

CITY OF PORTLAND, MAINE

PLANNING BOARD



Brandon Mazer, Chair
Maggie Stanley, Vice Chair
Marpheen Chann
Sean Dundon
Bob Dunfey
David Silk
Austin Smith

AGENDA PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on Tuesday, July 13 via Zoom. 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.

Please note that the placement of items on this agenda are subject to change – please check the Agenda & Minutes Center prior to the meeting for the item approximate start time.

ZOOM MEETING LOGIN:

When: Jul 13, 2021 04:30 PM Eastern Time (US and Canada)
Topic: Planning Board Workshop and Public Hearing July 13, 2021

Please click the link below to join the webinar:
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WORKSHOP - 4:30 PM

- i. Major Site Plan and Subdivision; 0 Dalton Street; Hammond House, LLC., Applicant (estimated time 4:30 - 5:30 p.m.). The Planning Board will hold a remote workshop to consider a plan by Hammond House, LLC for the development of a 48-unit Planned Residential Unit Development, along with associated site improvements, at 0 Dalton Street (located between Sherwood and Dalton Streets). The subject parcels total 3.4 acres in size and are zoned R-5 Residential.

PUBLIC HEARING - 5:30 PM

1. ROLL CALL AND DECLARATION OF QUORUM
2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON JUNE 22, 2021

Afternoon Workshop

144 State Street: Chann, Dundon, Dunfey, Mazer, Silk, and Smith present; Stanley recused.

387 Deering Avenue: All present.

Evening Hearing

178 Middle Street: All Present.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON JUNE 22, 2021

- i. Subdivision; 178 Middle Street; Cow Plaza 4, LLC. and Fresnel, LLC., Applicants
Silk moved and Dunfey seconded a motion to approve the subdivision with two conditions of approval. Vote 7-0.

5. NEW BUSINESS

- i. Level III Site Plan and Subdivision; 144 State Street; Community Housing of Maine, Applicant (estimated time 5:30 - 6:30 p.m.). The Planning Board will hold a remote public hearing to consider a plan for a 57-unit senior housing building and a 41-unit multi-family housing building at 73 and 91 Spring Street (formerly 144 State Street), along with associated site improvements. The subject property is 32,531 square feet in size and is zoned B-3 Downtown Business.
- ii. Level III Site Plan and Subdivision; 33-37 Montreal Street; 37 Montreal Street, LLC., Applicant (estimated time 6:30 p.m.). The Planning Board will hold a remote public hearing to consider the construction of a four story, nine unit residential development at 33 Montreal Street. The subject property is 10,804 square feet in size, is located in the Munjoy Hill Neighborhood Conservation Overlay District, and is zoned R-6 Residential.

Memorandum

Planning and Urban Development Department



To: Brandon Mazer, Chair and Members of the Portland Planning Board

From: Shukria Wiar, Planner

Date: July 9, 2021

Re: Winchester Woods, o Dalton Street (Winchester Drive); Hammond House, LLC

Project #: PL-001532-2021 CBL: 037 Fo22001

Meeting Date: July 13, 2021

I. INTRODUCTION

Hammond House, LLC has submitted a Major Site Plan and Subdivision application to facilitate the development of a 48 unit Planned Residential Unit Development (PRUD), along with associated site improvements, at o Dalton Street (located between Sherwood and Dalton streets), to be known as Winchester Woods. This project will combine 16 existing parcels into one parcel on which to site four 34' in height identical structures under a PRUD model. The site will be accessed through an existing right-of-way via Sherwood Street, with additional partial access to a recreation space and a walking trail at the end of Dalton Street. An existing single-family home, which is under common ownership with this development, will be renovated and split off from the PRUD as its own parcel. The subject parcels total 3.4 acres in size and are zoned R-5 Residential.

Figure 1 – Aerial of Proposed Development Site



The project will also be subject to the Inclusionary Zoning regulations. The applicant is proposing to utilize Section 18.2.3 E of the Land Use Code to allow for a 25% increase in total permitted units if the applicant provides the workforce housing units on site. Under this ordinance, the applicant must provide 25% of the units (12 units) as workforce units to meet the Land Use Code's requirements. As all 12 units will be built on site as part of this project, the applicant is eligible to receive a 25% density bonus.

Applicant: Hammond House, LLC

Consultants: Sam Lebel, P.E., Project Manager, Acorn Engineering, Inc.
Devin Cough – Archetype Architects

II. REQUIRED REVIEWS

Waiver Requests	Applicable Standards
Request: Minimum widths of drive aisles are 24 feet for parking lots with 90 degree parking. Applicant is requesting to reduce the drive aisle to a minimum of 22 feet within the site.	Technical Manual, <i>Section 1.14 Parking Lot and Parking Space Design</i> states 'Vehicular access shall be provided by one or more aisles. Minimum widths of aisles are illustrated in Figures I-28 thru I-31.' (<i>Minimum widths of aisles shall be</i>

Staff Comments:	24' for 90 degree parking)
Review	Applicable Standards
Major Site Plan	Section 14.6
Subdivision	Section 15.4
Inclusionary Zoning (IZ)	Section 18.1
Planned Residential Unit Development (PRUD)	Planned Residential Unit Developments in the R-5 Residential Zone (Section H of the Design Manual)

III. PROJECT DATA

Existing Zoning	R-5 Residential
Existing Use	Vacant
Proposed Use	Residential
Bedroom Mix	24 one-bedroom units; 24 two-bedroom units
Parcel Size	148,034 SF (3.4 Acres)

	Existing	Proposed	Net Change
Buildings Footprints (same for all four buildings)	0 SF	4,072 SF x 4 16,288 SF in total	16,288 SF
Building Floor Area	0 SF	12,216 SF x 4 48,864 SF in total	48,864 SF
Impervious Surface Area	0 SF	46,400 SF	46,400 SF
Parking Spaces	0	66 (4 handicapped)	66
Bicycle Parking Spaces	0	24	24

IV. EXISTING CONDITIONS

The 3.4 acre development site is an assemblage of lots located at the end of Dalton Street and abutting Sherwood Street in East Deering and is comprised of 16 existing parcels originally platted for future single family home development ranging in size from 4,950 square feet to 13,100 square feet. The property has approximately 120 feet of frontage along Dalton Street and 50 feet of frontage on Sherwood Street. The parcel along the Dalton Street frontage currently includes a single-story house at the edge of the site, which the applicant is keeping in order to renovate.

Presently, as the majority of the site is undeveloped, most of the land is pervious, including dense overgrowth and mature tree growth. The site currently contains a trail that extends along the Sherwood Street frontage, as well as an existing twenty foot wide sewer easement for the Portland Water District, which bisects the property. Abutting uses are all residential, with the exception of the Presumpscot Elementary School, which abuts the site to the northwest. There are single-family, duplex, and triplex homes along both Dalton and Sherwood streets and within the surrounding neighborhoods.

Figure 2 – Aerial of Existing Site with Historic Parcels



V. PROPOSED DEVELOPMENT

The applicant seeks to combine the various subdivided single-family parcels in order to facilitate the development of Winchester Woods, a 48 unit PRUD development consisting of apartments to be housed within four identical 12-unit buildings. Access to the buildings would be provided from Sherwood Street via a new private drive, Winchester Drive, with additional partial access to a recreation space and a walking trail at the end of Dalton Street. 66 surface parking spaces, of which four will be handicapped, will be provided. Four of these parking spaces will be located on-street along the private drive. Additional site amenities proposed include foot bridges, pathways, and recreational fields for active open space that will lead from the residential buildings to a proposed 14,400 square foot recreational field along the Dalton Street side. The Dalton Street access point will only be used for the recreational space. At this location, a handicapped space will be provided for accessibility.

Figure 3 – Existing Site with Historic Parcels



Figure 4 – Site plan with Building Rendering



VI. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

Notices were sent to one hundred and forty-three (143) residents and the interested citizen list. The notice also appeared in the *Portland Press Herald* on July 4th and 5th, 2021, as well as being posted on the City's web page. E-mail notices were sent at the same time as the mailed notices as well as being posted on the City's web page and posted on the legal ad. Two public comments have been received by the Planning office, Attachment 7.

The applicant held a neighborhood meeting, as required as part of this application, on May 27th, 2021 with ten (10) attendees (Attachment S-V).

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

a. The owners of the property are Walter Libby, Mark Libby, Lucy Copp and Medline Morrill by quitclaim deed with covenants recorded at the Cumberland County Registry of Deeds (Book 11647 Page 187 and Book 15054 Page 170). The applicant has provided a copy of a purchase and sale agreement, which demonstrates their right, title and interest in the property.

b. The applicant has submitted a letter from Camden National Bank, dated March 24, 2021, as demonstration of their financial and technical capacity to complete the proposed development.

c. The applicant has provided a copy of a purchase and sale agreement, which demonstrates their right, title and interest in the property. In addition, the applicant will also need easements or license agreements from the City and any other abutters who own the fee in the unaccepted Street F (proposed Winchester Drive). These easements and licenses are required in order to permit the developer to construct the road as proposed.

VIII. ZONING ANALYSIS**A. DIMENSIONAL AND USE REQUIREMENTS**

The proposed subdivision is within the R-5 Residential zone. A review of the zoning for the site was conducted and the proposed PRUD development meets standards for minimum lot size, minimum street frontage, and lot width requirements for the R-5 zone; below is the zoning assessment included in the application materials:

	Required	Proposed
Lot Size	2 AC	3.4 AC
Area Per Dwelling Unit	3,000 SF	3,375 SF
Minimum Street Frontage	50 SF	99'
Front Yard Minimum	20 SF	40'
Front Yard Maximum	N/A	80'
Rear Yard	20 sf	43'
Yard Right	N/A	31'
Yard Left	N/A	73'
Side Street Setback	15'	52'
Maximum Lot Coverage	40%	12%
Maximum Height	35'	34'
Common Open Space	300 SF/DU	300 SF/DU
Maximum Impervious Surface	N/A	N/A
Off-Street Parking	48	63

B. CONDITIONAL USE – INCLUSIONARY ZONING

As required by the City's Inclusionary Zoning Ordinance, regulations mandate that 25% of the units (12 units) meet the definition of workforce housing, allowing for a 25% density bonus (Section 18.2.3.E). Per the applicant, all 12 units will be built on site as part of this development. The existing single-family home currently under common ownership

with this development will be renovated and split off from the PRUD as its own parcel. The City's Housing Program Manager, Victoria Volent, has reviewed the application and offers the following comments (refer to Attachment 5 for a complete analysis):

Please note, the applicant proposes construction utilizing Section 18.2.3 E of the Ordinance which allows for a 25% increase in total permitted units if the applicant provides the workforce housing units on site. The applicant may not also take advantage of any bonus they may be eligible for under subsection 18.2.4 A (density bonus per Table 18-C) or 18.2.4 B (PRUD dimensional bonuses and changes).

Please also note, the applicant cannot provide a fee-in-lieu for a portion of the required workforce units as they have chosen to provide the workforce units on site to receive the 25% increase in total permitted units (they are committing to providing 12 workforce units on site).

IX. DEVELOPMENT REVIEW

A. SITE PLAN AND SUBDIVISION SUBMISSION REQUIREMENTS

The applicant has submitted a recording plat for review. William Scott, City Surveyor, reviewed the boundary survey as well as the plat, and offered recommendations, refer to Attachment 4 for Mr. Scott's complete memorandum). The final plat will need to be revised to reflect the survey's recommendation, and any waivers and conditions of approval that relate to the subdivision plan. Any waivers granted must be recorded at the Registry of Deeds within two years of a Planning Board decision.

B. SUBDIVISION (Section 15-4.1)

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

1. Will Not Result in Undue Water or Air Pollution (Section 15-4.1 A)

The project is not anticipated to result in undue air or water pollution.

2. Sufficient Water Availability and Will Not Cause Unreasonable Burden on Existing Water Supply (Section 15-4.1 B & C)

The development will be served by an eight-inch fire line running the length of the access drive. This line will connect into Portland Water District's (PWD) 12 inch main beneath Sherwood Street. The site will also be served by a four-inch domestic line. Each of the four buildings will be served by a six-inch fire and two-inch domestic service that will connect into the mechanical room for each respective building. The applicant will need to submit a capacity letter from PWD to state that there is sufficient capacity for the proposed development.

3. Will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result Section 15.4.1.)

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated given the site. The Site Plan (Plan 4) and Grading & Drainage Plan (Plan 5) include measures designed to stabilize the site during and after construction.

4. Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highway or public roads existing or proposed (Section 15.4.1 E)

The proposed development has frontage along Dalton Street and Sherwood Street. The main access point will be from Sherwood Street through a paper street to be known as Winchester Drive. Currently this street is shown as F street on the boundary survey, and an access road to the site is proposed and will utilize the vacated paper street ROW formerly held by the City. While a Traffic Movement Permit is not required as the project will not generate 100 or more vehicle trips during peak hour, traffic increase is expected for this project due to the

change in use of the land. Tom Errico, Consulting Traffic Engineer, has reviewed the proposed project trip generation and site location and recommends that the applicant complete a traffic study, with the scope of work to include the following:

- Evaluate the intersections of Sherwood Street at Veranda and Presumpscot Streets. This shall include collecting AM and PM intersection turning movements counts and conducting a capacity analysis. The analysis should be performed for No-Build and Build conditions.
 - Conduct a speed study on Sherwood Street and assess the need for traffic calming strategies (including suggestions for pavement marking calming strategies).
 - Crash data for Sherwood Street shall be obtained and assessed.
5. Will provide for adequate sanitary waste and storm water disposal and will not cause an unreasonable burden on municipal services if they are utilized (Section 15.4.1 F). Will not cause an unreasonable burden on the ability of the City to dispose of solid waste and sewage if municipal services are to be utilized (Section 15.4.1 G)

The project is proposed to connect to an eight-inch common sewer line into the existing sewer manhole located within Sherwood Street. The proposed main will run parallel with the Access Drive to serve the site. Each building will connect into this main with six-inch laterals. The applicant will need to submit a capacity letter from Department of Public Works (DPW) stating that there is sufficient capacity for this. The sewer connection to Sherwood Street may require a manhole; the applicant will need to coordinate with Water Resources for clarification. Lauren Swett, Consultant Peer Reviewer, has reviewed the Utilities Plan with the following recommendation regarding utilities on site:

- The utility plan includes locations of proposed landscaping, which is helpful. The Applicant should generally check for proximity of proposed landscaping to utilities. In addition to proximity to the USSFs as noted above, it also appears that landscaping will be in close proximity to some proposed electrical infrastructure – the Applicant should confirm constructability.
 - The utility plan identifies a potential gas main extension in the existing Dalton Street. Confirmation of this extension and further information on impact (repaving, etc.) should be provided.
6. Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or by the City, rare and irreplaceable natural areas, or any public rights for physical or visual access to the shoreline (Section 15.4.1 H)

The site is not within or proximate to an historic district. The applicant will need to submit determinations from Department of Agriculture, Conservation and Forestry and Maine Historic Preservation Commission to confirm that the proposal does not impact any botanical features or archaeological sites. Development on the subject property, which is a forested field surrounded by existing development, will not adversely affect any significant wildlife habitat, rare or irreplaceable natural areas, or any public access to the shoreline.

7. Is in conformance with the Comprehensive Plan, Portland's Plan 2030 (Sec 15.4.1 I)

The proposed project supports a number of goals identified in *Portland's Plan 2030*, particularly the Housing Section. Those goals include increasing the overall supply of housing city-wide to meet the needs, preferences, and financial capabilities of all Portland residents, to encourage contextually appropriate housing density, and to enable people who work in Portland to live in Portland. Comprehensive Plan goals relevant to the application are included below:

Housing: A Livable City

State Goals: To encourage and promote affordable decent, housing opportunities for all Maine citizens

Local Goals:

- Increase, preserve, and modify the overall supply of housing City-wide to meet the needs, preferences and financial capabilities of all Portland households.
- Encourage additional contextually-appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.
- Pursue policies to enable people who work in Portland to have the option to live in Portland.
- Encourage quality, sustainable design in new housing development.

Goals from Future Strategies:*3. Remove Housing Barriers*

- Identify priority growth areas.
- Allow for a range of housing models in City codes, whether small units, co-housing, or others that may suit changing needs and demographics.

8. The subdivider has adequate financial and technical capacity (Sec 15.4.1 J)

The owners of the property are Walter Libby, Mark Libby, Lucy Copp and Medline Morrill by quitclaim deed with covenants recorded at the Cumberland County Registry of Deeds (Book 11647 Page 187 and Book 15054 Page 170). The applicant has provided a copy of a purchase and sale agreement, which demonstrates their right, title and interest in the property. The applicant has submitted a letter from Camden National Bank, dated March 24, 2021, as demonstration of their financial and technical capacity to complete the proposed development.

9. Wetland/Water Body Impacts (Section 15.4.1 K)

The assemblage includes 13,939 SF of wetlands located near the center of the parcel. According to the site plan, the development will not encroach into these wetlands. Refer to Paragraph IX (B)(b)1 for more detail discussion.

10. Will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater (Section 15.4.1 L)

There are no anticipated impacts to groundwater supplies.

11. Flood-Prone Area (Section 15.4.1 M)

Per the FEMA flood maps, the site is not located in a flood zone and therefore this standard is not applicable.

12. Stormwater Management (Sec 15.4.1 N)

Staff have determined that the project is required to comply with Maine DEP Chapter 500 regulations as well as Section 5 of the Technical Manual for stormwater management. This requires compliance with the Basic, General, and Flooding Standards. The Applicant has provided a detailed Erosion and Sedimentation Control plan to meet the Basic Standards. The project will also require a Stormwater Maintenance Agreement.

13. Shore Frontage (Sec 15.4.1 O)

The parcel does not have shore frontage. No river, stream or brook within or abutting the proposed subdivision.

14. Traffic Impacts across municipal boundaries (Sec 15.4.1 P)

The parcel does not cross municipal boundaries.

B. SITE PLAN STANDARDS (Section 14-6)

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

a) **Transportation Standards**

1. **Impact on Surrounding Street Systems and Access and Circulation**

Please see Subdivision, Paragraph IX (B) (4), above.

2. **Access and Circulation**

The primary entrance and access point to the development will be via Sherwood Street, through a paper street to be known as Winchester Drive. To access the recreation fields the applicant is providing secondary access at the end of Dalton Street. There will be one handicapped parking space at this location. A sidewalk on one side of Winchester Drive is proposed along the eastern edge to provide access to the proposed residential buildings. Two crosswalks are proposed on site; a midblock crosswalk is proposed to accommodate the existing Portland Trails Path on site and one at the end of Winchester Drive. Mike Tremblay, Senior Engineer with DPW, has reviewed this and recommends the following comments:

- Sidewalk widths are typically 4 feet. While not under the purview of the Technical Manual, the recommended sidewalk width is at least 5 feet. Additionally, the Applicant should be aware of federal ADA requirements for sidewalks, which do apply here. Signs or other obstructions along the sidewalk may pinch the sidewalk down to an unacceptable width. A 5-foot sidewalk width or greater is strongly encouraged.
- The site plan shows several crosswalks along Winchester Drive, but there are no ramps shown. The applicant will need to address this and provide ramps at the two crosswalk locations.

3. **Public Transit Access**

This review is pending and has not determined if a transit shelter is required. The project is within a quarter mile of several existing bus stops (Routes 9A, 9A, and 7).

4. **Parking: Vehicle and Bicycle**

The applicant proposes to construct surface parking along two frontages of the proposed buildings. Per ordinance regulations, 48 parking spaces are required (one per unit) and the applicant is proposing sixty-six spaces, exceeding the parking requirement by 37%. As per Land Use Code Section 14.6.1.(D), the applicant will be required to provide a parking study in order to exceed the minimum parking by more than 10%.

Developments proposing to exceed minimum parking requirements by 10% or more must demonstrate through a parking study that the amount of parking is appropriate for the proposed use of the site

The applicant states the following in regard to this:

We believe that the proposed 66 spaces is appropriate for this site given the efficient site design that minimizes impervious area, and the lack of public and street parking near the site. To avoid parking spillover onto Sherwood Street, we propose to exceed the City's parking requirements to contain parking on site. Additionally, the 4th edition of the Institute of Traffic Engineers Parking Generation estimates a weekday average of 59 spaces for the site using Land Use Code 221 as opposed to the 48 defined by the City.

The applicant is proposing 24 bicycle spaces. Mr. Tremblay has reviewed the parking situation and offers the following recommendations:

- The northernmost parking area does not have an ADA space. All parking distinct areas should have a van-accessible ADA space.
- The buffer spaces adjacent to ADA parking spaces should have a direct accessible route to the sidewalk. Refer to [this document](#).
- Bicycle racks do not appear to be located along a paved access way, requiring users to wheel bikes through grass or another unspecified material. Bike rack symbology is also extremely small (5'x3') and do not adequately reflect the footprint of bike racks with bikes parked in them. The symbol used for a bike rack is a simple rectangle and is not easily distinguishable from other site features like concrete pads.

b) Environmental Quality Standards

1. Preservation of Significant Natural Features

There are no significant landscape or natural features to preserve. The site primarily consists of wooded areas with two drainage subcatchments; one is located to the southwestern corner of the site near Sherwood Street, whereas the second comprises the majority of the site. The site does contain 13, 939 square feet of wetlands located near the center of the parcel. According to the applicant, the wetlands were originally constructed as manmade detention basins with an outlet control structure to direct stormwater runoff into the municipal separated storm sewer system (MS4) within Sherwood Street. Currently, these features serve as a major collection point of stormwater in the neighborhood between Veranda St, Presumpscot St, and the railroad that runs parallel with I-295. Based on the materials provided, the development will not encroach into these wetlands. Erosion and sedimentation control measures will be provided throughout the site and around the wetlands. Lauren Swett, Consultant Peer Reviewer, reviewed the submitted application and states the following in regard to the wetland on site:

With work proposed in close proximity to wetlands, the Applicant should confirm if additional permitting, like a Natural Resource Protection Act Permit By Rule is necessary. Also, I would suggest that a different hatch be used to show loam and seed in the area to the east – the current hatch looks like wetlands and appears to show wetland impact which I don't believe is the intent of this work.

2. Landscaping and Landscape Preservation

a. Landscape Preservation

According to the applicant, they anticipate that a minimum of 30% of existing trees ten inches DBH or greater within the setback area will be preserved, mainly by maintaining the majority of the site's vegetation and grade at the southeast portion of the property.

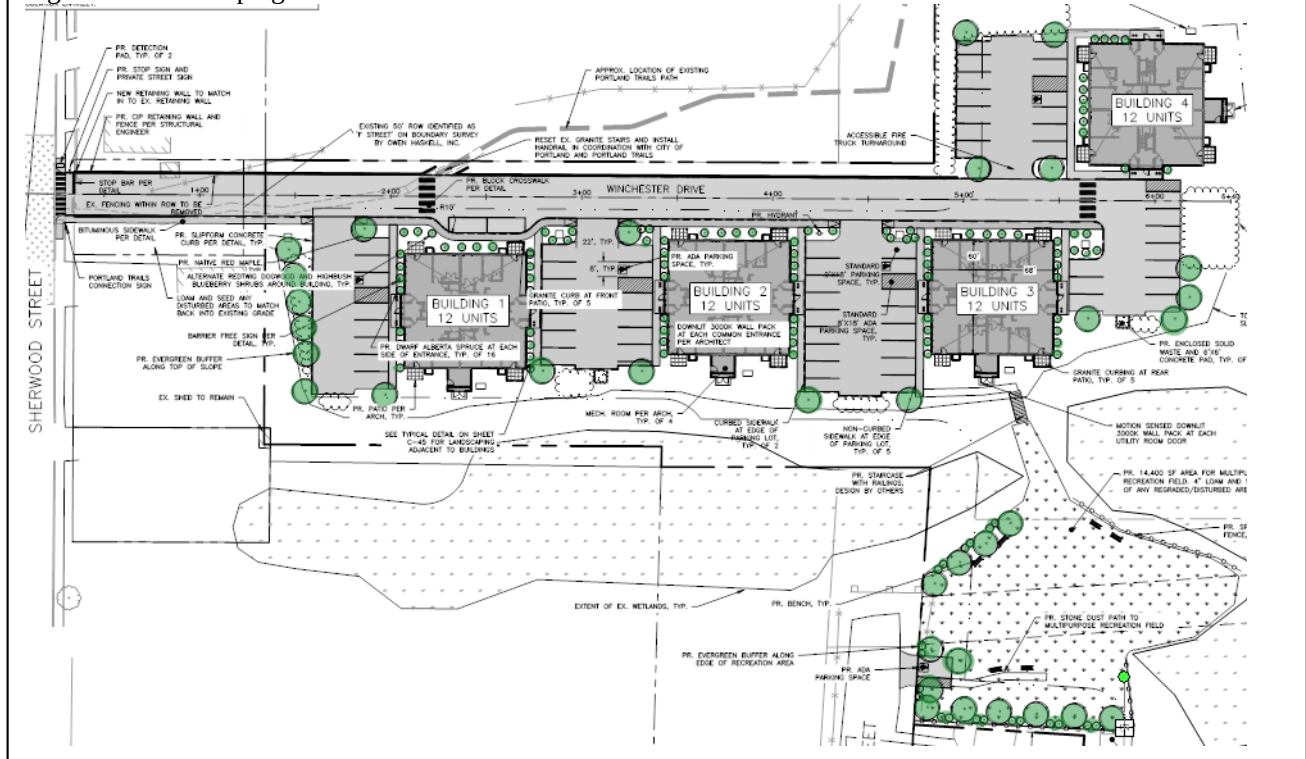
b. Site Landscaping

The applicant is proposing a combination of trees and shrubs on site, specifically along the parking lot and buildings understory.

c. Street Trees

The street tree requirement for PRUDs is two trees per unit in or near the ROW. The applicant is proposing 48 residential units, therefore will need 96 trees on the entire site. In reviewing the site plan, there are only six trees that will qualify as street trees. The applicant will need to work with the City Arborist to determine

Figure 5 – Landscaping Plan



where more street trees can be planted. A landscaping plan needs to be submitted that shows the preservation of existing trees and street trees on site.

3. Water Quality, Storm Water Management and Erosion Control

Under Section 5 of the City of Portland Technical Manual, a major development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. Ms. Swett, Consulting Peer Reviewer, has reviewed the drainage plan and stormwater report, and offers her recommendations; please see Attachment 3 for the complete analysis:

- Basic Standards – The project has provided an erosion and sedimentation control plan with details and notes in accordance with the standards. The plan should be updated to show a double row of sediment barrier along any remaining undisturbed wetlands.
- General & Flooding Standards – The project is providing for treatment and flow attenuation of stormwater utilizing a series of underdrained subsurface sand filters (USSFs). I just have a few minor comments:
 - The Applicant should check proposed tree location for proximity to the proposed USSF systems, in particular number 1 and 4.
 - A stormwater maintenance plan and agreement will be required for the proposed systems. The agreement should include the 4 USSFs and the connecting outlet control structure.
- A stormwater system is proposed to direct water from the school site to the west through the property, discharging to the west. The Applicant has included narrative describing the system's

design in conjunction with the abutting school property. The system includes a structure labeled “DMH By Others” and a “Potential 12” Storm Drain Connection and Drainage Easement from School”. Further information confirming the design of this system (specifically pipe sizing) should be provided as well as confirmation of the easement and additional infrastructure required from the abutter.

c) Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans

See Subdivision, Paragraph IX (B)7 above.

2. Public Safety and Fire Prevention (CPTED and Fire)

The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime. The site has been designed to promote safe and inviting public access. Adequate emergency access will be provided. The turning radii of the driveway are large enough to allow for emergency vehicles to enter and exit the proposed street. Two fire hydrants are located along Westbrook Street. The hydrant within the PRUD lot is proposed to be private and maintained as such.

3. Availability and Adequate Capacity of Public Utilities

The Applicant has contacted the Portland Water District and Department of Public Works requesting ability to serve for water and sewer and awaits a response; confirmation of ability to serve letters should be forwarded to the Planning Authority.

d) Site Design Standards

1. Massing, Ventilation and Wind Impact

All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will have to be shown on the plans and meet state and federal emissions requirements. Mechanical equipment should be located to the interior of the site, away from abutting residential properties and be screened from view from any public street and from adjacent sites by structure walls, evergreen landscaping, fencing, masonry wall or a combination thereof. The applicant will need to state what is being proposed and how the standard is being met.

2. Shadows

The project is not adjacent to any public park or open space but does abut the recreational fields located on the Presumpscot Elementary School campus. Based on the proposed building footprints, orientation, and heights, the structures will not cast shadow onto the school's fields.

3. Snow and Ice Loading

The applicant is proposing on-site snow storage. Snow within the PRUD lot is to be stored along the side slopes of the driveway. It is anticipated that snow will be stored along the roadway and along the edge of the surface parking lots.

4. View Corridors

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

5. Historic Resources

The site is not within a historic district or within 100 feet of a historic district, therefore this project does not require historic preservation review.

6. Exterior Lighting

There is no proposed site lighting at this time. The applicant is proposing façade mounted lighting fixtures at all the entrances to the residential buildings. All exterior site lighting including lighting of building entrances will have to be cutoff with no light emitted above the horizontal plane or spilled onto adjacent properties or streets.

7. Noise and Vibration

All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will have to be shown on the plans and meet state and federal emissions requirements. This mechanical equipment should be located to the interior of the site, away from abutting residential properties and be screened from view from any public street and from adjacent sites by structure walls, evergreen landscaping, fencing, masonry wall or a combination thereof. The applicant shall show the location and screening of these mechanical equipment in the site plans, as well as on the elevations.

8. Signage and Wayfinding

This standard does not apply to the proposal.

9. Zoning Related Design Standards

A design review according to the City of Portland Design Manual Standards was performed for the proposed new construction of the PRUD building. The review was performed by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Andrew Tufts, Planner. The project was reviewed against the *Planned Residential Unit Developments in the R-5 Residential Zones* (Section (h) of the Design Manual) and does not currently

Figure 6 – Elevations



South Elevation



North Elevation

meet all of the design standards. The proposed buildings will need to meet design standards regarding main entrances and façade material of the buildings, screening/landscaping at patios, and amenities in the active recreational open space. See Attachment 6 for a complete analysis.

X. NEXT STEPS

- a. Planning Board to provide preliminary comments/questions
- b. Continue to evaluate proposal against PRUD design guidelines
- c. Applicant to provide the following:
 - i. Transportation and Parking
 1. Provide trip generation analysis
 2. Provide traffic study
 3. Provide justification for the parking that exceeds the required amount
 - ii. Site Design
 1. Revise street tree design, raised granite
 2. Update midblock crosswalk details
 - iii. Subdivision
 1. Address Right, Title, and Interest in Street F (proposed Winchester Drive)
 2. Address Environmental Quality Standards, wetlands and stormwater management

XI. ATTACHMENTS**PLANNING BOARD REPORT ATTACHMENTS**

1. Consulting Traffic Engineer Review 05.17.2021
2. DPW Senior Engineer Review 06.20.2021
3. Consultant Civil Engineer Review 07.07.2021
4. City Surveyor Review 07.07.2021
5. Housing Planner Review 07.07.2021
6. Public Comment
 - 6a. Michael Long 5-14-2021
 - 6b. Heather Doolittle 5-20-2021

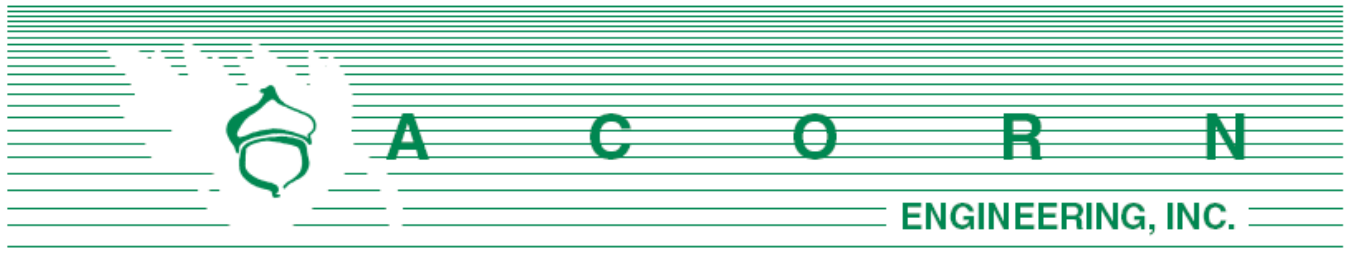
APPLICANT'S SUBMITTALS

- A. Cover Letter
- B. Site Plan Checklist
- C. Right, Title & Interest
- D. Zoning Assessment
- E. Summary of Written Easements
- F. Waivers
- G. Financial Capacity
- H. Technical Capacity
- I. Conformity with Land Use Ordinance
- J. Stormwater Management Report
- K. Erosion and Sedimentation Control Report
- L. Fire Department Letter
- M. Wastewater Capacity
- N. Lighting
- O. Architectural Design Narrative
- P. Utility Cover
- Q. Construction Management Report
- R. Solid Waste Disposal
- S. Certification Letter
- T. Neighborhood Letter
- U. Sign In Sheet

- V. Meeting Minutes
- W. Stormwater Management Permit Application – DEP
- X. Winchester Woods Notice of Public Meeting Sign
- Y. Winchester Woods Notice of Public Meeting Certification

PLANS

- Plan 1. Cover Sheet and Legend
- Plan 2. General Notes
- Plan 3. Construction Management and Erosion Control Plan
- Plan 4. Site Plan
- Plan 5. Grading & Drainage Plan
- Plan 6. Utility Plan
- Plan 7. Site Details I
- Plan 8. Site Details II
- Plan 9. Landscape Details
- Plan 10. Utility Details I
- Plan 11. Utility Details II
- Plan 12. Drainage Details
- Plan 13. Underdrained Subsurface Sand Filter Details
- Plan 14. Erosion & Sedimentation Control Notes
- Plan 15. Erosion & Sedimentation Control Details
- Plan 16. Subdivision Plat
- Plan 17. Rendered View
- Plan 18. Code Summary
- Plan 19. First Floor Plan
- Plan 20. Accessible First Floor Unit
- Plan 21. Second Floor Plan, and Third Floor Plan
- Plan 22. Building Elevations
- Plan 23. Existing Conditions Plan



Att. A

Planning & Urban Development Department
City of Portland, Maine
Attn: James Rather, Development Review Manager
389 Congress Street, 4th Floor
Portland, ME 04101

March 25, 2021

Subject: Major Site Plan & Subdivision Application
Dalton PRUD (Winchester Woods)

James:

On behalf of Hammond House, LLC, we are pleased to submit the accompanying package of materials related to the proposed Winchester Woods development located at the end of Dalton Street which comprises a series of parcels within an unbuilt subdivision planned decades ago. The infill project seeks to combine the various subdivided single-family parcels to facilitate the development of 48 apartments within four identical structures under a Planned Residential Unit Development (PRUD) model. The site will be accessed through an existing right-of-way off Sherwood Street, with additional partial access to a recreation space and a walking trail at the end of Dalton Street. The project will also be subject to the new Inclusionary Zoning regulations which mandates 25% of the units (12) meet the definition of workforce housing. All 12 units will be built on site as part of this project, allowing for a 25% density bonus. The existing single-family home that's under common ownership with this development will be renovated and split off from the PRUD as its own parcel.

The development has been tactfully designed to avoid disturbance of the wetlands on site. Additionally, the project will construct extensive stormwater BMP's on site to detain, cool, and treat stormwater including intercepting runoff from the Presumpscot Elementary School that currently drains to the site and wetlands. As the project progresses, we anticipate coordinating with the City facilities team as well as Portland Trails on the planned upgrades to the existing trail that traverses the site linking the school to Sherwood Street.

We are excited to submit this application to the Planning Department as it falls directly in line with the comprehensive plan by providing quality housing which includes the construction of 12 workforce units on site. We are requesting to be placed on the next available workshop meeting with the Planning Board. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Samuel J. Lebel, P.E.
Project Manager
Acorn Engineering, Inc.

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

Documents:

- Section A: Cover Letter
- Section B: Major Site Plan and Subdivision Application & Checklist
- Section C: Right, Title, Interest
- Section D: Zoning Assessment
- Section E: Easements
- Section F: Waiver Table
- Section G: Financial Capacity
- Section H: Technical Capacity
- Section I: Conformity with Land Use Ordinance
- Section J: Stormwater Management Report
- Section K: Erosion & Sedimentation Control Report
- Section L: Fire Department Letter
- Section M: Wastewater Capacity Letter
- Section N: Lighting
- Section O: Architectural Design Narrative
- Section P: Utility Cover
- Section Q: Construction Management Plan
- Section R: Solid Waste

Drawings:

- Civil Site Plan Set
- Architectural Plan Set



CITY OF PORTLAND
Planning & Urban Development Department

Att. B

MAJOR SITE PLAN GENERAL DOCUMENT AND DRAWINGS CHECKLIST Please submit each document as a separate PDF file. Please confirm by electronically checking the boxes in the left-hand column. ** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE AND WAIVER TABLE SEPARATELY AS NOTED BELOW ** At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.		
GENERAL APPLICATION DOCUMENTS		
☒	NA	Project Description Cover letter with detailed project description
☒	NA	Completed Checklist (this document)
☒	NA	Evidence of Right, Title, and Interest Deeds, leases, or purchase and sales agreements
☒	NA	Evidence of State or Federal Approvals Permits or letters of non-jurisdiction, if applicable
☒	NA	Zoning Assessment (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
☒	NA	Site Plan Standards Assessment (see Section 14.6 of the land use code) Summary of project compliance with site plan standards of the land use code
☒	NA	Summary of Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
☒	NA	Waiver Requests (see Waiver Table) Written request for waiver describing request and compliance with applicable waiver standards
☒	NA	Financial Capability Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
☒	NA	Technical Capability Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR 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

Yes NA	Impact on Surrounding Street Systems (14-14.6.1(A)) Describe incremental volume of traffic impacts and mitigation measures. If needed
Yes NA	Access and Circulation (14-14.6.1(B)) Identify and describe the following: - Site access and internal circulation, including ADA access - Drive-up features, if applicable - Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)
Yes NA	Public Transit (14-14.6.1(C)), if applicable Identify and describe the following: Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter
Yes NA	Off-Street Parking (14-14.6.1(D)), if applicable Identify and describe the following: - Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code - Curb cut separation and parking layout (Technical Manual, Section 1) - Construction details for bicycle racks - Management plan for snow storage and removal
Yes NA	Transportation Demand Management (TDM) (14-14.6.1(E)), if applicable Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements

ENVIRONMENTAL		
Yes	NA	Preservation of Significant Natural Features (14-14.6.2(A)), if applicable Identify and describe the following: • High and moderate value waterfowl and wading habitat • Aquifers (for Casco Bay Islands) • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental compliance consultants and determinations from applicable state and federal agencies
Yes	NA	Landscape Preservation (14-14.6.2(B)) Identify and describe the following: • Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4) • Measures to protect existing vegetation during construction
Yes	NA	Site Landscaping and Buffers (14-14.6.2(C)) Identify and describe the following: • Overall landscaping approach and consistency with standards • The use of screening and buffering of service areas and between non-residential and residential uses • Existing Heritage or Feature Trees on site and measures to preserve • Compliance with street tree requirements
Yes	NA	Water Quality, Stormwater Management, and Erosion Control (14-14.6.2(D)) Identify and describe the following: • Erosion and sedimentation control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater law, as applicable • Subsurface sanitary sewage disposal and groundwater protection measures

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY		
Yes	NA	Consistency with City Master Plans (14-14.6.3(A)) Describe proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes	NA	Public Safety and Fire Prevention (14-14.6.3(B)) Identify and describe the following: - Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3) - Emergency vehicle access - Consistency with public safety standards (Technical Manual, Section 3)
Yes	NA	Availability and Adequacy of Public Utilities (14-14.6.3(C)) (Technical Manual, Sections 2 & 9) Identify and describe the following: - Electrical services, including providing underground services - Existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections
SITE DESIGN		
Yes	NA	Massing, Ventilations and Wind Impact (14-14.6.4(A)) Identify and describe the following: - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces, including wind study, if applicable - Bulk, location, or height impacts on adjoining structures
Yes	NA	Shadows (14-14.6.4(B)), if applicable Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes	NA	Snow and Ice Loading (14-14.6.4(C)) Describe building design measures to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes	NA	View Corridors (14-14.6.4(D)), if applicable Describe any protection of designated view corridors (Portland Design Manual, Appendix. 1)
Yes	NA	Historic Resources (14-14.6.4(E)), if applicable Identify and describe the following: - The site's status as a designated landmark, within a historic district or historic landscape district, or within 100 feet of any designated landmark, historic district, or historic landscape district - Compliance with standards for preservation and documentation of archaeological resources

Yes	NA	Exterior Lighting (14-14.6.4(F)) Describe how the proposed site lighting will adhere to photometrics requirements as it relates to light trespass and full cutoff fixture design, pursuant to Technical Manual Section 12
Yes	NA	Noise and Vibration (14-14.6.4(G)) Provide data on noise levels for HVAC and other mechanical equipment, such as design specifications, to demonstrate consistency with state and federal noise emissions requirements as well as City code
Yes	NA	Signage and Wayfinding (14-14.6.4(H)), if applicable - Provide signage plan showing the location, dimensions, height and setback of all existing and proposed signs - Provide drawings of all commercial and directional signage on site
Yes	NA	Zone-Related Design Standards (14-14.6.4(I)) Address any applicable design review standards by zone, including compliance with Design Manual

MAJOR SITE PLAN DRAWINGS CHECKLIST

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

All drawings must be submitted in a 24 x 36 sheet size.

BOUNDARY SURVEY (stamped by a Maine Licensed Surveyor and drawn as per Technical Manual Sec. 13)

SITE PLAN(S) (stamped by a Maine Licensed Professional Engineer) including:

All sheets – Include a title block with project title and the following information:

- Project street address
- Name and address of property owner & applicant
- Licensed design professional, incl firm that produced plans
- North arrow
- Date of preparation and revision history block
- Tax parcel (chart, block, and lot) number

Existing Conditions Plan with the following:

- Existing structures, with distance from primary building façade(s) to the property line
- Approximate location of structures on abutting properties
- All streets and intersections adjacent to the site
- Existing driveways, pedestrian ways, and bicycle infrastructure, including dimensions and materials
- Existing public transit infrastructure
- Existing vehicle & bicycle parking areas
- Existing utilities on site and within adjacent rights-of-way
- Existing grades (two-foot contours preferred)
- Location of water courses, wetlands, and vegetation, or other significant natural features
- Existing soil conditions and location of test pits and borings
- Zoning boundary lines, including overlays
- Location of all existing easements and rights-of-way

Proposed Site Plan with the following:

- Proposed structures, including distance from primary building façade(s) to property lines
- Ground floor area, and finished floor elevations for all buildings
- Any proposed geometric modifications to streets and intersections adjacent to site
- Location, dimensions and materials of all 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, including turning templates
- Proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications
- Location of all snow storage areas
- Exterior lighting (please see Technical Manual Sec. 12 for photometrics requirements)
- Location of fire hydrants

• Location of solid waste management receptacles • Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable • Location of proposed easements and rights-of-way, including dimensions • Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed
UTILITY PLAN including:
• Proposed electrical infrastructure • Location, sizing and directional flows of all proposed sewer and stormwater infrastructure • Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site • Electric utility infrastructure
GRADING AND DRAINAGE PLAN including:
• Proposed grades • Proposed stormwater management measures meeting Technical Manual (Section 5) standards • Any proposed alteration of a watercourse or wetlands • Any groundwater protection measures • Proposed buffers and preservation measures for wetlands or significant natural features
LANDSCAPE PLAN including:
• Existing vegetation to be preserved and preservation measures • Proposed landscaping, screening, and street trees, including caliper widths for trees • Planting schedule, including street trees
ARCHITECTURAL PLANS AND RENDERINGS including:
• Exterior building elevations, color renderings, illustrations of all sides • Axonometric and street-level views for structures greater than three stories in height • Provide context drawings, if applicable (Design Manual, page 1) • Floor plans
CONSTRUCTION MANAGEMENT PLAN including:
• Specifics on traffic control, sidewalk sheds, and pedestrian rerouting • Include a drawing and written narrative
OTHER
• Details and cross-sections, as necessary

C. Right, Title, and Interest

Please refer to the attached Letter of Good Standing and Purchase and Sale Agreements demonstrating the Applicant's Right, Title, and Interest.





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: Wed Mar 10 2021 13:47:39. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
HAMMOND HOUSE, LLC	20194089DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
01/14/2019	N/A	MAINE

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

THOMAS B. FEDERLE
254 COMMERCIAL STREET
PORTLAND, ME 04101

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If you encounter problems, visit the [troubleshooting page](#).



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our [Feedback](#) page.

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PURCHASE AND SALE AGREEMENT

("days" means business days unless otherwise noted, see paragraph 23)

March 9, 2021
Offer Date

March 9, 2021 Effective Date
Effective Date is defined in Paragraph 23 of this Agreement.

1. PARTIES: This Agreement is made between KEVIN O'ROURKE ("Buyer") and D/S/H Hammer House LLC ("Seller").

2. DESCRIPTION: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy ☒ all part of (if "part of" see para. 26 for explanation) the property situated in municipality of PORTLAND, County of CUMBERLAND, State of Maine, located at Lots numbered 100, 101, 103 and 103 and described in deed(s) recorded at said County's Registry of Deeds Book(s) 8 10, Page(s) 1 21.

3. FIXTURES: The Buyer and Seller agree that all fixtures, including but not limited to existing storm windows, screens, shades and/or blinds, shutters, curtain rods, built-in appliances, heating sources/systems including gas and/or kerosene-fired heaters and wood/pellet stoves, sump pump, electrical fixtures, landscaping, and NA are included with the sale except for the following: NA.
Seller represents that all mechanical components of fixtures will be operational at the time of closing except: NA.

4. PERSONAL PROPERTY: The following items of personal property as viewed on NA are included with the sale at no additional cost, in "as is" condition with no warranties: NA.

5. PURCHASE PRICE/EARNEST MONEY: For such Deed and conveyance Buyer agrees to pay the total purchase price of NA. Buyer ☐ has delivered; or ☐ will deliver to the Agency within NA days of the Effective Date, a deposit of earnest money in the amount of \$ NA. Buyer agrees that an additional deposit of earnest money in the amount of \$ NA will be delivered NA.
If Buyer fails to deliver the initial or additional deposit in compliance with the above terms Seller may terminate this Agreement. This right to terminate ends once Buyer has delivered said deposit(s). The remainder of the purchase price shall be paid by wire, certified, cashier's or trust account check upon delivery of the Deed.

This Purchase and Sale Agreement is subject to the following conditions:

6. ESCROW AGENT/ACCEPTANCE: NA ("Agency") shall hold said earnest money and act as escrow agent until closing; this offer shall be valid until NA (date) ☐ AM ☐ PM; and, in the event of non-acceptance, this earnest money shall be returned promptly to Buyer.

7. TITLE AND CLOSING: A deed, conveying good and merchantable title in accordance with the Standards of Title adopted by the Maine Bar Association shall be delivered to Buyer and this transaction shall be closed and Buyer shall pay the balance due and execute all necessary papers on See Addendum (closing date) or before, if agreed in writing by both parties. If Seller is unable to convey in accordance with the provisions of this paragraph, then Seller shall have a reasonable time period, not to exceed 30 calendar days, from the time Seller is notified of the defect, unless otherwise agreed to in writing by both Buyer and Seller, to remedy the title. Seller hereby agrees to make a good-faith effort to cure any title defect during such period. If, at the later of the closing date set forth above or the expiration of such reasonable time period, Seller is unable to remedy the title, Buyer may close and accept the deed with the title defect or may terminate this Agreement in which case the parties shall be relieved of any further obligations hereunder and any earnest money shall be returned to the Buyer.

8. DEED: The property shall be conveyed by a Quitclaim Deed w/covenants, and shall be free and clear of all encumbrances except covenants, conditions, easements and restrictions of record which do not materially and adversely affect the continued current use of the property.

9. POSSESSION, OCCUPANCY, AND CONDITION: Unless otherwise agreed in writing, possession and occupancy of premises, free of tenants and occupants, shall be given to Buyer immediately at closing. Said premises shall then be broom clean, free of all possessions and debris, and in substantially the same condition as at present, excepting reasonable use and wear. Buyer shall have the right to view the property within 24 hours prior to closing.

10. RISK OF LOSS, DAMAGE, DESTRUCTION AND INSURANCE: Prior to closing, risk of loss, damage, or destruction of premises shall be assumed solely by the Seller. Seller shall keep the premises insured against fire and other extended casualty risks prior to closing. If the premises are damaged or destroyed prior to closing, Buyer may either terminate this Agreement and be refunded the earnest money, or close this transaction and accept the premises "as-is" together with the assignment of the insurance proceeds relating thereto.

Revised 2018

Page 1 of 4 - P&S

Buyer(s) Initials KOR

Seller(s) Initials TH

Vitalius Real Estate Group, LL, 306 Congress Street Portland, ME 4101
Briton Vitalius

Phone: (207)541-3755

Fax:

Produced with zipForm® by zipLogix 18070 Fifteen Mile Road, Fraser, Michigan 48026 www.ziplogix.com

11. FUEL/UTILITIES/PRORATIONS: Buyer ☐ shall ☒ shall not pay Seller at closing for all fuel in any tanks remaining on the property calculated as of the closing date or such earlier date as required to comply with lender requirements, if any. The amount owed, if any, shall be determined using the most recently available cash price of the company that last delivered the fuel. Metered utilities such as electricity, water and sewer will be paid through the date of closing by Seller. The following items, where applicable, shall be prorated as of the date of closing: collected rent, association fees, (other) _____. The day of closing is counted as a Seller day. Real estate taxes shall be prorated as of the date of closing (based on municipality's fiscal year). Seller is responsible for any unpaid taxes for prior years. If the amount of said taxes is not known at the time of closing, they shall be apportioned on the basis of the taxes assessed for the preceding year with a reapportionment as soon as the new tax rate and valuation can be ascertained, which latter provision shall survive closing. Buyer and Seller will each pay their transfer tax as required by State of Maine.

12. DUE DILIGENCE: Neither Seller nor Licensee makes any warranties regarding the condition, permitted use or value of Sellers' real or personal property, or any representations as to compliance with any federal, state or municipal codes, including, but not limited to, fire, life safety, electrical and plumbing. Buyer is encouraged to seek information from professionals regarding any specific issue or concern.

☐ Buyer's obligation to close under this Agreement is not subject to any due diligence investigations. Buyer is relying completely upon Buyer's own opinion as to the condition of the property.

☒ Buyer's obligation to close under this Agreement is subject to Buyer's satisfaction with the results of any due diligence investigations undertaken. Buyer shall have June 1, 2016 days from the Effective Date of this Agreement to perform such due diligence investigations as Buyer deems necessary which may include, without limitation, any or all of the following:

General Building	Square Footage	Zoning	Survey/MLI	Habitat Review/Waterfowl
Sewage Disposal	Code Conformance	Pests	Lead Paint	Coastal Shoreland Septic
Water Quality	Registered Farmland	Pool	Flood Plain	Energy Audit
Water Quantity	Environmental Scan	Insurance	Chimney	Lot Size/Acreage
Air Quality	Smoke/CO Detectors	Mold	Tax Status*	Arsenic Wood/Water (see par. 13)

All investigations will be done at Buyer's expense by persons chosen by Buyer in Buyer's sole discretion. Seller agrees to cooperate with Buyer and shall give Buyer and Buyer's agents and consultants reasonable access to the property and its systems and fixtures in order to undertake the above investigations. If the result of any investigation is unsatisfactory to Buyer, Buyer may terminate this Agreement by notifying Seller in writing within the specified number of days, and any earnest money shall be returned to Buyer. If the result of any investigation is unsatisfactory to Buyer in Buyer's sole discretion, and Buyer wishes to pursue remedies other than voiding the Agreement, Buyer must do so to full resolution within the time period set forth above; otherwise this contingency is waived. If Buyer does not notify Seller that an investigation is unsatisfactory within the time period set forth above, this contingency is waived by Buyer.

* If the property is enrolled in the Maine Tree Growth Tax program, Seller agrees to provide Buyer with the current Forest Management and Harvest Plan within _____ days. ☐ Yes ☒ No

13. PROPERTY DISCLOSURE FORM: Buyer acknowledges receipt of Property Disclosure Form and the information developed by the Maine Center for Disease Control and Prevention regarding arsenic in private water supplies and arsenic in treated wood.

14. FINANCING: Buyer's obligation to close:

☒ is not subject to a financing contingency. Buyer has provided Seller with acceptable proof of the funds.

☐ is not subject to a financing contingency. Buyer shall provide proof of the funds acceptable to Seller within _____ days. If such proof is unacceptable to Seller, Seller may terminate this Agreement no later than _____ days from receipt. If proof of funds is not provided within such time period, Seller may terminate this Agreement which right shall end once such proof is received, however Seller retains the agreed upon time period to terminate if such proof is unacceptable. If Seller terminates in either case, the earnest money shall be returned to Buyer.

☐ is subject to financing as follows:

- Buyer's obligation to close is subject to Buyer obtaining a _____ loan of _____ % of the purchase price, at an interest rate not to exceed _____ % and amortized over a period of _____ years. Buyer is under a good faith obligation to seek and obtain financing on these terms. If such financing is not available to Buyer as of the closing date, Buyer is not obligated to close and may terminate this Agreement in which case the earnest money shall be returned to Buyer.
- Buyer to provide Seller with letter from lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested within _____ days from the Effective Date of the Agreement. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
- Buyer hereby authorizes, instructs and directs its lender to communicate the status of the Buyer's loan application to Seller, Seller's licensee and Buyer's licensee.
- After (b) is met, if the lender notifies Buyer that it is unable or unwilling to provide said financing, Buyer is obligated to provide Seller with the written documentation of the loan denial within two days of receipt. After notifying Seller, Buyer shall have _____ days to provide Seller with a letter from another lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
- Buyer agrees to pay no more than _____ points. Seller agrees to pay up to \$ _____ toward Buyer's actual pre-pays, points and/or closing costs, but no more than allowable by Buyer's lender.
- Buyer's ability to obtain financing ☐ is ☒ is not subject to the sale of another property. See addendum ☐ Yes ☐ No.
- Buyer may choose to pay cash instead of obtaining financing. If so, Buyer shall notify Seller in writing including providing proof of funds and the Agreement shall no longer be subject to financing, and Seller's right to terminate pursuant to the provisions of this paragraph shall be void.

15. BROKERAGE DISCLOSURE: Buyer and Seller acknowledge they have been advised of the following relationships:

NA () of ()
Licensee MLS ID Agency MLS ID
is a ☐ Seller Agent ☐ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker
NA () of ()
Licensee MLS ID Agency MLS ID
is a ☐ Seller Agent ☐ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker

If this transaction involves Disclosed Dual Agency, the Buyer and Seller acknowledge the limited fiduciary duties of the agents and hereby consent to this arrangement. In addition, the Buyer and Seller acknowledge prior receipt and signing of a Disclosed Dual Agency Consent Agreement.

16. DEFAULT/RETURN OF EARNEST MONEY: Buyer's failure to fulfill any of Buyer's obligations hereunder shall constitute a default and Seller may employ all legal and equitable remedies, including without limitation, termination of this Agreement and forfeiture by Buyer of the earnest money. Seller's failure to fulfill any of Seller's obligations hereunder shall constitute a default and Buyer may employ all legal and equitable remedies, including without limitation, termination of this Agreement and return to Buyer of the earnest money. Agency acting as escrow agent has the option to require written releases from both parties prior to disbursing the earnest money to either Buyer or Seller. In the event that the Agency is made a party to any lawsuit by virtue of acting as escrow agent, Agency shall be entitled to recover reasonable attorney's fees and costs which shall be assessed as court costs in favor of the prevailing party.

17. MEDIATION: Earnest money or other disputes within the jurisdictional limit of small claims court will be handled in that forum. All other disputes or claims arising out of or relating to this Agreement or the property addressed in this Agreement (other than requests for injunctive relief) shall be submitted to mediation in accordance with generally accepted mediation practices. Buyer and Seller are bound to mediate in good faith and to each pay half of the mediation fees. If a party fails to submit a dispute or claim to mediation prior to initiating litigation (other than requests for injunctive relief), then that party will be liable for the other party's legal fees in any subsequent litigation regarding that same matter in which the party who failed to first submit the dispute or claim to mediation loses in that subsequent litigation. This clause shall survive the closing of the transaction.

18. PRIOR STATEMENTS: Any representations, statements and agreements are not valid unless contained herein. This Agreement completely expresses the obligations of the parties and may only be amended in writing, signed by both parties.

19. HEIRS/ASSIGNS: This Agreement shall extend to and be obligatory upon heirs, personal representatives, successors, and assigns of the Seller and the assigns of the Buyer.

20. COUNTERPARTS: This Agreement may be signed on any number of identical counterparts with the same binding effect as if the signatures were on one instrument. Original or faxed or other electronically transmitted signatures are binding.

21. SHORELAND ZONE SEPTIC SYSTEM: Seller represents that the property ☐ does ☒ does not contain a septic system within the Shoreland Zone. If the property does contain a septic system located in the Shoreland Zone, Seller agrees to provide certification at closing indicating whether the system has/has not malfunctioned within 180 calendar days prior to closing.

22. NOTICE: Any notice, communication or document delivery requirements hereunder may be satisfied by providing the required notice, communication or documentation to or from the parties or their Licensee. Only withdrawals of offers and counteroffers will be effective upon communication, verbally or in writing.

23. EFFECTIVE DATE/BUSINESS DAYS: This Agreement is a binding contract when the last party signing has caused a paper or electronic copy of the fully executed agreement to be delivered to the other party which shall be the Effective Date. Licensee is authorized to fill in the Effective Date on Page 1 hereof. Except as expressly set forth to the contrary, the use of the term "days" in this Agreement, including all addenda made a part hereof, shall mean business days defined as excluding Saturdays, Sundays and any observed Maine State/Federal holidays. Deadlines in this Agreement, including all addenda, expressed as "within x days" shall be counted from the Effective Date, unless another starting date is expressly set forth, beginning with the first day after the Effective Date, or such other established starting date, and ending at 5:00 p.m. Eastern Time on the last day counted. Unless expressly stated to the contrary, deadlines in this Agreement, including all addenda, expressed as a specific date shall end at 5:00 p.m. Eastern Time on such date.

24. CONFIDENTIALITY: Buyer and Seller authorize the disclosure of the information herein to the real estate licensees, attorneys, lenders, appraisers, inspectors, investigators and others involved in the transaction necessary for the purpose of closing this transaction. Buyer and Seller authorize the lender and/or closing agent preparing the closing disclosure and/or settlement statement to release a copy of the closing disclosure and/or settlement statement to the parties and their licensees prior to, at and after the closing.

25. ADDENDA: Lead Paint - ☐ Yes ☐ No ; Other - ☒ Yes ☐ No Explain: _____

The Property Disclosure Form is not an addendum and not part of this Agreement.

26. OTHER CONDITIONS:

27. GENERAL PROVISIONS:

- a. A copy of this Agreement is to be received by all parties and, by signature, receipt of a copy is hereby acknowledged. If not fully understood, contact an attorney. This is a Maine contract and shall be construed according to the laws of Maine.
- b. Seller acknowledges that State of Maine law requires buyers of property owned by non-resident sellers to withhold a prepayment of capital gains tax unless a waiver has been obtained by Seller from the State of Maine Revenue Services.
- c. Buyer and Seller acknowledge that under Maine law payment of property taxes is the legal responsibility of the person who owns the property on April 1, even if the property is sold before payment is due. If any part of the taxes is not paid when due, the lien will be filed in the name of the owner as of April 1 which could have a negative impact on their credit rating. Buyer and Seller shall agree at closing on their respective obligations regarding actual payment of taxes after closing. Buyer and Seller should make sure they understand their obligations agreed to at closing and what may happen if taxes are not paid as agreed.
- d. Buyer acknowledges that Maine law requires continuing interest in the property and any back up offers to be communicated by the listing agent to the Seller.
- e. Whenever this Agreement provides for earnest money to be returned or released, agency acting as escrow agent must comply with the Maine Real Estate Commission rules which may require written notices or obtaining written releases from both parties.

28. ELECTRONIC SIGNATURES: Pursuant to the Maine Uniform Electronic Transactions Act and Digital Signature Act, the parties authorize and agree to the use of electronic signatures as a method of signing/initialing this Agreement, including all addenda. The parties hereby agree that either party may sign electronically by utilizing an electronic signature service.

Buyer's Mailing address is

94 SOUTH ST. YARMOUTH, ME 04096

BUYER

DATE

BUYER

DATE

Seller accepts the offer and agrees to deliver the above-described property at the price and upon the terms and conditions set forth and agrees to pay agency a commission for services as specified in the listing agreement.

Seller's Mailing address is

16017 DAYSAILOR TRAIL LAKEWOOD RANCH FL 34202

SELLER

DATE

SELLER

DATE

COUNTER-OFFER

Seller agrees to sell on the terms and conditions as detailed herein with the following changes and/or conditions:

The parties acknowledge that until signed by Buyer, Seller's signature constitutes only an offer to sell on the above terms and the offer will expire unless accepted by Buyer's signature with communication of such signature to Seller by (date) _____ (time) _____ AM _____ PM.

SELLER

DATE

SELLER

DATE

The Buyer hereby accepts the counter offer set forth above.

BUYER

DATE

BUYER

DATE

EXTENSION

The closing date of this Agreement is extended until

DATE

SELLER

DATE

SELLER

DATE

BUYER

DATE

BUYER

DATE



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ADDENDUM TO PURCHASE AGREEMENT

Effective Date: March 9 2021

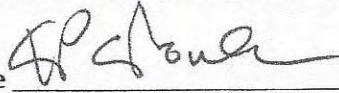
I. The Parties. This Addendum hereby becomes part of the Purchase Agreement between 1 individual(s) known as Kevin O'Rourke ("Buyer") and 1 individual(s) known as Thomas Farr dba Fortune Capital ("Seller") authorized on March 9 2021 ("Agreement") for the residential property located at F Street, Portland , Maine, 04103 ("Property").

II. Amendment(s). Buyer and Seller agree that the Agreement shall be amended as follows:

Buyer and Seller agree to extend due diligence until August 1, 2021 if City approvals have not been received by June 1, 2021.

III. Other Terms. All other terms and conditions of the Agreement shall remain the same. This Addendum shall go into effect on the date of the undersigned parties.

Buyer's Signature
Kevin O'Rourke

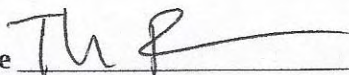


Date

3/9/21

Seller's Signature

Thomas Farr dba Fortune Capital



Date

3/15/21

DocuSign Envelope ID: F2F8A8B9-2B97-468E-965D-02ACCE4657C3

PURCHASE AND SALE AGREEMENT

("days" means business days unless otherwise noted, see paragraph 23)

Offer Date November 4, 2020

Effective Date 11/10/2020
Effective Date is defined in Paragraph 23 of this Agreement.

1. PARTIES: This Agreement is made between Hammond House LLC

Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill, Mark W. Libby

("Buyer") and
("Seller").

2. DESCRIPTION: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy ☒ all part of (if "part of" see para. 26 for explanation) the property situated in municipality of Portland County of Cumberland State of Maine, located at 29 Dalton St & Street F Parcels and described in deed(s) recorded at said County's Registry of Deeds Book(s) see section 26 Page(s) see section 26

3. FIXTURES: The Buyer and Seller agree that all fixtures, including but not limited to existing storm windows, screens, shades and/or blinds, shutters, curtain rods, built-in appliances, heating sources/systems including gas and/or kerosene-fired heaters and wood/pellet stoves, sump pump, electrical fixtures, hard-wired generators, landscaping, and XXXXXX are included with the sale except for the following: no exceptions
Seller represents that all mechanical components of fixtures will be operational at the time of closing except: As Is Condition

4. PERSONAL PROPERTY: The following items of personal property as viewed on October 12, 2020 are included with the sale at no additional cost, in "as is" condition with no warranties: kitchen appliances

5. PURCHASE PRICE/EARNEST MONEY: For such Deed and conveyance Buyer agrees to pay the total purchase price of \$450,000.00. Buyer ☐ has delivered; or ☒ will deliver to the Agency within 3 days of the Effective Date, a deposit of earnest money in the amount \$ 10,000.00. Buyer agrees that an additional deposit of earnest money in the amount of \$ XXXXXXXX will be delivered XXXXXXXXXXXX. If Buyer fails to deliver the initial or additional deposit in compliance with the above terms Seller may terminate this Agreement. This right to terminate ends once Buyer has delivered said deposit(s). The remainder of the purchase price shall be paid by wire, certified, cashier's or trust account check upon delivery of the Deed.

This Purchase and Sale Agreement is subject to the following conditions:

6. ESCROW AGENT/ACCEPTANCE: RE/MAX By The Bay ("Agency") shall hold said earnest money and act as escrow agent until closing; this offer shall be valid until 11/10/20 November 6, 2020 (date) 5:00 ☐ AM ☒ PM; and, in the event of non-acceptance, this earnest money shall be returned promptly to Buyer.

7. TITLE AND CLOSING: A deed, conveying good and merchantable title in accordance with the Standards of Title adopted by the Maine Bar Association shall be delivered to Buyer and this transaction shall be closed and Buyer shall pay the balance due and execute all necessary papers on See Section 26 (closing date) or before, if agreed in writing by both parties. If Seller is unable to convey in accordance with the provisions of this paragraph, then Seller shall have a reasonable time period, not to exceed 30 calendar days, from the time Seller is notified of the defect, unless otherwise agreed to in writing by both Buyer and Seller, to remedy the title. Seller hereby agrees to make a good-faith effort to cure any title defect during such period. If, at the later of the closing date set forth above or the expiration of such reasonable time period, Seller is unable to remedy the title, Buyer may close and accept the deed with the title defect or may terminate this Agreement in which case the parties shall be relieved of any further obligations hereunder and any earnest money shall be returned to the Buyer.

8. DEED: The property shall be conveyed by a Quitclaim Deed With Covenant deed, and shall be free and clear of all encumbrances except covenants, conditions, easements and restrictions of record which do not materially and adversely affect the continued current use of the property.

Page 1 of 5 - P&S

Buyer(s) Initials KPAR

Seller(s) Initials MM

RE/MAX By The Bay, 281 Veranda Portland ME 04101
David Banks

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Phone: 248.551.7343
Fax: 248.551.7344
www.ziplogix.com

29 Indian St

9. POSSESSION, OCCUPANCY, AND CONDITION: Unless otherwise agreed in writing, possession and occupancy of premises, free of tenants and occupants, shall be given to Buyer immediately at closing. Said premises shall then be broom clean, free of all possessions and debris, and in substantially the same condition as at present, excepting reasonable use and wear. Buyer shall have the right to view the property within 24 hours prior to closing.

10. RISK OF LOSS, DAMAGE, DESTRUCTION AND INSURANCE: Prior to closing, risk of loss, damage, or destruction of premises shall be assumed solely by the Seller. Seller shall keep the premises insured against fire and other extended casualty risks prior to closing. If the premises are damaged or destroyed prior to closing, Buyer may either terminate this Agreement and be refunded the earnest money, or close this transaction and accept the premises "as is" together with an assignment of the insurance proceeds relating thereto. #10 continued... renegotiate the purchase price agreeable to both buyer and seller.

11. FUEL/UTILITIES/PRORATIONS: Buyer ☐ shall ☒ shall not pay Seller at closing for all fuel in any tanks remaining on the property calculated as of the closing date or such earlier date as required to comply with lender requirements, if any. The amount owed, if any, shall be determined using the most recently available cash price of the company that last delivered the fuel. Metered utilities such as electricity, water and sewer will be paid through the date of closing by Seller. The following items, where applicable, shall be prorated as of the date of closing: collected rent, association fees, (other) _____. The day of closing is counted as a Seller day. Real estate taxes shall be prorated as of the date of closing (based on municipality's fiscal year). Seller is responsible for any unpaid taxes for prior years. If the amount of said taxes is not known at the time of closing, they shall be apportioned on the basis of the taxes assessed for the preceding year with a reapportionment as soon as the new tax rate and valuation can be ascertained, which latter provision shall survive closing. Buyer and Seller will each pay their transfer tax as required by State of Maine.

12. DUE DILIGENCE: Neither Seller nor Licensee makes any warranties regarding the condition, permitted use or value of Sellers' real or personal property, or any representations as to compliance with any federal, state or municipal codes, including, but not limited to, fire, life safety, electrical and plumbing. Buyer is encouraged to seek information from professionals regarding any specific issue or concern.

☐ Buyer's obligation to close under this Agreement is not subject to any due diligence investigations. Buyer is relying completely upon Buyer's own opinion as to the condition of the property.

☒ Buyer's obligation to close under this Agreement is subject to Buyer's satisfaction with the results of any due diligence investigations undertaken. Buyer shall have May 1, 2021* days from the Effective Date of this Agreement to perform such due diligence investigations as Buyer deems necessary which may include, but are not limited to, any or all of the following:

General Building	Square Footage	Zoning	Survey/MLI	Habitat Review/Waterfowl
Sewage Disposal	Code Conformance	Pests	Lead Paint	Shoreland Septic
Water Quality	Registered Farmland	Pool	Flood Plain	Energy Audit
Water Quantity	Environmental Scan	Insurance	Chimney	Lot Size/Acreage
Air Quality	Smoke/CO Detectors	Mold	Tax Status*	Arsenic Wood/Water (see par. 13)

All investigations will be done at Buyer's expense by persons chosen by Buyer in Buyer's sole discretion. Seller agrees to cooperate with Buyer and shall give Buyer and Buyer's agents and consultants reasonable access to the property and its systems and fixtures in order to undertake the above investigations. Buyer agrees to take reasonable steps to return the property to its pre-inspection condition. If the result of any investigation is unsatisfactory to Buyer, Buyer may terminate this Agreement by notifying Seller in writing within the specified number of days, and any earnest money shall be returned to Buyer. If the result of any investigation is unsatisfactory to Buyer in Buyer's sole discretion, and Buyer wishes to pursue remedies other than voiding the Agreement, Buyer must do so to full resolution within the time period set forth above; otherwise this contingency is waived. If Buyer does not notify Seller that an investigation is unsatisfactory within the time period set forth above, this contingency is waived by Buyer.

* If the property is enrolled in the Maine Tree Growth Tax program, Seller agrees to provide Buyer with the current Forest Management and Harvest Plan within ____ days. ☐ Yes ☒ No

13. PROPERTY DISCLOSURE FORM: Buyer acknowledges receipt of Property Disclosure Form and the information developed by the Maine Center for Disease Control and Prevention regarding arsenic in private water supplies and arsenic in treated wood.

KPAR

MM

14. FINANCING: Buyer's obligation to close:

- ☒ is not subject to a financing contingency. Buyer has provided Seller with acceptable proof of the funds. Buyer is not subject to a financing contingency. Buyer shall provide proof of the funds acceptable to Seller within _____ days. If such proof is unacceptable to Seller, Seller may terminate this Agreement no later than _____ days from receipt. If proof of funds is not provided within such time period, Seller may terminate this Agreement which right shall end once such proof is received, however Seller retains the agreed upon time period to terminate if such proof is unacceptable. If Seller terminates in either case, the earnest money shall be returned to Buyer.
- ☐ Buyer's ability to purchase ☐ is ☐ is not subject to the sale of another property. See addendum ☐ Yes ☐ No.
- ☐ Buyer's obligation to close is subject to financing as follows:
- Buyer's obligation to close is subject to Buyer obtaining a _____ loan of _____ % of the purchase price, at an interest rate not to exceed _____ % and amortized over a period of _____ years. Buyer is under a good faith obligation to seek and obtain financing on these terms. If such financing is not available to Buyer as of the closing date, Buyer is not obligated to close and may terminate this Agreement in which case the earnest money shall be returned to Buyer.
 - Buyer to provide Seller with letter from lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested within _____ days from the Effective Date of the Agreement. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
 - Buyer hereby authorizes, instructs and directs its lender to communicate the status of the Buyer's loan application to Seller, Seller's licensee and Buyer's licensee.
 - After (b) is met, if the lender notifies Buyer that it is unable or unwilling to provide said financing, Buyer is obligated to provide Seller with the written documentation of the loan denial within two days of receipt. After notifying Seller, Buyer shall have _____ days to provide Seller with a letter from another lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
 - Buyer agrees to pay no more than _____ points. Seller agrees to pay up to \$ _____ toward Buyer's actual pre-pays, points and/or closing costs, but no more than allowable by Buyer's lender.
 - Buyer's ability to obtain financing ☐ is ☐ is not subject to the sale of another property. See addendum ☐ Yes ☐ No.
 - Buyer may choose to pay cash instead of obtaining financing. If so, Buyer shall notify Seller in writing including providing proof of funds and the Agreement shall no longer be subject to financing, and Seller's right to terminate pursuant to the provisions of this paragraph shall be void and Seller's obligations pursuant to 14c shall remain in full force and effect.

15. BROKERAGE DISCLOSURE: Buyer and Seller acknowledge they have been advised of the following relationships:

_____ () of _____ ()
 is a ☐ Seller Agent ☐ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker
 Licensee (002090) of RE/MAX By The Bay (1150)
 MLS ID Agency MLS ID
 is a ☐ Seller Agent ☒ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker

If this transaction involves Disclosed Dual Agency, the Buyer and Seller acknowledge the limited fiduciary duties of the agents and hereby consent to this arrangement. In addition, the Buyer and Seller acknowledge prior receipt and signing of a Disclosed Dual Agency Consent Agreement.

16. DEFAULT/RETURN OF EARNEST MONEY: Buyer's failure to fulfill any of Buyer's obligations hereunder shall constitute a default and Seller may employ all legal and equitable remedies, including without limitation, termination of this Agreement and forfeiture by Buyer of the earnest money. Seller's failure to fulfill any of Seller's obligations hereunder shall constitute a default and Buyer may employ all legal and equitable remedies, including without limitation, termination of this Agreement and return to Buyer of the earnest money. Agency acting as escrow agent has the option to require written releases from both parties prior to disbursing the earnest money to either Buyer or Seller. In the event that the Agency is made a party to any lawsuit by virtue of acting as escrow agent, Agency shall be entitled to recover reasonable attorney's fees and costs which shall be assessed as court costs in favor of the prevailing party.

17. MEDIATION: Earnest money or other disputes within the jurisdictional limit of small claims court will be handled in that forum. All other disputes or claims arising out of or relating to this Agreement or the property addressed in this Agreement (other than requests for injunctive relief) shall be submitted to mediation in accordance with generally accepted mediation practices. Buyer and Seller are bound to mediate in good faith and to each pay half of the mediation fees. If a party fails to submit a dispute or claim to mediation prior to initiating litigation (other than requests for injunctive relief), then that party will be liable for the other party's legal fees in any subsequent litigation regarding that same matter in which the party who failed to first submit the dispute or claim to mediation loses in that subsequent litigation. This clause shall survive the closing of the transaction.

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Buyer(s) Initials

Seller(s) Initials

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39 Dalton St

18. **PRIOR STATEMENTS:** Any representations, statements and **agreements** are not valid unless contained herein. This Agreement completely expresses the obligations of the parties and may only be amended in writing, signed by both parties.
19. **HEIRS/ASSIGNS:** This Agreement shall extend to and be obligatory upon heirs, personal representatives, successors, and assigns of the Seller and the assigns of the Buyer.
20. **COUNTERPARTS:** This Agreement may be signed on any number of identical counterparts with the same binding effect as if the signatures were on one instrument. Original or faxed or other electronically transmitted signatures are binding.
21. **SHORELAND ZONE SEPTIC SYSTEM:** Seller represents that the property ☐ does ☒ does not contain a septic system within the Shoreland Zone. If the property does contain a septic system located in the Shoreland Zone, Seller agrees to provide certification at closing indicating whether the system has/had not malfunctioned within 180 calendar days prior to closing.
22. **NOTICE:** Any notice, communication or document delivery requirements hereunder may be satisfied by providing the required notice, communication or documentation to or from the parties or their Licensee. Only withdrawals of offers and counteroffers will be effective upon communication, verbally or in writing.
23. **EFFECTIVE DATE/BUSINESS DAYS:** This Agreement is a binding contract when the last party signing has caused a paper or electronic copy of the fully executed agreement to be delivered to the other party which shall be the Effective Date. Licensee is authorized to fill in the Effective Date on Page 1 hereof. Except as expressly set forth to the contrary, the use of the term "days" in this Agreement, including all addenda made a part hereof, shall mean business days defined as excluding Saturdays, Sundays and any observed Maine State/Federal holidays. Deadlines in this Agreement, including all addenda, expressed as "within x days" shall be counted from the Effective Date, unless another starting date is expressly set forth, beginning with the first day after the Effective Date, or such other established starting date, and ending at 5:00 p.m. Eastern Time on the last day counted. Unless expressly stated to the contrary, deadlines in this Agreement, including all addenda, expressed as a specific date shall end at 5:00 p.m. Eastern Time on such date.
24. **CONFIDENTIALITY:** Buyer and Seller authorize the disclosure of the information herein to the real estate licensees, attorneys, lenders, appraisers, inspectors, investigators and others involved in the transaction necessary for the purpose of closing this transaction. Buyer and Seller authorize the lender and/or closing agent preparing the closing disclosure and/or settlement statement to release a copy of the closing disclosure and/or settlement statement to the parties and their licensees prior to, at and after the closing.
25. **ADDENDA:** Lead Paint - ☒ Yes ☐ No ; Other - ☒ Yes ☐ No Explain: Addendum 1, Possession after Closing
- The Property Disclosure Form is not an addendum and not part of this Agreement.
26. **OTHER CONDITIONS:** At transfer of title, Seller will pay RE/MAX By The Bay a 2.5% commission on the sales price.

27. **GENERAL PROVISIONS:**

- A copy of this Agreement is to be received by all parties and, by signature, receipt of a copy is hereby acknowledged. If not fully understood, contact an attorney. This is a Maine contract and shall be construed according to the laws of Maine.
- Seller acknowledges that State of Maine law requires buyers of property owned by non-resident sellers to withhold a prepayment of capital gains tax unless a waiver has been obtained by Seller from the State of Maine Revenue Services.
- Buyer and Seller acknowledge that under Maine law payment of property taxes is the legal responsibility of the person who owns the property on April 1, even if the property is sold before payment is due. If any part of the taxes is not paid when due, the lien will be filed in the name of the owner as of April 1 which could have a negative impact on their credit rating. Buyer and Seller shall agree at closing on their respective obligations regarding actual payment of taxes after closing. Buyer and Seller should make sure they understand their obligations agreed to at closing and what may happen if taxes are not paid as agreed.
- Buyer acknowledges that Maine law requires continuing interest in the property and any back up offers to be communicated by the listing agent to the Seller.
- Whenever this Agreement provides for earnest money to be returned or released, agency acting as escrow agent must comply with the Maine Real Estate Commission rules which may require written notices or obtaining written releases from both parties.

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Buyer(s) Initials

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Seller(s) Initials

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*

29 Dallas St

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28. **ELECTRONIC SIGNATURES:** Pursuant to the Maine Uniform Electronic Transactions Act and Digital Signature Act, the parties authorize and agree to the use of electronic signatures as a method of signing/initialing this Agreement, including all addenda. The parties hereby agree that either party may sign electronically by utilizing an electronic signature service.

Buyer's Mailing address is

Hammond House LLC

11/4/2020

BUYER Hammond House LLC

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

Seller accepts the offer and agrees to deliver the above-described property at the price and upon the terms and conditions set forth and agrees to pay agency a commission for services as specified in the listing agreement.

Seller's Mailing address is

Walter H. Libby III

11/10/2020

SELLER Walter H. Libby III

DATE

SELLER Lacy M. Copp

11-10-20

DATE

SELLER Madeline Morrill

11/10/2020

SELLER Madeline F. Morrill

DATE

* Mark W. LibbySELLER Mark W. Libby

DATE

COUNTER-OFFER

Seller agrees to sell on the terms and conditions as detailed herein with the following changes and/or conditions:

The parties acknowledge that until signed by Buyer, Seller's signature constitutes only an offer to sell on the above terms and the offer will expire unless accepted by Buyer's signature with communication of such signature to Seller by (date) _____ (time) _____ ☐ AM ☐ PM.

SELLER

DATE

SELLER

DATE

SELLER

DATE

SELLER

DATE

The Buyer hereby accepts the counter offer set forth above.

BUYER

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

EXTENSION

The closing date of this Agreement is extended until _____

DATE

SELLER

DATE

SELLER

DATE

SELLER

DATE

SELLER

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE



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29 Dalton St



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ADDENDUM 1 TO AGREEMENT

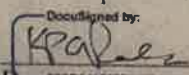
Addendum to contract dated November 4, 2020
 between Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill, Mark W. Libby
 (hereinafter "Seller")
 and Hammond House LLC
 (hereinafter "Buyer")
 property located at 29 Dalton St & Street F Parcels, Portland, ME 04103-5211

Continuation of Paragraph 2: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy all of the property situated in municipality of Portland, County of Cumberland, State of Maine, located at Dalton Street & Street F and described in deed(s) recorded at said County's Registry of Book 11647 Page 187 and Book 15054 Page 170 and further described as 2.674 acres on the boundary survey completed by Owen Haskell, INC, dated September 16, 2015, Job No. 2015-193P for Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill & Mark W. Libby and including half of Dalton Street owned by Sellers. Sellers will attempt to acquire and transfer to buyer part of Queen property to half of the right of way for Dalton Street.

Continuation of Paragraph 7: Buyer and Seller agree to close within 15 calendar days of received City approvals.

Continued... See Addendum Addendum Terms and Conditions 1

Parties acknowledge Agency's advice to seek legal, tax and other professional advice as necessary in connection with sale/purchase of property.

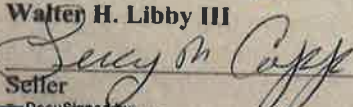
DocuSigned by:

 Buyer Hammond House LLC
 Date 11/4/2020

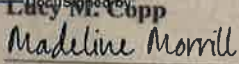
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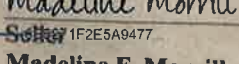
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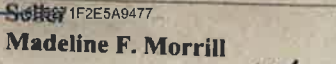
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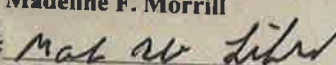

 Seller Walter H. Libby III
 Date 11/10/2020


 Seller Lucy M. Copp
 Date 11/10/2020

DocuSigned by:

 Seller Madeline Morrill
 Date 11/10/2020

DocuSigned by:

 Seller Madeline F. Morrill
 Date _____

DocuSigned by:

 Seller Mark W. Libby
 Date _____

DocuSigned by:

 Seller Mark W. Libby
 Date _____



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RE/MAX By The Bay, 181 Vermont Portland ME 04101
 David Banks

Produced with zipForm® by zipLogix 18070 Fifteen Mile Road, Fraser, Michigan 48026 www.ziplogix.com

Phone: 287.553.7362

Fax: 287.553.7296

29 Dalton St

DocuSign Envelope ID: FF2F8B89-2B97-468E-965B-D28CCE4657C3

ADDENDUM

PROPERTY: 29 Dalton St & Street F Parcels, Portland, ME 04103-5211

1) Addendum Terms and Conditions

***Continuation of Paragraph 12: Buyer and Seller agree to extend due diligence to 5pm on July 1, 2021 if City approvals have not been received by 5pm on May 1, 2021.**

Seller to provide Buyer with Property Disclosure within 5 business days

Date: 11/4/2020

DocuSigned by:

KPA
Signature

Date:

11/10/2020

DocuSigned by:

Madeline Morill
Signature

Date:

Walter Phillips
Signature

Date:

* Mch 2u Luby
Signature

Addendum

RE/MAX By The Bay, 281 Verranda Portland ME 04101
David Rankin

Produced with Lane Wolf Transactions (ZipForm Edition) 231 Shearson Cr. Cambridge, Ontario, Canada M1T 1S5
Phone: 287.551.7382 Fax: 287.551.7190
www.lane.com

29 Dalton St

POSSESSION AFTER CLOSING ADDENDUM

To Agreement dated November 4, 2020, between
Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill, Mark W. Libby
 and Hammond House LLC ("Seller")
 for property located at 29 Dalton St & Street F Parcels, Portland, ME 04103-5211 ("Buyer")

Notwithstanding anything to the contrary in the Agreement, Buyer and Seller agree as follows:

Seller shall be entitled to retain possession of the property for up to 30 calendar days from the date of closing at which time Seller shall deliver possession of the property to Buyer. Seller shall deliver the property in substantially the same condition as exists on the Effective Date of the Agreement. Seller shall be responsible for ordinary maintenance and repair of the property and the cost of fuel oil and utilities, including but not limited to electrical service, telephone service, water and sewer assessments, if any, to the property until possession of the property is delivered by Seller to Buyer. Fuel oil shall be prorated as of the date possession is delivered to Buyer at the then prevailing market price of company that delivered fuel. Seller agrees to indemnify and hold Buyer harmless for any costs, expenses, losses, damages, or other liabilities of any kind and nature resulting from Seller's occupancy of the property after closing. Seller accepts full responsibility for any of Seller's personal property remaining in or on the property after closing and agrees to hold Buyer harmless for any damage to or loss of such personal property. Seller shall maintain public liability insurance and insurance on Seller's personal property until possession is delivered by Seller to Buyer. Risk of loss by fire or otherwise shall be borne by Seller until closing. In addition to the above-referenced costs, Seller shall pay Buyer \$1000.00 per month per calendar day in advance for rental of the property. At closing, Buyer shall withhold \$ 0.00 from the net proceeds due Seller as a security deposit. At closing, the parties shall enter into the Maine Residential Lease developed by the Maine Attorney General, or such other lease agreement as mutually agreed to by the parties, further describing the rights and obligations of the parties.

The indemnification provisions of this addendum shall survive the closing or other expiration of the

Agreement by:
[Signature] 11/4/2020
 Buyer Date
 Hammond House LLC

[Signature] 11/10/2020
 Seller Date
 Walter H. Libby III

Buyer Date

[Signature] 11-10-20
 Seller Date
 Lucy M. Copp

Buyer Date

[Signature] 11/10/2020
 Seller Date
 Madeline Morrill

Buyer Date

* [Signature]
 Seller Date
 Mark W. Libby



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RE/MAX By The Bay, 261 Vermont Portland ME 04101

Dorinda Banks

Produced with zipForm® by zipLogix 18070 Fifteen Mile Road, Fraser, Michigan 48028 Phone: 247.553.7392 Fax: 247.553.7398 www.ziplogix.com

29 Dalton St



ZONING ANALYSIS Relevant Zone(s) R-5

All Projects:

	Required	Proposed
Lot Size	2 ac	3.40 ac
Area Per Dwelling Unit	3,000 sf	3,375 sf
Minimum Street Frontage	50 ft	99 ft
Front Yard Minimum	20 ft	40 ft
Front Yard Maximum	N/A	80 ft
Rear Yard	20 ft	43 ft
Yard Right	N/A	31 ft
Yard Left	N/A	73 ft
Side Street Setback	15 ft	52 ft
Step Back	N/A	N/A
Maximum Lot Coverage	40%	12%
Minimum Lot Coverage	N/A	N/A
Maximum Height	35 ft	<35 ft
Open Space	300 sf/du	300 sf/du
Maximum Impervious Area	N/A	36%
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	48	63
Loading Bays	N/A	N/A
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	2 ac	3.40 ac
Minimum Lot Area per Dwelling	3,000 sf	3,084 sf
Maximum # Units per Building	12	12
Maximum Building Length	140 ft	64 ft
Maximum Accessory Building Length	60 ft	N/A
Minimum Setbacks	See above	
Minimum Building Separation	N/A	N/A
Minimum Open Space	300 sf/du	300 sf/du

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density	Increase	48.1	48
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):			

E. Summary of Written Easements

Existing easements on site as identified by Owen Haskell, Inc. include:

1. A 20' wide sewer easement to Portland Water District as recorded in the Cumberland County Registry of Deeds Book 3939, Page 146.



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.
Technical Manual 1.14 Parking Lot and Parking Space Design	Minimum widths of aisles are 24' for 90 deg parking	We are requesting to reduce the drive aisle to a minimum 22' within the site.	The waiver is being sought to maximize use of available parking space within the site. The circulation has been verified to be functional. A 24' drive aisle reduces the total impervious area created by the development.

G. Financial Capacity

Please find attached a letter from the Applicant's bank demonstrating financial capacity.





March 24, 2021

City of Portland, Planning Division

389 Congress Street, 4th Floor

Portland, ME 04101

RE: 48-unit Residential Apartment Complex

To who it may concern:

Kevin O'Rourke and his related companies are well known to Camden National Bank. We have worked with Kevin for more than 8 years and have been directly involved in the financing of successful projects. With the expected financial contribution from Kevin and Bank financing that we will be entertaining, there is expected to be sufficient financial capacity to successfully complete the proposed project. We are looking forward to more substantive conversations as the project materializes.

Please feel free to contact me should you need any additional information. I can be reached at (207) 930-3909 or (207) 323-2673.

Sincerely,

Paul Doody
Paul Doody

Vice President

Camden National Bank



H. Technical Capacity

Acorn Engineering, Inc. has successfully permitted and provided civil/site engineering for over 20 Major Site Plan and Subdivision projects in Portland over the past 5 years. Some examples include:

- Eldredge Lumber
- 127 York Street – Harborside Townhomes
- Munjoy Heights
- 70 Anderson St.
- 89 Anderson St. – East Bayside Lofts
- 667 Congress St – The Hiawatha
- 52 & 82 Hanover Street



I. Conformity with Land Use Ordinance

The following outline is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use.

OVERVIEW

The proposed project has been designed to conform to City standards where possible as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

The project will not generate 100 or more cars during peak hour, therefore a Traffic Movement Permit will not be required. The site will be accessed via an access drive located within the ROW formerly serving a paper street off Sherwood Street. A moderate traffic increase is expected for this project due to the change in use of the land. However, the increase will be caused by standard vehicles and will not create any significant hazard to safety on the surrounding street network.

2. Access and Circulation:

a. Site Access and Circulation:

This project conforms with the design standards of Section 14.6.1.B as demonstrated in the following narrative:

- (i) All site access and internal circulation will be designed in accordance with the standards set forth in Section 1 of the Technical Manual.
- (ii) A sidewalk is proposed along the eastern edge of the access road to provide for safe access to the proposed residential buildings as well as the existing Portland Trails Path on site.
- (iii) The proposed entrance to the site is located off of Sherwood Street. An access road to the site is proposed and will utilize the vacated paper street ROW formerly held by the City.
- (iv) The site does not feature drive up services as mentioned in this requirement.

b. Loading and Servicing:

- (i) The site has been designed with 11-foot travel lanes and 22-foot drive aisles. The site has been designed to accommodate the turning movements required by a 40' fire truck in the event of emergency access.



c. Curb and Sidewalks:

- (i) A sidewalk has been proposed along the eastern portion of the access road and as well as the frontage of all buildings. The sidewalks will be installed in accordance with the street design standards of the City's technical manual.
- (ii) There are no existing sidewalks on site. It is proposed to connect the site's sidewalk with the existing sidewalk along Sherwood Street. Any disturbance of this sidewalk to accommodate the site will be rebuilt in conformance with Chapter 25 of the City's Code of Ordinances and the applicable design standards in the City's Technical Manual.
- (iii) Not applicable.
- (iv) Not applicable.

3. Public Transit Access:

- a. The proposed development is not located along an existing public transit route.
- b. Not applicable.
- c. Not applicable.

4. Parking:

a. Vehicular parking:

- (i) There are 66 proposed parking spaces associated with the PRUD which meets the parking required by the City. Refer to the Site Plan for more information.
- (ii) A parking study is not required.
- (iii) The development will exceed the parking requirements by 10% as determined by the City's parking requirements. We believe that the proposed 66 spaces is appropriate for this site given the efficient site design that minimizes impervious area, and the lack of public and street parking near the site. To avoid parking spillover onto Sherwood Street, we propose to exceed the City's parking requirements to contain parking on site. Additionally, the 4th edition of the Institute of Traffic Engineers Parking Generation estimates a weekday average of 59 spaces for the site using Land Use Code 221 as opposed to the 48 defined by the City.
- (iv) The parking space and aisle dimensions are in conformance with the



Technical Standards. Please refer to the Site Plan for more information.

b. Bicycle parking

- (i) The project's bicycle parking is in accordance with Table 19-A of the City's Land Use Code, as a result at least 19 bicycle spaces have been provided on site. Please refer to the Site Plan for more information which currently depicts 24 bicycle spaces.

c. Snow Storage:

- (i) The project's snow storage areas can be seen on the Site Plan
- (ii) Snow storage shall not be located where it interferes with the minimum parking requirements, pedestrian walkways, or stormwater management systems.

d. Electric Vehicle (EV) charging

- (i) A note has been added to the plans to direct the owner to provide the appropriate electrical plumbing to meet the requirements of Section 1.17 of the City's Technical Manual.

5. Transportation Demand Management (TDM):

- a. A Transportation Demand Management plan is not required for this project.
- b. Not applicable.

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

- a. Significant natural features on site include the wetlands near the center of the site. The project will not disturb these wetlands and will provide appropriate erosion and sedimentation control measures throughout the site and around the wetlands.
- b. Not applicable.
- c. Not applicable.

2. Landscaping Preservation:

- a. The disturbance of trees and vegetation will be limited.
- b. Measures will be taken in accordance with Section 4 of the Technical Manual.



- c. It's anticipated a minimum of 30% of existing trees ten inches DBH or greater within the setback area will be preserved, mainly by maintaining the majority of the site's vegetation and grade at the southeast portion of the property.
 - d. Not applicable.
- 3. Site landscaping and buffers.
 - a. Landscaping
 - (i) The project has frontage along Sherwood and Dalton St; per City Standards, it is required that a minimum of one shade tree or six plantings per 30 linear feet of frontage are planted. The requirement is met through the landscaping within the site and is described in greater detail on the Site Plan.
 - b. Buffers
 - (i) All exterior solid waste receptacle as well as applicable utility structures will be adequately screened within the development and from adjoining properties.
 - (ii) Not applicable.
 - (iii) The existing buffers are to remain or be replanted along all residential abutters.
 - c. Parking and vehicle display lot landscaping
 - (i) The two trees or one tree and three shrubs per five parking space requirement is met within the site.
 - (ii) The longest parking bay does not extend forty parking spaces long, in this case landscaped islands are only proposed near the driveway entrance.
 - (iii) Not applicable.
- 4. Street trees
 - a. Street trees will be provided along the project's access drive where possible in accordance with the Landscaping and landscape preservation standards of the Technical Manual.
 - b. Not applicable.
- 5. Water Quality, Stormwater Management and Erosion Control:
 - a. Stormwater
 - (i) The site drainage will not be directed to flow or pond onto adjacent lots. The drainage patterns will largely be maintained as they currently exist.



- (ii) Any stormwater that flows onto adjacent lots will not exceed the pre-development flows. In the current model, all storm events see a decrease in peak flows.
- (iii) The runoff from the site into the public way will not increase from the pre-development condition.
- b. A site-specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic and general standards of MEDEP Chapter 500. Please refer to the Stormwater Management Report for this information.
- c. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project will be serviced by a public wastewater system.

(c) Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans:
 - a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.
 - b. Not applicable.
2. Public Safety and Fire Prevention:
 - a. Public Safety Design
 - (i) The site has been designed to allow for long viewing aisles and minimal spaces obscured from view.
 - (ii) Access control has been provided for the development that promotes authorized access to the site by proposing a clear border definition between public and private space. A crosswalk along the access road is provided for access to the Portland Trails network, this access occurs before the first proposed building and will mark a clear border between the public trail connection and private development.
 - (iii) The recreation open space will provide for a large gathering area which is easily viewed from the development and neighboring properties. This area will promote natural surveillance and access control.
 - b. Emergency Access
 - (i) Adequate emergency access will be provided. The turning radii of the driveway are large enough to accommodate the turning movements for emergency vehicles. Additionally, driveway locations have been strategically designed to allow for turnaround locations from the parking bays.



3. Public Utilities:

- a. Ability to Serve letters have been sent to the respective companies. Responses are forthcoming. The stormwater report demonstrates that the post development conditions will not overburden the existing storm sewer within Sherwood Street.
- b. The electrical service will be wired underground via new pad-mounted transformers as shown on the Utility Plan.
- c. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual.
- d. The project will be served by connection to the public sewer system within Sherwood Street.
- e. Spaces allocated for solid waste storage can be seen on the Site Plan. The solid waste containers will be fully enclosed and screened from the public view.

(d) Site Design Standards

1. Massing, Ventilation and Wind Impact:

- a. The bulk, location and height of the proposed structures will not result in health or safety problems from a reduction in ventilation to abutting structures or changes to the existing wind climate.
- b. The bulk, location and height of the proposed structures shall minimize, to the extent feasible, any substantial diminution in the value or utility to neighboring structures under different ownership and not subject to a legal servitude in favor of the site being developed.
- c. All HVAC venting mechanisms will be directed away from public spaces and residential properties directly adjacent to the site.

2. Shadows:

- a. Not applicable.

3. Snow and Ice Loading:

- a. The structure will not distribute snow and ice onto adjacent properties.

4. View Corridors:

- a. The project is located outside the Downtown Vision View Corridor Protection Plan.

5. Historic Resources:



- a. The development is not located in a historic district, historic landscape district or City designated landmark.
 - b. The development is not located adjacent to designated landmarks, historic district, or historic landscape district.
 - c. There are no known archaeological resources on the site.
6. Exterior Lighting:
- a. Site Lighting.
 - (i) Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. A photometric plan will be uploaded as part of the Final Application, if required. Given the secluded nature of the site,
 - (ii) Any lighting that may adversely impact the abutting residential properties will feature house-side shielding.
 - b. Architectural and Specialty Lighting.
 - (i) No architectural or specialty lighting is proposed.
 - (ii) No up-lighting is proposed.
 - c. Street Lighting.
 - (i) Street lighting will be designed to meet the requirements of Section 10 of the Technical Manual.
7. Noise and Vibration:
- a. The HVAC system will meet the applicable state and federal emissions requirements and will also be screened and directed away from abutters.
8. Signage and Wayfinding:
- a. Signage
 - (i) Not applicable.
 - (ii) Not applicable.
 - (iii) Not applicable.
 - (iv) Not applicable.



(v) Not applicable.

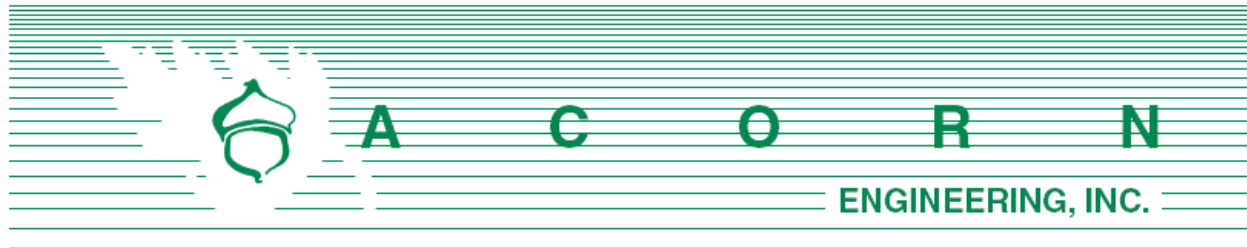
b. Wayfinding

(i) All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

9. Design Standards:

a. The project has been designed to meet the standards set forth in the R-5 zone. Please refer to the Site Plan for more information on the Space & Bulk Standards.





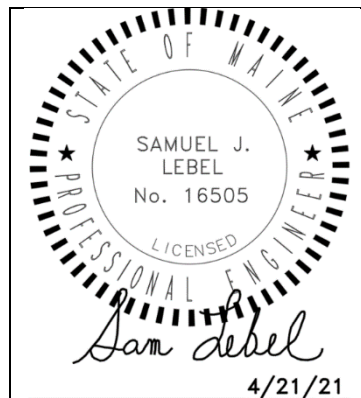
J. STORMWATER MANAGEMENT **REPORT**

Prepared For:

Hammond House, LLC
94 South Street
Yarmouth, Maine 04096

Prepared By:

Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101



April 2021



INTRODUCTION

Acorn Engineering, Inc. has been retained by Hammond House, LLC to provide civil engineering services for the proposed development off the end of Dalton Street in Portland, Maine, now known as Winchester Woods. The property consists of approximately 3.72 acres of land and contains the following parcels (Chart, Book, Lot, 428-A-008-013, 427-I-007-009, 427-K-001-004, 427-L-005-008 and 427-L-012, 427-N-001-004 and 427-N-012).

A stormwater analysis was prepared to demonstrate that the project will meet the requirements set forth by Maine DEP Chapter 500 Basic and General Standards and the following requirements from the City of Portland (the City):

- City of Portland Land Use Ordinance Article 14.6.2.D.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

EXISTING CONDITIONS

The proposed project site is located at the end of Dalton Street in Portland, Maine. A boundary and topographic survey developed by Owen Haskell, Inc. has been included within this submission package. The site primarily consists of wooded area with two drainage subcatchments. The first subcatchment is located to the southwestern corner of the site near Sherwood Street. The land slopes at roughly 15% from west to east towards an abutter on Sherwood. The second subcatchment comprises the majority of the site and generally drains internally within the site towards a pair of wetlands which our understanding were originally constructed as manmade detention basins with an outlet control structure. The southern most wetland area contains an engineered outlet control structure to meter stormwater runoff into the municipal separated storm sewer system (MS4) within Sherwood Street. These “wetlands” serve as a major collection point of stormwater in the neighborhood between Veranda St, Presumpscot St, and the railroad that runs parallel with I-295.

PROPOSED DEVELOPMENT

The project features the development of a planned unit residential development (PRUD) which a development program outlined within the land use ordinance and generally follows the principles of cluster subdivision planning where infrastructure is denser and more efficient in lieu and as a result, greater open space opportunities are available. The site will consist of four separate residential buildings with a total of 48 dwelling units, each building will be served with associated parking and utilities. Overall, the project proposes to develop 1.58 acres of the lot with 1.24 acres consisting of impervious area.

The site has been graded to slope with the existing topography while providing for appropriate slopes in the parking lot. The slopes on the outside of the parking areas that are not part of a stormwater system will be appropriately stabilized per the specifications in the plans and are anticipated to be heavily landscaped for further slope protection and buffering.

The majority of the site's runoff, including 95% of the new impervious area, will be collected via a storm drain system which will then be piped to one of the four proposed Underdrained Subsurface Sand Filters (USSF) where stormwater will first be pretreated via the isolator row which provides initial settlement and filtration of contaminants. Water will then flow vertically through the sand filter providing water quality improvements and outlet via a 4" underdrain. At each 4" outlet to the downstream drain manhole, orifices through the use of drilled holes in pipe caps will be utilized to help reduce the flow rate leaving the various USSF's. An outlet control structure will then serve as the common junction point from all four USSF systems which features two orifices and an overflow weir, allowing for greater control of the various storm peak flowrates.

The discharge from this system will ultimately flow to a level lip spreader before entering the bottom of the detention basin/wetland area. The spreader will also collect the discharge that's being intercepted from the off-site run-on to the site, primarily from the elementary school. The plans and design have been coordinated with the previously submitted project at the school which generated peak flowrates for each storm. The bypass system designed as part of the Dalton St project has been designed to keep this flow, some of which will also flow through a USSF on the school site, separate. Furthermore, the storm drain design can accommodate a 25 year storm and will functionally return this off-site run on to its pre-existing point of interest, the detention basin/wetlands.

The development will be served by the Portland Water District, CMP, Spectrum, Consolidated Communications, Unitil, and municipal sewer and storm systems. Utility mains and services have been coordinated with each respective utility company.

GENERAL STANDARDS – WATER QUALITY

The proposal is to provide primary water quality and quantity control through four separate Underdrained Subsurface Sand Filters (USSF) which have been designed in accordance with the Maine DEP BMP guidelines and are proposed to treat no less than 95% of the new impervious area and no less than 80% of the new developed area.

The underdrained subsurface sand filters were sized to meet or exceed the requirements set forth within the MDEP Volume III BMPs Technical Design Manual, Chapter 7.3. Filter BMP systems have shown to be effective at filtering out and removing a wide range of pollutants from stormwater runoff.

Impervious Treatment Area

The stormwater runoff shall first flow into the StormTech Isolator Row which will provide initial treatment of the larger sized pollutants. The stormwater will flow vertically through the sand filter layer. The treated stormwater will then be collected within perforated pipes and released slowly into the downstream system by an orifice on the end of the 4" underdrain outlet at an attenuated rate before it enters further engineered attenuation in an outlet control structure.

The treatment of the impervious and developed surfaces by the BMPs are as follows:

Table 1 - Impervious Treatment Area Table					
	Existing Imp. Area (SF)	Proposed Total Imp. Area (SF)	Net Change in Imp. Area (SF)	Proposed Imp. Area with Treatment (SF)	% Overall New Imp. Area Treated
USSFs	2,245	56,100	53,855	50,895	95%

Table 2 – Developed Area Treatment Area Table					
	Existing Dev. Area (SF)	Proposed Total Dev. Area (SF)	Net Change in Dev. Area (SF)	Proposed Dev. Area with Treatment (SF)	% Overall New Dev. Area Treated
USSFs	30,492	99,142	68,650	54,610	80%

As shown above, the project anticipates meeting the required treatment for new impervious and developed surfaces with the filter BMPs.

Filter Area Sizing

A calculation for sand filter area is necessary to meet the requirements below the surface of the USSF. As defined in the Volume III: BMPs Technical Design Manual, Chapter 7, the surface area of the filter shall be no less than the sum of 5% of the tributary impervious area and 2% of the tributary vegetated area. The filter area is calculated by the following formula:

$$[(\text{Imp. SF} \times 0.05) + (\text{Veg. SF} \times 0.02)] = \text{Filter Area (SF)}$$

Please refer to Table 2 below.

Table 2 – Total Filter Surface Area, displays the proposed USSF sizing requirements, actual size and the percentage of required area.

Table 3 – Total Filter Surface Area		
	Required Filter Area (SF)	Actual Filter Area (SF)
USSF 1	337	416
USSF 2	694	760
USSF 3	687	760
USSF 4	909	948

As shown, the size of the soil filter area will meet and exceed the surface area requirements.



Isolator Row Sizing

The isolator row was sized based upon a letter from Mark Bergeron, Director of the MDEP Bureau of Land Resources, to StormTech dated July 29, 2016. The calculation that Mr. Bergeron references to determine the minimum number of stormwater chambers needed for the isolator row is defined as the one-year peak flow rate divided by the specific flow rate of the chamber. To be conservative, the two-year peak flow rate was used from the HydroCAD model and divided by the flow rate of the MC-3500 chamber (0.3 cfs).

Table 4 – Isolator Row Sizing			
	2-Year Peak Flow (cfs)	Required Chambers	Provided Chambers
USSF 1	0.47	2	6
USSF 2	0.98	4	12
USSF 3	0.95	4	12
USSF 4	1.27	5	15

Water Quality Volume

In accordance with the Volume III: BMPs Technical Design Manual, a water quality volume of 1.0 inches times the tributary impervious area plus 0.4 inches times the tributary vegetated area is required to be treated by the USSF. The water quality volume is calculated by the following formula:

$$\left(\frac{\text{Imp. SF} \times 1.0''}{12''/1'} \right) + \left(\frac{\text{Veg. SF} \times 0.4''}{12''/1'} \right) = \text{Treatment Volume (CF)}$$

The proposed water quality volume is as follows:

Table 5 – Water Quality Volume Table				
	Vegetated Area (SF)	Impervious Area (SF)	Treatment Volume Required (CF)	Treatment Volume Provided (CF)
USSF 1	256	6,638	562	787
USSF 2	1,496	13,274	1,156	1,460
USSF 3	930	13,373	1,145	1,416
USSF 4	1,444	17,609	1,516	1,748

As shown, the size of the combined water quality volume will meet and exceed the treatment volume requirements. Values from the HydroCAD calculations are attached to this report.



The treatment volume was calculated by using the HydroCAD model and the rainfall that produces 18" of ponding within the chambers. The storage volume within the crushed stone and chambers – the two layers above the filter sand – is then added together to calculate the water quality volume.

A vertical orifice is modeled in HydroCAD at the outlet control structure to detain the stormwater for an approximate 24 hour time frame. The orifice for the water quantity volume is then set above the peak elevation determined for the water quality volume. Given that the outlet control structure is located downstream of the four USSFs, it is difficult to provide appropriate attenuation using the outlet control structure alone. To compensate, an orifice is modeled on each of the four underdrain outlets from the USSFs. This will provide for further control on the infiltration rates through the USSFs. The orifice is intended to be a PVC cap placed on the outfall pipe (no glue) with the orifice drilled into the cap eccentrically. The PVC cap can be easily inspected, removed or replaced if necessary. The orifice shall be placed at the end of the via an orifice on the end of each underdrain outlet from the USSFs, as well as a water quality and quantity orifice within the outlet control structure downstream of the proposed BMPs. Provided the infiltration rates of the water quality volume through the sand filter are variable, a water quality outlet is modeled to provide the required minimum 24-hour release

As shown above, the project anticipates meeting and exceeding the required treatment for new impervious surfaces and developed area through the use of four USSFs. Additionally, the plethora of native plants and catch basins will provide additional water quality benefits in addition to the treatment of the USSF.

FLOODING STANDARD – WATER QUANTITY

The proposed project was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, and 25-year storm events were used. The corresponding rainfall amounts for these storms are 3.10", 4.60", and 5.80" respectively. Due to the numerous variables, and inherent inaccuracies with the modeling program used to calculate stormwater runoff it is custom at Acorn Engineering, Inc. to round to the nearest whole number. However due to the small size of the project and the minimal existing flows, the stormwater runoff shall be rounded to the nearest tenth of a cubic feet per second (cfs).

Time of Concentration (Tc)

The times of concentration for subcatchments in both the pre and post conditions were calculated by entering the flow path with the associated ground cover and slopes. HydroCAD then calculated the Tc's and incorporated the total Tc for each subcatchment into the model. When the calculated Tc was less than six minutes (0.1 hours), a direct entry of six minutes was used as advised by the TR-55 model. Consistent with previous submissions and best practices, the sheet flow length for any Tc path was capped at 100 feet.

Curve Number (CN)

Within the pre-development model, the vegetated areas were considered grass/wood land cover in poor condition. This determination was made after multiple site visits that observed exposed soils with little to no organic duff layer. As such, although the land is wooded, the vegetative cover and surface condition would be considered in poor condition due to animal burrowing, disposal of debris, utilization of the site as an encampment and walking paths, general urban conditions, and little to no understory growth.

The post development landscaped areas were given a good rating within either the B or C hydrologic soil group depending on the underlying soil type. This assumption is reinforced given the aggressive landscape plan which will feature more porous conditions that are appropriately mulched along with future extensive root systems and canopy cover that will exist once the landscaping has matured.

Pre-development Calculations

The site consists of wooded area and wetlands in the predevelopment condition, for the purpose of this analysis the land has been divided into two separate sub catchments. The first sub catchment is located to the southwestern corner of the site near Sherwood Street. The land slopes at roughly 15% from west to east towards an abutter on Sherwood. The second sub catchment makes up the rest of the site which sees drainage internally within the site towards a pair of wetlands. The southern most wetland contains an outlet control structure to meter stormwater runoff into the municipal system within Sherwood Street.

Peak flow rates for the pre-development storm events are as follows:

Table 6 – Pre-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	0	0	1
POI #2	4	9	13
POI #3	5	9	13

Post-development Calculations

The drainage patterns from the pre and post conditions remain relatively the same, but with the post condition seeing four separate sub catchments that are dedicated for the treatment of runoff generated primarily by roof and pavement via the four (4) USSFs. The subcatchments are as follows:

- Subcatchment 1 – This is comprised of the untreated impervious area towards the entrance to the site that will be directed towards the MS4 in Sherwood St.
- Subcatchment 2 – This subcatchment consists mainly of landscaped area that will not



be treated via the proposed USSFs and will be directed to one of the two (2) wetlands on site, as it currently does.

- Subcatchments 2.1-2.4 – These subcatchments are responsible for the water quality treatment required by the DEP and City. All of the runoff within these sub catchments will be directed towards the proposed USSFs.

The post-development calculations include changes to the land use, and the compensation provided by the USSF's and associated engineered orifices. The following table represents comparison of pre- development and post-development condition peak runoff rates for the proposed development and tributary areas.

Table 7 – Post-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	0	0	0
POI #2	2	5	10
POI #3	2	5	11

Table 8 – Comparison of Peak Flows						
Drainage Area	2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)	
	Pre	Post	Pre	Post	Pre	Post
POI #1	0	0	1	0	1	0
POI #2	4	2	8	5	12	10
POI #3 (Total)	4	2	9	5	12	11

As shown in Table 7 and 8, the net impact of the post development peak flows will remain at or below the predevelopment levels. A post-development watershed map developed for this project can be viewed in Attachment B, and a copy of the HydroCAD calculations is included within Attachment C of this report.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey
- Soil borings completed in April 2021 by Summit Geoengineering Services

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because the



waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

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

Table 9 - “K” Value	
Soils Type	Subsurface
Buxton Silt Loam	0.37
Cut and fill land	0.20
Elmwood fine sandy loam	0.20
Suffield silt loam	0.32

The soil “K” value for the soil, listed above, shows a low to medium susceptibility to erosion. The site’s susceptibility to erosion is sourced from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although the soil “K” value shows a low to medium susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

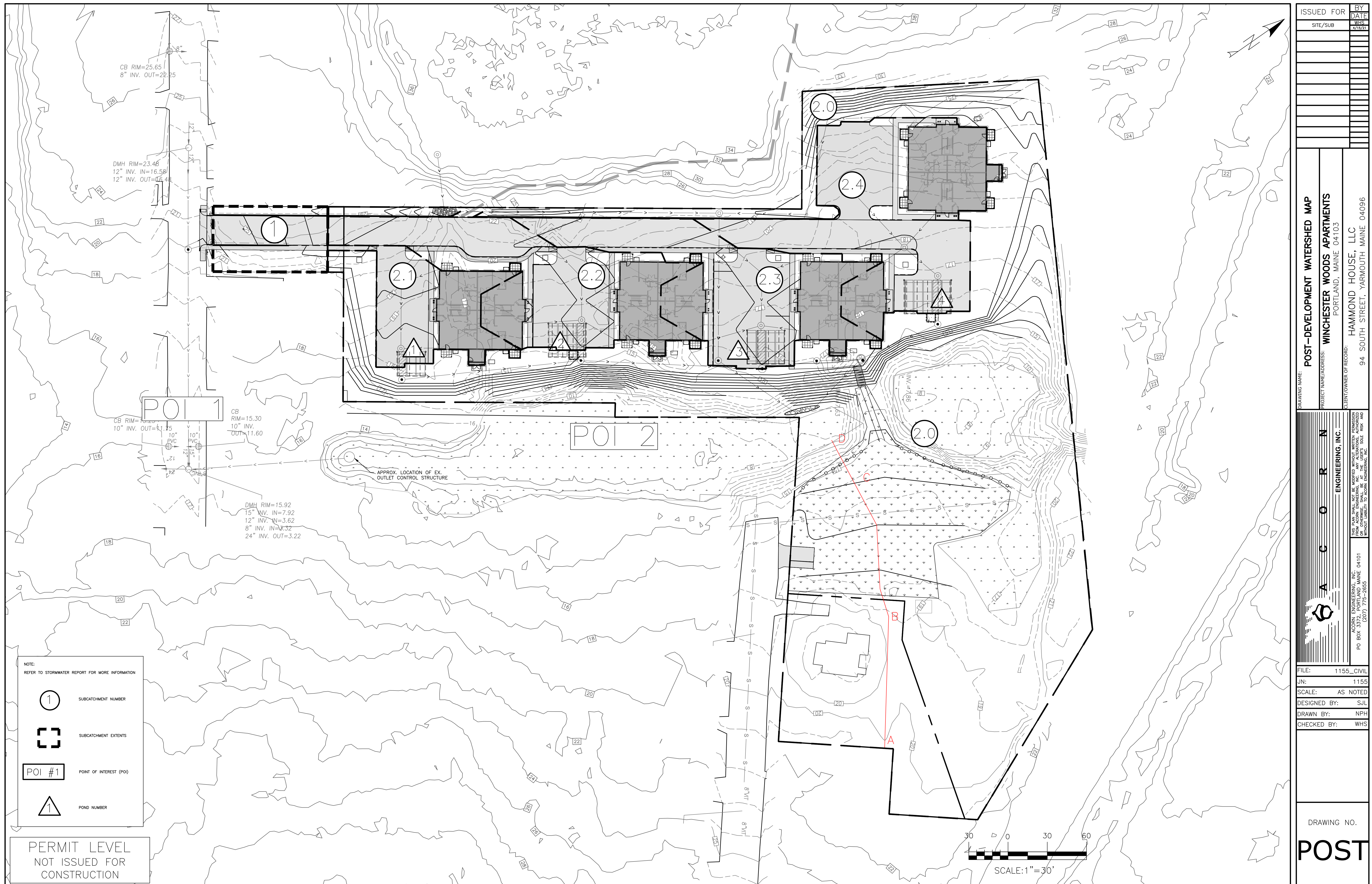
CONCLUSION

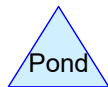
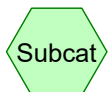
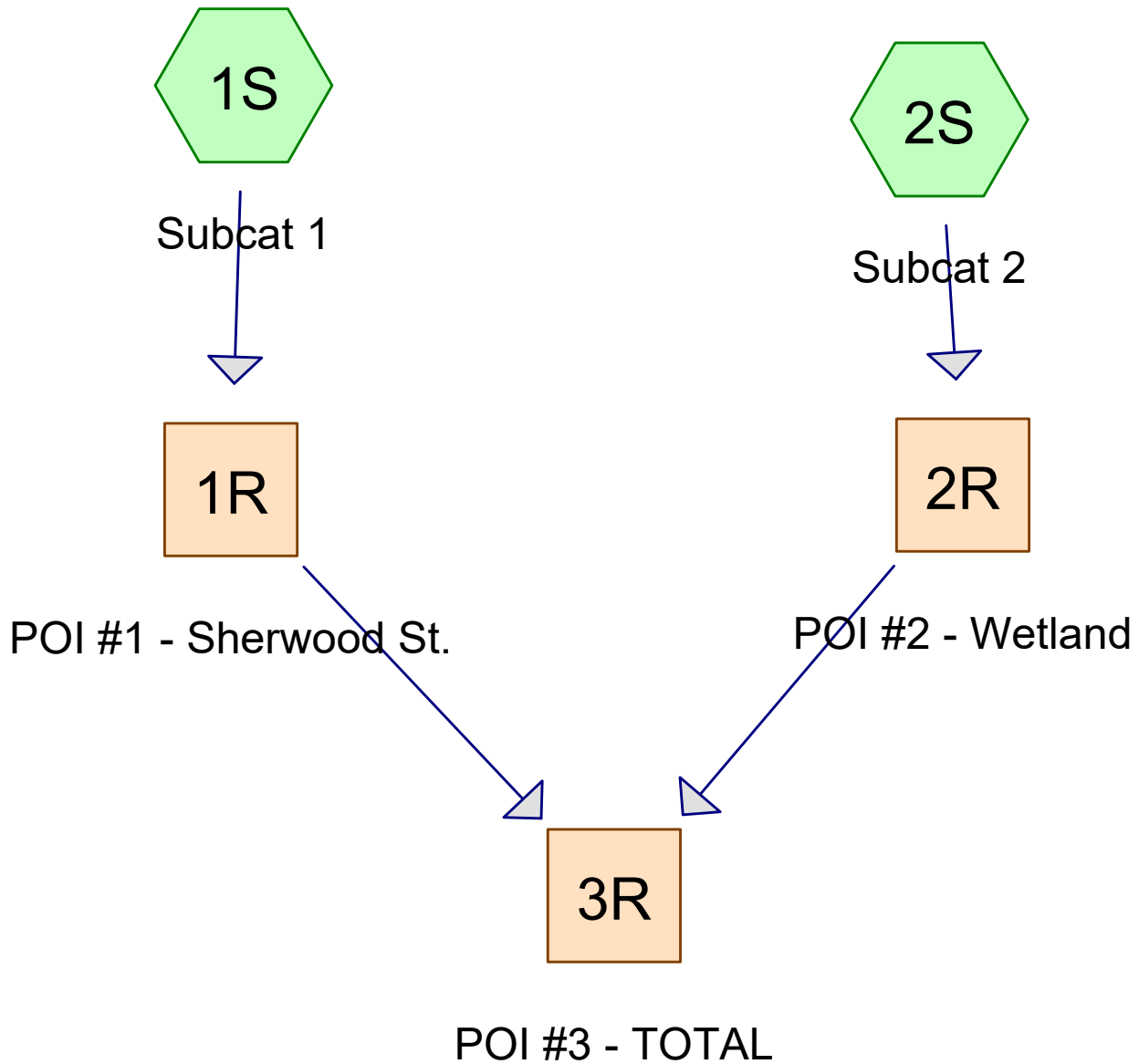
The proposed development was designed to meet the requirements implemented by the MDEP under the Stormwater Management Statute (38 M.R.S.A. § 420-D) as well as the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. The proposed project as designed is not anticipated to cause flooding or erosion problems within the subject site, abutters’ sites, nor within the right-of-way. Overall, the project will provide an improvement to stormwater runoff and overall management from several perspective as outlined above.

ATTACHMENTS

Attachment A: Pre-Development Watershed Map
 Attachment B: Post-Development Watershed Map
 Attachment C: HydroCAD Calculations
 Attachment D: Soil Survey







Routing Diagram for Pre Development_4-20-21
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.435	61	>75% Grass cover, Good, HSG B (2S)
0.137	74	>75% Grass cover, Good, HSG C (2S)
0.050	98	Roof Tops (2S)
0.002	98	Unconnected roofs, HSG C (1S)
0.662	73	Woods/grass comb., Poor, HSG B (2S)
2.431	82	Woods/grass comb., Poor, HSG C (2S)
0.118	82	Woods/grass combo, Poor, HSG C (1S)
3.835	78	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.097	HSG B	2S
2.689	HSG C	1S, 2S
0.000	HSG D	
0.050	Other	2S
3.835		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.435	0.137	0.000	0.000	0.572	>75% Grass cover, Good	2S
0.000	0.000	0.000	0.000	0.050	0.050	Roof Tops	2S
0.000	0.000	0.002	0.000	0.000	0.002	Unconnected roofs	1S
0.000	0.662	2.431	0.000	0.000	3.093	Woods/grass comb., Poor	2S
0.000	0.000	0.118	0.000	0.000	0.118	Woods/grass combo, Poor	1S
0.000	1.097	2.689	0.000	0.050	3.835	TOTAL AREA	

Pre Development_4-20-21

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Type III 24-hr 2-year Rainfall=3.10"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcat 1

Runoff Area=5,216 sf 1.50% Impervious Runoff Depth=1.46"

Tc=6.0 min CN=82 Runoff=0.20 cfs 0.015 af

Subcatchment2S: Subcat 2

Runoff Area=161,833 sf 1.34% Impervious Runoff Depth=1.20"

Flow Length=244' Tc=10.6 min CN=78 Runoff=4.36 cfs 0.372 af

Reach 1R: POI #1 - Sherwood St.

Inflow=0.20 cfs 0.015 af

Outflow=0.20 cfs 0.015 af

Reach 2R: POI #2 - Wetland

Inflow=4.36 cfs 0.372 af

Outflow=4.36 cfs 0.372 af

Reach 3R: POI #3 - TOTAL

Inflow=4.52 cfs 0.386 af

Outflow=4.52 cfs 0.386 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.386 af Average Runoff Depth = 1.21"
98.66% Pervious = 3.783 ac 1.34% Impervious = 0.052 ac

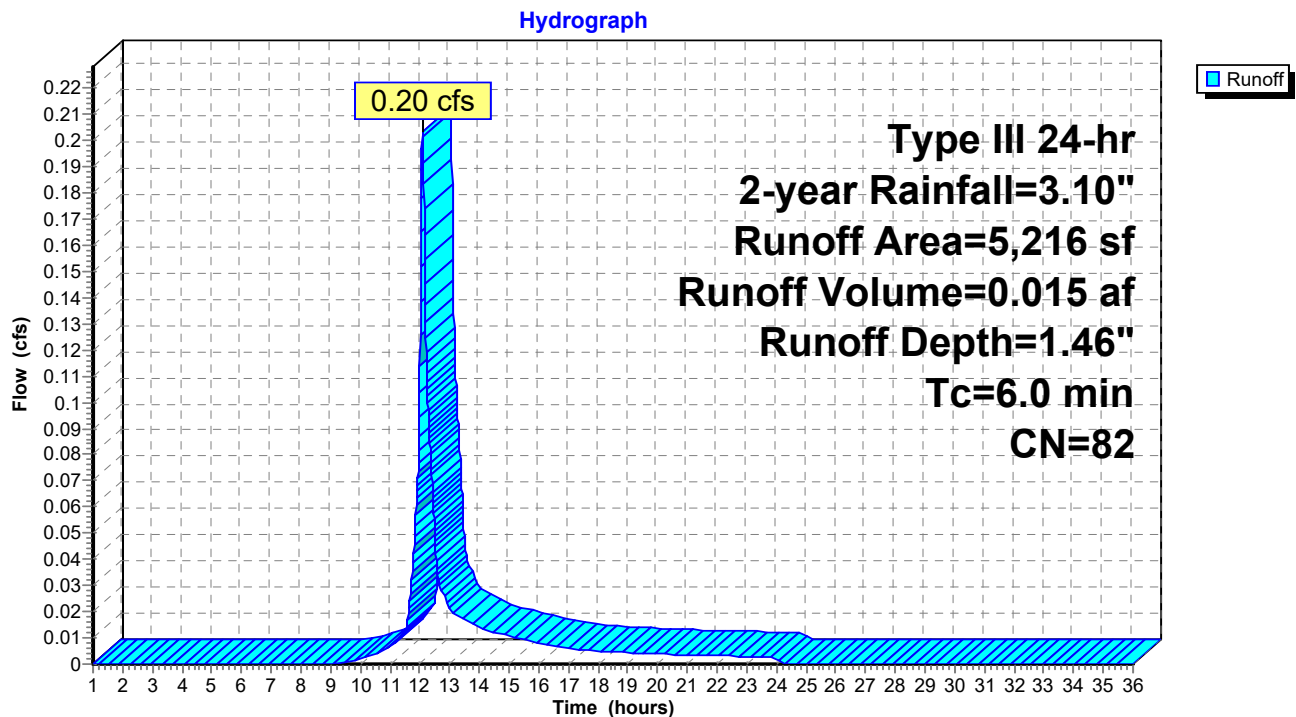
Summary for Subcatchment 1S: Subcat 1

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.015 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	5,138	82	Woods/grass combo, Poor, HSG C
	78	98	Unconnected roofs, HSG C
	5,216	82	Weighted Average
	5,138		98.50% Pervious Area
	78		1.50% Impervious Area
	78		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep Slopes to Grassed Ditch

Subcatchment 1S: Subcat 1

Pre Development_4-20-21

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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Subcatchment 2S: Subcat 2

Runoff = 4.36 cfs @ 12.15 hrs, Volume= 0.372 af, Depth= 1.20"

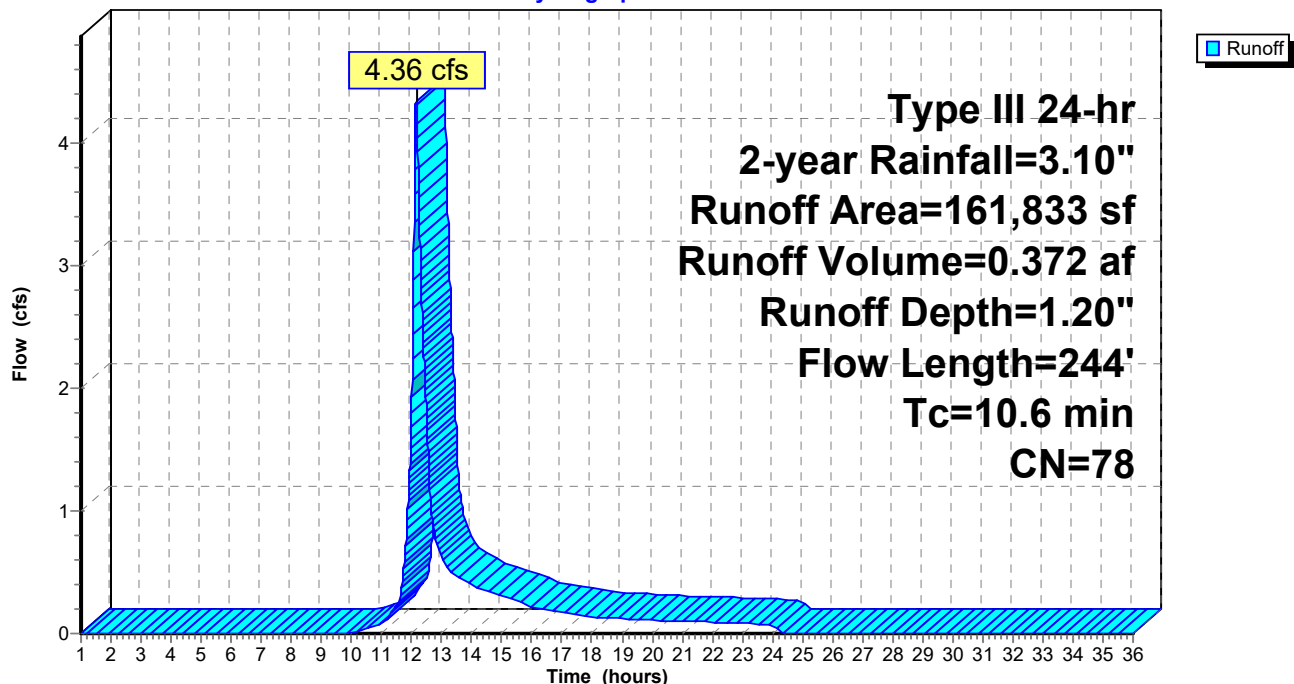
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
* 2,167	98	Roof Tops
* 105,916	82	Woods/grass comb., Poor, HSG C
28,832	73	Woods/grass comb., Poor, HSG B
18,938	61	>75% Grass cover, Good, HSG B
5,980	74	>75% Grass cover, Good, HSG C
161,833	78	Weighted Average
159,666		98.66% Pervious Area
2,167		1.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	2.45		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2

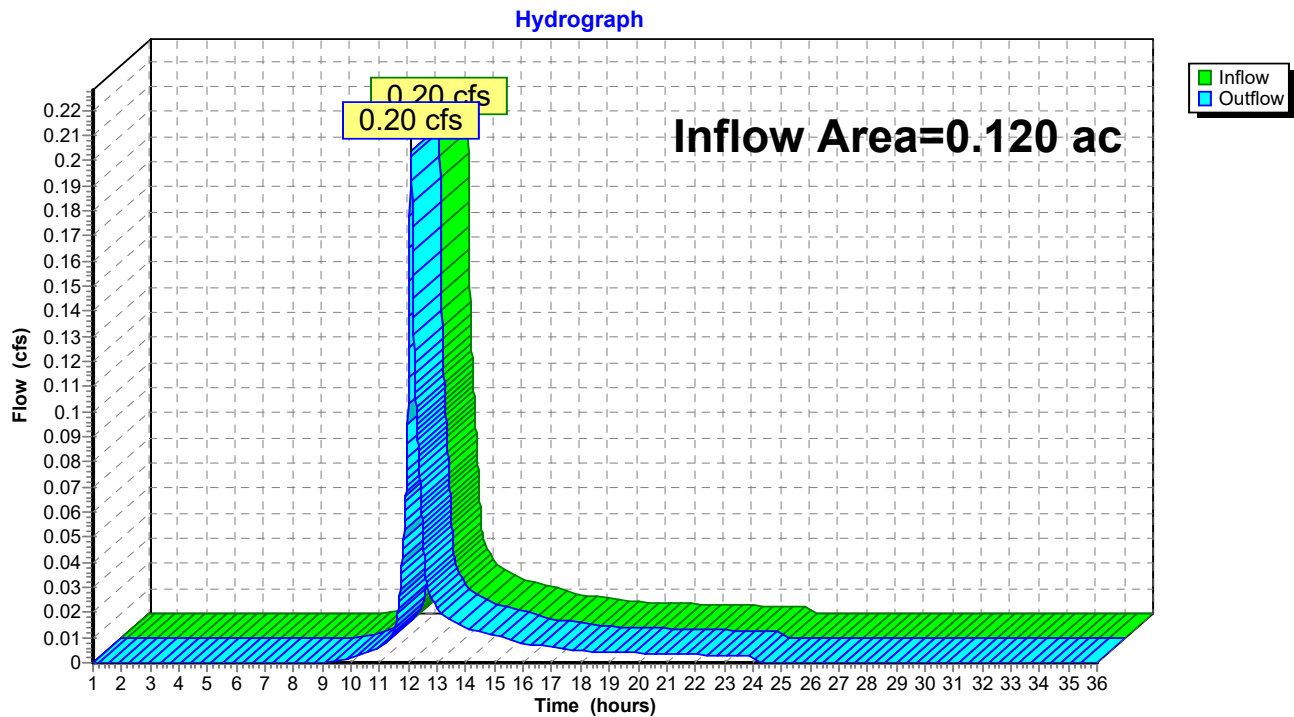
Hydrograph



Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.120 ac, 1.50% Impervious, Inflow Depth = 1.46" for 2-year event
Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.015 af
Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

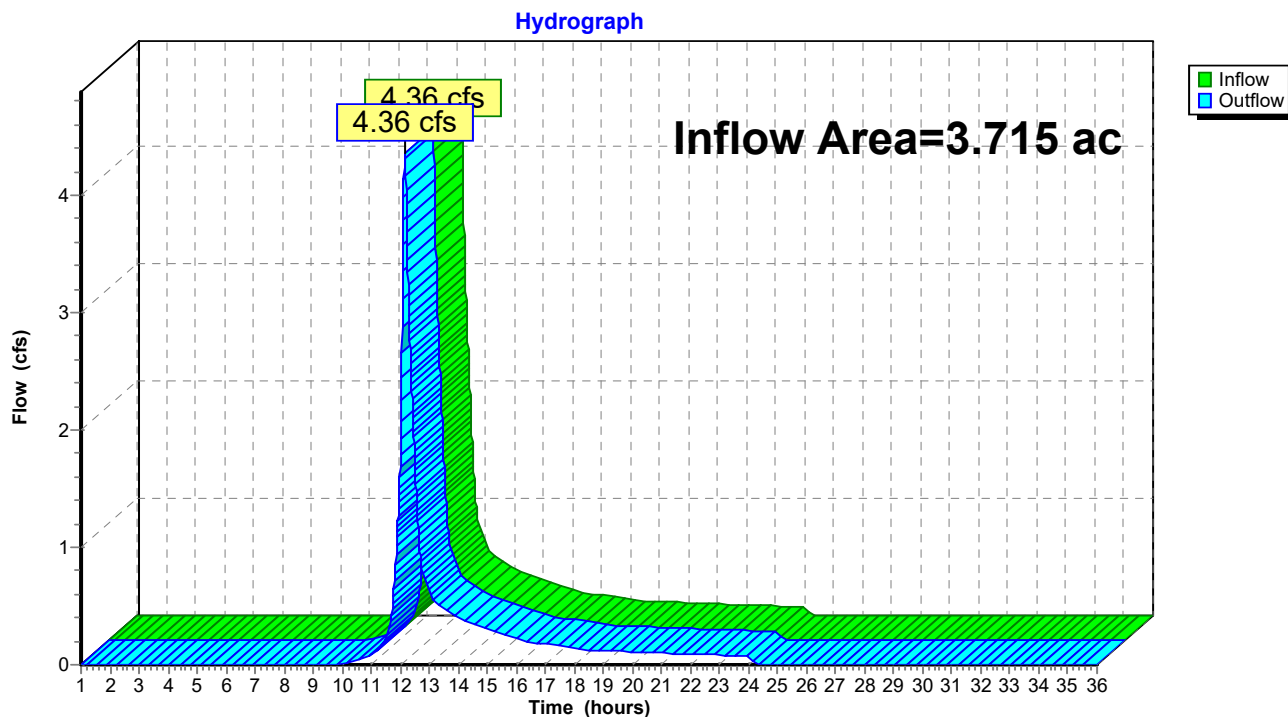
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - Sherwood St.

Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.715 ac, 1.34% Impervious, Inflow Depth = 1.20" for 2-year event
Inflow = 4.36 cfs @ 12.15 hrs, Volume= 0.372 af
Outflow = 4.36 cfs @ 12.15 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min

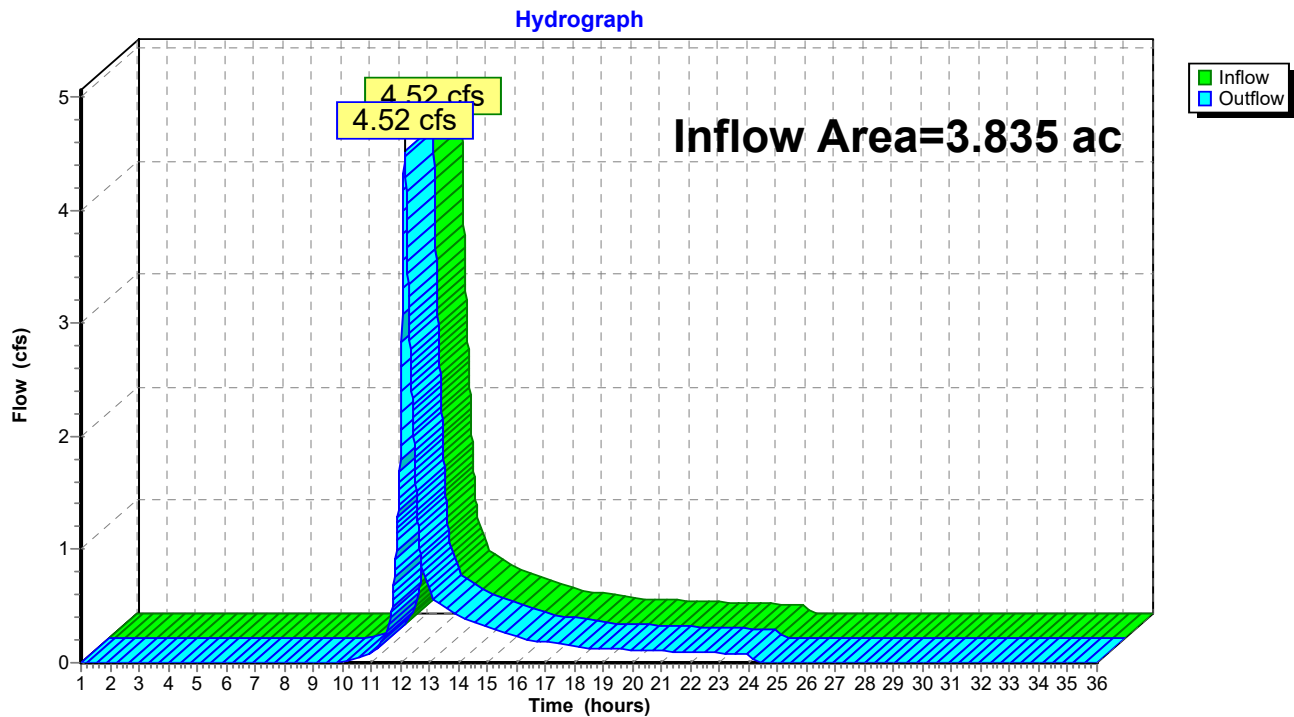
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 2R: POI #2 - Wetland

Summary for Reach 3R: POI #3 - TOTAL

Inflow Area = 3.835 ac, 1.34% Impervious, Inflow Depth = 1.21" for 2-year event
Inflow = 4.52 cfs @ 12.15 hrs, Volume= 0.386 af
Outflow = 4.52 cfs @ 12.15 hrs, Volume= 0.386 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: POI #3 - TOTAL

Pre Development_4-20-21*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcat 1

Runoff Area=5,216 sf 1.50% Impervious Runoff Depth=2.72"

Tc=6.0 min CN=82 Runoff=0.38 cfs 0.027 af

Subcatchment2S: Subcat 2

Runoff Area=161,833 sf 1.34% Impervious Runoff Depth=2.38"

Flow Length=244' Tc=10.6 min CN=78 Runoff=8.85 cfs 0.735 af

Reach 1R: POI #1 - Sherwood St.

Inflow=0.38 cfs 0.027 af

Outflow=0.38 cfs 0.027 af

Reach 2R: POI #2 - Wetland

Inflow=8.85 cfs 0.735 af

Outflow=8.85 cfs 0.735 af

Reach 3R: POI #3 - TOTAL

Inflow=9.16 cfs 0.763 af

Outflow=9.16 cfs 0.763 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.763 af Average Runoff Depth = 2.39"
98.66% Pervious = 3.783 ac 1.34% Impervious = 0.052 ac

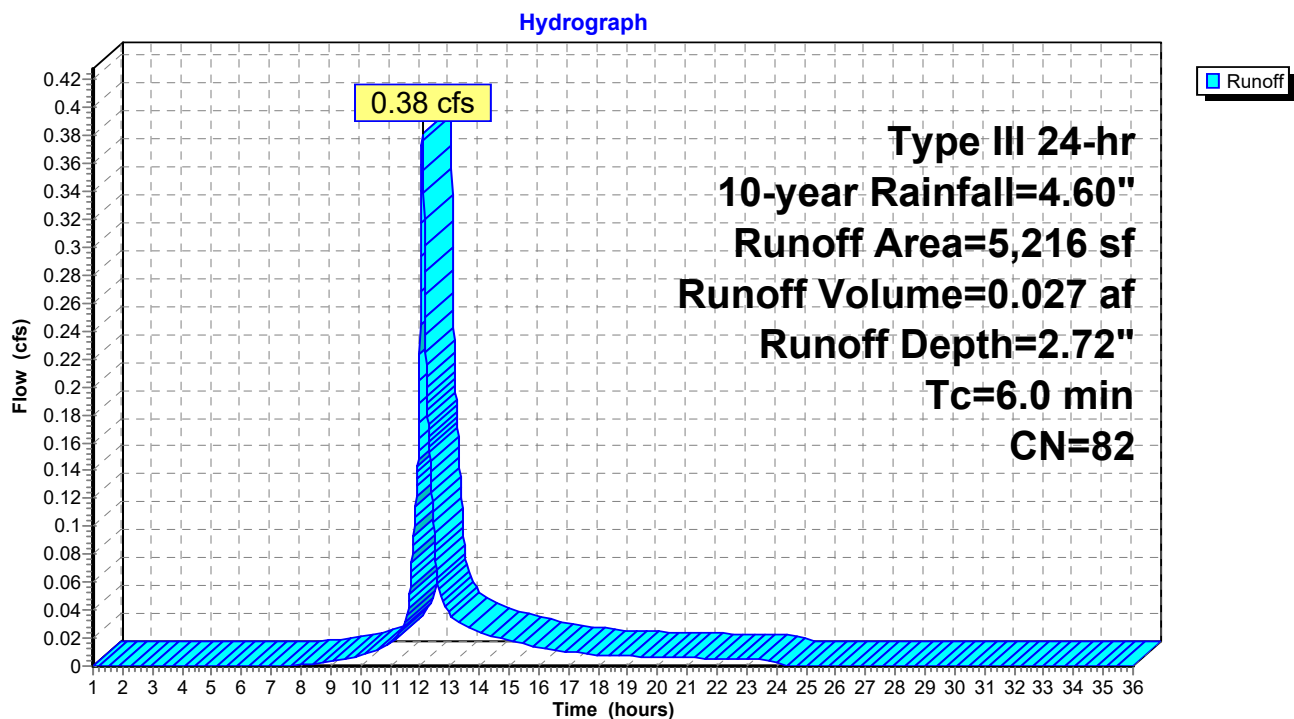
Summary for Subcatchment 1S: Subcat 1

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 5,138	82	Woods/grass combo, Poor, HSG C
78	98	Unconnected roofs, HSG C
5,216	82	Weighted Average
5,138		98.50% Pervious Area
78		1.50% Impervious Area
78		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep Slopes to Grassed Ditch

Subcatchment 1S: Subcat 1

Summary for Subcatchment 2S: Subcat 2

Runoff = 8.85 cfs @ 12.15 hrs, Volume= 0.735 af, Depth= 2.38"

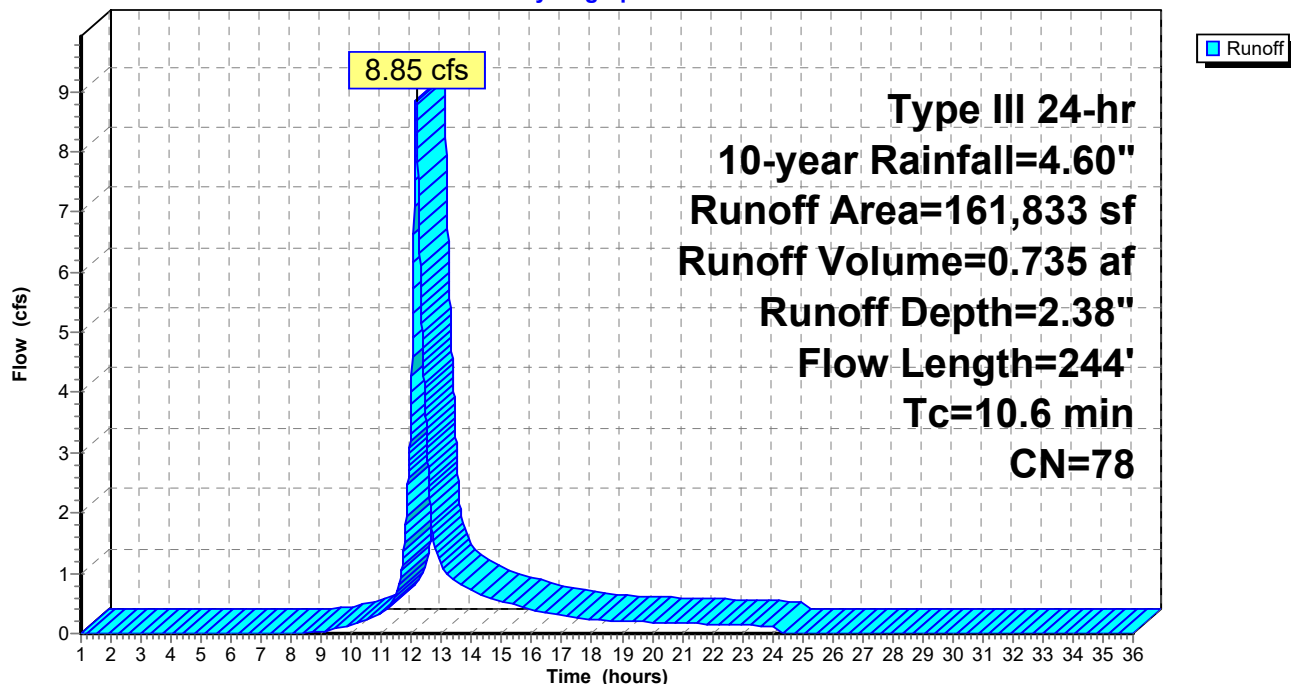
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 2,167	98	Roof Tops
* 105,916	82	Woods/grass comb., Poor, HSG C
28,832	73	Woods/grass comb., Poor, HSG B
18,938	61	>75% Grass cover, Good, HSG B
5,980	74	>75% Grass cover, Good, HSG C
161,833	78	Weighted Average
159,666		98.66% Pervious Area
2,167		1.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	2.45		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2

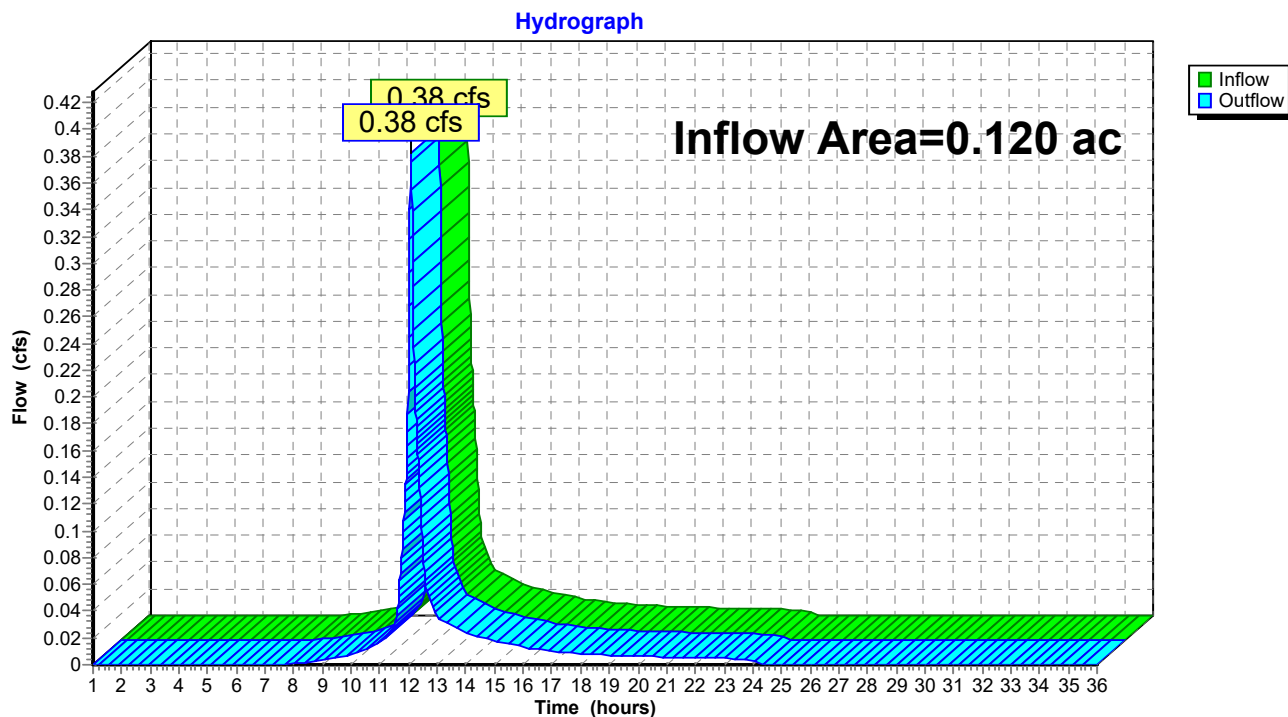
Hydrograph



Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.120 ac, 1.50% Impervious, Inflow Depth = 2.72" for 10-year event
Inflow = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

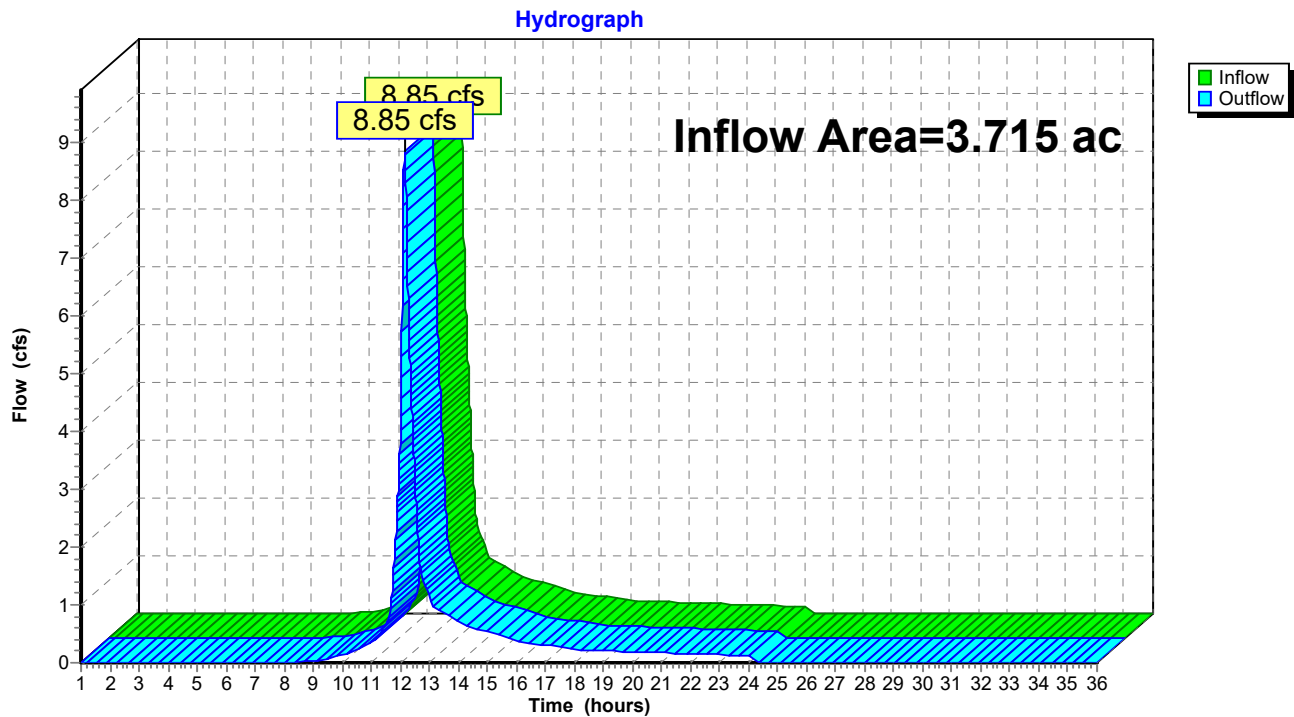
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - Sherwood St.

Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.715 ac, 1.34% Impervious, Inflow Depth = 2.38" for 10-year event
Inflow = 8.85 cfs @ 12.15 hrs, Volume= 0.735 af
Outflow = 8.85 cfs @ 12.15 hrs, Volume= 0.735 af, Atten= 0%, Lag= 0.0 min

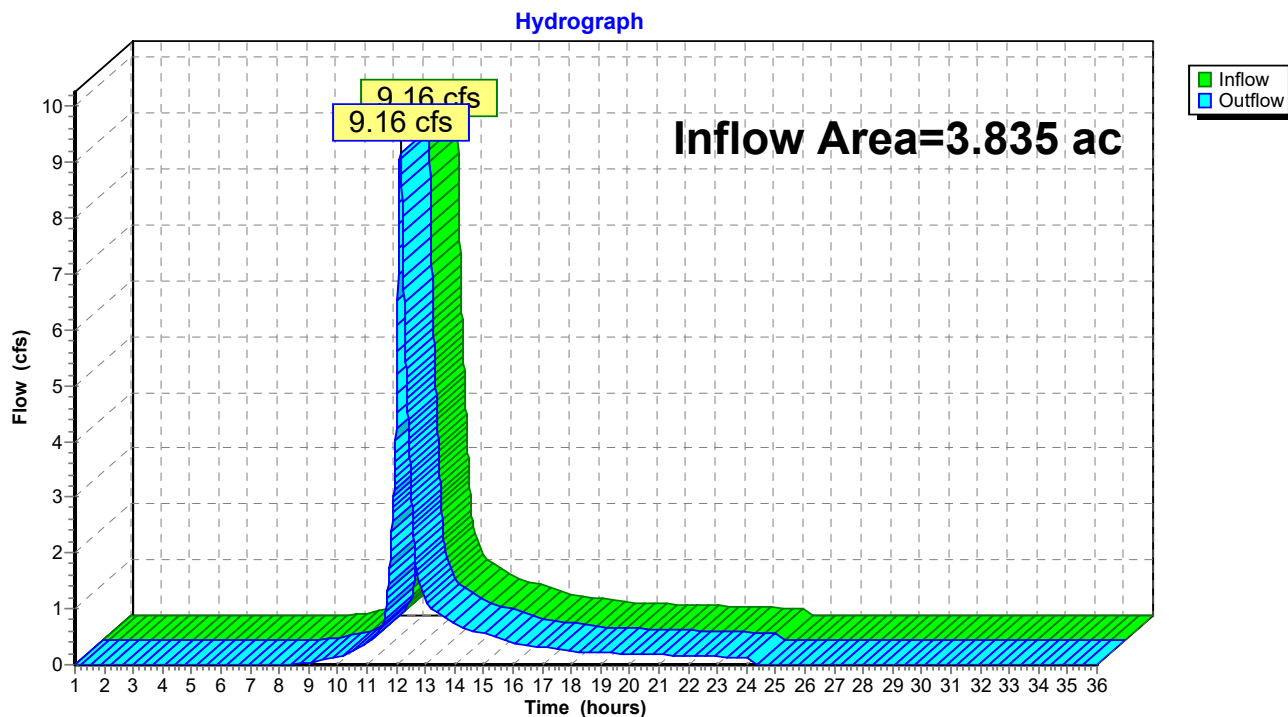
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 2R: POI #2 - Wetland

Summary for Reach 3R: POI #3 - TOTAL

Inflow Area = 3.835 ac, 1.34% Impervious, Inflow Depth = 2.39" for 10-year event
Inflow = 9.16 cfs @ 12.15 hrs, Volume= 0.763 af
Outflow = 9.16 cfs @ 12.15 hrs, Volume= 0.763 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: POI #3 - TOTAL

Pre Development_4-20-21*Type III 24-hr 25-year Rainfall=5.80"*

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcat 1

Runoff Area=5,216 sf 1.50% Impervious Runoff Depth=3.80"

Tc=6.0 min CN=82 Runoff=0.53 cfs 0.038 af

Subcatchment2S: Subcat 2

Runoff Area=161,833 sf 1.34% Impervious Runoff Depth=3.40"

Flow Length=244' Tc=10.6 min CN=78 Runoff=12.70 cfs 1.054 af

Reach 1R: POI #1 - Sherwood St.

Inflow=0.53 cfs 0.038 af

Outflow=0.53 cfs 0.038 af

Reach 2R: POI #2 - Wetland

Inflow=12.70 cfs 1.054 af

Outflow=12.70 cfs 1.054 af

Reach 3R: POI #3 - TOTAL

Inflow=13.13 cfs 1.091 af

Outflow=13.13 cfs 1.091 af

Total Runoff Area = 3.835 ac Runoff Volume = 1.091 af Average Runoff Depth = 3.42"
98.66% Pervious = 3.783 ac 1.34% Impervious = 0.052 ac

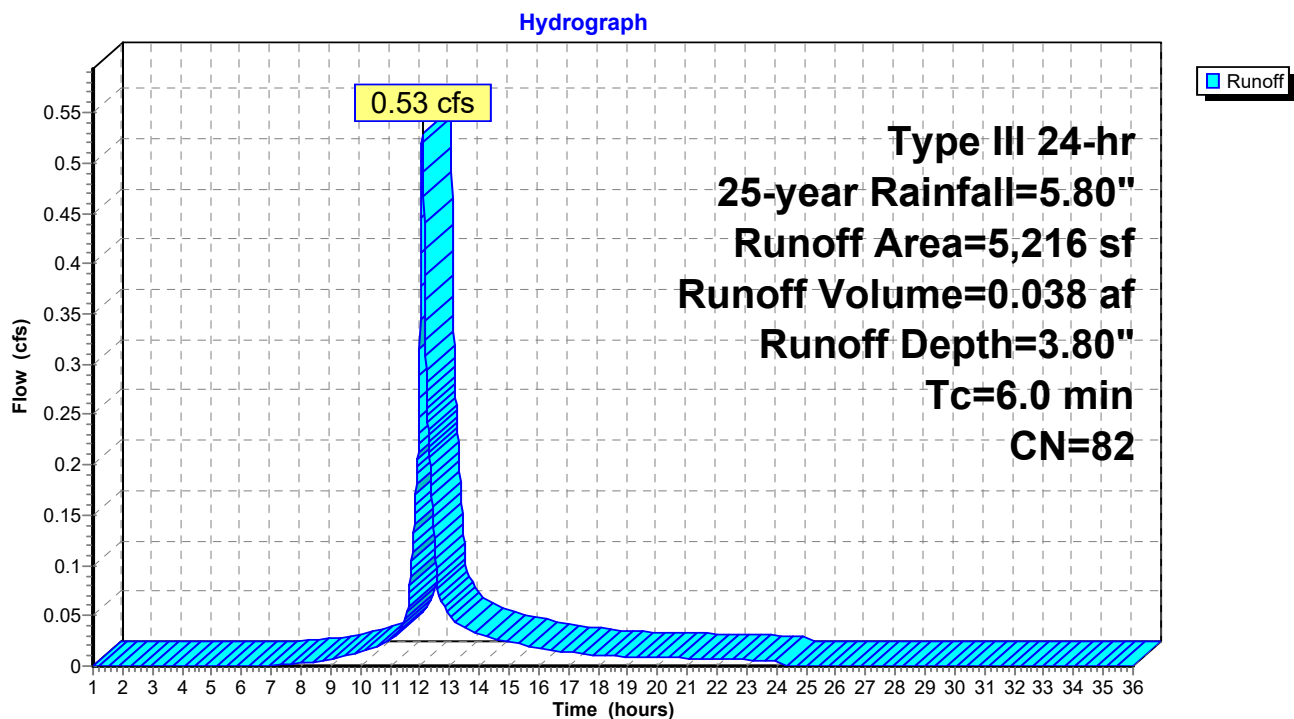
Summary for Subcatchment 1S: Subcat 1

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,138	82	Woods/grass combo, Poor, HSG C
	78	98	Unconnected roofs, HSG C
	5,216	82	Weighted Average
	5,138		98.50% Pervious Area
	78		1.50% Impervious Area
	78		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep Slopes to Grassed Ditch

Subcatchment 1S: Subcat 1

Summary for Subcatchment 2S: Subcat 2

Runoff = 12.70 cfs @ 12.15 hrs, Volume= 1.054 af, Depth= 3.40"

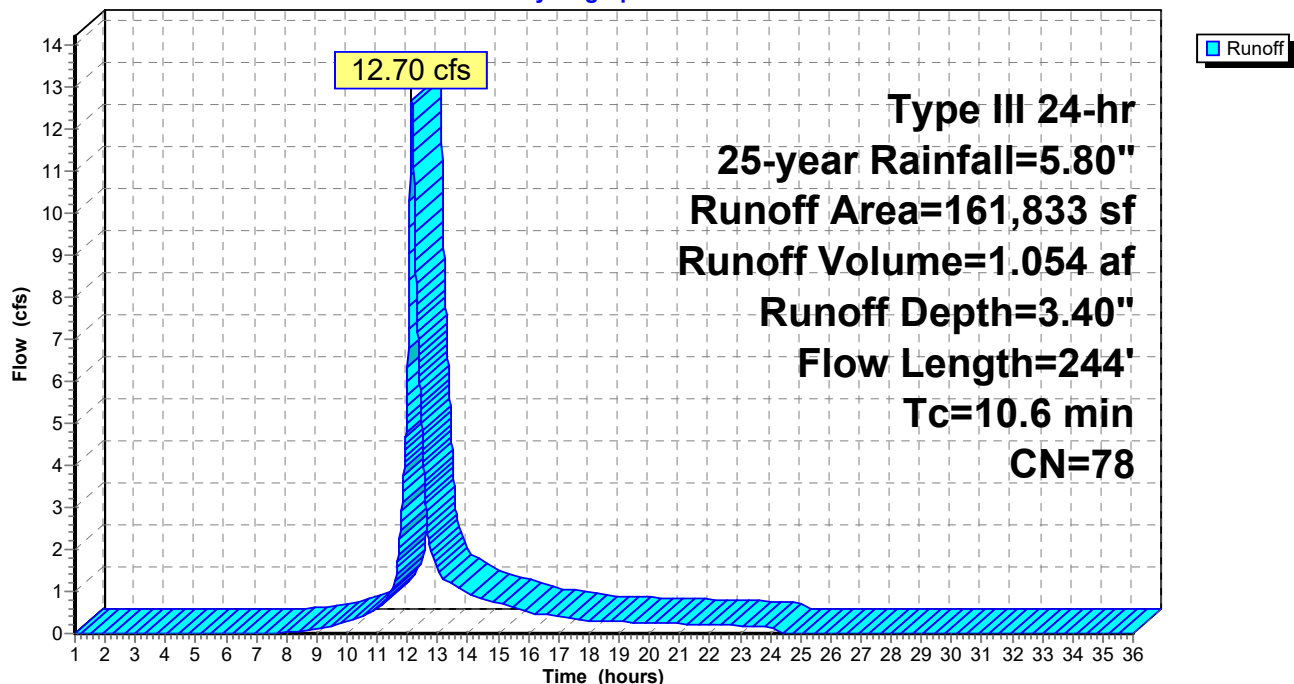
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
* 2,167	98	Roof Tops
* 105,916	82	Woods/grass comb., Poor, HSG C
28,832	73	Woods/grass comb., Poor, HSG B
18,938	61	>75% Grass cover, Good, HSG B
5,980	74	>75% Grass cover, Good, HSG C
161,833	78	Weighted Average
159,666		98.66% Pervious Area
2,167		1.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	2.45		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2

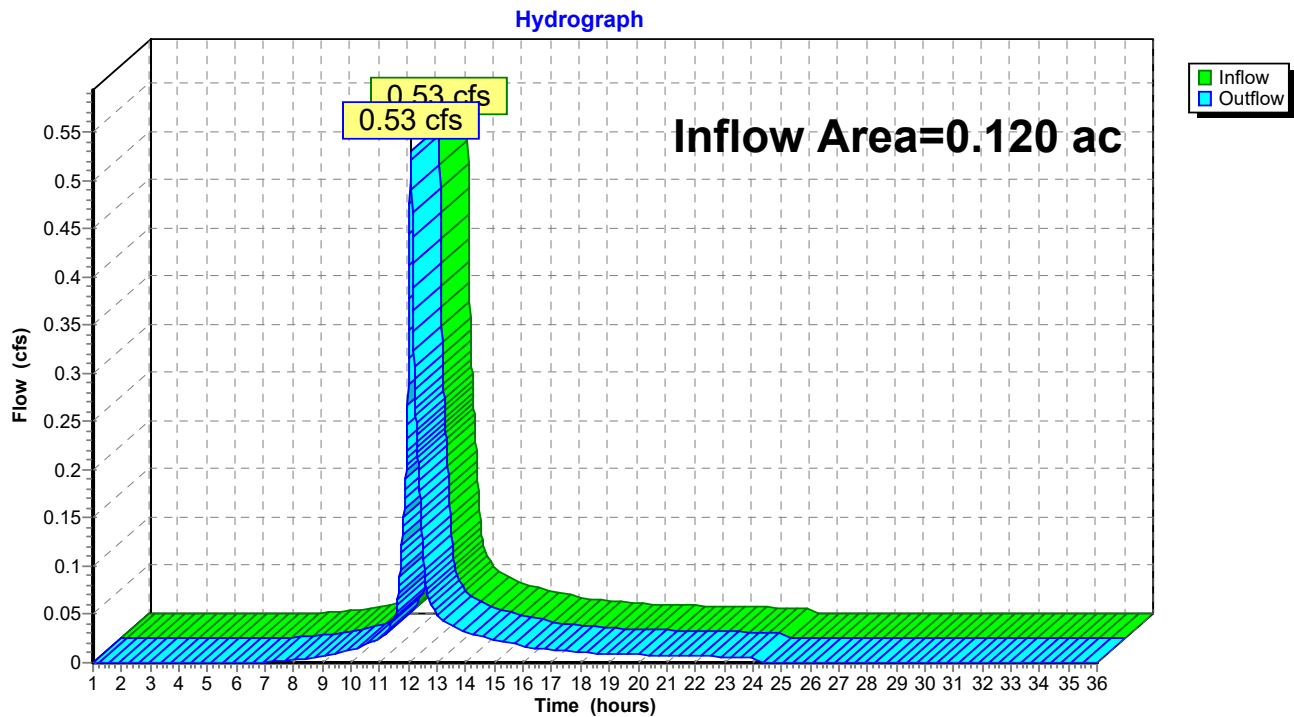
Hydrograph



Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.120 ac, 1.50% Impervious, Inflow Depth = 3.80" for 25-year event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

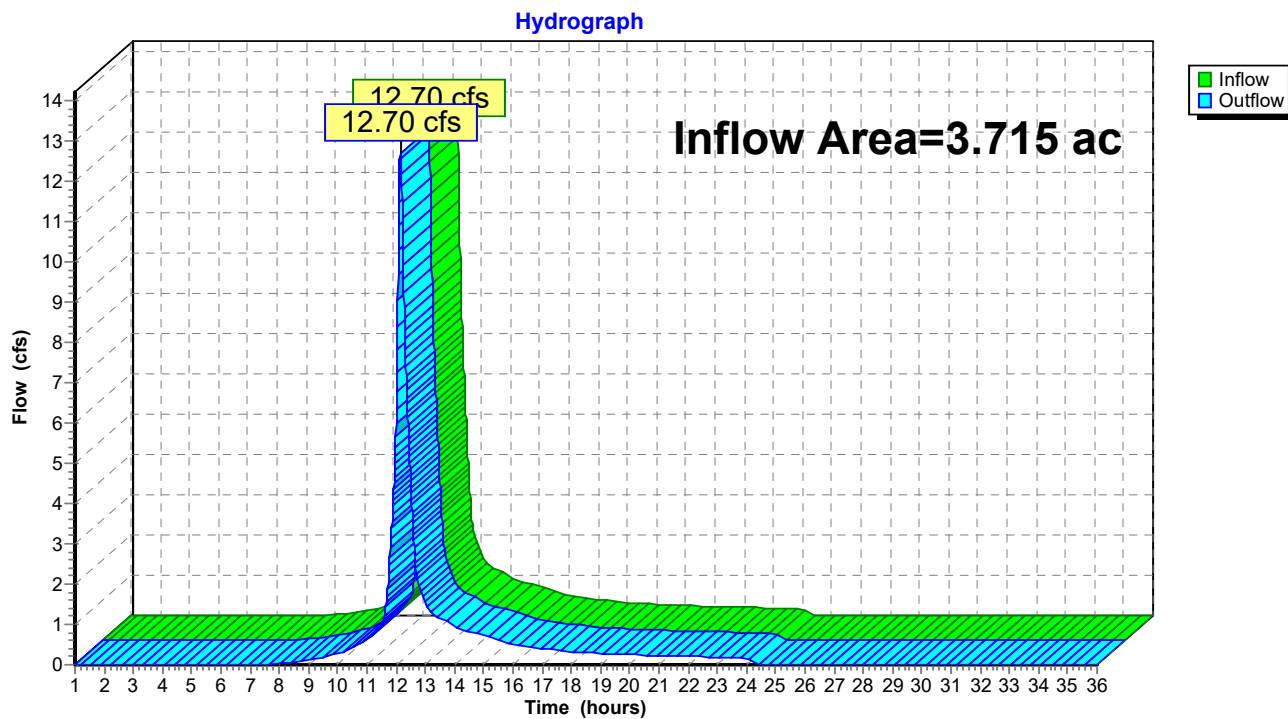
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - Sherwood St.

Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.715 ac, 1.34% Impervious, Inflow Depth = 3.40" for 25-year event
Inflow = 12.70 cfs @ 12.15 hrs, Volume= 1.054 af
Outflow = 12.70 cfs @ 12.15 hrs, Volume= 1.054 af, Atten= 0%, Lag= 0.0 min

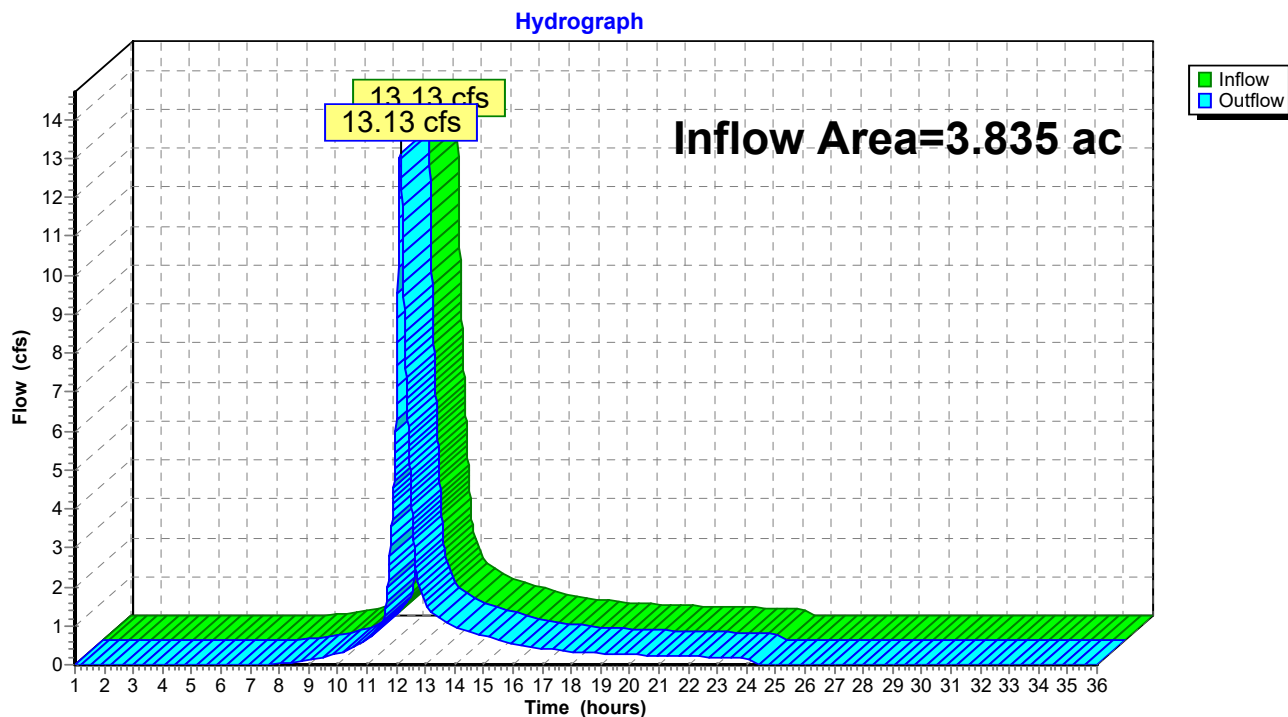
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

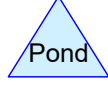
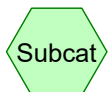
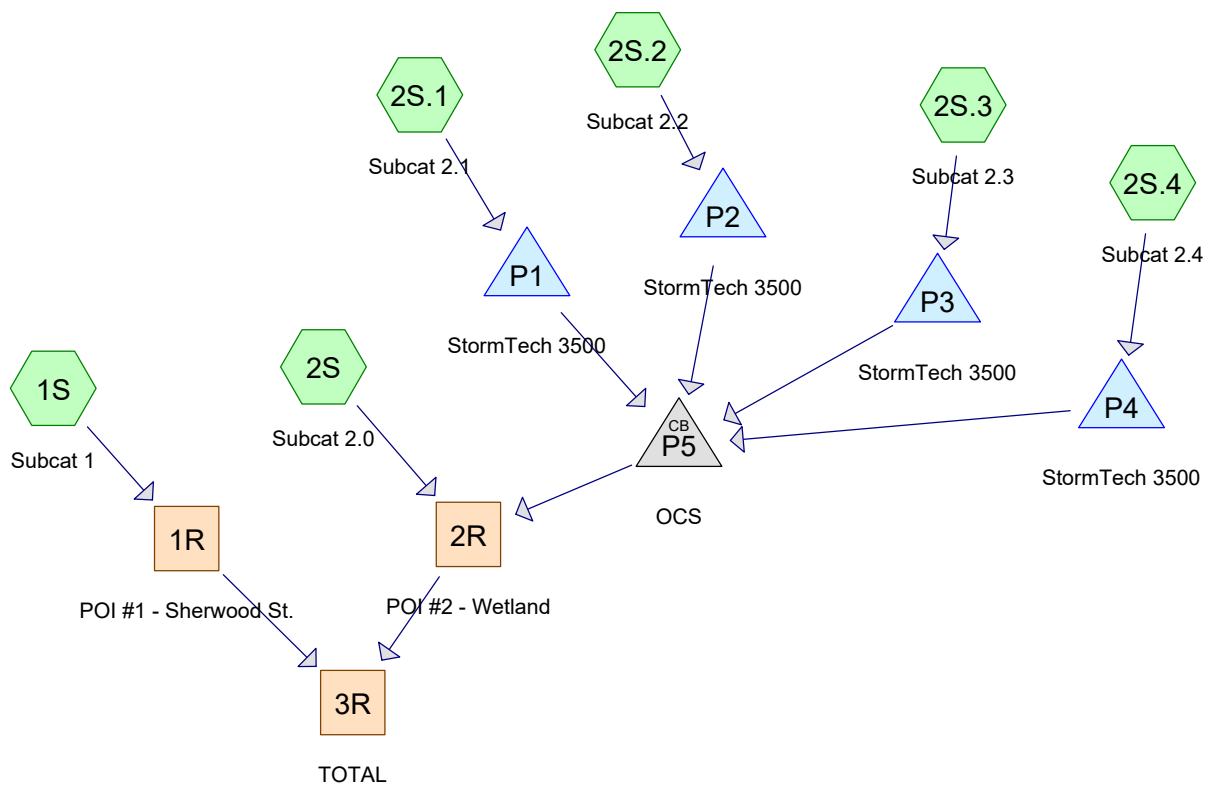
Reach 2R: POI #2 - Wetland

Summary for Reach 3R: POI #3 - TOTAL

Inflow Area = 3.835 ac, 1.34% Impervious, Inflow Depth = 3.42" for 25-year event
Inflow = 13.13 cfs @ 12.14 hrs, Volume= 1.091 af
Outflow = 13.13 cfs @ 12.14 hrs, Volume= 1.091 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: POI #3 - TOTAL



Routing Diagram for Post Development_4-21-21
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.580	61	>75% Grass cover, Good, HSG B (2S)
1.253	74	>75% Grass cover, Good, HSG C (2S, 2S.1, 2S.2, 2S.3, 2S.4)
0.066	98	Concrete Pads / Patio / Stairs (2S)
0.137	70	Cr. Stone (2S)
0.047	70	Cr. Stone/Misc. Vegetation (1S)
0.152	98	Pavement (2S.1)
1.016	98	Pavement/Roofs (2S.2, 2S.3, 2S.4)
0.053	98	Road/Sidewalk (1S)
0.529	66	Woods, Poor, HSG B (2S)
3.835	79	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.109	HSG B	2S
1.253	HSG C	2S, 2S.1, 2S.2, 2S.3, 2S.4
0.000	HSG D	
1.473	Other	1S, 2S, 2S.1, 2S.2, 2S.3, 2S.4
3.835		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.580	1.253	0.000	0.000	1.833	>75% Grass cover, Good	2S, 2S.1, 2S.2, 2S.3, 2S.4
0.000	0.000	0.000	0.000	0.066	0.066	Concrete Pads / Patio / Stairs	2S
0.000	0.000	0.000	0.000	0.137	0.137	Cr. Stone	2S
0.000	0.000	0.000	0.000	0.047	0.047	Cr. Stone/Misc. Vegetation	1S
0.000	0.000	0.000	0.000	0.152	0.152	Pavement	2S.1
0.000	0.000	0.000	0.000	1.016	1.016	Pavement/Roofs	2S.2, 2S.3, 2S.4
0.000	0.000	0.000	0.000	0.053	0.053	Road/Sidewalk	1S
0.000	0.529	0.000	0.000	0.000	0.529	Woods, Poor	2S
0.000	1.109	1.253	0.000	1.473	3.835	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	P1	18.80	14.00	20.0	0.2400	0.010	12.0	0.0	0.0
2	P1	13.60	10.00	125.0	0.0288	0.010	1.0	0.0	0.0
3	P2	12.80	12.70	10.0	0.0100	0.010	1.5	0.0	0.0
4	P2	18.00	17.25	4.0	0.1875	0.010	12.0	0.0	0.0
5	P3	11.58	11.40	10.0	0.0180	0.010	1.5	0.0	0.0
6	P3	16.80	16.00	5.5	0.1455	0.010	12.0	0.0	0.0
7	P4	10.83	10.75	20.0	0.0040	0.010	2.0	0.0	0.0
8	P4	16.05	15.00	10.0	0.1050	0.010	12.0	0.0	0.0
9	P5	7.95	7.80	34.0	0.0044	0.010	18.0	0.0	0.0

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Type III 24-hr 2-year Rainfall=3.10"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 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

Subcatchment1S: Subcat 1	Runoff Area=4,385 sf 53.04% Impervious Runoff Depth=1.67" Tc=6.0 min CN=85 Runoff=0.20 cfs 0.014 af
Subcatchment2S: Subcat 2.0	Runoff Area=107,660 sf 2.68% Impervious Runoff Depth=0.77" Flow Length=244' Tc=10.6 min CN=70 Runoff=1.67 cfs 0.159 af
Subcatchment2S.1: Subcat 2.1	Runoff Area=6,893 sf 96.29% Impervious Runoff Depth=2.76" Tc=6.0 min CN=97 Runoff=0.47 cfs 0.036 af
Subcatchment2S.2: Subcat 2.2	Runoff Area=14,770 sf 89.87% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=0.98 cfs 0.075 af
Subcatchment2S.3: Subcat 2.3	Runoff Area=14,303 sf 93.50% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=0.95 cfs 0.073 af
Subcatchment2S.4: Subcat 2.4	Runoff Area=19,053 sf 92.42% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=1.27 cfs 0.097 af
Reach 1R: POI #1 - Sherwood St.	Inflow=0.20 cfs 0.014 af Outflow=0.20 cfs 0.014 af
Reach 2R: POI #2 - Wetland	Inflow=2.00 cfs 0.436 af Outflow=2.00 cfs 0.436 af
Reach 3R: TOTAL	Inflow=2.15 cfs 0.450 af Outflow=2.15 cfs 0.450 af
Pond P1: StormTech 3500	Peak Elev=18.69' Storage=956 cf Inflow=0.47 cfs 0.036 af Outflow=0.02 cfs 0.034 af
Pond P2: StormTech 3500	Peak Elev=17.33' Storage=1,477 cf Inflow=0.98 cfs 0.075 af Outflow=0.09 cfs 0.075 af
Pond P3: StormTech 3500	Peak Elev=16.01' Storage=1,416 cf Inflow=0.95 cfs 0.073 af Outflow=0.09 cfs 0.072 af
Pond P4: StormTech 3500	Peak Elev=15.28' Storage=1,763 cf Inflow=1.27 cfs 0.097 af Outflow=0.15 cfs 0.097 af
Pond P5: OCS	Peak Elev=10.42' Inflow=0.35 cfs 0.278 af Outflow=0.35 cfs 0.278 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.453 af Average Runoff Depth = 1.42"
66.42% Pervious = 2.547 ac 33.58% Impervious = 1.288 ac

Summary for Subcatchment 1S: Subcat 1

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 1.67"

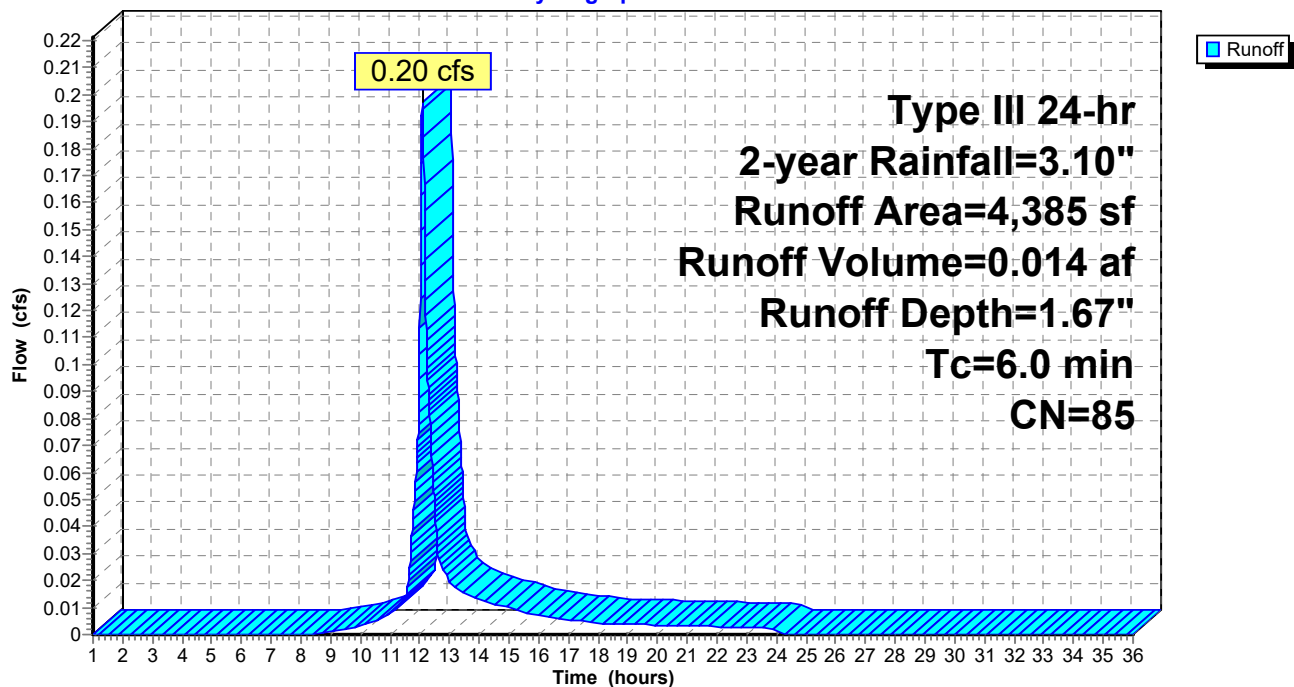
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,059	70	Cr. Stone/Misc. Vegetation
*	2,326	98	Road/Sidewalk
	4,385	85	Weighted Average
	2,059		46.96% Pervious Area
	2,326		53.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep banks to pipe flow

Subcatchment 1S: Subcat 1

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Subcatchment 2S: Subcat 2.0

Runoff = 1.67 cfs @ 12.17 hrs, Volume= 0.159 af, Depth= 0.77"

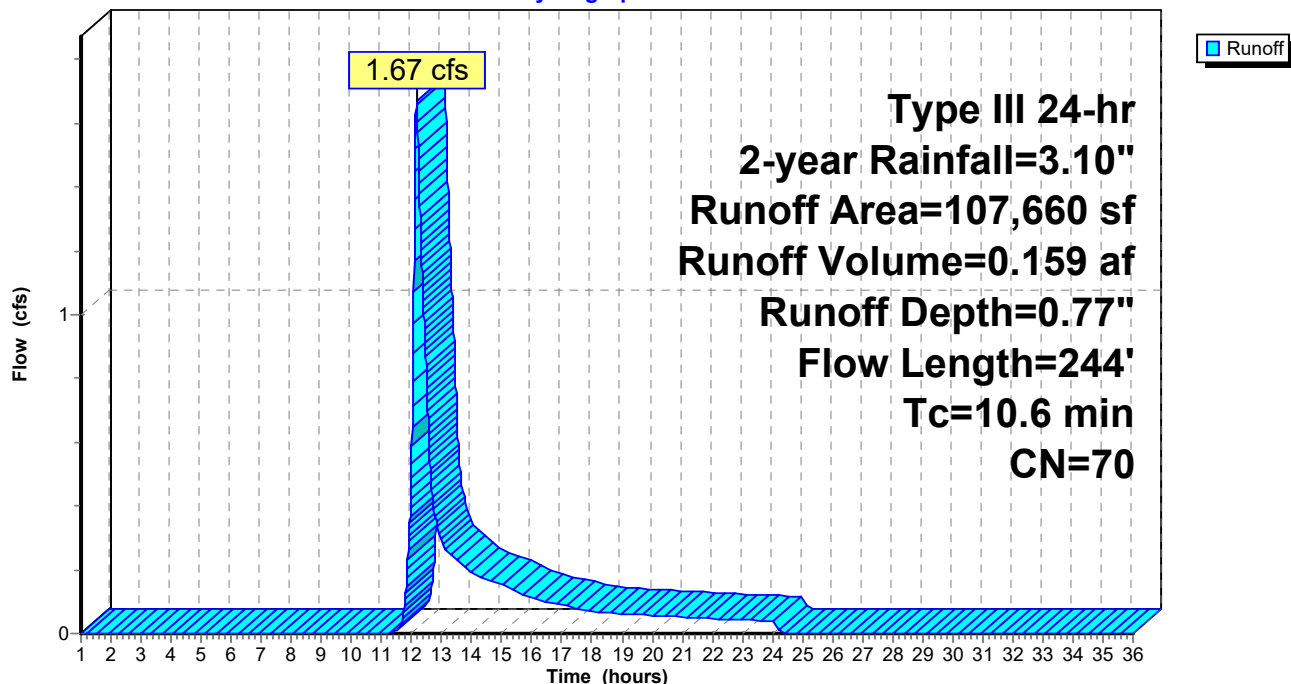
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
* 2,882	98	Concrete Pads / Patio / Stairs
23,059	66	Woods, Poor, HSG B
* 5,983	70	Cr. Stone
50,476	74	>75% Grass cover, Good, HSG C
25,260	61	>75% Grass cover, Good, HSG B
107,660	70	Weighted Average
104,778		97.32% Pervious Area
2,882		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	3.43		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2.0

Hydrograph



Summary for Subcatchment 2S.1: Subcat 2.1

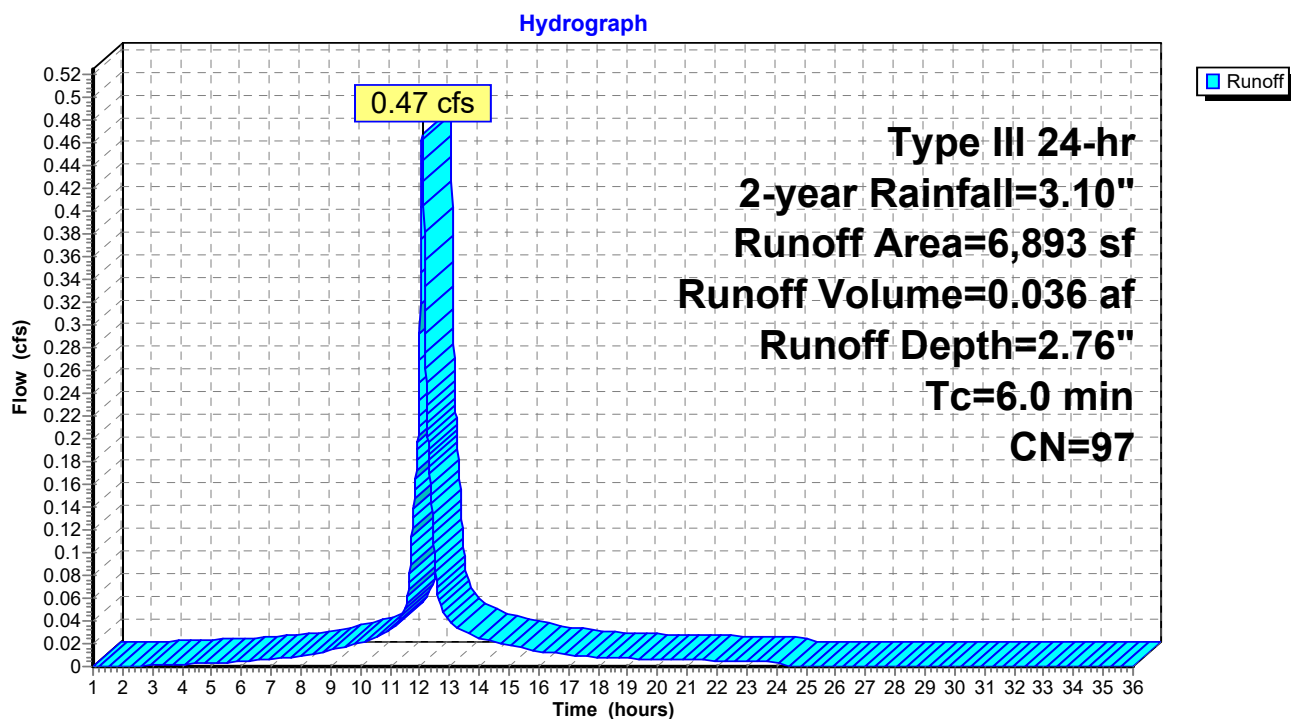
Runoff = 0.47 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	6,637	98	Pavement
	256	74	>75% Grass cover, Good, HSG C
	6,893	97	Weighted Average
	256		3.71% Pervious Area
	6,637		96.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.1: Subcat 2.1



Summary for Subcatchment 2S.2: Subcat 2.2

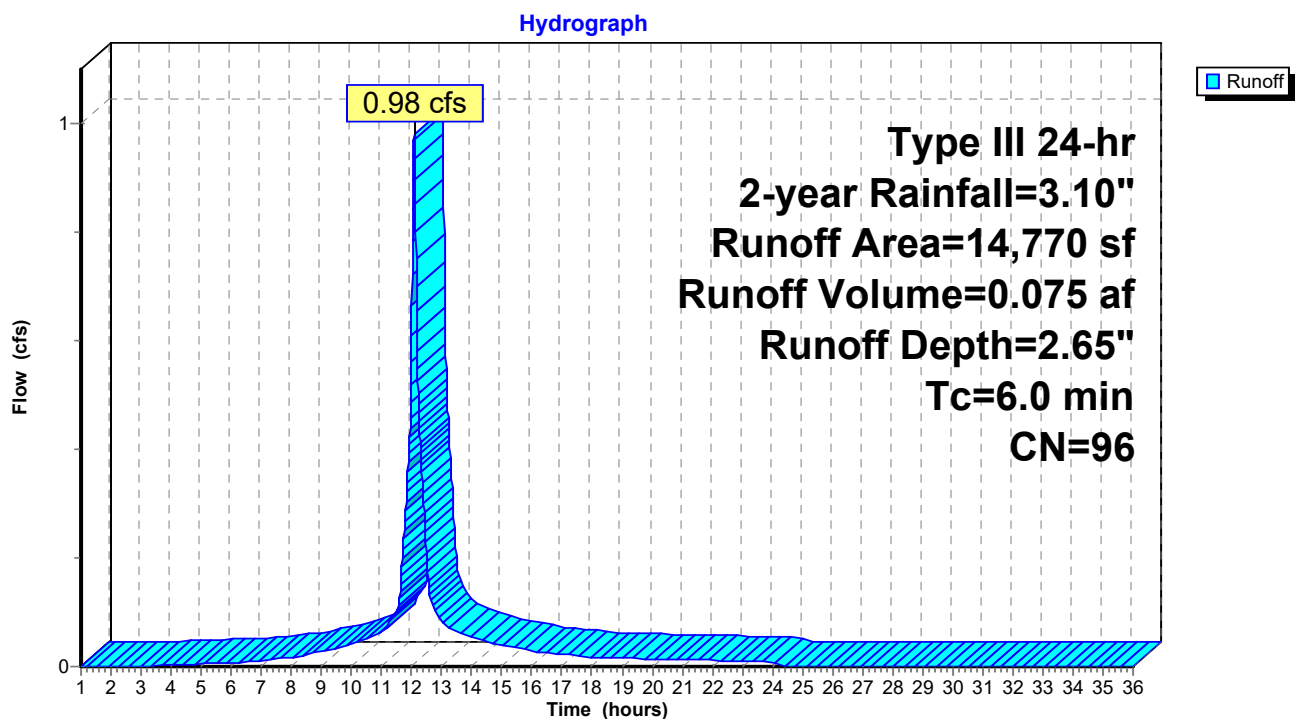
Runoff = 0.98 cfs @ 12.08 hrs, Volume= 0.075 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	13,274	98	Pavement/Roofs
	1,496	74	>75% Grass cover, Good, HSG C
	14,770	96	Weighted Average
	1,496		10.13% Pervious Area
	13,274		89.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.2: Subcat 2.2



Summary for Subcatchment 2S.3: Subcat 2.3

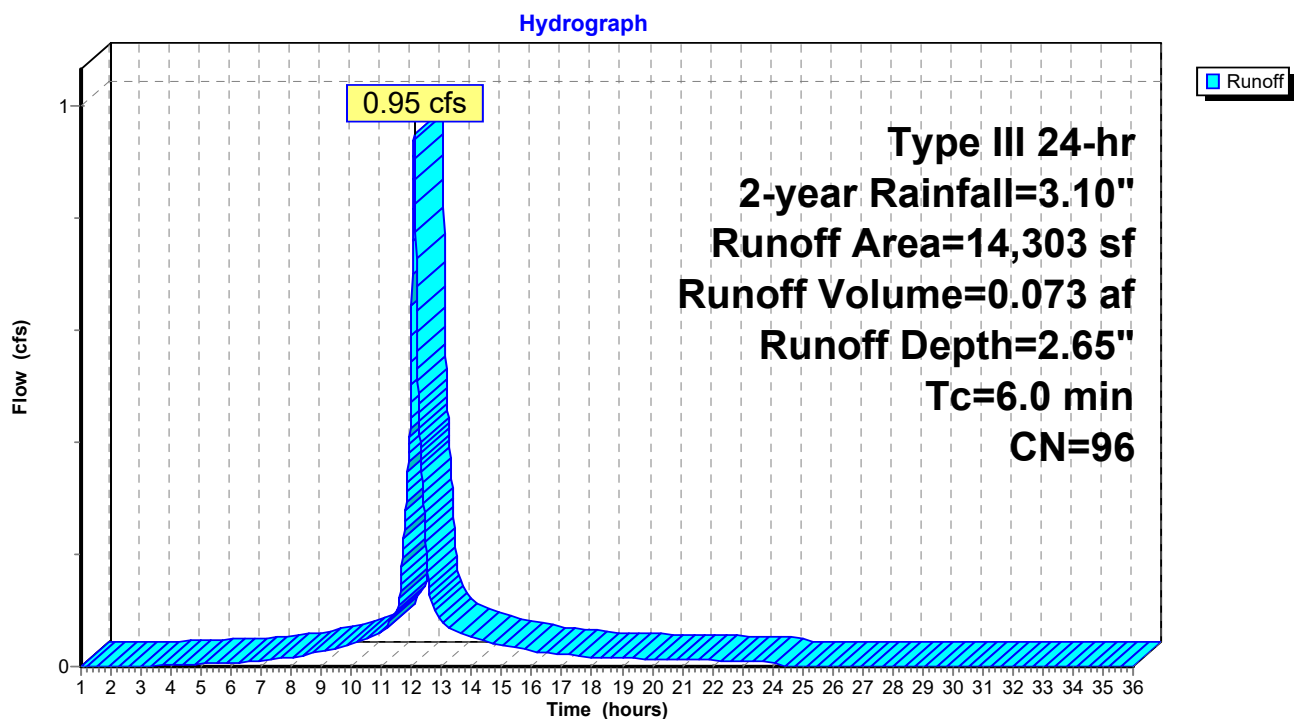
Runoff = 0.95 cfs @ 12.08 hrs, Volume= 0.073 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	13,373	98	Pavement/Roofs
	930	74	>75% Grass cover, Good, HSG C
	14,303	96	Weighted Average
	930		6.50% Pervious Area
	13,373		93.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.3: Subcat 2.3



Summary for Subcatchment 2S.4: Subcat 2.4

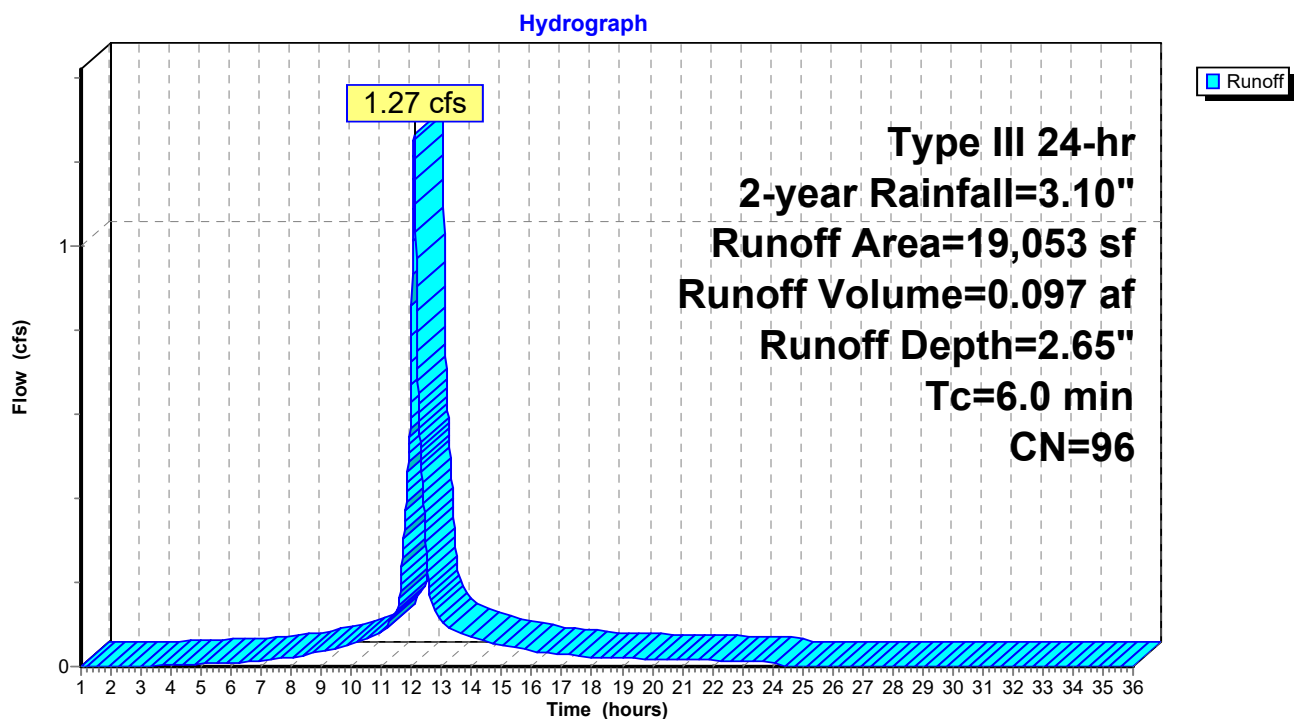
Runoff = 1.27 cfs @ 12.08 hrs, Volume= 0.097 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	17,609	98	Pavement/Roofs
	1,444	74	>75% Grass cover, Good, HSG C
	19,053	96	Weighted Average
	1,444		7.58% Pervious Area
	17,609		92.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.4: Subcat 2.4

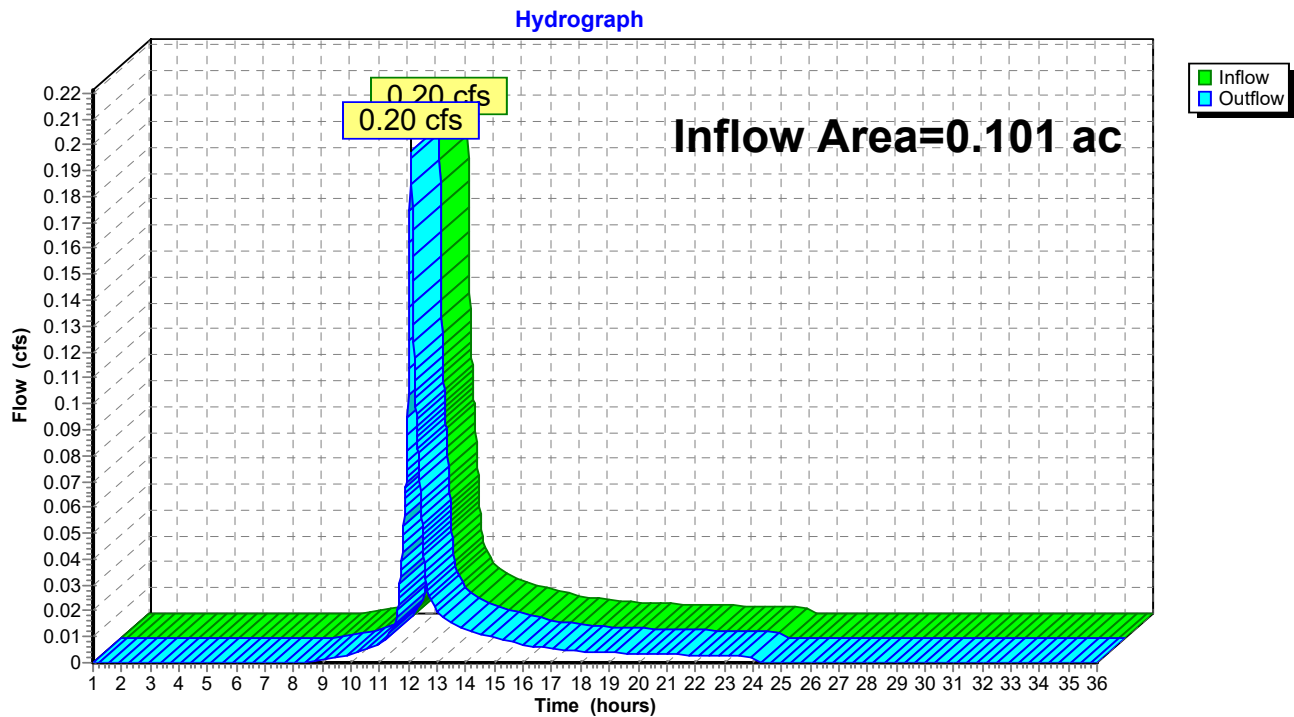


Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.101 ac, 53.04% Impervious, Inflow Depth = 1.67" for 2-year event
 Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af
 Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 1R: POI #1 - Sherwood St.

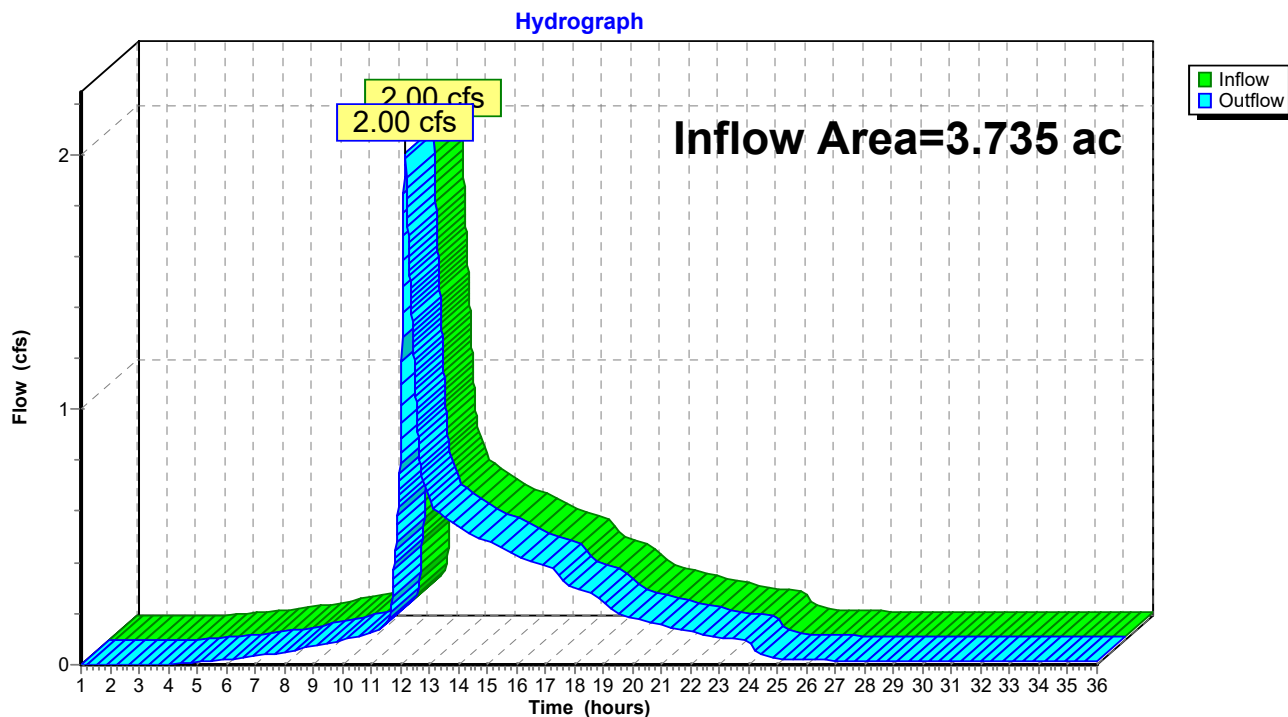


Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.735 ac, 33.06% Impervious, Inflow Depth > 1.40" for 2-year event
 Inflow = 2.00 cfs @ 12.17 hrs, Volume= 0.436 af
 Outflow = 2.00 cfs @ 12.17 hrs, Volume= 0.436 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 2R: POI #2 - Wetland



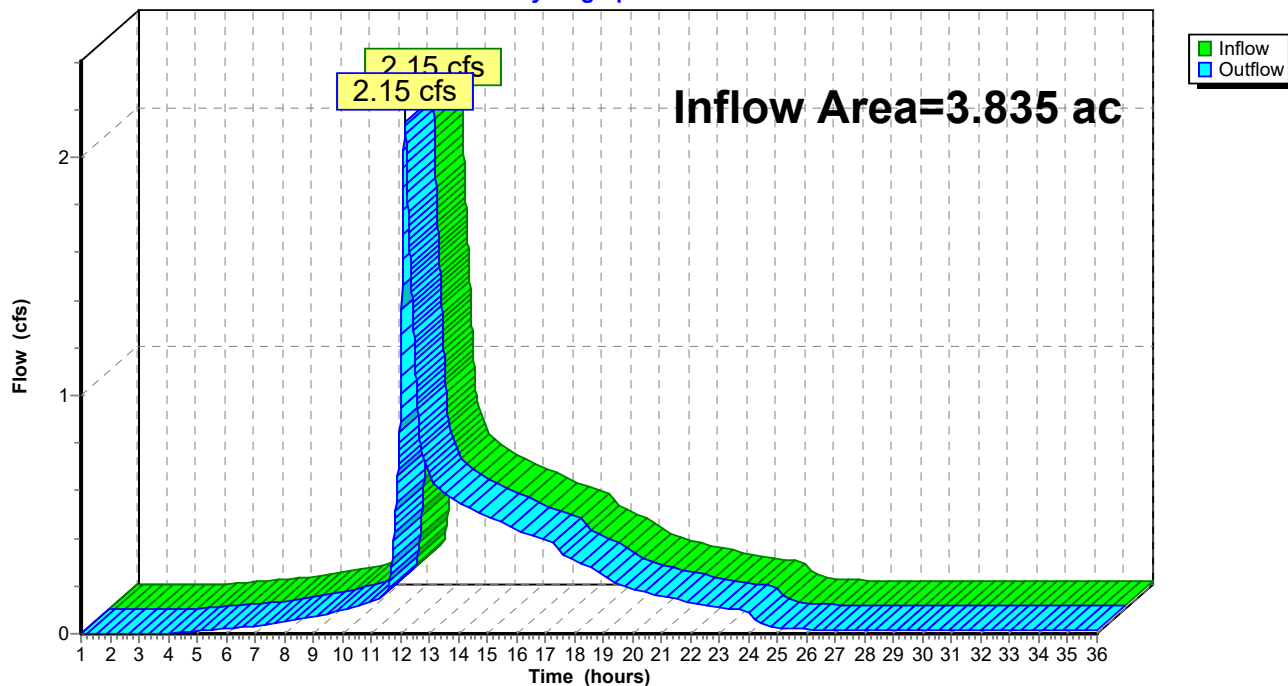
Summary for Reach 3R: TOTAL

Inflow Area = 3.835 ac, 33.58% Impervious, Inflow Depth > 1.41" for 2-year event
 Inflow = 2.15 cfs @ 12.16 hrs, Volume= 0.450 af
 Outflow = 2.15 cfs @ 12.16 hrs, Volume= 0.450 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 3R: TOTAL

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P1: StormTech 3500

Inflow Area = 0.158 ac, 96.29% Impervious, Inflow Depth = 2.76" for 2-year event
 Inflow = 0.47 cfs @ 12.08 hrs, Volume= 0.036 af
 Outflow = 0.02 cfs @ 15.54 hrs, Volume= 0.034 af, Atten= 97%, Lag= 207.2 min
 Primary = 0.02 cfs @ 15.54 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 18.69' @ 15.54 hrs Surf.Area= 1,247 sf Storage= 956 cf

Plug-Flow detention time= 565.9 min calculated for 0.034 af (93% of inflow)
 Center-of-Mass det. time= 527.0 min (1,293.9 - 766.8)

Volume	Invert	Avail.Storage	Storage Description
#1	16.10'	448 cf	21.76'W x 19.10'L x 4.50'H Stone 1,870 cf Overall - 749 cf Embedded = 1,121 cf x 40.0% Voids
#2	16.60'	749 cf	ADS_StormTech MC-3500 d +Cap x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 6 Chambers in 3 Rows Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
#3	14.60'	31 cf	21.76'W x 19.10'L x 1.50'H Sand 623 cf Overall x 5.0% Voids
#4	13.60'	163 cf	21.76'W x 19.10'L x 1.00'H Crushed Stone 416 cf Overall - 7 cf Embedded = 408 cf x 40.0% Voids
#5	13.85'	7 cf	4.0" Round Underdrain Storage Inside #4 L= 85.1'
		1,399 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	18.80'	12.0" Round Bypass Overflow L= 20.0' Ke= 0.900 Inlet / Outlet Invert= 18.80' / 14.00' S= 0.2400 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Primary	13.60'	1.0" Round Underdrain & Orifice L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.60' / 10.00' S= 0.0288 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf

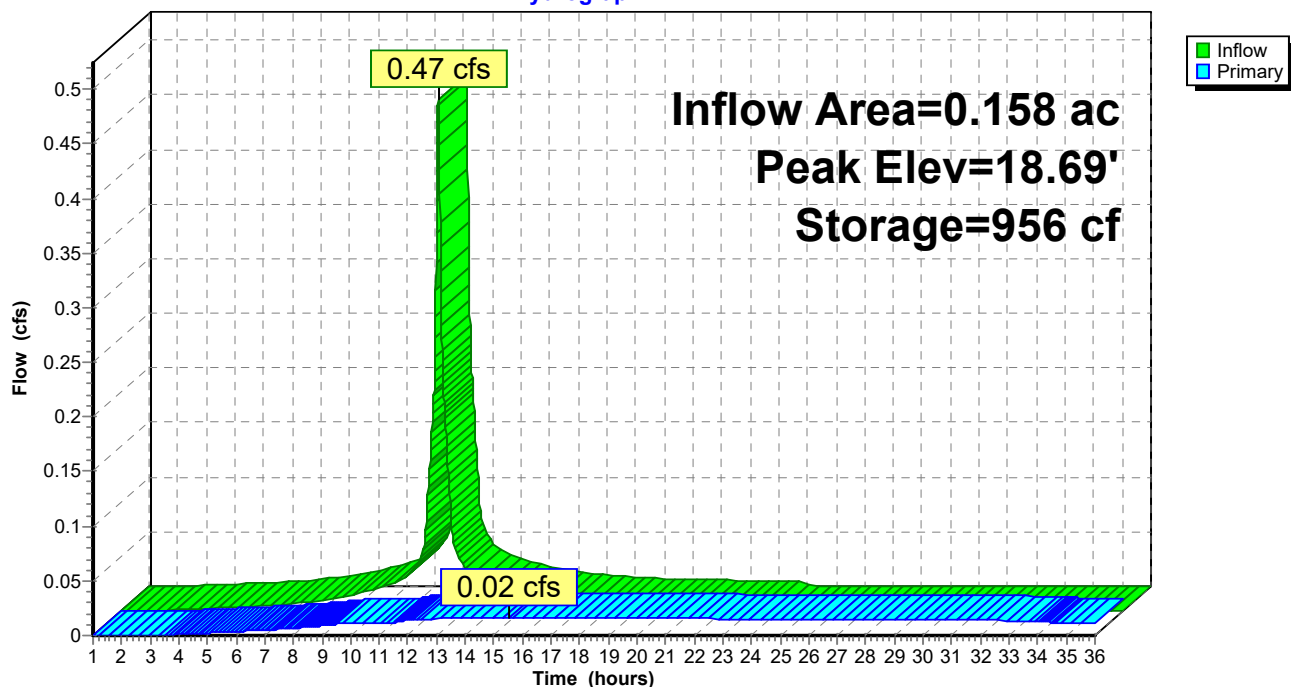
Primary OutFlow Max=0.02 cfs @ 15.54 hrs HW=18.69' TW=10.06' (Dynamic Tailwater)

1=Bypass Overflow (Controls 0.00 cfs)

2=Underdrain & Orifice (Barrel Controls 0.02 cfs @ 2.91 fps)

Pond P1: StormTech 3500

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P2: StormTech 3500

Inflow Area = 0.339 ac, 89.87% Impervious, Inflow Depth = 2.65" for 2-year event
 Inflow = 0.98 cfs @ 12.08 hrs, Volume= 0.075 af
 Outflow = 0.09 cfs @ 12.89 hrs, Volume= 0.075 af, Atten= 90%, Lag= 48.3 min
 Primary = 0.09 cfs @ 12.89 hrs, Volume= 0.075 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 17.33' @ 12.89 hrs Surf.Area= 2,317 sf Storage= 1,477 cf

Plug-Flow detention time= 161.8 min calculated for 0.075 af (100% of inflow)
 Center-of-Mass det. time= 161.4 min (936.4 - 775.0)

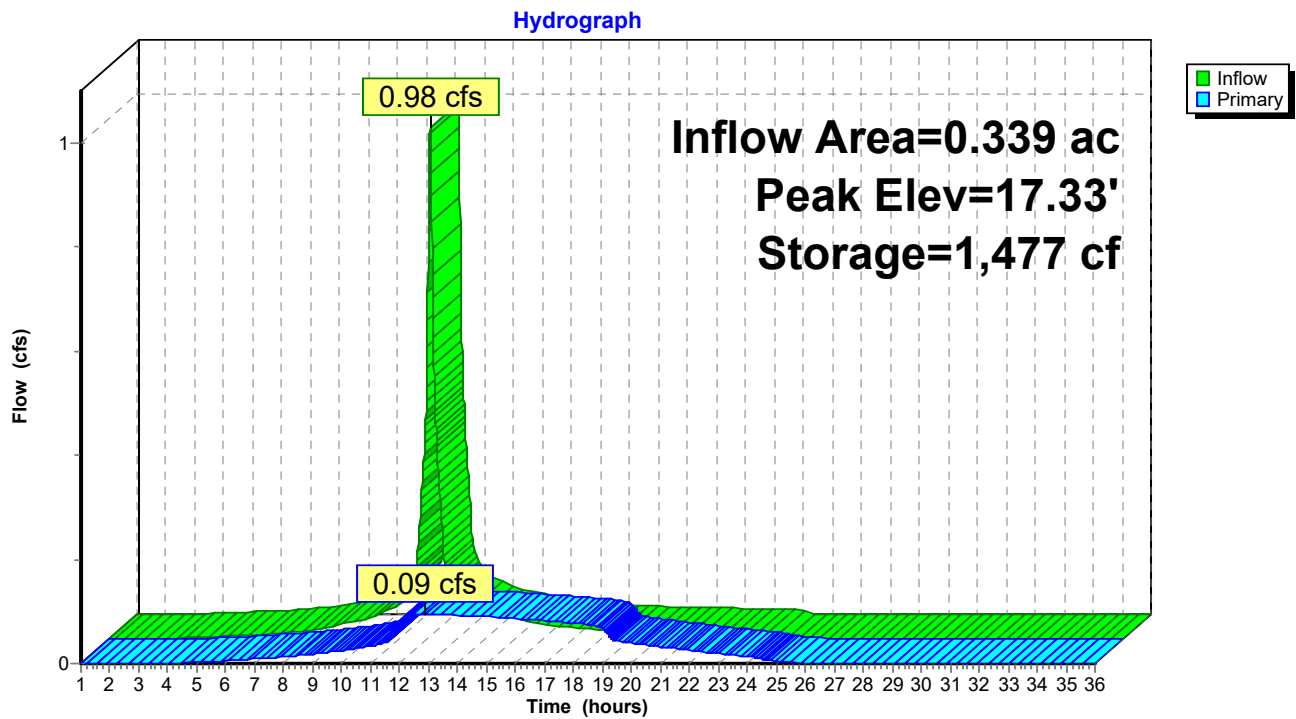
Volume	Invert	Avail.Storage	Storage Description
#1	15.30'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	15.80'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	13.80'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	12.80'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	13.05'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	12.80'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.80' / 12.70' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	18.00'	12.0" Round Bypass Overflow L= 4.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.00' / 17.25' S= 0.1875 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.89 hrs HW=17.33' TW=10.42' (Dynamic Tailwater)

1=Underdrain & Orifice (Barrel Controls 0.09 cfs @ 7.72 fps)
 2=Bypass Overflow (Controls 0.00 cfs)

Pond P2: StormTech 3500



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P3: StormTech 3500

Inflow Area = 0.328 ac, 93.50% Impervious, Inflow Depth = 2.65" for 2-year event
 Inflow = 0.95 cfs @ 12.08 hrs, Volume= 0.073 af
 Outflow = 0.09 cfs @ 12.86 hrs, Volume= 0.072 af, Atten= 90%, Lag= 46.5 min
 Primary = 0.09 cfs @ 12.86 hrs, Volume= 0.072 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 16.01' @ 12.86 hrs Surf.Area= 2,317 sf Storage= 1,416 cf

Plug-Flow detention time= 154.9 min calculated for 0.072 af (100% of inflow)
 Center-of-Mass det. time= 154.7 min (929.6 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	14.58'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	12.58'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	11.58'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	11.83'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

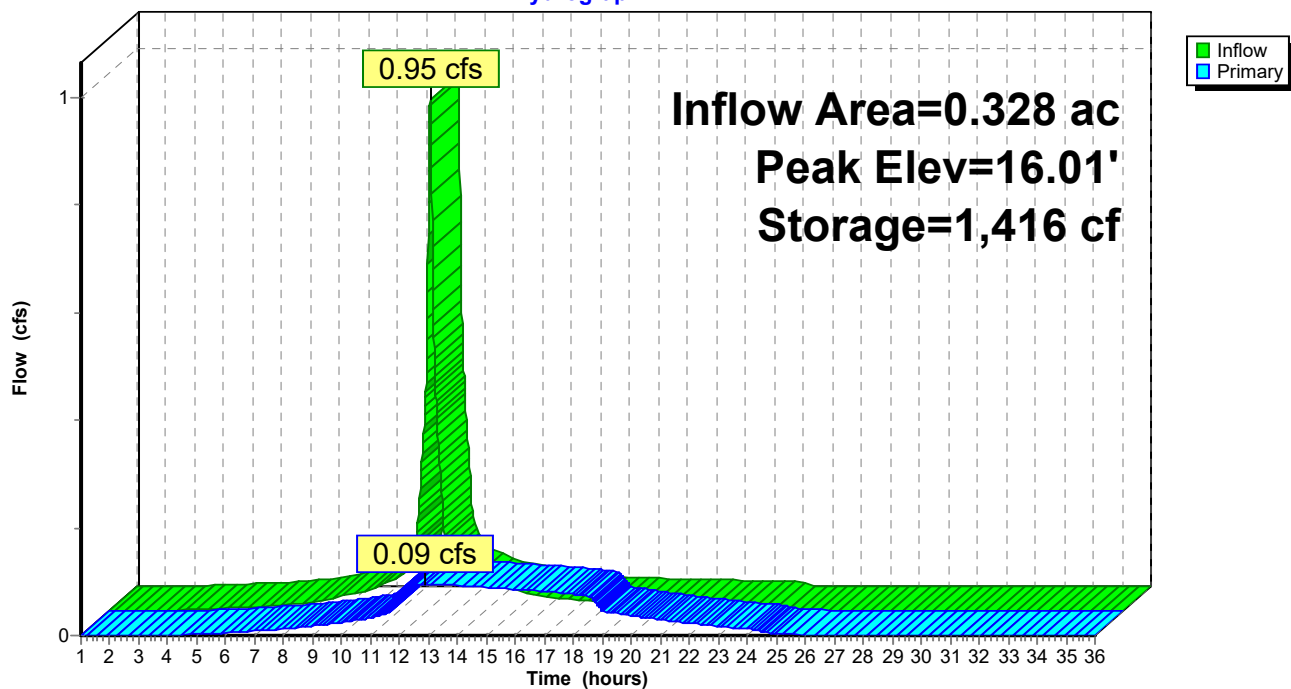
Device	Routing	Invert	Outlet Devices
#1	Primary	11.58'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 11.58' / 11.40' S= 0.0180 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	16.80'	12.0" Round Bypass Overflow L= 5.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.00' S= 0.1455 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.86 hrs HW=16.01' TW=10.42' (Dynamic Tailwater)

1=Underdrain & Orifice (Barrel Controls 0.09 cfs @ 7.70 fps)
 2=Bypass Overflow (Controls 0.00 cfs)

Pond P3: StormTech 3500

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P4: StormTech 3500

Inflow Area = 0.437 ac, 92.42% Impervious, Inflow Depth = 2.65" for 2-year event
 Inflow = 1.27 cfs @ 12.08 hrs, Volume= 0.097 af
 Outflow = 0.15 cfs @ 12.68 hrs, Volume= 0.097 af, Atten= 88%, Lag= 35.6 min
 Primary = 0.15 cfs @ 12.68 hrs, Volume= 0.097 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 15.28' @ 12.68 hrs Surf.Area= 2,845 sf Storage= 1,763 cf

Plug-Flow detention time= 119.9 min calculated for 0.097 af (100% of inflow)
 Center-of-Mass det. time= 119.4 min (894.3 - 775.0)

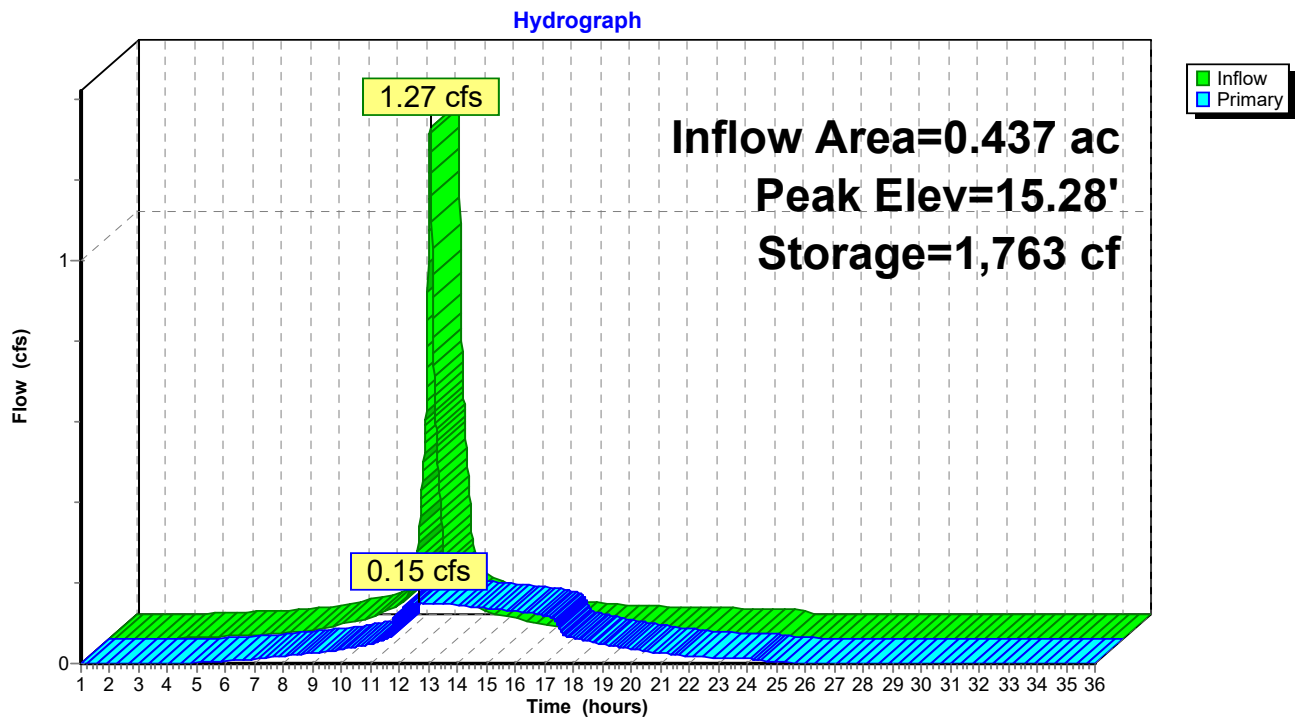
Volume	Invert	Avail.Storage	Storage Description
#1	13.33'	988 cf	36.10'W x 26.27'L x 4.50'H Stone 4,268 cf Overall - 1,798 cf Embedded = 2,469 cf x 40.0% Voids
#2	13.83'	1,798 cf	ADS_StormTech MC-3500 d +Cap x 15 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 15 Chambers in 5 Rows Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf
#3	11.83'	71 cf	36.10'W x 26.27'L x 1.50'H Sand 1,423 cf Overall x 5.0% Voids
#4	10.83'	372 cf	36.10'W x 26.27'L x 1.00'H Crushed Stone 948 cf Overall - 17 cf Embedded = 931 cf x 40.0% Voids
#5	11.08'	17 cf	4.0" Round Underdrain Storage Inside #4 L= 197.0'
		3,247 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	10.83'	2.0" Round Underdrain & Orifice L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.83' / 10.75' S= 0.0040 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#2	Primary	16.05'	12.0" Round Bypass Overflow L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.05' / 15.00' S= 0.1050 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.68 hrs HW=15.28' TW=10.42' (Dynamic Tailwater)

1=Underdrain & Orifice (Barrel Controls 0.15 cfs @ 6.87 fps)
 2=Bypass Overflow (Controls 0.00 cfs)

Pond P4: StormTech 3500



Summary for Pond P5: OCS

Inflow Area = 1.263 ac, 92.50% Impervious, Inflow Depth > 2.64" for 2-year event
 Inflow = 0.35 cfs @ 12.79 hrs, Volume= 0.278 af
 Outflow = 0.35 cfs @ 12.79 hrs, Volume= 0.278 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.35 cfs @ 12.79 hrs, Volume= 0.278 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 10.42' @ 12.79 hrs

Flood Elev= 21.00'

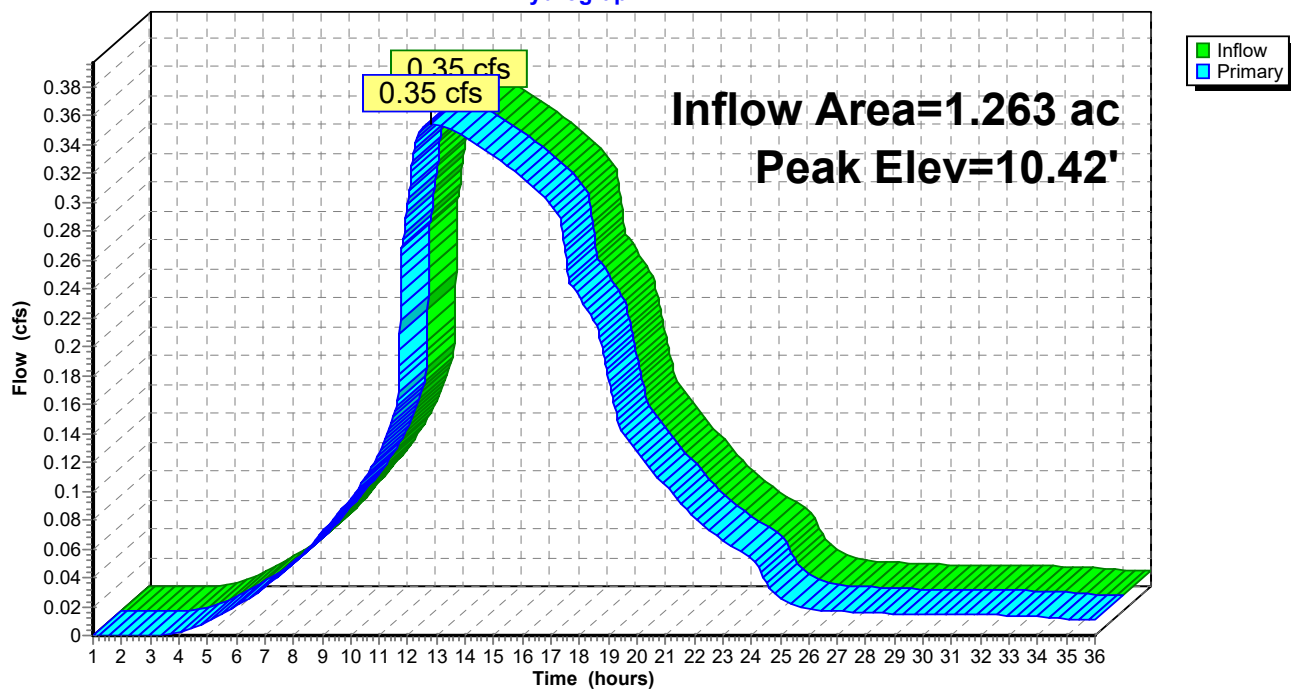
Device	Routing	Invert	Outlet Devices
#1	Primary	7.95'	18.0" Round 18" Outlet L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.95' / 7.80' S= 0.0044 '/ Cc= 0.900 n= 0.010, Flow Area= 1.77 sf
#2	Device 1	8.05'	3.0" Vert. Quality Orifice C= 0.600
#3	Device 1	12.50'	6.0" Vert. Quantity Orifice C= 0.600
#4	Device 1	15.40'	6.0' long x 0.7' 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 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.35 cfs @ 12.79 hrs HW=10.42' TW=0.00' (Dynamic Tailwater)

- 1=18" Outlet (Passes 0.35 cfs of 8.81 cfs potential flow)
- 2=Quality Orifice (Orifice Controls 0.35 cfs @ 7.22 fps)
- 3=Quantity Orifice (Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P5: OCS

Hydrograph



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Type III 24-hr 10-year Rainfall=4.60"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 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

Subcatchment1S: Subcat 1	Runoff Area=4,385 sf 53.04% Impervious Runoff Depth=3.00" Tc=6.0 min CN=85 Runoff=0.35 cfs 0.025 af
Subcatchment2S: Subcat 2.0	Runoff Area=107,660 sf 2.68% Impervious Runoff Depth=1.74" Flow Length=244' Tc=10.6 min CN=70 Runoff=4.20 cfs 0.359 af
Subcatchment2S.1: Subcat 2.1	Runoff Area=6,893 sf 96.29% Impervious Runoff Depth=4.25" Tc=6.0 min CN=97 Runoff=0.71 cfs 0.056 af
Subcatchment2S.2: Subcat 2.2	Runoff Area=14,770 sf 89.87% Impervious Runoff Depth=4.14" Tc=6.0 min CN=96 Runoff=1.50 cfs 0.117 af
Subcatchment2S.3: Subcat 2.3	Runoff Area=14,303 sf 93.50% Impervious Runoff Depth=4.14" Tc=6.0 min CN=96 Runoff=1.45 cfs 0.113 af
Subcatchment2S.4: Subcat 2.4	Runoff Area=19,053 sf 92.42% Impervious Runoff Depth=4.14" Tc=6.0 min CN=96 Runoff=1.93 cfs 0.151 af
Reach 1R: POI #1 - Sherwood St.	Inflow=0.35 cfs 0.025 af Outflow=0.35 cfs 0.025 af
Reach 2R: POI #2 - Wetland	Inflow=4.57 cfs 0.791 af Outflow=4.57 cfs 0.791 af
Reach 3R: TOTAL	Inflow=4.84 cfs 0.816 af Outflow=4.84 cfs 0.816 af
Pond P1: StormTech 3500	Peak Elev=19.09' Storage=1,072 cf Inflow=0.71 cfs 0.056 af Outflow=0.29 cfs 0.051 af
Pond P2: StormTech 3500	Peak Elev=18.35' Storage=2,045 cf Inflow=1.50 cfs 0.117 af Outflow=0.49 cfs 0.117 af
Pond P3: StormTech 3500	Peak Elev=17.13' Storage=2,042 cf Inflow=1.45 cfs 0.113 af Outflow=0.42 cfs 0.113 af
Pond P4: StormTech 3500	Peak Elev=16.44' Storage=2,562 cf Inflow=1.93 cfs 0.151 af Outflow=0.58 cfs 0.151 af
Pond P5: OCS	Peak Elev=14.20' Inflow=1.72 cfs 0.432 af Outflow=1.72 cfs 0.432 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.821 af Average Runoff Depth = 2.57"
66.42% Pervious = 2.547 ac 33.58% Impervious = 1.288 ac

Summary for Subcatchment 1S: Subcat 1

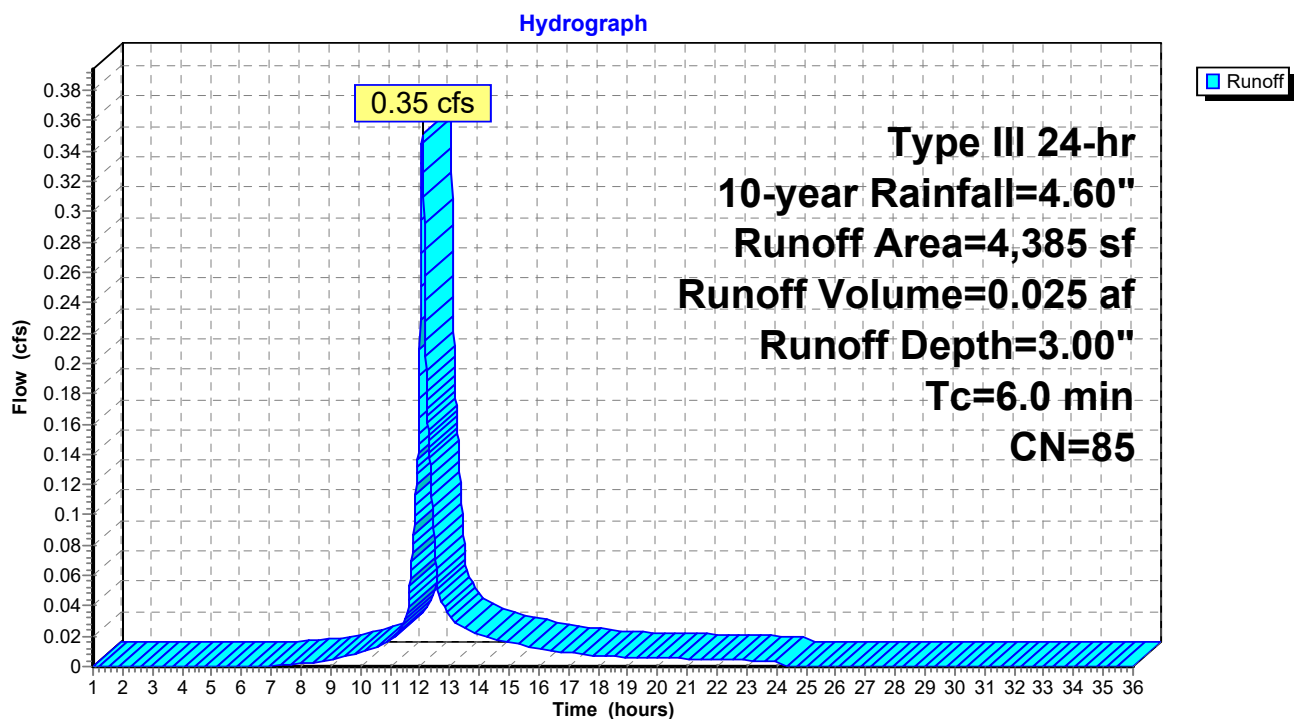
Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,059	70	Cr. Stone/Misc. Vegetation
*	2,326	98	Road/Sidewalk
	4,385	85	Weighted Average
	2,059		46.96% Pervious Area
	2,326		53.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep banks to pipe flow

Subcatchment 1S: Subcat 1



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Type III 24-hr 10-year Rainfall=4.60"

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Summary for Subcatchment 2S: Subcat 2.0

Runoff = 4.20 cfs @ 12.15 hrs, Volume= 0.359 af, Depth= 1.74"

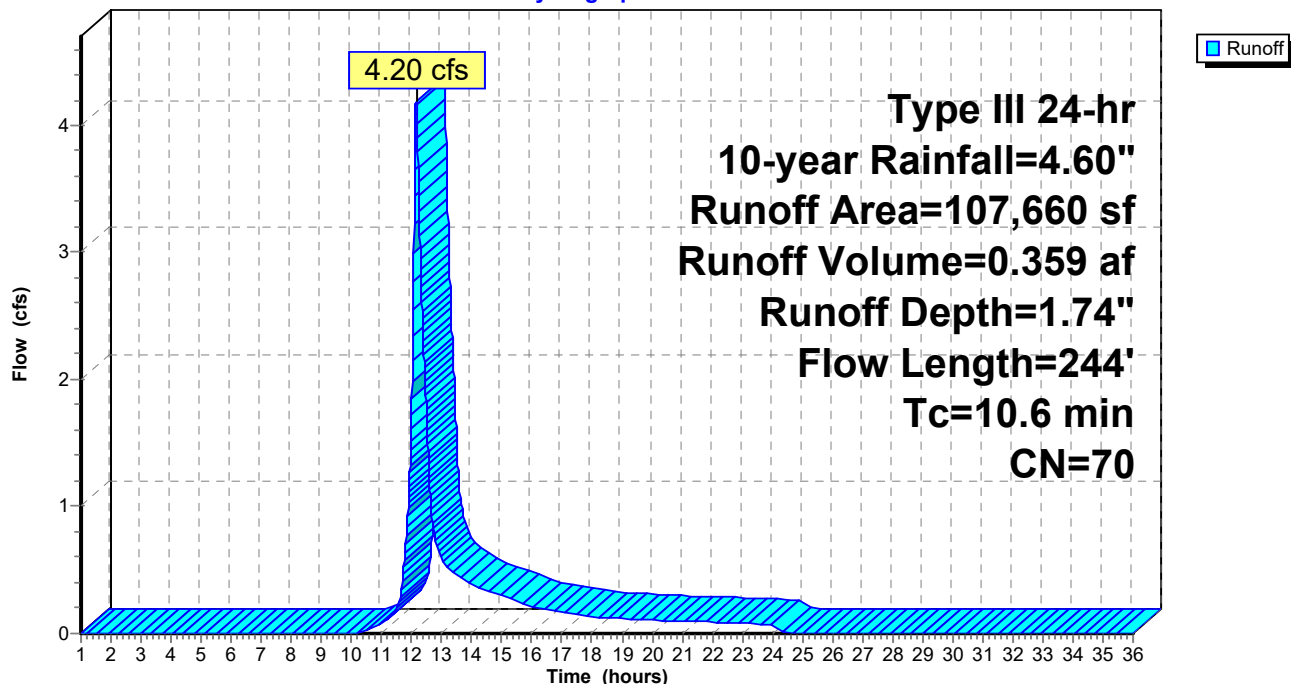
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 2,882	98	Concrete Pads / Patio / Stairs
23,059	66	Woods, Poor, HSG B
* 5,983	70	Cr. Stone
50,476	74	>75% Grass cover, Good, HSG C
25,260	61	>75% Grass cover, Good, HSG B
107,660	70	Weighted Average
104,778		97.32% Pervious Area
2,882		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	3.43		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2.0

Hydrograph



Summary for Subcatchment 2S.1: Subcat 2.1

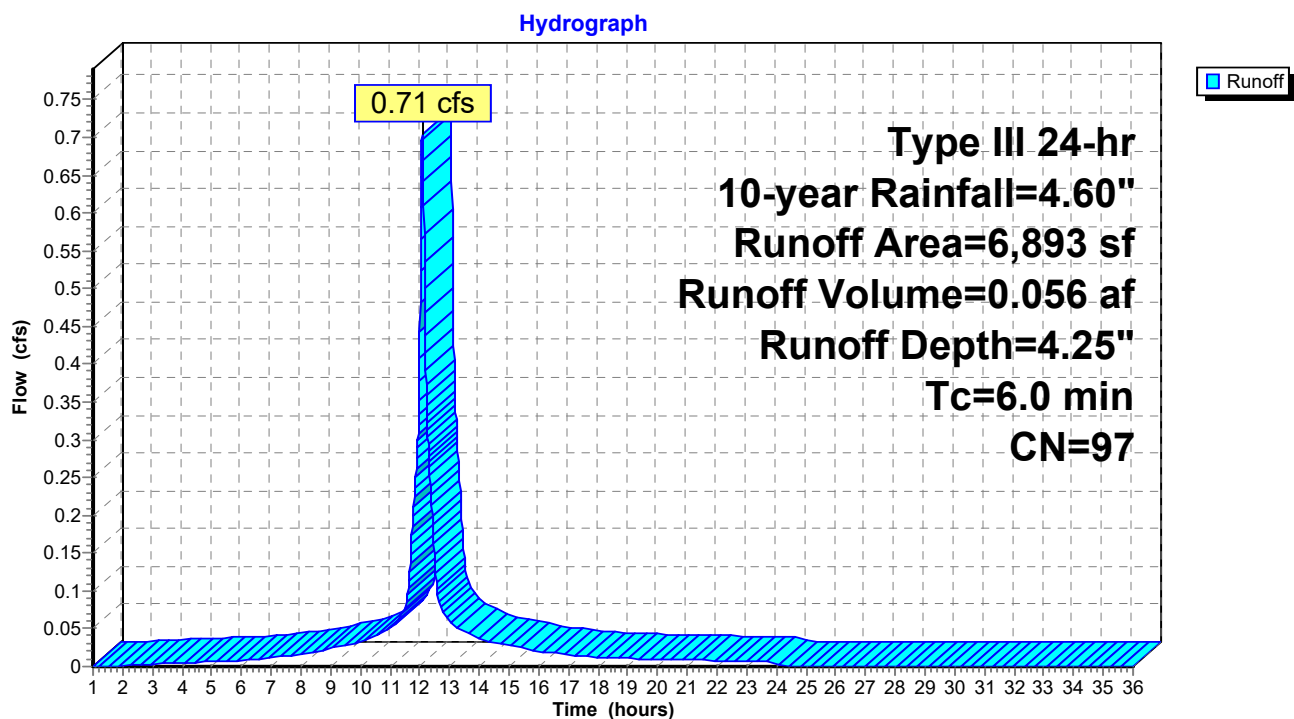
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.056 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	6,637	98	Pavement
	256	74	>75% Grass cover, Good, HSG C
	6,893	97	Weighted Average
	256		3.71% Pervious Area
	6,637		96.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.1: Subcat 2.1



Summary for Subcatchment 2S.2: Subcat 2.2

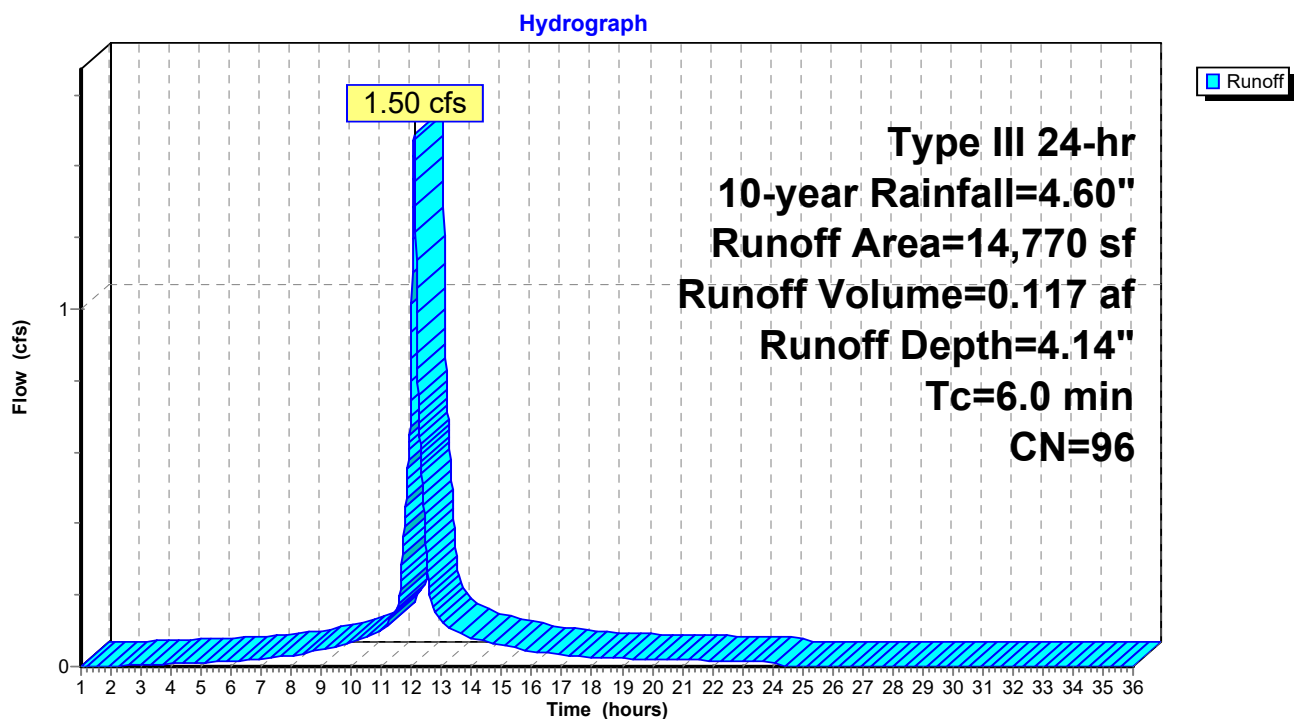
Runoff = 1.50 cfs @ 12.08 hrs, Volume= 0.117 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	13,274	98	Pavement/Roofs
	1,496	74	>75% Grass cover, Good, HSG C
	14,770	96	Weighted Average
	1,496		10.13% Pervious Area
	13,274		89.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.2: Subcat 2.2



Summary for Subcatchment 2S.3: Subcat 2.3

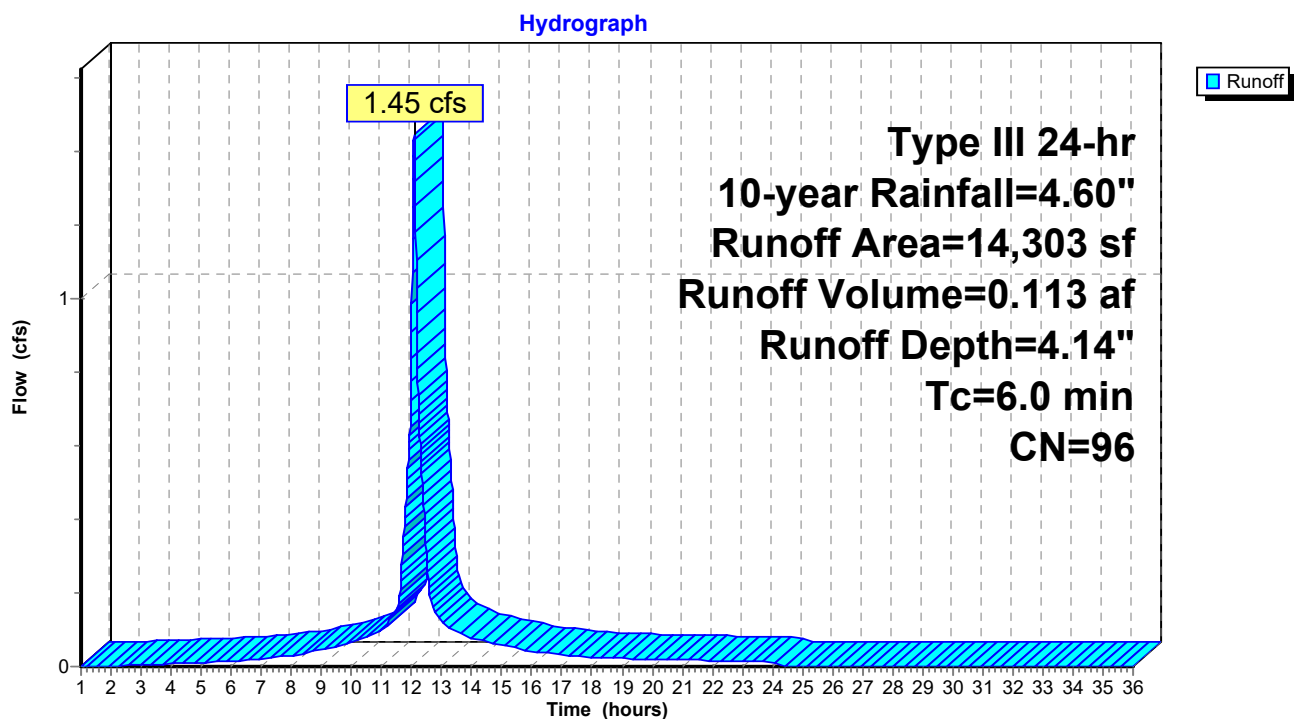
Runoff = 1.45 cfs @ 12.08 hrs, Volume= 0.113 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	13,373	98	Pavement/Roofs
	930	74	>75% Grass cover, Good, HSG C
	14,303	96	Weighted Average
	930		6.50% Pervious Area
	13,373		93.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.3: Subcat 2.3



Summary for Subcatchment 2S.4: Subcat 2.4

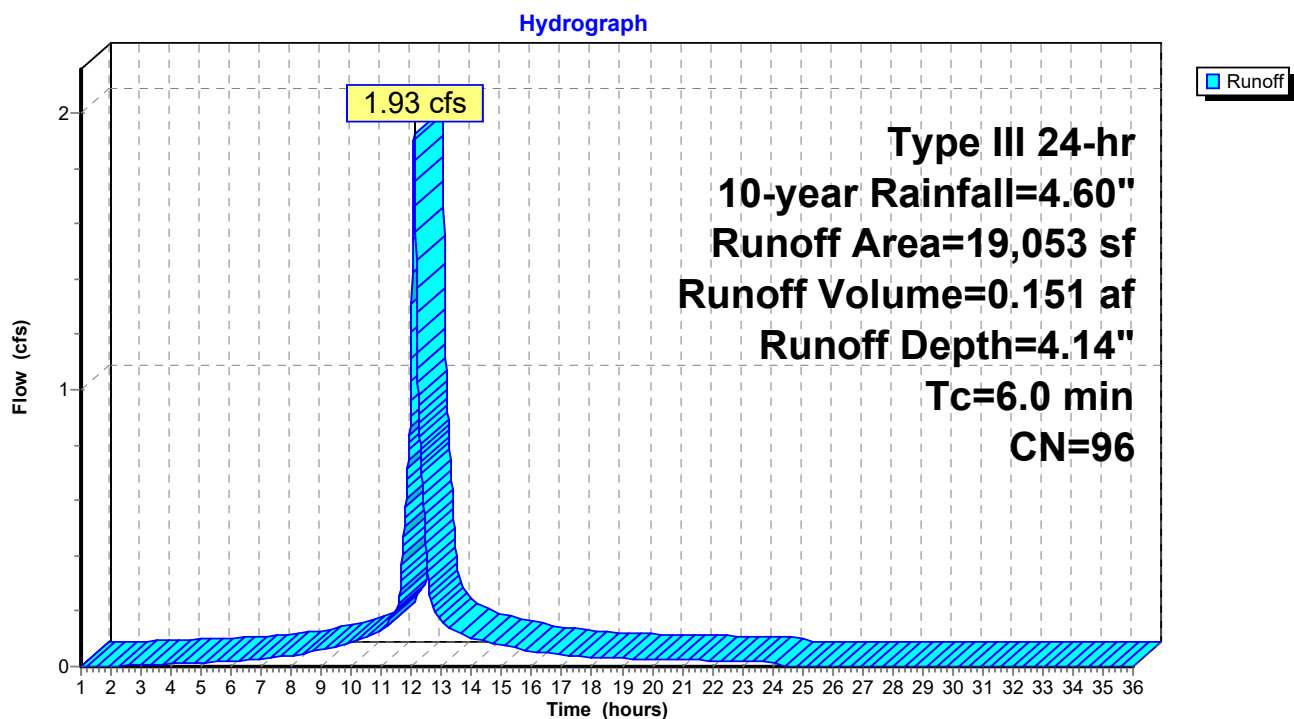
Runoff = 1.93 cfs @ 12.08 hrs, Volume= 0.151 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	17,609	98	Pavement/Roofs
	1,444	74	>75% Grass cover, Good, HSG C
	19,053	96	Weighted Average
	1,444		7.58% Pervious Area
	17,609		92.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.4: Subcat 2.4

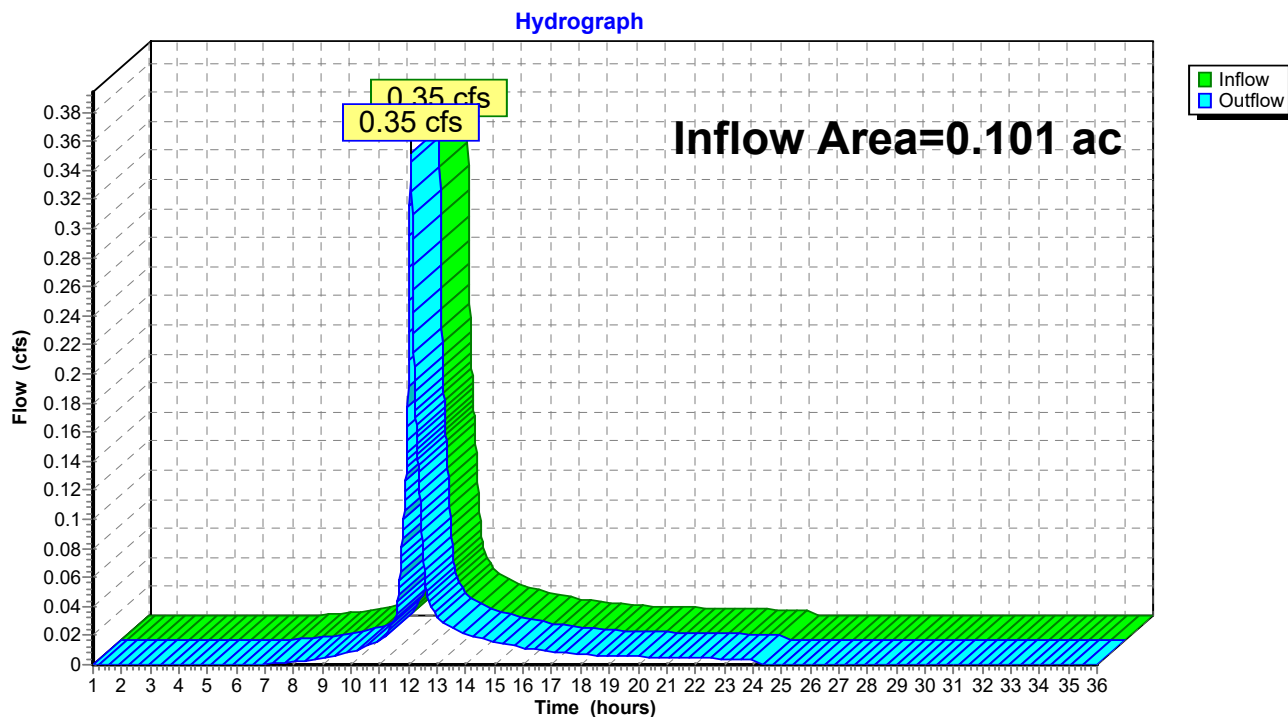


Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.101 ac, 53.04% Impervious, Inflow Depth = 3.00" for 10-year event
 Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af
 Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 1R: POI #1 - Sherwood St.

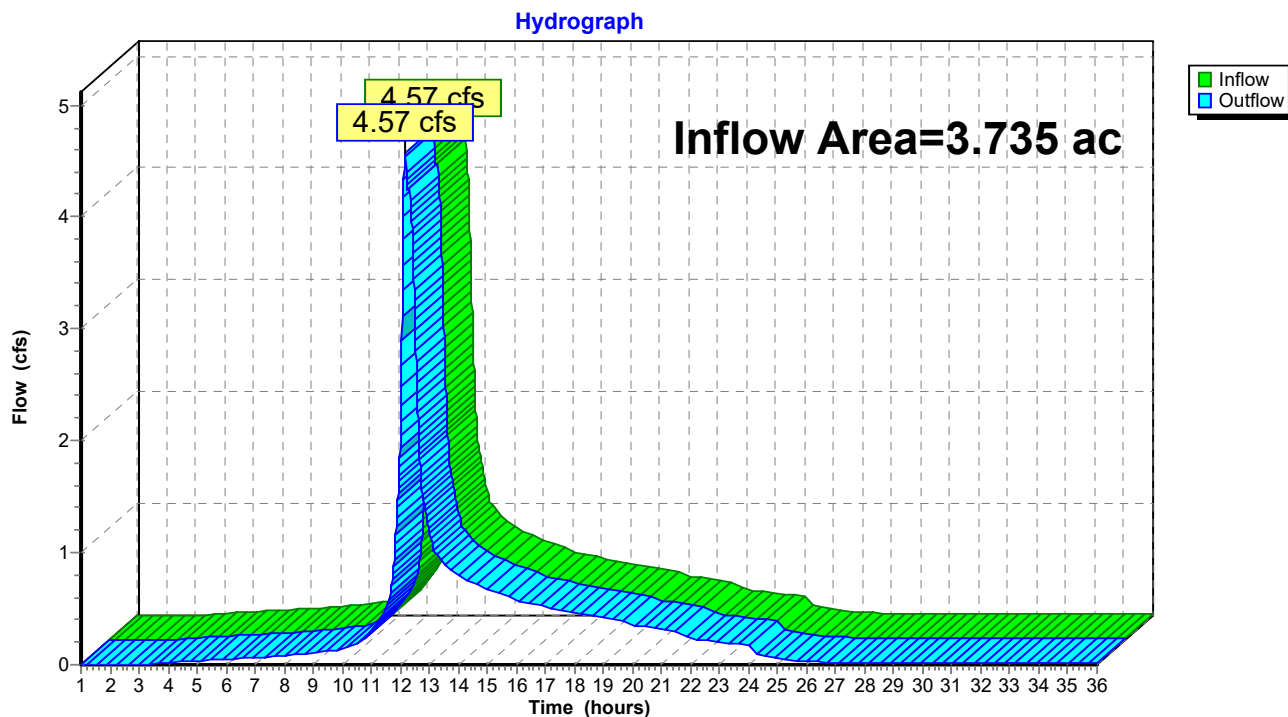


Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.735 ac, 33.06% Impervious, Inflow Depth > 2.54" for 10-year event
 Inflow = 4.57 cfs @ 12.16 hrs, Volume= 0.791 af
 Outflow = 4.57 cfs @ 12.16 hrs, Volume= 0.791 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 2R: POI #2 - Wetland



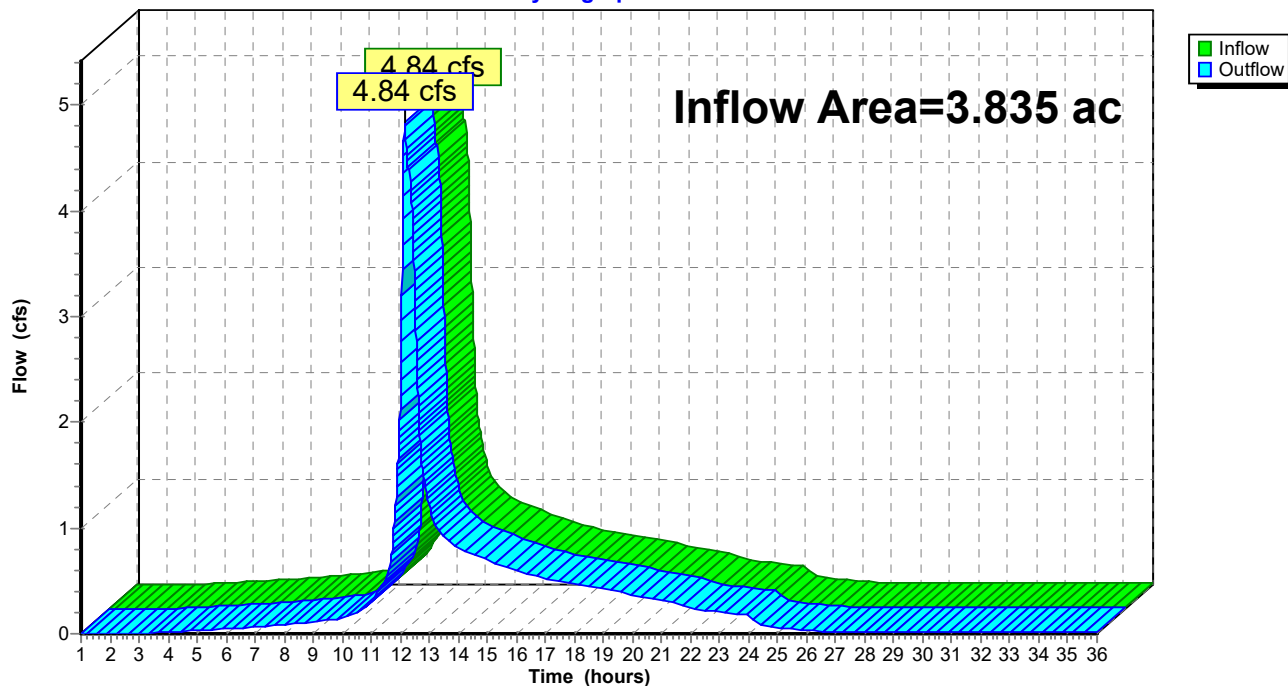
Summary for Reach 3R: TOTAL

Inflow Area = 3.835 ac, 33.58% Impervious, Inflow Depth > 2.55" for 10-year event
 Inflow = 4.84 cfs @ 12.15 hrs, Volume= 0.816 af
 Outflow = 4.84 cfs @ 12.15 hrs, Volume= 0.816 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 3R: TOTAL

Hydrograph



Summary for Pond P1: StormTech 3500

Inflow Area = 0.158 ac, 96.29% Impervious, Inflow Depth = 4.25" for 10-year event
 Inflow = 0.71 cfs @ 12.08 hrs, Volume= 0.056 af
 Outflow = 0.29 cfs @ 12.28 hrs, Volume= 0.051 af, Atten= 58%, Lag= 11.8 min
 Primary = 0.29 cfs @ 12.28 hrs, Volume= 0.051 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 19.09' @ 12.28 hrs Surf.Area= 1,247 sf Storage= 1,072 cf

Plug-Flow detention time= 411.8 min calculated for 0.051 af (91% of inflow)
 Center-of-Mass det. time= 367.2 min (1,124.7 - 757.5)

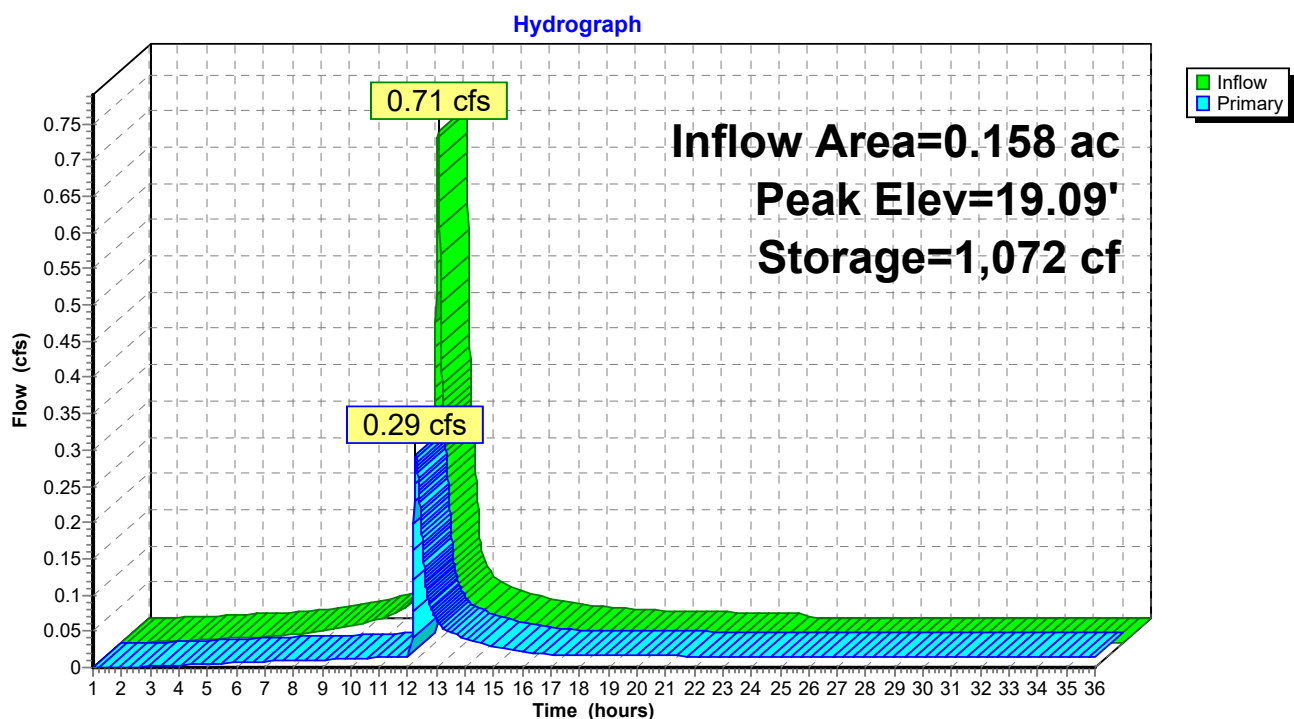
Volume	Invert	Avail.Storage	Storage Description
#1	16.10'	448 cf	21.76'W x 19.10'L x 4.50'H Stone 1,870 cf Overall - 749 cf Embedded = 1,121 cf x 40.0% Voids
#2	16.60'	749 cf	ADS_StormTech MC-3500 d +Cap x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 6 Chambers in 3 Rows Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
#3	14.60'	31 cf	21.76'W x 19.10'L x 1.50'H Sand 623 cf Overall x 5.0% Voids
#4	13.60'	163 cf	21.76'W x 19.10'L x 1.00'H Crushed Stone 416 cf Overall - 7 cf Embedded = 408 cf x 40.0% Voids
#5	13.85'	7 cf	4.0" Round Underdrain Storage Inside #4 L= 85.1'
		1,399 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	18.80'	12.0" Round Bypass Overflow L= 20.0' Ke= 0.900 Inlet / Outlet Invert= 18.80' / 14.00' S= 0.2400 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Primary	13.60'	1.0" Round Underdrain & Orifice L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.60' / 10.00' S= 0.0288 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf

Primary OutFlow Max=0.29 cfs @ 12.28 hrs HW=19.09' TW=13.28' (Dynamic Tailwater)

1=Bypass Overflow (Inlet Controls 0.28 cfs @ 1.46 fps)
 2=Underdrain & Orifice (Outlet Controls 0.01 cfs @ 2.39 fps)

Pond P1: StormTech 3500



Summary for Pond P2: StormTech 3500

Inflow Area = 0.339 ac, 89.87% Impervious, Inflow Depth = 4.14" for 10-year event
 Inflow = 1.50 cfs @ 12.08 hrs, Volume= 0.117 af
 Outflow = 0.49 cfs @ 12.37 hrs, Volume= 0.117 af, Atten= 67%, Lag= 17.2 min
 Primary = 0.49 cfs @ 12.37 hrs, Volume= 0.117 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 18.35' @ 12.37 hrs Surf.Area= 2,317 sf Storage= 2,045 cf

Plug-Flow detention time= 174.0 min calculated for 0.117 af (100% of inflow)
 Center-of-Mass det. time= 173.8 min (938.2 - 764.4)

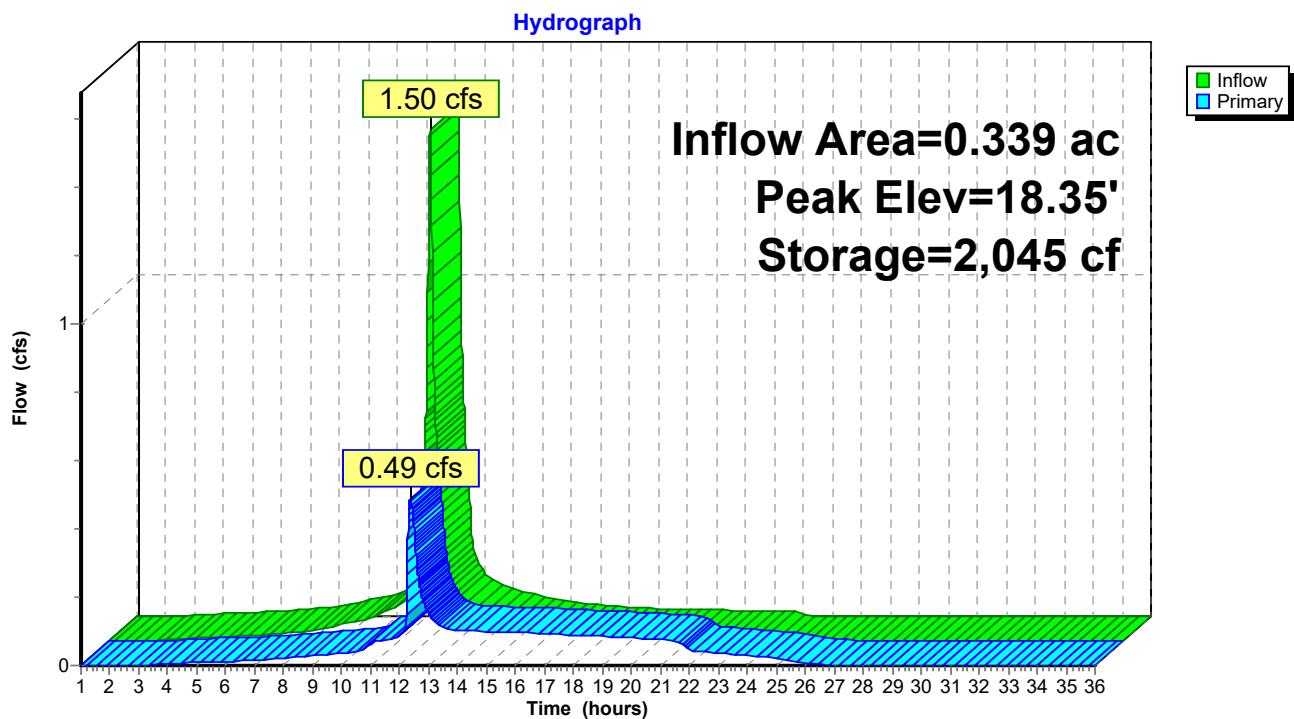
Volume	Invert	Avail.Storage	Storage Description
#1	15.30'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	15.80'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	13.80'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	12.80'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	13.05'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	12.80'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.80' / 12.70' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	18.00'	12.0" Round Bypass Overflow L= 4.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.00' / 17.25' S= 0.1875 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.49 cfs @ 12.37 hrs HW=18.35' TW=14.18' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.09 cfs @ 7.43 fps)
 2=Bypass Overflow (Inlet Controls 0.40 cfs @ 1.60 fps)

Pond P2: StormTech 3500



Summary for Pond P3: StormTech 3500

Inflow Area = 0.328 ac, 93.50% Impervious, Inflow Depth = 4.14" for 10-year event
 Inflow = 1.45 cfs @ 12.08 hrs, Volume= 0.113 af
 Outflow = 0.42 cfs @ 12.41 hrs, Volume= 0.113 af, Atten= 71%, Lag= 19.7 min
 Primary = 0.42 cfs @ 12.41 hrs, Volume= 0.113 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 17.13' @ 12.41 hrs Surf.Area= 2,317 sf Storage= 2,042 cf

Plug-Flow detention time= 176.2 min calculated for 0.113 af (100% of inflow)
 Center-of-Mass det. time= 176.1 min (940.5 - 764.4)

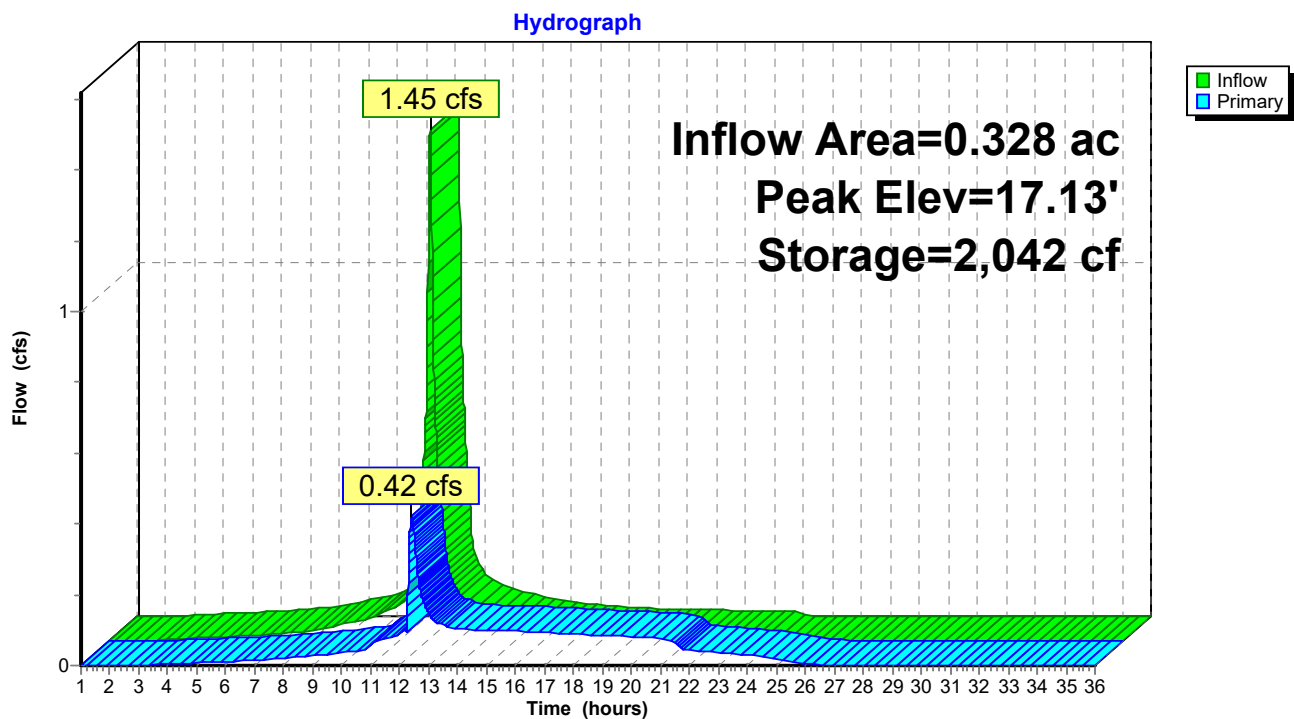
Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	14.58'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	12.58'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	11.58'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	11.83'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.58'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 11.58' / 11.40' S= 0.0180 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	16.80'	12.0" Round Bypass Overflow L= 5.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.00' S= 0.1455 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.42 cfs @ 12.41 hrs HW=17.13' TW=14.15' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.08 cfs @ 6.27 fps)
 2=Bypass Overflow (Inlet Controls 0.34 cfs @ 1.54 fps)

Pond P3: StormTech 3500



Summary for Pond P4: StormTech 3500

Inflow Area = 0.437 ac, 92.42% Impervious, Inflow Depth = 4.14" for 10-year event
 Inflow = 1.93 cfs @ 12.08 hrs, Volume= 0.151 af
 Outflow = 0.58 cfs @ 12.40 hrs, Volume= 0.151 af, Atten= 70%, Lag= 19.2 min
 Primary = 0.58 cfs @ 12.40 hrs, Volume= 0.151 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 16.44' @ 12.40 hrs Surf.Area= 2,845 sf Storage= 2,562 cf

Plug-Flow detention time= 137.5 min calculated for 0.151 af (100% of inflow)
 Center-of-Mass det. time= 137.2 min (901.6 - 764.4)

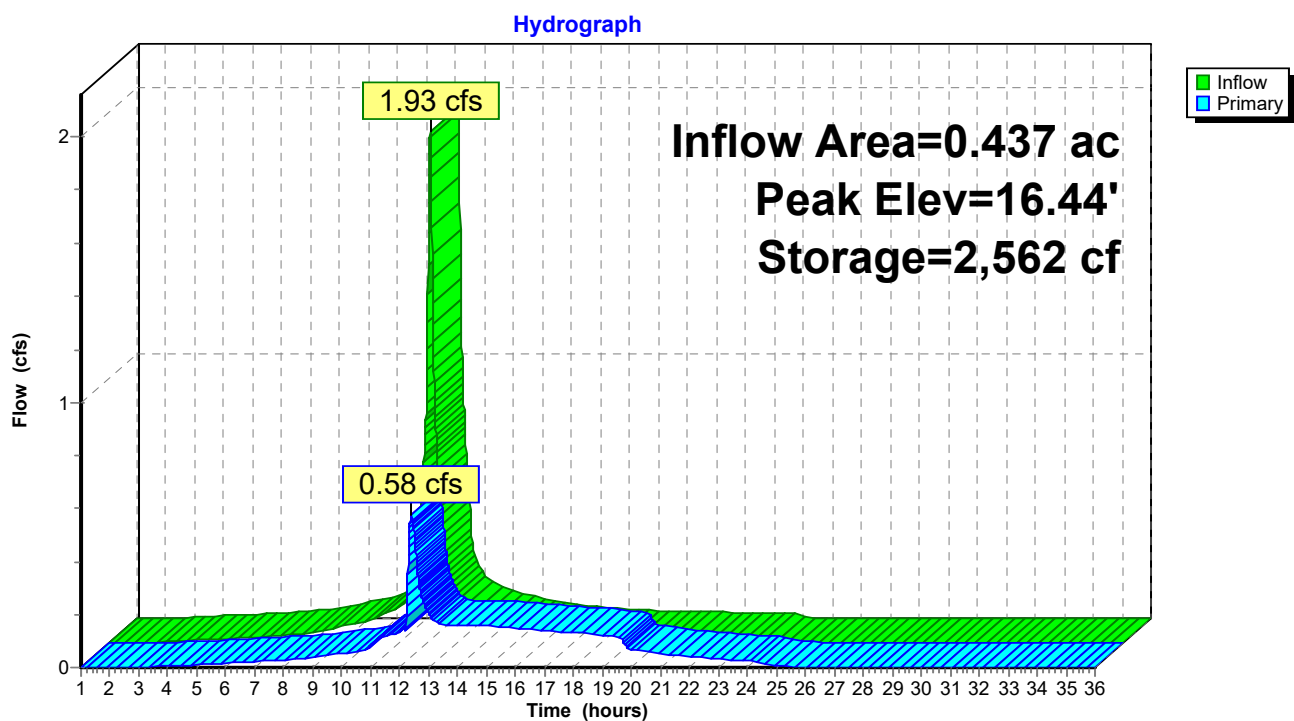
Volume	Invert	Avail.Storage	Storage Description
#1	13.33'	988 cf	36.10'W x 26.27'L x 4.50'H Stone 4,268 cf Overall - 1,798 cf Embedded = 2,469 cf x 40.0% Voids
#2	13.83'	1,798 cf	ADS_StormTech MC-3500 d +Cap x 15 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 15 Chambers in 5 Rows Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf
#3	11.83'	71 cf	36.10'W x 26.27'L x 1.50'H Sand 1,423 cf Overall x 5.0% Voids
#4	10.83'	372 cf	36.10'W x 26.27'L x 1.00'H Crushed Stone 948 cf Overall - 17 cf Embedded = 931 cf x 40.0% Voids
#5	11.08'	17 cf	4.0" Round Underdrain Storage Inside #4 L= 197.0'
		3,247 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	10.83'	2.0" Round Underdrain & Orifice L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.83' / 10.75' S= 0.0040 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#2	Primary	16.05'	12.0" Round Bypass Overflow L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.05' / 15.00' S= 0.1050 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.58 cfs @ 12.40 hrs HW=16.44' TW=14.18' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.11 cfs @ 4.94 fps)
 2=Bypass Overflow (Inlet Controls 0.47 cfs @ 1.67 fps)

Pond P4: StormTech 3500



Summary for Pond P5: OCS

Inflow Area = 1.263 ac, 92.50% Impervious, Inflow Depth > 4.10" for 10-year event
 Inflow = 1.72 cfs @ 12.39 hrs, Volume= 0.432 af
 Outflow = 1.72 cfs @ 12.39 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.72 cfs @ 12.39 hrs, Volume= 0.432 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 14.20' @ 12.39 hrs

Flood Elev= 21.00'

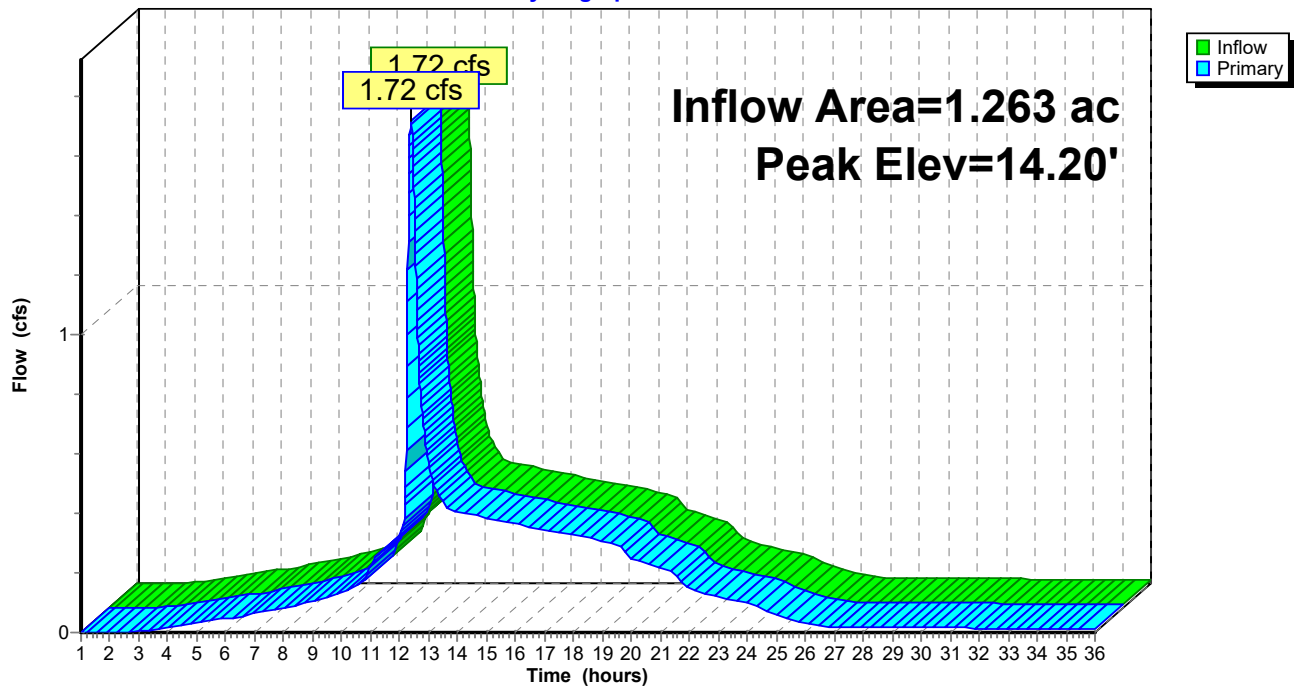
Device	Routing	Invert	Outlet Devices
#1	Primary	7.95'	18.0" Round 18" Outlet L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.95' / 7.80' S= 0.0044 ' / ' Cc= 0.900 n= 0.010, Flow Area= 1.77 sf
#2	Device 1	8.05'	3.0" Vert. Quality Orifice C= 0.600
#3	Device 1	12.50'	6.0" Vert. Quantity Orifice C= 0.600
#4	Device 1	15.40'	6.0' long x 0.7' 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 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=1.72 cfs @ 12.39 hrs HW=14.20' TW=0.00' (Dynamic Tailwater)

- ↑ **1=18" Outlet** (Passes 1.72 cfs of 15.75 cfs potential flow)
- ↑ **2=Quality Orifice** (Orifice Controls 0.58 cfs @ 11.81 fps)
- ↑ **3=Quantity Orifice** (Orifice Controls 1.14 cfs @ 5.79 fps)
- ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P5: OCS

Hydrograph



Post Development_4-21-21

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Type III 24-hr 25-year Rainfall=5.80"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 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

Subcatchment1S: Subcat 1	Runoff Area=4,385 sf 53.04% Impervious Runoff Depth=4.11" Tc=6.0 min CN=85 Runoff=0.48 cfs 0.035 af
Subcatchment2S: Subcat 2.0	Runoff Area=107,660 sf 2.68% Impervious Runoff Depth=2.65" Flow Length=244' Tc=10.6 min CN=70 Runoff=6.51 cfs 0.545 af
Subcatchment2S.1: Subcat 2.1	Runoff Area=6,893 sf 96.29% Impervious Runoff Depth=5.44" Tc=6.0 min CN=97 Runoff=0.89 cfs 0.072 af
Subcatchment2S.2: Subcat 2.2	Runoff Area=14,770 sf 89.87% Impervious Runoff Depth=5.33" Tc=6.0 min CN=96 Runoff=1.90 cfs 0.151 af
Subcatchment2S.3: Subcat 2.3	Runoff Area=14,303 sf 93.50% Impervious Runoff Depth=5.33" Tc=6.0 min CN=96 Runoff=1.84 cfs 0.146 af
Subcatchment2S.4: Subcat 2.4	Runoff Area=19,053 sf 92.42% Impervious Runoff Depth=5.33" Tc=6.0 min CN=96 Runoff=2.45 cfs 0.194 af
Reach 1R: POI #1 - Sherwood St.	Inflow=0.48 cfs 0.035 af Outflow=0.48 cfs 0.035 af
Reach 2R: POI #2 - Wetland	Inflow=10.44 cfs 1.101 af Outflow=10.44 cfs 1.101 af
Reach 3R: TOTAL	Inflow=10.77 cfs 1.136 af Outflow=10.77 cfs 1.136 af
Pond P1: StormTech 3500	Peak Elev=19.30' Storage=1,127 cf Inflow=0.89 cfs 0.072 af Outflow=0.75 cfs 0.066 af
Pond P2: StormTech 3500	Peak Elev=18.62' Storage=2,180 cf Inflow=1.90 cfs 0.151 af Outflow=1.16 cfs 0.151 af
Pond P3: StormTech 3500	Peak Elev=17.38' Storage=2,170 cf Inflow=1.84 cfs 0.146 af Outflow=1.03 cfs 0.146 af
Pond P4: StormTech 3500	Peak Elev=16.73' Storage=2,742 cf Inflow=2.45 cfs 0.194 af Outflow=1.34 cfs 0.194 af
Pond P5: OCS	Peak Elev=15.63' Inflow=4.12 cfs 0.556 af Outflow=4.12 cfs 0.556 af

Total Runoff Area = 3.835 ac Runoff Volume = 1.142 af Average Runoff Depth = 3.57"
66.42% Pervious = 2.547 ac 33.58% Impervious = 1.288 ac

Summary for Subcatchment 1S: Subcat 1

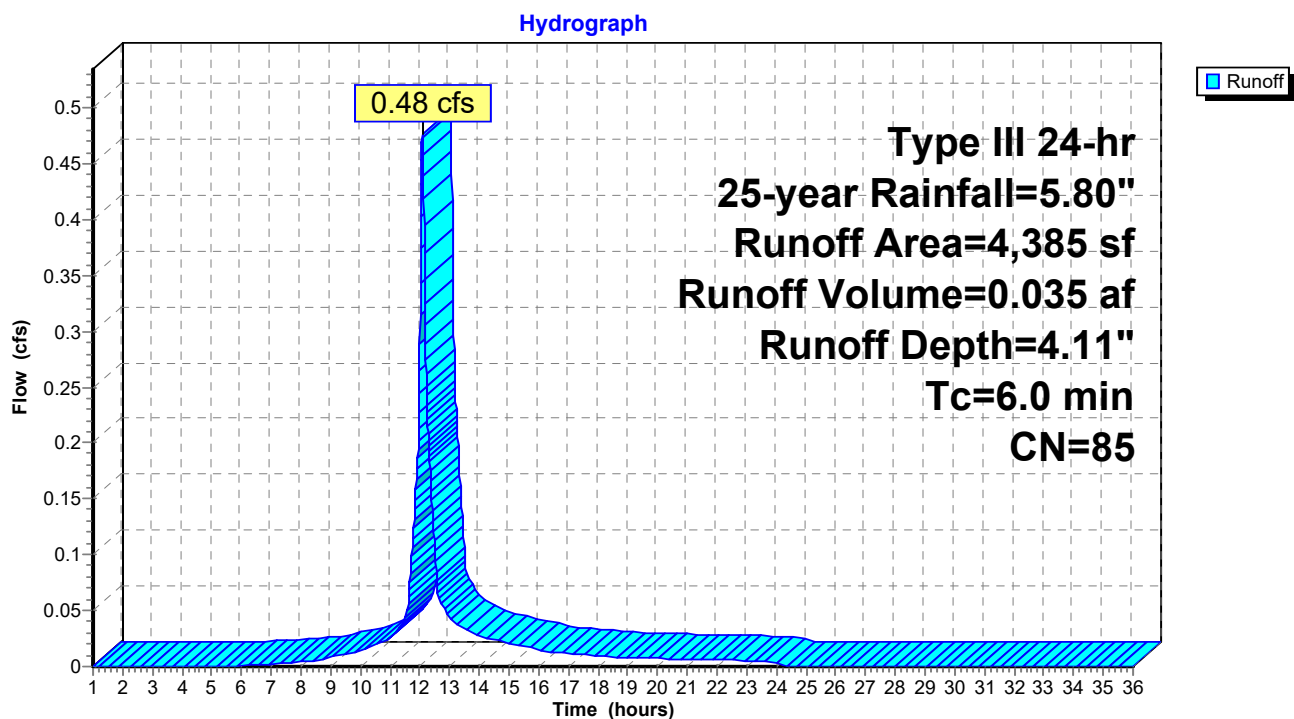
Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,059	70	Cr. Stone/Misc. Vegetation
*	2,326	98	Road/Sidewalk
	4,385	85	Weighted Average
	2,059		46.96% Pervious Area
	2,326		53.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep banks to pipe flow

Subcatchment 1S: Subcat 1



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Type III 24-hr 25-year Rainfall=5.80"

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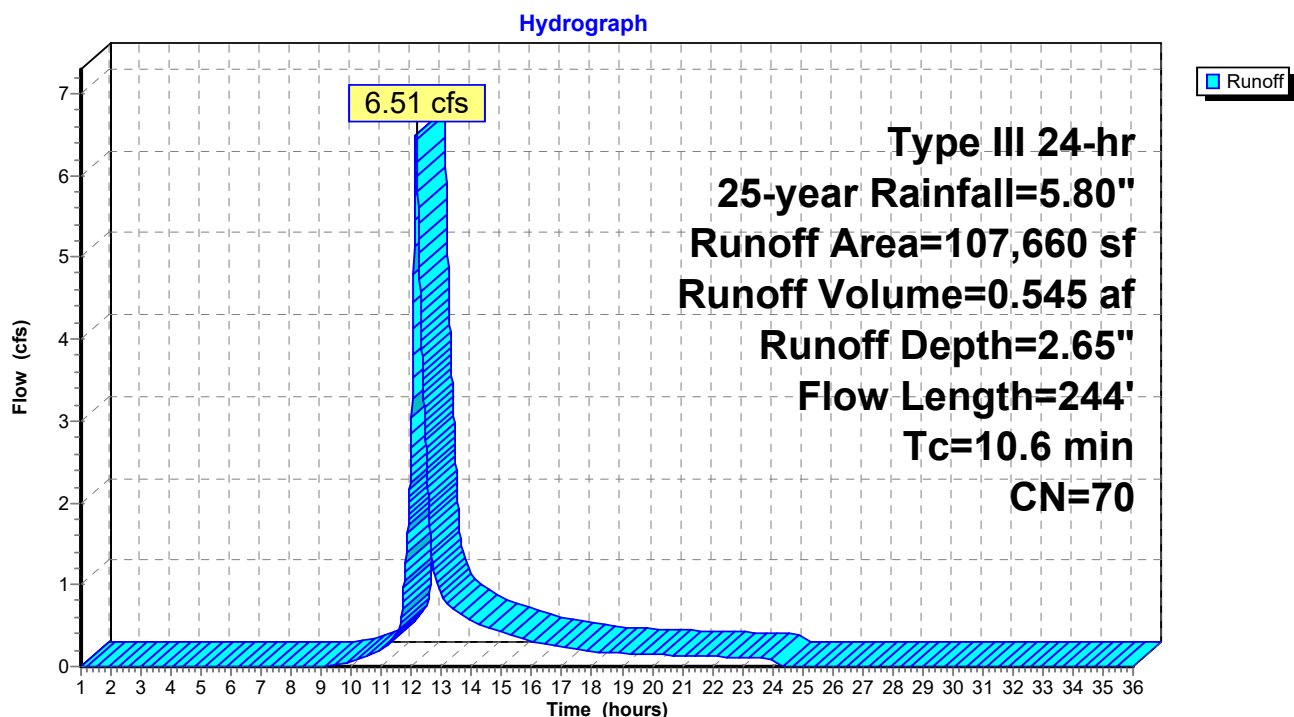
Summary for Subcatchment 2S: Subcat 2.0

Runoff = 6.51 cfs @ 12.15 hrs, Volume= 0.545 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
* 2,882	98	Concrete Pads / Patio / Stairs
23,059	66	Woods, Poor, HSG B
* 5,983	70	Cr. Stone
50,476	74	>75% Grass cover, Good, HSG C
25,260	61	>75% Grass cover, Good, HSG B
107,660	70	Weighted Average
104,778		97.32% Pervious Area
2,882		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	3.43		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2.0

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Type III 24-hr 25-year Rainfall=5.80"

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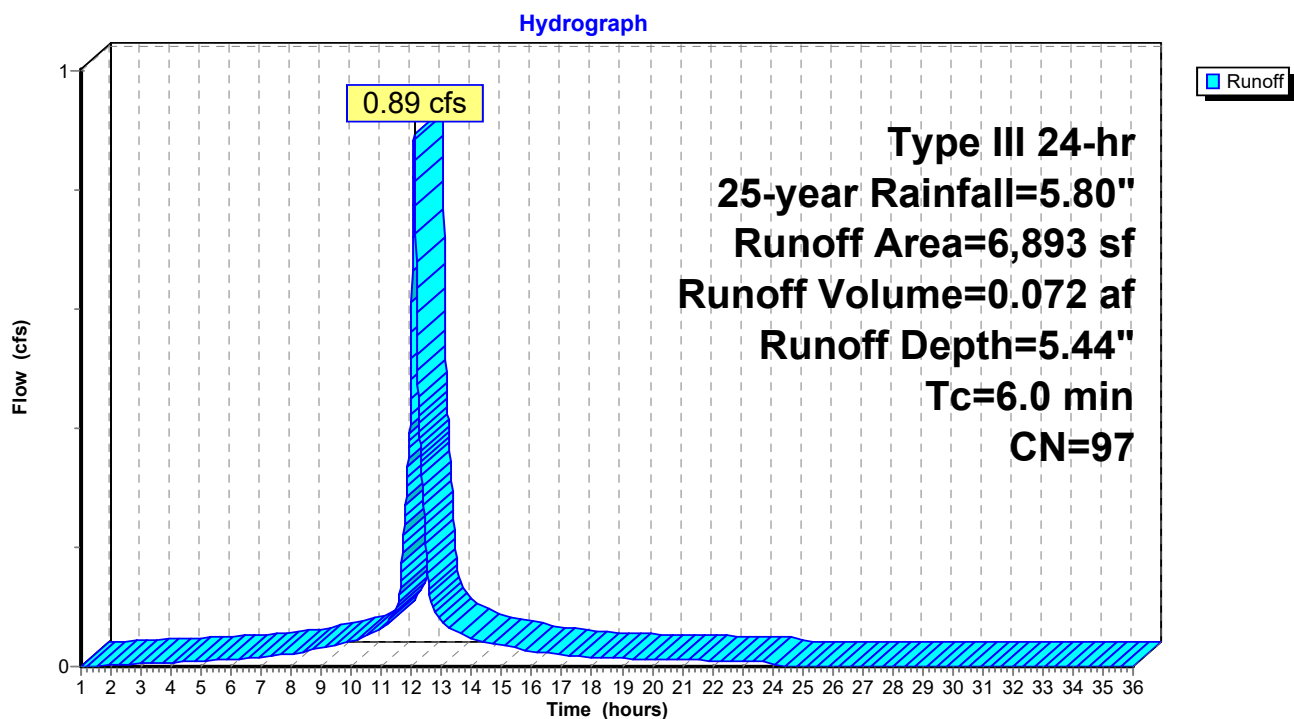
Summary for Subcatchment 2S.1: Subcat 2.1

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.072 af, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,637	98	Pavement
	256	74	>75% Grass cover, Good, HSG C
	6,893	97	Weighted Average
	256		3.71% Pervious Area
	6,637		96.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.1: Subcat 2.1

Summary for Subcatchment 2S.2: Subcat 2.2

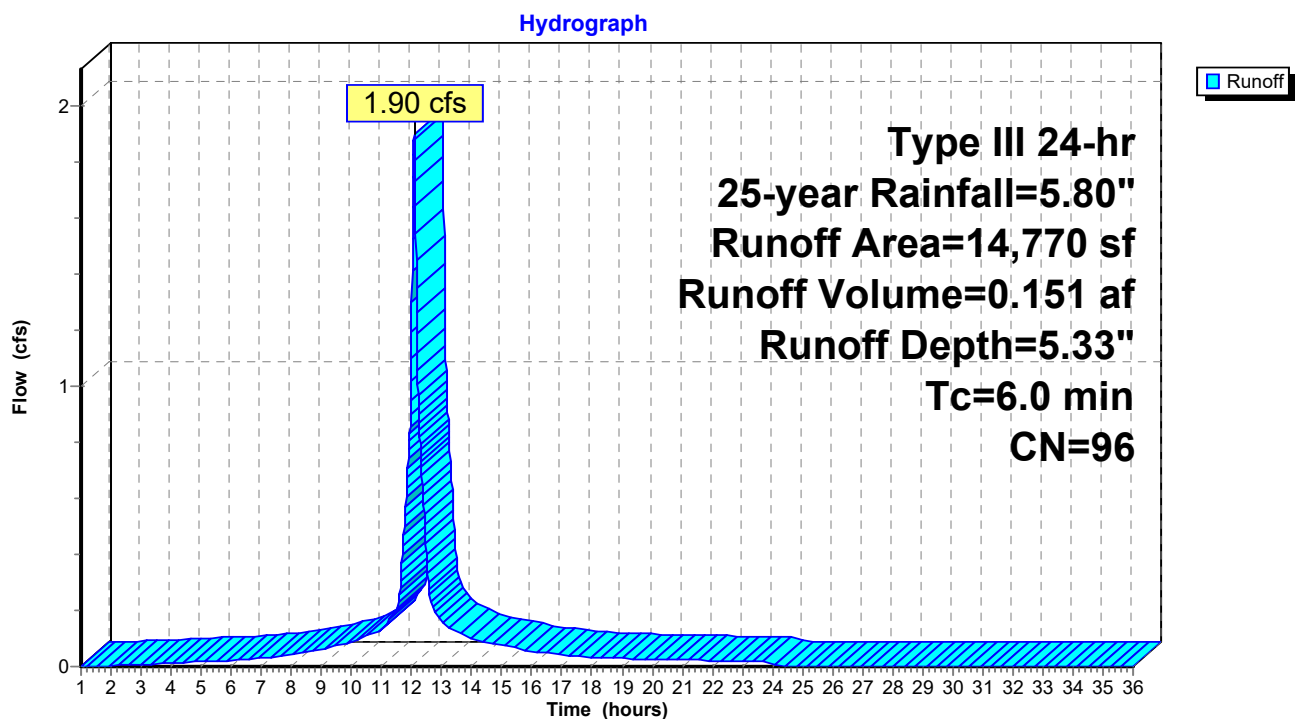
Runoff = 1.90 cfs @ 12.08 hrs, Volume= 0.151 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,274	98	Pavement/Roofs
	1,496	74	>75% Grass cover, Good, HSG C
	14,770	96	Weighted Average
	1,496		10.13% Pervious Area
	13,274		89.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.2: Subcat 2.2



Summary for Subcatchment 2S.3: Subcat 2.3

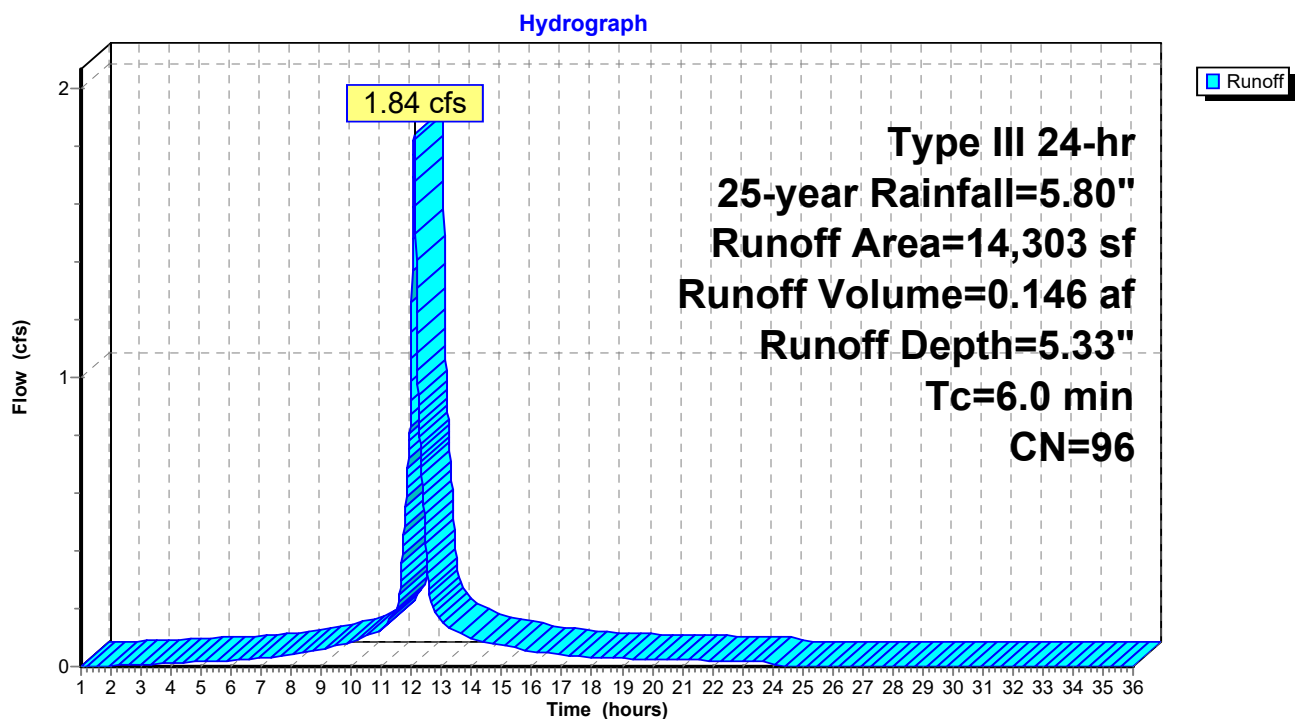
Runoff = 1.84 cfs @ 12.08 hrs, Volume= 0.146 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,373	98	Pavement/Roofs
	930	74	>75% Grass cover, Good, HSG C
	14,303	96	Weighted Average
	930		6.50% Pervious Area
	13,373		93.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.3: Subcat 2.3



Summary for Subcatchment 2S.4: Subcat 2.4

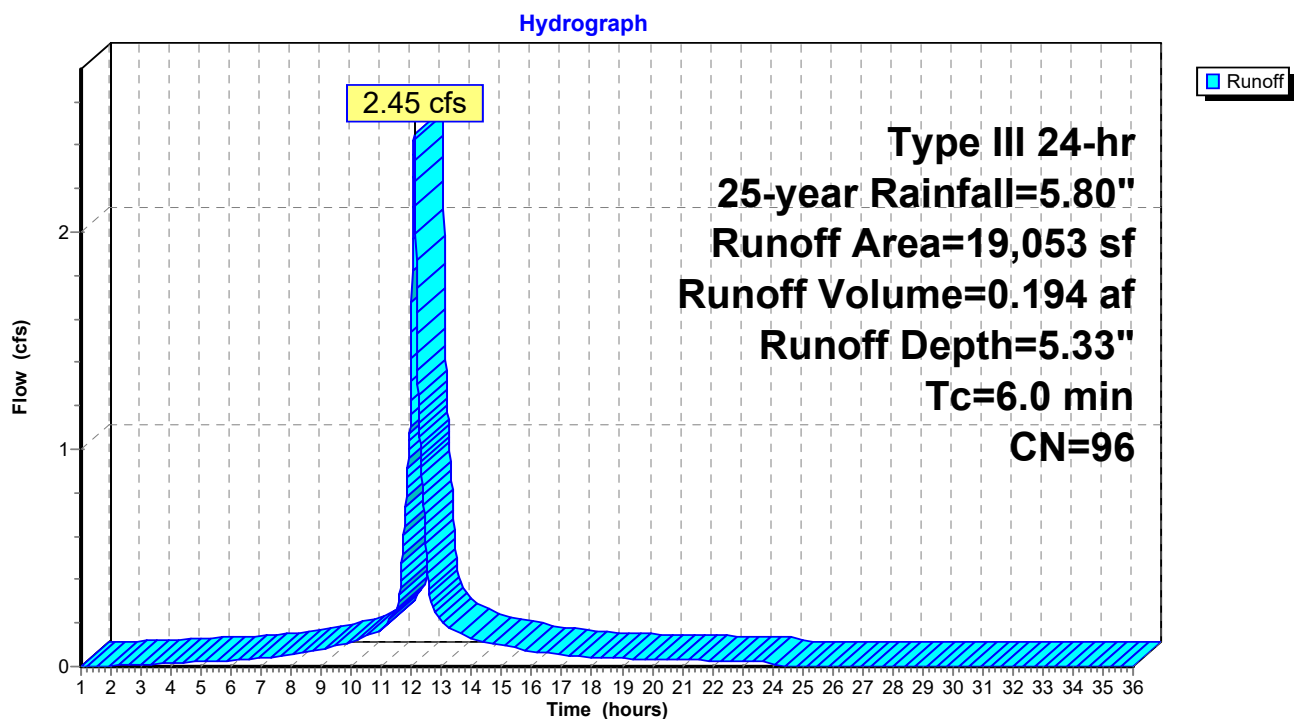
Runoff = 2.45 cfs @ 12.08 hrs, Volume= 0.194 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	17,609	98	Pavement/Roofs
	1,444	74	>75% Grass cover, Good, HSG C
	19,053	96	Weighted Average
	1,444		7.58% Pervious Area
	17,609		92.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.4: Subcat 2.4

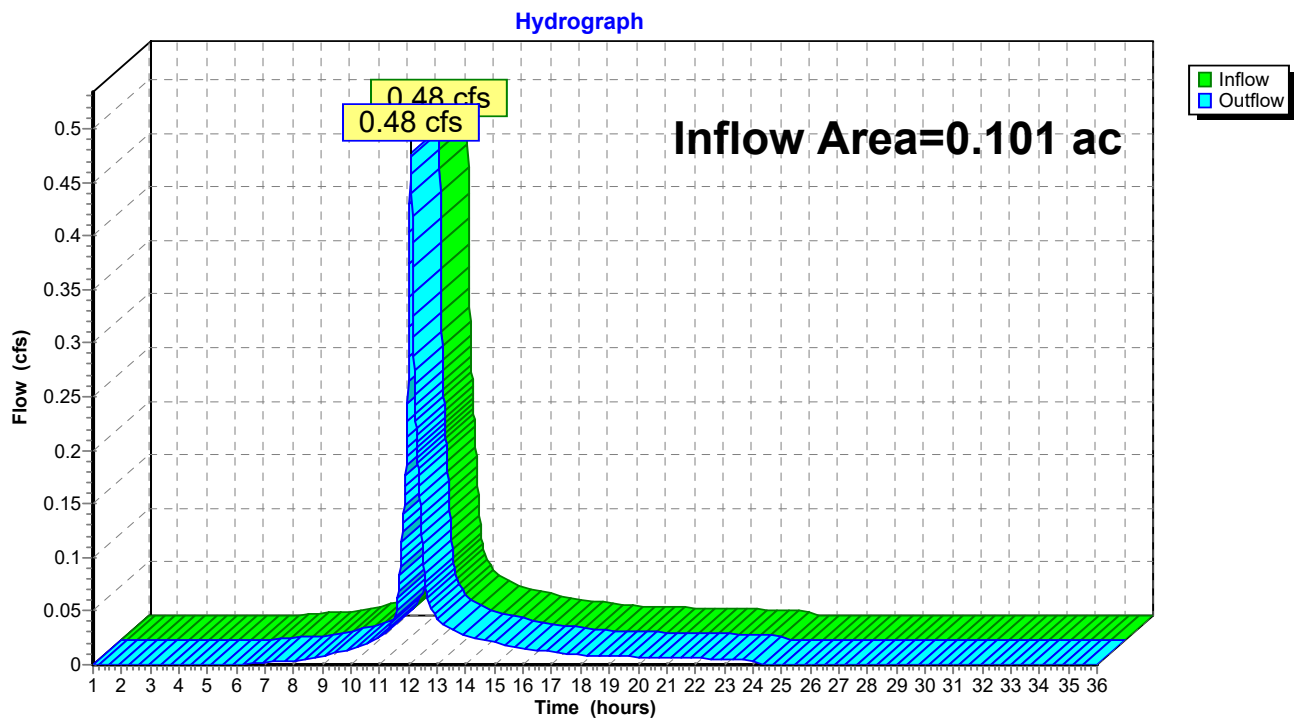


Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.101 ac, 53.04% Impervious, Inflow Depth = 4.11" for 25-year event
 Inflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af
 Outflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 1R: POI #1 - Sherwood St.

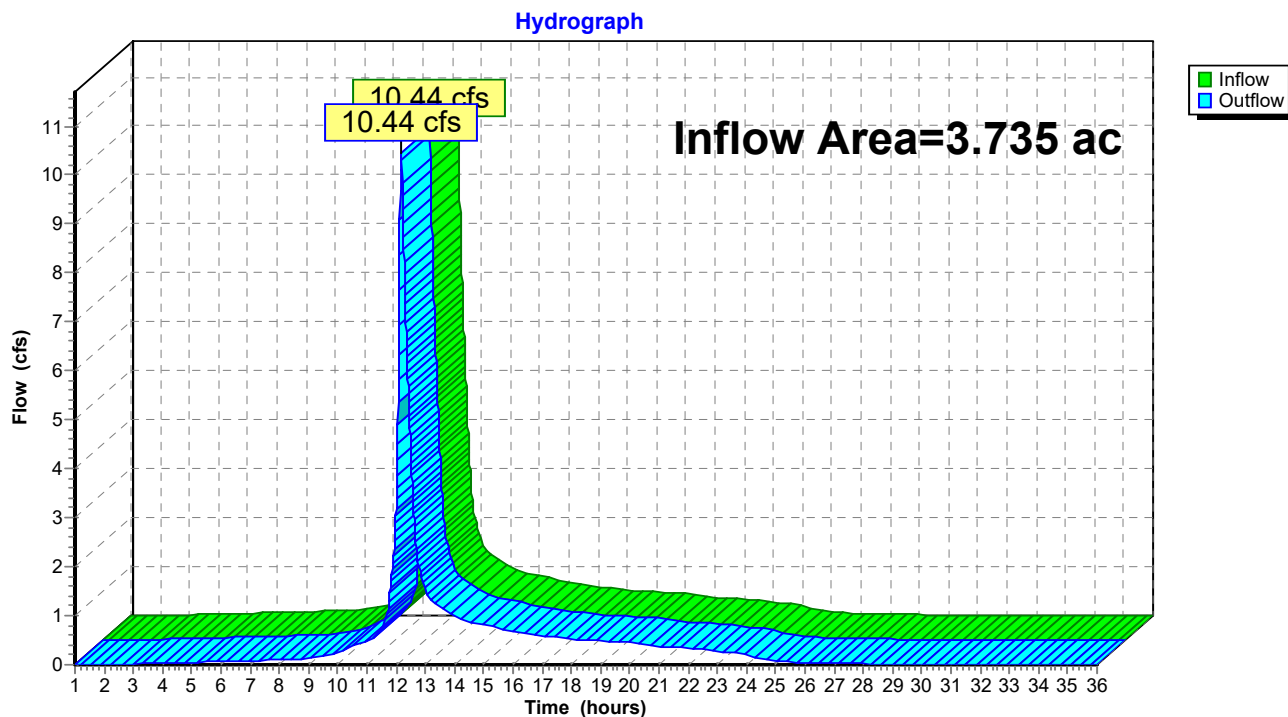


Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.735 ac, 33.06% Impervious, Inflow Depth > 3.54" for 25-year event
 Inflow = 10.44 cfs @ 12.17 hrs, Volume= 1.101 af
 Outflow = 10.44 cfs @ 12.17 hrs, Volume= 1.101 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 2R: POI #2 - Wetland



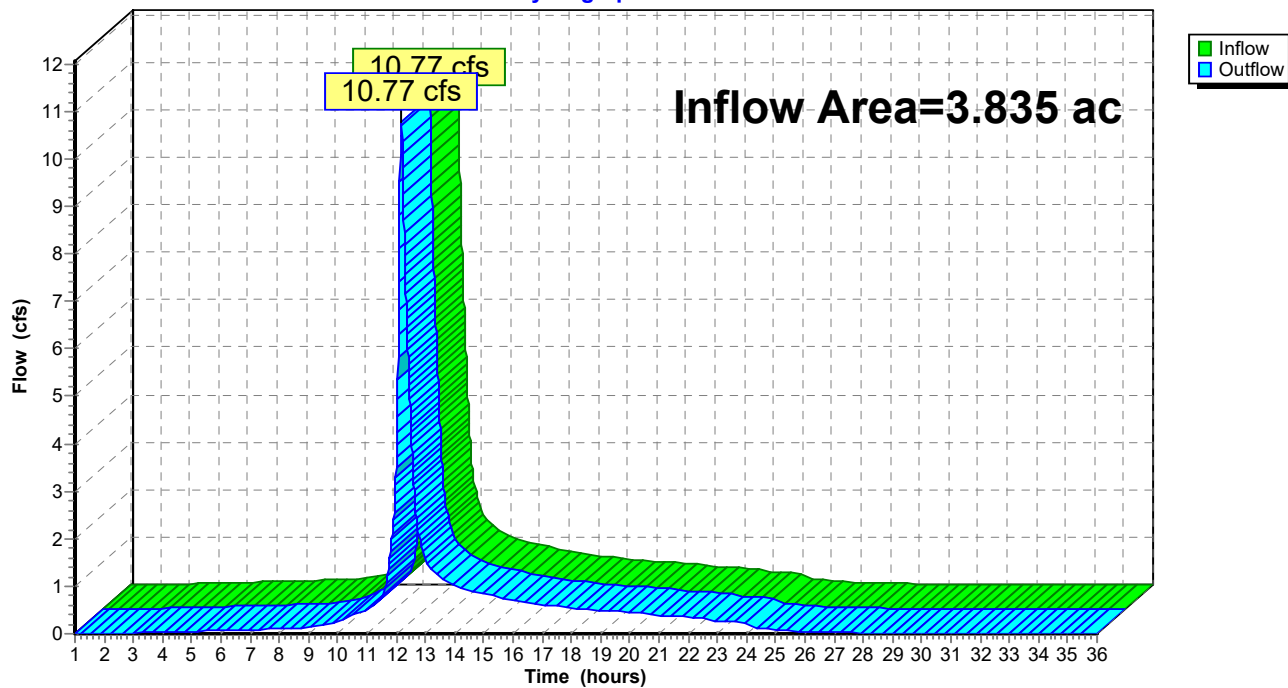
Summary for Reach 3R: TOTAL

Inflow Area = 3.835 ac, 33.58% Impervious, Inflow Depth > 3.55" for 25-year event
 Inflow = 10.77 cfs @ 12.17 hrs, Volume= 1.136 af
 Outflow = 10.77 cfs @ 12.17 hrs, Volume= 1.136 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 3R: TOTAL

Hydrograph



Summary for Pond P1: StormTech 3500

Inflow Area = 0.158 ac, 96.29% Impervious, Inflow Depth = 5.44" for 25-year event
 Inflow = 0.89 cfs @ 12.08 hrs, Volume= 0.072 af
 Outflow = 0.75 cfs @ 12.14 hrs, Volume= 0.066 af, Atten= 16%, Lag= 3.1 min
 Primary = 0.75 cfs @ 12.14 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 19.30' @ 12.14 hrs Surf.Area= 1,247 sf Storage= 1,127 cf

Plug-Flow detention time= 332.3 min calculated for 0.066 af (92% of inflow)
 Center-of-Mass det. time= 288.9 min (1,041.7 - 752.8)

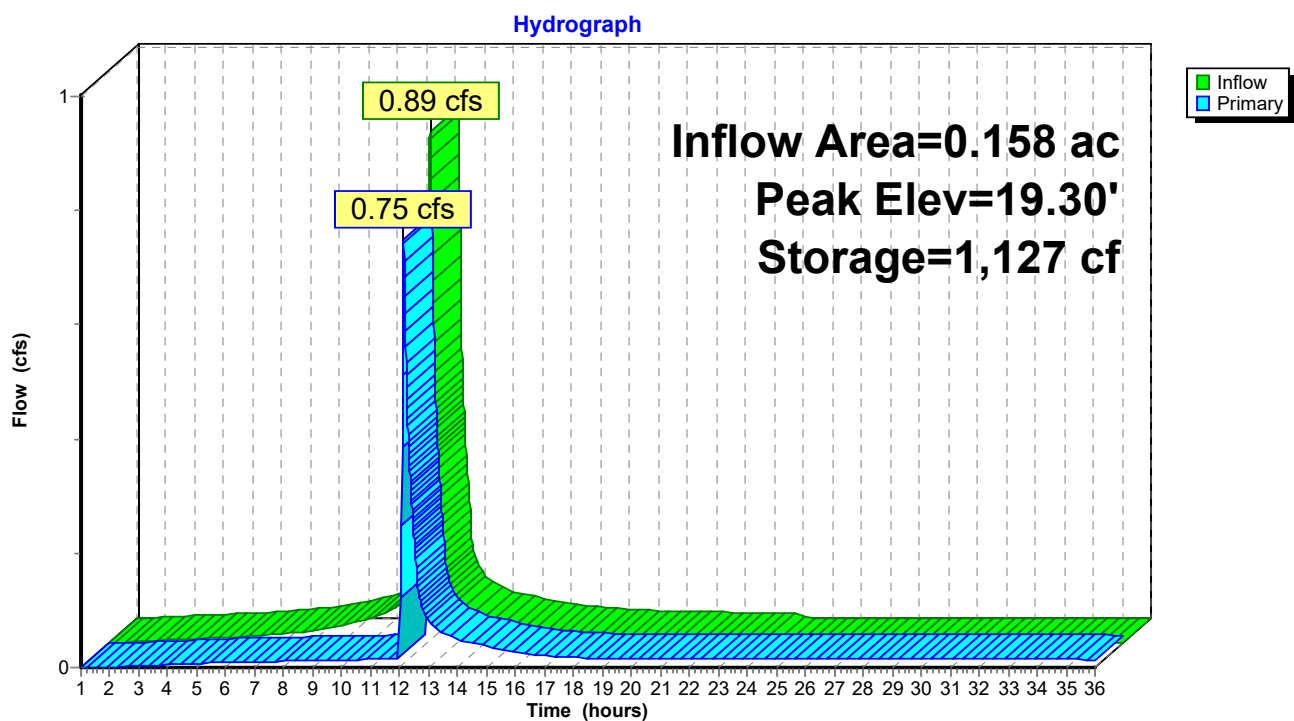
Volume	Invert	Avail.Storage	Storage Description
#1	16.10'	448 cf	21.76'W x 19.10'L x 4.50'H Stone 1,870 cf Overall - 749 cf Embedded = 1,121 cf x 40.0% Voids
#2	16.60'	749 cf	ADS_StormTech MC-3500 d +Cap x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 6 Chambers in 3 Rows Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
#3	14.60'	31 cf	21.76'W x 19.10'L x 1.50'H Sand 623 cf Overall x 5.0% Voids
#4	13.60'	163 cf	21.76'W x 19.10'L x 1.00'H Crushed Stone 416 cf Overall - 7 cf Embedded = 408 cf x 40.0% Voids
#5	13.85'	7 cf	4.0" Round Underdrain Storage Inside #4 L= 85.1'
		1,399 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	18.80'	12.0" Round Bypass Overflow L= 20.0' Ke= 0.900 Inlet / Outlet Invert= 18.80' / 14.00' S= 0.2400 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Primary	13.60'	1.0" Round Underdrain & Orifice L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.60' / 10.00' S= 0.0288 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf

Primary OutFlow Max=0.75 cfs @ 12.14 hrs HW=19.30' TW=15.53' (Dynamic Tailwater)

1=Bypass Overflow (Inlet Controls 0.74 cfs @ 1.89 fps)
 2=Underdrain & Orifice (Outlet Controls 0.01 cfs @ 1.92 fps)

Pond P1: StormTech 3500



Summary for Pond P2: StormTech 3500

Inflow Area = 0.339 ac, 89.87% Impervious, Inflow Depth = 5.33" for 25-year event
 Inflow = 1.90 cfs @ 12.08 hrs, Volume= 0.151 af
 Outflow = 1.16 cfs @ 12.18 hrs, Volume= 0.151 af, Atten= 39%, Lag= 6.0 min
 Primary = 1.16 cfs @ 12.18 hrs, Volume= 0.151 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 18.62' @ 12.18 hrs Surf.Area= 2,317 sf Storage= 2,180 cf

Plug-Flow detention time= 155.6 min calculated for 0.151 af (100% of inflow)
 Center-of-Mass det. time= 155.4 min (914.4 - 759.0)

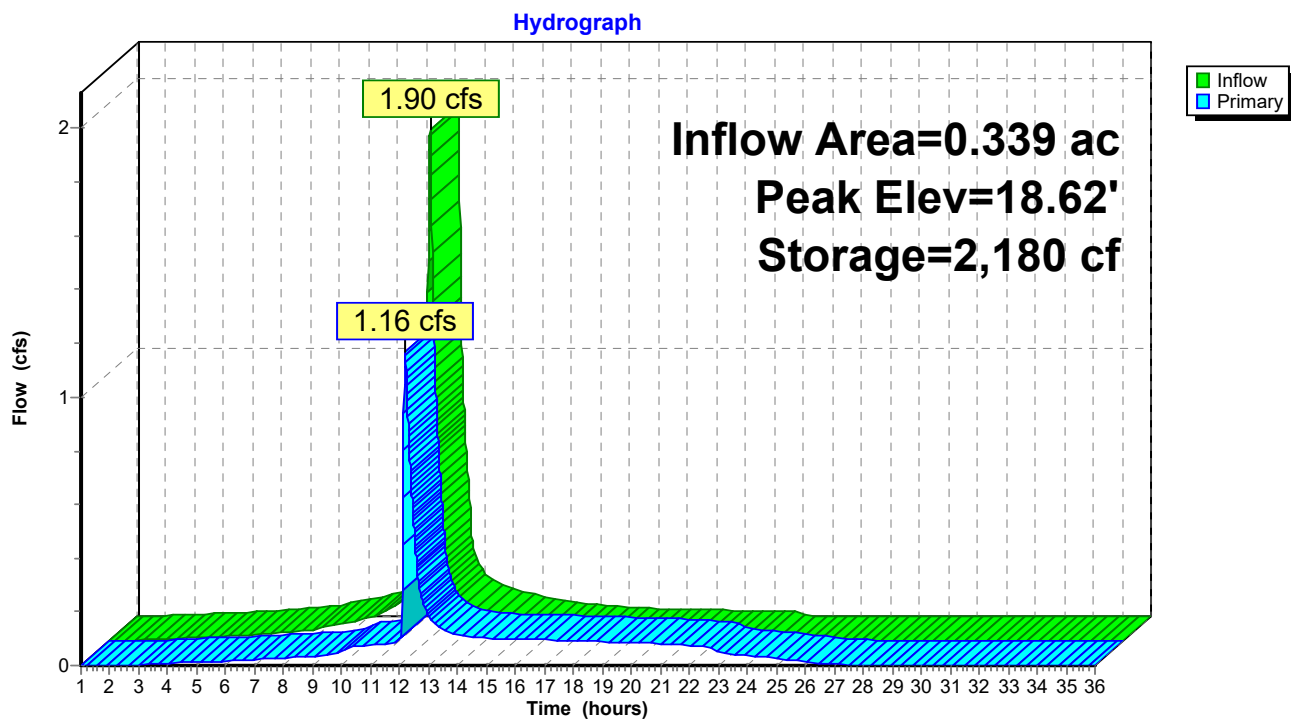
Volume	Invert	Avail.Storage	Storage Description
#1	15.30'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	15.80'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	13.80'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	12.80'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	13.05'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	12.80'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.80' / 12.70' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	18.00'	12.0" Round Bypass Overflow L= 4.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.00' / 17.25' S= 0.1875 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.18 hrs HW=18.62' TW=15.63' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.08 cfs @ 6.29 fps)
 2=Bypass Overflow (Inlet Controls 1.09 cfs @ 2.12 fps)

Pond P2: StormTech 3500



Summary for Pond P3: StormTech 3500

Inflow Area = 0.328 ac, 93.50% Impervious, Inflow Depth = 5.33" for 25-year event
 Inflow = 1.84 cfs @ 12.08 hrs, Volume= 0.146 af
 Outflow = 1.03 cfs @ 12.20 hrs, Volume= 0.146 af, Atten= 44%, Lag= 7.0 min
 Primary = 1.03 cfs @ 12.20 hrs, Volume= 0.146 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 17.38' @ 12.20 hrs Surf.Area= 2,317 sf Storage= 2,170 cf

Plug-Flow detention time= 157.5 min calculated for 0.146 af (100% of inflow)
 Center-of-Mass det. time= 157.4 min (916.4 - 759.0)

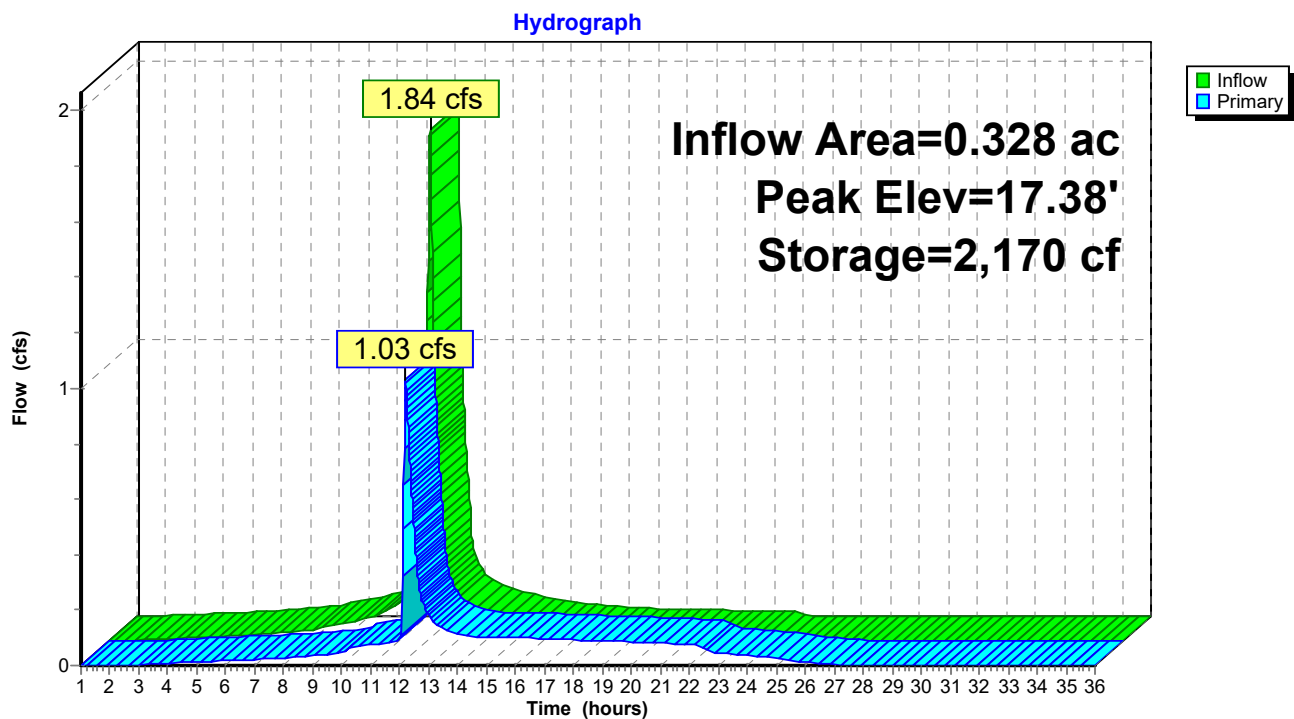
Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	14.58'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	12.58'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	11.58'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	11.83'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.58'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 11.58' / 11.40' S= 0.0180 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	16.80'	12.0" Round Bypass Overflow L= 5.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.00' S= 0.1455 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.03 cfs @ 12.20 hrs HW=17.38' TW=15.63' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.06 cfs @ 4.81 fps)
 2=Bypass Overflow (Inlet Controls 0.97 cfs @ 2.05 fps)

Pond P3: StormTech 3500



Summary for Pond P4: StormTech 3500

Inflow Area = 0.437 ac, 92.42% Impervious, Inflow Depth = 5.33" for 25-year event
 Inflow = 2.45 cfs @ 12.08 hrs, Volume= 0.194 af
 Outflow = 1.34 cfs @ 12.20 hrs, Volume= 0.194 af, Atten= 46%, Lag= 7.3 min
 Primary = 1.34 cfs @ 12.20 hrs, Volume= 0.194 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 16.73' @ 12.20 hrs Surf.Area= 2,845 sf Storage= 2,742 cf

Plug-Flow detention time= 124.5 min calculated for 0.194 af (100% of inflow)
 Center-of-Mass det. time= 124.3 min (883.3 - 759.0)

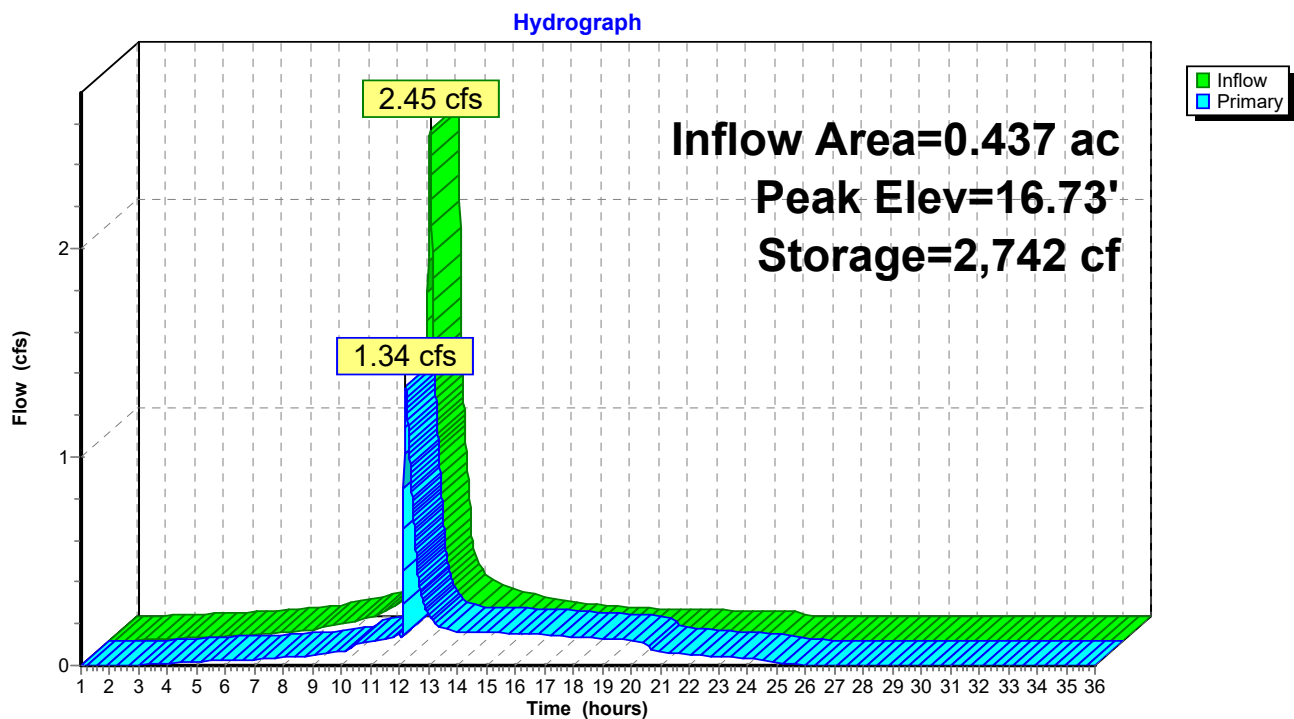
Volume	Invert	Avail.Storage	Storage Description
#1	13.33'	988 cf	36.10'W x 26.27'L x 4.50'H Stone 4,268 cf Overall - 1,798 cf Embedded = 2,469 cf x 40.0% Voids
#2	13.83'	1,798 cf	ADS_StormTech MC-3500 d +Cap x 15 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 15 Chambers in 5 Rows Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf
#3	11.83'	71 cf	36.10'W x 26.27'L x 1.50'H Sand 1,423 cf Overall x 5.0% Voids
#4	10.83'	372 cf	36.10'W x 26.27'L x 1.00'H Crushed Stone 948 cf Overall - 17 cf Embedded = 931 cf x 40.0% Voids
#5	11.08'	17 cf	4.0" Round Underdrain Storage Inside #4 L= 197.0'
		3,247 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	10.83'	2.0" Round Underdrain & Orifice L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.83' / 10.75' S= 0.0040 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#2	Primary	16.05'	12.0" Round Bypass Overflow L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.05' / 15.00' S= 0.1050 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.20 hrs HW=16.73' TW=15.63' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.08 cfs @ 3.45 fps)
 2=Bypass Overflow (Inlet Controls 1.26 cfs @ 2.22 fps)

Pond P4: StormTech 3500



Summary for Pond P5: OCS

Inflow Area = 1.263 ac, 92.50% Impervious, Inflow Depth > 5.28" for 25-year event
 Inflow = 4.12 cfs @ 12.19 hrs, Volume= 0.556 af
 Outflow = 4.12 cfs @ 12.19 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.12 cfs @ 12.19 hrs, Volume= 0.556 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 15.63' @ 12.19 hrs

Flood Elev= 21.00'

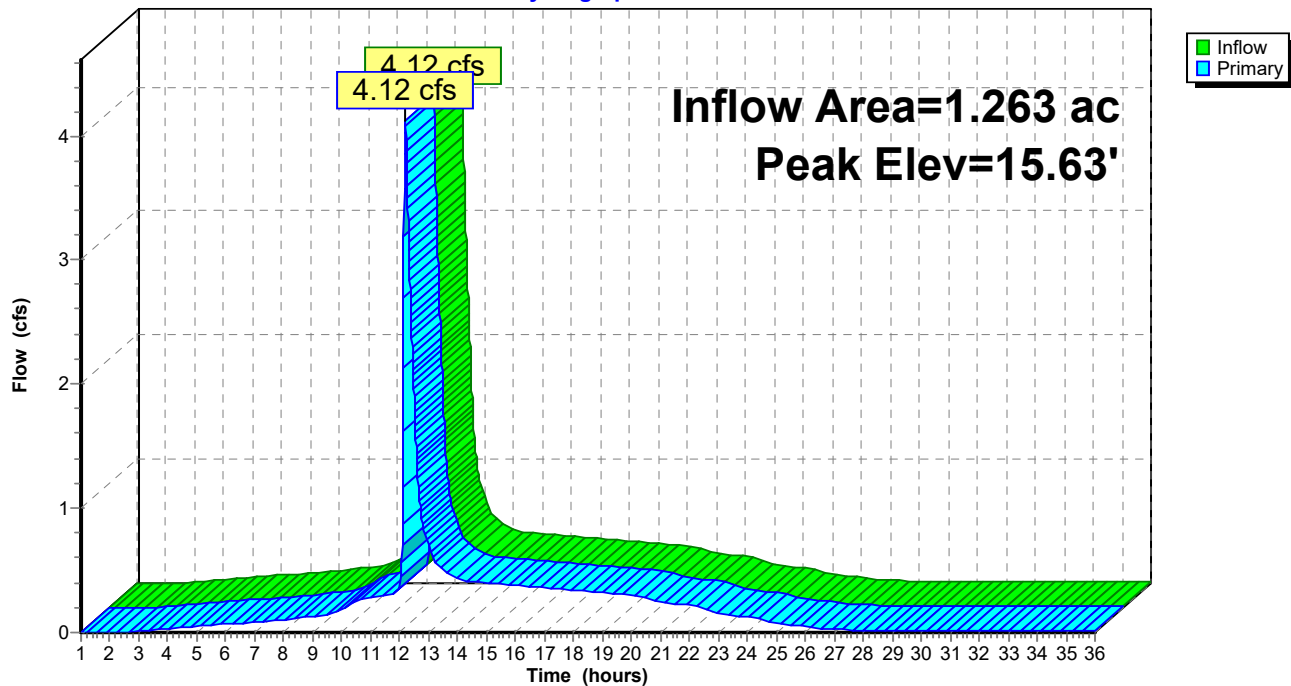
Device	Routing	Invert	Outlet Devices
#1	Primary	7.95'	18.0" Round 18" Outlet L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.95' / 7.80' S= 0.0044 '/' Cc= 0.900 n= 0.010, Flow Area= 1.77 sf
#2	Device 1	8.05'	3.0" Vert. Quality Orifice C= 0.600
#3	Device 1	12.50'	6.0" Vert. Quantity Orifice C= 0.600
#4	Device 1	15.40'	6.0' long x 0.7' 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 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=4.12 cfs @ 12.19 hrs HW=15.63' TW=0.00' (Dynamic Tailwater)

- 1=18" Outlet (Passes 4.12 cfs of 17.69 cfs potential flow)
- 2=Quality Orifice (Orifice Controls 0.65 cfs @ 13.15 fps)
- 3=Quantity Orifice (Orifice Controls 1.61 cfs @ 8.18 fps)
- 4=Broad-Crested Rectangular Weir (Weir Controls 1.87 cfs @ 1.34 fps)

Pond P5: OCS

Hydrograph





United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine



March 11, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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 17, Jun 5, 2020

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	Acres in AOI	Percent of AOI
BuC2	Buxton silt loam, 8 to 15 percent slopes	0.1	3.6%
Cu	Cut and fill land	0.0	0.0%
EmB	Elmwood fine sandy loam, 0 to 8 percent slopes	1.1	29.9%
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	2.6	66.5%
Totals for Area of Interest		3.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

BuC2—Buxton silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2x1by
Elevation: 10 to 490 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Buxton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buxton

Setting

Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Fine glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: silt loam
Bw1 - 7 to 18 inches: silt loam
Bw2 - 18 to 23 inches: silty clay loam
BC - 23 to 35 inches: silty clay loam
C - 35 to 65 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 17 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Lamoine

Percent of map unit: 7 percent

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Landform: Marine terraces, river valleys
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Scantic

Percent of map unit: 5 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Buxton, >15% slopes

Percent of map unit: 3 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Cu—Cut and fill land

Map Unit Setting

National map unit symbol: blh4
Elevation: 10 to 2,200 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 70 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Cut and fill land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cut And Fill Land

Typical profile

H1 - 0 to 65 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 35 percent
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: About 24 to 42 inches

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Available water capacity: Moderate (about 6.6 inches)

Minor Components

Windsor

Percent of map unit: 2 percent
Landform: Kames, outwash terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Elmwood

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hollis

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Tidal marsh

Percent of map unit: 2 percent
Landform: Tidal flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Buxton

Percent of map unit: 2 percent
Landform: Coastal plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

EmB—Elmwood fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: blh8
Elevation: 10 to 900 feet
Mean annual precipitation: 36 to 55 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 90 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Elmwood and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elmwood

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 25 inches: sandy loam
H3 - 25 to 65 inches: silty clay loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Swanton

Percent of map unit: 7 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Melrose

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Whately

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

SuD2—Suffield silt loam, 15 to 25 percent slopes, eroded

Map Unit Setting

National map unit symbol: blk2
Elevation: 10 to 900 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Suffield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Suffield

Setting

Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser

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Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine glaciolacustrine deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 33 inches: silty clay
H4 - 33 to 65 inches: silty clay

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Hartland

Percent of map unit: 7 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suffield, slopes <15%

Percent of map unit: 3 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Belgrade

Percent of map unit: 3 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suffield, slopes >25%

Percent of map unit: 2 percent

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Landform: Coastal plains

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

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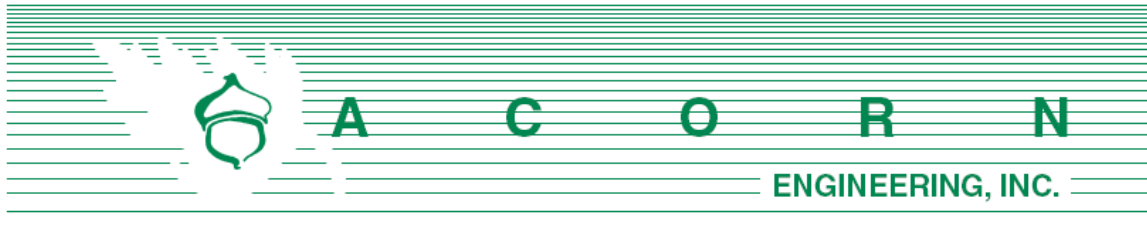
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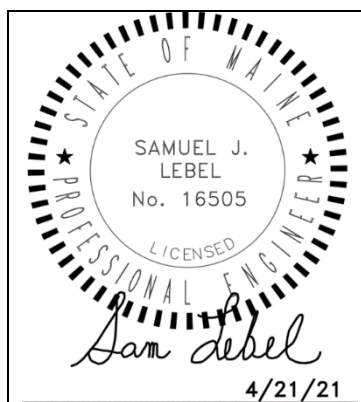
K. EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

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Prepared By:

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April 2021

INTRODUCTION

Acorn Engineering, Inc. has been retained by Hammond House, LLC to provide civil engineering services for the proposed residential development at the end of Dalton Street in Portland, Maine. The proposed project includes the construction of 4 separate buildings with a total of 48 dwelling units.

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

1.0 EXISTING CONDITIONS

The proposed project site is located at the end of Dalton Street in Portland, Maine. A boundary and topographic survey has been prepared by Owen Haskell, Inc. dated December 11th, 2020.

The property is in the R5 Residential Zone. Abutting Uses include residential except for the elementary school that abuts the site to the northwest.

The 3.72 acre site consists of varying slopes. To the northern corner of the site the land slopes at approximately 7% from west to east down into a pair of wetlands near the center of the site. To the east of the wetlands the site slopes roughly 2% to the wetlands. The south of the site slopes to the west with grades dropping off towards the abutters at roughly 33%.

1.1 Existing Soils

Onsite soil information includes the following:

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

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

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

Table 1 - “K” Value	
Soils Type	Subsurface
Buxton Silt Loam	0.37



Cut and fill land	0.20
Elmwood fine sandy loam	0.20
Suffield silt loam	0.32

The soil “K” value for the soil, listed above, shows a medium to low susceptibility to erosion. The site’s susceptibility to erosion is from the USDA Soil Survey. Although the soil “K” value shows a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

Critical areas that would require special attention during construction are any exposed slopes, particularly to the northern and south eastern portions of the site along with the wetlands located near the center of the site.

1.4 Protected Natural Resource

Wetlands exist onsite, as delineated by Mark Hampton Associated, Inc. in May of 2018. The project is not located with a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

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

1.6 Timber Harvesting

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



2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

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

2.1 Temporary Erosion Control Measures

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

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

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

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

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

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American



Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

- 2.1.5 Dalton and Sherwood streets shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
 - 2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.
 - 2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be “toed” into the ground.
 - 2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached $\frac{1}{2}$ the design height.
 - 2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.
 - 2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.
 - 2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.
 - 2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.
 - 2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.
- 2.2 Permanent Erosion Control Measures



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

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

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

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

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Construction Management & Erosion Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

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

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

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

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

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

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

5.2 Mulching



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

5.3 Soil Stockpiling

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

5.4 Seeding

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

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



5.5 Over winter stabilization of disturbed soils

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

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.
- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.
- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

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

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.
- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.



- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

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

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

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

6.3 Mulched Areas



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

6.4 Dust Control

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

6.5 Stormwater Appurtenances

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

6.6 Erosion and Sedimentation Control Inspections:

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

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

Qualifications:

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

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



7.0 IMPLEMENTATION SCHEDULE

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

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

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

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

8.0 CONCLUSION

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



9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan



TEMPORARY SEEDING PLAN

Site Preparation

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

Seedbed Preparation

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

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

Seeding

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

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

Mulching

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

Conclusion

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



PERMANENT SEEDING PLAN

Site Preparation

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

Seedbed Preparation

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

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

Seeding

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

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

Mulching

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

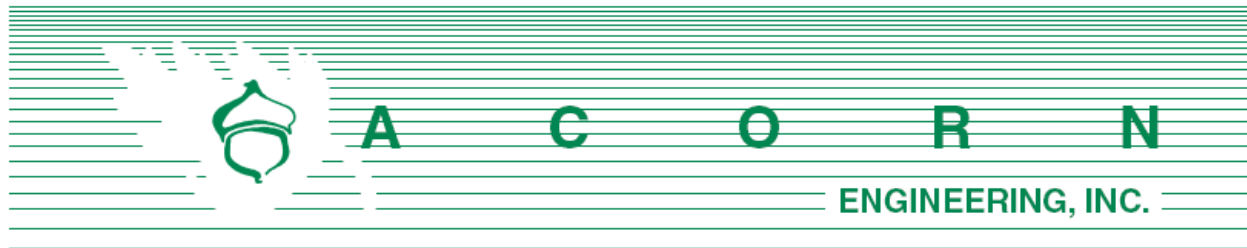
Recommendations

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

Conclusion

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





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

March 11, 2021

Subject: Dalton Street PRUD – Fire Department Checklist
 Section L of Application

On behalf of Hammond House, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

Hammond House, LLC
 94 South Street
 Yarmouth, Maine 04096
 (207) 838-3410

2. Name, address, telephone number of architect

Archetype Architects
 48 Union Wharf
 Portland, Maine 04101
 (207) 772-6022

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

NFPA: Apartment Building IBC: R-2

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

Proposed Buildings (Total of 4 Structures)		
Ground	16,288	sf
2 nd Floor	16,288	sf
3 rd Floor	16,288	sf
Total	48,864	sf



5. Elevation of all structures

The proposed building height is 34'.

6. Proposed fire protection of all structures

Each building will be sprinkled and in compliance with NFPA 13R.

7. Hydrant locations

A hydrant is proposed within the site and will be within 230 ft from the far corner of the furthest structure. Please refer to the Utility Plan.

8. Water main size and location

Water services of 4" and 8" are proposed along the access drive to the site. A domestic meter pit and above ground backflow enclosure are located along the access drive as well. Each building will be served via a 6" fire and 2" domestic service that tap into the respective services within the access drive.

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

Access to the structures is provided from the access drive as well as parking bays.

10. A code summary referencing NFPA 1 and all fire department technical standards may be submitted with the Final Application, if required by the fire department.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

Each building can be accessed via the access drive off of Sherwood. The access drive will be equipped with slipform concrete curbing. The following pavement street widths to the site are as follows:

- Sherwood Street: 25 feet
- Access Drive: 22 feet

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



City of Portland Technical Manual – Section 3 Public Safety

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

Response: The site has been designed to accommodate the turning movements required from a 40' ladder truck utilizing the drive aisle and private roadway.

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

Response: As depicted on the site plan, the proposed site layout provides fire access from at least two sides of a paved travel way, and in some case 3 sides.

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

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

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

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

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

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

Response: The proposed site maintains the required clearance height of nine feet in all cases.

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

Response: Elevators are not proposed for this project.

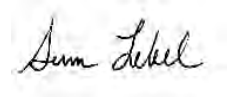


3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

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

Thank you for your review. Please let me know if you have any additional questions or comments.

Sincerely,



Samuel J. Lebel, P.E.
Project Manager
Acorn Engineering, Inc.



BUILDING CODE SUMMARY

Name of Project: Dalton Prud
Address: Portland, ME Zip Code
Owner/ Authorized Agent: Kevin O'Rourke Phone # () E-Mail kevin@gravitysports.org
Owned By: City/County Private State
Code Enforcement Jurisdiction: City Portland County State

CONTACT:
DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
Architectural Archetype Architects David Lloyd 936 (207) 772-6022
Civil Acorn Engineering
Electrical Bennett Engineering Will Bennett
Fire Alarm Bennett Engineering Will Bennett
Plumbing Bennett Engineering Will Bennett
Mechanical Bennett Engineering Will Bennett
Sprinkler-Standpipe M2 Structural Engineers Matt Miller
Structural Retaining Walls >5' High
Other

Maine Uniform Building and Energy Code with references to 2018 NFPA 1 & NFPA 101

- 2015 International Building Code (IBC)
- 2015 International Existing Building Code (IEBC)
- 2015 International Energy Conservation Code (IECC)

New Construction Addition Renovation
1st Time Interior Completion
Shell/Core
Phased Construction – Shell/Core
Renovation

2015 INTERNATIONAL EXISTING BUILDING CODE:
Alteration: Prescriptive Repair Chapter 14
Level 1 Level II Level III
Historic Property Change of Use
CONSTRUCTED:(date) ORIGINAL OCCUPANCY(S) (Ch. 3):
RENOVATED: (date) CURRENT OCCUPANCY(S) (Ch. 3):

RISK CATEGORY (table 1604.5) Current: I II III IV
Proposed: I II III IV

BASIC BUILDING DATA (table 601)
Construction Type: I-A II-A III-A IV V-A
I-B II-B III-B V-B
mixed types utilizing Horizontal Building Separation Allowance per IBC 510.2
Sprinklers: No Partial Yes NFPA 13 NFPA 13R NFPA 13D
Standpipes: No Yes Class I II III Wet Dry
Flood Hazard Area: No Yes
Special Inspections Required per section 17: No Yes, see attached statement of special inspections

Gross Building Area:				
FLOOR	EXISTING (SQ.FT)	NEW (SQ.FT)	RENO/ALTER (SQ.FT)	SUB-TOTAL
6 th Floor		0		
5 th Floor		0		
4 th Floor		0		
3 rd Floor		3,821		
2 nd Floor		3,821		
Mezzanine		0		
1 st Floor		4072		
Basement		0		
TOTAL		11,914		

NOTE: THIS BUILDING REPEATED (4) TIMES. TOTAL BUILDING AREA = 47,936 SF

ALLOWABLE AREA
Occupancy Classification 302:
Assembly Business Educational Factory Hazardous Institutional
A-1 A-2 A-3 A-4 A-5
F-1 Moderate F-2 Low
H-1 Deteronate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
I-1 Condition I 2
I-2 Condition I 2
I-3 Condition I 2 3 4 5
I-4
Mercantile
Residential R-1 R-2 R-3 R-4
Storage S-1 Moderate S-2 Low High-piled
Parking Garage Open Enclosed Repair Garage
Utility and Miscellaneous
Accessory Occupancy Classification(s) 508.2:
N/A

Incidental Uses (Table 509): NONE
NFPA 101 Table 30.3.2.1.1 Hazardous Area Protection: NONE
Special Uses (Chapter 4 – List Code Sections) NONE
Special Provisions: (Chapter 5 – List Code Sections): NONE

506.2.3 Single Occupancy, Multistory Buildings:

Allowable Area =
The allowable area of a single-occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:

A_a = [A_r + (NS × I_f)] × S_a (Equation 5-2)

Allowable area = [21,000 + (7,000 × 1 (frontage increase not taken))] × 3 = 42,000 SF
EACH 11,914 SF BUILDING < 42,000 SF ALLOWABLE

where:
A_a = Allowable area (square feet).
A_t = Tabular allowable area factor (NS, S13R or SM value, as applicable) in accordance with Table 506.2.
N_S = Tabular allowable area factor in accordance with Table 506.2 for a non sprinklered building (regardless of whether th building is sprinklered).
I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.
Actual number of building stories above grade plane, not to exceed three. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building storie above grade plane, not to exceed four.

No individual story shall exceed the allowable area (A_a) as determined by Equation 5-2 using the value of S_a = 1.

ALLOWABLE HEIGHT			
	ALLOWABLE: (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	60	34'-0"	
Building Height in Stories (Table 504.4)	3	3	

¹ Provide code reference if the "Show on Plans" quantity is not based on Table 504.3 or 504.4.

² The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	NOTES	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Structural Frame, including columns, girders, trusses					
Bearing Walls					
Exterior					
North	0HR			W1, W2/A4.00	
East	0HR			W1, W2/A4.00	
West	0HR			W1/A4.00	
South	0HR			W1/A4.00	
Interior	0HR				
Nonbearing Walls and Partitions					
Exterior walls					
North				N/A	
East				N/A	
West				N/A	
South				N/A	
Interior walls and partitions	0				
Floor Construction Including supporting beams and joists	1HR			F2/A4.02	UL L528
Floor Ceiling Assembly	1HR			F2/A4.02	UL L528
Column Supporting Floors	0HR			N/A	
Roof Construction, including supporting beams and joists	0HR			R1,R2,R3/A4.02	GA FC5406, UL P531, UL P52
Roof Ceiling Assembly	0HR			N/A	
Column Supporting Roof	0HR			N/A	
Shaft Enclosures - Exit	1HR				
Shaft Enclosures - Other	1HR				
Corridor Separation	30 MIN.			W4/A4.01	UL U311
Occupancy/Fire Barrier Separation				W6/A4.01	UL305
Party/Fire Wall Separation	1 HR.				
Smoke Barrier Separation					
Smoke Partition					
Tenant/Dwelling Unit/ Sleeping Unit Separation	1 HR			W5/A4.01	
Incidental Use Separation	1 HR			N/A	

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY LINES)	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
20'-0" MIN	Unprotected, Sprinklered	No Limit	>allowable

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: No Yes
Exit Signs: No Yes
Fire Alarm: No Yes
Smoke Detection Systems: No Yes Partial
Carbon Monoxide Detection: No Yes

LIFE SAFETY PLAN

Life Safety Plan Sheet #:
Fire and/or smoke rated wall locations (Chapter 7)
Assumed and real property line locations (if not on the site plan)
Exterior wall opening area with respect to distance to assumed property lines (705.8)
Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
Occupant loads for each area
Exit access travel distances (1017)
Common path of travel distances (1006.2.1 & 2006.3.2(1))
Dead end lengths (1020.4)
Clear exit widths for each exit door (NFPA 101 TABLE 7.3.3.1)
Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
Actual occupant load for each exit door
A schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.
Location of doors with panic hardware (1010.1.10) N/A
Location of doors with delayed egress locks and the amount of delay (1010.1.9.7) N/A
Location of doors with electromagnetic egress locks (1010.1.9.9) N/A
Location of doors equipped with hold-open devices N/A
Location of emergency escape windows (1030) N/A
The square footage of each fire area (202)
The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) N/A
Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ANSI 117.1 ACCESSIBLE UNITS REQUIRED	ANSI 117.1 ACCESSIBLE UNITS PROVIDED	ANSI 117.1 TYPE A UNITS REQUIRED	ANSI 117.1 TYPE A UNITS PROVIDED	ANSI 117.1 TYPE B UNITS REQUIRED	ANSI 117.1 TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE/TYP A/TYPE B UNITS PROVIDED
48	0	0	1	1	16	16	16

COMMENTS

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	13'2" ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

PLUMBING FIXTURE REQUIREMENTS (2015 UPC)

USE		WATERCLOSETS			URINALS			LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G												
	NEW REQ'D												

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

ELEVATOR NOT REQUIRED
2 & 3-STORY RESIDENTIAL BUILDING
PER CODE PATH BELOW

The following language is taken from IBC 2015, and exempts the building from the requirements for an elevator, as the building is less than (4) stories.

1009.2.1 Elevators Required

In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, not less than one required accessible means of egress shall be an elevator complying with Section 1009.4.

Exceptions:

- In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge.
- In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1012.

However, questions are often raised about the need for an accessible route (ie, an elevator) to the second and third floor. Exception 2 below eliminates the requirement for an accessible route to floors without accessible elements.

1104.4 Multistory Buildings and Facilities

At least one accessible route shall connect each accessible story and mezzanine in multilevel buildings and facilities.

Exceptions:

- An accessible route is not required to stories and mezzanines that have an aggregate area of not more than 3,000 square feet (278.7 m2) and are located above and below accessible levels. This exception shall not apply to:
 - Multiple tenant facilities of Group M occupancies containing five or more tenant spaces used for the sales or rental of goods and where at least one such tenant space is located on a floor level above or below the accessible levels;
 - Stories or mezzanines containing offices of health care providers (Group B or I);
 - Passenger transportation facilities and airports (Group A-3 or B); or
 - Government buildings.
- Stories or mezzanines that do not contain accessible elements or other spaces as determined by Section 1107 or 1108 are not required to be served by an accessible route from an accessible level.

Exception 3 below allows for all required Type A units to be located on the first floor.

1107.4 Accessible Route

At least one accessible route shall connect accessible building or facility entrances with the primary entrance of each Accessible unit, Type A unit and Type B unit within the building or facility and with

those exterior and interior spaces and facilities that serve the units.

Exceptions:

- If due to circumstances outside the control of the owner, either the slope of the finished ground level between accessible facilities and buildings exceeds one unit vertical in 12 units horizontal (1:12), or where physical barriers or legal restrictions prevent the installation of an accessible route, a vehicular route with parking that complies with Section 1106 at each public or common use facility or building is permitted in place of the accessible route.
- In Group I-3 facilities, an accessible route is not required to connect stories or mezzanines where Accessible units, all common use areas serving Accessible units and all public use areas are on an accessible route.
- In Group R-2 facilities with Type A units complying with Section 1107.6.2.2.1, an accessible route is not required to connect stories or mezzanines where Type A units, all common use areas serving Type A units and all public use areas are on an accessible route.

The language below exempts upper floors without elevator service from containing accessible units.

1107.7.1 Structures Without Elevator Service

Where no elevator service is provided in a structure, only the dwelling units and sleeping units that are located on stories indicated in Sections 1107.7.1.1 and 1107.7.1.2 are required to be Type A units and Type B units, respectively. The number of Type A units shall be determined in accordance with Section 1107.6.2.2.1.

Type B units are only required on the ground floor per the section below.

1107.7.1.1 One Story With Type B Units Required

At least one story containing dwelling units or sleeping units intended to be occupied as a residence shall be provided with an accessible entrance from the exterior of the structure and all units intended to be occupied as a residence on that story shall be Type B units.

The exclusion of an elevator may prompt a question about the use of a single means of egress from the second and third floors. A single means of egress is allowed per the IBC 2015 language below. Emergency Escape and Rescue Openings per section 1030 will be provided.

1006.2.1 Egress Based on Occupant Load and Common Path of Egress Travel Distance

Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1.

Exceptions:

- In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and the common path of egress travel does not exceed 125 feet (38 100 mm).

Prepared For:
Kevin O'Rourke

Consultant:

ARCHETYPE ARCHITECTS
48 Union Wharf - Portland, Maine 04101

Architect:

Project:
DALTON PRUD

PORTLAND, ME

Revisions:

Scale:

Date:
04/05/2021

CODE SUMMARY

A0.01

M. Calculation of Wastewater Flowrate for Dalton PRUD Development

The proposed project includes four (4) separate residential buildings consisting of twelve (12) units each. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following daily flows:

Estimate of Design Flows			
Classification of Water Demand	Number of Units	Gallons per Day per Unit	Total Gallons per Day
<i>Existing</i>			
-	-	-	0
<i>Proposed</i>			
Residential Units (1-Bedroom)	24	120	2,880
Residential Units (2-Bedroom)	24	180	4,320
Total Existing			0
Total Proposed			7,200
Net Change			+7,200 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition			

As seen above, the project anticipates an increase in daily flow rate of approximately 7,200 gallons. Please see attached for the formal application template.



CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works
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: April 6, 2021

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

Site Address: Dalton Street Portland, Maine 0410

Proposed Use: Condominiums/ Multifamily residential

Previous Use: Undeveloped Land

Existing Sanitary Flows: 0 GPD

Existing Process Flows: GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

Proposed connection to the combined system within York Street

Chart Block Lot Number: 44-B-007

Site Category	Commercial (see part 4 below)	☐
	Industrial (complete part 5 below)	☐
	Governmental	☐
	Residential	☒
	Other (specify)	☐

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

2. Please, Submit Contact Information.

City Planner's Name: TBD

Phone: 207-874-8719

Owner/Developer Name: Hammond House, LLC

Owner/Developer Address: 94 South Street Yarmouth, ME 04096

Phone: Fax: E-mail: kevin@gravitysports.org

Engineering Consultant Name: Sam Lebel, P.E. - Acorn Engineering, Inc.

Engineering Consultant Address: 65 Hanover Street Portland, Maine 04102

Phone: (207) 775-2655 Fax: E-mail: slebel@acorn-engineering.com

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 7,200 GPD

Peaking Factor/ Peak Times: Diurnal Residential Flow Pattern

Specify the source of design guidelines: (i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify) State of Maine Subsurface Wastewater Disposal Rules, Effective 8/3/15

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values:

N/A

Size of External Grease Interceptor:

Retention Time:

Peaking Factor/ Peak Times:

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated:

N/A

GPD

Do you currently hold Federal or State discharge permits?

Yes

No

Is the process wastewater termed categorical under CFR 40?

Yes

No

OSHA Standard Industrial Code (SIC):

(<http://www.osha.gov/oshstats/sicser.html>)

Peaking Factor/Peak Process Times:

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

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

N. Lighting

Photometric plans for the proposed site will be forwarded if deemed necessary. Please see attached for the cut sheet for the sole proposed light model. At this time, the lighting program is simple in nature with typical modest downlit 3000k LED wall packs at the entrances and utility room. There is no proposed site lighting at this time. Furthermore, the development footprint is well buffered by existing vegetation and given the relatively large setbacks, there will be no light trespass caused by the building's wall packs.

LNC SERIES	Cat.#	Type	 HUBBELL Outdoor Lighting
	Job		

SPECIFICATIONS

Intended Use:

The compact LED LNC is designed for entry/perimeter illumination for safety, security and identity. Typical mounting height is up to 12 feet with 40ft fixture spacing (without acrylic diffuser) and 30ft spacing with acrylic diffuser installed. Photocontrol option is available to provide dusk-to-dawn control for additional energy savings.

Construction:

Decorative die-cast aluminum housing and door. Rugged design protects internal components and provides excellent thermal management for long life – 60,000 hours minimum LED life at L96 rating per IESNA TM-21-11. Powder paint finishes provide lasting appearance in outdoor environments.

Optics/Electrical

LED:

Drivers are 120-277V, 50/60Hz Type II, III and Type IV lenses provide wide lateral spread.

- LNC5L – 5 LEDs, Types II, III or IV available, see page 2 for electrical details
- LNC7L – 7 LEDs, Type II, III or IV available, see page 2 for electrical details
- LNC9L – 9 LEDs, Types II, III or IV available, see page 2 for electrical details
- 3000K - 80 CRI, 4000K - 70 CRI, and 5000K - 70 CRI, CCT nominal
- Minimum operating temperature is -40°C/-40°F
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion

Lenses:

Full cut-off distribution; Ambient diffuser included, use for applications near entrances or locations where reduced brightness is desired.

Installation:

Quick mount adapter provides quick installation, designed for recessed box 4" square junction box.

Listings:

Listed and labeled to UL 1598 for wet locations, 25° C ambient environments. DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at: <http://www.designlights.org/>

- IES Progress Award Winner - 2012

Warranty:

Five year limited warranty. For more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>

PRODUCT IMAGE(S)



LNC-5L



LNC-7L



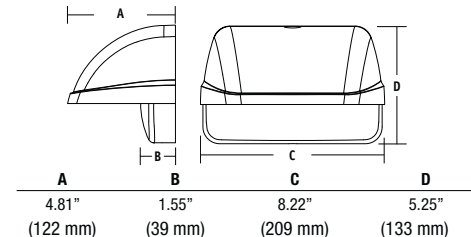
LNC-9L



With diffuser



DIMENSIONS



SHIPPING INFORMATION

Catalog Number	G.W(kg)/CTN	Carton Dimensions			Carton Qty. per Master Pack
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	
LNC-5LU	9.6 (4.36)	14.5 (37)	9.6 (24.5)	6.8 (17.5)	2
LNC-7LU	9.6 (4.36)	14.5 (37)	9.6 (24.5)	6.8 (17.5)	2
LNC-9LU	9.6 (4.36)	14.5 (37)	9.6 (24.5)	6.8 (17.5)	2

CERTIFICATIONS/LISTINGS



ORDERING INFORMATION

ORDERING EXAMPLE: LNC-9LU-5K-3-1-PCU

LNC	-		-		-		-		-	
SERIES	NUMBER OF LEDs	VOLTAGE	CCT	IES DISTRIBUTION	FINISH	OPTIONS				
LNC LNC zero uplight	5L 5 LEDs 7L 7 LEDs 9L 9 LEDs	U 120V-277V 1 120V 2 208V 3 240V 4 277V	3K 3000K nominal, 70 CRI 4K 4000K nominal, 70 CRI 5K 5000K nominal AM ¹ Amber (590 nm) available for "Turtle Friendly" / observatory applications, 350 mA (consult factory)	2 Type II 3 Type III 4 Type IV	1 Bronze 2 Black 3 Gray 4 White 5 Platinum * Specify Finish	PCU Universal Button Photocell				

¹ Amber LEDs only available on 7LU and 9LU configurations, 350 mA only


Job Name:
HAMMOND ST. DEVELOPMENT - SITE
Catalog Number:

LNC-5LU-4K-2-*

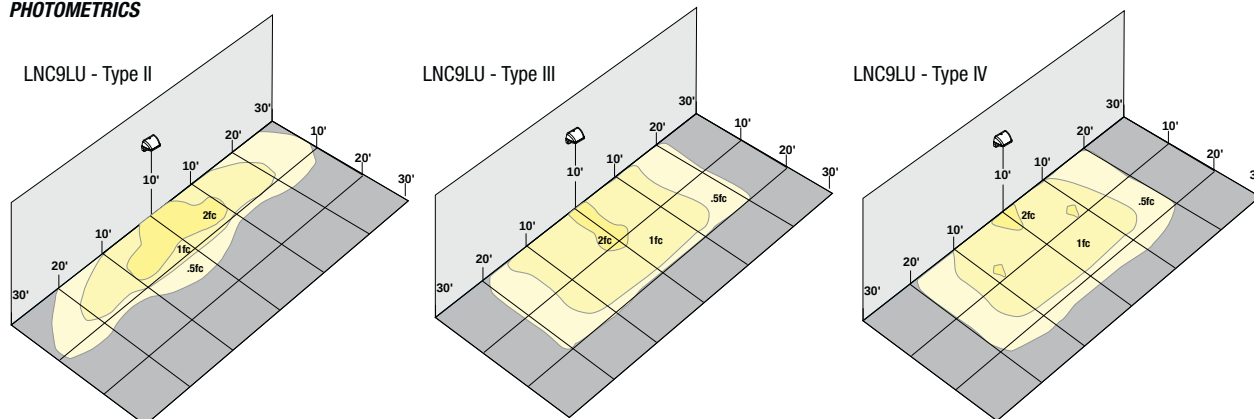
Notes: SPECIFY FINISH

Type:**WP-1**

SLA18-40388

REPLACEMENT PART

CATALOG NUMBER	DESCRIPTION
93039574	Frosted comfort shield, improved uniformity with only 5% reduction

PHOTOMETRICS**PERFORMANCE DATA**

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 70 CRI)		4K (4000K nominal, 70 CRI)		3K (3000K nominal, 80 CRI)		AM (<580 nm wave-length)		
				LUMENS	LPW'	LUMENS	LPW'	LUMENS	LPW'	LUMENS	SYSTEM WATTS	LPW'
5	STD. (700mA)	13W	2	1,150	88.5	1,052	81	883	68			
			3	1,132	87	1,077	83	833	64			
			4	1,146	88	1,053	81	849	65			
7	AM (350mA)	17W	2	1,515	89	1,369	80.5	1,272	75			
			3	1,500	88	1,539	90.5	1,392	82	268	6.6	59
			4	1,557	91.5	1,535	90	1,425	84			
9		22W	2	2,069	94	2,033	92	1,588	72			
			3	2,024	92	1,989	90	1,623	74			
			4	2,095	95	2,059	93.5	1,680	76	382	8.3	46

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. Please consult IES files for BUG ratings.

PROJECTED LUMEN MAINTENANCE

Ambient Temp.	OPERATING HOURS					
	0	25,000	50,000	TM-21-11 ¹ 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	0.94	>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.

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE	LUMEN MULTIPLIER
0° C	1.02
10° C	1.01
20° C	1.00
25° C	1.00
30° C	1.00
40° C	0.99
50° C	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

ELECTRICAL DATA

# OF LEDS	DRIVE CURRENT (mA)	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (w)
5	1	STD. (700mA)	120	0.11	13
			277	0.05	13
7	1	STD. (700mA)	120	0.14	17
			277	0.07	17
9	1	STD. (700mA)	120	0.17	22
			277	0.09	22


HUBBELL
Outdoor Lighting

Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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LAREDO LNC-SPEC

AUGUST 30, 2017 4:47 PM

O. Architectural Design Narrative

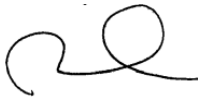
Please find attached the design narrative completed by Archetype Architects.



Architectural Narrative

Although somewhat remote from the surrounding neighborhood, the buildings use all traditional New England siding and trim details. The clapboard is vinyl but window trim, door trim and corner boards are PVC to give a crisp distinctive line identifying the building elements. There are four buildings each a three-story building with a shingled hip roof. Each building has two main entrances located on a side elevation yielding easy access from parking area. A walkway from the street sidewalk is identified with two granite posts identifying the entry walk to the main door. The doors are identified with double columns and an overhang trimmed out in classic New England style. Each side door gains access to six units for a total of twelve units per building. Keeping the buildings at twelve units helps scale the project down to be in harmony with neighboring buildings scale. Each unit has a deck or patio breaking up the façade and offering the private outdoor amenity for the occupants. The buildings are placed to allow proper landscaping but close enough to preserve as much natural wooded area as possible.

David Lloyd, Principal Architect



Maine Licensed Architect
Architect/President, Archetype

P. Utilities

The proposed project will include installation of multiple utility services to the renovated building.

Water:

It is proposed to serve the site with an 8" fire line running the length of the access drive. This line will connect into PWD's 12" main within Sherwood Street. The site will also be served by a 4" domestic line. Each of the four (4) buildings will be served by a 6" fire and 2" domestic service that will connect into the mechanical room for each respective building.

Sewer:

It is proposed to connect a 8" common sewer line into the existing sewer manhole located within Sherwood Street. The proposed main will run parallel with the Access Drive to serve the site. Each building will connect into this main with 6" laterals. Please refer to the Wastewater Capacity Letter for more information.

Stormwater:

The project will trigger general and flooding standards as they pertain to Chapter 500 of the Maine DEP regulations. As such, on site quantity and quality control will be provided by capturing 95% of the new impervious area and routing it to underdrained subsurface sand filters before it's slowly metered out to the existing detention basin along Dalton Street. The proposed peak flowrates in the post condition show a noticeable decrease as compared to the existing condition. Furthermore, the off-site run-on from the neighboring school has been accounted for and will be diverted to the existing detention basin where it currently flows. The project continues to coordinate with the design engineer of the school renovation project.

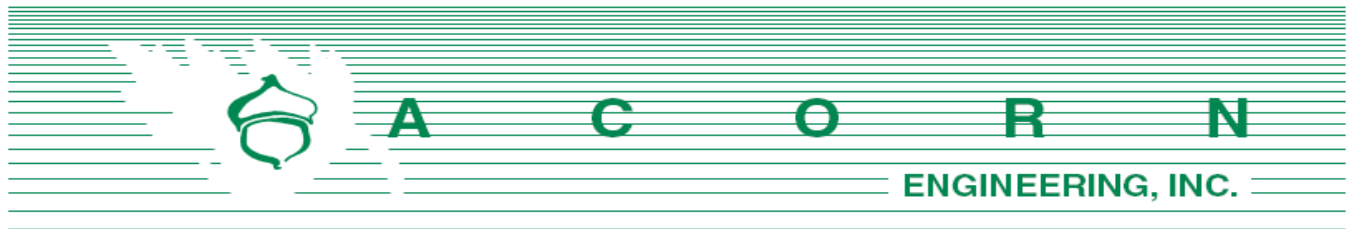
Electric/Communications:

It is proposed to install a riser on the existing utility pole near the site entrance on Sherwood. From here underground conduits will be run into the site to serve the electric and communication demands of the development. A total of four (4) separate pad mounted transformers are proposed to serve the residential buildings.

Natural Gas:

The development is currently contemplating the extension of the existing gas main

Various coordination streams including ability to serve letters are under way with the respective utility companies. Please find attached the letters sent out to date. Formal approvals will be forwarded upon receipt.



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

April 22, 2021

Subject: Dalton Street PRUD
 Re: Ability to Serve

To Whom It May Concern:

On behalf of Hammond House, LLC we are pleased to submit the following request for PWD's ability to serve the proposed development. The proposed project is located at the end of Dalton Street and contains the following parcels, Chart, Book, Lot: 428-A-008-013, 427-I-007-009, 427-K-001-004, 427-L-005-008 and 427-L-012, 427-N-001-004 and 427-N-012. The site is located within the R-5 Residential Zoning District in Portland, Maine. The property consists mainly of undeveloped land with an existing single-family home and accessory structures. The project includes the development of four (4) multi-family buildings with accompanying roadway, parking, and recreation space.

The existing single-family dwelling will continue to be served by the existing services within Dalton Street. It is proposed to serve the site with an 8" fire line running the length of Winchester Drive. This line will connect into the 12" main within Sherwood Street. The site will also be served by a 4" domestic line with an underground meter pit proposed within Winchester Drive. Each of the four (4) buildings will be served by a 6" fire and 2" domestic service that will connect into the mechanical room for each respective building. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, and assuming that the units will be comprised of 6 one-bedroom units and 6 two-bedroom units in each of the four proposed buildings, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Single Family Dwelling (Dalton St)	3-Bedroom	1	270	270
Total Gallons per Day (Existing)				270
Proposed Flow				

Single Family Dwelling (Dalton St)	3-Bedroom	1	270	270
Residential Units	1-Bedroom	24	120	2,880
Residential Units	2-Bedroom	24	180	4,320
Total Gallons per Day (Proposed)				7,470
Net Change				+7,200 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

The proposed project is anticipated to increase the net flow by approximately 7,200 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. Additionally, the number of bedrooms per unit may change later in the design process. We will provide any changes to the anticipated water demand.

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

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

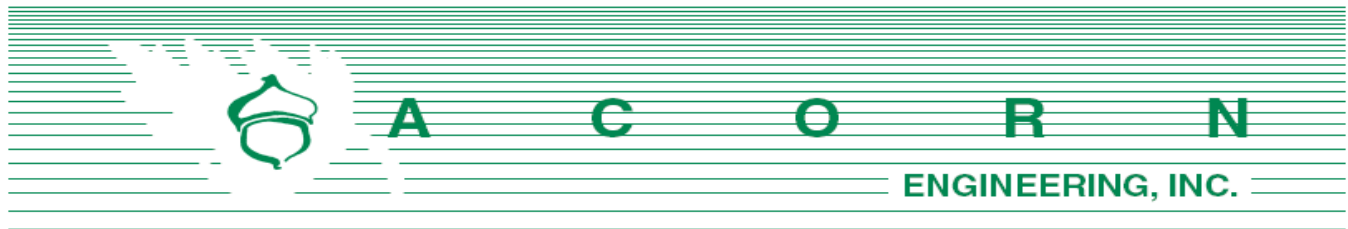
I have attached a fixture count, an existing conditions plan created by Owen Haskell, Inc., and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Nate Pratt-Holt, E.I.
Design Engineer
Acorn Engineering, Inc.





Spectrum Cable
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

April 22, 2021

Subject: Dalton Street PRUD
Re: Ability to Serve

Dear Mr. Pelletier:

On behalf of Hammond House, LLC we are pleased to submit the following request for Spectrum's ability to serve the proposed development. The proposed project is located at the end of Dalton Street and contains the following parcels, Chart, Book, Lot: 428-A-008-013, 427-I-007-009, 427-K-001-004, 427-L-005-008 and 427-L-012, 427-N-001-004 and 427-N-012. The site is located within the R-5 Residential Zoning District in Portland, Maine. The property consists mainly of undeveloped land with an existing single-family home and accessory structures. The project includes the development of four (4) multi-family buildings with accompanying roadway, parking, and recreation space.

The existing single-family dwelling will continue to be served by the aerial services on Dalton Street. It is also proposed that new underground services be dropped from the existing utility pole on Sherwood Street. The conduit will cross Sherwood Street and continue within the proposed roadway to each of the proposed buildings.

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

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

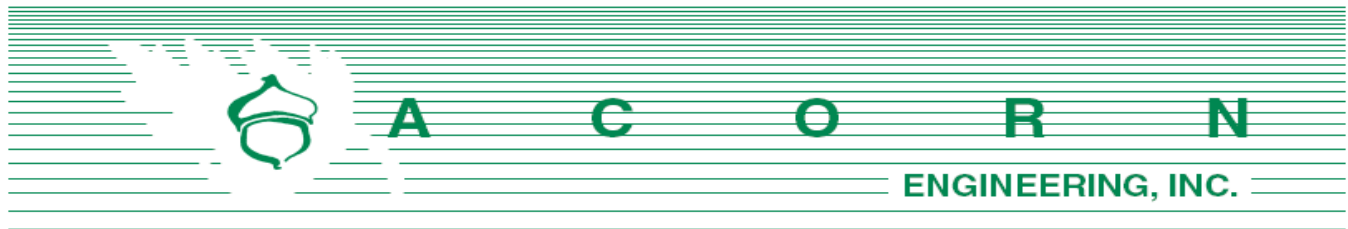
I have attached an existing conditions plan created by Owen Haskell, Inc. as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Nate Pratt-Holt, E.I.
Design Engineer
Acorn Engineering, Inc.



A C O R N Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104



Central Maine Power Company
162 Canco Road
Portland, Maine 04103

April 22, 2021

Subject: Dalton Street PRUD
Re: Ability to Serve

To whom it may concern:

On behalf of Hammond House, LLC we are pleased to submit the following request for CMP's ability to serve the proposed development. The proposed project is located at the end of Dalton Street and contains the following parcels, Chart, Book, Lot: 428-A-008-013, 427-I-007-009, 427-K-001-004, 427-L-005-008 and 427-L-012, 427-N-001-004 and 427-N-012. The site is located within the R-5 Residential Zoning District in Portland, Maine. The property consists mainly of undeveloped land with an existing single-family home and accessory structures. The project includes the development of four (4) multi-family buildings with accompanying roadway, parking, and recreation space.

The existing single-family dwelling will continue to be served by the aerial services on Dalton Street. It is also proposed that new underground services be dropped from the existing utility pole on Sherwood Street. The conduit will cross Sherwood Street and continue within the proposed roadway to four (4) proposed pad-mounted transformers to serve the residential structures.

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

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

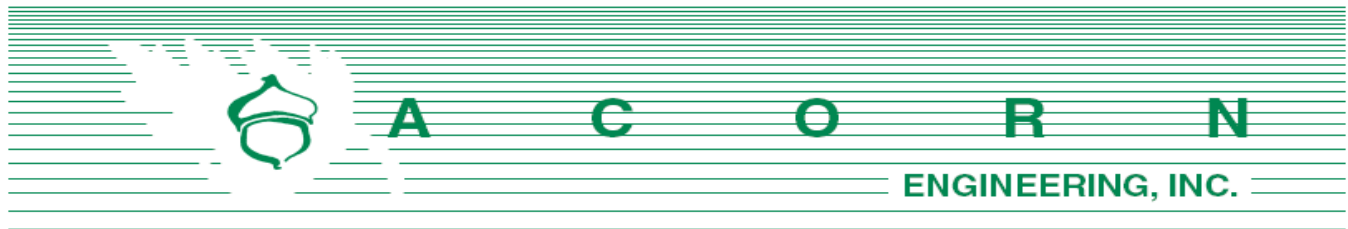
I have attached an existing conditions plan created by Owen Haskell, Inc. as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Nate Pratt-Holt, E.I.
Design Engineer
Acorn Engineering, Inc.



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207-775-2655 • PO Box 3372 • Portland • Maine • 04104



Consolidated Communications
Attn: Mr. Patrick Morrison
5 Davis Farm Road
Portland, Maine 04103

April 22, 2021

Subject: Dalton Street PRUD
Re: Ability to Serve

Mr. Morrison:

On behalf of Hammond House, LLC we are pleased to submit the following request for Consolidated's ability to serve the proposed development. The proposed project is located at the end of Dalton Street and contains the following parcels, Chart, Book, Lot: 428-A-008-013, 427-I-007-009, 427-K-001-004, 427-L-005-008 and 427-L-012, 427-N-001-004 and 427-N-012. The site is located within the R-5 Residential Zoning District in Portland, Maine. The property consists mainly of undeveloped land with an existing single-family home and accessory structures. The project includes the development of four (4) multi-family buildings with accompanying roadway, parking, and recreation space.

The existing single-family dwelling will continue to be served by the aerial services on Dalton Street. It is also proposed that new underground services be dropped from the existing utility pole on Sherwood Street. The conduit will cross Sherwood Street and continue within the proposed roadway to each of the proposed buildings.

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

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

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

Sincerely,

Nate Pratt-Holt, E.I.
Design Engineer
Acorn Engineering, Inc.



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Q. Construction Management Plan

Project Address: Dalton/Sherwood Street (future private way to become Winchester Drive)

Project Description:

The proposed project includes the development of a 3.4 ac parcel to accommodate four (4) residential buildings with a total of forty-eight (48) units.

Project Team Summary:

Owner:	Hammond House, LLC
General Contractor:	TBD
Civil & Environmental Engineer:	Acorn Engineering, Inc.
Architect:	Archetype Architects
Structural Engineer:	M2 Structural Engineering
Geotechnical Engineer:	Summit Geoengineering Services

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

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

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

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

A. Construction Management Principles

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

B. Development Review of Construction Management Plan

Logistics and safety program shall be submitted at or prior to the preconstruction meeting by the GC with all pertinent information required by the Maine Department



of Transportation's Traffic Control Plan Standard Specification 652.3.3.

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

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

1. Street Opening and Street Occupancy Permits:

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

2. Blasting:

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

3. Building Code:

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

D. Construction Administration and Communication

The Contractor will work closely with adjacent abutters, businesses, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Communication in order to comply with all agreements, ordinances, and special permits will be of the utmost importance. Contractor and Subcontractor contact information shall be posted somewhere along the project's street frontage. Additional signage necessary for communication shall be provided but will be temporary and removed upon completion of the project.

E. Construction Schedule

The GC shall submit a construction timeline at or prior to the preconstruction meeting. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit and City Code Section 25-129, Noise, dust and debris. Between September 1 and May 31, the following year, no person shall engage in construction activities generating noise exceeding 50 decibels, between the hours of 7 pm and 7 am of the following day within 500 feet of any buildings. From June 1 to August 31, construction activity may continue until 8 pm. No construction activity shall begin before 8 am on a Saturday, Sunday, or legal holiday. Extended hours or night work may be requested for special circumstances and street utility work if needed. These requests will be subject to approval by the Public Works Authority. Deliveries will be scheduled between 7 am and 5 pm.



The estimated timeframe of the proposed project is outlined below:

<u>Project Start Date:</u>	Fall 2021
<u>Project End Date:</u>	Spring 2023

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City.

F. Security

1. The Construction Management Plan, Sheet C-03, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*
3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - o Good Housekeeping
 - o On-site security
 - o Installation of new fire protection systems as construction progresses
 - o Preservation of existing systems during demolition
 - o Organization and training of an on-site fire brigade
 - o Development of a pre-fire plan with the local fire department
 - o Rapid communication
 - o Consideration of special hazards resulting from previous occupancies
 - o Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

Construction activity in the public right-of-way shall be compliant with Chapter 25 Article VII of the City Code. At no time will it be permissible for construction activity including delivery vehicle to close or block streets or affect public safety



access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater

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

3. Traffic Control Plans

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

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

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

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

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



- Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

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

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately, and its removal shall comply with all local, state, and federal regulations.
2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.
3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.
4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.
5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.
6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:
 - a. Snow/ice removal or commence automatically from 1" or greater of snow or ice
 - b. Remove snow as needed within the work zone, including parking spaces. Driveways and site lines shall not be blocked by piles of snow.
 - c. Clear all walks and ramps within the work zone
 - d. Sand or salt as needed
 - e. Clear all basin or drainage to help snow melt
 - f. The above steps shall be carried out Sunday-Saturday including holidays.

I. Erosion & Sedimentation Control

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved Construction Management Plan, C-03, and the approved erosion and sedimentation control report, prior to the pre-construction meeting for inspection



- by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after storm events (0.5" or more in 24 hours). Additionally, temporary or permanent stormwater management systems shall be inspected and maintained to ensure working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection (MDEP) or the U.S. Environmental Protection Agency (EPA) upon request.
2. Due to the existing, sparse landscaping on site, no protection during construction will be necessary.
 3. Stored materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for the location of material staging areas, the location of on-site temporary construction trailers, the location of on-site truck delivery holding areas, the location of on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.
3. All deliveries for materials shall comply with the City's noise requirements.

K. Parking During Construction

1. Adequate parking for construction workers shall be provided on site or arrangements for off-street parking at an off-site location shall be provided.
2. Truck Routes and Volumes: The following quantities are estimated as part of the reconstruction:
 - Gravel & Stone – 1,500 CY. Earthwork subcontractor(s) pit to project site.
 - Hot Mix Asphalt – 75 Tons. Paving subcontractor pit to project site.

L. Dewatering Plans



1. A basic dewatering plan for any construction work is required and shall be submitted by the Contractor. The plan must cover construction sites where groundwater is not expected but the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including filters, erosion and sediment control measures, or other methods of removing sediment from approved discharges.
2. For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared by the Contractor and approved by the Department of Public Works. Groundwater and/or soil testing may be required to determine course of action if treatment is necessary. Approval for all discharges to City infrastructure is required. The proposed plan must address the following:
 - Project duration, discharge location, storage equipment on-site, dewatering schematic, and emergency contact.
 - General requirements include trained staff on-site for all approve discharges and required site log for documentation of all discharges.
 - Storage and/or treatment process should include proper settling time and maintain proper use of filtering medium as required.
 - Contingency/maintenance plan for all dewatering equipment devices and filtration mediums.

Any water that is removed from an excavation must be pumped from a perforated device buried in crush stone prior discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

M. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

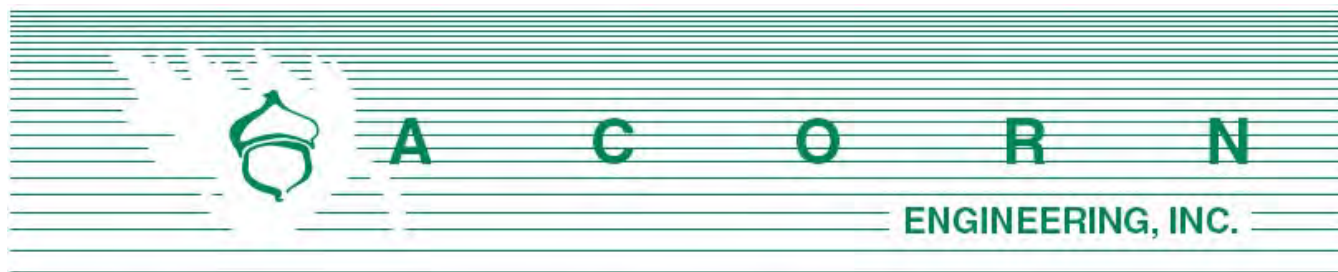


R. Solid Waste Disposal

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

The solid waste containers will be fully enclosed and screened from the public view. A private hauler will be contracted with for removal.





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

June 7, 2021

Subject: Winchester Woods Neighborhood Meeting

I, Sam Lebel, hereby certify that a neighborhood meeting was held on May 27, 2021 remotely over a video conference at 5:35 pm.

I also certify that on May 17th, 2021 invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.
2. Residents on the “interested parties” list.

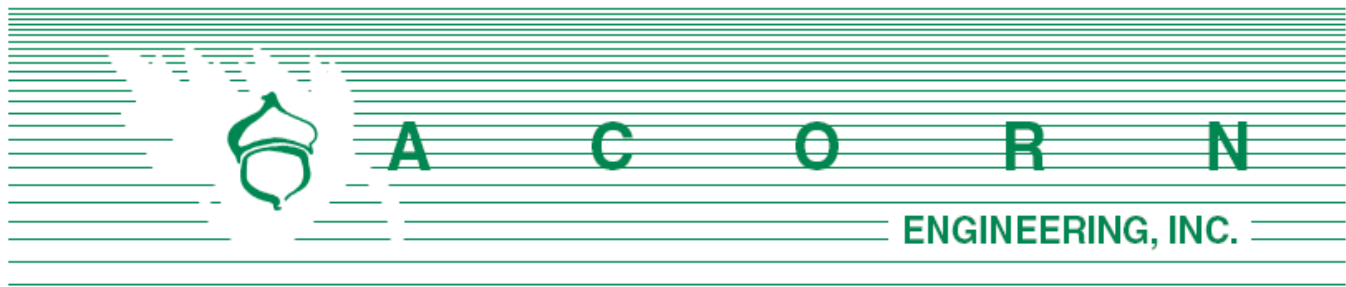
Sincerely,

A handwritten signature in cursive script that reads 'Sam Lebel'.

Sam Lebel, P.E.
Project Manager Acorn
Engineering, Inc.

Included with this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes



Dear Neighbor:

May 17, 2021

On behalf of Hammond House, LLC, we are pleased to invite you to a neighborhood meeting to discuss plans for the proposed residential project at the end of Dalton Street within the R-5 Zoning District. The project includes a Planned Residential Unit Development (PRUD) with the construction of four, three-story buildings, each containing twelve residences. The site will be served by a private access road, on-site parking, and a multi-purpose green space.

Meeting Location: This meeting will be available for public viewing and participation via Zoom. **For those wishing to attend this meeting, please email admin@acorn-engineering.com for a link or phone number to join the meeting.** You may also call the office line (listed below) to request this information.

Meeting Date/Time: Thursday, May 27, 2021 at 5:30 pm

The City code requires that property owners within 500 feet of the proposed development and residents on an “interested parties list” be invited to participate in a neighborhood meeting. Both the sign-in sheet and recorded meeting minutes will be submitted to the Planning Board. The meeting is anticipated to be run similarly to previous non-virtual neighborhood meetings and the project team will give an overview of the process at the beginning of the meeting.

If you have any questions, please don’t hesitate to call me at (207) 775–2655. We look forward to seeing you at the meeting.

Sincerely,

A handwritten signature in black ink that reads "Sam Lebel".

Sam Lebel, P.E.
Project Manager
Acorn Engineering, Inc.

Sign-In Sheet

5/27/2021

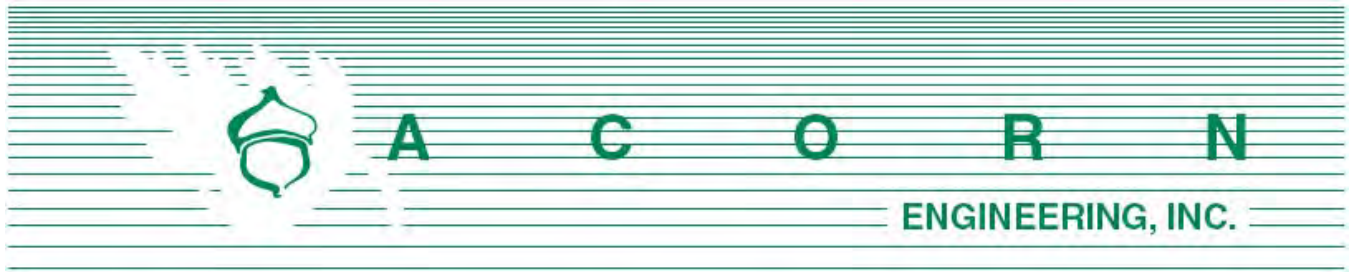
Members of the Public in Attendance¹:

NAME	EMAIL
1. Susan Campbell	
2. Marge Queen	maqbeachbum@gwi.net
3. Loren and Patty Peters	loren1952@gmail.com
4. Elaine Carney	elaine@propsectjh.com
5. Gloria Dubail	mcdkeller@gmail.com
6. Melissa and Michael Isgro	Melissa.Ann.Isgro@gmail.com
7. Heather Doolittle	hdoolitt@gmail.com
8. Jaime Parker	jaime@trails.org
9. Cheryl Leeman	
10. Aura Russell-Bedder	arussellbedder@gmail.com

Please note that additional neighbors were in attendance but chose not to sign in.

Developer and Consultant Team in Attendance:

NAME	EMAIL
1. Kevin O'Rourke – Hammond House LLC	kevin@gravitysports.
2. Will Savage – Acorn Engineering, Inc.	wsavage@acorn-engineering.com
3. Sam Lebel – Acorn Engineering, Inc.	slebel@acorn-engineering.com
4. Nate Pratt-Holt – Acorn Engineering, Inc.	nprattholt@acorn-engineering.com
5. Devin Cough – Archetype Architects	devin@archetypepa.com



Winchester Woods Apartments Neighborhood Meeting

Neighborhood Meeting Minutes

May 27, 2021 / 5:35 pm

Remote meeting via Zoom

Project Team Participants:

Kevin O'Rourke (KO): Developer/Presenter – (Hammond House LLC)

Sam Lebel (SL): Civil Engineer/Presenter (Acorn Engineering)

Will Savage (WS): Civil Engineer (Acorn Engineering)

Nate Pratt-Holt (NH): Civil Engineer/Note Taker (Acorn Engineering)

Devin Cough (DC): Architect/Presenter (Archetype Architects)

Meeting started at approximately 5:35 pm.

Presentation:

Kevin O'Rourke:

- (Slide 1)
 - o Developer and Applicant
 - o Introduced the project
 - o History of Career as developer, over 20 years of experience as residential developer
 - o Explained history of site and F-Street, laid out as subdivision from 1865
 - o Explained intent to use F-Street (paper street) to build Winchester Drive
 - o Vision to create high quality rental housing
 - o 12 of 48 units to be deed restricted for workforce housing and to be spread throughout the 4 buildings
 - o Overview of PRUD and the allowance of increased housing density under City conditions

- o PRUD standards allows for 55 units, but only proposing 48 units
- (Slide 2)
- Proposing pedestrian and bike accesses
 - o Intent of creating a neighborhood within a neighborhood
- (Slide 1)
 - o Clarification of buffering to screen site from Sherwood

Sam Lebel:

- (Slide 2)
 - o Meeting minutes being taken and to be submitted to City
 - o Preparing to be in front of planning board in June or July
 - o Planner is Shukria Wiar
- (Slide 3)
 - o Overview of streets and geographic features around the site
- (Slide 4)
 - o Brief history of site containing subdivided lots
 - o Existing wetland to south of site, appear to be manmade and serve as neighborhood drainage collection point
- (Slide 5)
 - o Four separate buildings, each with 12 units to make up 48 proposed units
 - o 12 of 48 to be restricted for affordability, with the remaining 36 units to be market rate units
 - o 22' driveway (Winchester Woods Drive) will come off Sherwood
 - o Proposed sidewalk to allow access for residents and linkage to Portland Trails system
 - o Proposing 63 parking spaces on site for a 1.3 space to unit ratio
 - o Alternative transportation options near site such as Metro, pedestrian, and bicycle opportunities
 - o Single family house property to be separate from the development
 - o 14,400 sf multi-purpose recreation field as part of the PRUD standards
 - o No wetland disturbance, looking to preserve mature trees on site to the greatest extent practical
 - o Underground utilities to serve the site
 - o Project to detain, cool, and treat 95% of project's impervious area with a slight reduction of peak flows when compared to the pre-condition via MaineDEP approved stormwater infrastructure



Devin Cough:

- (Slide 6)
 - o Building material with traditional New England material and sloped roofs
 - o Consistent with neighborhood
 - o Vinyl clapboard siding that changes to vertical board and batten to define the entryway

- (Slide 7)
 - o Each unit to be supplied with energy efficient heat pumps for heating and cooling
 - o Even mix of 750 sf one-bedroom units and 900 sf two-bedroom units to allow for diverse mix of residents
 - o Ground floor units type B accessible with one unit fully type A accessible

Comments, Questions & Answers:

Please note that the following questions and answers were not recorded verbatim and aim to represent and summarize the actual questions, answers, and discussion that took place at the meeting.

Q: Will the trail behind Presumpscot School be preserved?

SL: We are looking to enhance the connection to the trail system. Willing to improve the portion on site. Providing access off sidewalk in site via a crosswalk.

Q: Is the multipurpose recreation field public? Will there be access from Dalton Street?

KO: We are providing parking off Dalton Street to allow for ADA access. Unclear how the city requires parking to open space. Would prefer to allow access to the public kids in the neighborhood.

Q: (*Question/comments from Jamie Parker of Portland Trails*) How will the existing trail be accessed? Would like to work with the development team to see the existing trail improved. Can a new trail be linked from the recreation space to the Presumpscot School trail. The community should have input on the use of the recreation field.

Q: Will Dalton street be used as an access point for construction vehicles?

SL: This will depend on the contractor's preference. We are currently proposing options for access off Sherwood and Dalton Streets.



KO: Based on preliminary discussions with the potential contractor, the site access is likely to occur primarily off Sherwood Street.

Q: How will more cars be allowed into Sherwood Street giving existing size constraints of the road?

SL: Trip generation numbers have been run for the site to quantify trip generation. This will likely not have a large impact on the street network as the peak hour is in the low 20's.

Q: How will Presumpscot School cope with an increase in children in the neighborhood if they don't go through with their renovations?

KO: If the School has an overcrowding issue it is unlikely that prospective tenants with children will want to move into the apartments knowing these issues.

Q: Can a traffic study be performed for Sherwood and Dalton Streets? What will the lighting look like to neighbors, what about the trail lighting? What will the buffering requirements be from the southeast of the site and Dalton? What will the impacts be on the wetland from the development? General concerns about parking. Would like to see a traffic study performed for Sherwood Street. Concerns about on street parking on Sherwood Street. Concerns about on street parking on Dalton during the winter specifically.

SL: Parking will not be proposed on either Sherwood or Dalton Streets. The site is very close to bus stops and is in close proximity to downtown Portland. The multimodal transportation opportunities near the site will reduce the parking generation. The city would likely not require a traffic study due to the predictability of multifamily residential when compared to commercial uses as well as the low trip generation. No plans for trail lighting at this time. The lighting on the buildings will be wallpacks and downlit to eliminate trespass over the property line with a photometric plan likely on its way. The site will find a balance between safety and eliminating trespass to neighbors. A 22' minimum buffer will be held to the southeast of the site at the "pinch point" with a greater buffer elsewhere. The stormwater runoff will be collected via underground chambers to reduce the peak flow rates generated by the site when comparing the existing condition to the proposed project. This analysis will be reviewed by the city and their peer review consultant.

Q: There are traffic issues going to the schools in the morning. A traffic study would be good for this area even if not required by the city. Is the grading shown in the first slide accurate?

SL: This rendering has not been nailed down yet to match the plans so there are some slight tweaks to make to incorporate the correct grading.

Q: Are there plans to prevent the migration of the invasive Japanese Knotweed?

SL: This would likely be addressed once a contractor has been selected.

Q: This study should occur before that step, the city arborist and DEP should be addressed.

SL: We can have that discussion with the arborist and reference DEP resources.



Q: A traffic study should be prepared. How will changes to surrounding properties be communicated?

KO: A preconstruction meeting will be required for this project to help manage these issues.

Q: What will the distance be from the property line to the edge of the proposed road?

SL: Approximately 6'. We are looking to retain the greatest extent of the existing stone wall along Sherwood.

Q: What is considered 80% of the area median income?

KO: 80% of the area median income for a family of 1 is \$54,950. 80% for a household of 2 is \$62,800. A household of 4 is \$78,500. Prospective tenants would need to be below these criteria thresholds in order to meet the deed restricted housing.

C: There is a lot of commercial traffic on Sherwood Street.

C: I support the request for a traffic study to help preserve safety of kids near the School. You should coordinate with the school renovation project.

KO: We have had preliminary discussions with the School's Civil Engineer as well as School Representatives to coordinate the two construction projects.

C: Traffic should be coordinated between the two developments.

Q: Why will the access to the site be provided off Sherwood?

KO: The extension to Dalton has been terminated to avoid disturbing wetlands. The sightlines from Sherwood Street are better than from Dalton when turning onto Veranda Street.

C: Emphasize the traffic issues and recommend a traffic study. The slides don't depict the actual conditions on the abutting houses. Concerns about impact on watershed from development.

SL: The runoff from the pavement and roofs will be directed into sand filters to cool and detain runoff before discharging to wetlands. These systems are underneath the pavement and will slowly release treated stormwater.

Q: What are your plans to provide a buffer for the site?

KO: We will protect the healthy and mature trees along the perimeter of the site where possible as well as plant new trees to improve the aesthetic.

Q: How can we determine which trees will be removed as part of this project?



KO: This will occur at the pre-construction meeting. It is my intent to protect the landscape to the greatest extent possible.

C: Sensitivity to neighborhood and environment are critical factors to this project.

Q: Have you considered access from the railyard off Presumpscot Street?

KO: I have reached out to the Railroad and have not received a response.

Q: Is there any local significance to the name “Winchester Woods”?

KO: I submitted various street names to the City’s E911 naming process. The name seemed to fit into the framework of the existing surrounding street names.

Q: Why is it called 0 Dalton Street?

KO: I believe that is what the lot is called on the City’s Tax Maps.

Q: Is the land that you are using City Owned?

KO: No, the property was privately owned. We are not developing this property with any funds from the City.

WS: Any remaining questions or comments?

Q: How will houses on Dalton be impacted, specifically at the end of the street?

KO: 29 Dalton will be renovated and improved. The other houses on Dalton will not be impacted other than construction noise during the days.

Q: What are the next steps? How can we request a traffic study?

WS: We will be assigned a planning board workshop. This is a public process and anyone in attendance tonight can attend that meeting and offer feedback. Shukria Wiar is the planner for this project and is the best source for you to address your comments and questions to. Meeting minutes are being taken and will be submitted to the public.

Q: Will we be notified of future meetings?

WS: The City handles this and will send out notification to all abutters within 500’ of the project.

KO: Thank you everybody for participating in this conversation tonight.

Meeting concluded at approximately 7:05 pm.



The abovementioned material was as interpreted and recorded from handwritten notes. Please note and relay any discrepancies or disputed information in the recorded minutes to the below address so that they can be reviewed, revised, and resubmitted as necessary.

Recorded by,



Nathan Pratt-Holt, E.I.

Design Engineer

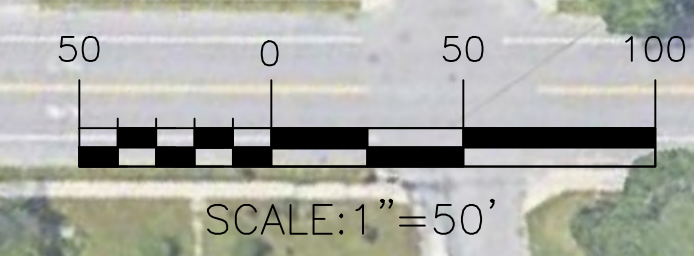
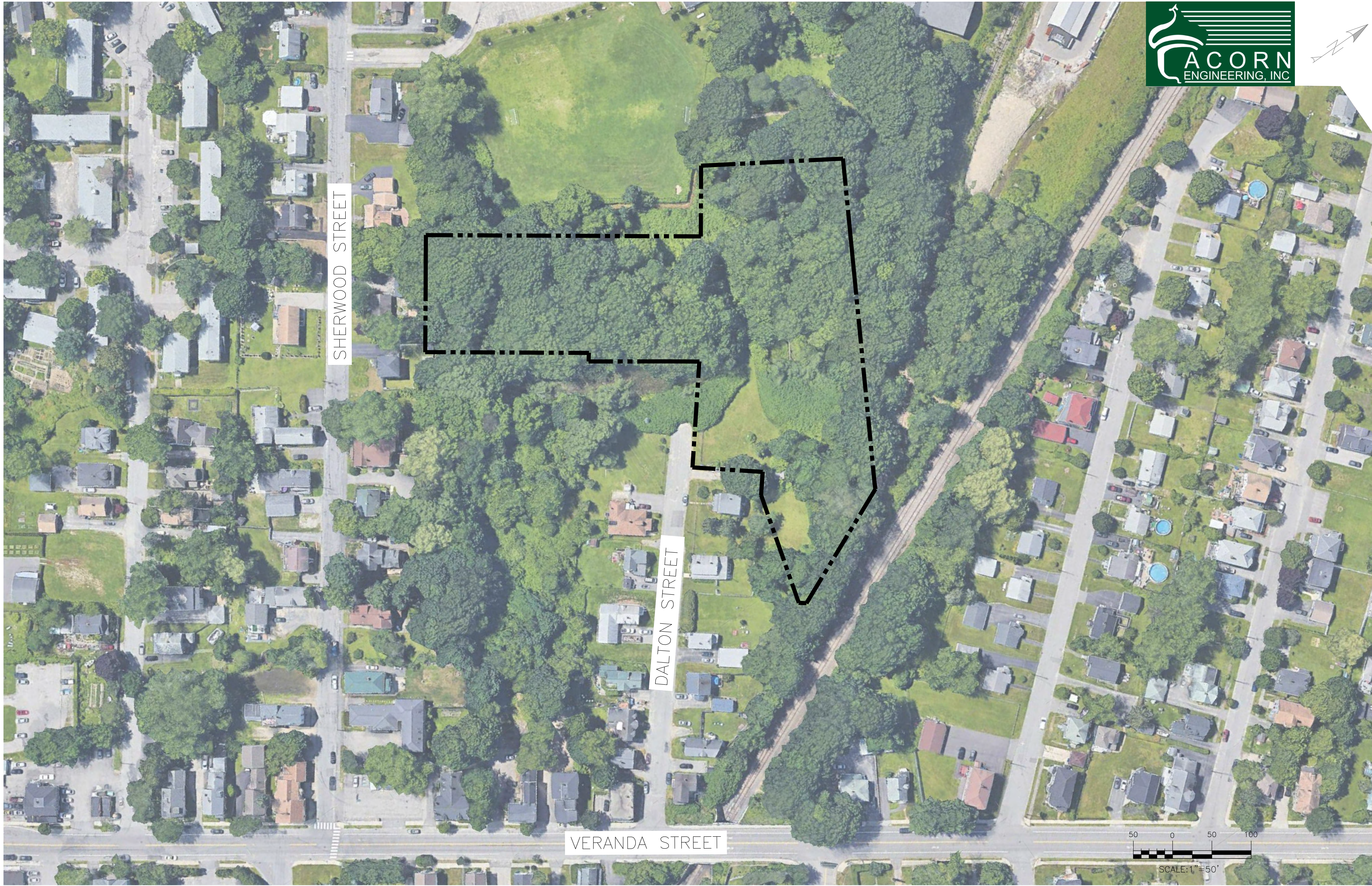
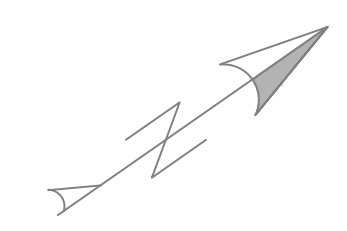
Acorn Engineering, Inc.

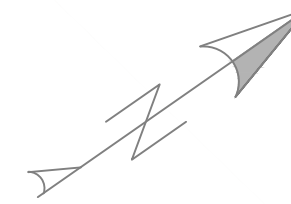
nprattholt@acorn-engineering.com







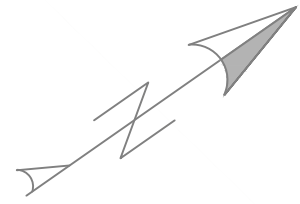


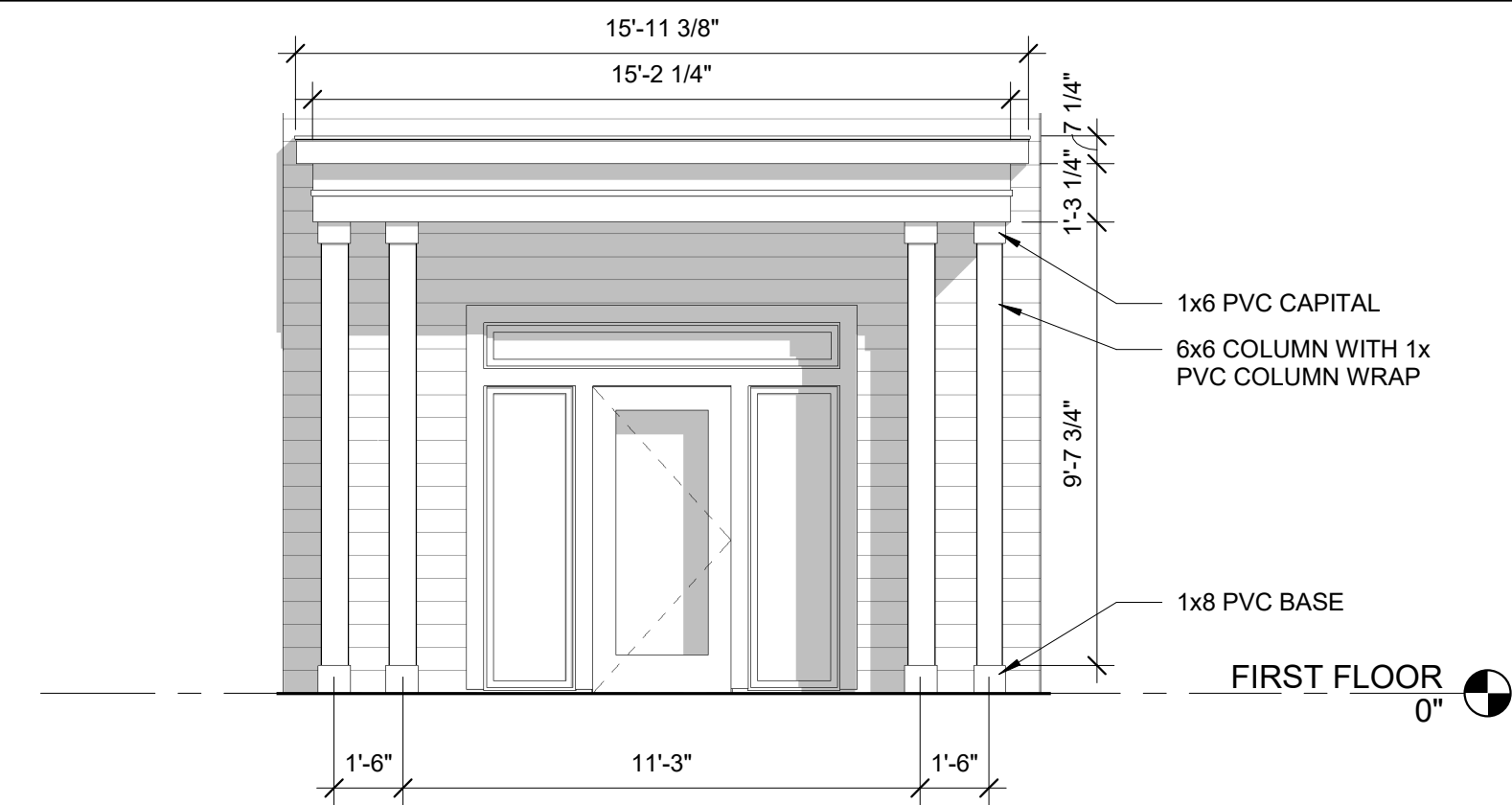


LANDSCAPED OR GRASSED AREA

PAVEMENT

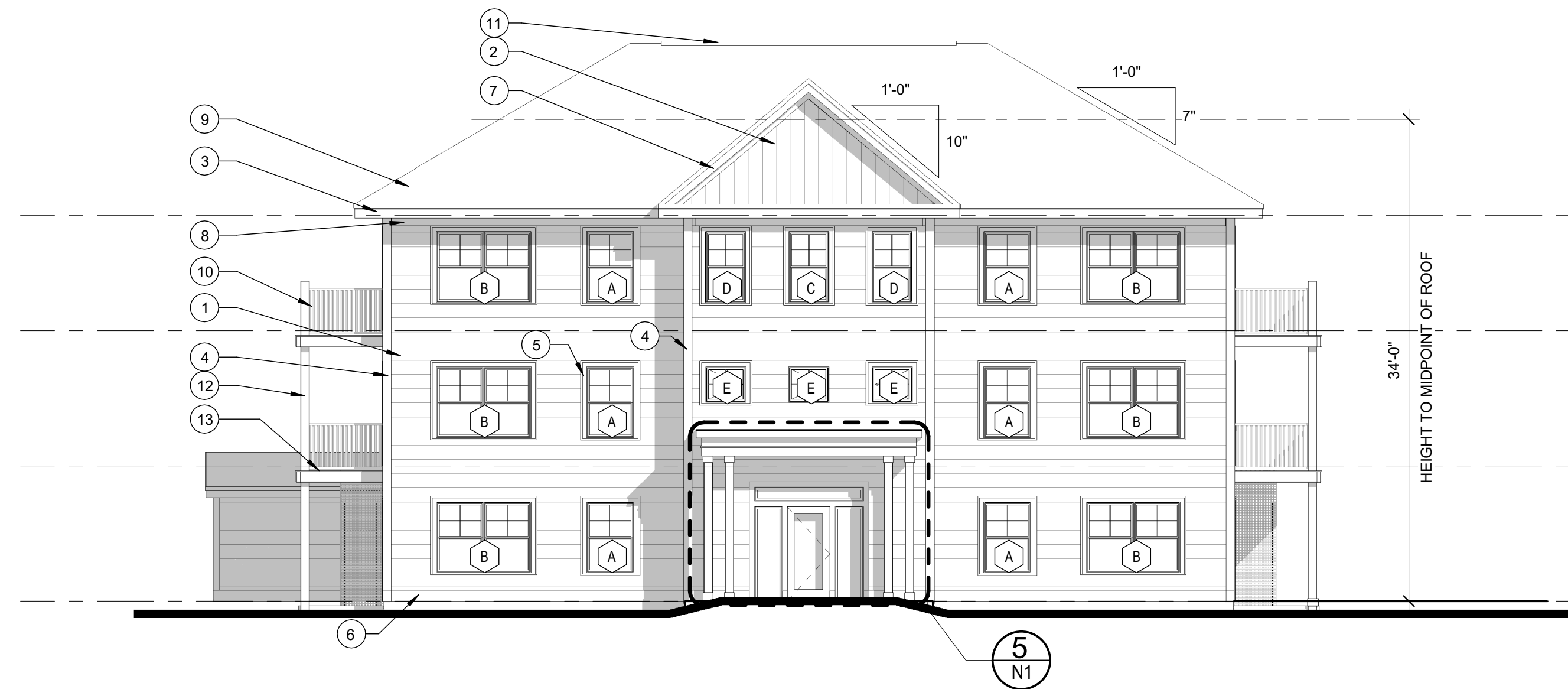
PROPOSED BUILDINGS



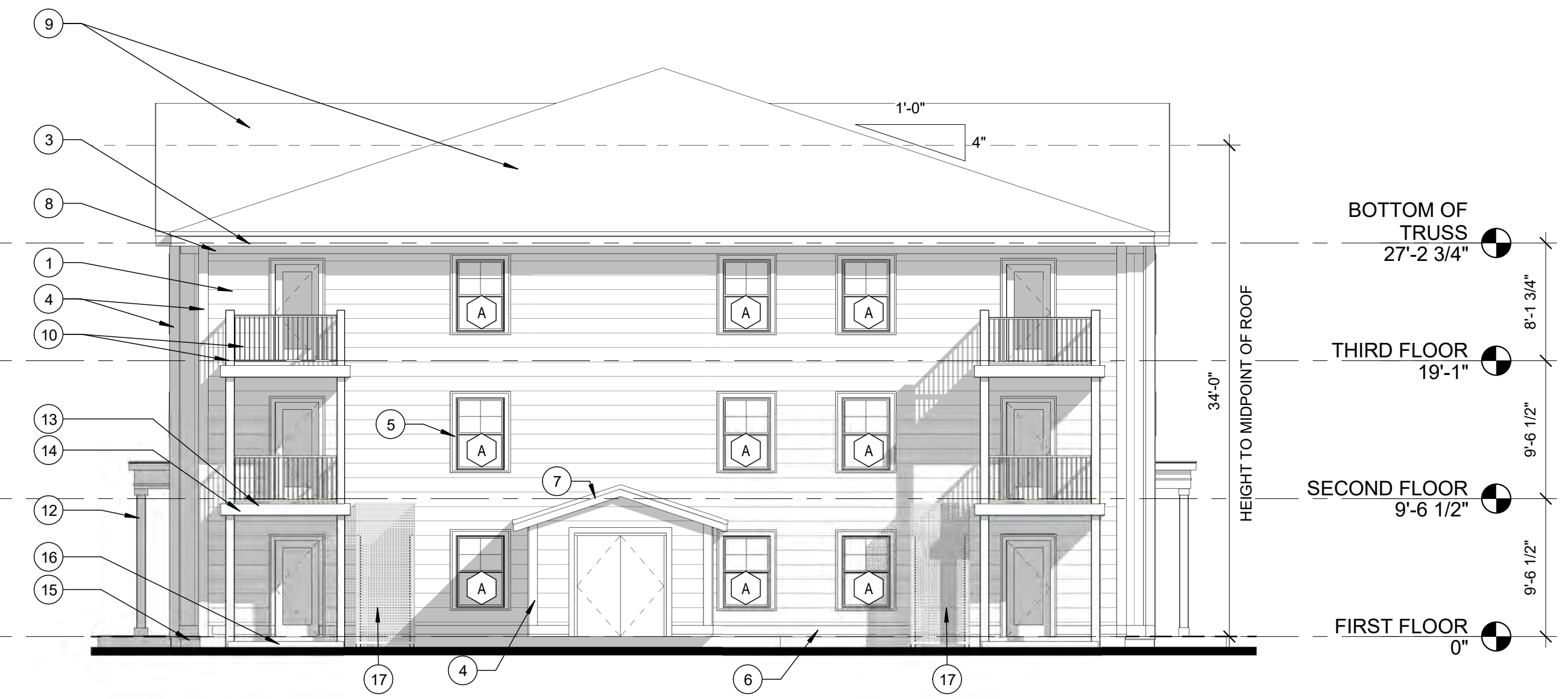


5 | ENTRY ELEVATION
1/4" = 1'-0"

1. VINYL SIDING - EQUAL TO CERTANTEED MONOGRAM 5" CLAPBOARD
2. VINYL BOARD AND BATTEN SIDING
3. 1x10 PVC FASCIA WITH 1x4 SHADOW BOARD - COLOR TO BE WHITE
4. 1x8 PVC CORNERBOARDS - COLOR TO BE WHITE
5. 1x4 PVC WINDOW TRIM W/ 1x2 TRIM AROUND PERIMETER
6. 1x10 PVC WATER TABLE
7. 1x10 PVC RAKE BOARD WITH 1x4 PVC SHADOW BOARD
8. 1x6 PVC FRIEZE
9. 30-YEAR ARCHITECTURAL ASPHALT SHINGLE
10. 42" HIGH VINYL RAILING AND BALUSTERS
11. CONTINUOUS RIDGE VENT
12. PVC TRIM WRAP ON POST - REF STRUCTURAL FOR POST SIZE
13. COMPOSITE DECKING
14. 1x10 PVC TRIM
15. 8" EXPOSED CONCRETE, TYP.
16. 2x2 CONCRETE PATIO PAVERS



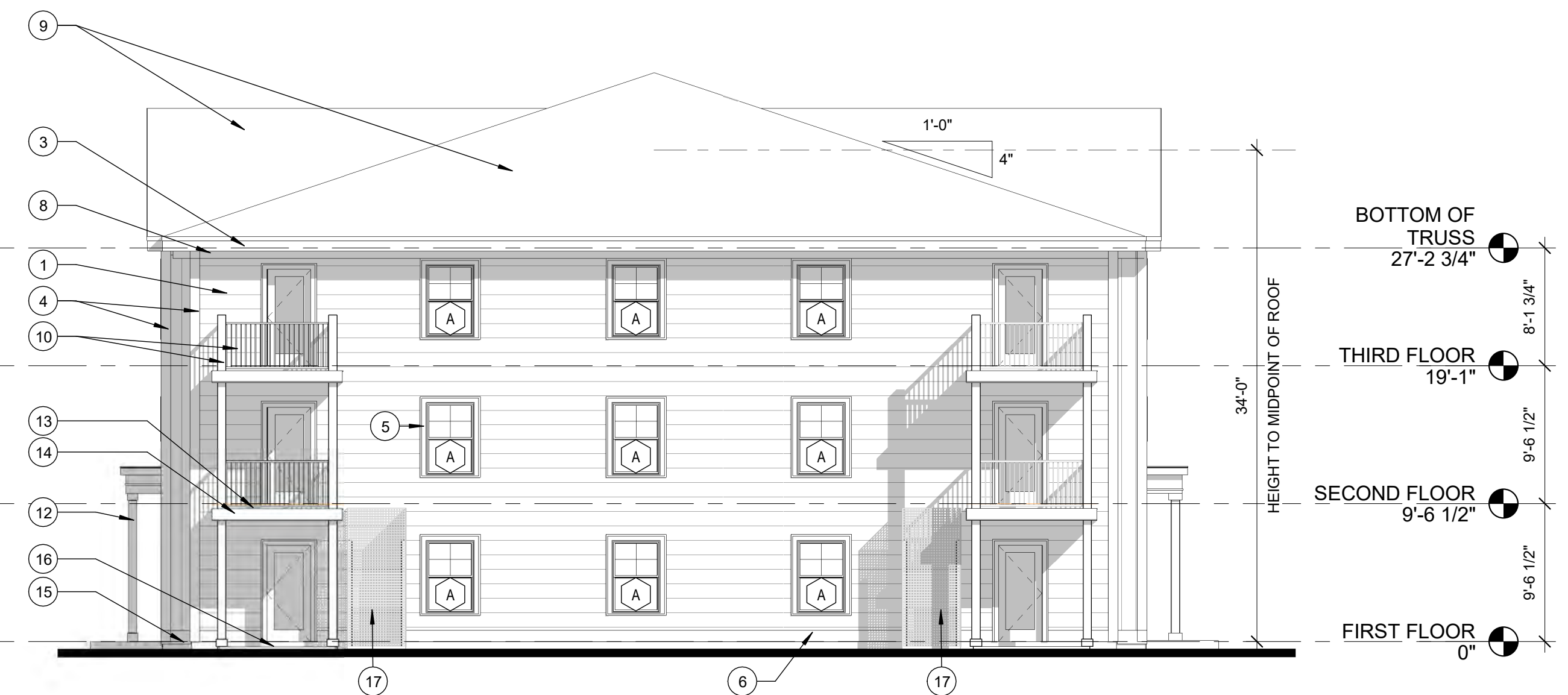
1 | ELEVATION A
1/8" = 1'-0"



3 | ELEVATION B
1/8" = 1'-0"



2 | ELEVATION C
1/8" = 1'-0"



4 | ELEVATION D
1/8" = 1'-0"

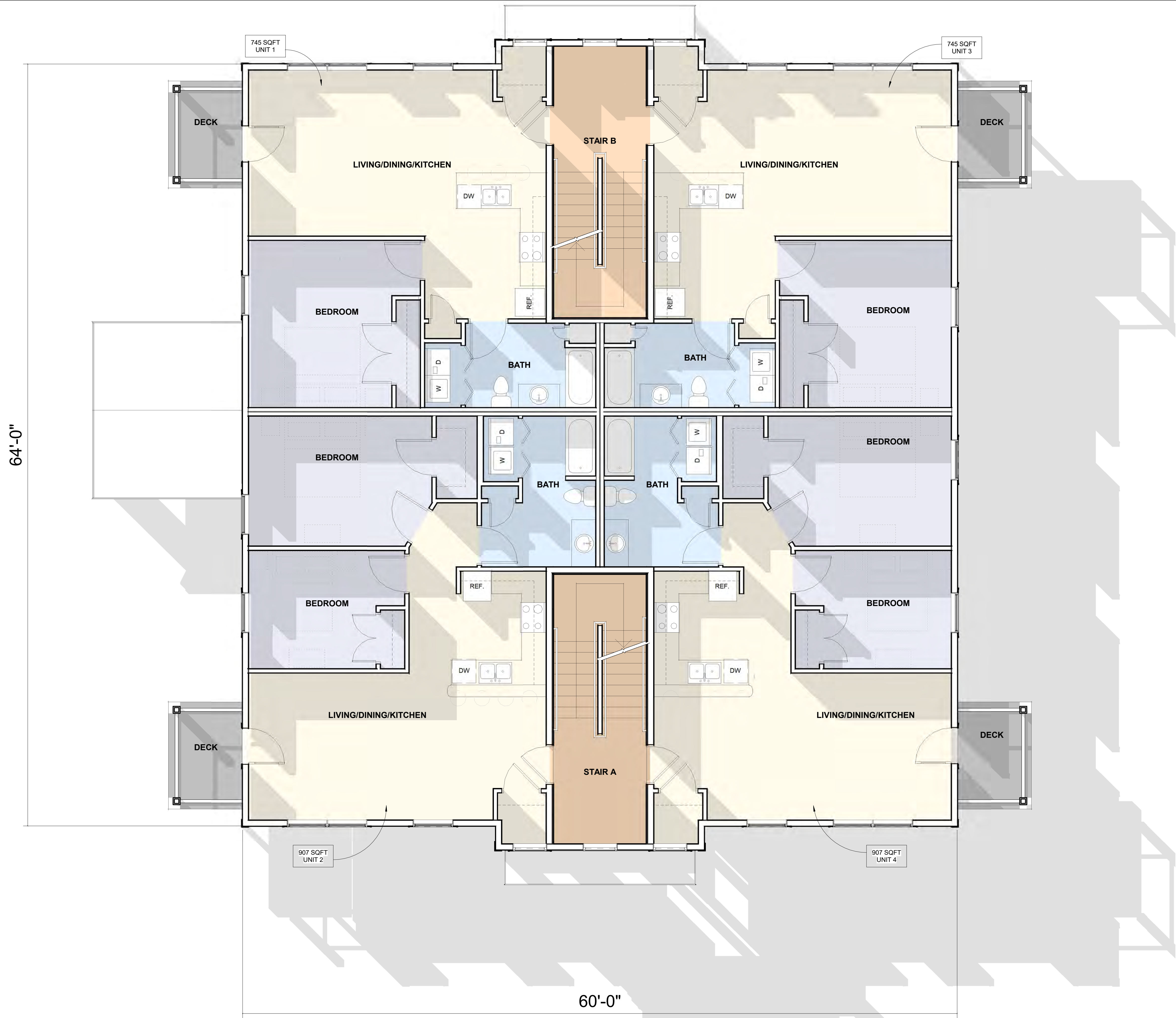
WINCHESTER WOODS

PORTLAND, ME

5/27/2021

N1

ARCHETYPE
ARCHITECTS



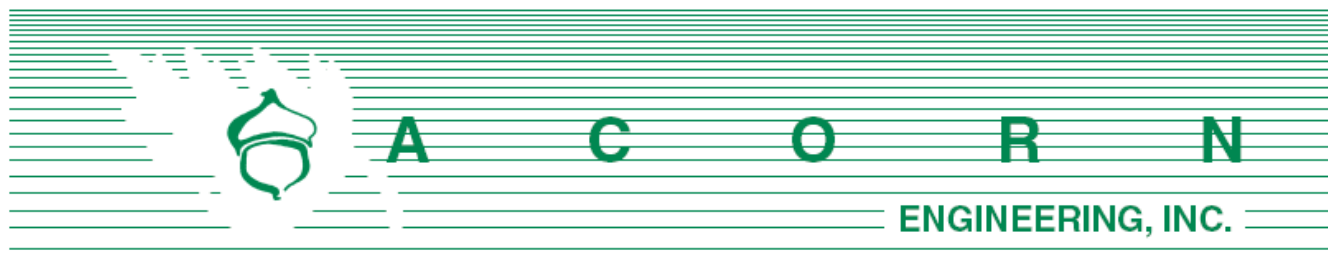
WINCHESTER WOODS

PORTLAND, ME

5/27/2021

N2

ARCHETYPE
ARCHITECTS



Maine Department of Environmental Protection /
City of Portland, Maine

June 21, 2021

Subject: Delegated Review: Stormwater Management Permit
Winchester Woods Development – Portland, Maine

To Whom It May Concern:

Acorn Engineering has been retained by Hammond House, LLC to provide civil engineering and permitting services for the proposed development at the end of Dalton Street which comprises a series of parcels within an unbuilt subdivision planned decades ago. In accordance with the City's delegated review for Stormwater Permits, we are submitting the Application in the DEP's format. The Applicant seeks to develop the 3.40 acre parcel and 0.11 acre paper street to accommodate 48 apartments within four separate structures that will be served by a private road (Winchester Drive). On behalf of our client, we are pleased to submit a Stormwater Management Permit application for the project subject to Delegated Review by the City of Portland. Concurrently, the project is anticipated to undergo a Major Site Plan/Subdivision review subject to approval from the Portland Planning Board.

The existing site largely consists of wooded area, with impervious and developed area coming in the form of beaten trails throughout the site. The proposed impervious area is made up of a 22' wide road serving the development, parking area, a sidewalk network throughout the site, a walking path, and rooftops. 95% of the stormwater runoff from the new impervious area will be directed to four separate underdrained subsurface sand filters. In addition to providing water quality treatment, the project will meet or exceed flooding standards by maintaining or lowering the peak flowrates within the municipal system in Sherwood Street.

If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

A handwritten signature in black ink, appearing to read "Sam Lebel".

Samuel J. Lebel, P.E.
Project Manager
Acorn Engineering, Inc.

A handwritten signature in black ink, appearing to read "Will Savage".

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

The following documents and drawings are included as part of this application.

Documents:

1. Stormwater Management Law Permit Application
2. Notice of Intent to File
3. Certificate of Good Standing
4. Title, Right, or Interest
5. Photos of the Project Site
6. Basic Standards Submissions (Erosion & Sedimentation Control Report)
7. General Standards Submissions (Stormwater Management Report)

Drawings:

Civil Site Plan Set, Dated 04/29/2021

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RESOURCES

Stormwater Application Form

FOR DEP USE

L- _____

ATS# _____

FEES PAID _____

DATE RECEIVED _____

PLEASE TYPE OR PRINT IN INK

This application is for (Check the one that applies):		☒ New application		☐ Amendment	
1. Name of Applicant:	Hammond House, LLC		5. Name of Agent:	Sam Lebel	
2. Applicant's Mailing Address:	94 South Street, Yarmouth, ME 04096		6. Agent's Mailing Address:	65 Hanover St., Portland, ME 04101	
3. Applicant's Phone #:	207-838-3410		7. Agent's Phone #:	207-775-2655	
4. Email address (REQUIRED-license will be sent via email):	kevin@gravitysports.org		8. E-mail address (REQUIRED-license will be sent via email)	wsavage@acorn-engineering.com	
9. Location of Project: (Road, Street, Rt.#)	Dalton street		10. Town:	Portland	
			11. County:	Cumberland	
12. Type of Direct Watershed: (Check all that apply)	☐ Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming ☐ River, stream or brook ☐ Urban impaired stream ☒ Freshwater wetland ☐ Coastal wetland ☐ Wellhead of public water supply		13. Amount of Disturbed Area:	Total Amt. = 2.50 acres	
			14. Amount of Developed Area:	☒ 1 or more acres, but less than 5 acres ☐ 5 acres or more Total Amt. = 1.58 acres	
			15. Amount of Impervious Area:	☐ less than 20,000 sq. ft. ☐ 20,000 sq. ft. to 1 acre ☒ 1 to 3 acres ☐ 3 or more acres Total Amount of Impervious Acres =	
16. Applicable Standards: (Check all that apply)	☐ Stormwater PBR ☒ Basic standards ☒ General standards: BMP ☐ General standards: phosphorus ☐ Flooding standard ☐ Urban impaired stream standards ☐ Other: _____		17. Type of Stormwater Control:	☐ Vegetative (e.g. buffers) ☒ Structural (e.g. underdrained filters, ponds, infiltration structures)	
18. Exceptions &/or Waivers Requested:	BMP Standards ▼ ☒ Pretreatment measures ☐ Discharge to ocean/major river segment ☐ Linear portion of project ☐ Utility corridor ☐ Redevelopment		Urban impaired stream standard ▼ ☐ Developed area not landscaped or impervious ☐ Redevelopment		Flooding Standard ▼ ☐ Discharge to ocean/major river segment ☐ Insignificant increase in peak flow
19. Proposed Start Date and Brief Project Description:	The project anticipates construction by Fall 2021. The project proposed 4 residential buildings with 12 units each, for a total of 48 units. The project will be served with a private access drive and accompanying utilities				
20. Size of Lot or Parcel:	☐ _____ sq. ft., or ☒ 3.51 acres	UTM Easting:	2928445.50	UTM Northing:	309711.74
21. Title, Right or Interest:	☒ own ☐ lease ☐ purchase option ☐ written agreement				
22. Deed Reference Numbers:	Book#:	Page:	24. Map and Lot Numbers:	Map #:	Lot #:
				427	K001001
23. DEP Staff Previously Contacted:		25. Project started prior to application?	☐ Yes ☒ No	Completed?	☐ Yes ☐ No

SIGNATURES / CERTIFICATIONS ON PAGE 2

26. Resubmission of Application?	☐ Yes → ☒ No	If yes, previous application #		Previous project manager:	
27. Written Notice of Violation?	☐ Yes → ☒ No	If yes, name of DEP enforcement staff involved:			
28. Detailed Directions to the Project Site:		From I-295N, take exit 8 for ME-26N/Washington Ave., turn right on to Veranda St. for .2 miles and turn left onto Dalton Street.			
29. Stormwater Permit by Rule Submissions ▼		30. Stormwater Application Submissions ▼			
☐ This form (including signature page) ☐ Fee ☐ Topographic Map ☐ Plan or Drawing ☐ Photos of Area		☒ This form (including signature page) ☒ Fee ☒ Proof of title, right or interest ☒ Certificate of good standing (if applicable) ☒ Photos of Area ☐ Copy of Public Notice		☐ Professional & Notice Certification ☒ Basic standards submissions ☒ General standards submissions ☐ Flooding standard submissions ☐ Other standard submissions ☐ Compensation Fee (if required)	
31. FEES, Amount Enclosed:		DELEGATED REVIEW - FEE THROUGH CSS PORTAL			
Does the agent have an interest in the project? If yes, what is the interest?: ☐ Yes → ☒ No					

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	
E-mailing the decision to the electronic address located on the front page of this application (see #4 for the applicant and #9 for the agent."	
Signed: <u>Sum Lebel</u>	Title <u>P.E., Project Engineer</u> Date: <u>4.28.2021</u>
Notice of Intent to Comply with Maine Construction General Permit	With this Stormwater Law application form and my signature below, 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. Signed <u>Sum Lebel</u> Date: <u>4.28.2021</u>

NOTE: If a Notice of Intent is required, you must file a Notice of Termination (attached as Form G) within 20 days of completing permanent stabilization of the project site.

ADDITIONAL SIGNATURES/CERTIFICATIONS

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for stormwater approval is complete and accurate to the best of his/her knowledge. *Sam Lebel*

Signature: _____

Name (print): Sam Lebel, PE

Date: 6-21-2021

Re/Cert/Lic No: 16505

Engineer X

Geologist _____

Soil Scientist _____

Land Surveyor _____

Site Evaluator _____

Active Member of the Maine Bar _____

Professional Landscape Architect _____

Public Notice: Notice of Intent to File

Please take notice that

Hammond House, LLC 94 South Street, Yarmouth ME, 04096

phone: 207-838-3410 (Name, Address and Phone # of Applicant)

is intending to file a Stormwater Law permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. § 420-D on or about June 18, 2021

(anticipated filing date)

This application is for

The proposed residential development of 4 buildings with 48 dwelling units and associated parking.

(description of the project)

Dalton/Sherwood Street, Portland Maine

(project location)

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. 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 Environmental Protection's office in Portland, Augusta or Bangor) (circle one) during normal working hours. A copy of the application may also be seen at the municipal

offices in Portland, Maine.
(town)

Written public comments may be sent to the regional office in Portland, Augusta, or Bangor where the application is filed for public inspection.

MDEP, Central Maine Regional Office, 17 State House Station, Augusta, Maine 04333
MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103
MDEP, Eastern Maine Regional Office, 106 Hogan Road, Bangor, Maine 04401

Certificate of Good Standing

Please see the attached Certificate of Good Standing from the Department of the Secretary of State for Hammond House, LLC.





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: Wed Mar 10 2021 13:47:39. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
HAMMOND HOUSE, LLC	20194089DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
01/14/2019	N/A	MAINE

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

THOMAS B. FEDERLE
254 COMMERCIAL STREET
PORTLAND, ME 04101

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Click on a link to obtain additional information.

List of Filings

[View list of filings](#)

Obtain additional information:

Certificate of Existence [\(more info\)](#)

[Short Form without amendments \(\\$30.00\)](#) [Long Form with amendments \(\\$30.00\)](#)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the [troubleshooting page](#).



If you encounter technical difficulties while using these services, please contact the [Webmaster](#). If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or [e-mail](#) or visit

our [Feedback](#) page.

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PURCHASE AND SALE AGREEMENT

("days" means business days unless otherwise noted, see paragraph 23)

March 9, 2021
Offer Date

March 9, 2021 Effective Date
Effective Date is defined in Paragraph 23 of this Agreement.

1. PARTIES: This Agreement is made between KEVIN O'ROURKE ("Buyer") and D/S/H Hammer House LLC ("Seller").

2. DESCRIPTION: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy ☒ all part of (if "part of" see para. 26 for explanation) the property situated in municipality of PORTLAND, County of CUMBERLAND, State of Maine, located at Lots numbered 100, 101, 103 and 103 and described in deed(s) recorded at said County's Registry of Deeds Book(s) 8 10, Page(s) 1 21.

3. FIXTURES: The Buyer and Seller agree that all fixtures, including but not limited to existing storm windows, screens, shades and/or blinds, shutters, curtain rods, built-in appliances, heating sources/systems including gas and/or kerosene-fired heaters and wood/pellet stoves, sump pump, electrical fixtures, landscaping, and NA are included with the sale except for the following: NA.
Seller represents that all mechanical components of fixtures will be operational at the time of closing except: NA.

4. PERSONAL PROPERTY: The following items of personal property as viewed on NA are included with the sale at no additional cost, in "as is" condition with no warranties: NA.

5. PURCHASE PRICE/EARNEST MONEY: For such Deed and conveyance Buyer agrees to pay the total purchase price of NA. Buyer ☐ has delivered; or ☐ will deliver to the Agency within NA days of the Effective Date, a deposit of earnest money in the amount of \$ NA. Buyer agrees that an additional deposit of earnest money in the amount of \$ NA will be delivered NA.
If Buyer fails to deliver the initial or additional deposit in compliance with the above terms Seller may terminate this Agreement. This right to terminate ends once Buyer has delivered said deposit(s). The remainder of the purchase price shall be paid by wire, certified, cashier's or trust account check upon delivery of the Deed.

This Purchase and Sale Agreement is subject to the following conditions:

6. ESCROW AGENT/ACCEPTANCE: NA ("Agency") shall hold said earnest money and act as escrow agent until closing; this offer shall be valid until NA (date) ☐ AM ☐ PM; and, in the event of non-acceptance, this earnest money shall be returned promptly to Buyer.

7. TITLE AND CLOSING: A deed, conveying good and merchantable title in accordance with the Standards of Title adopted by the Maine Bar Association shall be delivered to Buyer and this transaction shall be closed and Buyer shall pay the balance due and execute all necessary papers on See Addendum (closing date) or before, if agreed in writing by both parties. If Seller is unable to convey in accordance with the provisions of this paragraph, then Seller shall have a reasonable time period, not to exceed 30 calendar days, from the time Seller is notified of the defect, unless otherwise agreed to in writing by both Buyer and Seller, to remedy the title. Seller hereby agrees to make a good-faith effort to cure any title defect during such period. If, at the later of the closing date set forth above or the expiration of such reasonable time period, Seller is unable to remedy the title, Buyer may close and accept the deed with the title defect or may terminate this Agreement in which case the parties shall be relieved of any further obligations hereunder and any earnest money shall be returned to the Buyer.

8. DEED: The property shall be conveyed by a Quitclaim Deed w/covenants, and shall be free and clear of all encumbrances except covenants, conditions, easements and restrictions of record which do not materially and adversely affect the continued current use of the property.

9. POSSESSION, OCCUPANCY, AND CONDITION: Unless otherwise agreed in writing, possession and occupancy of premises, free of tenants and occupants, shall be given to Buyer immediately at closing. Said premises shall then be broom clean, free of all possessions and debris, and in substantially the same condition as at present, excepting reasonable use and wear. Buyer shall have the right to view the property within 24 hours prior to closing.

10. RISK OF LOSS, DAMAGE, DESTRUCTION AND INSURANCE: Prior to closing, risk of loss, damage, or destruction of premises shall be assumed solely by the Seller. Seller shall keep the premises insured against fire and other extended casualty risks prior to closing. If the premises are damaged or destroyed prior to closing, Buyer may either terminate this Agreement and be refunded the earnest money, or close this transaction and accept the premises "as-is" together with the assignment of the insurance proceeds relating thereto.

Revised 2018

Page 1 of 4 - P&S

Buyer(s) Initials KOR

Seller(s) Initials TH

Vitalius Real Estate Group, LL, 306 Congress Street Portland, ME 4101
Briton Vitalius

Phone: (207)541-3755

Fax:

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11. FUEL/UTILITIES/PRORATIONS: Buyer ☐ shall ☒ shall not pay Seller at closing for all fuel in any tanks remaining on the property calculated as of the closing date or such earlier date as required to comply with lender requirements, if any. The amount owed, if any, shall be determined using the most recently available cash price of the company that last delivered the fuel. Metered utilities such as electricity, water and sewer will be paid through the date of closing by Seller. The following items, where applicable, shall be prorated as of the date of closing: collected rent, association fees, (other) _____. The day of closing is counted as a Seller day. Real estate taxes shall be prorated as of the date of closing (based on municipality's fiscal year). Seller is responsible for any unpaid taxes for prior years. If the amount of said taxes is not known at the time of closing, they shall be apportioned on the basis of the taxes assessed for the preceding year with a reapportionment as soon as the new tax rate and valuation can be ascertained, which latter provision shall survive closing. Buyer and Seller will each pay their transfer tax as required by State of Maine.

12. DUE DILIGENCE: Neither Seller nor Licensee makes any warranties regarding the condition, permitted use or value of Sellers' real or personal property, or any representations as to compliance with any federal, state or municipal codes, including, but not limited to, fire, life safety, electrical and plumbing. Buyer is encouraged to seek information from professionals regarding any specific issue or concern.

☐ Buyer's obligation to close under this Agreement is not subject to any due diligence investigations. Buyer is relying completely upon Buyer's own opinion as to the condition of the property.

☒ Buyer's obligation to close under this Agreement is subject to Buyer's satisfaction with the results of any due diligence investigations undertaken. Buyer shall have June 1, 2016 days from the Effective Date of this Agreement to perform such due diligence investigations as Buyer deems necessary which may include, without limitation, any or all of the following:

General Building	Square Footage	Zoning	Survey/MLI	Habitat Review/Waterfowl
Sewage Disposal	Code Conformance	Pests	Lead Paint	Coastal Shoreland Septic
Water Quality	Registered Farmland	Pool	Flood Plain	Energy Audit
Water Quantity	Environmental Scan	Insurance	Chimney	Lot Size/Acreage
Air Quality	Smoke/CO Detectors	Mold	Tax Status*	Arsenic Wood/Water (see par. 13)

All investigations will be done at Buyer's expense by persons chosen by Buyer in Buyer's sole discretion. Seller agrees to cooperate with Buyer and shall give Buyer and Buyer's agents and consultants reasonable access to the property and its systems and fixtures in order to undertake the above investigations. If the result of any investigation is unsatisfactory to Buyer, Buyer may terminate this Agreement by notifying Seller in writing within the specified number of days, and any earnest money shall be returned to Buyer. If the result of any investigation is unsatisfactory to Buyer in Buyer's sole discretion, and Buyer wishes to pursue remedies other than voiding the Agreement, Buyer must do so to full resolution within the time period set forth above; otherwise this contingency is waived. If Buyer does not notify Seller that an investigation is unsatisfactory within the time period set forth above, this contingency is waived by Buyer.

* If the property is enrolled in the Maine Tree Growth Tax program, Seller agrees to provide Buyer with the current Forest Management and Harvest Plan within _____ days. ☐ Yes ☒ No

13. PROPERTY DISCLOSURE FORM: Buyer acknowledges receipt of Property Disclosure Form and the information developed by the Maine Center for Disease Control and Prevention regarding arsenic in private water supplies and arsenic in treated wood.

14. FINANCING: Buyer's obligation to close:

☒ is not subject to a financing contingency. Buyer has provided Seller with acceptable proof of the funds.

☐ is not subject to a financing contingency. Buyer shall provide proof of the funds acceptable to Seller within _____ days. If such proof is unacceptable to Seller, Seller may terminate this Agreement no later than _____ days from receipt. If proof of funds is not provided within such time period, Seller may terminate this Agreement which right shall end once such proof is received, however Seller retains the agreed upon time period to terminate if such proof is unacceptable. If Seller terminates in either case, the earnest money shall be returned to Buyer.

☐ is subject to financing as follows:

- a. Buyer's obligation to close is subject to Buyer obtaining a _____ loan of _____ % of the purchase price, at an interest rate not to exceed _____ % and amortized over a period of _____ years. Buyer is under a good faith obligation to seek and obtain financing on these terms. If such financing is not available to Buyer as of the closing date, Buyer is not obligated to close and may terminate this Agreement in which case the earnest money shall be returned to Buyer.
- b. Buyer to provide Seller with letter from lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested within _____ days from the Effective Date of the Agreement. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
- c. Buyer hereby authorizes, instructs and directs its lender to communicate the status of the Buyer's loan application to Seller, Seller's licensee and Buyer's licensee.
- d. After (b) is met, if the lender notifies Buyer that it is unable or unwilling to provide said financing, Buyer is obligated to provide Seller with the written documentation of the loan denial within two days of receipt. After notifying Seller, Buyer shall have _____ days to provide Seller with a letter from another lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
- e. Buyer agrees to pay no more than _____ points. Seller agrees to pay up to \$ _____ toward Buyer's actual pre-pays, points and/or closing costs, but no more than allowable by Buyer's lender.
- f. Buyer's ability to obtain financing ☐ is ☒ is not subject to the sale of another property. See addendum ☐ Yes ☐ No.
- g. Buyer may choose to pay cash instead of obtaining financing. If so, Buyer shall notify Seller in writing including providing proof of funds and the Agreement shall no longer be subject to financing, and Seller's right to terminate pursuant to the provisions of this paragraph shall be void.

15. BROKERAGE DISCLOSURE: Buyer and Seller acknowledge they have been advised of the following relationships:

NA () of ()
Licensee MLS ID Agency MLS ID
is a ☐ Seller Agent ☐ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker
NA () of ()
Licensee MLS ID Agency MLS ID
is a ☐ Seller Agent ☐ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker

If this transaction involves Disclosed Dual Agency, the Buyer and Seller acknowledge the limited fiduciary duties of the agents and hereby consent to this arrangement. In addition, the Buyer and Seller acknowledge prior receipt and signing of a Disclosed Dual Agency Consent Agreement.

16. DEFAULT/RETURN OF EARNEST MONEY: Buyer's failure to fulfill any of Buyer's obligations hereunder shall constitute a default and Seller may employ all legal and equitable remedies, including without limitation, termination of this Agreement and forfeiture by Buyer of the earnest money. Seller's failure to fulfill any of Seller's obligations hereunder shall constitute a default and Buyer may employ all legal and equitable remedies, including without limitation, termination of this Agreement and return to Buyer of the earnest money. Agency acting as escrow agent has the option to require written releases from both parties prior to disbursing the earnest money to either Buyer or Seller. In the event that the Agency is made a party to any lawsuit by virtue of acting as escrow agent, Agency shall be entitled to recover reasonable attorney's fees and costs which shall be assessed as court costs in favor of the prevailing party.

17. MEDIATION: Earnest money or other disputes within the jurisdictional limit of small claims court will be handled in that forum. All other disputes or claims arising out of or relating to this Agreement or the property addressed in this Agreement (other than requests for injunctive relief) shall be submitted to mediation in accordance with generally accepted mediation practices. Buyer and Seller are bound to mediate in good faith and to each pay half of the mediation fees. If a party fails to submit a dispute or claim to mediation prior to initiating litigation (other than requests for injunctive relief), then that party will be liable for the other party's legal fees in any subsequent litigation regarding that same matter in which the party who failed to first submit the dispute or claim to mediation loses in that subsequent litigation. This clause shall survive the closing of the transaction.

18. PRIOR STATEMENTS: Any representations, statements and agreements are not valid unless contained herein. This Agreement completely expresses the obligations of the parties and may only be amended in writing, signed by both parties.

19. HEIRS/ASSIGNS: This Agreement shall extend to and be obligatory upon heirs, personal representatives, successors, and assigns of the Seller and the assigns of the Buyer.

20. COUNTERPARTS: This Agreement may be signed on any number of identical counterparts with the same binding effect as if the signatures were on one instrument. Original or faxed or other electronically transmitted signatures are binding.

21. SHORELAND ZONE SEPTIC SYSTEM: Seller represents that the property ☐ does ☒ does not contain a septic system within the Shoreland Zone. If the property does contain a septic system located in the Shoreland Zone, Seller agrees to provide certification at closing indicating whether the system has/has not malfunctioned within 180 calendar days prior to closing.

22. NOTICE: Any notice, communication or document delivery requirements hereunder may be satisfied by providing the required notice, communication or documentation to or from the parties or their Licensee. Only withdrawals of offers and counteroffers will be effective upon communication, verbally or in writing.

23. EFFECTIVE DATE/BUSINESS DAYS: This Agreement is a binding contract when the last party signing has caused a paper or electronic copy of the fully executed agreement to be delivered to the other party which shall be the Effective Date. Licensee is authorized to fill in the Effective Date on Page 1 hereof. Except as expressly set forth to the contrary, the use of the term "days" in this Agreement, including all addenda made a part hereof, shall mean business days defined as excluding Saturdays, Sundays and any observed Maine State/Federal holidays. Deadlines in this Agreement, including all addenda, expressed as "within x days" shall be counted from the Effective Date, unless another starting date is expressly set forth, beginning with the first day after the Effective Date, or such other established starting date, and ending at 5:00 p.m. Eastern Time on the last day counted. Unless expressly stated to the contrary, deadlines in this Agreement, including all addenda, expressed as a specific date shall end at 5:00 p.m. Eastern Time on such date.

24. CONFIDENTIALITY: Buyer and Seller authorize the disclosure of the information herein to the real estate licensees, attorneys, lenders, appraisers, inspectors, investigators and others involved in the transaction necessary for the purpose of closing this transaction. Buyer and Seller authorize the lender and/or closing agent preparing the closing disclosure and/or settlement statement to release a copy of the closing disclosure and/or settlement statement to the parties and their licensees prior to, at and after the closing.

25. ADDENDA: Lead Paint - ☐ Yes ☐ No ; Other - ☒ Yes ☐ No Explain: _____

The Property Disclosure Form is not an addendum and not part of this Agreement.

26. OTHER CONDITIONS:

27. GENERAL PROVISIONS:

- a. A copy of this Agreement is to be received by all parties and, by signature, receipt of a copy is hereby acknowledged. If not fully understood, contact an attorney. This is a Maine contract and shall be construed according to the laws of Maine.
- b. Seller acknowledges that State of Maine law requires buyers of property owned by non-resident sellers to withhold a prepayment of capital gains tax unless a waiver has been obtained by Seller from the State of Maine Revenue Services.
- c. Buyer and Seller acknowledge that under Maine law payment of property taxes is the legal responsibility of the person who owns the property on April 1, even if the property is sold before payment is due. If any part of the taxes is not paid when due, the lien will be filed in the name of the owner as of April 1 which could have a negative impact on their credit rating. Buyer and Seller shall agree at closing on their respective obligations regarding actual payment of taxes after closing. Buyer and Seller should make sure they understand their obligations agreed to at closing and what may happen if taxes are not paid as agreed.
- d. Buyer acknowledges that Maine law requires continuing interest in the property and any back up offers to be communicated by the listing agent to the Seller.
- e. Whenever this Agreement provides for earnest money to be returned or released, agency acting as escrow agent must comply with the Maine Real Estate Commission rules which may require written notices or obtaining written releases from both parties.

28. ELECTRONIC SIGNATURES: Pursuant to the Maine Uniform Electronic Transactions Act and Digital Signature Act, the parties authorize and agree to the use of electronic signatures as a method of signing/initialing this Agreement, including all addenda. The parties hereby agree that either party may sign electronically by utilizing an electronic signature service.

Buyer's Mailing address is

94 SOUTH ST. YARMOUTH, ME 04096

BUYER

DATE

BUYER

DATE

Seller accepts the offer and agrees to deliver the above-described property at the price and upon the terms and conditions set forth and agrees to pay agency a commission for services as specified in the listing agreement.

Seller's Mailing address is

16017 DAYSAILOR TRAIL LAKEWOOD RANCH FL 34202

SELLER

DATE

SELLER

DATE

COUNTER-OFFER

Seller agrees to sell on the terms and conditions as detailed herein with the following changes and/or conditions:

The parties acknowledge that until signed by Buyer, Seller's signature constitutes only an offer to sell on the above terms and the offer will expire unless accepted by Buyer's signature with communication of such signature to Seller by (date) _____ (time) _____ AM _____ PM.

SELLER

DATE

SELLER

DATE

The Buyer hereby accepts the counter offer set forth above.

BUYER

DATE

BUYER

DATE

EXTENSION

The closing date of this Agreement is extended until

DATE

SELLER

DATE

SELLER

DATE

BUYER

DATE

BUYER

DATE



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ADDENDUM TO PURCHASE AGREEMENT

Effective Date: March 9 2021

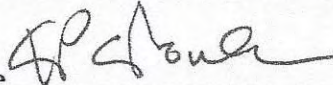
I. The Parties. This Addendum hereby becomes part of the Purchase Agreement between 1 individual(s) known as Kevin O'Rourke ("Buyer") and 1 individual(s) known as Thomas Farr dba Fortune Capital ("Seller") authorized on March 9 2021 ("Agreement") for the residential property located at F Street, Portland , Maine, 04103 ("Property").

II. Amendment(s). Buyer and Seller agree that the Agreement shall be amended as follows:

Buyer and Seller agree to extend due diligence until August 1, 2021 if City approvals have not been received by June 1, 2021.

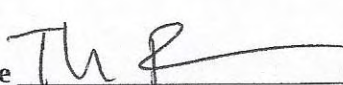
III. Other Terms. All other terms and conditions of the Agreement shall remain the same. This Addendum shall go into effect on the date of the undersigned parties.

Buyer's Signature
Kevin O'Rourke

 Date 3/9/21

Seller's Signature

Thomas Farr dba Fortune Capital

 Date 3/15/21

DocuSign Envelope ID: F2F8A8B9-2B97-468E-965D-02ACCE4657C3

PURCHASE AND SALE AGREEMENT

("days" means business days unless otherwise noted, see paragraph 23)

Offer Date November 4, 2020

Effective Date 11/10/2020
Effective Date is defined in Paragraph 23 of this Agreement.

1. PARTIES: This Agreement is made between Hammond House LLC

Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill, Mark W. Libby

("Buyer") and
("Seller").

2. DESCRIPTION: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy ☒ all part of (if "part of" see para. 26 for explanation) the property situated in municipality of Portland County of Cumberland State of Maine, located at 29 Dalton St & Street F Parcels and described in deed(s) recorded at said County's Registry of Deeds Book(s) see section 26 Page(s) see section 26

3. FIXTURES: The Buyer and Seller agree that all fixtures, including but not limited to existing storm windows, screens, shades and/or blinds, shutters, curtain rods, built-in appliances, heating sources/systems including gas and/or kerosene-fired heaters and wood/pellet stoves, sump pump, electrical fixtures, hard-wired generators, landscaping, and XXXXXX are included with the sale except for the following: no exceptions
Seller represents that all mechanical components of fixtures will be operational at the time of closing except: As Is Condition

4. PERSONAL PROPERTY: The following items of personal property as viewed on October 12, 2020 are included with the sale at no additional cost, in "as is" condition with no warranties: kitchen appliances

5. PURCHASE PRICE/EARNEST MONEY: For such Deed and conveyance Buyer agrees to pay the total purchase price of \$450,000.00. Buyer ☐ has delivered; or ☒ will deliver to the Agency within 3 days of the Effective Date, a deposit of earnest money in the amount \$ 10,000.00. Buyer agrees that an additional deposit of earnest money in the amount of \$ XXXXXXXX will be delivered XXXXXXXXXXXX. If Buyer fails to deliver the initial or additional deposit in compliance with the above terms Seller may terminate this Agreement. This right to terminate ends once Buyer has delivered said deposit(s). The remainder of the purchase price shall be paid by wire, certified, cashier's or trust account check upon delivery of the Deed.

This Purchase and Sale Agreement is subject to the following conditions:

6. ESCROW AGENT/ACCEPTANCE: RE/MAX By The Bay ("Agency") shall hold said earnest money and act as escrow agent until closing; this offer shall be valid until 11/10/20 November 6, 2020 (date) 5:00 ☐ AM ☒ PM; and, in the event of non-acceptance, this earnest money shall be returned promptly to Buyer.

7. TITLE AND CLOSING: A deed, conveying good and merchantable title in accordance with the Standards of Title adopted by the Maine Bar Association shall be delivered to Buyer and this transaction shall be closed and Buyer shall pay the balance due and execute all necessary papers on See Section 26 (closing date) or before, if agreed in writing by both parties. If Seller is unable to convey in accordance with the provisions of this paragraph, then Seller shall have a reasonable time period, not to exceed 30 calendar days, from the time Seller is notified of the defect, unless otherwise agreed to in writing by both Buyer and Seller, to remedy the title. Seller hereby agrees to make a good-faith effort to cure any title defect during such period. If, at the later of the closing date set forth above or the expiration of such reasonable time period, Seller is unable to remedy the title, Buyer may close and accept the deed with the title defect or may terminate this Agreement in which case the parties shall be relieved of any further obligations hereunder and any earnest money shall be returned to the Buyer.

8. DEED: The property shall be conveyed by a Quitclaim Deed With Covenant deed, and shall be free and clear of all encumbrances except covenants, conditions, easements and restrictions of record which do not materially and adversely affect the continued current use of the property.

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Buyer(s) Initials KPAR

Seller(s) Initials MM

RE/MAX By The Bay, 281 Veranda Portland ME 04101

David Banks

Produced with zipForm® by zipLogix 13070 Fifteen Mile Road, Fraser, Michigan 48033

Phone: 248.553.7343

Fax: 248.553.7344

29 Indian St

9. **POSSESSION, OCCUPANCY, AND CONDITION:** Unless otherwise agreed in writing, possession and occupancy of premises, free of tenants and occupants, shall be given to Buyer immediately at closing. Said premises shall then be broom clean, free of all possessions and debris, and in substantially the same condition as at present, excepting reasonable use and wear. Buyer shall have the right to view the property within 24 hours prior to closing.

10. **RISK OF LOSS, DAMAGE, DESTRUCTION AND INSURANCE:** Prior to closing, risk of loss, damage, or destruction of premises shall be assumed solely by the Seller. Seller shall keep the premises insured against fire and other extended casualty risks prior to closing. If the premises are damaged or destroyed prior to closing, Buyer may either terminate this Agreement and be refunded the earnest money, or close this transaction and accept the premises "as is" together with an assignment of the insurance proceeds relating thereto. #10 continued... renegotiate the purchase price agreeable to both buyer and seller.

11. **FUEL/UTILITIES/PRORATIONS:** Buyer ☐ shall ☒ shall not pay Seller at closing for all fuel in any tanks remaining on the property calculated as of the closing date or such earlier date as required to comply with lender requirements, if any. The amount owed, if any, shall be determined using the most recently available cash price of the company that last delivered the fuel. Metered utilities such as electricity, water and sewer will be paid through the date of closing by Seller. The following items, where applicable, shall be prorated as of the date of closing: collected rent, association fees, (other) _____. The day of closing is counted as a Seller day. Real estate taxes shall be prorated as of the date of closing (based on municipality's fiscal year). Seller is responsible for any unpaid taxes for prior years. If the amount of said taxes is not known at the time of closing, they shall be apportioned on the basis of the taxes assessed for the preceding year with a reapportionment as soon as the new tax rate and valuation can be ascertained, which latter provision shall survive closing. Buyer and Seller will each pay their transfer tax as required by State of Maine.

12. **DUE DILIGENCE:** Neither Seller nor Licensee makes any warranties regarding the condition, permitted use or value of Sellers' real or personal property, or any representations as to compliance with any federal, state or municipal codes, including, but not limited to, fire, life safety, electrical and plumbing. Buyer is encouraged to seek information from professionals regarding any specific issue or concern.

☐ Buyer's obligation to close under this Agreement is not subject to any due diligence investigations. Buyer is relying completely upon Buyer's own opinion as to the condition of the property.

☒ Buyer's obligation to close under this Agreement is subject to Buyer's satisfaction with the results of any due diligence investigations undertaken. Buyer shall have May 1, 2021* days from the Effective Date of this Agreement to perform such due diligence investigations as Buyer deems necessary which may include, but are not limited to, any or all of the following:

General Building	Square Footage	Zoning	Survey/MLI	Habitat Review/Waterfowl
Sewage Disposal	Code Conformance	Pests	Lead Paint	Shoreland Septic
Water Quality	Registered Farmland	Pool	Flood Plain	Energy Audit
Water Quantity	Environmental Scan	Insurance	Chimney	Lot Size/Acreage
Air Quality	Smoke/CO Detectors	Mold	Tax Status*	Arsenic Wood/Water (see par. 13)

All investigations will be done at Buyer's expense by persons chosen by Buyer in Buyer's sole discretion. Seller agrees to cooperate with Buyer and shall give Buyer and Buyer's agents and consultants reasonable access to the property and its systems and fixtures in order to undertake the above investigations. Buyer agrees to take reasonable steps to return the property to its pre-inspection condition. If the result of any investigation is unsatisfactory to Buyer, Buyer may terminate this Agreement by notifying Seller in writing within the specified number of days, and any earnest money shall be returned to Buyer. If the result of any investigation is unsatisfactory to Buyer in Buyer's sole discretion, and Buyer wishes to pursue remedies other than voiding the Agreement, Buyer must do so to full resolution within the time period set forth above; otherwise this contingency is waived. If Buyer does not notify Seller that an investigation is unsatisfactory within the time period set forth above, this contingency is waived by Buyer.

* If the property is enrolled in the Maine Tree Growth Tax program, Seller agrees to provide Buyer with the current Forest Management and Harvest Plan within ____ days. ☐ Yes ☒ No

13. **PROPERTY DISCLOSURE FORM:** Buyer acknowledges receipt of Property Disclosure Form and the information developed by the Maine Center for Disease Control and Prevention regarding arsenic in private water supplies and arsenic in treated wood.

KPAR

MM

14. FINANCING: Buyer's obligation to close:

- ☒ is not subject to a financing contingency. Buyer has provided Seller with acceptable proof of the funds. Buyer is not subject to a financing contingency. Buyer shall provide proof of the funds acceptable to Seller within _____ days. If such proof is unacceptable to Seller, Seller may terminate this Agreement no later than _____ days from receipt. If proof of funds is not provided within such time period, Seller may terminate this Agreement which right shall end once such proof is received, however Seller retains the agreed upon time period to terminate if such proof is unacceptable. If Seller terminates in either case, the earnest money shall be returned to Buyer.
- ☐ Buyer's ability to purchase ☐ is ☐ is not subject to the sale of another property. See addendum ☐ Yes ☐ No.
- a. Buyer's obligation to close is subject to financing as follows:
Buyer's obligation to close is subject to Buyer obtaining a _____ loan of _____ % of the purchase price, at an interest rate not to exceed _____ % and amortized over a period of _____ years. Buyer is under a good faith obligation to seek and obtain financing on these terms. If such financing is not available to Buyer as of the closing date, Buyer is not obligated to close and may terminate this Agreement in which case the earnest money shall be returned to Buyer.
- b. Buyer to provide Seller with letter from lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested within _____ days from the Effective Date of the Agreement. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
- c. Buyer hereby authorizes, instructs and directs its lender to communicate the status of the Buyer's loan application to Seller, Seller's licensee and Buyer's licensee.
- d. After (b) is met, if the lender notifies Buyer that it is unable or unwilling to provide said financing, Buyer is obligated to provide Seller with the written documentation of the loan denial within two days of receipt. After notifying Seller, Buyer shall have _____ days to provide Seller with a letter from another lender showing that Buyer has made application for loan specified in (a) and, subject to verification of information, is qualified for the loan requested. If Buyer fails to provide Seller with such letter within said time period, Seller may terminate this Agreement and the earnest money shall be returned to Buyer. This right to terminate ends once Buyer's letter is received.
- e. Buyer agrees to pay no more than _____ points. Seller agrees to pay up to \$ _____ toward Buyer's actual pre-pays, points and/or closing costs, but no more than allowable by Buyer's lender.
- f. Buyer's ability to obtain financing ☐ is ☐ is not subject to the sale of another property. See addendum ☐ Yes ☐ No.
- g. Buyer may choose to pay cash instead of obtaining financing. If so, Buyer shall notify Seller in writing including providing proof of funds and the Agreement shall no longer be subject to financing, and Seller's right to terminate pursuant to the provisions of this paragraph shall be void and Seller's obligations pursuant to 14e shall remain in full force and effect.

15. BROKERAGE DISCLOSURE: Buyer and Seller acknowledge they have been advised of the following relationships:

_____ () of _____
Licensee MLS ID Agency MLS ID
is a ☐ Seller Agent ☐ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker

David Banks (002090) of **RE/MAX By The Bay** (1150)
Licensee MLS ID Agency MLS ID
is a ☐ Seller Agent ☒ Buyer Agent ☐ Disc Dual Agent ☐ Transaction Broker

If this transaction involves Disclosed Dual Agency, the Buyer and Seller acknowledge the limited fiduciary duties of the agents and hereby consent to this arrangement. In addition, the Buyer and Seller acknowledge prior receipt and signing of a Disclosed Dual Agency Consent Agreement.

16. DEFAULT/RETURN OF EARNEST MONEY: Buyer's failure to fulfill any of Buyer's obligations hereunder shall constitute a default and Seller may employ all legal and equitable remedies, including without limitation, termination of this Agreement and forfeiture by Buyer of the earnest money. Seller's failure to fulfill any of Seller's obligations hereunder shall constitute a default and Buyer may employ all legal and equitable remedies, including without limitation, termination of this Agreement and return to Buyer of the earnest money. Agency acting as escrow agent has the option to require written releases from both parties prior to disbursing the earnest money to either Buyer or Seller. In the event that the Agency is made a party to any lawsuit by virtue of acting as escrow agent, Agency shall be entitled to recover reasonable attorney's fees and costs which shall be assessed as court costs in favor of the prevailing party.

17. MEDIATION: Earnest money or other disputes within the jurisdictional limit of small claims court will be handled in that forum. All other disputes or claims arising out of or relating to this Agreement or the property addressed in this Agreement (other than requests for injunctive relief) shall be submitted to mediation in accordance with generally accepted mediation practices. Buyer and Seller are bound to mediate in good faith and to each pay half of the mediation fees. If a party fails to submit a dispute or claim to mediation prior to initiating litigation (other than requests for injunctive relief), then that party will be liable for the other party's legal fees in any subsequent litigation regarding that same matter in which the party who failed to first submit the dispute or claim to mediation loses in that subsequent litigation. This clause shall survive the closing of the transaction.

Page 3 of 5 - P&S

Buyer(s) Initials

Seller(s) Initials

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39 Dalton St

18. **PRIOR STATEMENTS:** Any representations, statements and **agreements** are not valid unless contained herein. This Agreement completely expresses the obligations of the parties and may only be amended in writing, signed by both parties.
19. **HEIRS/ASSIGNS:** This Agreement shall extend to and be obligatory upon heirs, personal representatives, successors, and assigns of the Seller and the assigns of the Buyer.
20. **COUNTERPARTS:** This Agreement may be signed on any number of identical counterparts with the same binding effect as if the signatures were on one instrument. Original or faxed or other electronically transmitted signatures are binding.
21. **SHORELAND ZONE SEPTIC SYSTEM:** Seller represents that the property ☐ does ☒ does not contain a septic system within the Shoreland Zone. If the property does contain a septic system located in the Shoreland Zone, Seller agrees to provide certification at closing indicating whether the system has/has not malfunctioned within 180 calendar days prior to closing.
22. **NOTICE:** Any notice, communication or document delivery requirements hereunder may be satisfied by providing the required notice, communication or documentation to or from the parties or their Licensee. Only withdrawals of offers and counteroffers will be effective upon communication, verbally or in writing.
23. **EFFECTIVE DATE/BUSINESS DAYS:** This Agreement is a binding contract when the last party signing has caused a paper or electronic copy of the fully executed agreement to be delivered to the other party which shall be the Effective Date. Licensee is authorized to fill in the Effective Date on Page 1 hereof. Except as expressly set forth to the contrary, the use of the term "days" in this Agreement, including all addenda made a part hereof, shall mean business days defined as excluding Saturdays, Sundays and any observed Maine State/Federal holidays. Deadlines in this Agreement, including all addenda, expressed as "within x days" shall be counted from the Effective Date, unless another starting date is expressly set forth, beginning with the first day after the Effective Date, or such other established starting date, and ending at 5:00 p.m. Eastern Time on the last day counted. Unless expressly stated to the contrary, deadlines in this Agreement, including all addenda, expressed as a specific date shall end at 5:00 p.m. Eastern Time on such date.
24. **CONFIDENTIALITY:** Buyer and Seller authorize the disclosure of the information herein to the real estate licensees, attorneys, lenders, appraisers, inspectors, investigators and others involved in the transaction necessary for the purpose of closing this transaction. Buyer and Seller authorize the lender and/or closing agent preparing the closing disclosure and/or settlement statement to release a copy of the closing disclosure and/or settlement statement to the parties and their licensees prior to, at and after the closing.
25. **ADDENDA:** Lead Paint - ☒ Yes ☐ No ; Other - ☒ Yes ☐ No Explain: Addendum 1, Possession after Closing
- The Property Disclosure Form is not an addendum and not part of this Agreement.
26. **OTHER CONDITIONS:** At transfer of title, Seller will pay RE/MAX By The Bay a 2.5% commission on the sales price.

27. GENERAL PROVISIONS:

- A copy of this Agreement is to be received by all parties and, by signature, receipt of a copy is hereby acknowledged. If not fully understood, contact an attorney. This is a Maine contract and shall be construed according to the laws of Maine.
- Seller acknowledges that State of Maine law requires buyers of property owned by non-resident sellers to withhold a prepayment of capital gains tax unless a waiver has been obtained by Seller from the State of Maine Revenue Services.
- Buyer and Seller acknowledge that under Maine law payment of property taxes is the legal responsibility of the person who owns the property on April 1, even if the property is sold before payment is due. If any part of the taxes is not paid when due, the lien will be filed in the name of the owner as of April 1 which could have a negative impact on their credit rating. Buyer and Seller shall agree at closing on their respective obligations regarding actual payment of taxes after closing. Buyer and Seller should make sure they understand their obligations agreed to at closing and what may happen if taxes are not paid as agreed.
- Buyer acknowledges that Maine law requires continuing interest in the property and any back up offers to be communicated by the listing agent to the Seller.
- Whenever this Agreement provides for earnest money to be returned or released, agency acting as escrow agent must comply with the Maine Real Estate Commission rules which may require written notices or obtaining written releases from both parties.

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Buyer(s) Initials

KPAR

Seller(s) Initials

MM

ML

WBY

JC

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*

29 Dallas St

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28. **ELECTRONIC SIGNATURES:** Pursuant to the Maine Uniform Electronic Transactions Act and Digital Signature Act, the parties authorize and agree to the use of electronic signatures as a method of signing/initialing this Agreement, including all addenda. The parties hereby agree that either party may sign electronically by utilizing an electronic signature service.

Buyer's Mailing address is

Hammond House LLC

11/4/2020

BUYER Hammond House LLC

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

Seller accepts the offer and agrees to deliver the above-described property at the price and upon the terms and conditions set forth and agrees to pay agency a commission for services as specified in the listing agreement.

Seller's Mailing address is

Walter H. Libby III

11/10/2020

SELLER Walter H. Libby III

DATE

SELLER Lacy M. Copp

11-10-20

DATE

SELLER Madeline Morrill

11/10/2020

SELLER Madeline F. Morrill

DATE

* Mark W. LibbySELLER Mark W. Libby

DATE

COUNTER-OFFER

Seller agrees to sell on the terms and conditions as detailed herein with the following changes and/or conditions:

The parties acknowledge that until signed by Buyer, Seller's signature constitutes only an offer to sell on the above terms and the offer will expire unless accepted by Buyer's signature with communication of such signature to Seller by (date) _____ (time) ☐ AM ☐ PM.

SELLER

DATE

SELLER

DATE

SELLER

DATE

SELLER

DATE

The Buyer hereby accepts the counter offer set forth above.

BUYER

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

EXTENSION

The closing date of this Agreement is extended until

DATE

SELLER

DATE

SELLER

DATE

SELLER

DATE

SELLER

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

BUYER

DATE

Page 5 of 5 - P&S



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29 Dalton St



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ADDENDUM 1 TO AGREEMENT

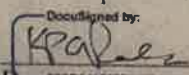
Addendum to contract dated November 4, 2020
 between Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill, Mark W. Libby
 (hereinafter "Seller")
 and Hammond House LLC
 (hereinafter "Buyer")
 property located at 29 Dalton St & Street F Parcels, Portland, ME 04103-5211

Continuation of Paragraph 2: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy all of the property situated in municipality of Portland, County of Cumberland, State of Maine, located at Dalton Street & Street F and described in deed(s) recorded at said County's Registry of Book 11647 Page 187 and Book 15054 Page 170 and further described as 2.674 acres on the boundary survey completed by Owen Haskell, INC, dated September 16, 2015, Job No. 2015-193P for Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill & Mark W. Libby and including half of Dalton Street owned by Sellers. Sellers will attempt to acquire and transfer to buyer part of Queen property to half of the right of way for Dalton Street.

Continuation of Paragraph 7: Buyer and Seller agree to close within 15 calendar days of received City approvals.

Continued... See Addendum Addendum Terms and Conditions 1

Parties acknowledge Agency's advice to seek legal, tax and other professional advice as necessary in connection with sale/purchase of property.

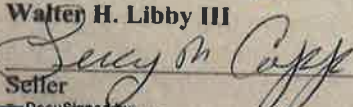
DocuSigned by:

 Buyer Hammond House LLC
 Date 11/4/2020

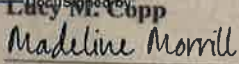
Buyer _____ Date _____

Buyer _____ Date _____

Buyer _____ Date _____

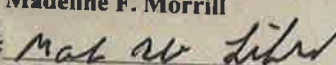

 Seller Walter H. Libby III
 Date 11/10/2020


 Seller Lucy M. Copp
 Date 11/10/2020

DocuSigned by:

 Seller Madeline Morrill
 Date 11/10/2020

Seller Madeline F. Morrill
 Date _____

Seller Mark W. Libby
 Date _____

* 
 Seller Mark W. Libby
 Date _____



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RE/MAX By The Bay, 181 Vermont Portland ME 04101
 David Banks

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ADDENDUM

PROPERTY: 29 Dalton St & Street F Parcels, Portland, ME 04103-5211

1) Addendum Terms and Conditions

***Continuation of Paragraph 12: Buyer and Seller agree to extend due diligence to 5pm on July 1, 2021 if City approvals have not been received by 5pm on May 1, 2021.**

Seller to provide Buyer with Property Disclosure within 5 business days

Date: 11/4/2020

DocuSigned by:

KPA
Signature

Date:

11/10/2020

DocuSigned by:

Madeline Morill
Signature

Date:

Walter Phillips
Signature

Date:

* Mch 20 Lohy
Signature

Leroy M. Lohy
Addendum

RE/MAX By The Bay, 281 Verranda Portland ME 04101
David Rankin

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Phone: 287.553.7382 Fax: 287.553.7390
www.lane.com

29 Dalton St

POSSESSION AFTER CLOSING ADDENDUM

To Agreement dated November 4, 2020, between
Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill, Mark W. Libby
 and Hammond House LLC ("Seller")
 for property located at 29 Dalton St & Street F Parcels, Portland, ME 04103-5211 ("Buyer")

Notwithstanding anything to the contrary in the Agreement, Buyer and Seller agree as follows:

Seller shall be entitled to retain possession of the property for up to 30 calendar days from the date of closing at which time Seller shall deliver possession of the property to Buyer. Seller shall deliver the property in substantially the same condition as exists on the Effective Date of the Agreement. Seller shall be responsible for ordinary maintenance and repair of the property and the cost of fuel oil and utilities, including but not limited to electrical service, telephone service, water and sewer assessments, if any, to the property until possession of the property is delivered by Seller to Buyer. Fuel oil shall be prorated as of the date possession is delivered to Buyer at the then prevailing market price of company that delivered fuel. Seller agrees to indemnify and hold Buyer harmless for any costs, expenses, losses, damages, or other liabilities of any kind and nature resulting from Seller's occupancy of the property after closing. Seller accepts full responsibility for any of Seller's personal property remaining in or on the property after closing and agrees to hold Buyer harmless for any damage to or loss of such personal property. Seller shall maintain public liability insurance and insurance on Seller's personal property until possession is delivered by Seller to Buyer. Risk of loss by fire or otherwise shall be borne by Seller until closing. In addition to the above-referenced costs, Seller shall pay Buyer \$1000.00 per month per calendar day in advance for rental of the property. At closing, Buyer shall withhold \$ 0.00 from the net proceeds due Seller as a security deposit. At closing, the parties shall enter into the Maine Residential Lease developed by the Maine Attorney General, or such other lease agreement as mutually agreed to by the parties, further describing the rights and obligations of the parties.

The indemnification provisions of this addendum shall survive the closing or other expiration of the

Agreement by:
[Signature] 11/4/2020
 Buyer
 Hammond House LLC Date

[Signature] 11/10/2020
 Seller
 Walter H. Libby III Date

Buyer Date

[Signature] 11-10-20
 Seller
 Lucy M. Copp Date

Buyer Date

[Signature] 11/10/2020
 Seller
 Madeline Morrill Date

Buyer Date

* [Signature]
 Seller
 Mark W. Libby Date



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RE/MAX By The Bay, 261 Vermont Portland ME 04101

Dorinda Banks

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29 Dalton St

Photos of the Project Site





Figure 1. *Location of Portland Trails Connection (Facing approx. north on Sherwood)*



Figure 2. *Facing approx. east on Sherwood*





Figure 3. Existing Shed and Stockade Fence Near Paper Street



Figure 4. Chain-link Fence near Presumpscot School (Facing Approx. northwest)





Figure 5. Facing approx. south while located near chain-link Fence adjacent to Presumpscot School



Figure 6. Facing approx. east while looking down Dalton Street





Figure 7. Facing approx. north while looking into site



Figure 8. Location of Wetland in Site





Figure 9. Facing west towards chain-link fence along Presumpscot school



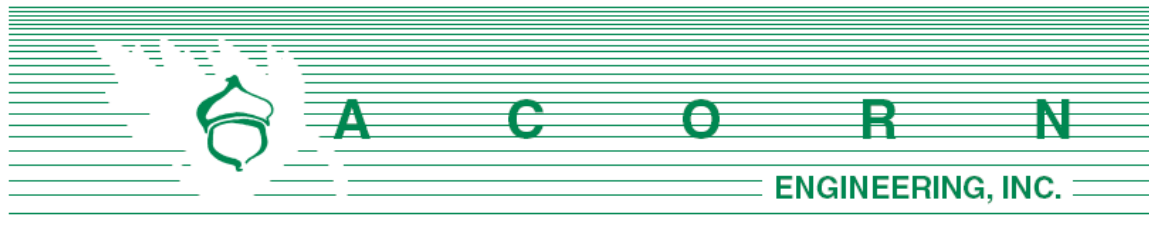
Figure 10. Facing east while located on site



Basic Standards Submissions

Please see the attached document, Erosion and Sedimentation Control Plan, developed in accordance with the Basic Standards submission requirements.





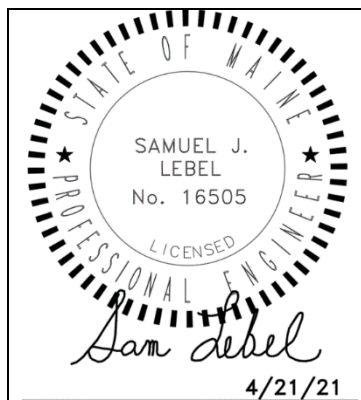
K. EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

**Hammond House, LLC
94 South Street
Yarmouth, Maine 04096**

Prepared By:

**Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101**



April 2021

INTRODUCTION

Acorn Engineering, Inc. has been retained by Hammond House, LLC to provide civil engineering services for the proposed residential development at the end of Dalton Street in Portland, Maine. The proposed project includes the construction of 4 separate buildings with a total of 48 dwelling units.

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

1.0 EXISTING CONDITIONS

The proposed project site is located at the end of Dalton Street in Portland, Maine. A boundary and topographic survey has been prepared by Owen Haskell, Inc. dated December 11th, 2020.

The property is in the R5 Residential Zone. Abutting Uses include residential except for the elementary school that abuts the site to the northwest.

The 3.72 acre site consists of varying slopes. To the northern corner of the site the land slopes at approximately 7% from west to east down into a pair of wetlands near the center of the site. To the east of the wetlands the site slopes roughly 2% to the wetlands. The south of the site slopes to the west with grades dropping off towards the abutters at roughly 33%.

1.1 Existing Soils

Onsite soil information includes the following:

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

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

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

Table 1 - “K” Value	
Soils Type	Subsurface
Buxton Silt Loam	0.37



Cut and fill land	0.20
Elmwood fine sandy loam	0.20
Suffield silt loam	0.32

The soil “K” value for the soil, listed above, shows a medium to low susceptibility to erosion. The site’s susceptibility to erosion is from the USDA Soil Survey. Although the soil “K” value shows a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

Critical areas that would require special attention during construction are any exposed slopes, particularly to the northern and south eastern portions of the site along with the wetlands located near the center of the site.

1.4 Protected Natural Resource

Wetlands exist onsite, as delineated by Mark Hampton Associated, Inc. in May of 2018. The project is not located with a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

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

1.6 Timber Harvesting

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



2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

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

2.1 Temporary Erosion Control Measures

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

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

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

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

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

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American



Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

- 2.1.5 Dalton and Sherwood streets shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
 - 2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.
 - 2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be “toed” into the ground.
 - 2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached $\frac{1}{2}$ the design height.
 - 2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.
 - 2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.
 - 2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.
 - 2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.
 - 2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.
- 2.2 Permanent Erosion Control Measures



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

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

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

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

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Construction Management & Erosion Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

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

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

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

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

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

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

5.2 Mulching



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

5.3 Soil Stockpiling

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

5.4 Seeding

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

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



5.5 Over winter stabilization of disturbed soils

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

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.
- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.
- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

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

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.
- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.



- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

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

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

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

6.3 Mulched Areas



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

6.4 Dust Control

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

6.5 Stormwater Appurtenances

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

6.6 Erosion and Sedimentation Control Inspections:

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

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

Qualifications:

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

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



7.0 IMPLEMENTATION SCHEDULE

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

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

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

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

8.0 CONCLUSION

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



9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan



TEMPORARY SEEDING PLAN

Site Preparation

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

Seedbed Preparation

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

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

Seeding

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

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

Mulching

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

Conclusion

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



PERMANENT SEEDING PLAN

Site Preparation

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

Seedbed Preparation

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

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

Seeding

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

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

Mulching

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

Recommendations

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

Conclusion

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



General Standards Submissions

The following Stormwater Management Report and corresponding attachments have been developed in accordance with the General Standards submission requirements.

Phosphorous export calculations were not performed for the proposed redevelopment as Phosphorous Standards do not apply.



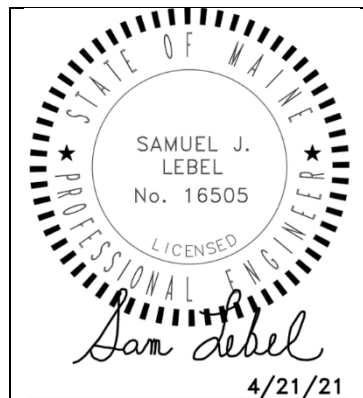
J. STORMWATER MANAGEMENT **REPORT**

Prepared For:

Hammond House, LLC
94 South Street
Yarmouth, Maine 04096

Prepared By:

Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101



April 2021



INTRODUCTION

Acorn Engineering, Inc. has been retained by Hammond House, LLC to provide civil engineering services for the proposed development off the end of Dalton Street in Portland, Maine, now known as Winchester Woods. The property consists of approximately 3.72 acres of land and contains the following parcels (Chart, Book, Lot, 428-A-008-013, 427-I-007-009, 427-K-001-004, 427-L-005-008 and 427-L-012, 427-N-001-004 and 427-N-012).

A stormwater analysis was prepared to demonstrate that the project will meet the requirements set forth by Maine DEP Chapter 500 Basic and General Standards and the following requirements from the City of Portland (the City):

- City of Portland Land Use Ordinance Article 14.6.2.D.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

EXISTING CONDITIONS

The proposed project site is located at the end of Dalton Street in Portland, Maine. A boundary and topographic survey developed by Owen Haskell, Inc. has been included within this submission package. The site primarily consists of wooded area with two drainage subcatchments. The first subcatchment is located to the southwestern corner of the site near Sherwood Street. The land slopes at roughly 15% from west to east towards an abutter on Sherwood. The second subcatchment comprises the majority of the site and generally drains internally within the site towards a pair of wetlands which our understanding were originally constructed as manmade detention basins with an outlet control structure. The southern most wetland area contains an engineered outlet control structure to meter stormwater runoff into the municipal separated storm sewer system (MS4) within Sherwood Street. These “wetlands” serve as a major collection point of stormwater in the neighborhood between Veranda St, Presumpscot St, and the railroad that runs parallel with I-295.

PROPOSED DEVELOPMENT

The project features the development of a planned unit residential development (PRUD) which a development program outlined within the land use ordinance and generally follows the principles of cluster subdivision planning where infrastructure is denser and more efficient in lieu and as a result, grater open space opportunities are available. The site will consist of four separate residential buildings with a total of 48 dwelling units, each building will be served with associated parking and utilities. Overall, the project proposes to develop 1.58 acres of the lot with 1.24 acres consisting of impervious area.

The site has been graded to slope with the existing topography while providing for appropriate slopes in the parking lot. The slopes on the outside of the parking areas that are not part of a stormwater system will be appropriately stabilized per the specifications in the plans and are anticipated to be heavily landscaped for further slope protection and buffering.



The majority of the site's runoff, including 95% of the new impervious area, will be collected via a storm drain system which will then be piped to one of the four proposed Underdrained Subsurface Sand Filters (USSF) where stormwater will first be pretreated via the isolator row which provides initial settlement and filtration of contaminants. Water will then flow vertically through the sand filter providing water quality improvements and outlet via a 4" underdrain. At each 4" outlet to the downstream drain manhole, orifices through the use of drilled holes in pipe caps will be utilized to help reduce the flow rate leaving the various USSF's. An outlet control structure will then serve as the common junction point from all four USSF systems which features two orifices and an overflow weir, allowing for greater control of the various storm peak flowrates.

The discharge from this system will ultimately flow to a level lip spreader before entering the bottom of the detention basin/wetland area. The spreader will also collect the discharge that's being intercepted from the off-site run-on to the site, primarily from the elementary school. The plans and design have been coordinated with the previously submitted project at the school which generated peak flowrates for each storm. The bypass system designed as part of the Dalton St project has been designed to keep this flow, some of which will also flow through a USSF on the school site, separate. Furthermore, the storm drain design can accommodate a 25 year storm and will functionally return this off-site run on to its pre-existing point of interest, the detention basin/wetlands.

The development will be served by the Portland Water District, CMP, Spectrum, Consolidated Communications, Unitil, and municipal sewer and storm systems. Utility mains and services have been coordinated with each respective utility company.

GENERAL STANDARDS – WATER QUALITY

The proposal is to provide primary water quality and quantity control through four separate Underdrained Subsurface Sand Filters (USSF) which have been designed in accordance with the Maine DEP BMP guidelines and are proposed to treat no less than 95% of the new impervious area and no less than 80% of the new developed area.

The underdrained subsurface sand filters were sized to meet or exceed the requirements set forth within the MDEP Volume III BMPs Technical Design Manual, Chapter 7.3. Filter BMP systems have shown to be effective at filtering out and removing a wide range of pollutants from stormwater runoff.

Impervious Treatment Area

The stormwater runoff shall first flow into the StormTech Isolator Row which will provide initial treatment of the larger sized pollutants. The stormwater will flow vertically through the sand filter layer. The treated stormwater will then be collected within perforated pipes and released slowly into the downstream system by an orifice on the end of the 4" underdrain outlet at an attenuated rate before it enters further engineered attenuation in an outlet control structure.

The treatment of the impervious and developed surfaces by the BMPs are as follows:

Table 1 - Impervious Treatment Area Table					
	Existing Imp. Area (SF)	Proposed Total Imp. Area (SF)	Net Change in Imp. Area (SF)	Proposed Imp. Area with Treatment (SF)	% Overall New Imp. Area Treated
USSFs	2,245	56,100	53,855	50,895	95%

Table 2 – Developed Area Treatment Area Table					
	Existing Dev. Area (SF)	Proposed Total Dev. Area (SF)	Net Change in Dev. Area (SF)	Proposed Dev. Area with Treatment (SF)	% Overall New Dev. Area Treated
USSFs	30,492	99,142	68,650	54,610	80%

As shown above, the project anticipates meeting the required treatment for new impervious and developed surfaces with the filter BMPs.

Filter Area Sizing

A calculation for sand filter area is necessary to meet the requirements below the surface of the USSF. As defined in the Volume III: BMPs Technical Design Manual, Chapter 7, the surface area of the filter shall be no less than the sum of 5% of the tributary impervious area and 2% of the tributary vegetated area. The filter area is calculated by the following formula:

$$[(\text{Imp. SF} \times 0.05) + (\text{Veg. SF} \times 0.02)] = \text{Filter Area (SF)}$$

Please refer to Table 2 below.

Table 2 – Total Filter Surface Area, displays the proposed USSF sizing requirements, actual size and the percentage of required area.

Table 3 – Total Filter Surface Area		
	Required Filter Area (SF)	Actual Filter Area (SF)
USSF 1	337	416
USSF 2	694	760
USSF 3	687	760
USSF 4	909	948

As shown, the size of the soil filter area will meet and exceed the surface area requirements.



Isolator Row Sizing

The isolator row was sized based upon a letter from Mark Bergeron, Director of the MDEP Bureau of Land Resources, to StormTech dated July 29, 2016. The calculation that Mr. Bergeron references to determine the minimum number of stormwater chambers needed for the isolator row is defined as the one-year peak flow rate divided by the specific flow rate of the chamber. To be conservative, the two-year peak flow rate was used from the HydroCAD model and divided by the flow rate of the MC-3500 chamber (0.3 cfs).

Table 4 – Isolator Row Sizing			
	2-Year Peak Flow (cfs)	Required Chambers	Provided Chambers
USSF 1	0.47	2	6
USSF 2	0.98	4	12
USSF 3	0.95	4	12
USSF 4	1.27	5	15

Water Quality Volume

In accordance with the Volume III: BMPs Technical Design Manual, a water quality volume of 1.0 inches times the tributary impervious area plus 0.4 inches times the tributary vegetated area is required to be treated by the USSF. The water quality volume is calculated by the following formula:

$$\left(\frac{\text{Imp. SF} \times 1.0''}{12''/1'} \right) + \left(\frac{\text{Veg. SF} \times 0.4''}{12''/1'} \right) = \text{Treatment Volume (CF)}$$

The proposed water quality volume is as follows:

Table 5 – Water Quality Volume Table				
	Vegetated Area (SF)	Impervious Area (SF)	Treatment Volume Required (CF)	Treatment Volume Provided (CF)
USSF 1	256	6,638	562	787
USSF 2	1,496	13,274	1,156	1,460
USSF 3	930	13,373	1,145	1,416
USSF 4	1,444	17,609	1,516	1,748

As shown, the size of the combined water quality volume will meet and exceed the treatment volume requirements. Values from the HydroCAD calculations are attached to this report.



The treatment volume was calculated by using the HydroCAD model and the rainfall that produces 18" of ponding within the chambers. The storage volume within the crushed stone and chambers – the two layers above the filter sand – is then added together to calculate the water quality volume.

A vertical orifice is modeled in HydroCAD at the outlet control structure to detain the stormwater for an approximate 24 hour time frame. The orifice for the water quantity volume is then set above the peak elevation determined for the water quality volume. Given that the outlet control structure is located downstream of the four USSFs, it is difficult to provide appropriate attenuation using the outlet control structure alone. To compensate, an orifice is modeled on each of the four underdrain outlets from the USSFs. This will provide for further control on the infiltration rates through the USSFs. The orifice is intended to be a PVC cap placed on the outfall pipe (no glue) with the orifice drilled into the cap eccentrically. The PVC cap can be easily inspected, removed or replaced if necessary. The orifice shall be placed at the end of the via an orifice on the end of each underdrain outlet from the USSFs, as well as a water quality and quantity orifice within the outlet control structure downstream of the proposed BMPs. Provided the infiltration rates of the water quality volume through the sand filter are variable, a water quality outlet is modeled to provide the required minimum 24-hour release

As shown above, the project anticipates meeting and exceeding the required treatment for new impervious surfaces and developed area through the use of four USSFs. Additionally, the plethora of native plants and catch basins will provide additional water quality benefits in addition to the treatment of the USSF.

FLOODING STANDARD – WATER QUANTITY

The proposed project was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, and 25-year storm events were used. The corresponding rainfall amounts for these storms are 3.10", 4.60", and 5.80" respectively. Due to the numerous variables, and inherent inaccuracies with the modeling program used to calculate stormwater runoff it is custom at Acorn Engineering, Inc. to round to the nearest whole number. However due to the small size of the project and the minimal existing flows, the stormwater runoff shall be rounded to the nearest tenth of a cubic feet per second (cfs).

Time of Concentration (Tc)

The times of concentration for subcatchments in both the pre and post conditions were calculated by entering the flow path with the associated ground cover and slopes. HydroCAD then calculated the Tc's and incorporated the total Tc for each subcatchment into the model. When the calculated Tc was less than six minutes (0.1 hours), a direct entry of six minutes was used as advised by the TR-55 model. Consistent with previous submissions and best practices, the sheet flow length for any Tc path was capped at 100 feet.



Curve Number (CN)

Within the pre-development model, the vegetated areas were considered grass/wood land cover in poor condition. This determination was made after multiple site visits that observed exposed soils with little to no organic duff layer. As such, although the land is wooded, the vegetative cover and surface condition would be considered in poor condition due to animal burrowing, disposal of debris, utilization of the site as an encampment and walking paths, general urban conditions, and little to no understory growth.

The post development landscaped areas were given a good rating within either the B or C hydrologic soil group depending on the underlying soil type. This assumption is reinforced given the aggressive landscape plan which will feature more porous conditions that are appropriately mulched along with future extensive root systems and canopy cover that will exist once the landscaping has matured.

Pre-development Calculations

The site consists of wooded area and wetlands in the predevelopment condition, for the purpose of this analysis the land has been divided into two separate sub catchments. The first sub catchment is located to the southwestern corner of the site near Sherwood Street. The land slopes at roughly 15% from west to east towards an abutter on Sherwood. The second sub catchment makes up the rest of the site which sees drainage internally within the site towards a pair of wetlands. The southern most wetland contains an outlet control structure to meter stormwater runoff into the municipal system within Sherwood Street.

Peak flow rates for the pre-development storm events are as follows:

Table 6 – Pre-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	0	0	1
POI #2	4	9	13
POI #3	5	9	13

Post-development Calculations

The drainage patterns from the pre and post conditions remain relatively the same, but with the post condition seeing four separate sub catchments that are dedicated for the treatment of runoff generated primarily by roof and pavement via the four (4) USSFs. The subcatchments are as follows:

- Subcatchment 1 – This is comprised of the untreated impervious area towards the entrance to the site that will be directed towards the MS4 in Sherwood St.
- Subcatchment 2 – This subcatchment consists mainly of landscaped area that will not



be treated via the proposed USSFs and will be directed to one of the two (2) wetlands on site, as it currently does.

- Subcatchments 2.1-2.4 – These subcatchments are responsible for the water quality treatment required by the DEP and City. All of the runoff within these sub catchments will be directed towards the proposed USSFs.

The post-development calculations include changes to the land use, and the compensation provided by the USSF's and associated engineered orifices. The following table represents comparison of pre- development and post-development condition peak runoff rates for the proposed development and tributary areas.

Table 7 – Post-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	0	0	0
POI #2	2	5	10
POI #3	2	5	11

Table 8 – Comparison of Peak Flows						
Drainage Area	2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)	
	Pre	Post	Pre	Post	Pre	Post
POI #1	0	0	1	0	1	0
POI #2	4	2	8	5	12	10
POI #3 (Total)	4	2	9	5	12	11

As shown in Table 7 and 8, the net impact of the post development peak flows will remain at or below the predevelopment levels. A post-development watershed map developed for this project can be viewed in Attachment B, and a copy of the HydroCAD calculations is included within Attachment C of this report.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey
- Soil borings completed in April 2021 by Summit Geoengineering Services

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because the



waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

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

Table 9 - “K” Value	
Soils Type	Subsurface
Buxton Silt Loam	0.37
Cut and fill land	0.20
Elmwood fine sandy loam	0.20
Suffield silt loam	0.32

The soil “K” value for the soil, listed above, shows a low to medium susceptibility to erosion. The site’s susceptibility to erosion is sourced from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although the soil “K” value shows a low to medium susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

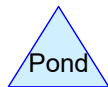
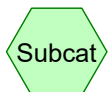
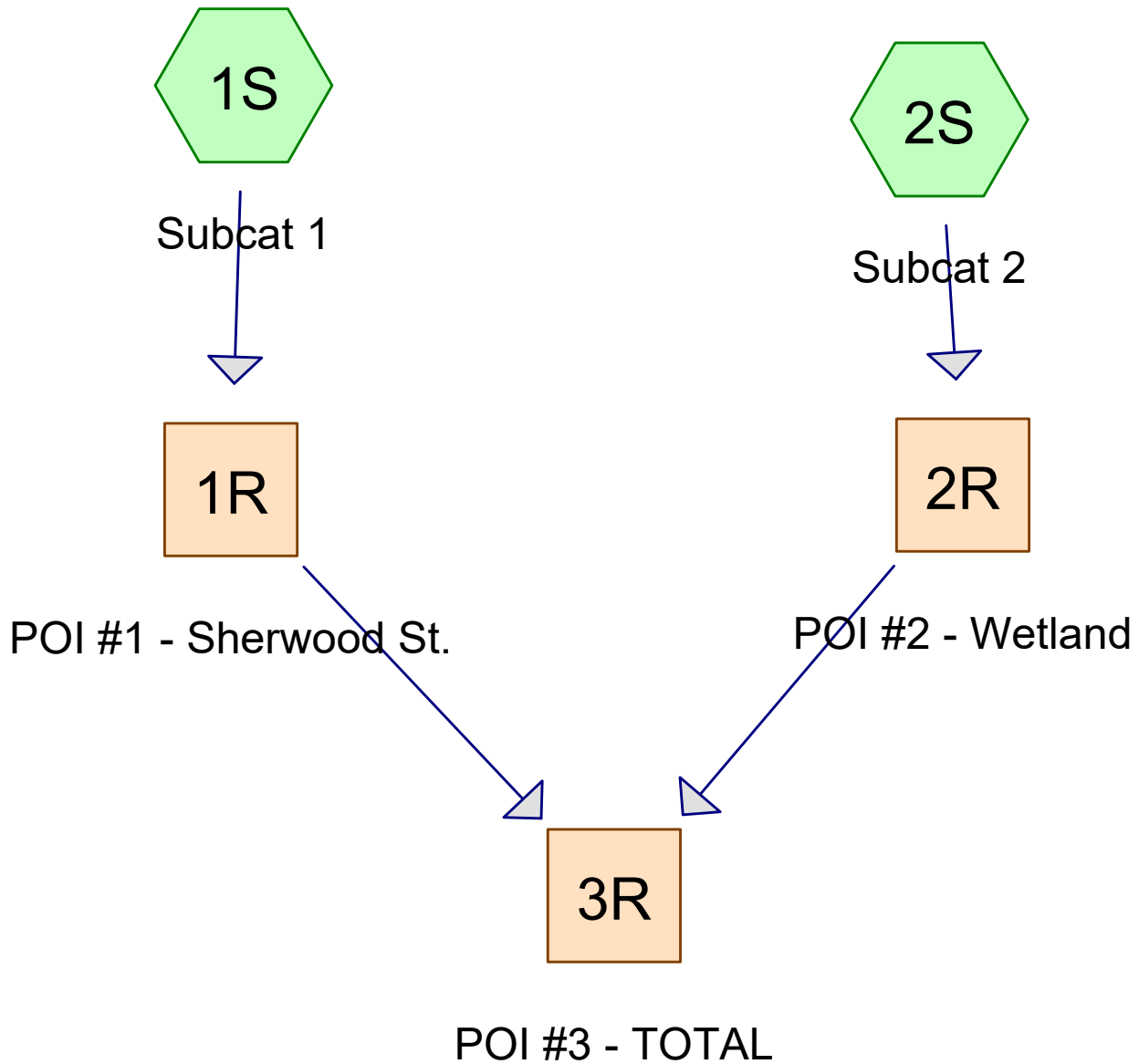
CONCLUSION

The proposed development was designed to meet the requirements implemented by the MDEP under the Stormwater Management Statute (38 M.R.S.A. § 420-D) as well as the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. The proposed project as designed is not anticipated to cause flooding or erosion problems within the subject site, abutters’ sites, nor within the right-of-way. Overall, the project will provide an improvement to stormwater runoff and overall management from several perspective as outlined above.

ATTACHMENTS

Attachment A: Pre-Development Watershed Map
 Attachment B: Post-Development Watershed Map
 Attachment C: HydroCAD Calculations
 Attachment D: Soil Survey





Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.435	61	>75% Grass cover, Good, HSG B (2S)
0.137	74	>75% Grass cover, Good, HSG C (2S)
0.050	98	Roof Tops (2S)
0.002	98	Unconnected roofs, HSG C (1S)
0.662	73	Woods/grass comb., Poor, HSG B (2S)
2.431	82	Woods/grass comb., Poor, HSG C (2S)
0.118	82	Woods/grass combo, Poor, HSG C (1S)
3.835	78	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.097	HSG B	2S
2.689	HSG C	1S, 2S
0.000	HSG D	
0.050	Other	2S
3.835		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.435	0.137	0.000	0.000	0.572	>75% Grass cover, Good	2S
0.000	0.000	0.000	0.000	0.050	0.050	Roof Tops	2S
0.000	0.000	0.002	0.000	0.000	0.002	Unconnected roofs	1S
0.000	0.662	2.431	0.000	0.000	3.093	Woods/grass comb., Poor	2S
0.000	0.000	0.118	0.000	0.000	0.118	Woods/grass combo, Poor	1S
0.000	1.097	2.689	0.000	0.050	3.835	TOTAL AREA	

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Type III 24-hr 2-year Rainfall=3.10"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcat 1

Runoff Area=5,216 sf 1.50% Impervious Runoff Depth=1.46"

Tc=6.0 min CN=82 Runoff=0.20 cfs 0.015 af

Subcatchment2S: Subcat 2

Runoff Area=161,833 sf 1.34% Impervious Runoff Depth=1.20"

Flow Length=244' Tc=10.6 min CN=78 Runoff=4.36 cfs 0.372 af

Reach 1R: POI #1 - Sherwood St.

Inflow=0.20 cfs 0.015 af

Outflow=0.20 cfs 0.015 af

Reach 2R: POI #2 - Wetland

Inflow=4.36 cfs 0.372 af

Outflow=4.36 cfs 0.372 af

Reach 3R: POI #3 - TOTAL

Inflow=4.52 cfs 0.386 af

Outflow=4.52 cfs 0.386 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.386 af Average Runoff Depth = 1.21"
98.66% Pervious = 3.783 ac 1.34% Impervious = 0.052 ac

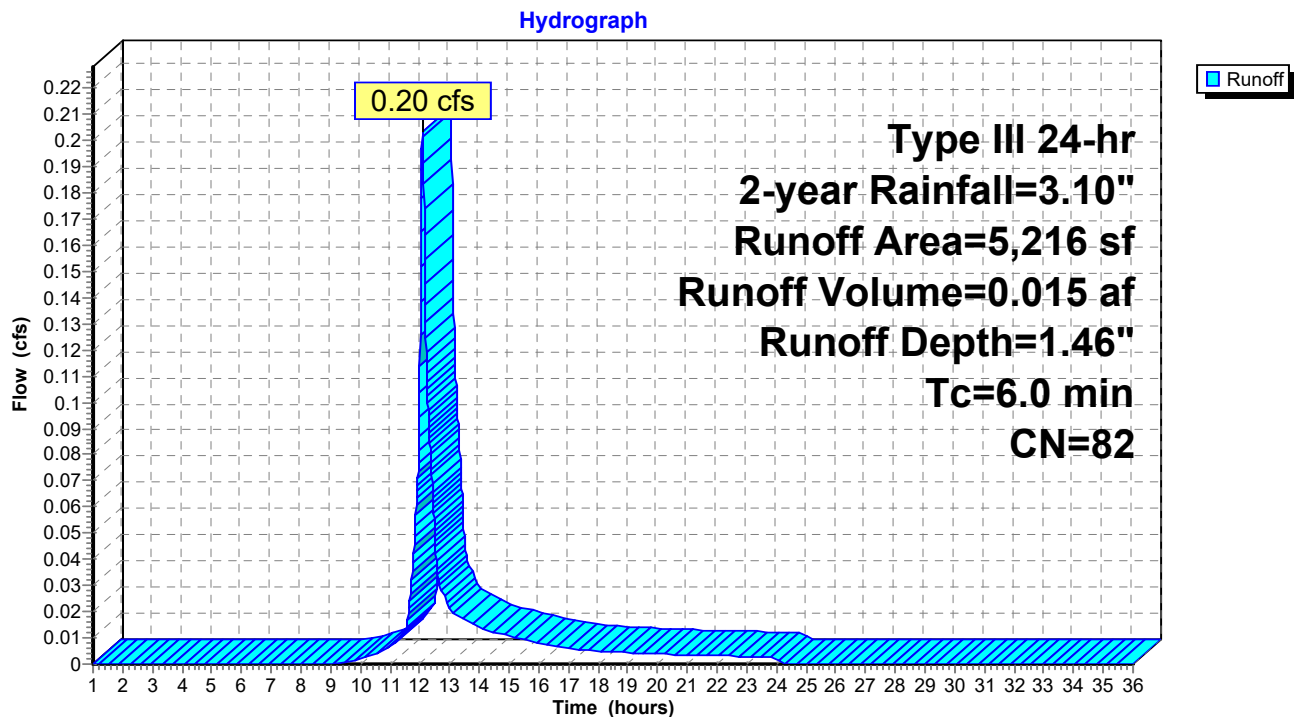
Summary for Subcatchment 1S: Subcat 1

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.015 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	5,138	82	Woods/grass combo, Poor, HSG C
	78	98	Unconnected roofs, HSG C
	5,216	82	Weighted Average
	5,138		98.50% Pervious Area
	78		1.50% Impervious Area
	78		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep Slopes to Grassed Ditch

Subcatchment 1S: Subcat 1

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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Subcatchment 2S: Subcat 2

Runoff = 4.36 cfs @ 12.15 hrs, Volume= 0.372 af, Depth= 1.20"

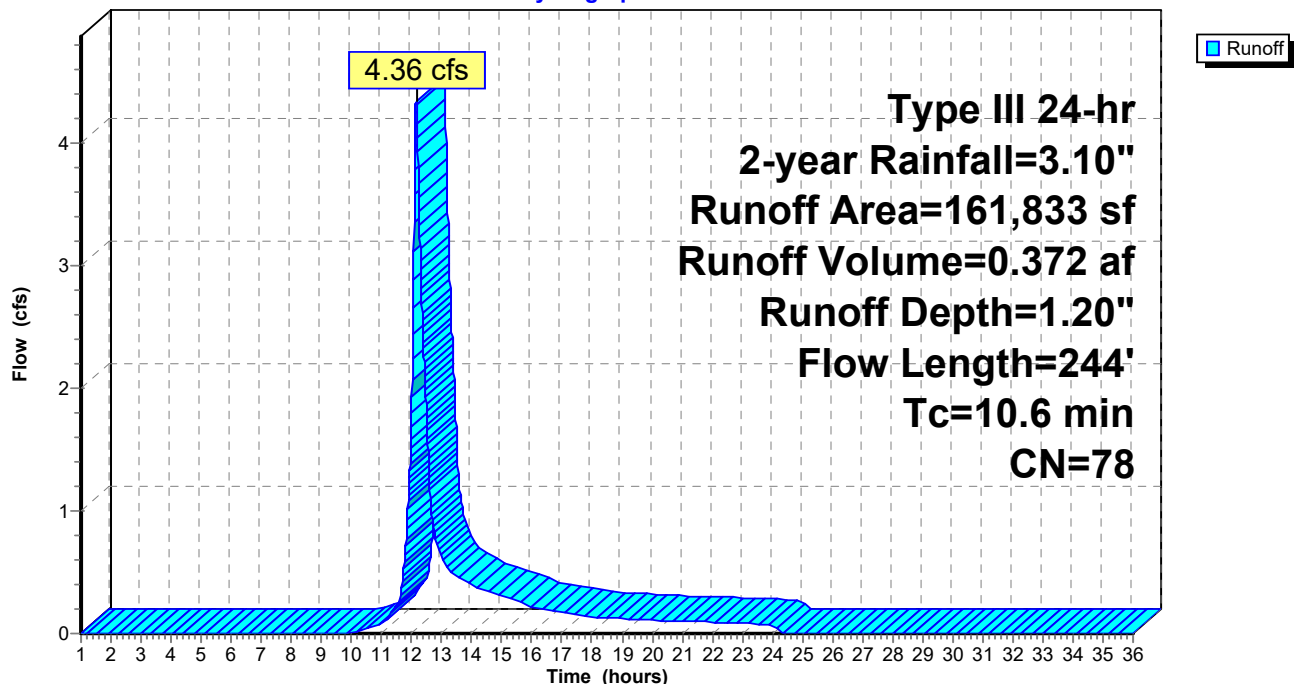
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
* 2,167	98	Roof Tops
* 105,916	82	Woods/grass comb., Poor, HSG C
28,832	73	Woods/grass comb., Poor, HSG B
18,938	61	>75% Grass cover, Good, HSG B
5,980	74	>75% Grass cover, Good, HSG C
161,833	78	Weighted Average
159,666		98.66% Pervious Area
2,167		1.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	2.45		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2

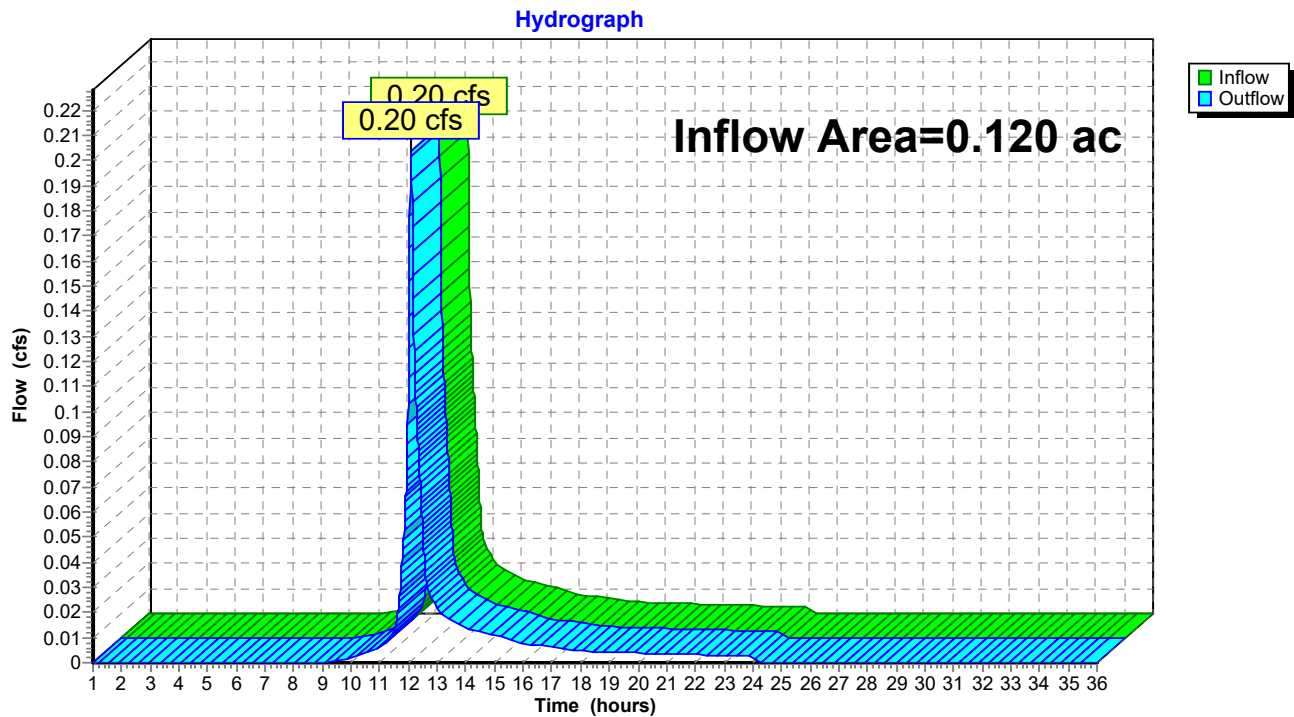
Hydrograph



Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.120 ac, 1.50% Impervious, Inflow Depth = 1.46" for 2-year event
Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.015 af
Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

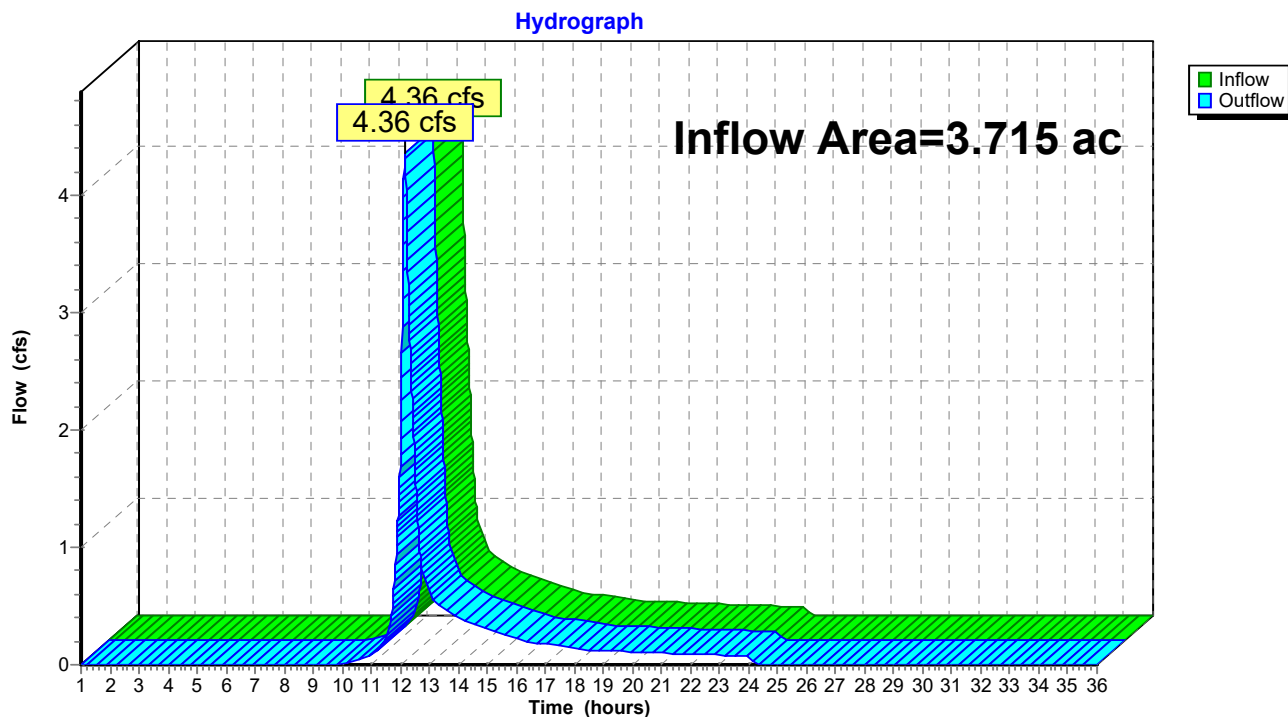
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - Sherwood St.

Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.715 ac, 1.34% Impervious, Inflow Depth = 1.20" for 2-year event
Inflow = 4.36 cfs @ 12.15 hrs, Volume= 0.372 af
Outflow = 4.36 cfs @ 12.15 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min

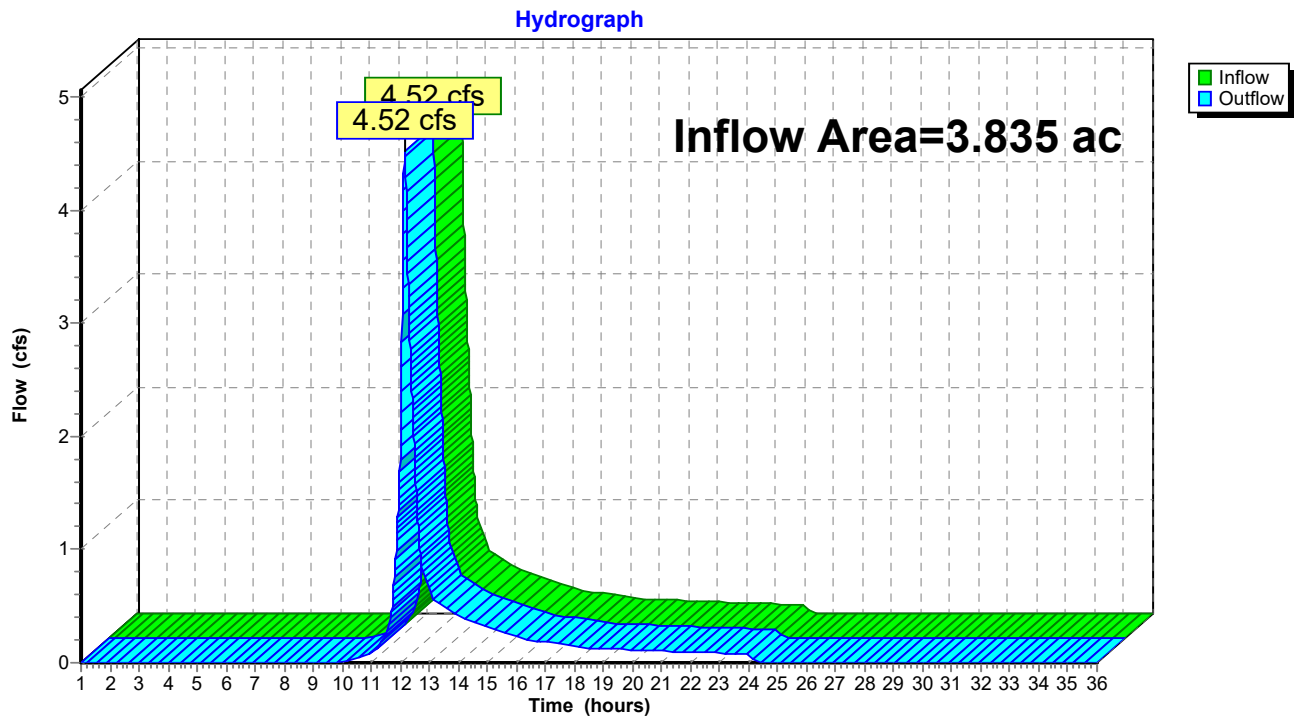
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 2R: POI #2 - Wetland

Summary for Reach 3R: POI #3 - TOTAL

Inflow Area = 3.835 ac, 1.34% Impervious, Inflow Depth = 1.21" for 2-year event
Inflow = 4.52 cfs @ 12.15 hrs, Volume= 0.386 af
Outflow = 4.52 cfs @ 12.15 hrs, Volume= 0.386 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: POI #3 - TOTAL

Pre Development_4-20-21*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcat 1

Runoff Area=5,216 sf 1.50% Impervious Runoff Depth=2.72"

Tc=6.0 min CN=82 Runoff=0.38 cfs 0.027 af

Subcatchment2S: Subcat 2

Runoff Area=161,833 sf 1.34% Impervious Runoff Depth=2.38"

Flow Length=244' Tc=10.6 min CN=78 Runoff=8.85 cfs 0.735 af

Reach 1R: POI #1 - Sherwood St.

Inflow=0.38 cfs 0.027 af

Outflow=0.38 cfs 0.027 af

Reach 2R: POI #2 - Wetland

Inflow=8.85 cfs 0.735 af

Outflow=8.85 cfs 0.735 af

Reach 3R: POI #3 - TOTAL

Inflow=9.16 cfs 0.763 af

Outflow=9.16 cfs 0.763 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.763 af Average Runoff Depth = 2.39"
98.66% Pervious = 3.783 ac 1.34% Impervious = 0.052 ac

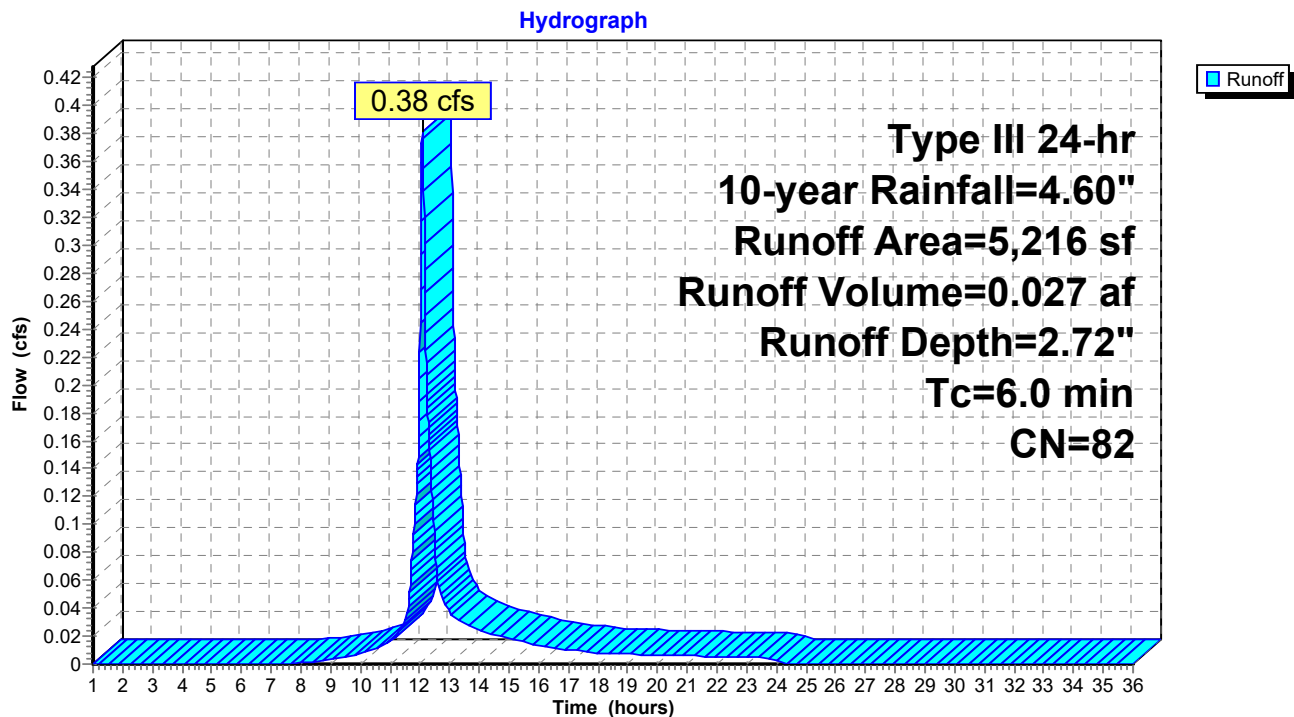
Summary for Subcatchment 1S: Subcat 1

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 5,138	82	Woods/grass combo, Poor, HSG C
78	98	Unconnected roofs, HSG C
5,216	82	Weighted Average
5,138		98.50% Pervious Area
78		1.50% Impervious Area
78		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep Slopes to Grassed Ditch

Subcatchment 1S: Subcat 1

Summary for Subcatchment 2S: Subcat 2

Runoff = 8.85 cfs @ 12.15 hrs, Volume= 0.735 af, Depth= 2.38"

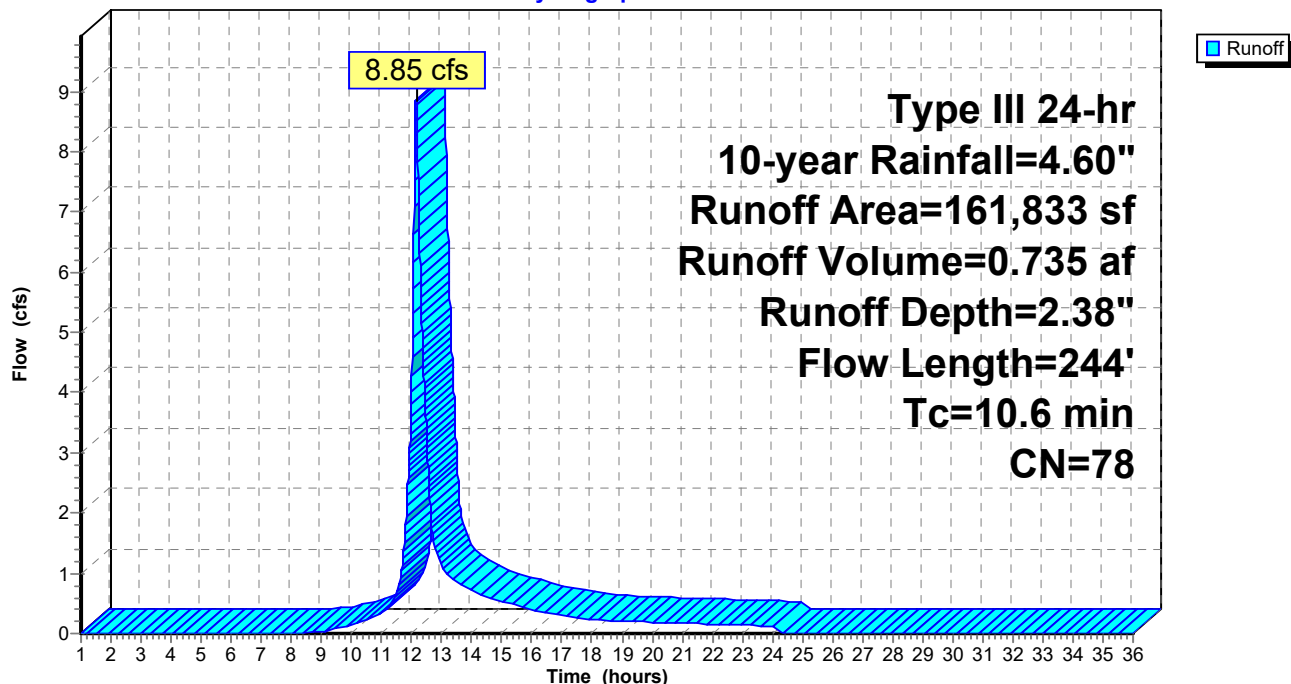
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Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,167	98	Roof Tops
*	105,916	82	Woods/grass comb., Poor, HSG C
	28,832	73	Woods/grass comb., Poor, HSG B
	18,938	61	>75% Grass cover, Good, HSG B
	5,980	74	>75% Grass cover, Good, HSG C
	161,833	78	Weighted Average
	159,666		98.66% Pervious Area
	2,167		1.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	2.45		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2

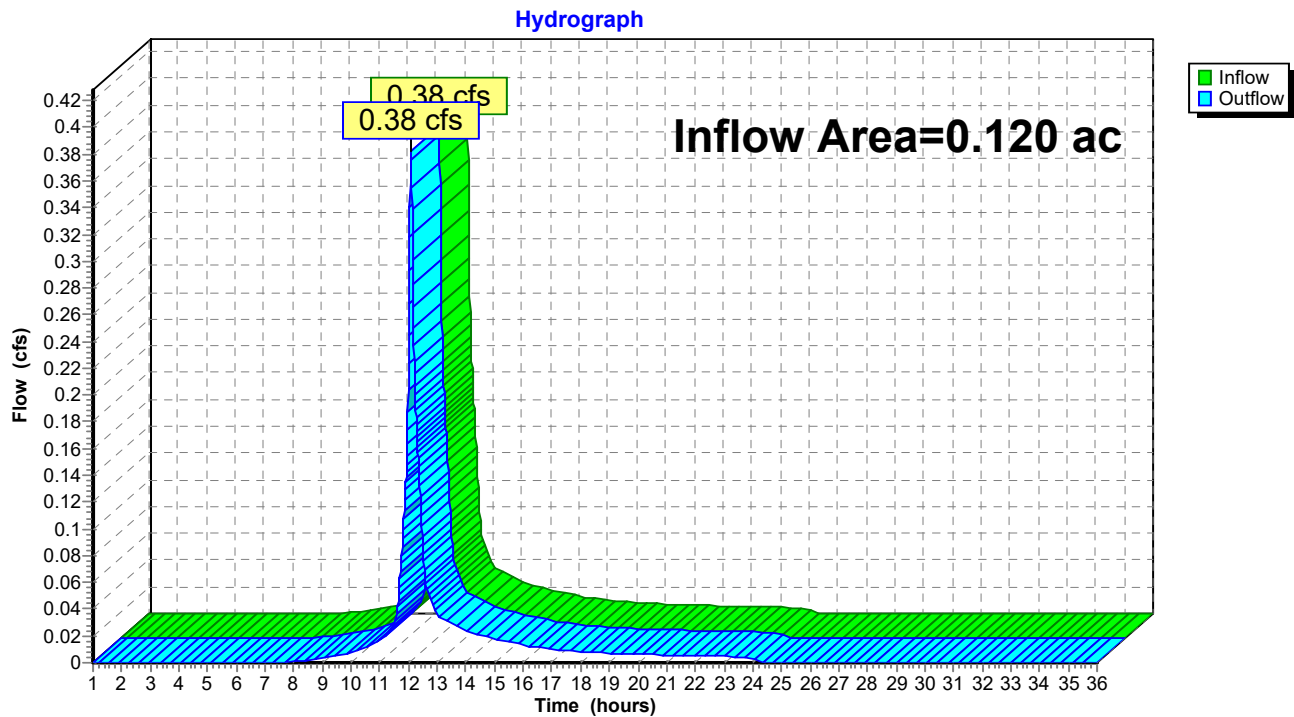
Hydrograph



Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.120 ac, 1.50% Impervious, Inflow Depth = 2.72" for 10-year event
Inflow = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

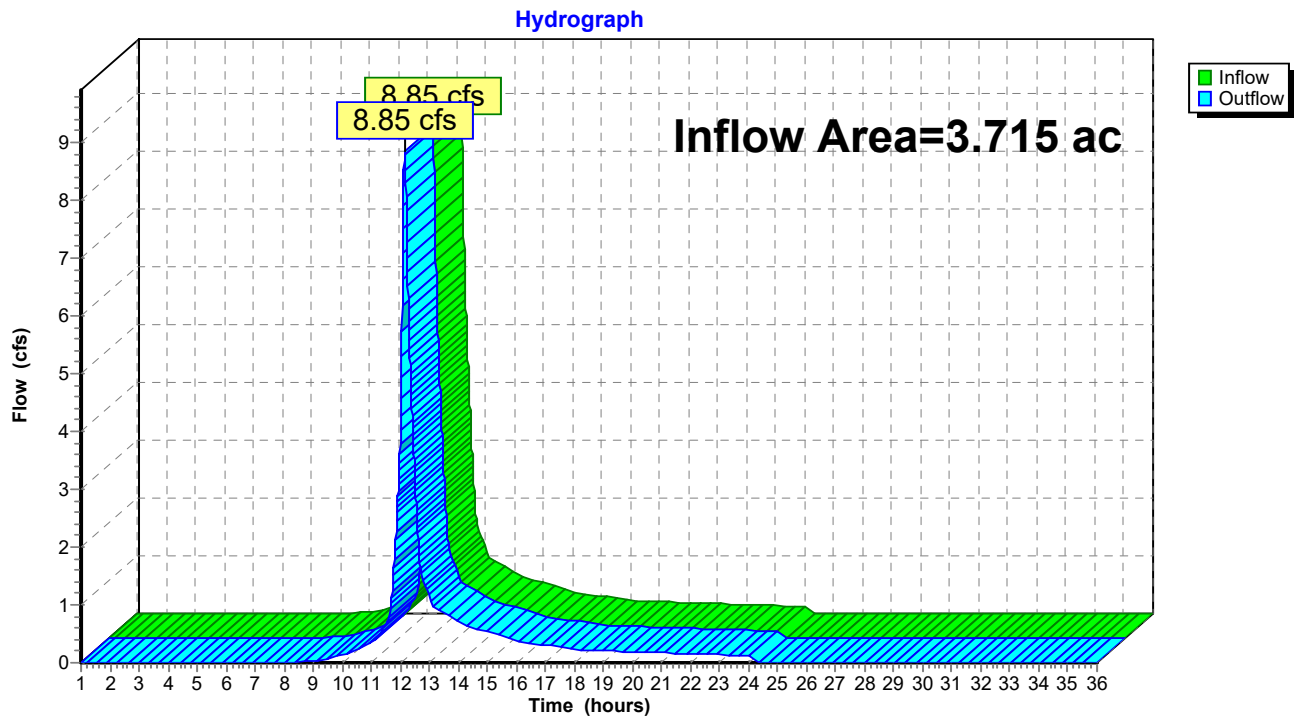
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Reach 1R: POI #1 - Sherwood St.

Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.715 ac, 1.34% Impervious, Inflow Depth = 2.38" for 10-year event
Inflow = 8.85 cfs @ 12.15 hrs, Volume= 0.735 af
Outflow = 8.85 cfs @ 12.15 hrs, Volume= 0.735 af, Atten= 0%, Lag= 0.0 min

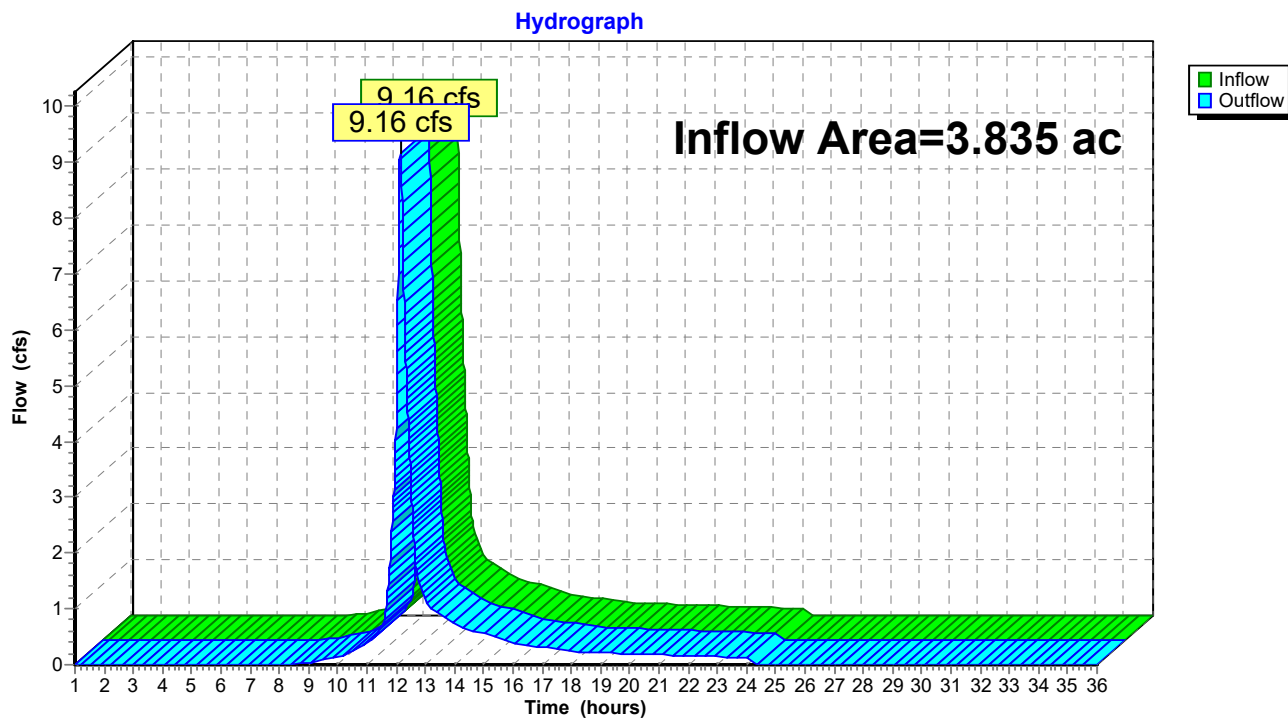
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 2R: POI #2 - Wetland

Summary for Reach 3R: POI #3 - TOTAL

Inflow Area = 3.835 ac, 1.34% Impervious, Inflow Depth = 2.39" for 10-year event
Inflow = 9.16 cfs @ 12.15 hrs, Volume= 0.763 af
Outflow = 9.16 cfs @ 12.15 hrs, Volume= 0.763 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: POI #3 - TOTAL

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcat 1

Runoff Area=5,216 sf 1.50% Impervious Runoff Depth=3.80"

Tc=6.0 min CN=82 Runoff=0.53 cfs 0.038 af

Subcatchment2S: Subcat 2

Runoff Area=161,833 sf 1.34% Impervious Runoff Depth=3.40"

Flow Length=244' Tc=10.6 min CN=78 Runoff=12.70 cfs 1.054 af

Reach 1R: POI #1 - Sherwood St.

Inflow=0.53 cfs 0.038 af

Outflow=0.53 cfs 0.038 af

Reach 2R: POI #2 - Wetland

Inflow=12.70 cfs 1.054 af

Outflow=12.70 cfs 1.054 af

Reach 3R: POI #3 - TOTAL

Inflow=13.13 cfs 1.091 af

Outflow=13.13 cfs 1.091 af

Total Runoff Area = 3.835 ac Runoff Volume = 1.091 af Average Runoff Depth = 3.42"
98.66% Pervious = 3.783 ac 1.34% Impervious = 0.052 ac

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Type III 24-hr 25-year Rainfall=5.80"

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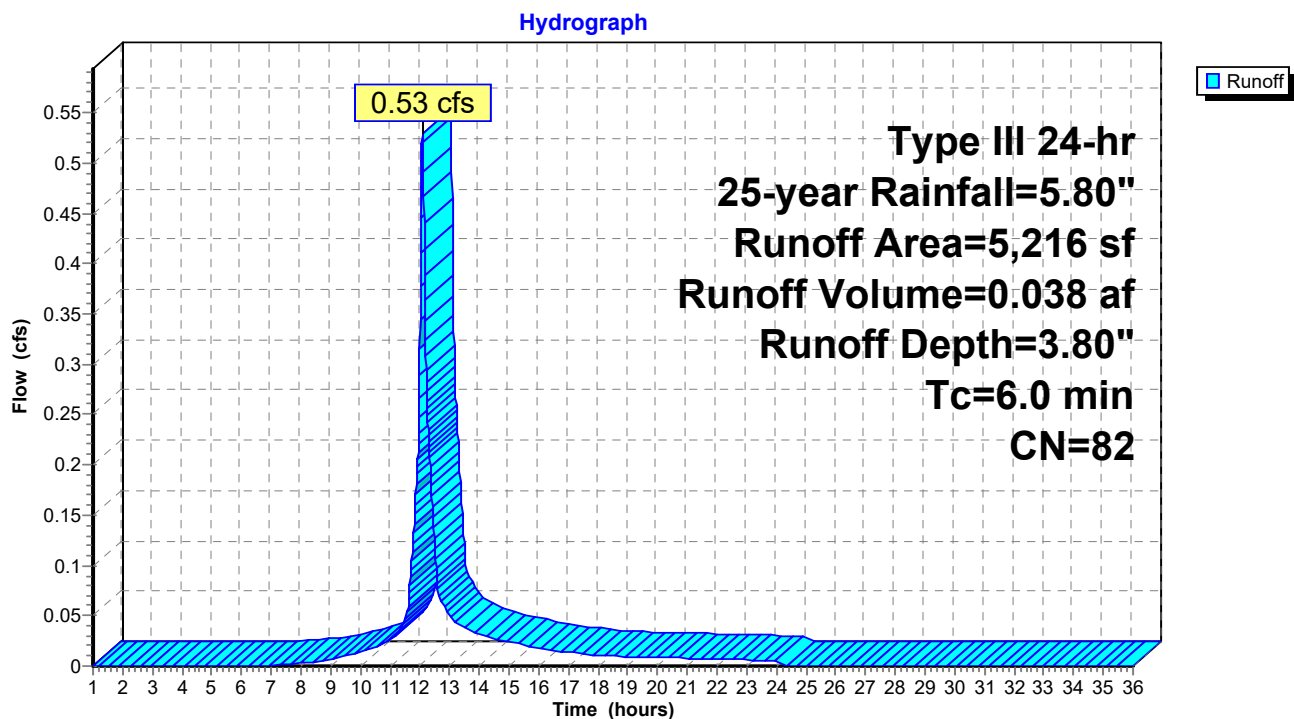
Summary for Subcatchment 1S: Subcat 1

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,138	82	Woods/grass combo, Poor, HSG C
	78	98	Unconnected roofs, HSG C
	5,216	82	Weighted Average
	5,138		98.50% Pervious Area
	78		1.50% Impervious Area
	78		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep Slopes to Grassed Ditch

Subcatchment 1S: Subcat 1

Summary for Subcatchment 2S: Subcat 2

Runoff = 12.70 cfs @ 12.15 hrs, Volume= 1.054 af, Depth= 3.40"

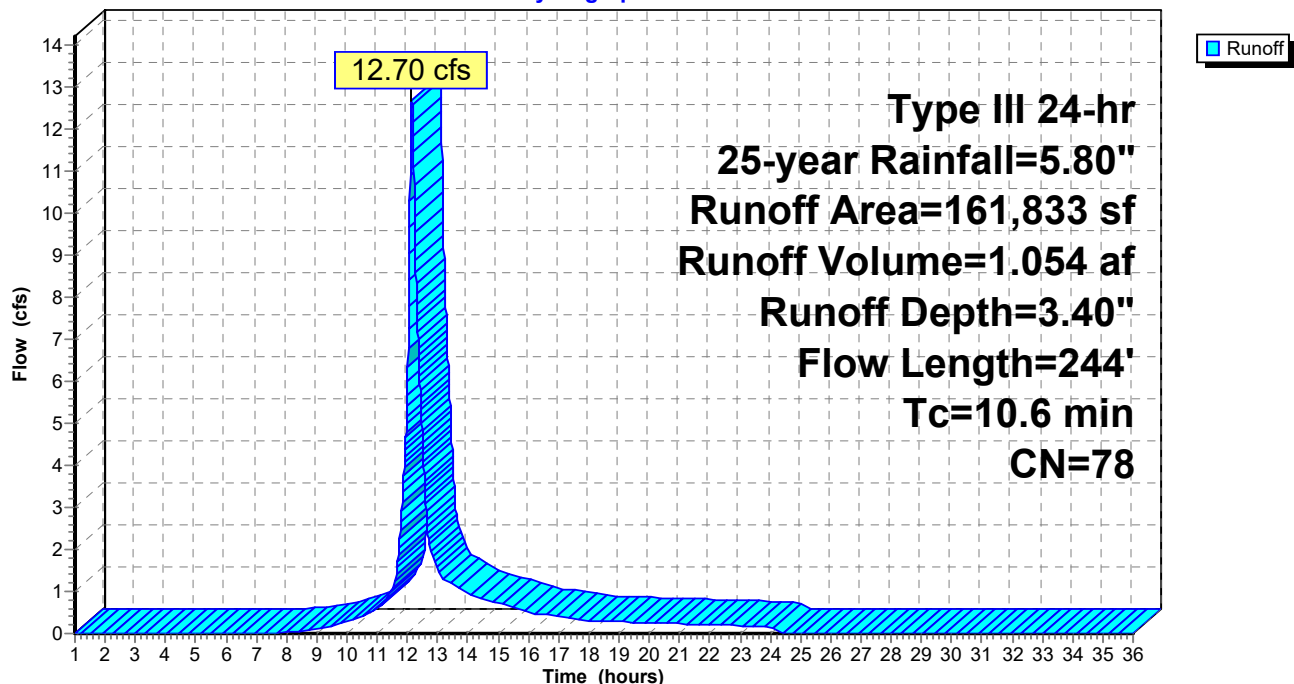
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
* 2,167	98	Roof Tops
* 105,916	82	Woods/grass comb., Poor, HSG C
28,832	73	Woods/grass comb., Poor, HSG B
18,938	61	>75% Grass cover, Good, HSG B
5,980	74	>75% Grass cover, Good, HSG C
161,833	78	Weighted Average
159,666		98.66% Pervious Area
2,167		1.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	2.45		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2

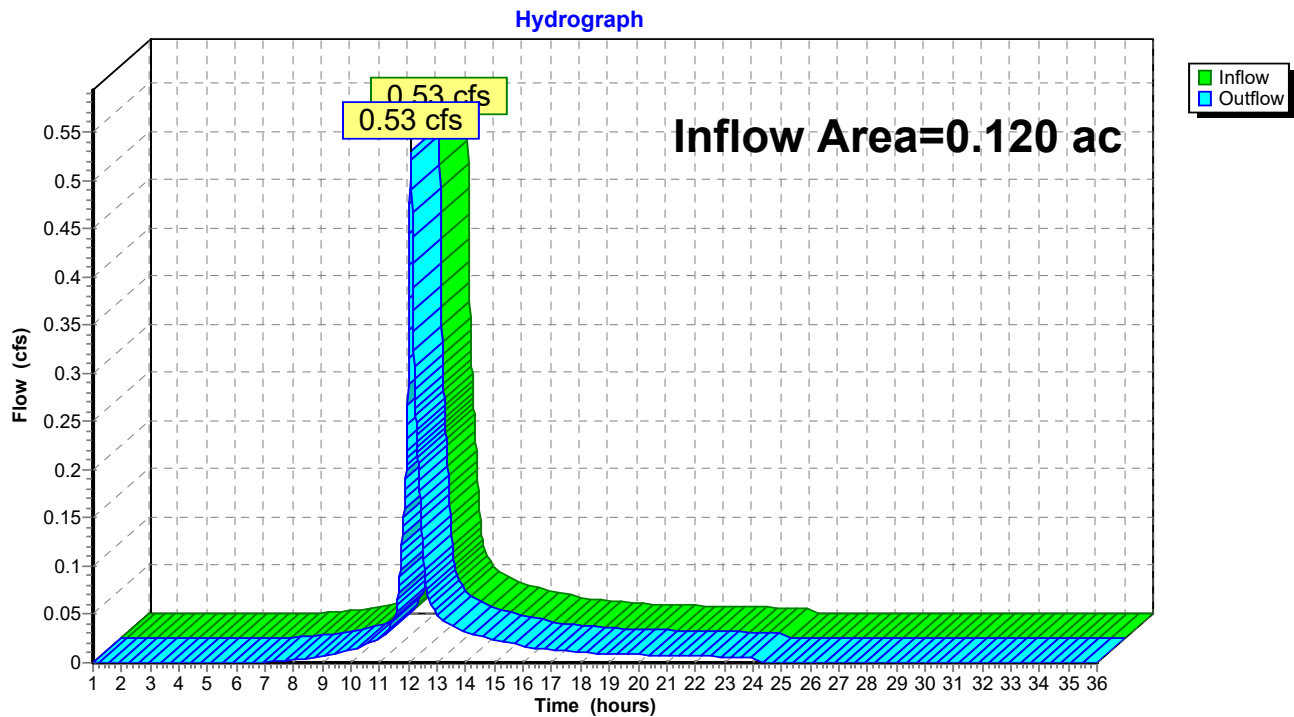
Hydrograph



Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.120 ac, 1.50% Impervious, Inflow Depth = 3.80" for 25-year event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

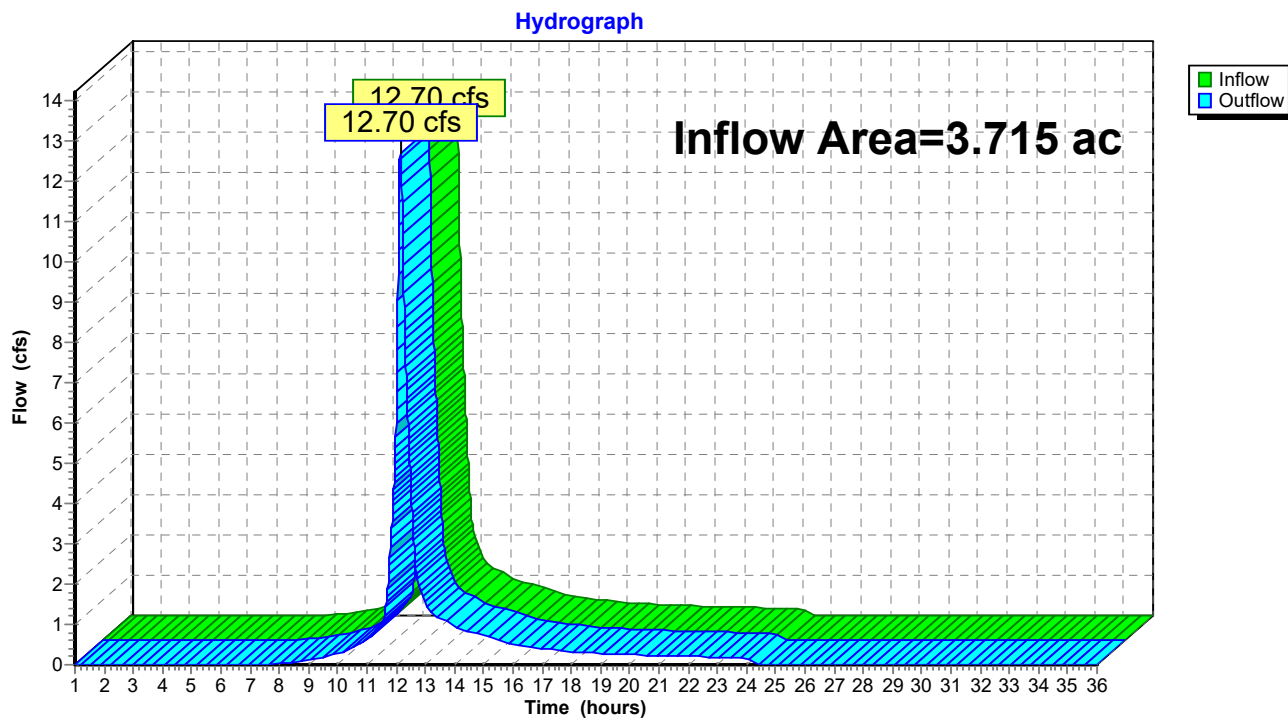
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - Sherwood St.

Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.715 ac, 1.34% Impervious, Inflow Depth = 3.40" for 25-year event
Inflow = 12.70 cfs @ 12.15 hrs, Volume= 1.054 af
Outflow = 12.70 cfs @ 12.15 hrs, Volume= 1.054 af, Atten= 0%, Lag= 0.0 min

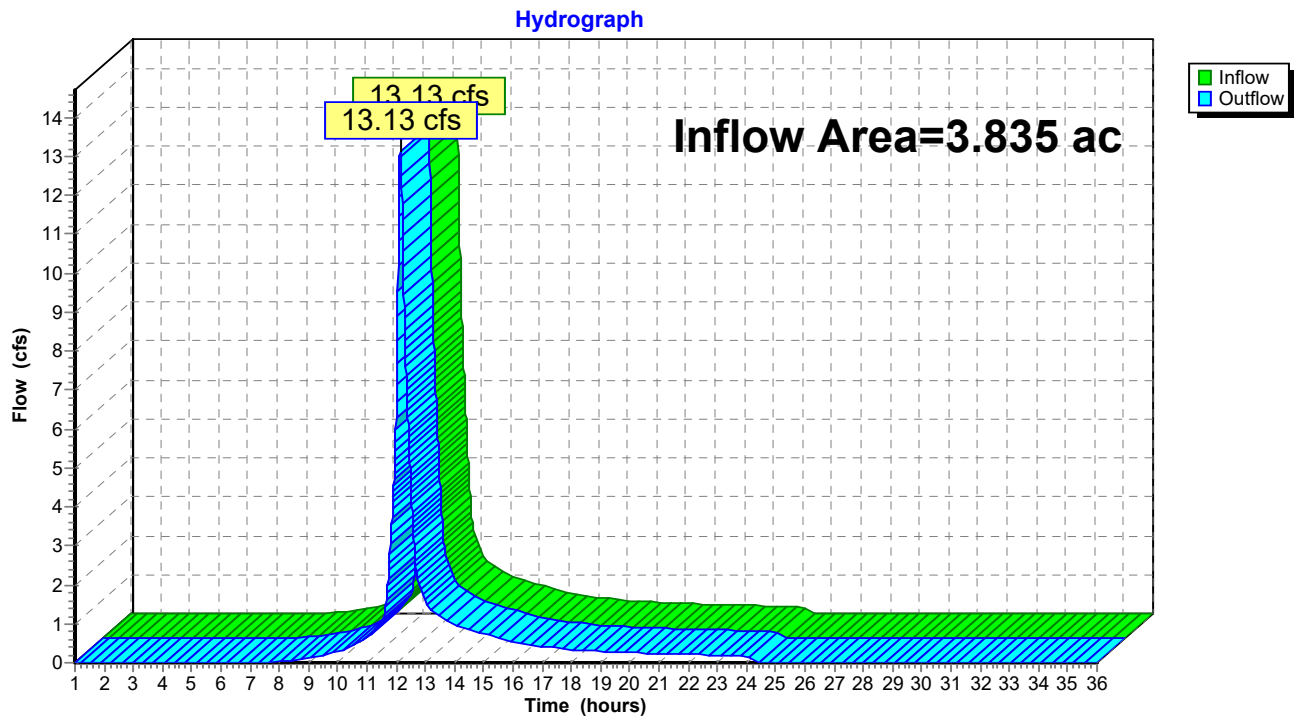
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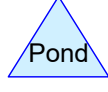
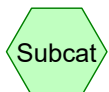
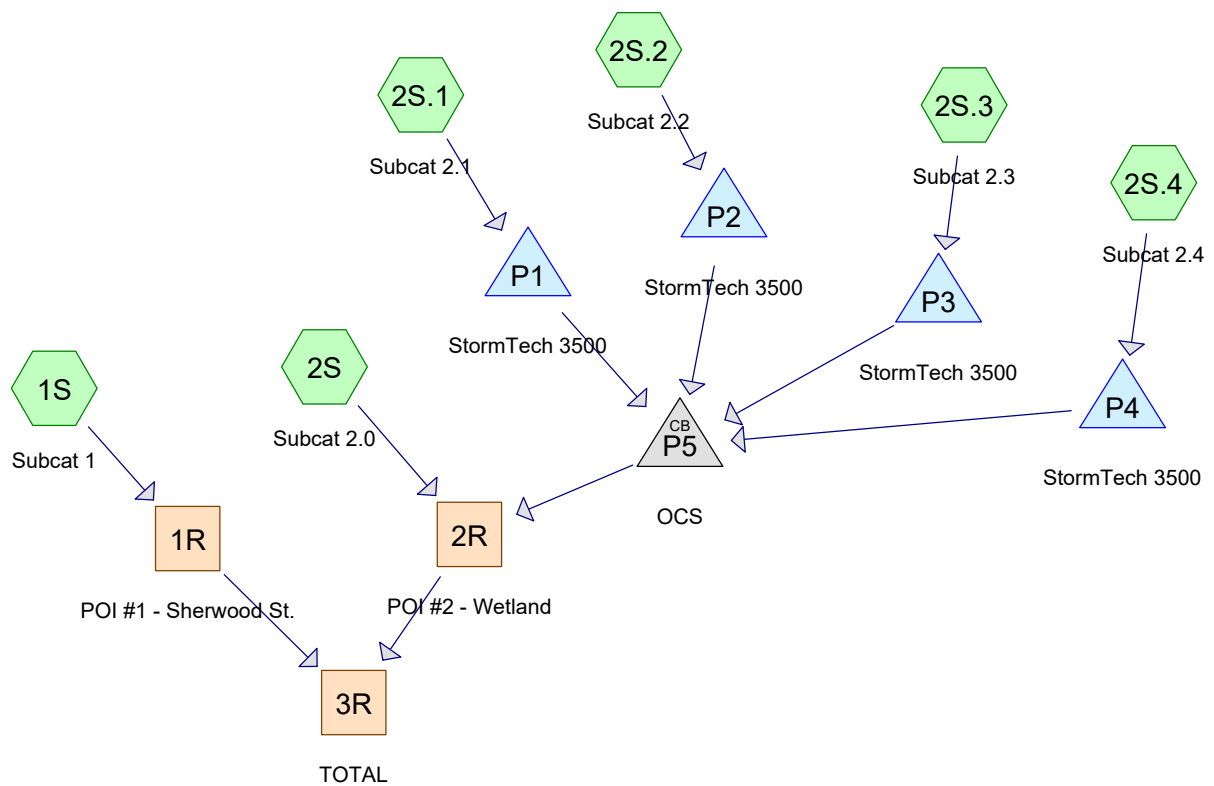
Reach 2R: POI #2 - Wetland

Summary for Reach 3R: POI #3 - TOTAL

Inflow Area = 3.835 ac, 1.34% Impervious, Inflow Depth = 3.42" for 25-year event
Inflow = 13.13 cfs @ 12.14 hrs, Volume= 1.091 af
Outflow = 13.13 cfs @ 12.14 hrs, Volume= 1.091 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: POI #3 - TOTAL



Routing Diagram for Post Development_4-21-21
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.580	61	>75% Grass cover, Good, HSG B (2S)
1.253	74	>75% Grass cover, Good, HSG C (2S, 2S.1, 2S.2, 2S.3, 2S.4)
0.066	98	Concrete Pads / Patio / Stairs (2S)
0.137	70	Cr. Stone (2S)
0.047	70	Cr. Stone/Misc. Vegetation (1S)
0.152	98	Pavement (2S.1)
1.016	98	Pavement/Roofs (2S.2, 2S.3, 2S.4)
0.053	98	Road/Sidewalk (1S)
0.529	66	Woods, Poor, HSG B (2S)
3.835	79	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.109	HSG B	2S
1.253	HSG C	2S, 2S.1, 2S.2, 2S.3, 2S.4
0.000	HSG D	
1.473	Other	1S, 2S, 2S.1, 2S.2, 2S.3, 2S.4
3.835		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.580	1.253	0.000	0.000	1.833	>75% Grass cover, Good	2S, 2S.1, 2S.2, 2S.3, 2S.4
0.000	0.000	0.000	0.000	0.066	0.066	Concrete Pads / Patio / Stairs	2S
0.000	0.000	0.000	0.000	0.137	0.137	Cr. Stone	2S
0.000	0.000	0.000	0.000	0.047	0.047	Cr. Stone/Misc. Vegetation	1S
0.000	0.000	0.000	0.000	0.152	0.152	Pavement	2S.1
0.000	0.000	0.000	0.000	1.016	1.016	Pavement/Roofs	2S.2, 2S.3, 2S.4
0.000	0.000	0.000	0.000	0.053	0.053	Road/Sidewalk	1S
0.000	0.529	0.000	0.000	0.000	0.529	Woods, Poor	2S
0.000	1.109	1.253	0.000	1.473	3.835	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	P1	18.80	14.00	20.0	0.2400	0.010	12.0	0.0	0.0
2	P1	13.60	10.00	125.0	0.0288	0.010	1.0	0.0	0.0
3	P2	12.80	12.70	10.0	0.0100	0.010	1.5	0.0	0.0
4	P2	18.00	17.25	4.0	0.1875	0.010	12.0	0.0	0.0
5	P3	11.58	11.40	10.0	0.0180	0.010	1.5	0.0	0.0
6	P3	16.80	16.00	5.5	0.1455	0.010	12.0	0.0	0.0
7	P4	10.83	10.75	20.0	0.0040	0.010	2.0	0.0	0.0
8	P4	16.05	15.00	10.0	0.1050	0.010	12.0	0.0	0.0
9	P5	7.95	7.80	34.0	0.0044	0.010	18.0	0.0	0.0

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Type III 24-hr 2-year Rainfall=3.10"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 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

Subcatchment1S: Subcat 1	Runoff Area=4,385 sf 53.04% Impervious Runoff Depth=1.67" Tc=6.0 min CN=85 Runoff=0.20 cfs 0.014 af
Subcatchment2S: Subcat 2.0	Runoff Area=107,660 sf 2.68% Impervious Runoff Depth=0.77" Flow Length=244' Tc=10.6 min CN=70 Runoff=1.67 cfs 0.159 af
Subcatchment2S.1: Subcat 2.1	Runoff Area=6,893 sf 96.29% Impervious Runoff Depth=2.76" Tc=6.0 min CN=97 Runoff=0.47 cfs 0.036 af
Subcatchment2S.2: Subcat 2.2	Runoff Area=14,770 sf 89.87% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=0.98 cfs 0.075 af
Subcatchment2S.3: Subcat 2.3	Runoff Area=14,303 sf 93.50% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=0.95 cfs 0.073 af
Subcatchment2S.4: Subcat 2.4	Runoff Area=19,053 sf 92.42% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=1.27 cfs 0.097 af
Reach 1R: POI #1 - Sherwood St.	Inflow=0.20 cfs 0.014 af Outflow=0.20 cfs 0.014 af
Reach 2R: POI #2 - Wetland	Inflow=2.00 cfs 0.436 af Outflow=2.00 cfs 0.436 af
Reach 3R: TOTAL	Inflow=2.15 cfs 0.450 af Outflow=2.15 cfs 0.450 af
Pond P1: StormTech 3500	Peak Elev=18.69' Storage=956 cf Inflow=0.47 cfs 0.036 af Outflow=0.02 cfs 0.034 af
Pond P2: StormTech 3500	Peak Elev=17.33' Storage=1,477 cf Inflow=0.98 cfs 0.075 af Outflow=0.09 cfs 0.075 af
Pond P3: StormTech 3500	Peak Elev=16.01' Storage=1,416 cf Inflow=0.95 cfs 0.073 af Outflow=0.09 cfs 0.072 af
Pond P4: StormTech 3500	Peak Elev=15.28' Storage=1,763 cf Inflow=1.27 cfs 0.097 af Outflow=0.15 cfs 0.097 af
Pond P5: OCS	Peak Elev=10.42' Inflow=0.35 cfs 0.278 af Outflow=0.35 cfs 0.278 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.453 af Average Runoff Depth = 1.42"
66.42% Pervious = 2.547 ac 33.58% Impervious = 1.288 ac

Summary for Subcatchment 1S: Subcat 1

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 1.67"

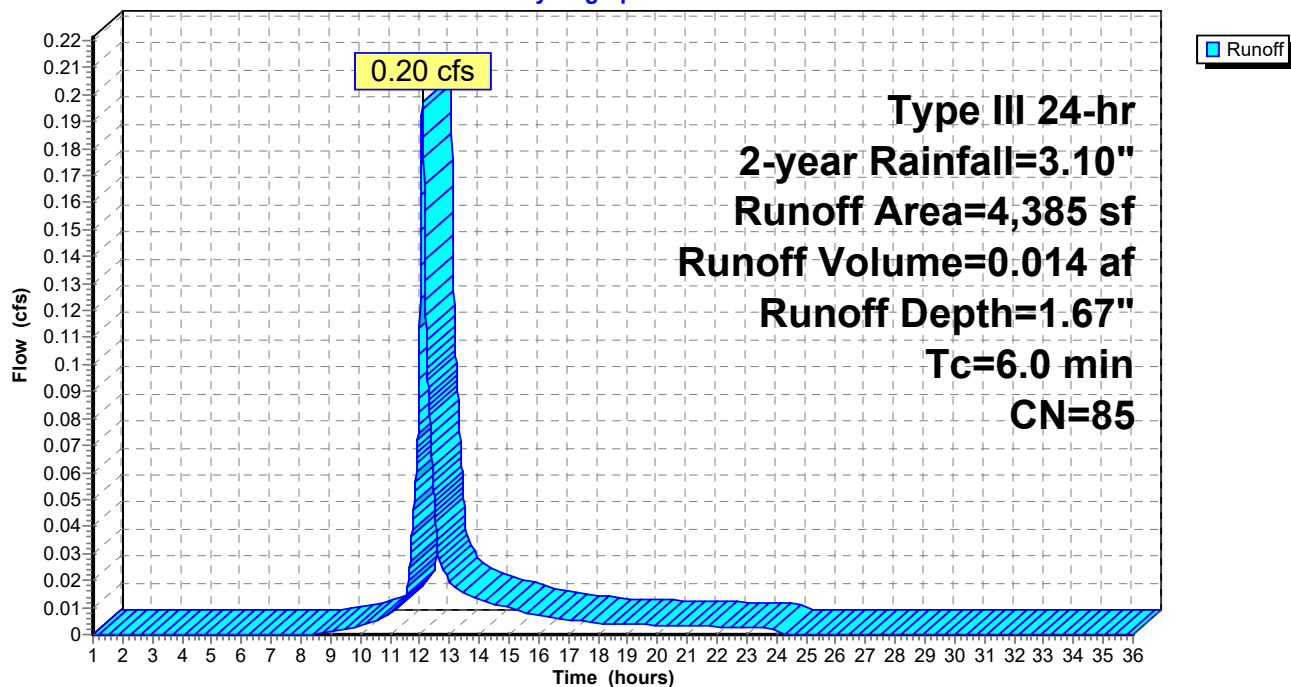
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,059	70	Cr. Stone/Misc. Vegetation
*	2,326	98	Road/Sidewalk
	4,385	85	Weighted Average
	2,059		46.96% Pervious Area
	2,326		53.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep banks to pipe flow

Subcatchment 1S: Subcat 1

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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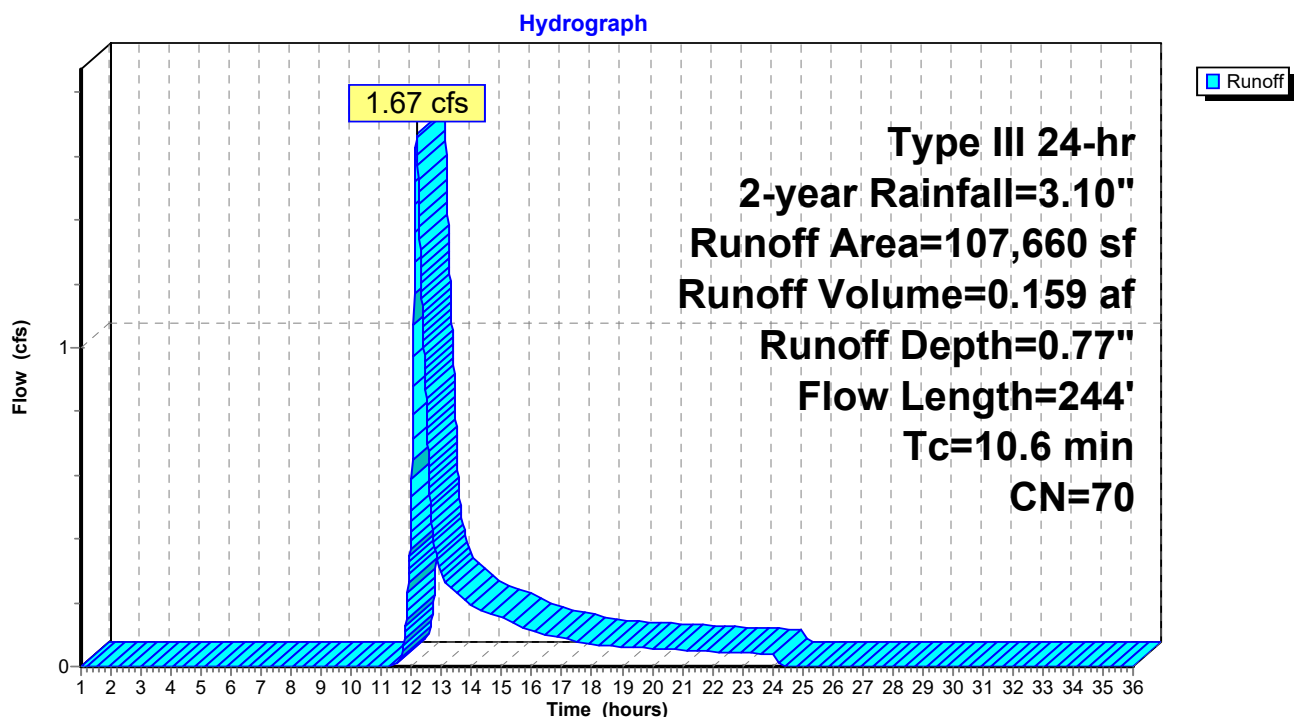
Summary for Subcatchment 2S: Subcat 2.0

Runoff = 1.67 cfs @ 12.17 hrs, Volume= 0.159 af, Depth= 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,882	98	Concrete Pads / Patio / Stairs
	23,059	66	Woods, Poor, HSG B
*	5,983	70	Cr. Stone
	50,476	74	>75% Grass cover, Good, HSG C
	25,260	61	>75% Grass cover, Good, HSG B
	107,660	70	Weighted Average
	104,778		97.32% Pervious Area
	2,882		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	3.43		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2.0

Summary for Subcatchment 2S.1: Subcat 2.1

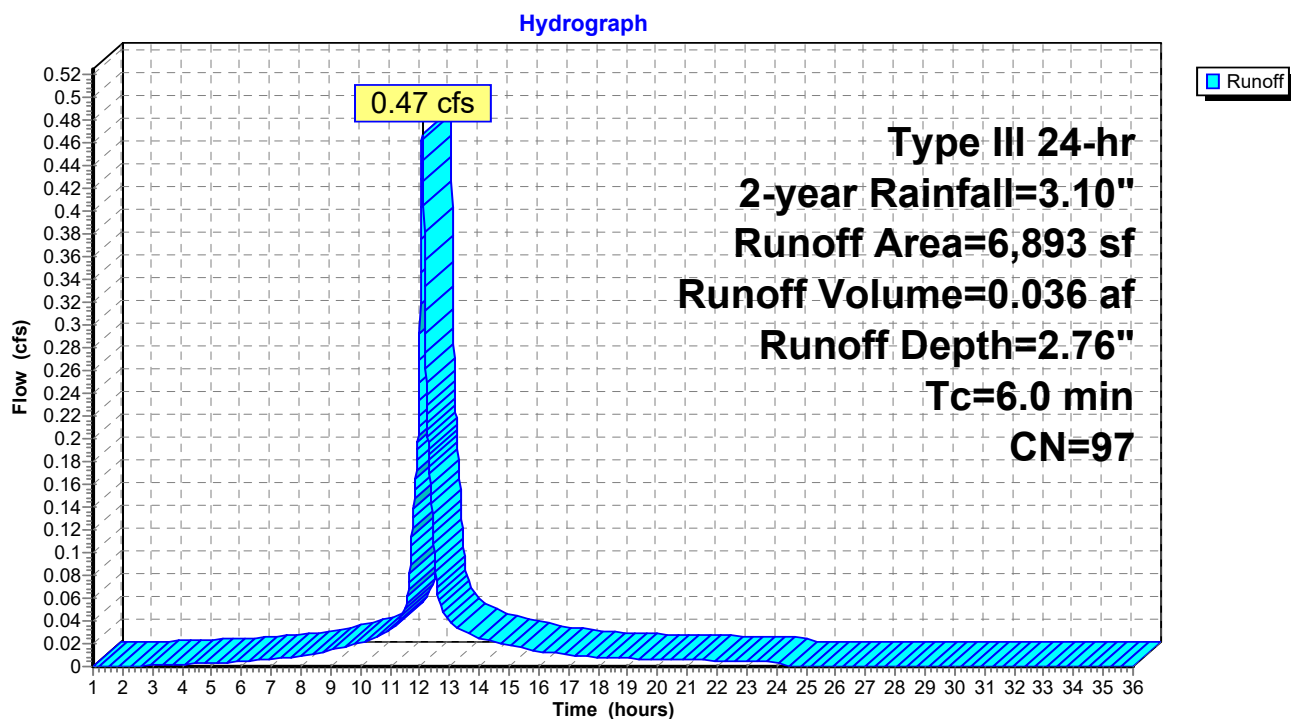
Runoff = 0.47 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	6,637	98	Pavement
	256	74	>75% Grass cover, Good, HSG C
	6,893	97	Weighted Average
	256		3.71% Pervious Area
	6,637		96.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.1: Subcat 2.1



Summary for Subcatchment 2S.2: Subcat 2.2

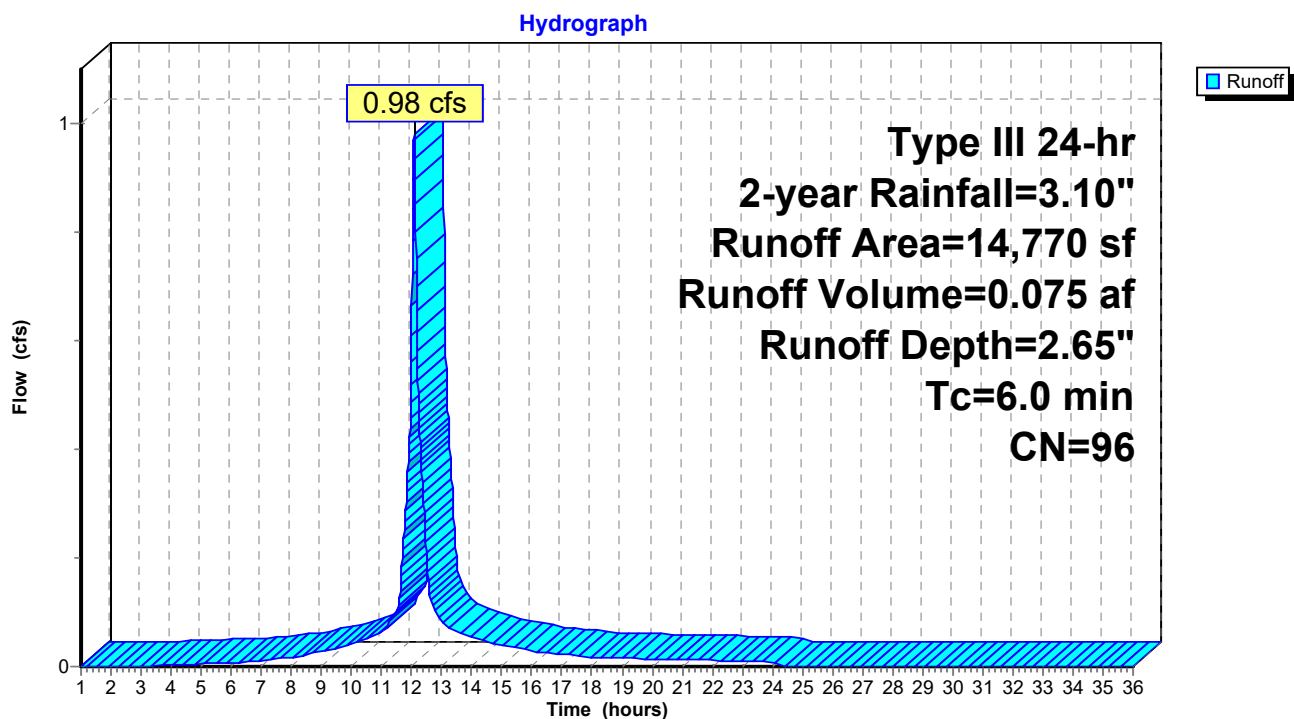
Runoff = 0.98 cfs @ 12.08 hrs, Volume= 0.075 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	13,274	98	Pavement/Roofs
	1,496	74	>75% Grass cover, Good, HSG C
	14,770	96	Weighted Average
	1,496		10.13% Pervious Area
	13,274		89.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.2: Subcat 2.2



Summary for Subcatchment 2S.3: Subcat 2.3

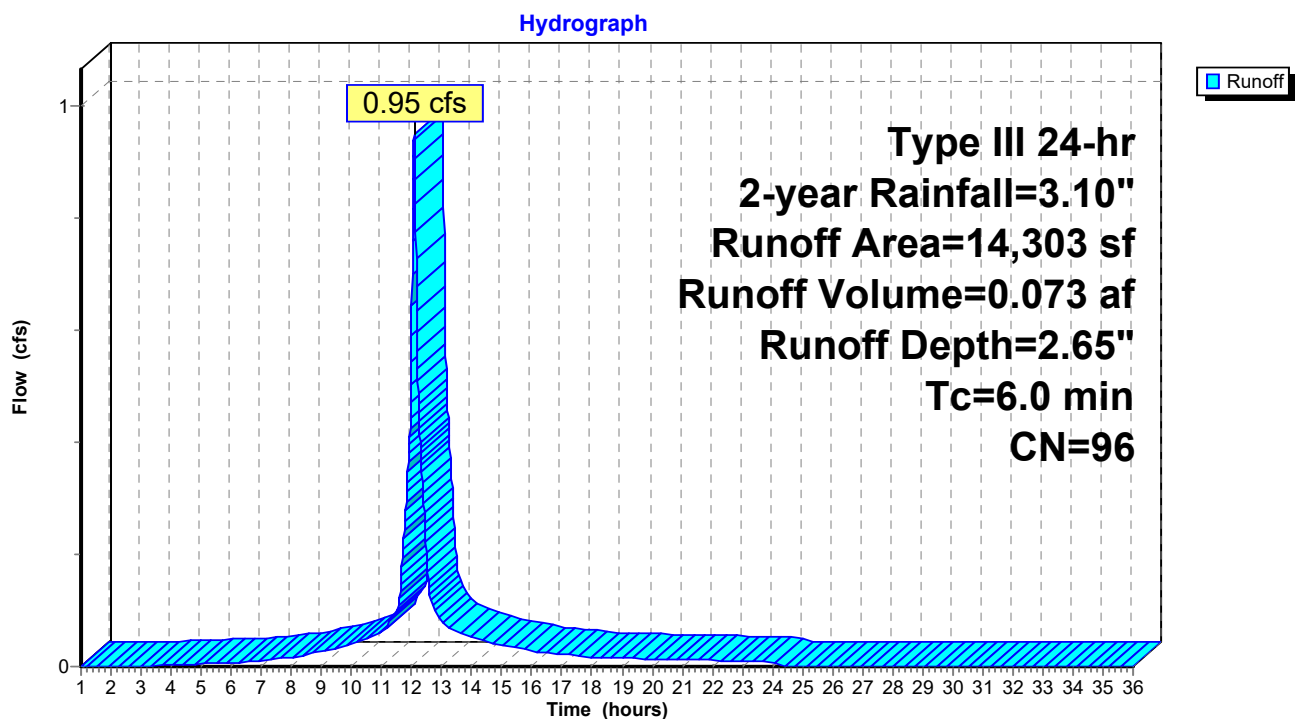
Runoff = 0.95 cfs @ 12.08 hrs, Volume= 0.073 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	13,373	98	Pavement/Roofs
	930	74	>75% Grass cover, Good, HSG C
	14,303	96	Weighted Average
	930		6.50% Pervious Area
	13,373		93.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.3: Subcat 2.3



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Type III 24-hr 2-year Rainfall=3.10"

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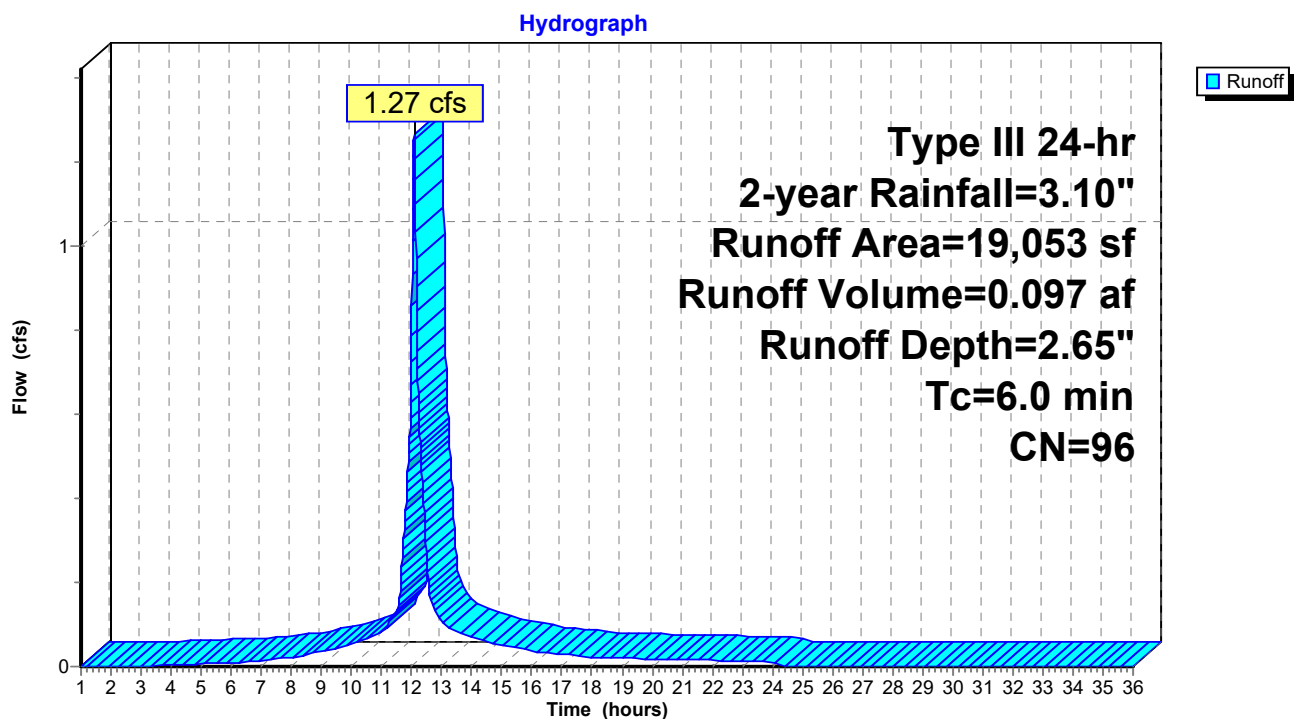
Summary for Subcatchment 2S.4: Subcat 2.4

Runoff = 1.27 cfs @ 12.08 hrs, Volume= 0.097 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	17,609	98	Pavement/Roofs
	1,444	74	>75% Grass cover, Good, HSG C
	19,053	96	Weighted Average
	1,444		7.58% Pervious Area
	17,609		92.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

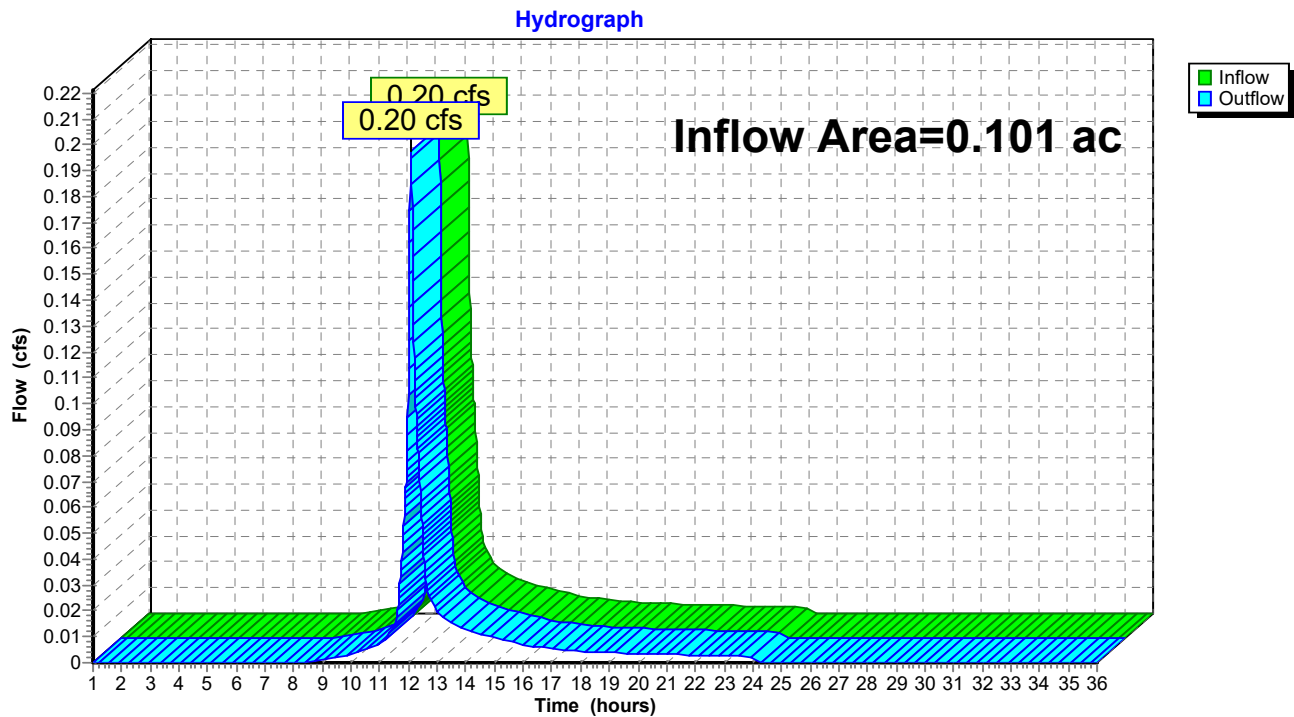
Subcatchment 2S.4: Subcat 2.4

Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.101 ac, 53.04% Impervious, Inflow Depth = 1.67" for 2-year event
 Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af
 Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 1R: POI #1 - Sherwood St.

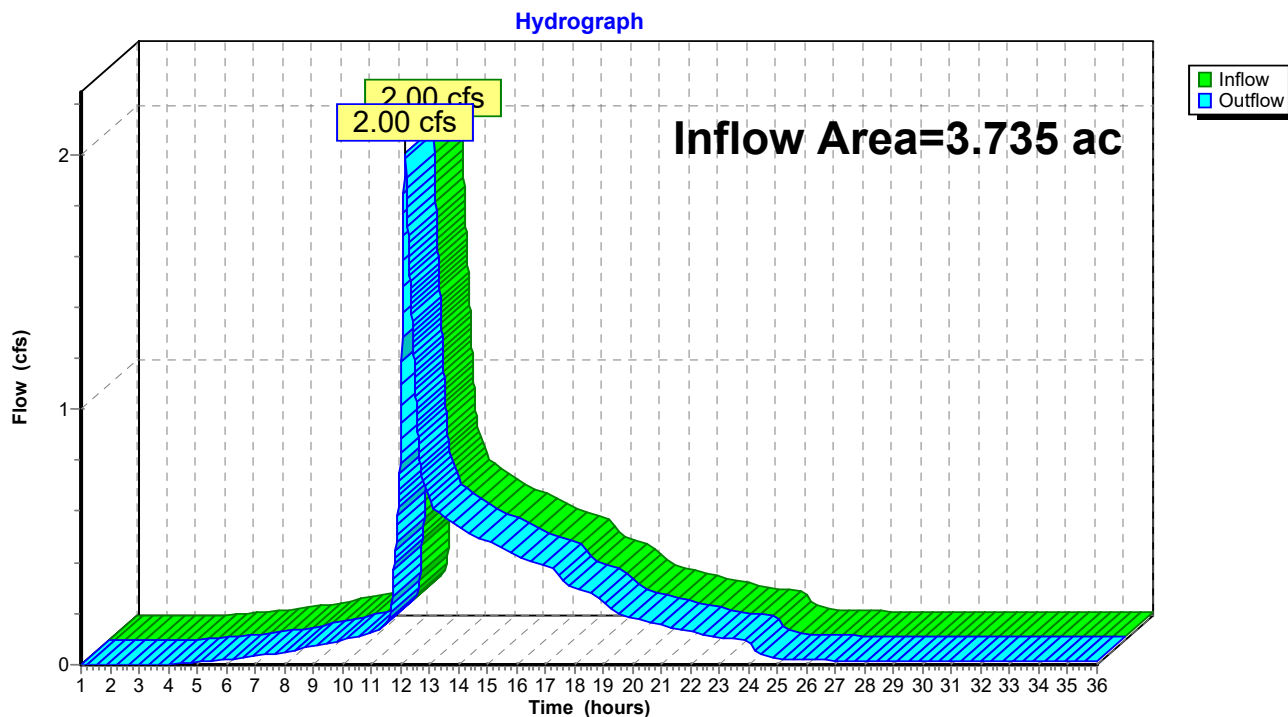


Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.735 ac, 33.06% Impervious, Inflow Depth > 1.40" for 2-year event
 Inflow = 2.00 cfs @ 12.17 hrs, Volume= 0.436 af
 Outflow = 2.00 cfs @ 12.17 hrs, Volume= 0.436 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 2R: POI #2 - Wetland



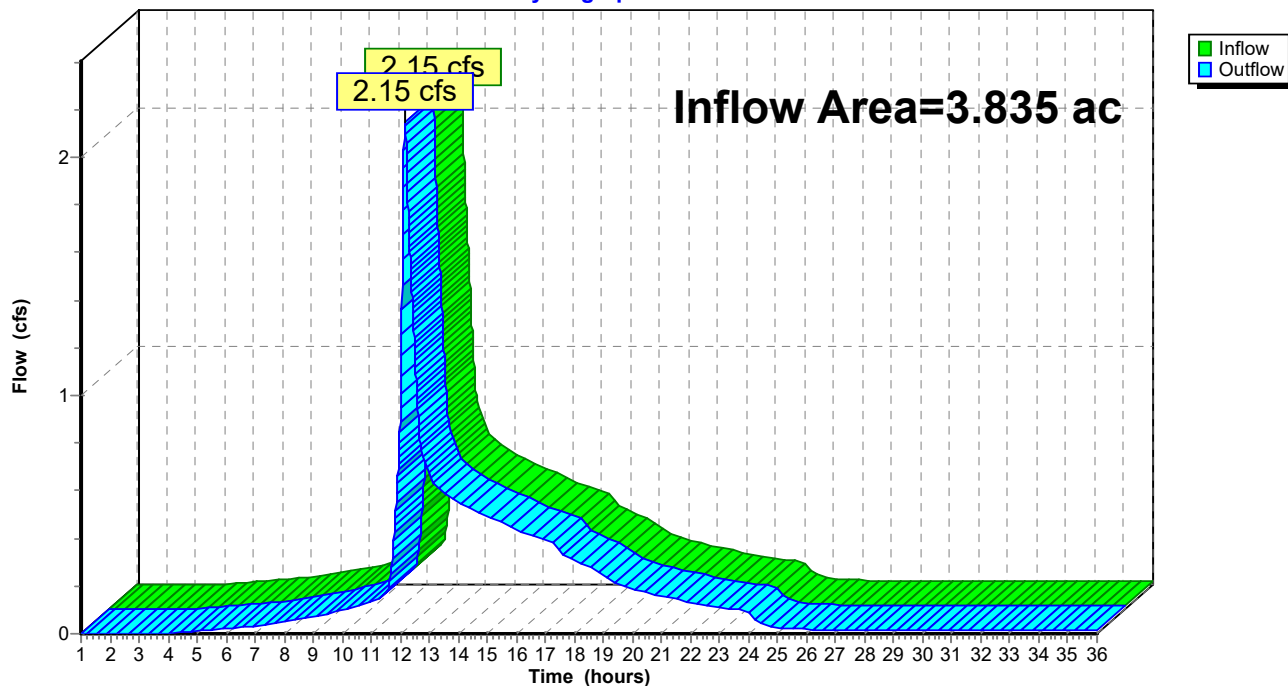
Summary for Reach 3R: TOTAL

Inflow Area = 3.835 ac, 33.58% Impervious, Inflow Depth > 1.41" for 2-year event
 Inflow = 2.15 cfs @ 12.16 hrs, Volume= 0.450 af
 Outflow = 2.15 cfs @ 12.16 hrs, Volume= 0.450 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 3R: TOTAL

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P1: StormTech 3500

Inflow Area = 0.158 ac, 96.29% Impervious, Inflow Depth = 2.76" for 2-year event
 Inflow = 0.47 cfs @ 12.08 hrs, Volume= 0.036 af
 Outflow = 0.02 cfs @ 15.54 hrs, Volume= 0.034 af, Atten= 97%, Lag= 207.2 min
 Primary = 0.02 cfs @ 15.54 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 18.69' @ 15.54 hrs Surf.Area= 1,247 sf Storage= 956 cf

Plug-Flow detention time= 565.9 min calculated for 0.034 af (93% of inflow)
 Center-of-Mass det. time= 527.0 min (1,293.9 - 766.8)

Volume	Invert	Avail.Storage	Storage Description
#1	16.10'	448 cf	21.76'W x 19.10'L x 4.50'H Stone 1,870 cf Overall - 749 cf Embedded = 1,121 cf x 40.0% Voids
#2	16.60'	749 cf	ADS_StormTech MC-3500 d +Cap x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 6 Chambers in 3 Rows Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
#3	14.60'	31 cf	21.76'W x 19.10'L x 1.50'H Sand 623 cf Overall x 5.0% Voids
#4	13.60'	163 cf	21.76'W x 19.10'L x 1.00'H Crushed Stone 416 cf Overall - 7 cf Embedded = 408 cf x 40.0% Voids
#5	13.85'	7 cf	4.0" Round Underdrain Storage Inside #4 L= 85.1'
		1,399 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	18.80'	12.0" Round Bypass Overflow L= 20.0' Ke= 0.900 Inlet / Outlet Invert= 18.80' / 14.00' S= 0.2400 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Primary	13.60'	1.0" Round Underdrain & Orifice L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.60' / 10.00' S= 0.0288 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf

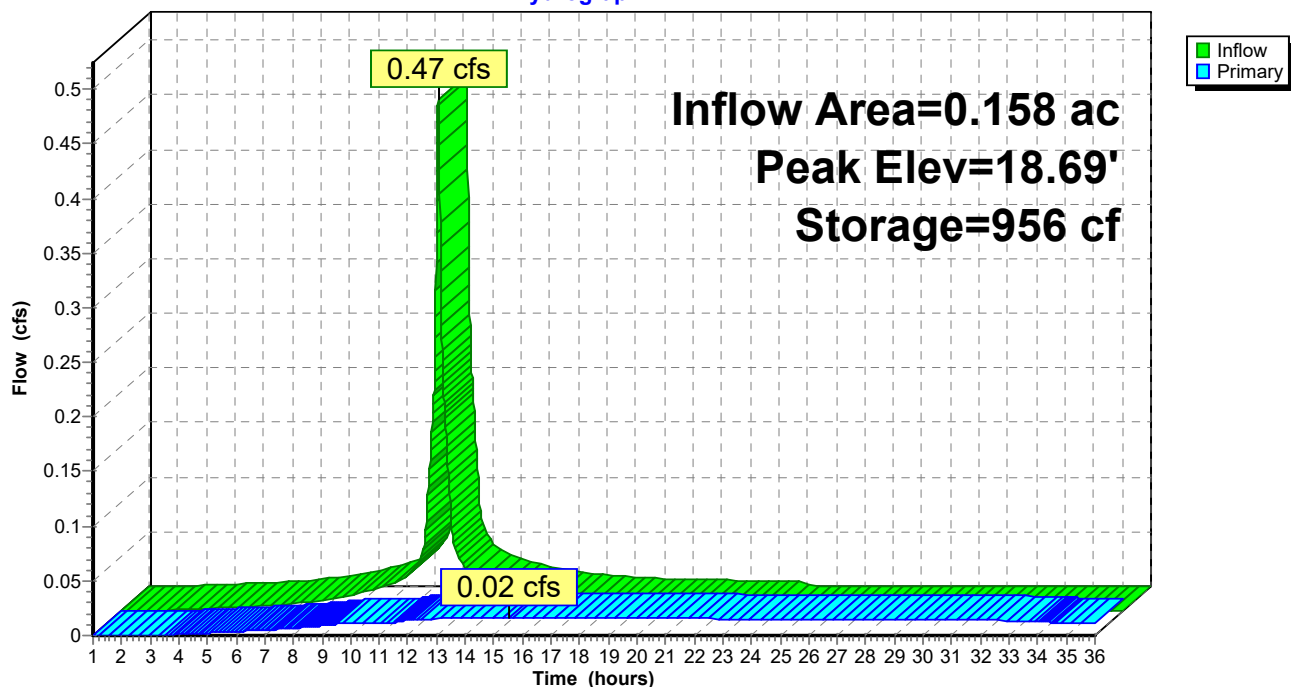
Primary OutFlow Max=0.02 cfs @ 15.54 hrs HW=18.69' TW=10.06' (Dynamic Tailwater)

1=Bypass Overflow (Controls 0.00 cfs)

2=Underdrain & Orifice (Barrel Controls 0.02 cfs @ 2.91 fps)

Pond P1: StormTech 3500

Hydrograph



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P2: StormTech 3500

Inflow Area = 0.339 ac, 89.87% Impervious, Inflow Depth = 2.65" for 2-year event
 Inflow = 0.98 cfs @ 12.08 hrs, Volume= 0.075 af
 Outflow = 0.09 cfs @ 12.89 hrs, Volume= 0.075 af, Atten= 90%, Lag= 48.3 min
 Primary = 0.09 cfs @ 12.89 hrs, Volume= 0.075 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 17.33' @ 12.89 hrs Surf.Area= 2,317 sf Storage= 1,477 cf

Plug-Flow detention time= 161.8 min calculated for 0.075 af (100% of inflow)
 Center-of-Mass det. time= 161.4 min (936.4 - 775.0)

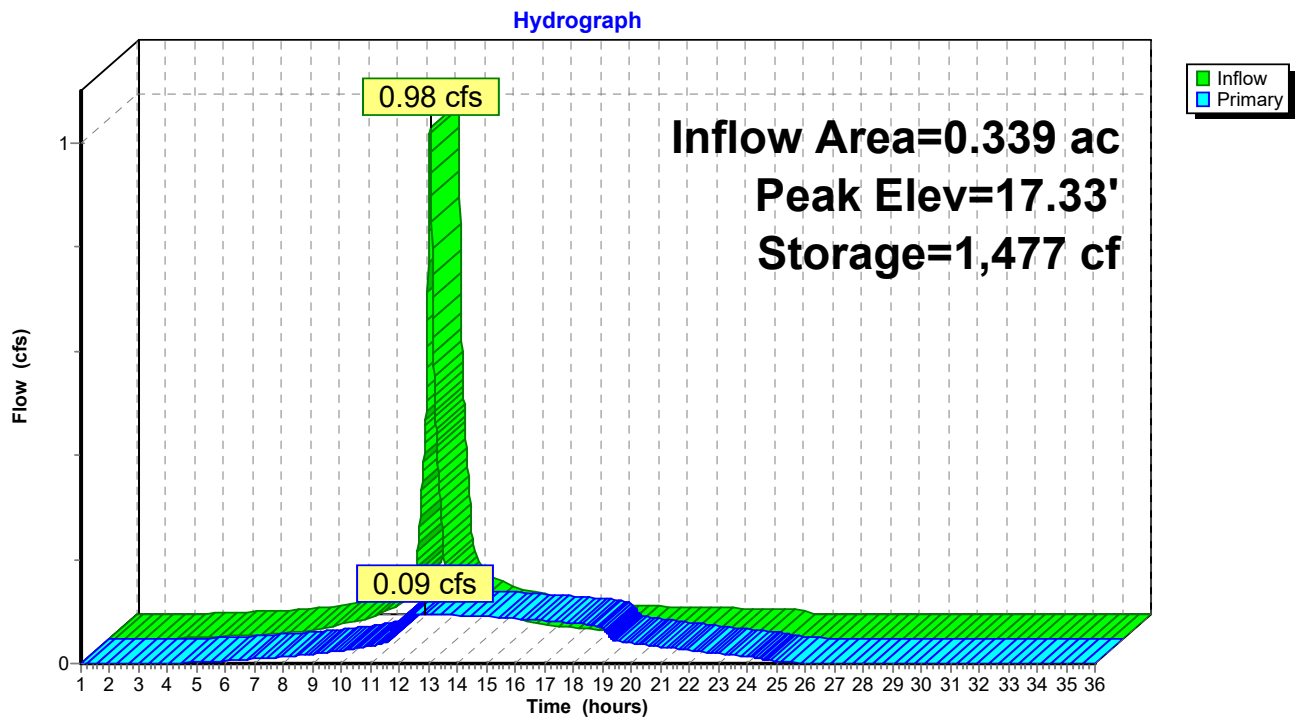
Volume	Invert	Avail.Storage	Storage Description
#1	15.30'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	15.80'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	13.80'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	12.80'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	13.05'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	12.80'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.80' / 12.70' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	18.00'	12.0" Round Bypass Overflow L= 4.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.00' / 17.25' S= 0.1875 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.89 hrs HW=17.33' TW=10.42' (Dynamic Tailwater)

1=Underdrain & Orifice (Barrel Controls 0.09 cfs @ 7.72 fps)
 2=Bypass Overflow (Controls 0.00 cfs)

Pond P2: StormTech 3500



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P3: StormTech 3500

Inflow Area = 0.328 ac, 93.50% Impervious, Inflow Depth = 2.65" for 2-year event
 Inflow = 0.95 cfs @ 12.08 hrs, Volume= 0.073 af
 Outflow = 0.09 cfs @ 12.86 hrs, Volume= 0.072 af, Atten= 90%, Lag= 46.5 min
 Primary = 0.09 cfs @ 12.86 hrs, Volume= 0.072 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 16.01' @ 12.86 hrs Surf.Area= 2,317 sf Storage= 1,416 cf

Plug-Flow detention time= 154.9 min calculated for 0.072 af (100% of inflow)
 Center-of-Mass det. time= 154.7 min (929.6 - 775.0)

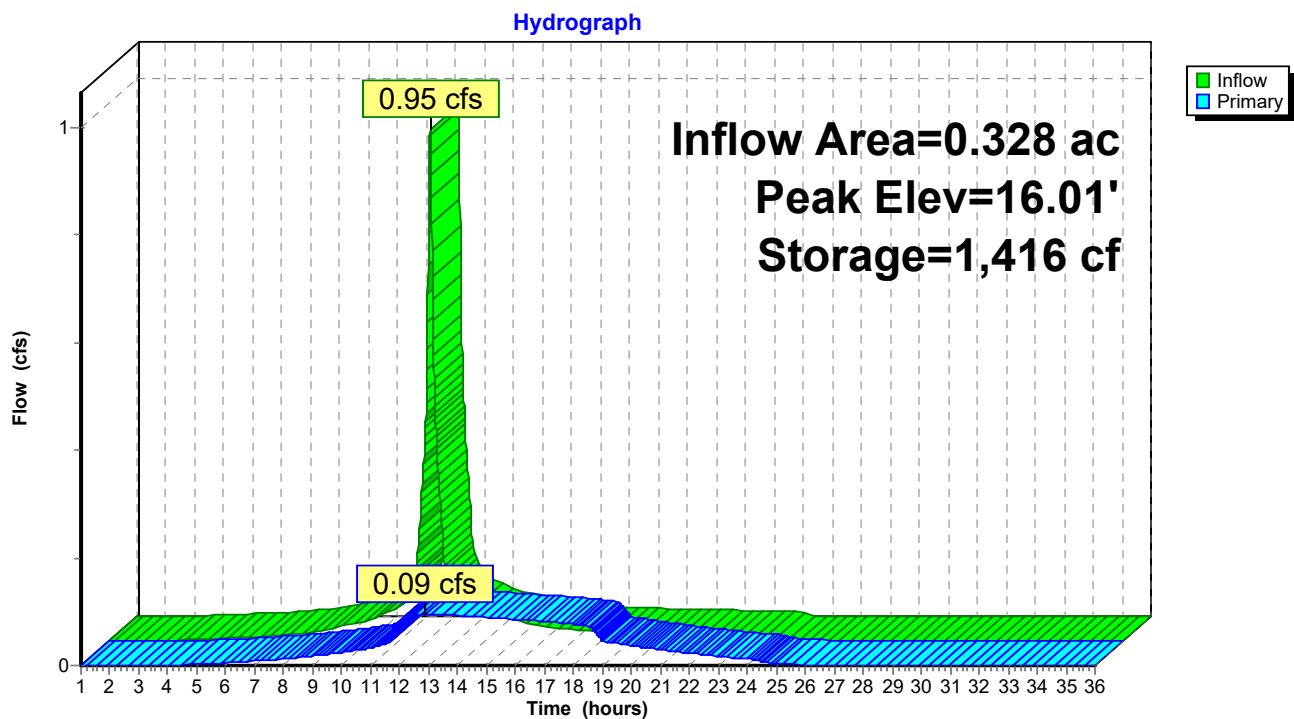
Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	14.58'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	12.58'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	11.58'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	11.83'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.58'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 11.58' / 11.40' S= 0.0180 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	16.80'	12.0" Round Bypass Overflow L= 5.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.00' S= 0.1455 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.86 hrs HW=16.01' TW=10.42' (Dynamic Tailwater)

1=Underdrain & Orifice (Barrel Controls 0.09 cfs @ 7.70 fps)
 2=Bypass Overflow (Controls 0.00 cfs)

Pond P3: StormTech 3500



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Type III 24-hr 2-year Rainfall=3.10"

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Summary for Pond P4: StormTech 3500

Inflow Area = 0.437 ac, 92.42% Impervious, Inflow Depth = 2.65" for 2-year event
 Inflow = 1.27 cfs @ 12.08 hrs, Volume= 0.097 af
 Outflow = 0.15 cfs @ 12.68 hrs, Volume= 0.097 af, Atten= 88%, Lag= 35.6 min
 Primary = 0.15 cfs @ 12.68 hrs, Volume= 0.097 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 15.28' @ 12.68 hrs Surf.Area= 2,845 sf Storage= 1,763 cf

Plug-Flow detention time= 119.9 min calculated for 0.097 af (100% of inflow)
 Center-of-Mass det. time= 119.4 min (894.3 - 775.0)

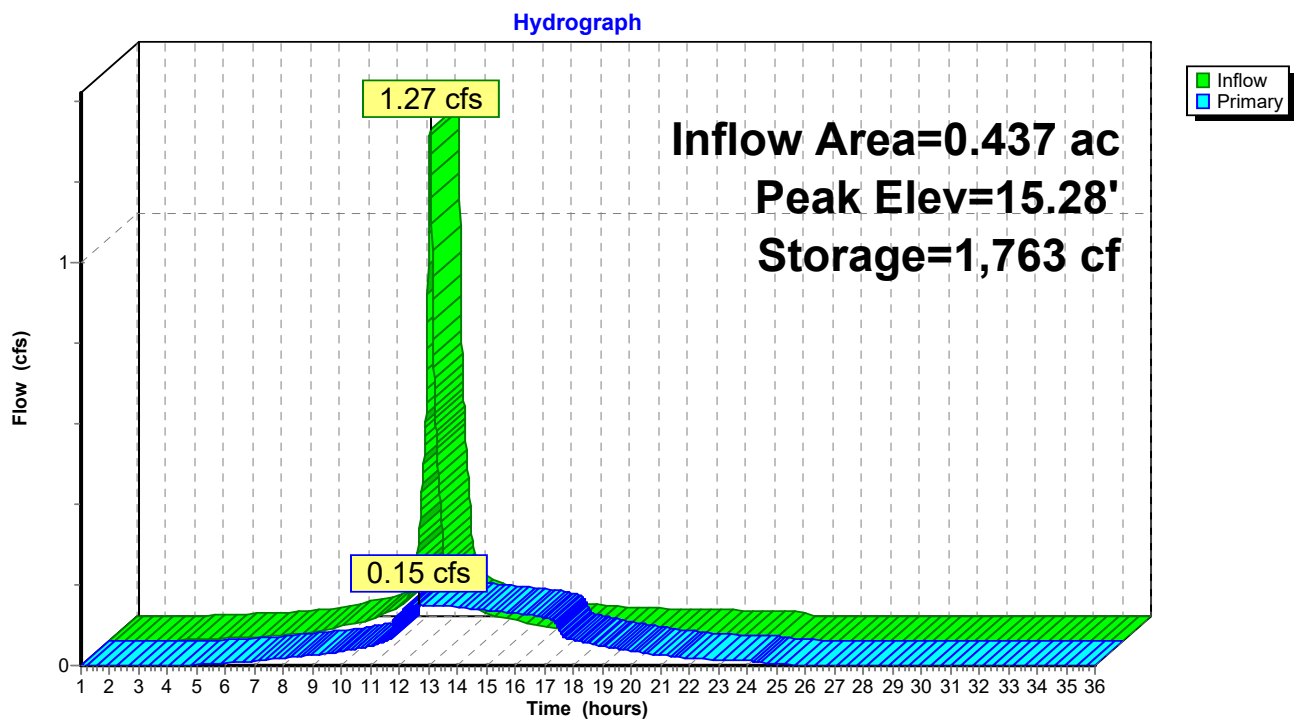
Volume	Invert	Avail.Storage	Storage Description
#1	13.33'	988 cf	36.10'W x 26.27'L x 4.50'H Stone 4,268 cf Overall - 1,798 cf Embedded = 2,469 cf x 40.0% Voids
#2	13.83'	1,798 cf	ADS_StormTech MC-3500 d +Cap x 15 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 15 Chambers in 5 Rows Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf
#3	11.83'	71 cf	36.10'W x 26.27'L x 1.50'H Sand 1,423 cf Overall x 5.0% Voids
#4	10.83'	372 cf	36.10'W x 26.27'L x 1.00'H Crushed Stone 948 cf Overall - 17 cf Embedded = 931 cf x 40.0% Voids
#5	11.08'	17 cf	4.0" Round Underdrain Storage Inside #4 L= 197.0'
		3,247 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	10.83'	2.0" Round Underdrain & Orifice L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.83' / 10.75' S= 0.0040 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#2	Primary	16.05'	12.0" Round Bypass Overflow L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.05' / 15.00' S= 0.1050 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.68 hrs HW=15.28' TW=10.42' (Dynamic Tailwater)

1=Underdrain & Orifice (Barrel Controls 0.15 cfs @ 6.87 fps)
 2=Bypass Overflow (Controls 0.00 cfs)

Pond P4: StormTech 3500



Summary for Pond P5: OCS

Inflow Area = 1.263 ac, 92.50% Impervious, Inflow Depth > 2.64" for 2-year event
 Inflow = 0.35 cfs @ 12.79 hrs, Volume= 0.278 af
 Outflow = 0.35 cfs @ 12.79 hrs, Volume= 0.278 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.35 cfs @ 12.79 hrs, Volume= 0.278 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 10.42' @ 12.79 hrs

Flood Elev= 21.00'

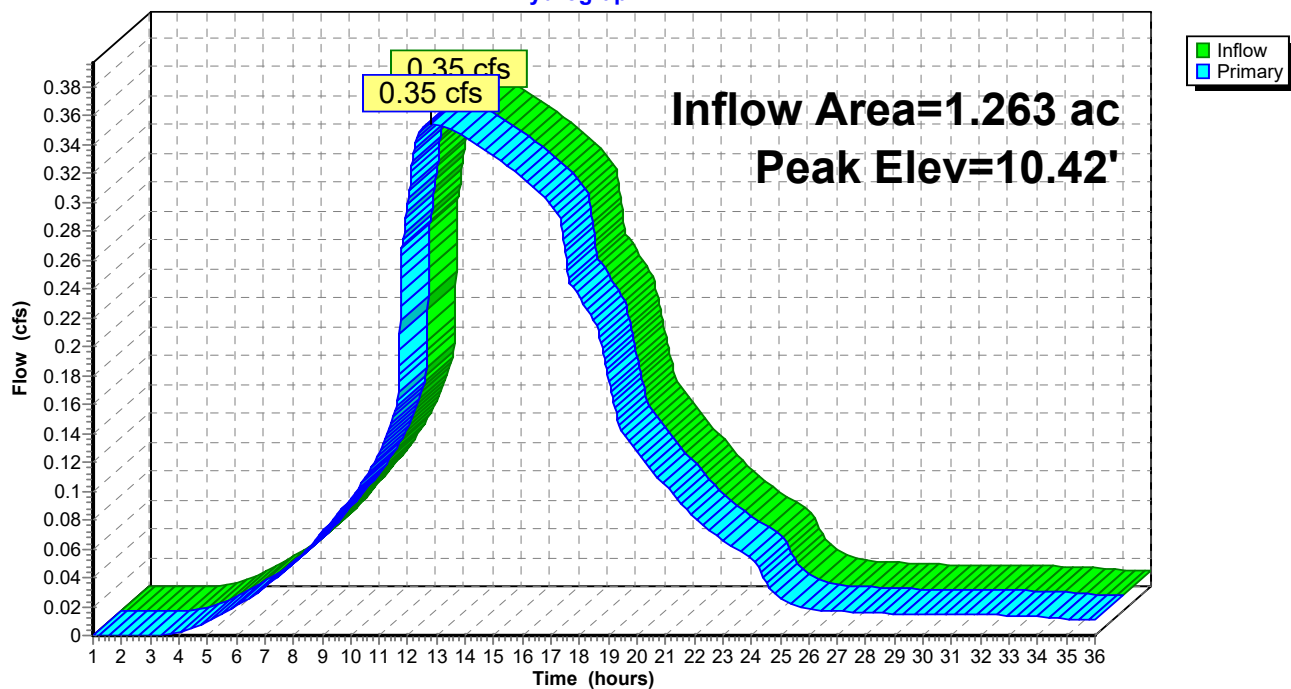
Device	Routing	Invert	Outlet Devices
#1	Primary	7.95'	18.0" Round 18" Outlet L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.95' / 7.80' S= 0.0044 '/' Cc= 0.900 n= 0.010, Flow Area= 1.77 sf
#2	Device 1	8.05'	3.0" Vert. Quality Orifice C= 0.600
#3	Device 1	12.50'	6.0" Vert. Quantity Orifice C= 0.600
#4	Device 1	15.40'	6.0' long x 0.7' 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 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.35 cfs @ 12.79 hrs HW=10.42' TW=0.00' (Dynamic Tailwater)

- 1=18" Outlet (Passes 0.35 cfs of 8.81 cfs potential flow)
- 2=Quality Orifice (Orifice Controls 0.35 cfs @ 7.22 fps)
- 3=Quantity Orifice (Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P5: OCS

Hydrograph



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Type III 24-hr 10-year Rainfall=4.60"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 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

Subcatchment1S: Subcat 1	Runoff Area=4,385 sf 53.04% Impervious Runoff Depth=3.00" Tc=6.0 min CN=85 Runoff=0.35 cfs 0.025 af
Subcatchment2S: Subcat 2.0	Runoff Area=107,660 sf 2.68% Impervious Runoff Depth=1.74" Flow Length=244' Tc=10.6 min CN=70 Runoff=4.20 cfs 0.359 af
Subcatchment2S.1: Subcat 2.1	Runoff Area=6,893 sf 96.29% Impervious Runoff Depth=4.25" Tc=6.0 min CN=97 Runoff=0.71 cfs 0.056 af
Subcatchment2S.2: Subcat 2.2	Runoff Area=14,770 sf 89.87% Impervious Runoff Depth=4.14" Tc=6.0 min CN=96 Runoff=1.50 cfs 0.117 af
Subcatchment2S.3: Subcat 2.3	Runoff Area=14,303 sf 93.50% Impervious Runoff Depth=4.14" Tc=6.0 min CN=96 Runoff=1.45 cfs 0.113 af
Subcatchment2S.4: Subcat 2.4	Runoff Area=19,053 sf 92.42% Impervious Runoff Depth=4.14" Tc=6.0 min CN=96 Runoff=1.93 cfs 0.151 af
Reach 1R: POI #1 - Sherwood St.	Inflow=0.35 cfs 0.025 af Outflow=0.35 cfs 0.025 af
Reach 2R: POI #2 - Wetland	Inflow=4.57 cfs 0.791 af Outflow=4.57 cfs 0.791 af
Reach 3R: TOTAL	Inflow=4.84 cfs 0.816 af Outflow=4.84 cfs 0.816 af
Pond P1: StormTech 3500	Peak Elev=19.09' Storage=1,072 cf Inflow=0.71 cfs 0.056 af Outflow=0.29 cfs 0.051 af
Pond P2: StormTech 3500	Peak Elev=18.35' Storage=2,045 cf Inflow=1.50 cfs 0.117 af Outflow=0.49 cfs 0.117 af
Pond P3: StormTech 3500	Peak Elev=17.13' Storage=2,042 cf Inflow=1.45 cfs 0.113 af Outflow=0.42 cfs 0.113 af
Pond P4: StormTech 3500	Peak Elev=16.44' Storage=2,562 cf Inflow=1.93 cfs 0.151 af Outflow=0.58 cfs 0.151 af
Pond P5: OCS	Peak Elev=14.20' Inflow=1.72 cfs 0.432 af Outflow=1.72 cfs 0.432 af

Total Runoff Area = 3.835 ac Runoff Volume = 0.821 af Average Runoff Depth = 2.57"
66.42% Pervious = 2.547 ac 33.58% Impervious = 1.288 ac

Summary for Subcatchment 1S: Subcat 1

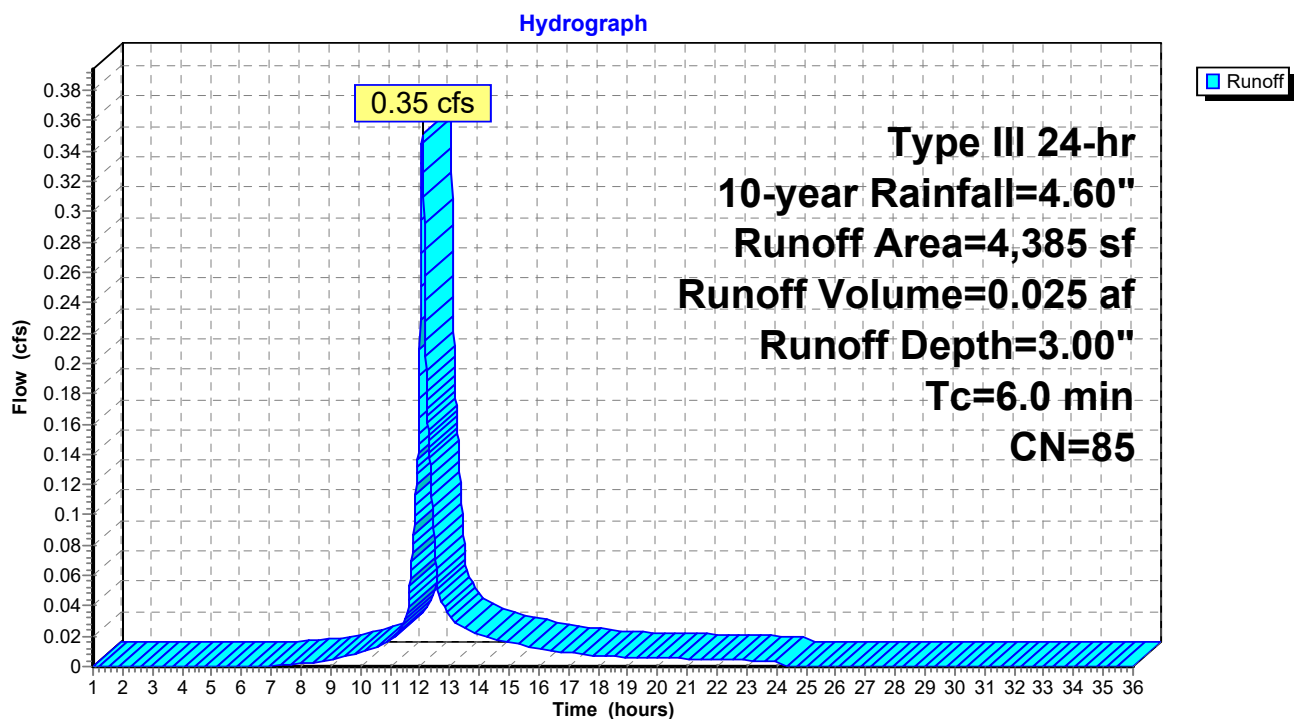
Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,059	70	Cr. Stone/Misc. Vegetation
*	2,326	98	Road/Sidewalk
	4,385	85	Weighted Average
	2,059		46.96% Pervious Area
	2,326		53.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep banks to pipe flow

Subcatchment 1S: Subcat 1



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Type III 24-hr 10-year Rainfall=4.60"

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Summary for Subcatchment 2S: Subcat 2.0

Runoff = 4.20 cfs @ 12.15 hrs, Volume= 0.359 af, Depth= 1.74"

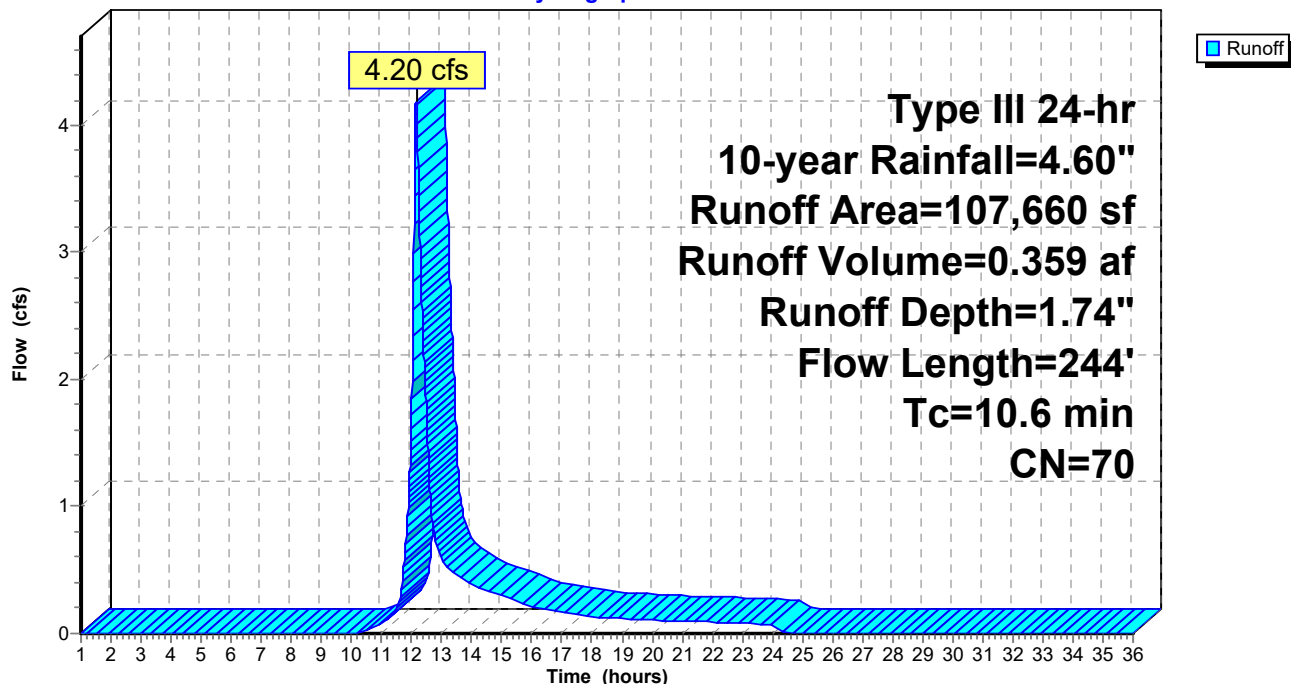
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 2,882	98	Concrete Pads / Patio / Stairs
23,059	66	Woods, Poor, HSG B
* 5,983	70	Cr. Stone
50,476	74	>75% Grass cover, Good, HSG C
25,260	61	>75% Grass cover, Good, HSG B
107,660	70	Weighted Average
104,778		97.32% Pervious Area
2,882		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	3.43		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2.0

Hydrograph



Summary for Subcatchment 2S.1: Subcat 2.1

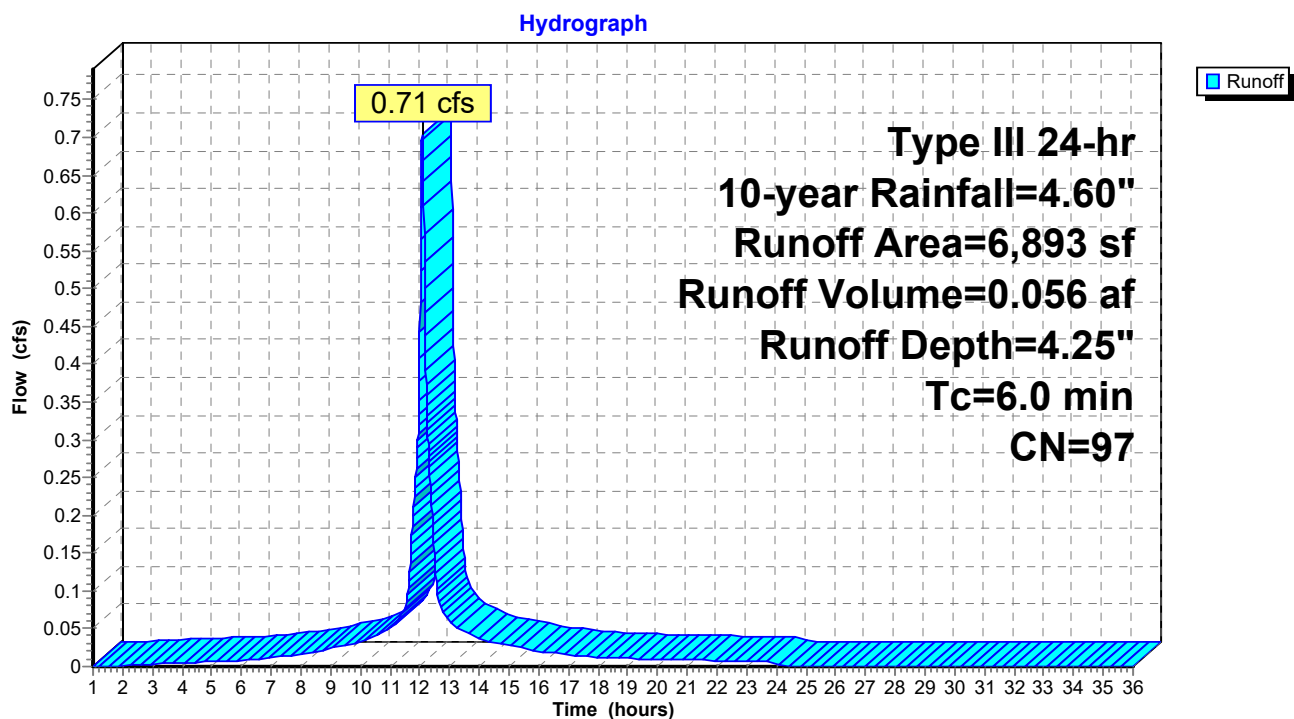
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.056 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	6,637	98	Pavement
	256	74	>75% Grass cover, Good, HSG C
	6,893	97	Weighted Average
	256		3.71% Pervious Area
	6,637		96.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.1: Subcat 2.1



Summary for Subcatchment 2S.2: Subcat 2.2

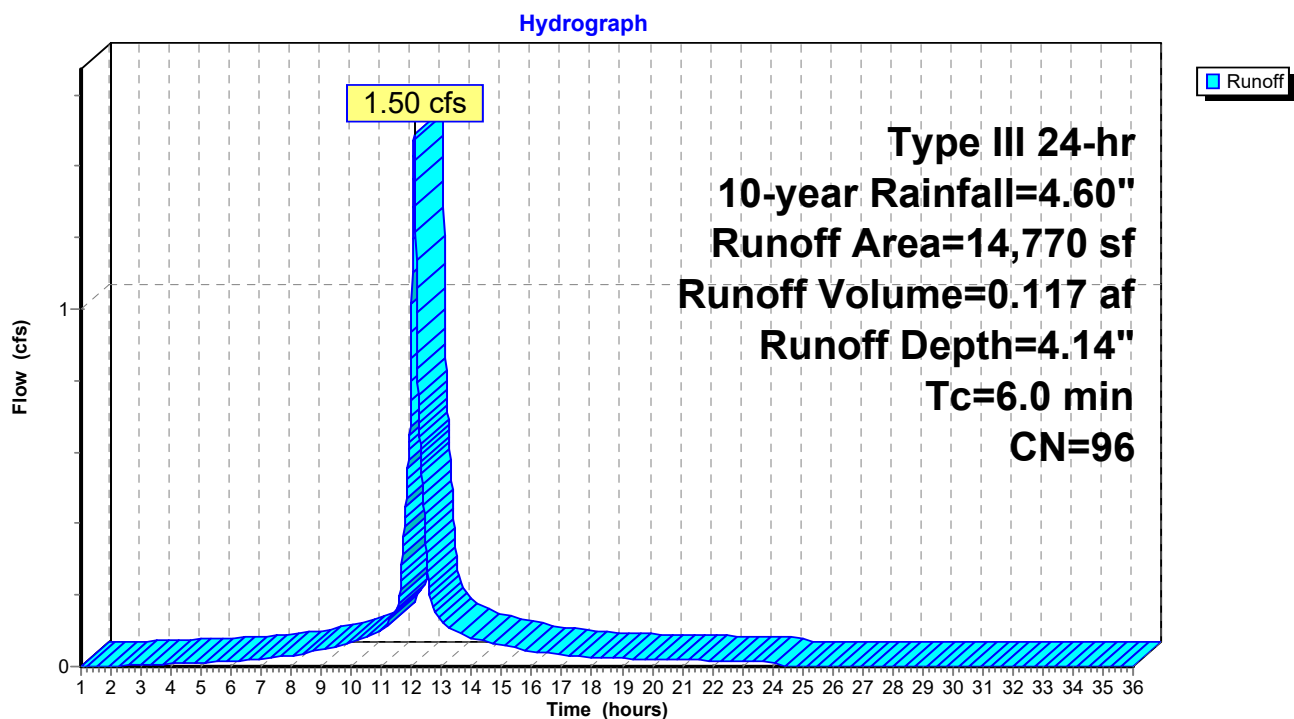
Runoff = 1.50 cfs @ 12.08 hrs, Volume= 0.117 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	13,274	98	Pavement/Roofs
	1,496	74	>75% Grass cover, Good, HSG C
	14,770	96	Weighted Average
	1,496		10.13% Pervious Area
	13,274		89.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.2: Subcat 2.2



Summary for Subcatchment 2S.3: Subcat 2.3

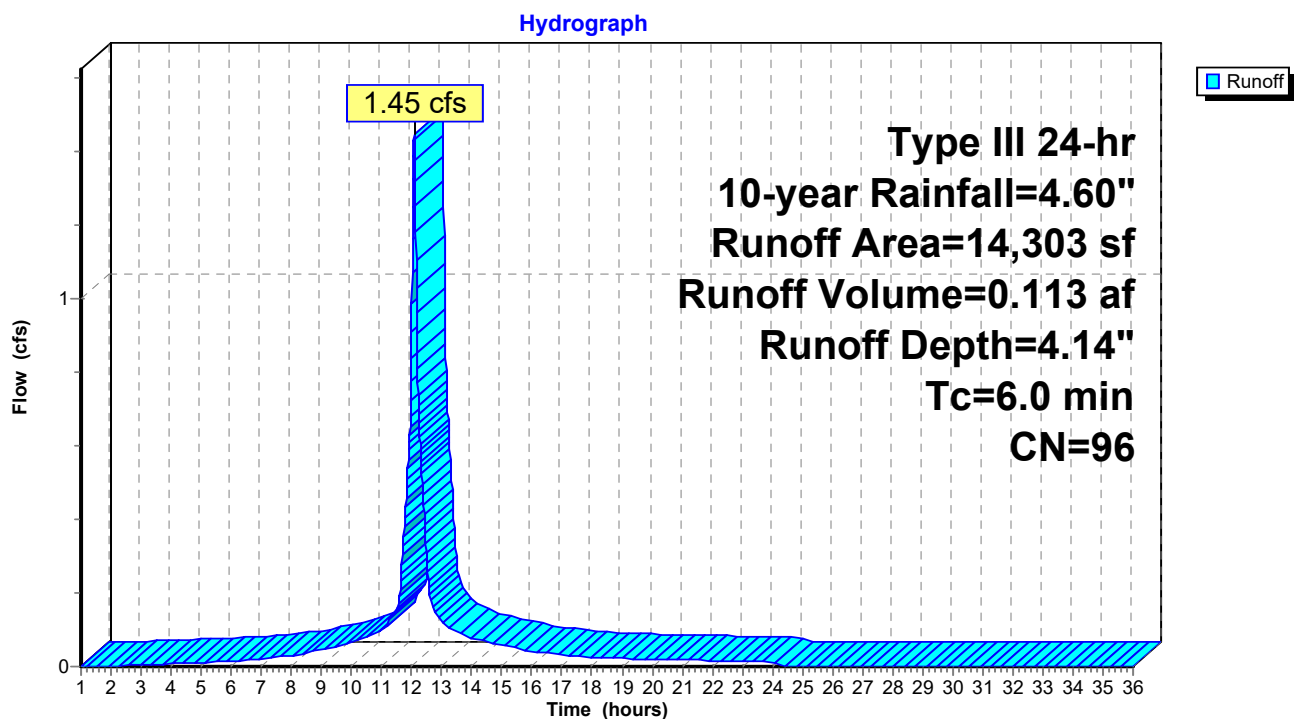
Runoff = 1.45 cfs @ 12.08 hrs, Volume= 0.113 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	13,373	98	Pavement/Roofs
	930	74	>75% Grass cover, Good, HSG C
	14,303	96	Weighted Average
	930		6.50% Pervious Area
	13,373		93.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.3: Subcat 2.3



Summary for Subcatchment 2S.4: Subcat 2.4

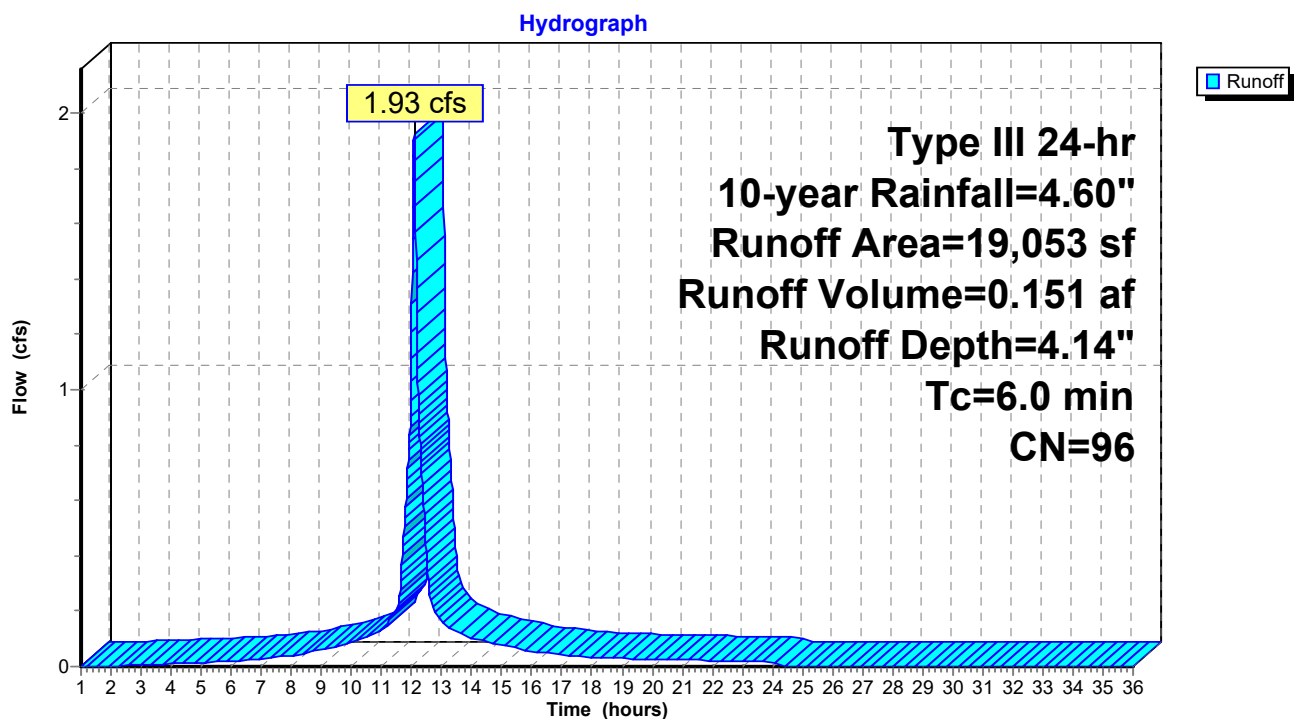
Runoff = 1.93 cfs @ 12.08 hrs, Volume= 0.151 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	17,609	98	Pavement/Roofs
	1,444	74	>75% Grass cover, Good, HSG C
	19,053	96	Weighted Average
	1,444		7.58% Pervious Area
	17,609		92.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.4: Subcat 2.4

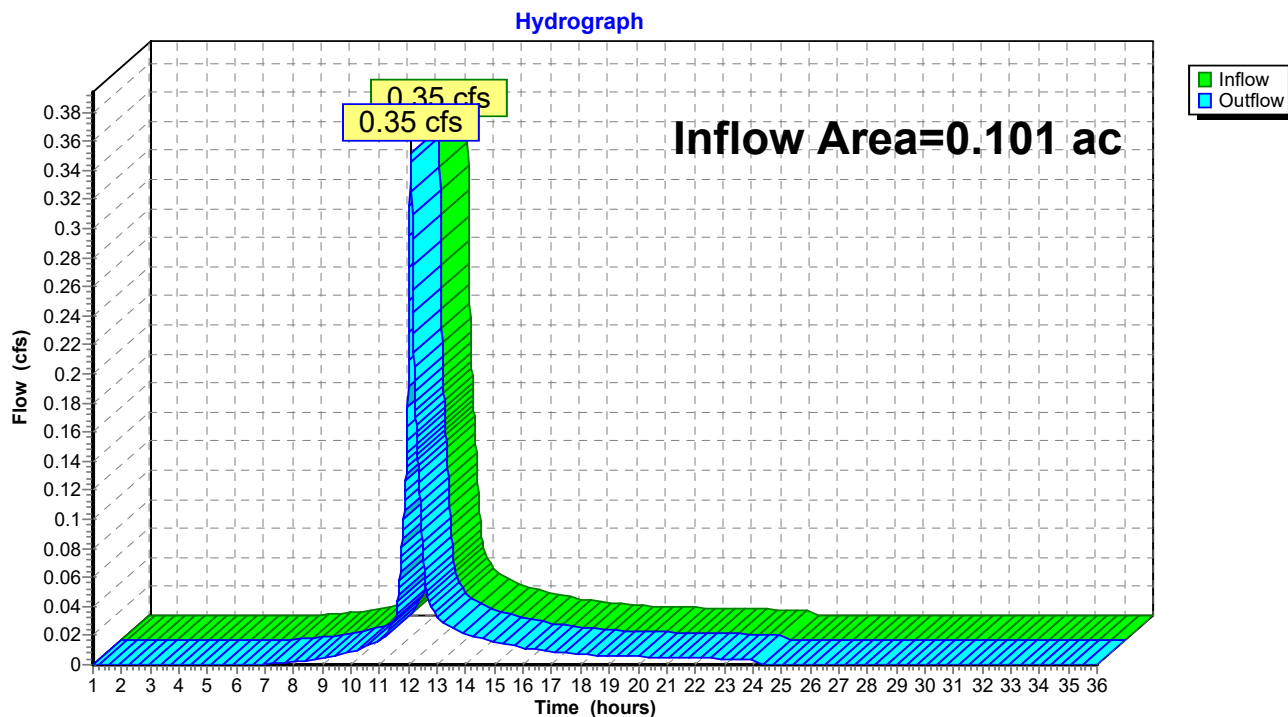


Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.101 ac, 53.04% Impervious, Inflow Depth = 3.00" for 10-year event
 Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af
 Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 1R: POI #1 - Sherwood St.

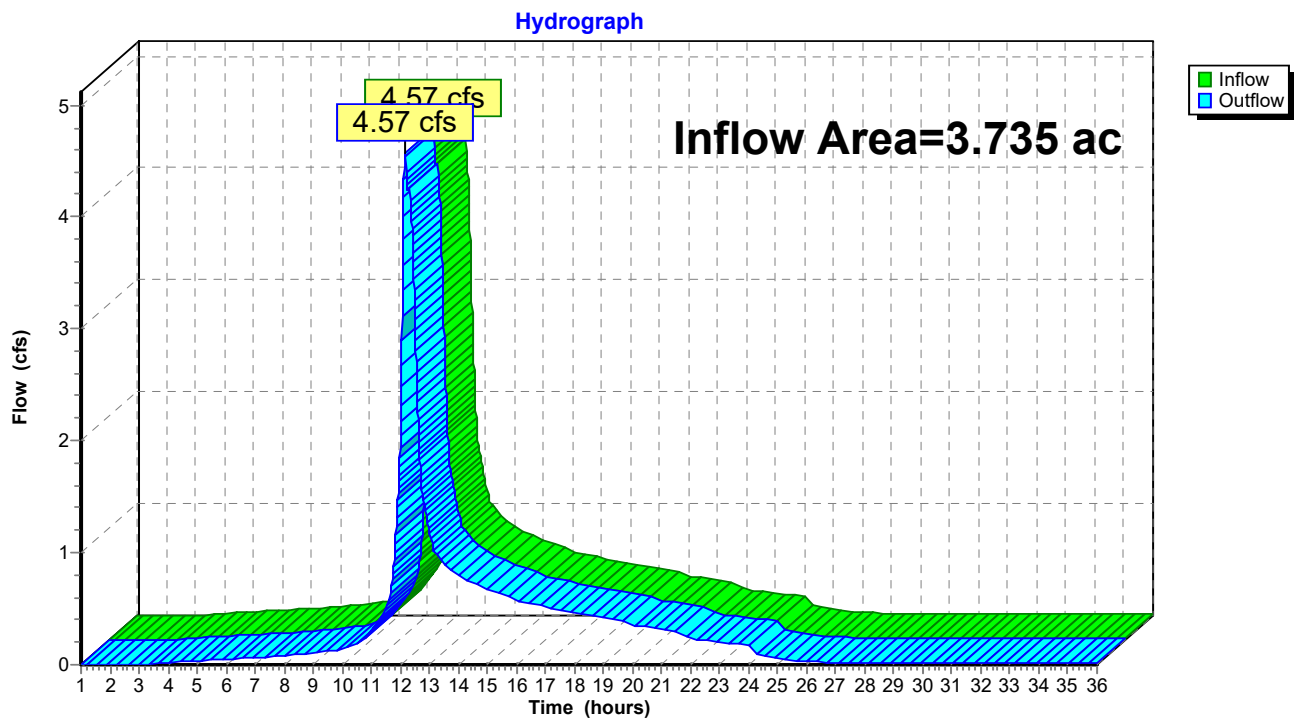


Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.735 ac, 33.06% Impervious, Inflow Depth > 2.54" for 10-year event
 Inflow = 4.57 cfs @ 12.16 hrs, Volume= 0.791 af
 Outflow = 4.57 cfs @ 12.16 hrs, Volume= 0.791 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 2R: POI #2 - Wetland



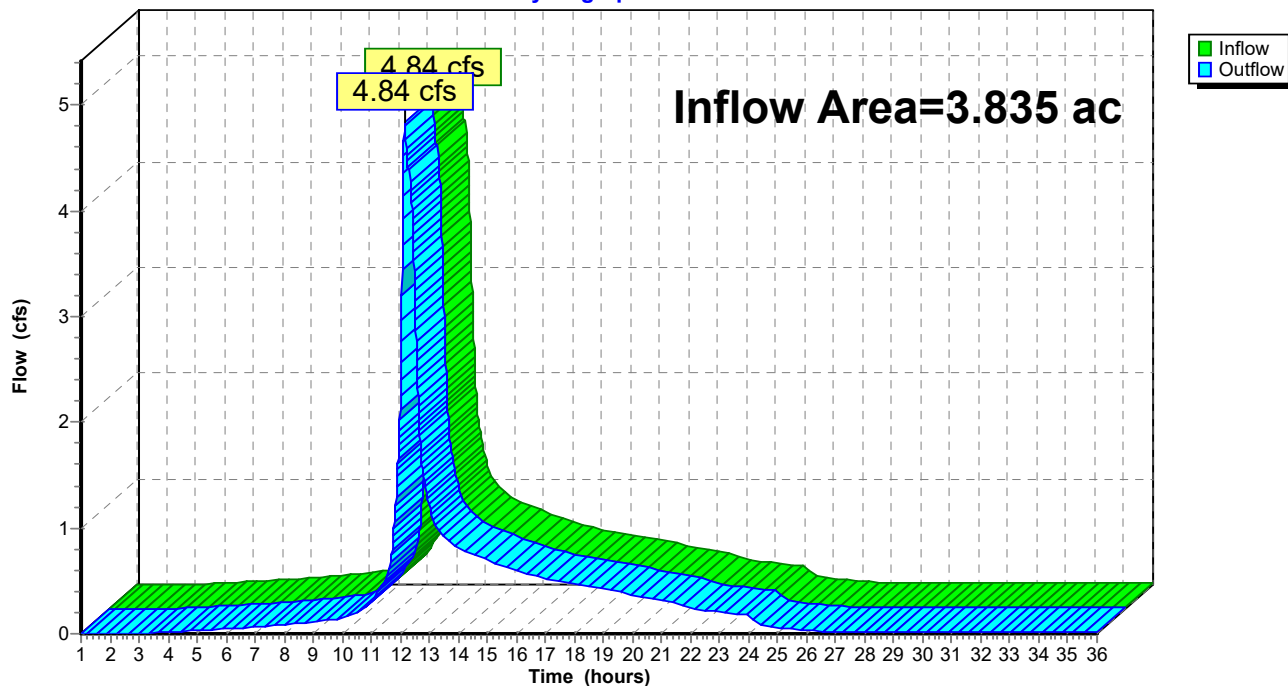
Summary for Reach 3R: TOTAL

Inflow Area = 3.835 ac, 33.58% Impervious, Inflow Depth > 2.55" for 10-year event
 Inflow = 4.84 cfs @ 12.15 hrs, Volume= 0.816 af
 Outflow = 4.84 cfs @ 12.15 hrs, Volume= 0.816 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 3R: TOTAL

Hydrograph



Summary for Pond P1: StormTech 3500

Inflow Area = 0.158 ac, 96.29% Impervious, Inflow Depth = 4.25" for 10-year event
 Inflow = 0.71 cfs @ 12.08 hrs, Volume= 0.056 af
 Outflow = 0.29 cfs @ 12.28 hrs, Volume= 0.051 af, Atten= 58%, Lag= 11.8 min
 Primary = 0.29 cfs @ 12.28 hrs, Volume= 0.051 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 19.09' @ 12.28 hrs Surf.Area= 1,247 sf Storage= 1,072 cf

Plug-Flow detention time= 411.8 min calculated for 0.051 af (91% of inflow)
 Center-of-Mass det. time= 367.2 min (1,124.7 - 757.5)

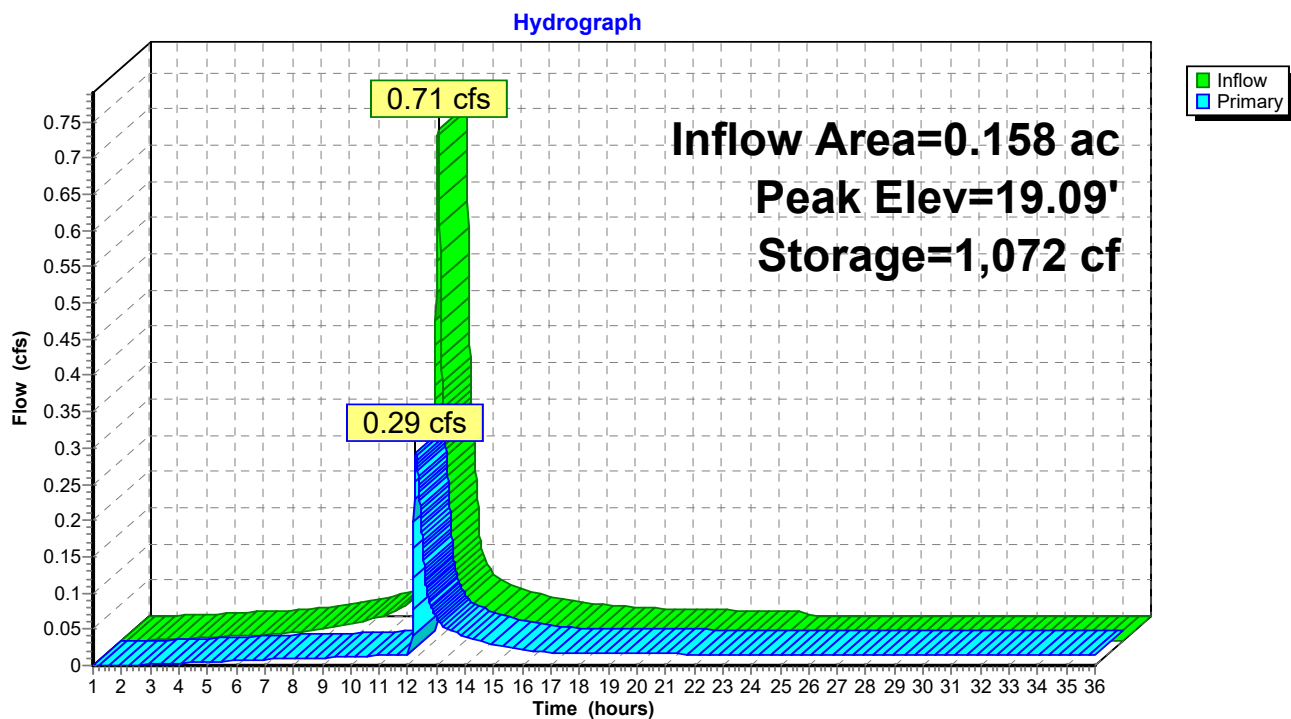
Volume	Invert	Avail.Storage	Storage Description
#1	16.10'	448 cf	21.76'W x 19.10'L x 4.50'H Stone 1,870 cf Overall - 749 cf Embedded = 1,121 cf x 40.0% Voids
#2	16.60'	749 cf	ADS_StormTech MC-3500 d +Cap x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 6 Chambers in 3 Rows Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
#3	14.60'	31 cf	21.76'W x 19.10'L x 1.50'H Sand 623 cf Overall x 5.0% Voids
#4	13.60'	163 cf	21.76'W x 19.10'L x 1.00'H Crushed Stone 416 cf Overall - 7 cf Embedded = 408 cf x 40.0% Voids
#5	13.85'	7 cf	4.0" Round Underdrain Storage Inside #4 L= 85.1'
		1,399 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	18.80'	12.0" Round Bypass Overflow L= 20.0' Ke= 0.900 Inlet / Outlet Invert= 18.80' / 14.00' S= 0.2400 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Primary	13.60'	1.0" Round Underdrain & Orifice L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.60' / 10.00' S= 0.0288 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf

Primary OutFlow Max=0.29 cfs @ 12.28 hrs HW=19.09' TW=13.28' (Dynamic Tailwater)

1=Bypass Overflow (Inlet Controls 0.28 cfs @ 1.46 fps)
 2=Underdrain & Orifice (Outlet Controls 0.01 cfs @ 2.39 fps)

Pond P1: StormTech 3500



Summary for Pond P2: StormTech 3500

Inflow Area = 0.339 ac, 89.87% Impervious, Inflow Depth = 4.14" for 10-year event
 Inflow = 1.50 cfs @ 12.08 hrs, Volume= 0.117 af
 Outflow = 0.49 cfs @ 12.37 hrs, Volume= 0.117 af, Atten= 67%, Lag= 17.2 min
 Primary = 0.49 cfs @ 12.37 hrs, Volume= 0.117 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 18.35' @ 12.37 hrs Surf.Area= 2,317 sf Storage= 2,045 cf

Plug-Flow detention time= 174.0 min calculated for 0.117 af (100% of inflow)
 Center-of-Mass det. time= 173.8 min (938.2 - 764.4)

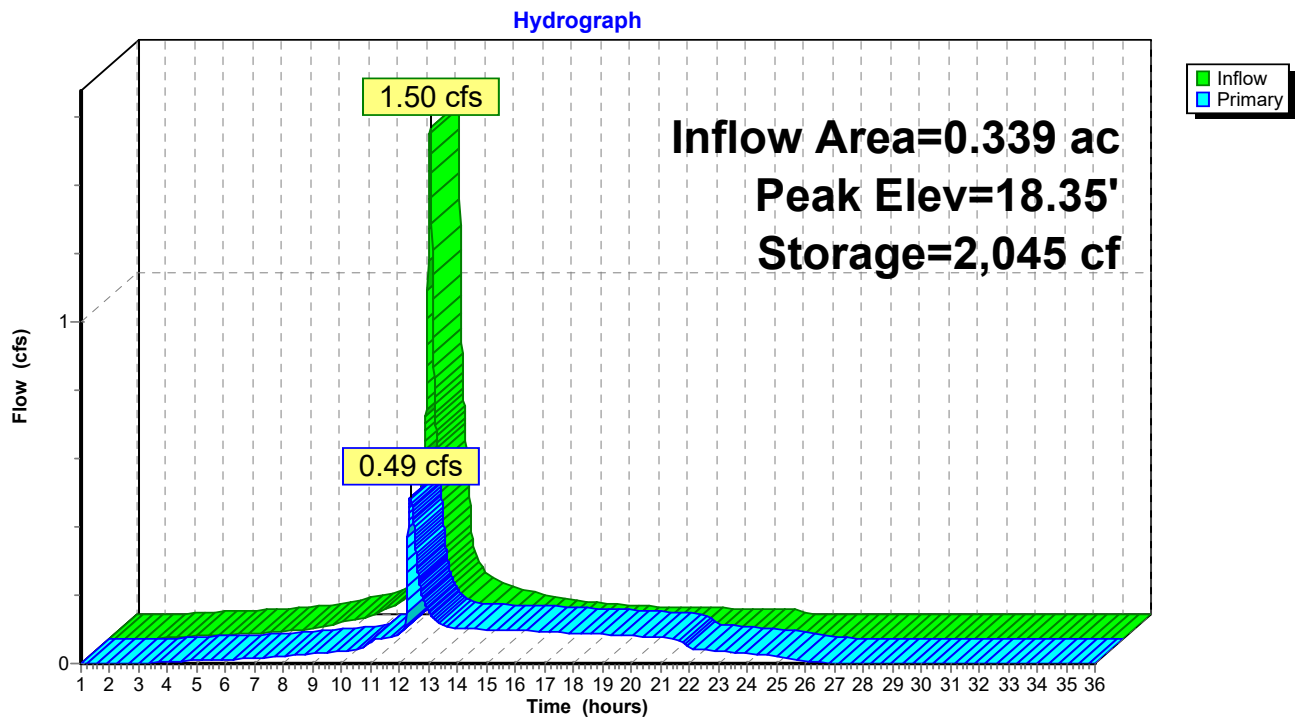
Volume	Invert	Avail.Storage	Storage Description
#1	15.30'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	15.80'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	13.80'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	12.80'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	13.05'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	12.80'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.80' / 12.70' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	18.00'	12.0" Round Bypass Overflow L= 4.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.00' / 17.25' S= 0.1875 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.49 cfs @ 12.37 hrs HW=18.35' TW=14.18' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.09 cfs @ 7.43 fps)
 2=Bypass Overflow (Inlet Controls 0.40 cfs @ 1.60 fps)

Pond P2: StormTech 3500



Summary for Pond P3: StormTech 3500

Inflow Area = 0.328 ac, 93.50% Impervious, Inflow Depth = 4.14" for 10-year event
 Inflow = 1.45 cfs @ 12.08 hrs, Volume= 0.113 af
 Outflow = 0.42 cfs @ 12.41 hrs, Volume= 0.113 af, Atten= 71%, Lag= 19.7 min
 Primary = 0.42 cfs @ 12.41 hrs, Volume= 0.113 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 17.13' @ 12.41 hrs Surf.Area= 2,317 sf Storage= 2,042 cf

Plug-Flow detention time= 176.2 min calculated for 0.113 af (100% of inflow)
 Center-of-Mass det. time= 176.1 min (940.5 - 764.4)

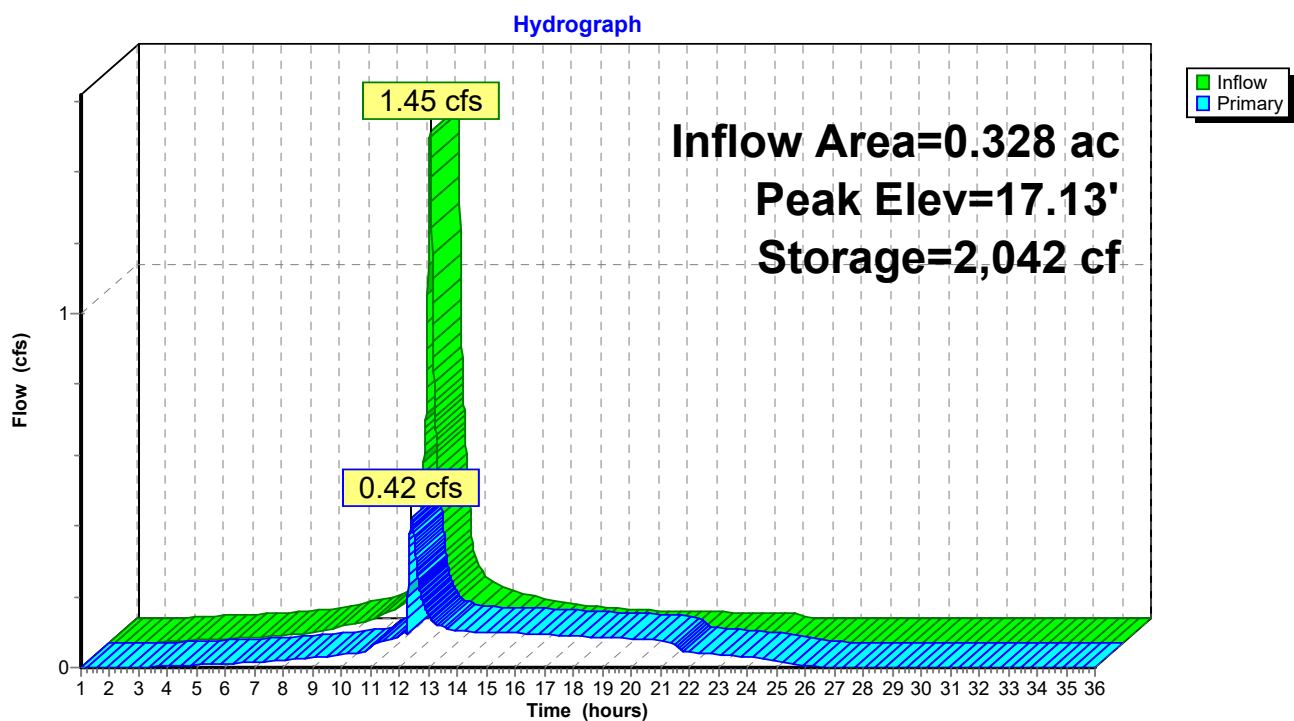
Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	14.58'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	12.58'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	11.58'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	11.83'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.58'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 11.58' / 11.40' S= 0.0180 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	16.80'	12.0" Round Bypass Overflow L= 5.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.00' S= 0.1455 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.42 cfs @ 12.41 hrs HW=17.13' TW=14.15' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.08 cfs @ 6.27 fps)
 2=Bypass Overflow (Inlet Controls 0.34 cfs @ 1.54 fps)

Pond P3: StormTech 3500



Summary for Pond P4: StormTech 3500

Inflow Area = 0.437 ac, 92.42% Impervious, Inflow Depth = 4.14" for 10-year event
 Inflow = 1.93 cfs @ 12.08 hrs, Volume= 0.151 af
 Outflow = 0.58 cfs @ 12.40 hrs, Volume= 0.151 af, Atten= 70%, Lag= 19.2 min
 Primary = 0.58 cfs @ 12.40 hrs, Volume= 0.151 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 16.44' @ 12.40 hrs Surf.Area= 2,845 sf Storage= 2,562 cf

Plug-Flow detention time= 137.5 min calculated for 0.151 af (100% of inflow)
 Center-of-Mass det. time= 137.2 min (901.6 - 764.4)

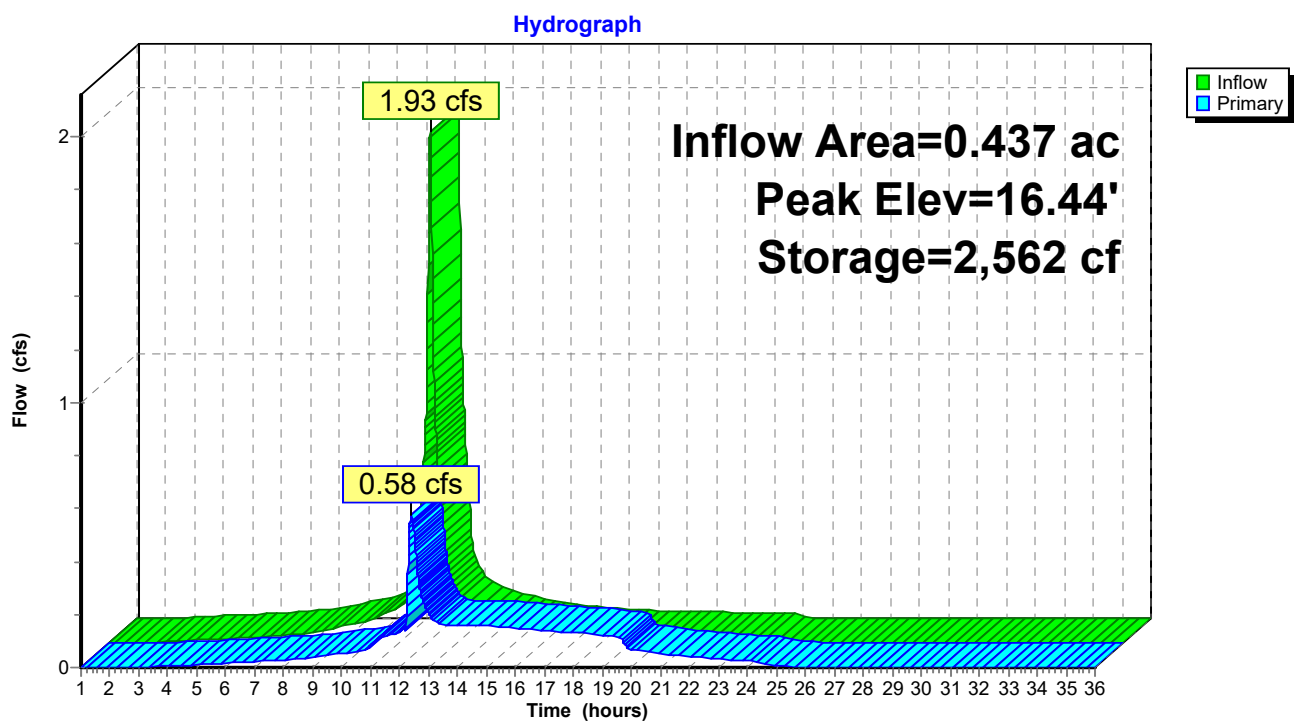
Volume	Invert	Avail.Storage	Storage Description
#1	13.33'	988 cf	36.10'W x 26.27'L x 4.50'H Stone 4,268 cf Overall - 1,798 cf Embedded = 2,469 cf x 40.0% Voids
#2	13.83'	1,798 cf	ADS_StormTech MC-3500 d +Cap x 15 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 15 Chambers in 5 Rows Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf
#3	11.83'	71 cf	36.10'W x 26.27'L x 1.50'H Sand 1,423 cf Overall x 5.0% Voids
#4	10.83'	372 cf	36.10'W x 26.27'L x 1.00'H Crushed Stone 948 cf Overall - 17 cf Embedded = 931 cf x 40.0% Voids
#5	11.08'	17 cf	4.0" Round Underdrain Storage Inside #4 L= 197.0'
		3,247 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	10.83'	2.0" Round Underdrain & Orifice L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.83' / 10.75' S= 0.0040 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#2	Primary	16.05'	12.0" Round Bypass Overflow L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.05' / 15.00' S= 0.1050 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.58 cfs @ 12.40 hrs HW=16.44' TW=14.18' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.11 cfs @ 4.94 fps)
 2=Bypass Overflow (Inlet Controls 0.47 cfs @ 1.67 fps)

Pond P4: StormTech 3500



Summary for Pond P5: OCS

Inflow Area = 1.263 ac, 92.50% Impervious, Inflow Depth > 4.10" for 10-year event
 Inflow = 1.72 cfs @ 12.39 hrs, Volume= 0.432 af
 Outflow = 1.72 cfs @ 12.39 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.72 cfs @ 12.39 hrs, Volume= 0.432 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 14.20' @ 12.39 hrs

Flood Elev= 21.00'

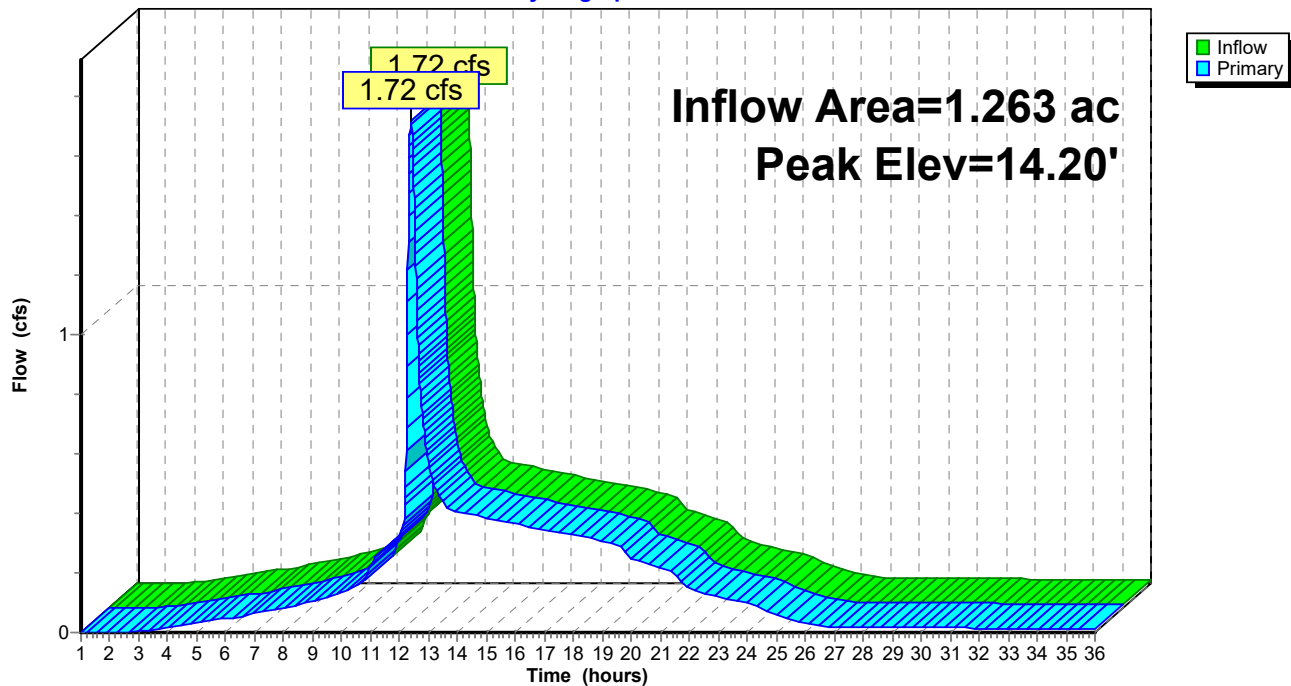
Device	Routing	Invert	Outlet Devices
#1	Primary	7.95'	18.0" Round 18" Outlet L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.95' / 7.80' S= 0.0044 ' / ' Cc= 0.900 n= 0.010, Flow Area= 1.77 sf
#2	Device 1	8.05'	3.0" Vert. Quality Orifice C= 0.600
#3	Device 1	12.50'	6.0" Vert. Quantity Orifice C= 0.600
#4	Device 1	15.40'	6.0' long x 0.7' 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 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=1.72 cfs @ 12.39 hrs HW=14.20' TW=0.00' (Dynamic Tailwater)

- ↑ **1=18" Outlet** (Passes 1.72 cfs of 15.75 cfs potential flow)
- ↑ **2=Quality Orifice** (Orifice Controls 0.58 cfs @ 11.81 fps)
- ↑ **3=Quantity Orifice** (Orifice Controls 1.14 cfs @ 5.79 fps)
- ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P5: OCS

Hydrograph



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Type III 24-hr 25-year Rainfall=5.80"

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 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

Subcatchment1S: Subcat 1	Runoff Area=4,385 sf 53.04% Impervious Runoff Depth=4.11" Tc=6.0 min CN=85 Runoff=0.48 cfs 0.035 af
Subcatchment2S: Subcat 2.0	Runoff Area=107,660 sf 2.68% Impervious Runoff Depth=2.65" Flow Length=244' Tc=10.6 min CN=70 Runoff=6.51 cfs 0.545 af
Subcatchment2S.1: Subcat 2.1	Runoff Area=6,893 sf 96.29% Impervious Runoff Depth=5.44" Tc=6.0 min CN=97 Runoff=0.89 cfs 0.072 af
Subcatchment2S.2: Subcat 2.2	Runoff Area=14,770 sf 89.87% Impervious Runoff Depth=5.33" Tc=6.0 min CN=96 Runoff=1.90 cfs 0.151 af
Subcatchment2S.3: Subcat 2.3	Runoff Area=14,303 sf 93.50% Impervious Runoff Depth=5.33" Tc=6.0 min CN=96 Runoff=1.84 cfs 0.146 af
Subcatchment2S.4: Subcat 2.4	Runoff Area=19,053 sf 92.42% Impervious Runoff Depth=5.33" Tc=6.0 min CN=96 Runoff=2.45 cfs 0.194 af
Reach 1R: POI #1 - Sherwood St.	Inflow=0.48 cfs 0.035 af Outflow=0.48 cfs 0.035 af
Reach 2R: POI #2 - Wetland	Inflow=10.44 cfs 1.101 af Outflow=10.44 cfs 1.101 af
Reach 3R: TOTAL	Inflow=10.77 cfs 1.136 af Outflow=10.77 cfs 1.136 af
Pond P1: StormTech 3500	Peak Elev=19.30' Storage=1,127 cf Inflow=0.89 cfs 0.072 af Outflow=0.75 cfs 0.066 af
Pond P2: StormTech 3500	Peak Elev=18.62' Storage=2,180 cf Inflow=1.90 cfs 0.151 af Outflow=1.16 cfs 0.151 af
Pond P3: StormTech 3500	Peak Elev=17.38' Storage=2,170 cf Inflow=1.84 cfs 0.146 af Outflow=1.03 cfs 0.146 af
Pond P4: StormTech 3500	Peak Elev=16.73' Storage=2,742 cf Inflow=2.45 cfs 0.194 af Outflow=1.34 cfs 0.194 af
Pond P5: OCS	Peak Elev=15.63' Inflow=4.12 cfs 0.556 af Outflow=4.12 cfs 0.556 af

Total Runoff Area = 3.835 ac Runoff Volume = 1.142 af Average Runoff Depth = 3.57"
66.42% Pervious = 2.547 ac 33.58% Impervious = 1.288 ac

Summary for Subcatchment 1S: Subcat 1

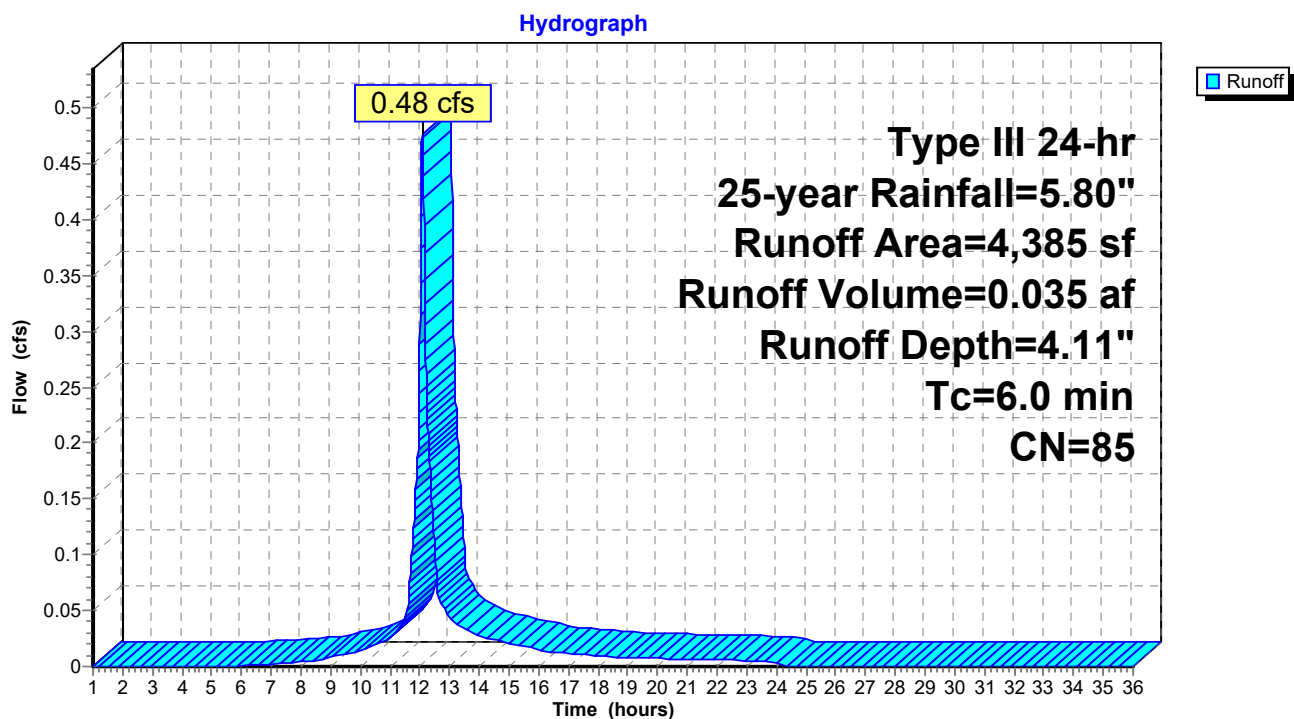
Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,059	70	Cr. Stone/Misc. Vegetation
*	2,326	98	Road/Sidewalk
	4,385	85	Weighted Average
	2,059		46.96% Pervious Area
	2,326		53.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Steep banks to pipe flow

Subcatchment 1S: Subcat 1



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Type III 24-hr 25-year Rainfall=5.80"

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Summary for Subcatchment 2S: Subcat 2.0

Runoff = 6.51 cfs @ 12.15 hrs, Volume= 0.545 af, Depth= 2.65"

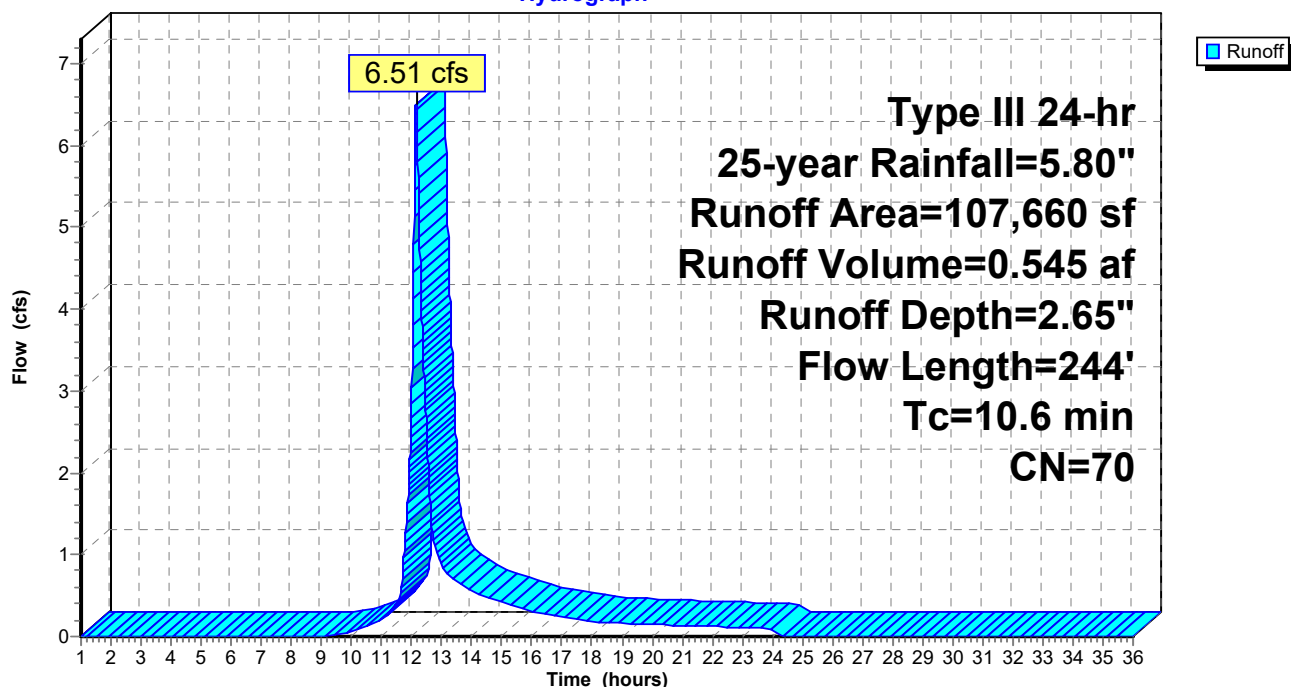
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
* 2,882	98	Concrete Pads / Patio / Stairs
23,059	66	Woods, Poor, HSG B
* 5,983	70	Cr. Stone
50,476	74	>75% Grass cover, Good, HSG C
25,260	61	>75% Grass cover, Good, HSG B
107,660	70	Weighted Average
104,778		97.32% Pervious Area
2,882		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0200	0.17		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
0.7	110	0.0300	2.60		Shallow Concentrated Flow, B to C Grassed Waterway Kv= 15.0 fps
0.2	34	0.2400	3.43		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
10.6	244	Total			

Subcatchment 2S: Subcat 2.0

Hydrograph



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Type III 24-hr 25-year Rainfall=5.80"

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Summary for Subcatchment 2S.1: Subcat 2.1

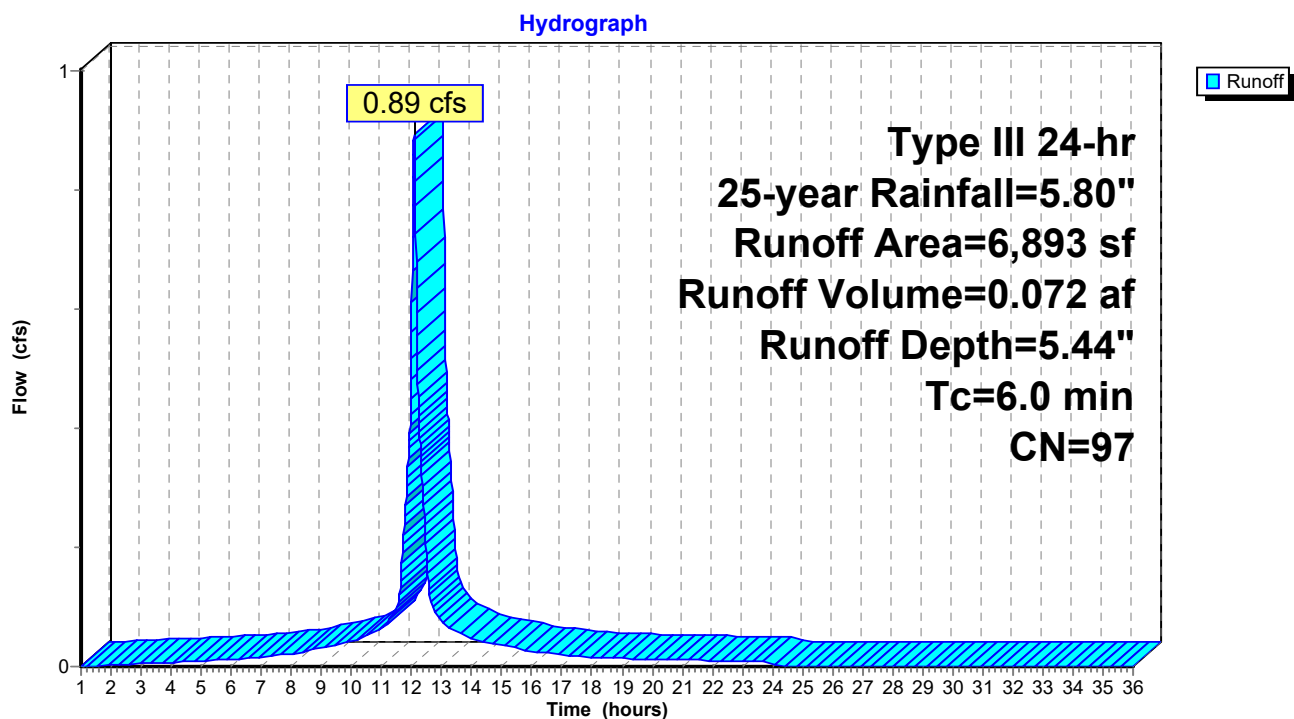
Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.072 af, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,637	98	Pavement
	256	74	>75% Grass cover, Good, HSG C
	6,893	97	Weighted Average
	256		3.71% Pervious Area
	6,637		96.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.1: Subcat 2.1



Summary for Subcatchment 2S.2: Subcat 2.2

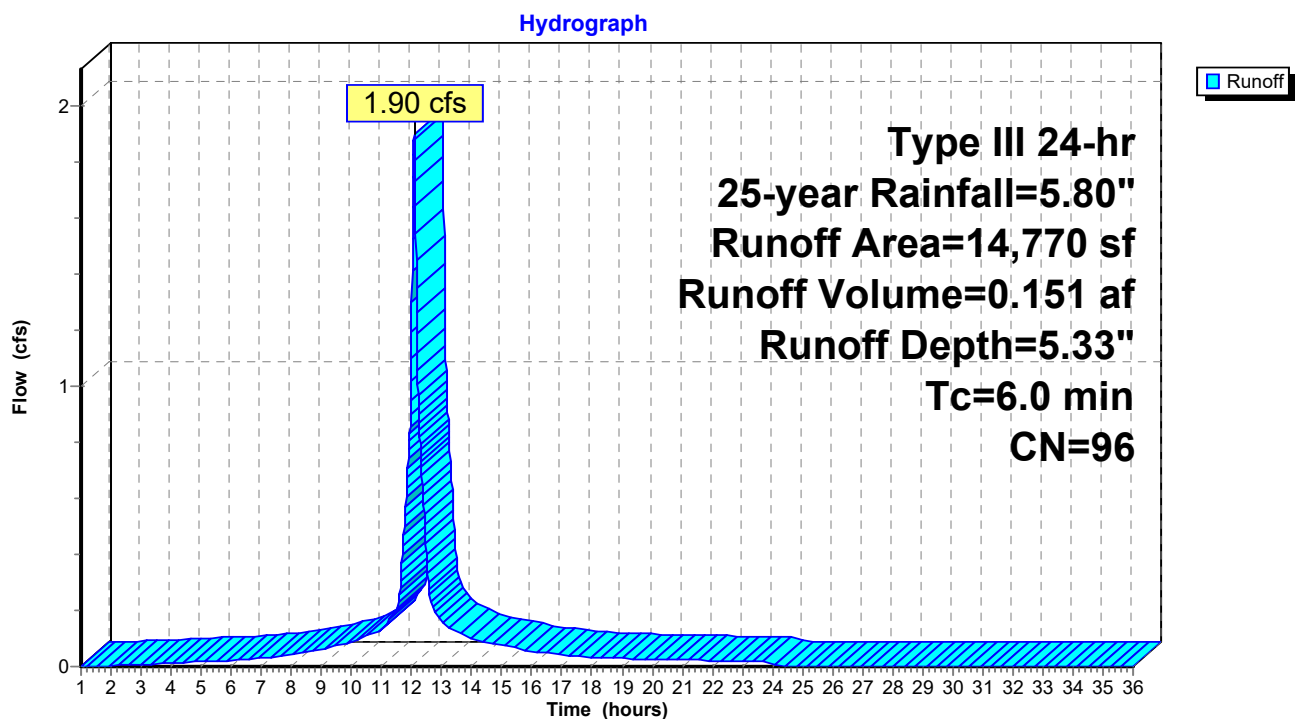
Runoff = 1.90 cfs @ 12.08 hrs, Volume= 0.151 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,274	98	Pavement/Roofs
	1,496	74	>75% Grass cover, Good, HSG C
	14,770	96	Weighted Average
	1,496		10.13% Pervious Area
	13,274		89.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.2: Subcat 2.2



Summary for Subcatchment 2S.3: Subcat 2.3

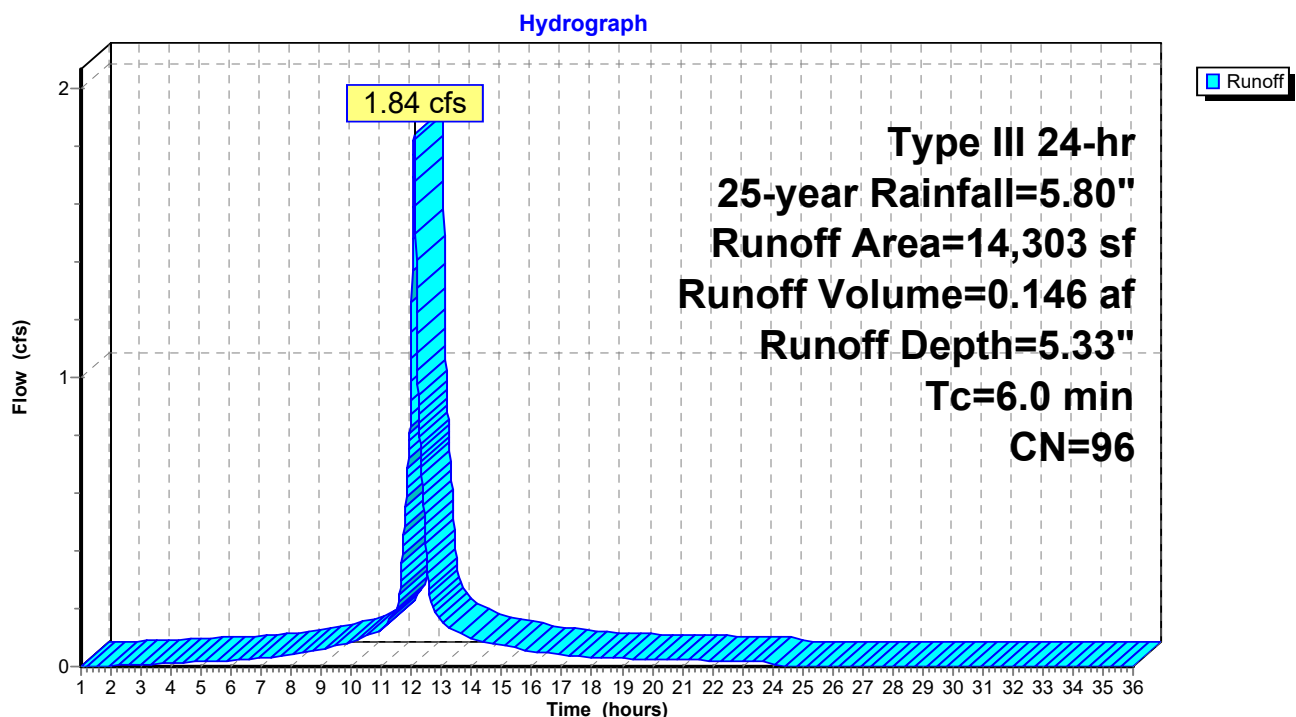
Runoff = 1.84 cfs @ 12.08 hrs, Volume= 0.146 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,373	98	Pavement/Roofs
	930	74	>75% Grass cover, Good, HSG C
	14,303	96	Weighted Average
	930		6.50% Pervious Area
	13,373		93.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.3: Subcat 2.3



Summary for Subcatchment 2S.4: Subcat 2.4

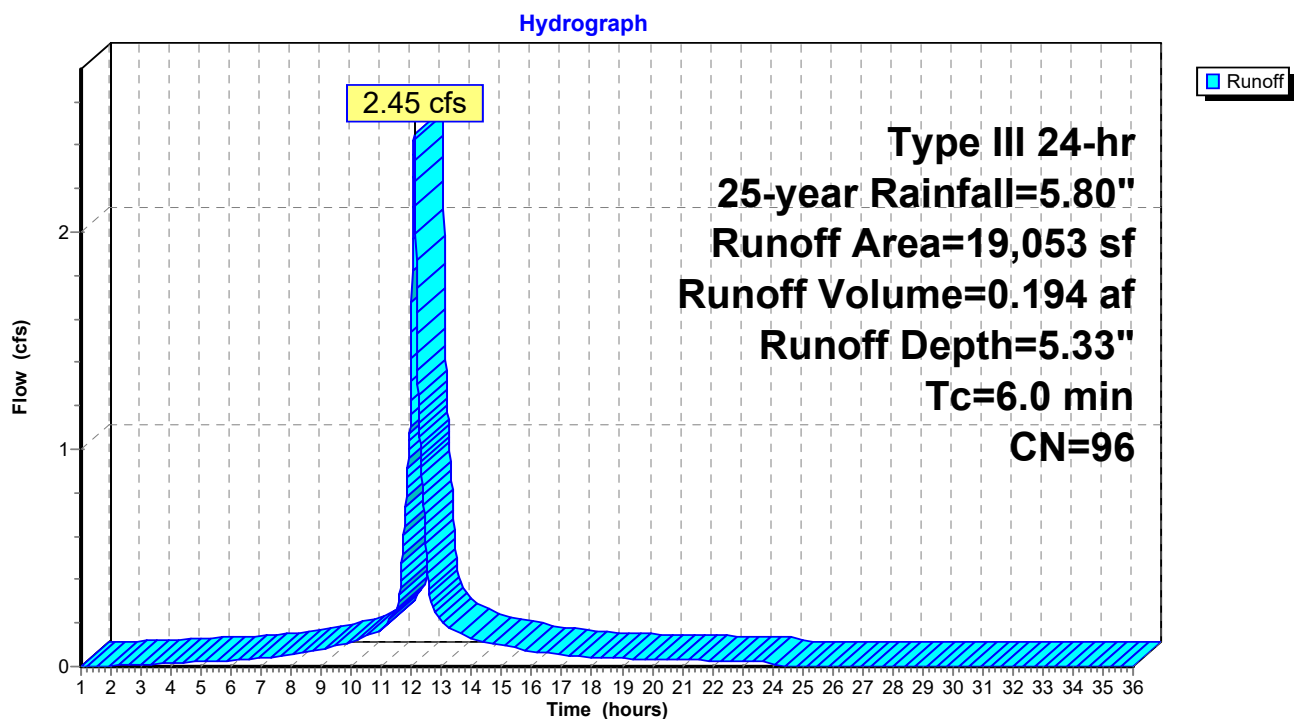
Runoff = 2.45 cfs @ 12.08 hrs, Volume= 0.194 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	17,609	98	Pavement/Roofs
	1,444	74	>75% Grass cover, Good, HSG C
	19,053	96	Weighted Average
	1,444		7.58% Pervious Area
	17,609		92.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S.4: Subcat 2.4

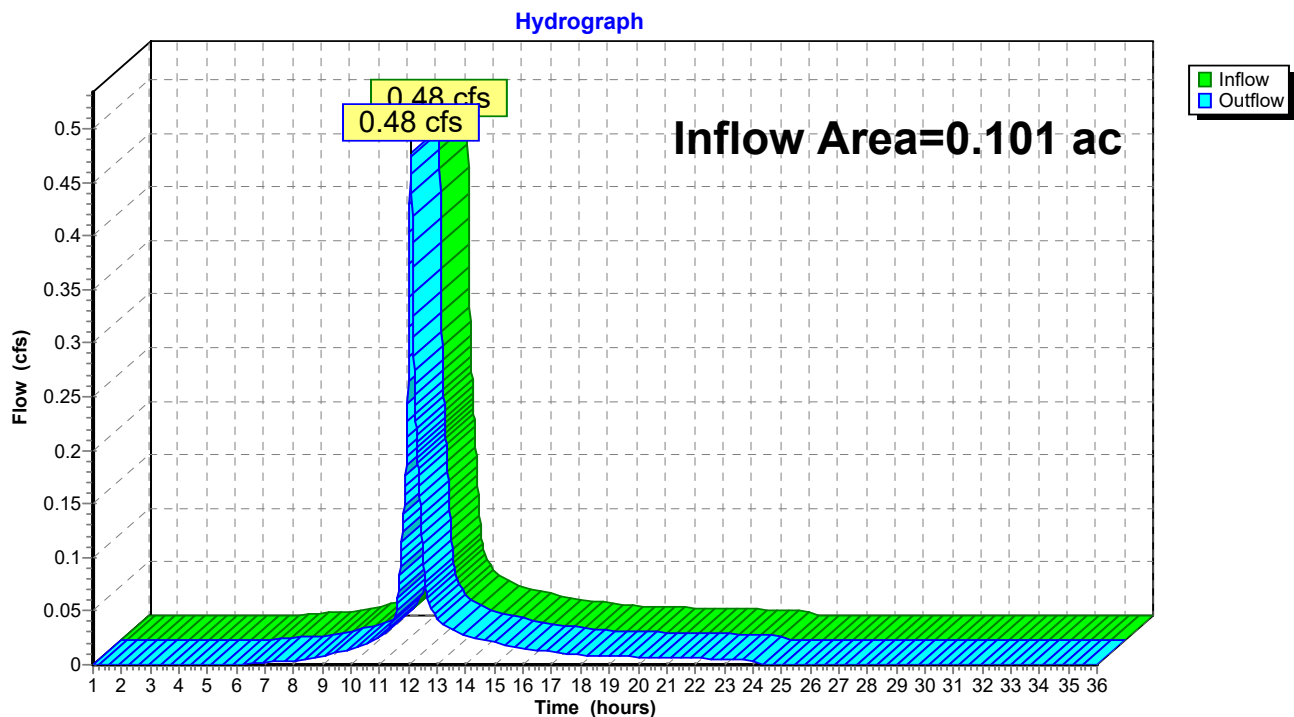


Summary for Reach 1R: POI #1 - Sherwood St.

Inflow Area = 0.101 ac, 53.04% Impervious, Inflow Depth = 4.11" for 25-year event
 Inflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af
 Outflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 1R: POI #1 - Sherwood St.

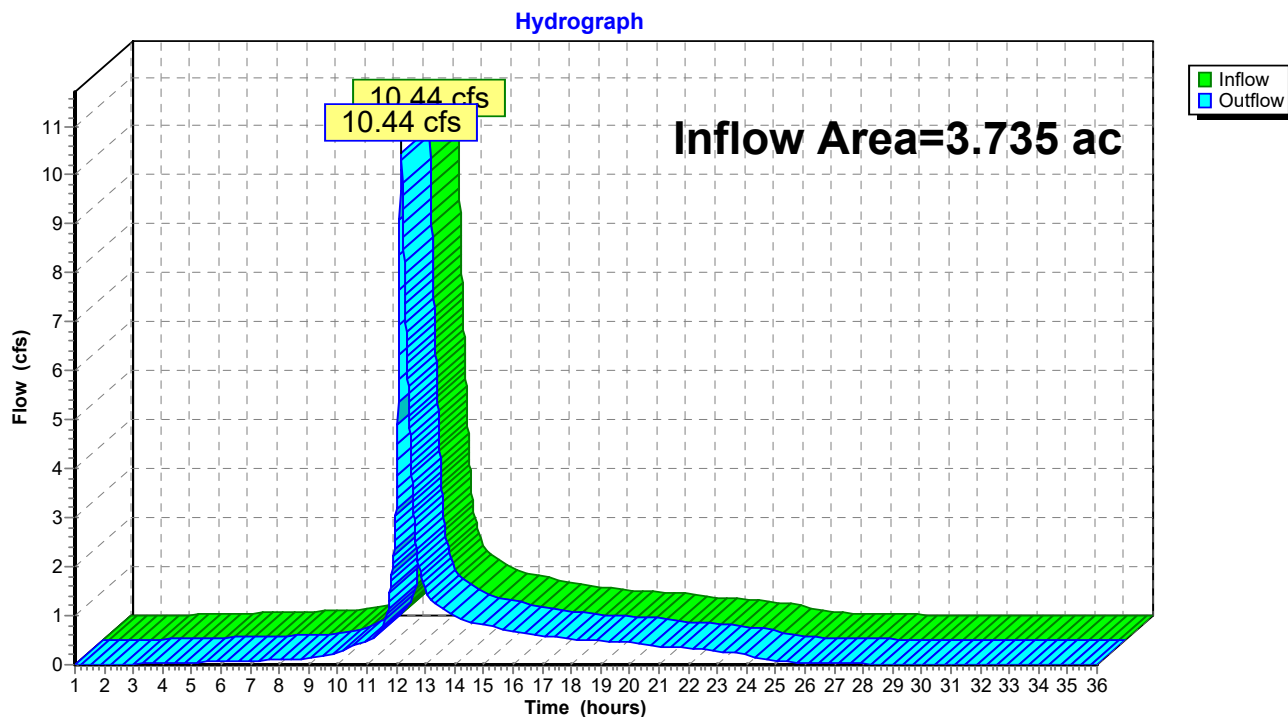


Summary for Reach 2R: POI #2 - Wetland

Inflow Area = 3.735 ac, 33.06% Impervious, Inflow Depth > 3.54" for 25-year event
 Inflow = 10.44 cfs @ 12.17 hrs, Volume= 1.101 af
 Outflow = 10.44 cfs @ 12.17 hrs, Volume= 1.101 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 2R: POI #2 - Wetland



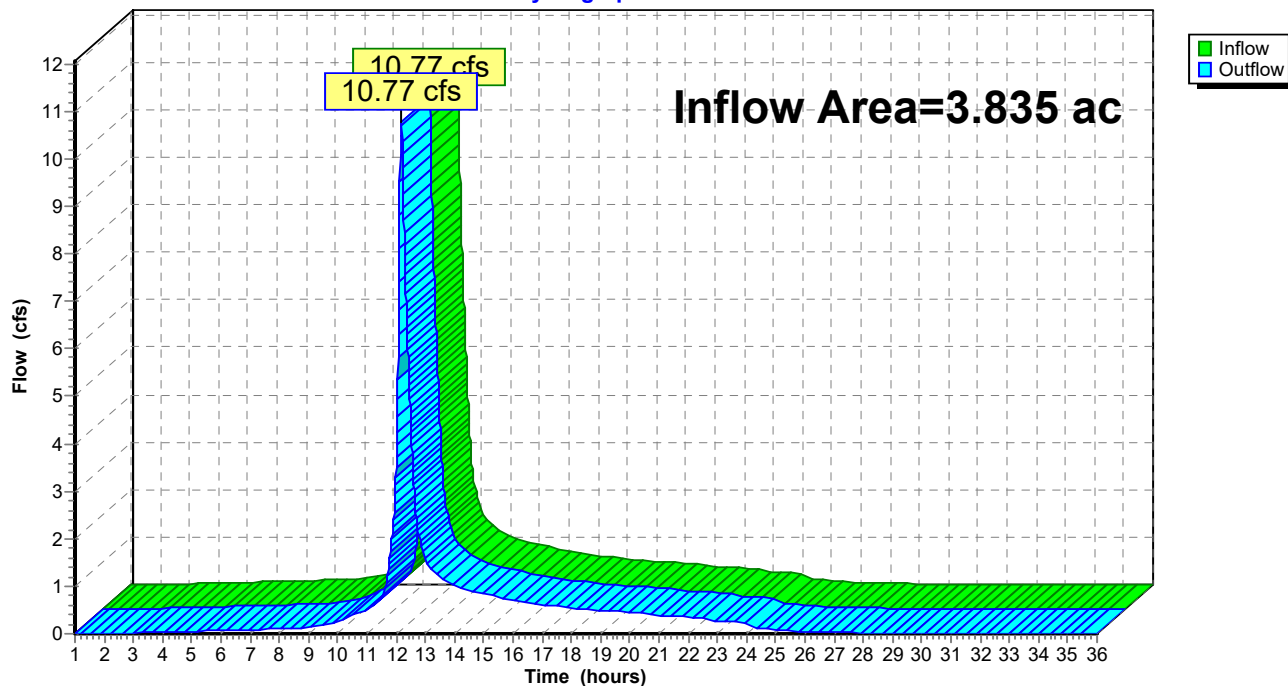
Summary for Reach 3R: TOTAL

Inflow Area = 3.835 ac, 33.58% Impervious, Inflow Depth > 3.55" for 25-year event
 Inflow = 10.77 cfs @ 12.17 hrs, Volume= 1.136 af
 Outflow = 10.77 cfs @ 12.17 hrs, Volume= 1.136 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Reach 3R: TOTAL

Hydrograph



Summary for Pond P1: StormTech 3500

Inflow Area = 0.158 ac, 96.29% Impervious, Inflow Depth = 5.44" for 25-year event
 Inflow = 0.89 cfs @ 12.08 hrs, Volume= 0.072 af
 Outflow = 0.75 cfs @ 12.14 hrs, Volume= 0.066 af, Atten= 16%, Lag= 3.1 min
 Primary = 0.75 cfs @ 12.14 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 19.30' @ 12.14 hrs Surf.Area= 1,247 sf Storage= 1,127 cf

Plug-Flow detention time= 332.3 min calculated for 0.066 af (92% of inflow)
 Center-of-Mass det. time= 288.9 min (1,041.7 - 752.8)

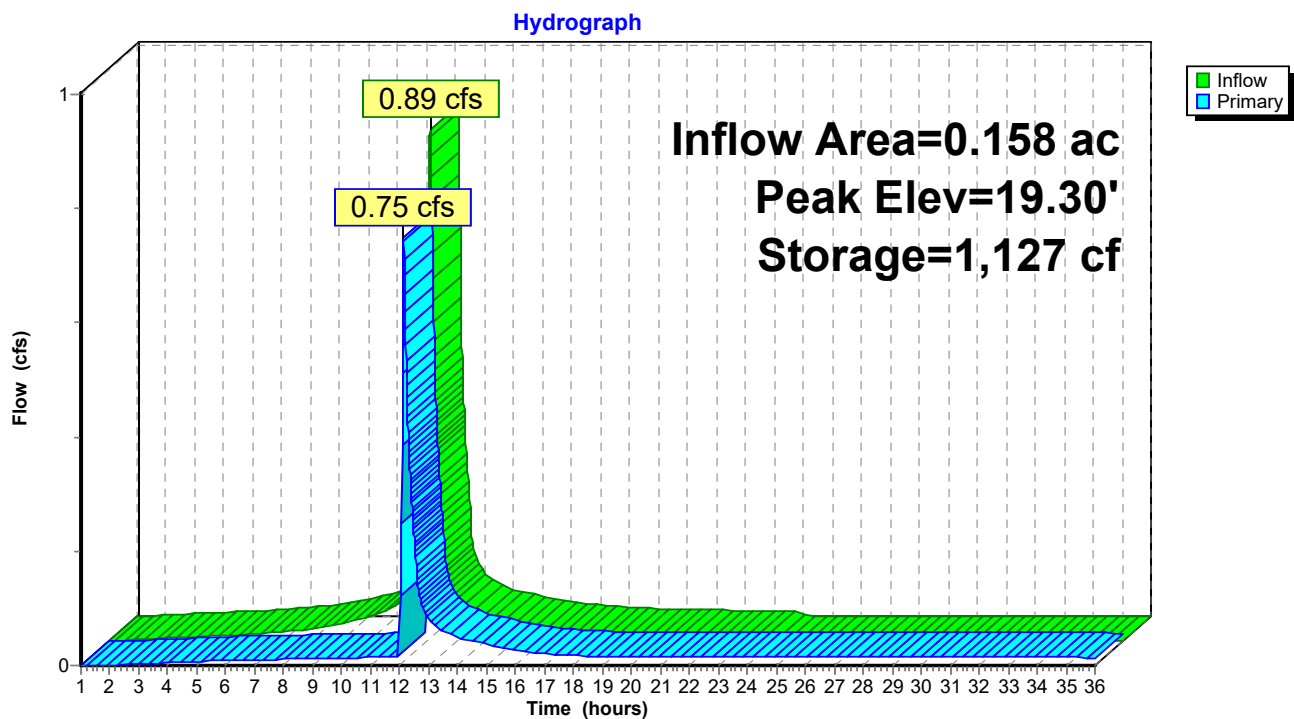
Volume	Invert	Avail.Storage	Storage Description
#1	16.10'	448 cf	21.76'W x 19.10'L x 4.50'H Stone 1,870 cf Overall - 749 cf Embedded = 1,121 cf x 40.0% Voids
#2	16.60'	749 cf	ADS_StormTech MC-3500 d +Cap x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 6 Chambers in 3 Rows Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
#3	14.60'	31 cf	21.76'W x 19.10'L x 1.50'H Sand 623 cf Overall x 5.0% Voids
#4	13.60'	163 cf	21.76'W x 19.10'L x 1.00'H Crushed Stone 416 cf Overall - 7 cf Embedded = 408 cf x 40.0% Voids
#5	13.85'	7 cf	4.0" Round Underdrain Storage Inside #4 L= 85.1'
		1,399 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	18.80'	12.0" Round Bypass Overflow L= 20.0' Ke= 0.900 Inlet / Outlet Invert= 18.80' / 14.00' S= 0.2400 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Primary	13.60'	1.0" Round Underdrain & Orifice L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.60' / 10.00' S= 0.0288 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf

Primary OutFlow Max=0.75 cfs @ 12.14 hrs HW=19.30' TW=15.53' (Dynamic Tailwater)

1=Bypass Overflow (Inlet Controls 0.74 cfs @ 1.89 fps)
 2=Underdrain & Orifice (Outlet Controls 0.01 cfs @ 1.92 fps)

Pond P1: StormTech 3500



Summary for Pond P2: StormTech 3500

Inflow Area = 0.339 ac, 89.87% Impervious, Inflow Depth = 5.33" for 25-year event
 Inflow = 1.90 cfs @ 12.08 hrs, Volume= 0.151 af
 Outflow = 1.16 cfs @ 12.18 hrs, Volume= 0.151 af, Atten= 39%, Lag= 6.0 min
 Primary = 1.16 cfs @ 12.18 hrs, Volume= 0.151 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 18.62' @ 12.18 hrs Surf.Area= 2,317 sf Storage= 2,180 cf

Plug-Flow detention time= 155.6 min calculated for 0.151 af (100% of inflow)
 Center-of-Mass det. time= 155.4 min (914.4 - 759.0)

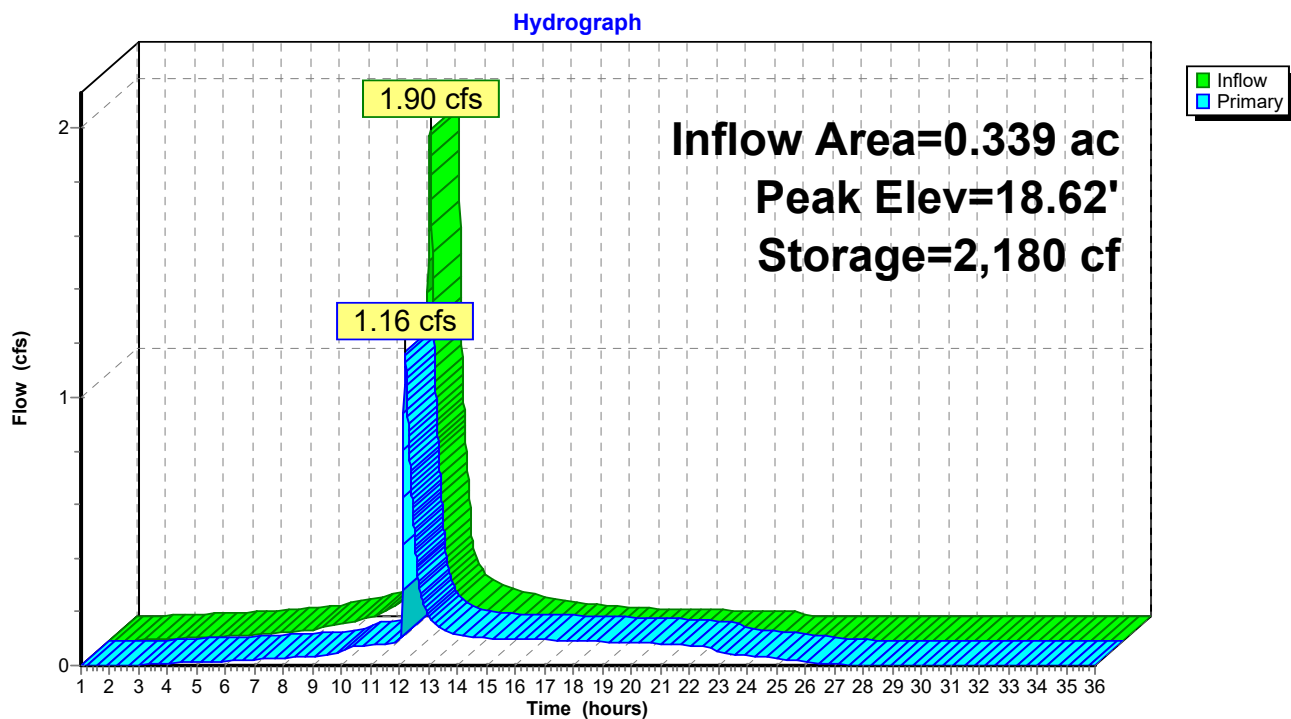
Volume	Invert	Avail.Storage	Storage Description
#1	15.30'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	15.80'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	13.80'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	12.80'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	13.05'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	12.80'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.80' / 12.70' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	18.00'	12.0" Round Bypass Overflow L= 4.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.00' / 17.25' S= 0.1875 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.18 hrs HW=18.62' TW=15.63' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.08 cfs @ 6.29 fps)
 2=Bypass Overflow (Inlet Controls 1.09 cfs @ 2.12 fps)

Pond P2: StormTech 3500



Summary for Pond P3: StormTech 3500

Inflow Area = 0.328 ac, 93.50% Impervious, Inflow Depth = 5.33" for 25-year event
 Inflow = 1.84 cfs @ 12.08 hrs, Volume= 0.146 af
 Outflow = 1.03 cfs @ 12.20 hrs, Volume= 0.146 af, Atten= 44%, Lag= 7.0 min
 Primary = 1.03 cfs @ 12.20 hrs, Volume= 0.146 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 17.38' @ 12.20 hrs Surf.Area= 2,317 sf Storage= 2,170 cf

Plug-Flow detention time= 157.5 min calculated for 0.146 af (100% of inflow)
 Center-of-Mass det. time= 157.4 min (916.4 - 759.0)

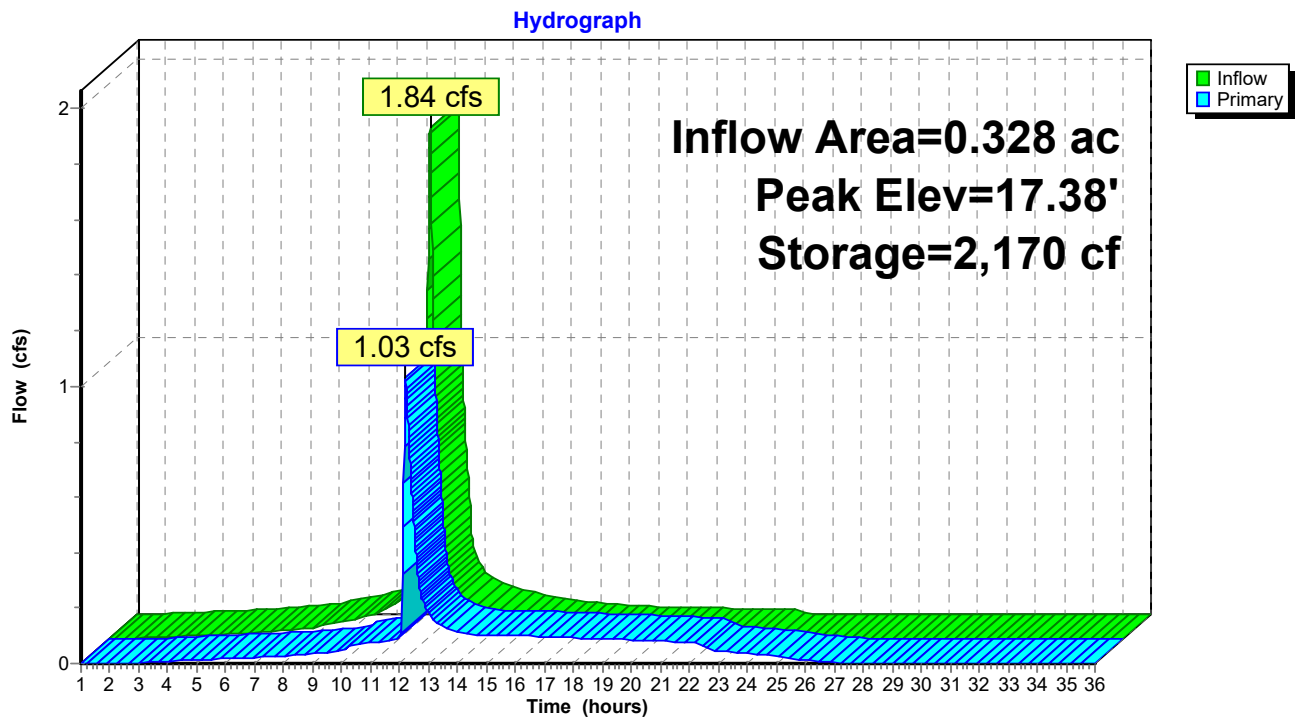
Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	815 cf	28.93'W x 26.70'L x 4.50'H Stone 3,476 cf Overall - 1,439 cf Embedded = 2,037 cf x 40.0% Voids
#2	14.58'	1,439 cf	ADS_StormTech MC-3500 d +Cap x 12 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 12 Chambers in 4 Rows Cap Storage= +14.9 cf x 2 x 4 rows = 119.2 cf
#3	12.58'	58 cf	28.93'W x 26.70'L x 1.50'H Sand 1,159 cf Overall x 5.0% Voids
#4	11.58'	303 cf	28.93'W x 26.70'L x 1.00'H Crushed Stone 772 cf Overall - 14 cf Embedded = 759 cf x 40.0% Voids
#5	11.83'	14 cf	4.0" Round Underdrain Storage Inside #4 L= 157.0'
		2,629 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.58'	1.5" Round Underdrain & Orifice L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 11.58' / 11.40' S= 0.0180 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.01 sf
#2	Primary	16.80'	12.0" Round Bypass Overflow L= 5.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.00' S= 0.1455 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.03 cfs @ 12.20 hrs HW=17.38' TW=15.63' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.06 cfs @ 4.81 fps)
 2=Bypass Overflow (Inlet Controls 0.97 cfs @ 2.05 fps)

Pond P3: StormTech 3500



Summary for Pond P4: StormTech 3500

Inflow Area = 0.437 ac, 92.42% Impervious, Inflow Depth = 5.33" for 25-year event
 Inflow = 2.45 cfs @ 12.08 hrs, Volume= 0.194 af
 Outflow = 1.34 cfs @ 12.20 hrs, Volume= 0.194 af, Atten= 46%, Lag= 7.3 min
 Primary = 1.34 cfs @ 12.20 hrs, Volume= 0.194 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 16.73' @ 12.20 hrs Surf.Area= 2,845 sf Storage= 2,742 cf

Plug-Flow detention time= 124.5 min calculated for 0.194 af (100% of inflow)
 Center-of-Mass det. time= 124.3 min (883.3 - 759.0)

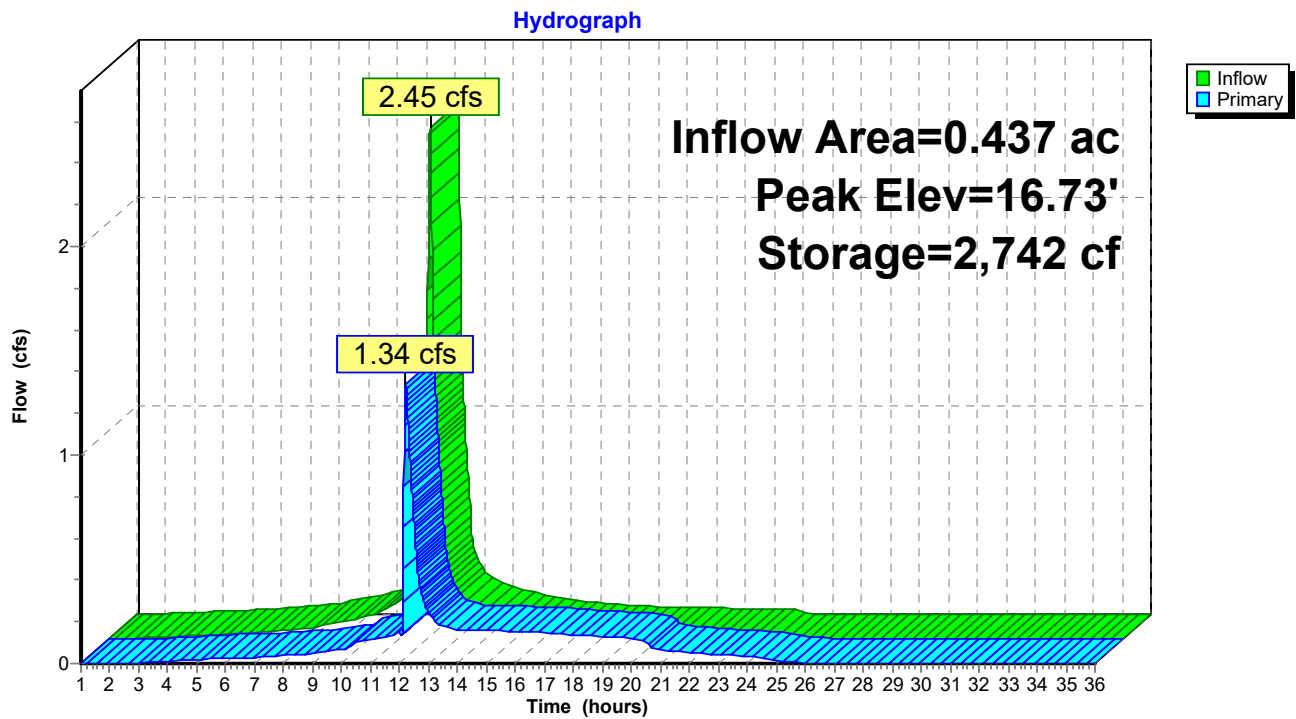
Volume	Invert	Avail.Storage	Storage Description
#1	13.33'	988 cf	36.10'W x 26.27'L x 4.50'H Stone 4,268 cf Overall - 1,798 cf Embedded = 2,469 cf x 40.0% Voids
#2	13.83'	1,798 cf	ADS_StormTech MC-3500 d +Cap x 15 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 15 Chambers in 5 Rows Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf
#3	11.83'	71 cf	36.10'W x 26.27'L x 1.50'H Sand 1,423 cf Overall x 5.0% Voids
#4	10.83'	372 cf	36.10'W x 26.27'L x 1.00'H Crushed Stone 948 cf Overall - 17 cf Embedded = 931 cf x 40.0% Voids
#5	11.08'	17 cf	4.0" Round Underdrain Storage Inside #4 L= 197.0'
		3,247 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	10.83'	2.0" Round Underdrain & Orifice L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.83' / 10.75' S= 0.0040 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#2	Primary	16.05'	12.0" Round Bypass Overflow L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.05' / 15.00' S= 0.1050 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.20 hrs HW=16.73' TW=15.63' (Dynamic Tailwater)

1=Underdrain & Orifice (Outlet Controls 0.08 cfs @ 3.45 fps)
 2=Bypass Overflow (Inlet Controls 1.26 cfs @ 2.22 fps)

Pond P4: StormTech 3500



Summary for Pond P5: OCS

Inflow Area = 1.263 ac, 92.50% Impervious, Inflow Depth > 5.28" for 25-year event
 Inflow = 4.12 cfs @ 12.19 hrs, Volume= 0.556 af
 Outflow = 4.12 cfs @ 12.19 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.12 cfs @ 12.19 hrs, Volume= 0.556 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 15.63' @ 12.19 hrs

Flood Elev= 21.00'

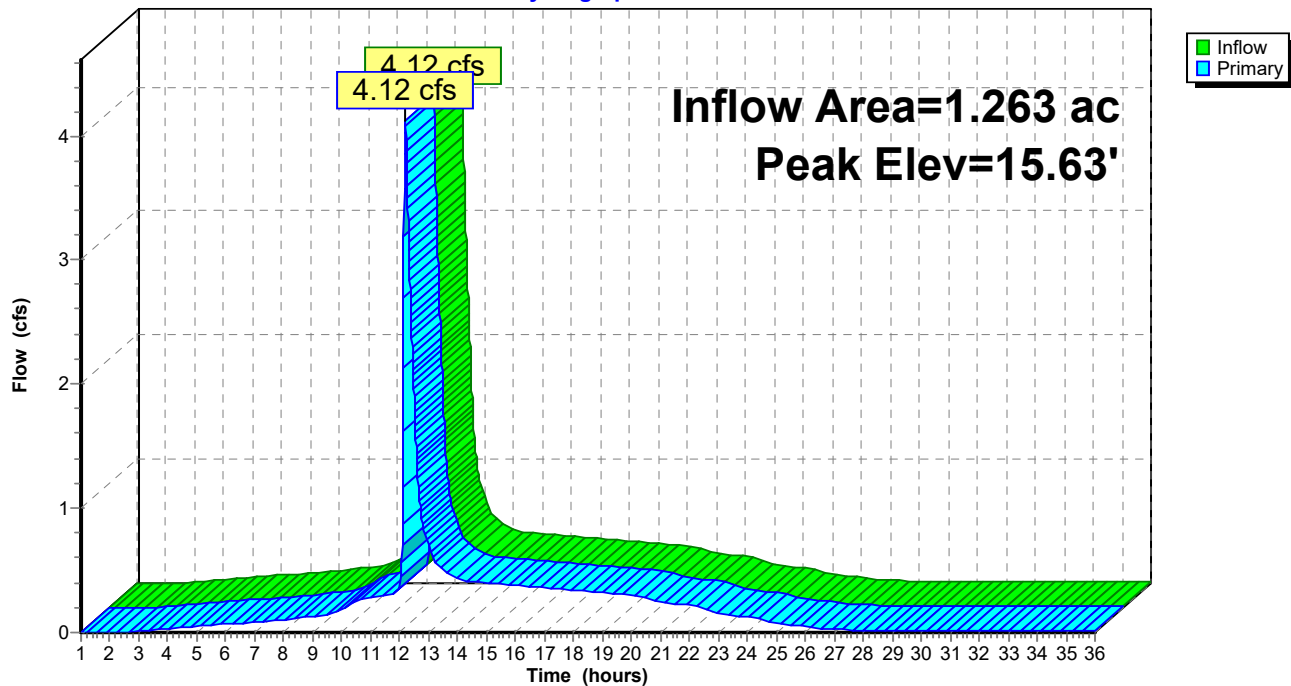
Device	Routing	Invert	Outlet Devices
#1	Primary	7.95'	18.0" Round 18" Outlet L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.95' / 7.80' S= 0.0044 '/' Cc= 0.900 n= 0.010, Flow Area= 1.77 sf
#2	Device 1	8.05'	3.0" Vert. Quality Orifice C= 0.600
#3	Device 1	12.50'	6.0" Vert. Quantity Orifice C= 0.600
#4	Device 1	15.40'	6.0' long x 0.7' 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 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=4.12 cfs @ 12.19 hrs HW=15.63' TW=0.00' (Dynamic Tailwater)

- ↑ **1=18" Outlet** (Passes 4.12 cfs of 17.69 cfs potential flow)
- ↑ **2=Quality Orifice** (Orifice Controls 0.65 cfs @ 13.15 fps)
- ↑ **3=Quantity Orifice** (Orifice Controls 1.61 cfs @ 8.18 fps)
- ↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 1.87 cfs @ 1.34 fps)

Pond P5: OCS

Hydrograph





United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine



March 11, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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 17, Jun 5, 2020

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	Acres in AOI	Percent of AOI
BuC2	Buxton silt loam, 8 to 15 percent slopes	0.1	3.6%
Cu	Cut and fill land	0.0	0.0%
EmB	Elmwood fine sandy loam, 0 to 8 percent slopes	1.1	29.9%
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	2.6	66.5%
Totals for Area of Interest		3.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

BuC2—Buxton silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2x1by
Elevation: 10 to 490 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Buxton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buxton

Setting

Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Fine glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: silt loam
Bw1 - 7 to 18 inches: silt loam
Bw2 - 18 to 23 inches: silty clay loam
BC - 23 to 35 inches: silty clay loam
C - 35 to 65 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 17 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Lamoine

Percent of map unit: 7 percent

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Landform: Marine terraces, river valleys
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Scantic

Percent of map unit: 5 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Buxton, >15% slopes

Percent of map unit: 3 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Cu—Cut and fill land

Map Unit Setting

National map unit symbol: blh4
Elevation: 10 to 2,200 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 70 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Cut and fill land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cut And Fill Land

Typical profile

H1 - 0 to 65 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 35 percent
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: About 24 to 42 inches

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Available water capacity: Moderate (about 6.6 inches)

Minor Components

Windsor

Percent of map unit: 2 percent
Landform: Kames, outwash terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Elmwood

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hollis

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Tidal marsh

Percent of map unit: 2 percent
Landform: Tidal flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Buxton

Percent of map unit: 2 percent
Landform: Coastal plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

EmB—Elmwood fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: blh8
Elevation: 10 to 900 feet
Mean annual precipitation: 36 to 55 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 90 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Elmwood and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elmwood

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 25 inches: sandy loam
H3 - 25 to 65 inches: silty clay loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Swanton

Percent of map unit: 7 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Melrose

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Whately

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

SuD2—Suffield silt loam, 15 to 25 percent slopes, eroded

Map Unit Setting

National map unit symbol: blk2
Elevation: 10 to 900 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Suffield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Suffield

Setting

Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine glaciolacustrine deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 33 inches: silty clay
H4 - 33 to 65 inches: silty clay

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Hartland

Percent of map unit: 7 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suffield, slopes <15%

Percent of map unit: 3 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Belgrade

Percent of map unit: 3 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suffield, slopes >25%

Percent of map unit: 2 percent

Custom Soil Resource Report

Landform: Coastal plains

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

References

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

ADDRESS: IN THE VICINITY OF: 157 SHERWOOD STREET
& 33 DALTON STREET

MEETING DATE:
JULY 13, 2021

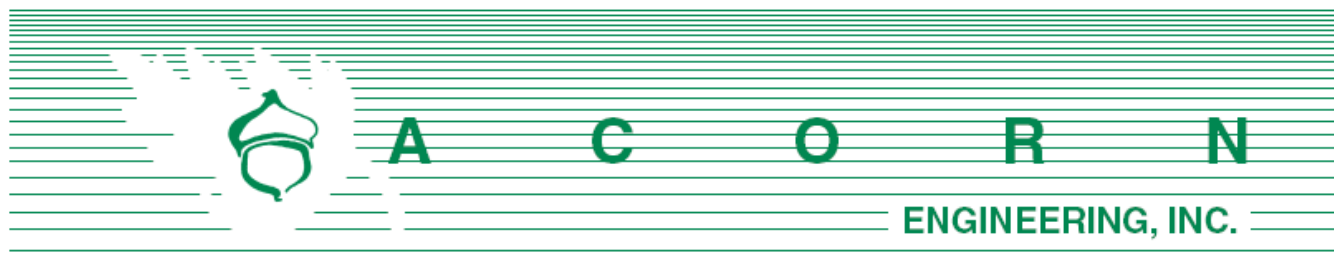
APPLICATION ID: PL-001532-2021

Att. X

NOTICE OF PUBLIC MEETING

CITY OF PORTLAND PLANNING BOARD

Find agenda at: www.portlandmaine.gov/agendas
For more information, call (207) 874-8719



Planning Division
 City of Portland, Maine
 Attn: Shukria Wiar
 389 Congress Street, 4th Floor
 Portland, ME 04101

July 2, 2021

Subject: Winchester Woods - Notice of Public Meeting Certification

I, Sam Lebel, hereby certify that (2) notice of neighborhood meeting signs were posted on July 2, 2021, prior to the July 13, 2021 Planning Board Meeting for the proposed project PL-001532-2021 located in the vicinity of 157 Sherwood Street and 33 Dalton Street. Photo documentation of sign in-situ:



Sign Location Near 33 Dalton Street



Sign Location Near 157 Sherwood Street

Note that it is the applicant's responsibility to remove the notice of public meeting sign within three days following the date of the meeting.

Signed,

Sam Lebel, P.E.
 Project Manager
 Acorn Engineering, Inc.

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SINGLE FAMILY RESIDENTIAL		
ZONE: R-5	REQUIRED	PROPOSED
MINIMUM LOT SIZE	6,000 SF	13,986 SF
MINIMUM FRONT SETBACK	20 FT	19.15 FT
MINIMUM REAR SETBACK	20 FT	20.50 FT
MINIMUM SIDE SETBACK	14 FT	21.89 FT
*** ACCESSORY DETACHED STRUCTURES WITH GROUND COVERAGE OF 144 SF OR LESS *** ASSUMES A STRUCTURE HEIGHT OF 2 STORIES. SEE SEC 14-120 OF CITY OF PORTLAND'S CODE OF ORDINANCES FOR HEIGHT BREAKDOWN *** FOR A BUILDING LENGTH EQUAL TO OR LESS THAN 100', THE MINIMUM SETBACK IS 25'. A BUILDING LENGTH GREATER THAN 100' REQUIRES A 35' SETBACK. **** AT A MINIMUM, A CONTIGUOUS AREA OF 6,000 SF WITH A MIN. DIMENSION OF 50'		

GENERAL NOTES:

1. ALL BRICK SIDEWALK AND VERTICAL GRANITE CURBS TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
4. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN ASPHALT SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
6. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
7. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
8. IN ACCORDANCE WITH SECTION 14.6.1 OF THE PORTLAND LAND USE CODE, AND SECTION 1.1.7 OF THE PORTLAND TECHNICAL MANUAL, NEW PARKING LOTS WITH FIVE OR MORE SPACES SHALL INCLUDE ENERGIZED ELECTRICAL OUTLETS OR INSTALLED CHARGERS CAPABLE OF PROVIDING LEVEL 2 ELECTRIC VEHICLE CHARGING OR HIGHER TO 20% OF PARKING SPACES. REMAINING SPACES MUST BE SERVED BY SUFFICIENT WIRING, AND ELECTRICAL SERVICE TO ALLOW FOR FUTURE INSTALLATION OF ELECTRIC VEHICLE SUPPLY EQUIPMENT.

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PR. DETECTION PAD, TYP. OF 2

PR. STOP SIGN AND PRIVATE STREET SIGN

NEW RETAINING WALL TO MATCH IN TO EX. RETAINING WALL

PR. CIP RETAINING WALL AND FENCE PER STRUCTURAL ENGINEER

EXISTING 50' ROW IDENTIFIED AS 'F STREET' ON BOUNDARY SURVEY BY OWEN HASKELL, INC.

APPROX. LOCATION OF EXISTING PORTLAND TRAILS PATH

RESET EX. GRANITE STAIRS AND INSTALL HANDRAIL IN COORDINATION WITH CITY OF PORTLAND AND PORTLAND TRAILS

ACCESSIBLE FIRE TRUCK TURNAROUND

CONCRETE LANDING WITH 6" REVEAL AT REAR OR UTILITY ROOM, TYP. OF 4

ZONING DIVIDE BETWEEN R5 AND IM ZONES

SNOW STORAGE, TYP.

TOP OF SLOPE, TYP.

PR. HYDRANT

PR. ADA PARKING SPACE, TYP.

STANDARD 9'x48' PARKING SPACE, TYP.

STANDARD 8'x18' ADA PARKING SPACE, TYP.

PR. ENCLOSED SOLID WASTE AND 6'x6' CONCRETE PAD, TYP. OF 2

GRANITE CURBING AT REAR PATIO, TYP. OF 5

MOTION SENSED DOWNLIT 3000K WALL PACK AT EACH UTILITY ROOM DOOR

PR. 14,400 SF AREA FOR MULTIPURPOSE RECREATION FIELD, 4" LOAM AND SEED OF ANY REGRADED/DISTURBED AREAS

PR. SPLIT RAIL FENCE, TYP.

EX. 20' SEWER EASEMENT W/PWD

PR. STAIRCASE WITH RAILINGS, DESIGN BY OTHERS

PR. BENCH, TYP.

PR. EVERGREEN BUFFER ALONG EDGE OF RECREATION AREA

PR. ADA PARKING SPACE

PR. STONE DUST PATH TO MULTIPURPOSE RECREATION FIELD

LOCATION OF EX. SHED TO BE RELOCATED IN COORDINATION WITH ABUTTER

21.89'

20.50'

19.15'

30 0 30 60

SCALE: 1"=30'

0+00 1+00 2+00 3+00 4+00 5+00 6+00

WINCHESTER DRIVE

SHERWOOD STREET

DALTON STREET

BUILDING 1
12 UNITS

BUILDING 2
12 UNITS

BUILDING 3
12 UNITS

BUILDING 4
12 UNITS

PR. BLOCK CROSSWALK PER DETAIL

PR. SLIPFORM CONCRETE CURB PER DETAIL, TYP.

PR. NATIVE RED MAPLE, TYP.

ALTERNATE REDTIG DOGWOOD AND HICHBUSH BLUEBERRY SHRUBS AROUND BUILDING, TYP.

LOAM AND SEED ANY DISTURBED AREAS TO MATCH BACK INTO EXISTING GRADE

BARRIER FREE SIGN PER DETAIL, TYP.

PR. EVERGREEN BUFFER ALONG TOP OF SLOPE

EX. SHED TO REMAIN

PR. PATIO PER ARCH, TYP.

MECH. ROOM PER ARCH, TYP. OF 4

CURBED SIDEWALK AT EDGE OF PARKING LOT, TYP. OF 2

NON-CURBED SIDEWALK AT EDGE OF PARKING LOT, TYP. OF 5

PR. DWARF ALBERTA SPRUCE AT EACH SIDE OF ENTRANCE, TYP. OF 16

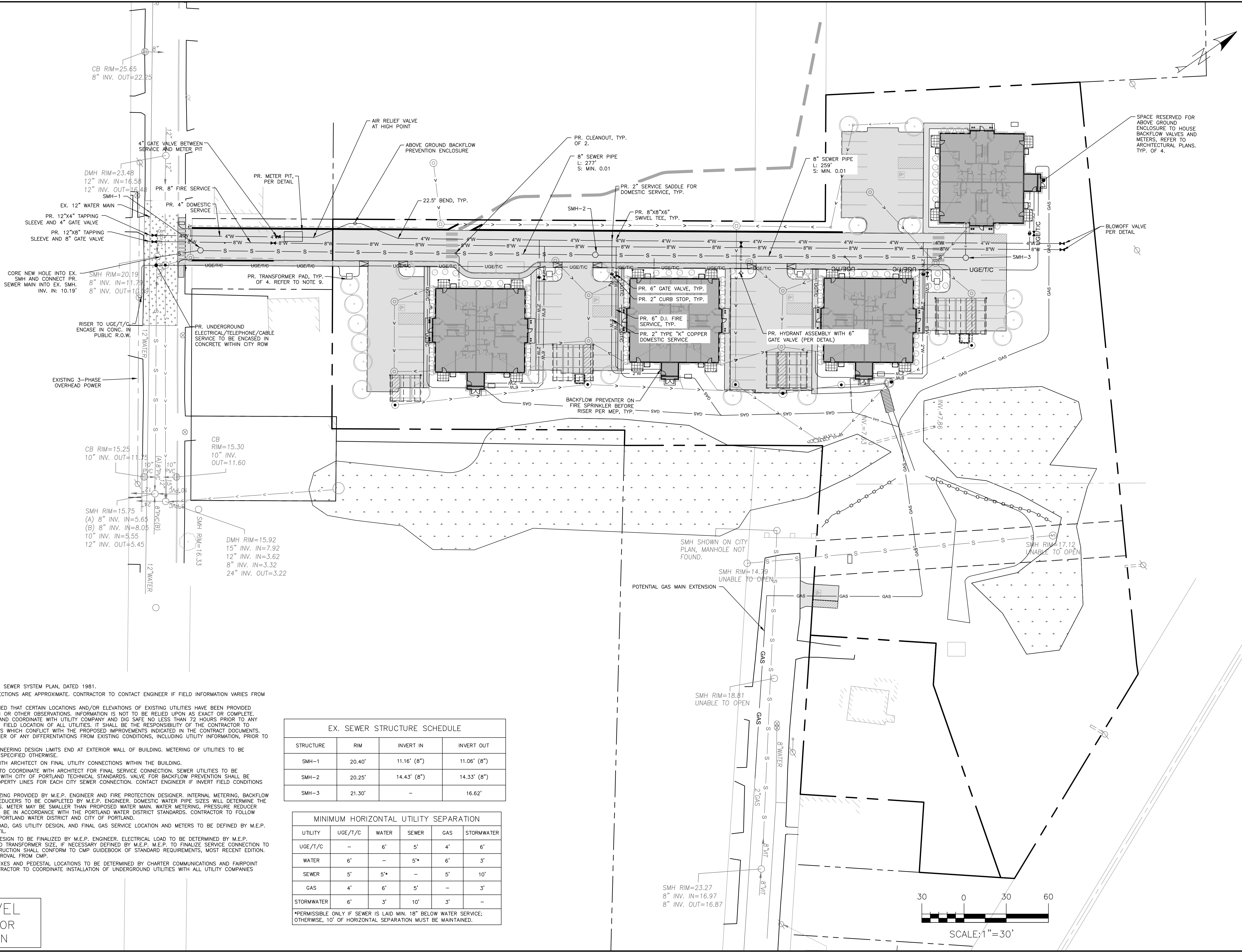
GRANITE CURB AT FRONT PATIO, TYP. OF 5

22', TYP.

8', TYP.

SEE TYPICAL DETAIL ON SHEET C-45 FOR LANDSCAPING ADJACENT TO BUILDINGS

EXTENT OF EX. WETLANDS, TYP.



- GENERAL NOTES:
1. PLAN REFERENCE TO PORTLAND SEWER SYSTEM PLAN, DATED 1981.
 2. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
 3. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
 4. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
 5. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
 6. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.
 7. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
 8. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNTIL.
 9. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
 10. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.

EX. SEWER STRUCTURE SCHEDULE			
STRUCTURE	RIM	INVERT IN	INVERT OUT
SMH-1	20.40'	11.16' (8")	11.06' (8")
SMH-2	20.25'	14.43' (8")	14.33' (8")
SMH-3	21.30'	-	16.62'

MINIMUM HORIZONTAL UTILITY SEPARATION					
UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	-	6'	5'	4'	6'
WATER	6'	-	5'	6'	3'
SEWER	5'	5'	-	5'	10'
GAS	4'	6'	5'	-	3'
STORMWATER	6'	3'	10'	3'	-

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10' OF HORIZONTAL SEPARATION MUST BE MAINTAINED.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR
SITE/SUB

BY
DATE
WHS
4/15/21

UTILITY PLAN

PROJECT NAME/ADDRESS:
WINCHESTER WOODS APARTMENTS
PORTLAND, MAINE 04103

CLIENT/OWNER OF RECORD:
HAMMOND HOUSE, LLC
94 SOUTH STREET, YARMOUTH MAINE 04096

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 779-2885

FILE:
JN:
SCALE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:

1155_CIVIL
1155
AS NOTED
SJL
NPH
WHS

SAMUEL J. LEBEL
No. 15505
MAINE
REGISTERED PROFESSIONAL ENGINEER
DATE: 4/16/21
Signature: Sam Lebel

DRAWING NO.
C-20

1. PLAN REFERENCE TO PORTLAND SEWER SYSTEM PLAN, DATED 1981.
2. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
3. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF REQUIRED FOR CONSTRUCTION.
4. CONTRACTOR SHALL ENSURE THAT UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
5. CATCH BASIN INLET PROTECTION TO BE INSTALLED WITHIN ANY STRUCTURES DOWNGRADIENT OF ACTIVE CONSTRUCTION.
6. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADIENT OF ALL ACTIVE CONSTRUCTION WORK. PER DETAIL, BARRIERS TO NOT EXTEND PAST PROPERTY LINES; BARRIERS SHOWN OFFSET FROM PROPERTY LINES ON PLANS FOR VISUAL PURPOSES ONLY.
7. ANY SLOPE BETWEEN AND INCLUDING 2:1 TO 3:1 SHALL BE STABILIZED WITH ECB. SLOPES STEEPER THAN 2:1 SHALL BE REINFORCED WITH TRM. SEE DETAILS.

STRUCTURE TABLE					
	NAME	DIA	RIM	INV. IN (SIZE)	INV. OUT (SIZE)
	CB-1	48"	20.67'	16.00' (12") 16.00' (6") 16.00' (6")	14.65' (24")
	CB-2	48"	20.68'	17.30' (12") 17.30' (6")	17.20' (12")
	CB-3	48"	21.85'	16.95' (12") 16.95' (6") 16.95' (6")	16.00' (24")
	CB-4	48"	21.70'	17.60' (12") 17.60' (6")	17.50' (12")
	CB-5	48"	22.60'	17.00' (12") 17.00' (6")	16.80' (24")
	CB-6	48"	22.78'	19.60' (6")	19.50' (12")
	CB-7	48"	20.50'	16.00' (12")	14.00' (24")
	CB-9	48"	20.30'		17.30' (12")
	CB-10	48"	21.46'	16.38' (4") 16.38' (6")	14.00' (12")
	CB-11	48"	21.39'	16.00' (15") 16.00' (8")	15.90' (15")
	CB-12	48"	20.75'		17.25' (15")
	CB-13	48"	21.89'		18.00' (12")
	CB-14	48"	20.66'		17.66' (12")
	CB-15	48"	19.29'	16.29' (12") 16.29' (6") 16.29' (6")	16.19' (12")
	DMH-1	48"	21.05'	11.40' (18")	11.30' (18")
	DMH-2	60"	21.00'	11.75' (15") 11.75' (4") 16.60' (12")	11.65' (18")
	DMH-3	48"	21.50'	12.95' (12") 17.80' (12") 12.95' (4")	12.85' (15")
	DMH-4	48"	22.30'	18.60' (12") 13.75' (4")	13.65' (12")
	DMH-5	48"	20.25'	15.95' (12") 11.00' (4")	10.90' (12")
	DMH-6	48"	20.00'	12.40' (12")	
	DMH-7	48"	21.74'	15.00' (15")	8.01' (18")
	OCS	84"	21.05'	10.25' (12") 11.00' (18")	7.95' (18")

	ISSUED FOR	BY DATE
SITE/SUB		WHS 04/19/21
DRAWING NAME:	GRADING & DRAINAGE PLAN	
PROJECT NAME/ADDRESS:	WINCHESTER WOODS APARTMENTS PORTLAND, MAINE 04103	
CLIENT OWNER OF RECORD:	HAMMOND HOUSE, LLC 94 SOUTH STREET, YARMOUTH MAINE 04096	

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY VARIATIONS, AUTHORIZED BY THE CLIENT, MUST BE APPROVED IN WRITING AND CANNOT BE MADE WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

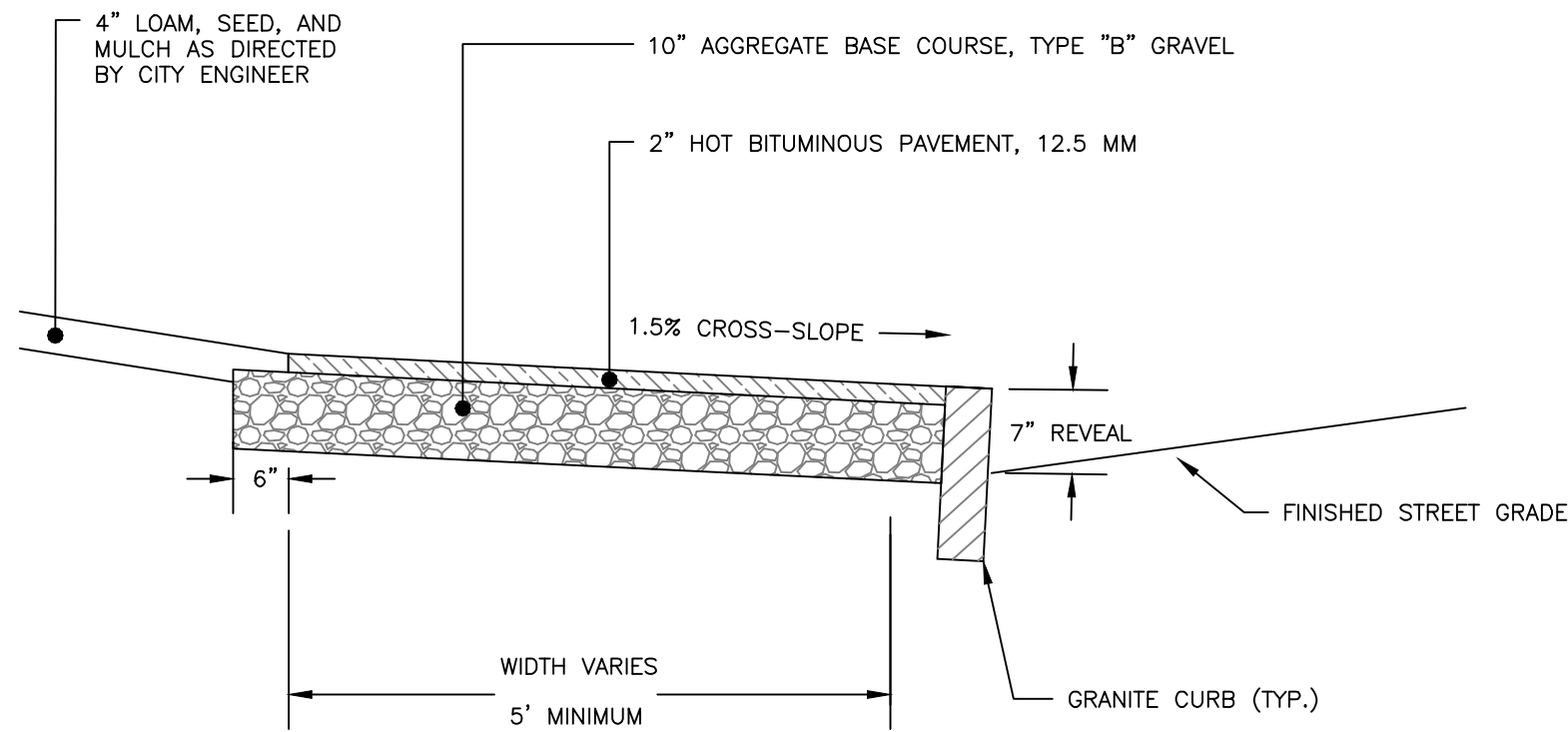
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE:	1155_CIVIL
JN:	1155
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

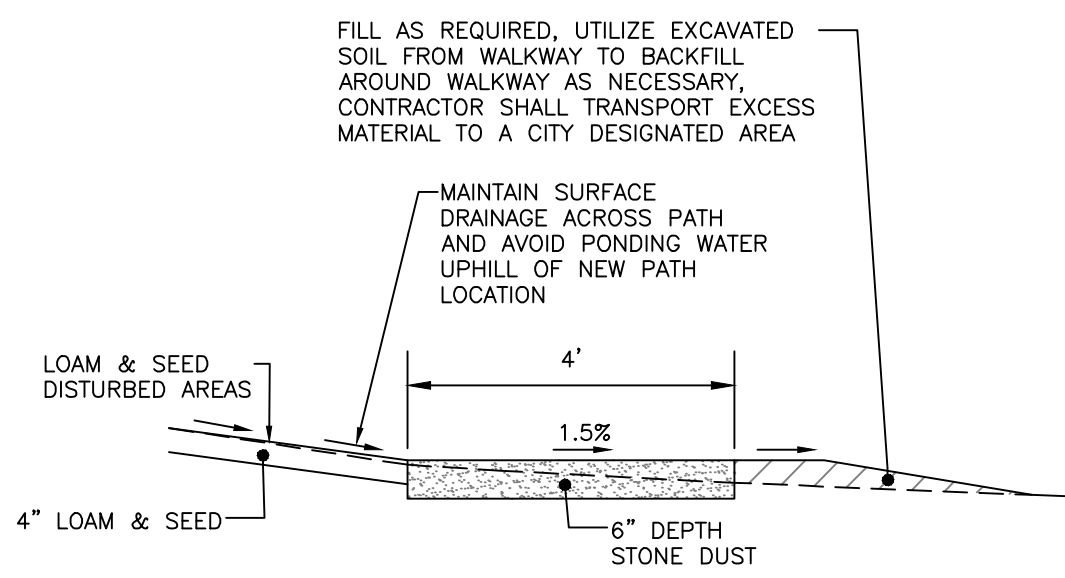
San Lebel 04/19/21

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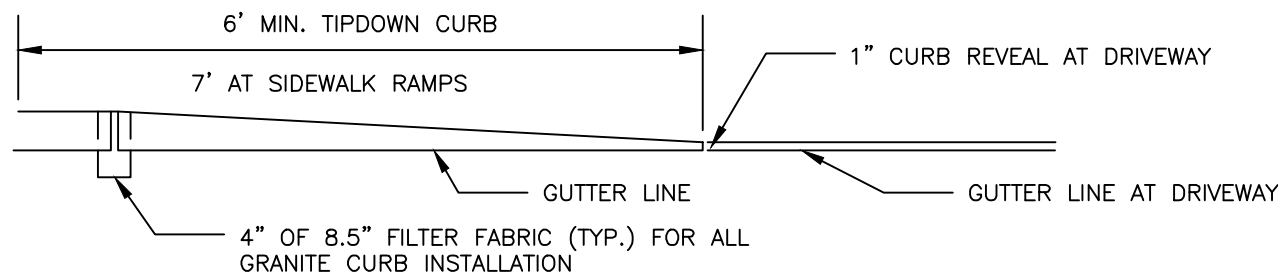
C-30



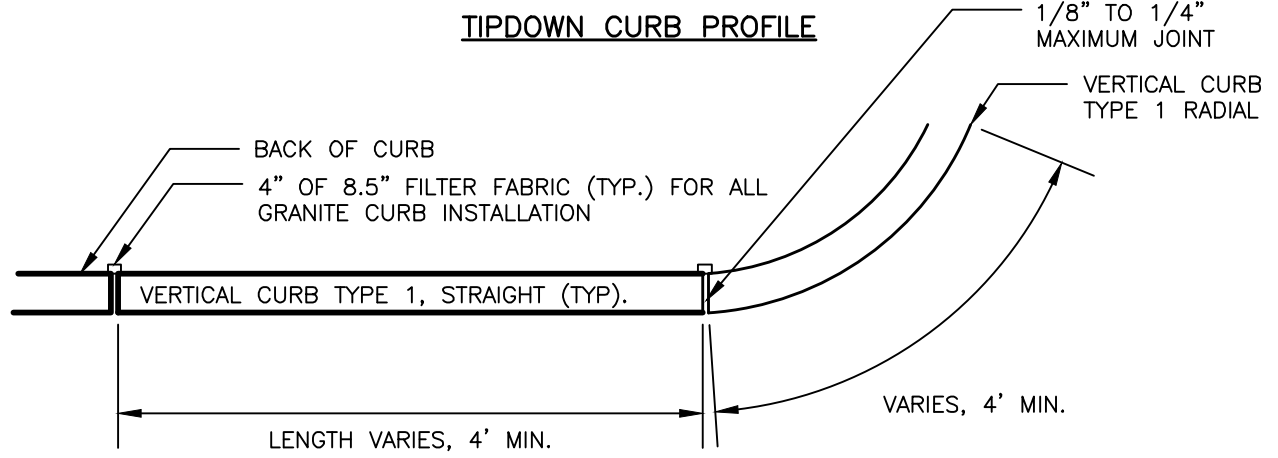
PUBLIC BITUMINOUS SIDEWALK
NOT TO SCALE



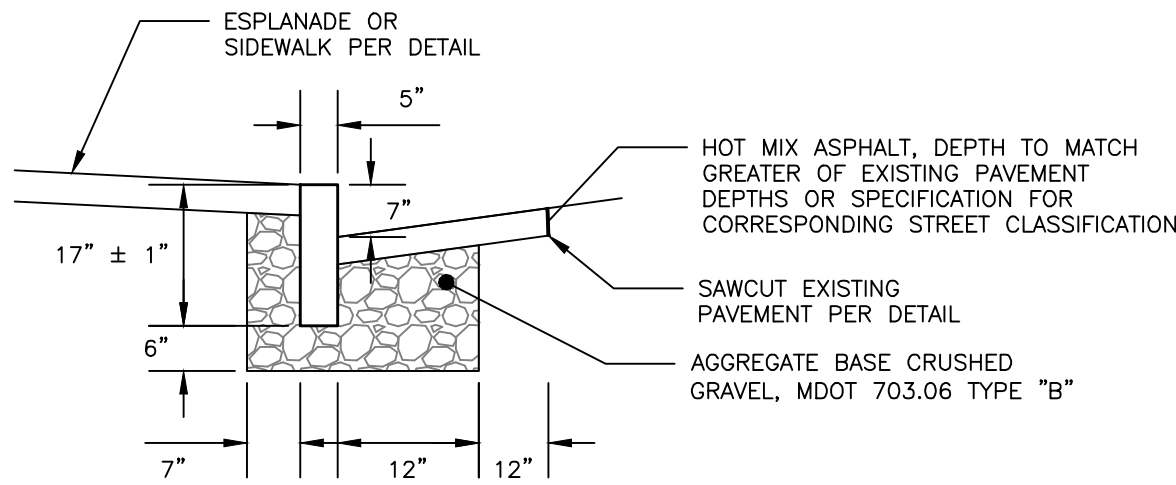
4' WIDE STONE DUST PATH
NOT TO SCALE



TIPDOWN CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW

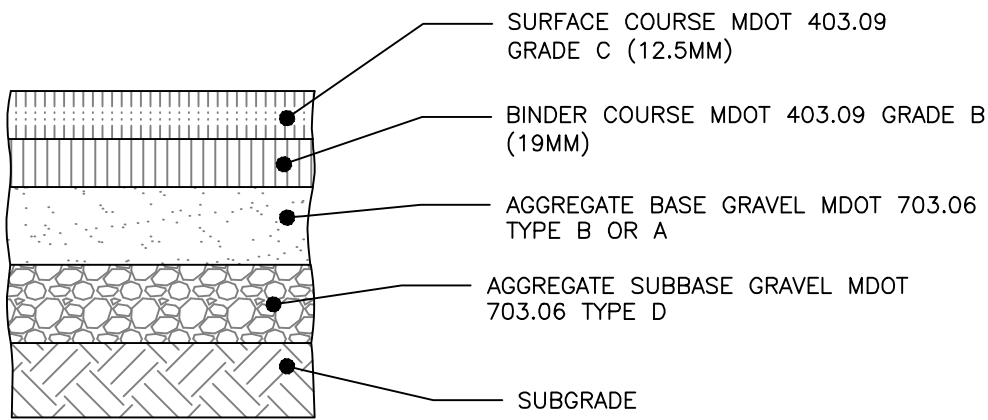


VERTICAL GRANITE CURB CROSS SECTION

- NOTES:
1. CURB SHALL BE RESET IN ACCORDANCE WITH MDT 609.08 WITH THE EXCEPTION OF CURB SPACING TO BE INSTALLED PER DETAIL.

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION
IN EXISTING STREETS DETAIL

NOT TO SCALE

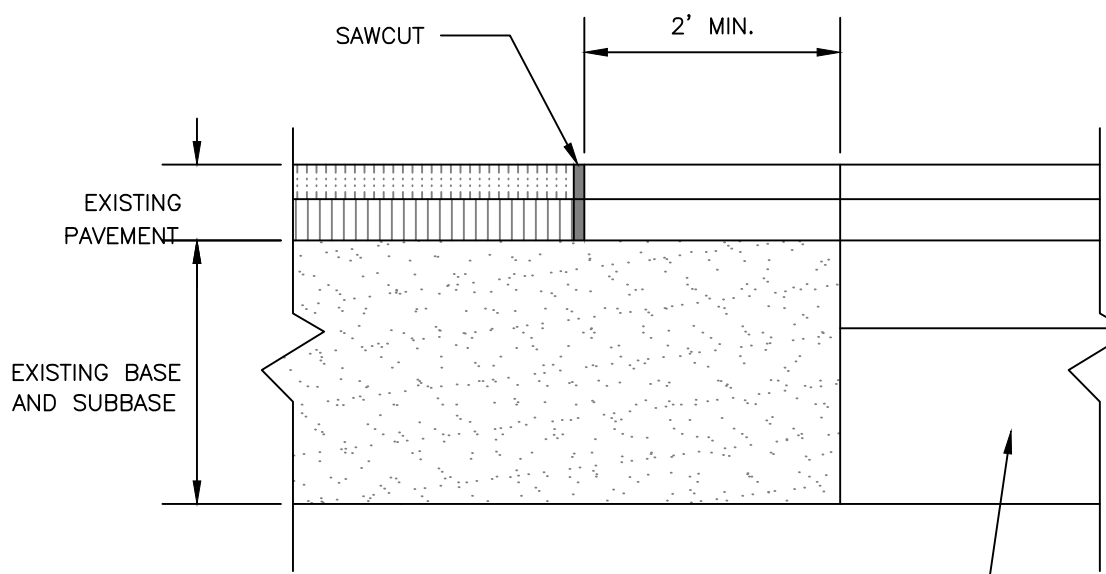


NOTE:
COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDT 703.06 TYPE B OR A
15"	AGGREGATE SUBBASE GRAVEL MDT 703.06 TYPE D

CITY OF PORTLAND LOCAL
BITUMINOUS PAVEMENT PROFILE
NOT TO SCALE

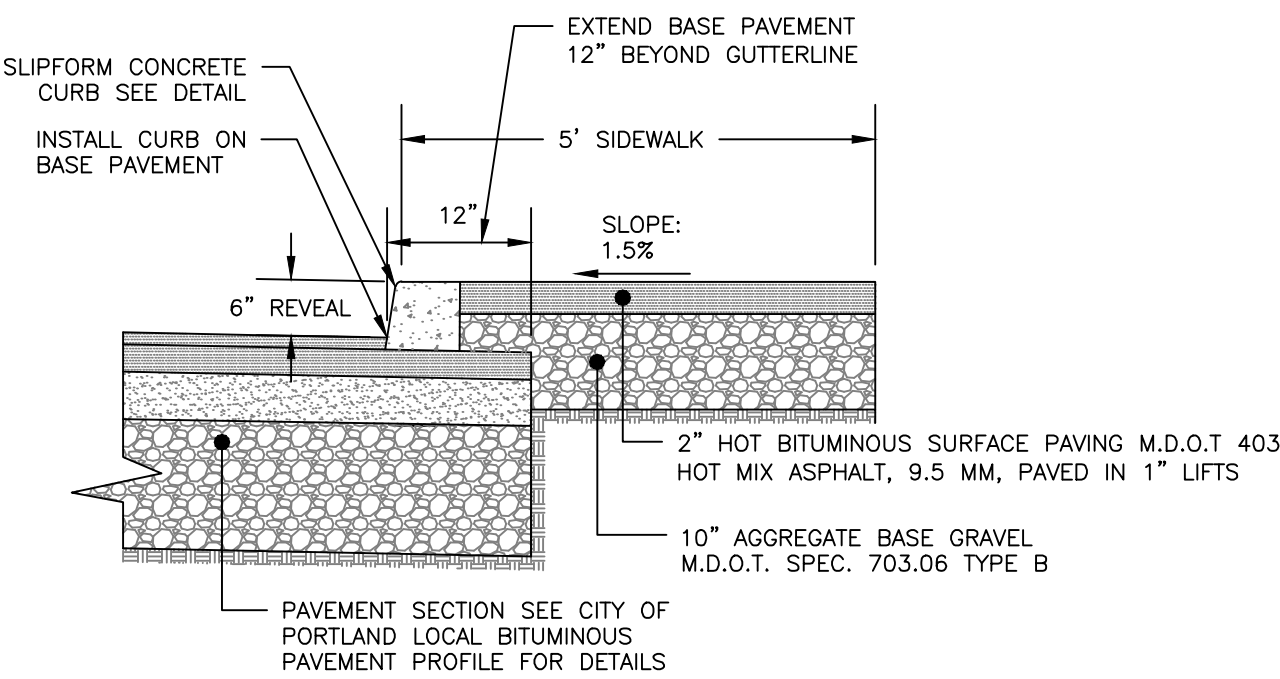
- NOTES:
1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
 2. THE NEW PAVEMENT SECTION SHALL MEET THE CITY OF PORTLAND LOCAL BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM.



PAVEMENT SAWCUT DETAIL

NOT TO SCALE

- NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
 2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.



INTERNAL BITUMINOUS SIDEWALK DETAIL

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

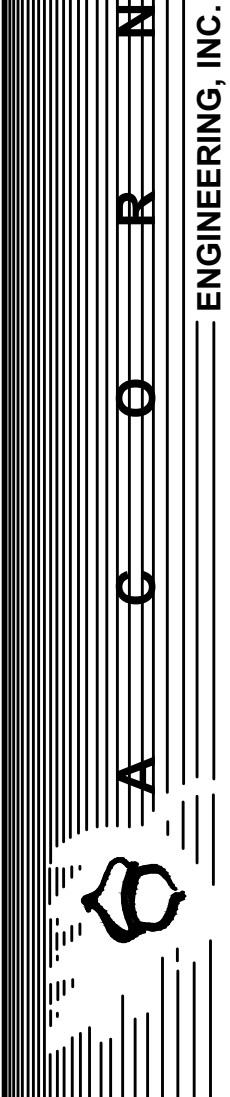
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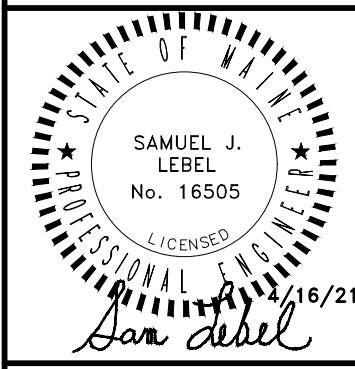
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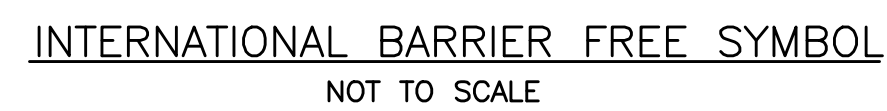
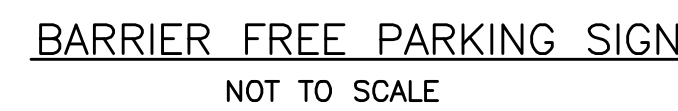


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DESIGNED BY:	SJL
DRAWN BY:	JHG
CHECKED BY:	WHS

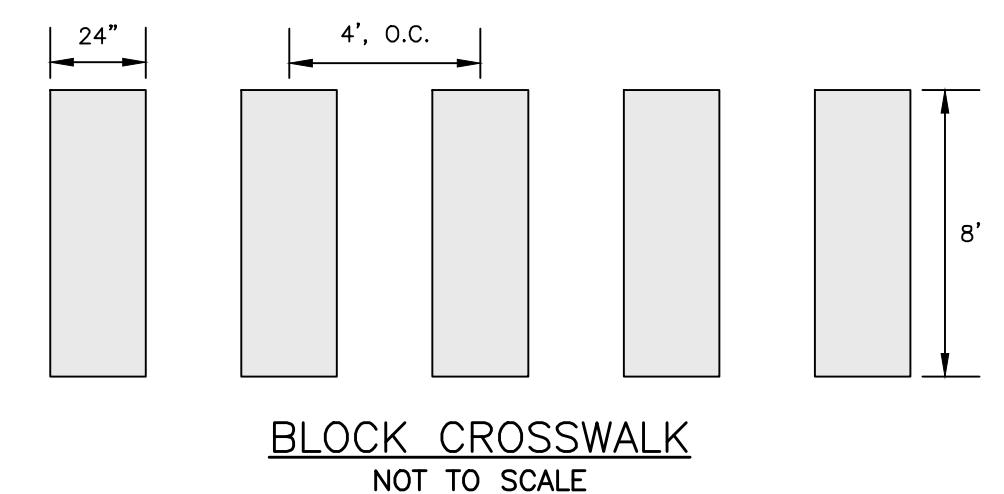
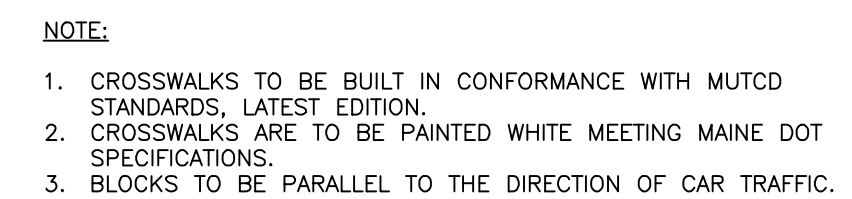
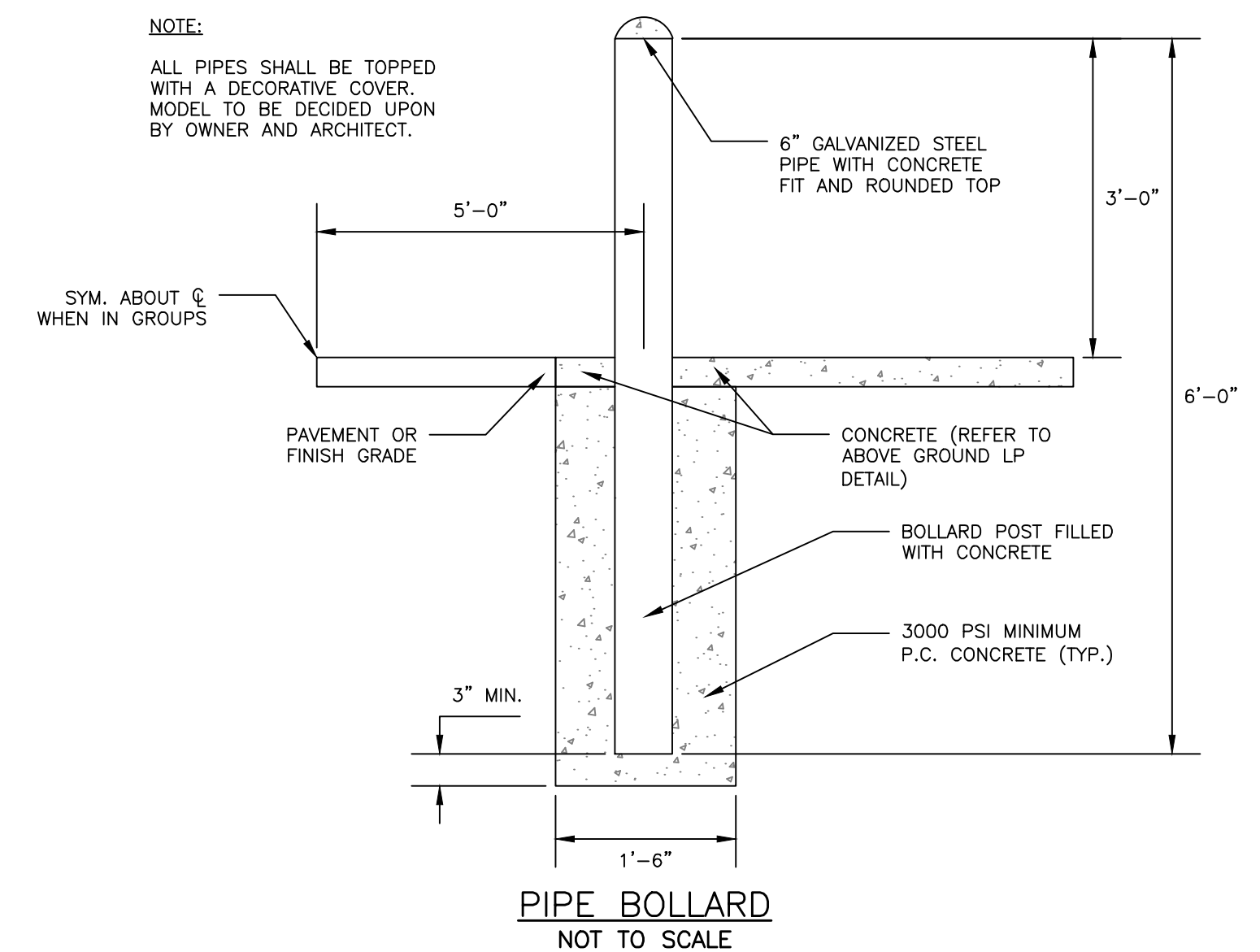
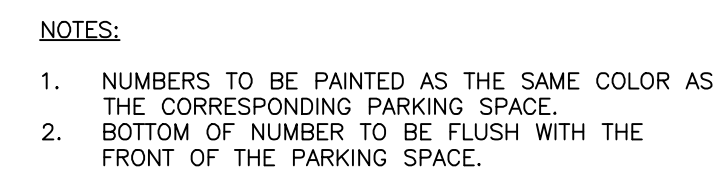
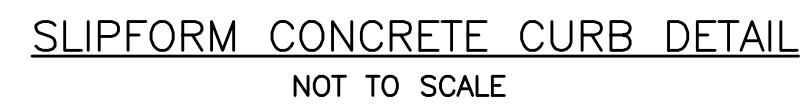
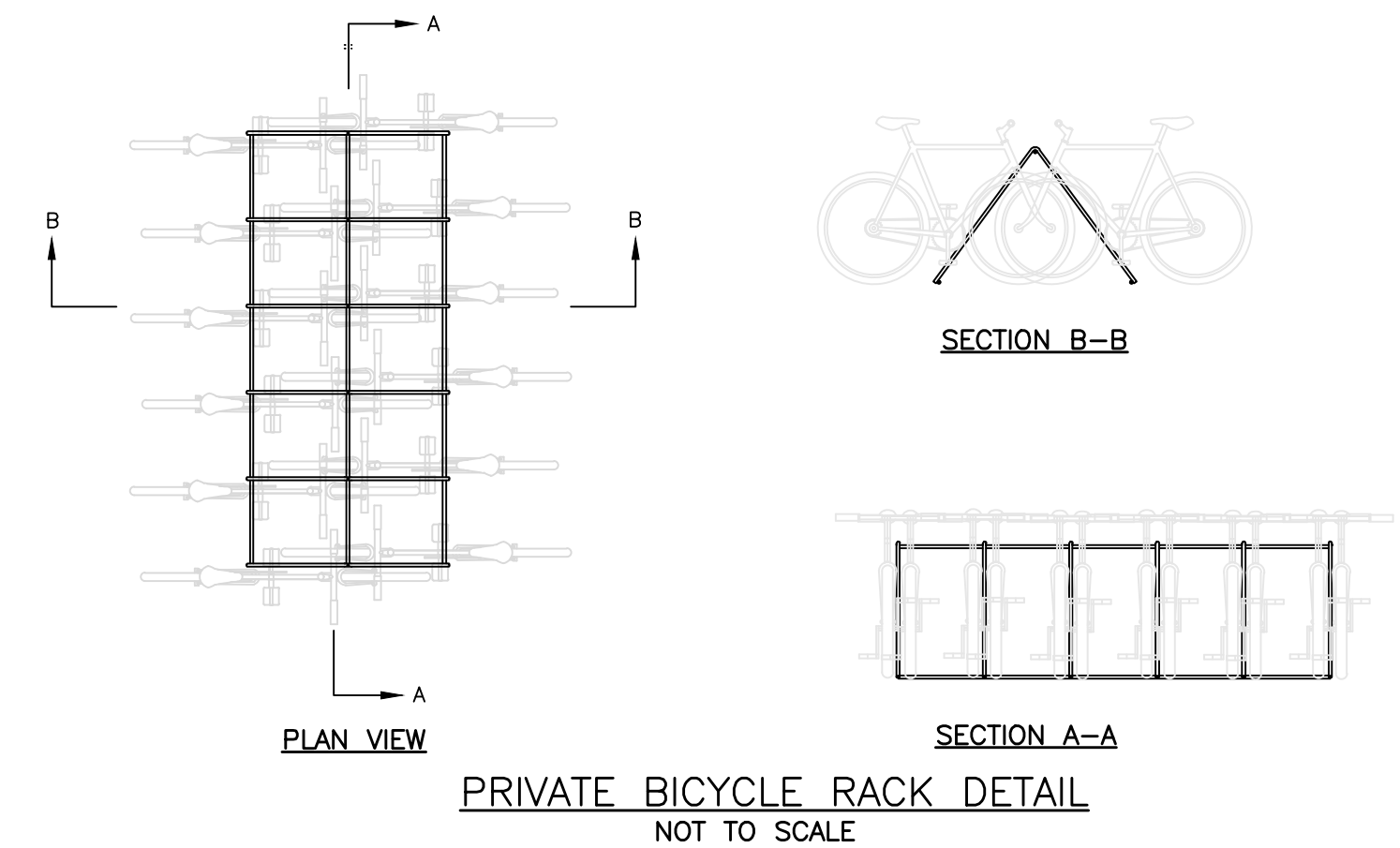


DRAWING NO.
C-40

1. ALL ASPECTS OF RESERVED PARKING SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION
2. SIGN SHALL BE CONSTRUCTED AS SIGN R7-B UNDER THE "PARKING AND STANDING SIGNS AND PLAQUES" (R7 SERIES) WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION. VAN ACCESSIBILITY SHALL BE CONSTRUCTED AS SIGN R7-8a OR R7-8b.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.



- NOTES:
1. BICYCLE RACK SHALL HAVE CAPACITY FOR FOURTEEN BICYCLES.
 2. BICYCLE RACK PARTS SHALL BE OF UNIFORM COLOR AND SHALL BE FINISHED IN ACCORDANCE WITH PRODUCT SPECIFICATION. PER CITY OF PORTLAND TECHNICAL STANDARDS ALL BICYCLE RACKS WITHIN THE RIGHT-OF-WAY SHALL MATCH THE FURNITURE COLOR FOR THAT LOCATION AS DESCRIBED IN THE MUNICIPAL LIVING STANDARDS. IF NO DESIGNATED COLOR FOR THAT AREA EXISTS, BICYCLE RACKS SHALL BE BLACK.
 3. BICYCLE RACK SHALL BE MANUFACTURED WITH MATERIALS AND FINISHES THAT MEET THE INSTALLATION RECOMMENDATIONS, AND SHALL BE INSTALLED WITH A SURFACE MOUNT UNLESS OTHERWISE APPROVED BY ENGINEER.
 4. BICYCLE RACK SHALL BE "DERO EVENT RACK", AS MANUFACTURED BY DERO BIKE RACKS.
 5. MANUFACTURER'S RECOMMENDED OFFSETS SHALL BE ENFORCED WHERE POSSIBLE.



PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

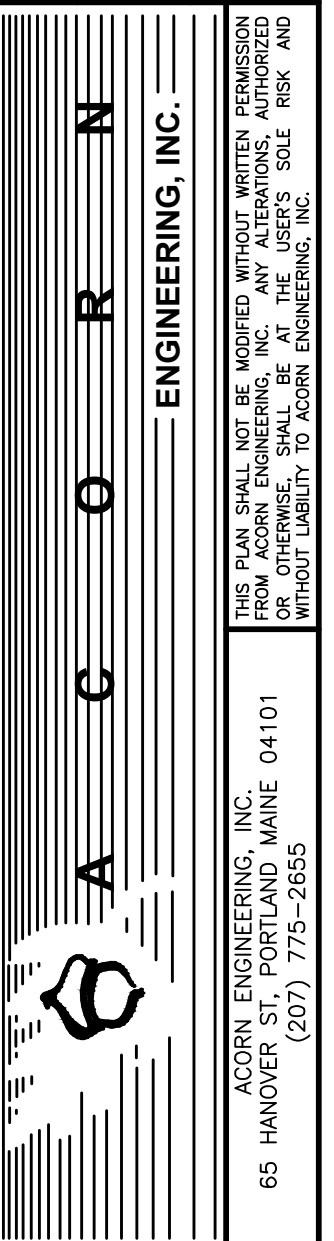
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SITE DETAILS - 2

WINCHESIER WOODS APARTMENTS

94 SOUTH STREET, YARMOUTH, ME 04096

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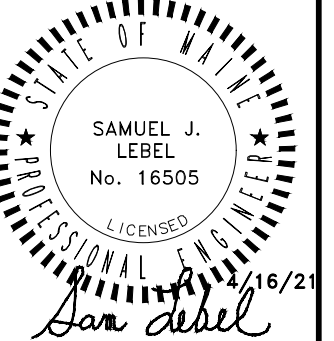
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DESIGNED BY: SJL

DRAWN BY: JHG

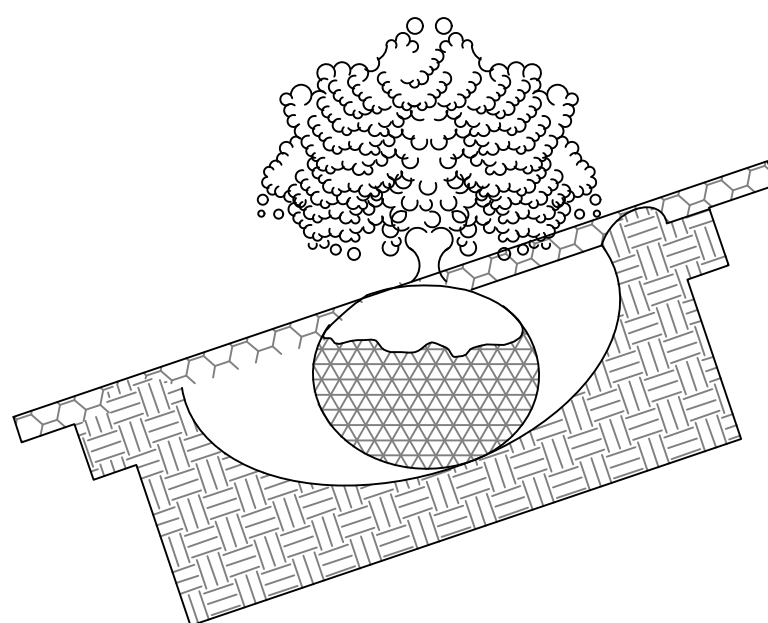
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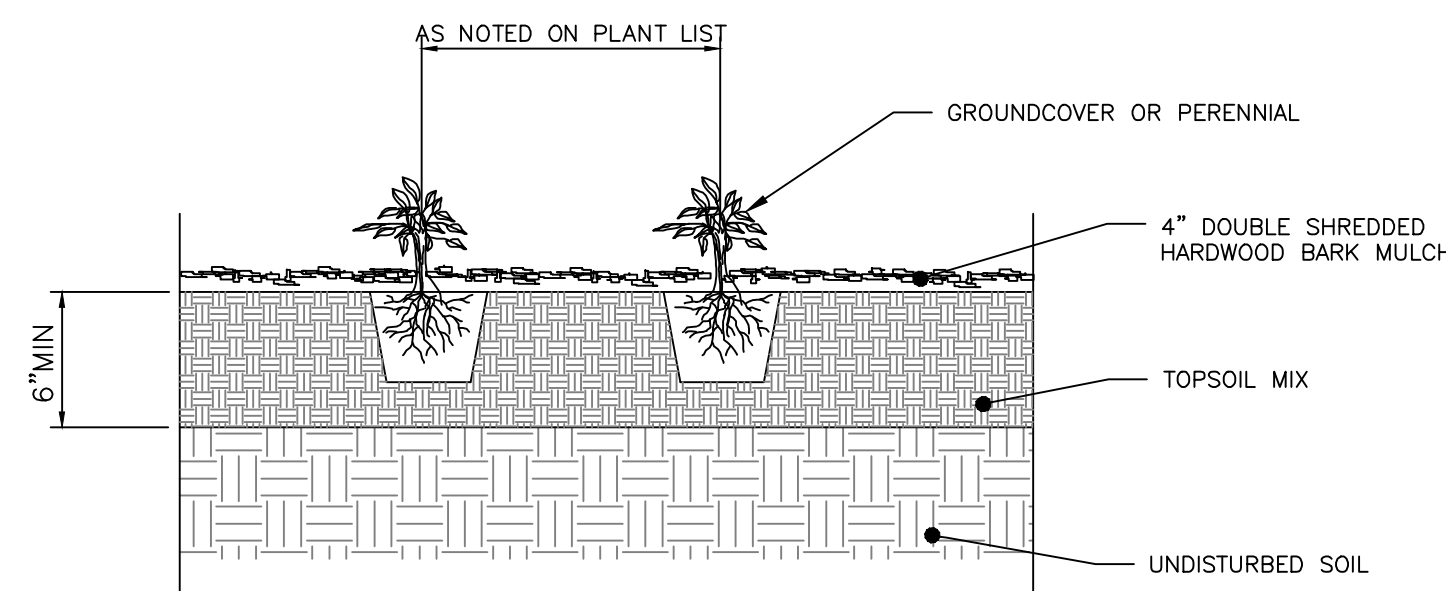
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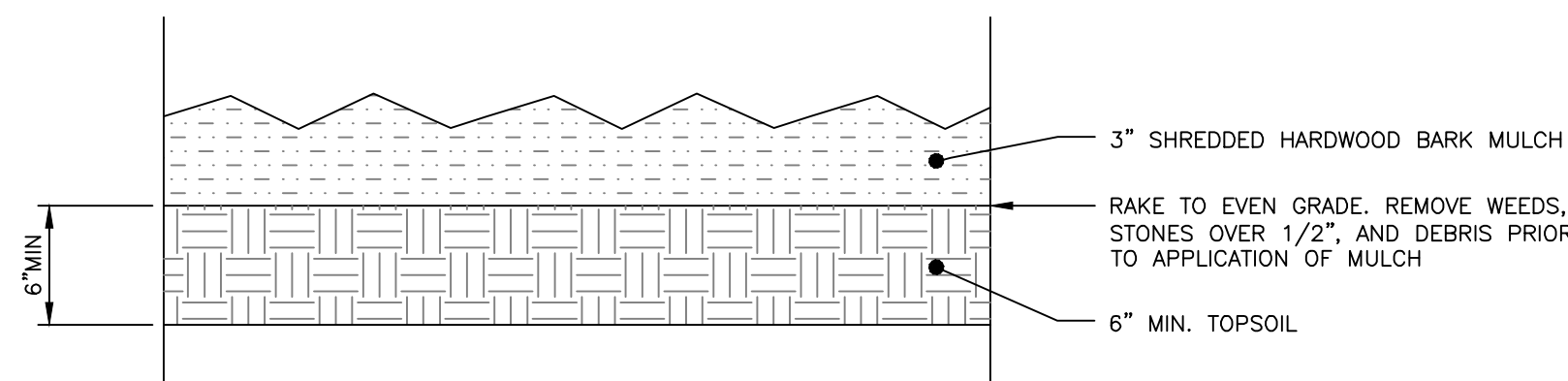
1. DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SEED ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.
2. BACKFILL WITH TOPSOIL, FIRM, FRAGMENT FREE. THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 6.0 NOR MORE THAN 8.0.
3. CONTAINER GROWN STOCK - REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.
4. BACKFILL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE THE FIRST TEST.



TYPICAL PLANTING
NOT TO SCALE

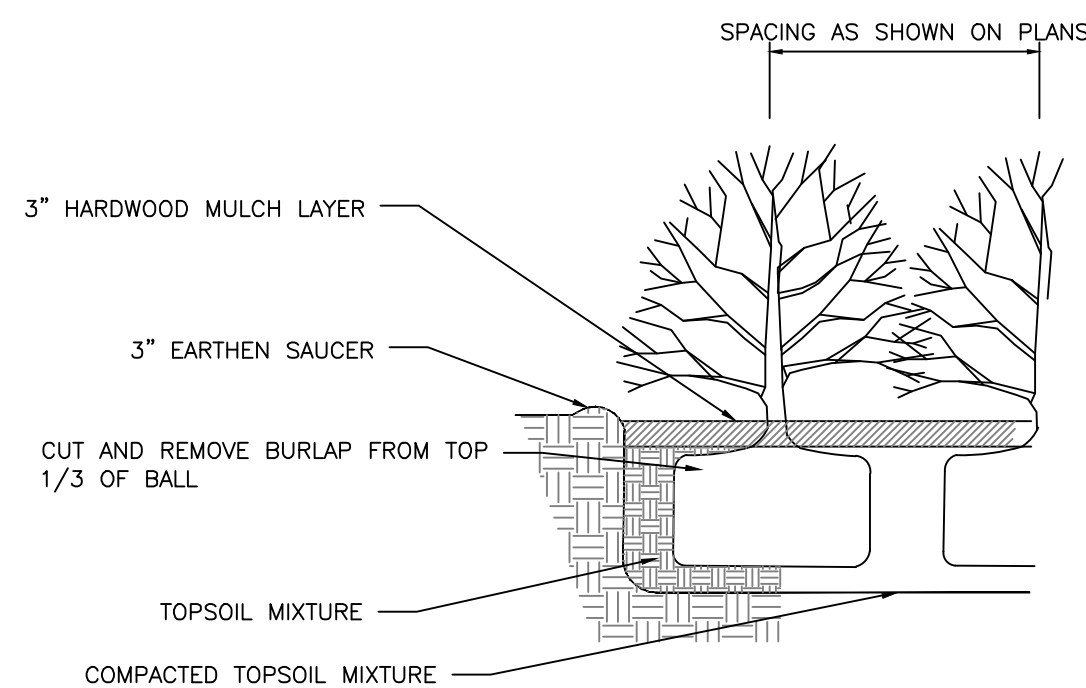


PERENNIAL PLANTING DETAIL
NOT TO SCALE

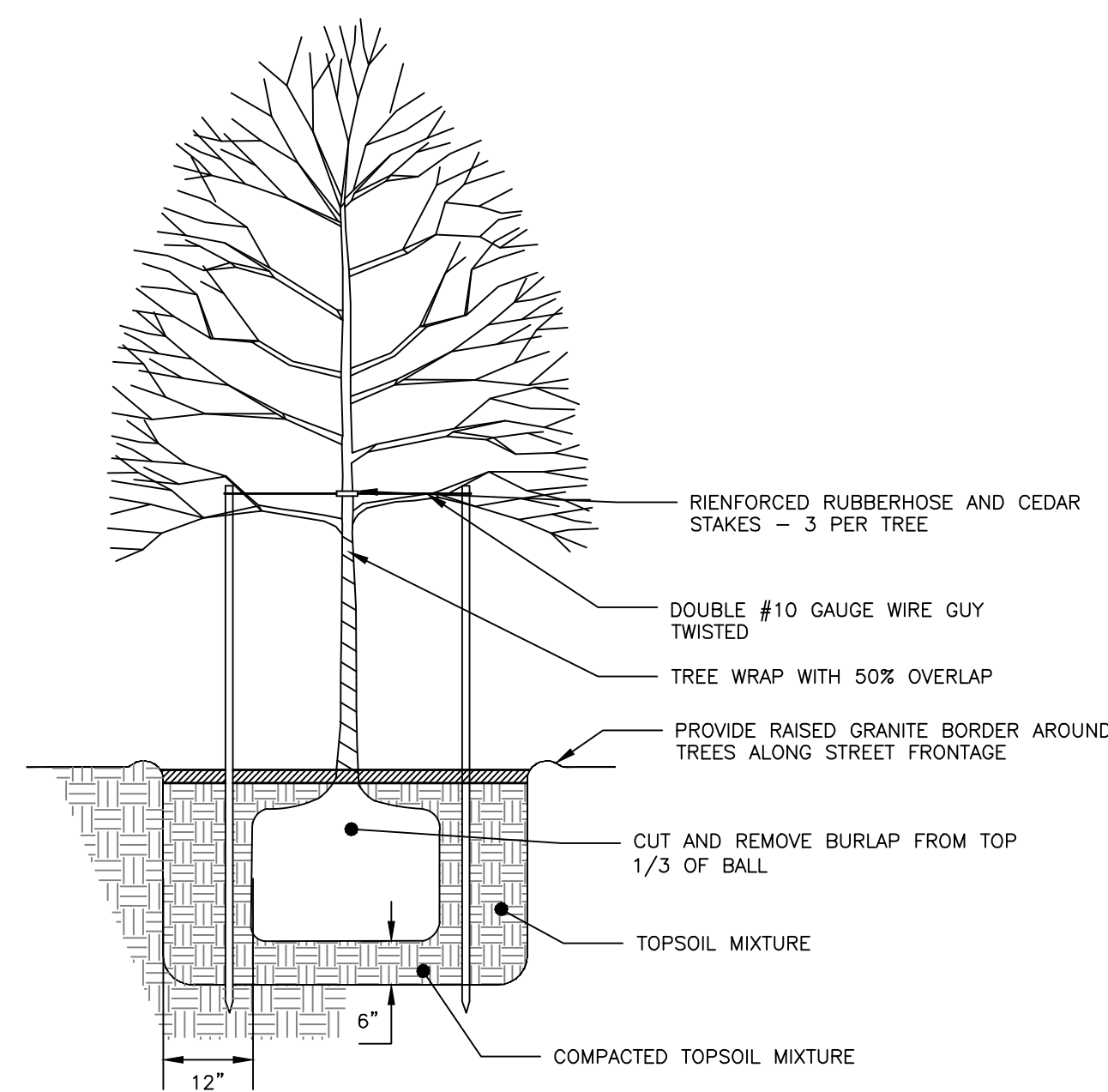


BARK MULCH DETAIL
NOT TO SCALE

1. ALL PLANT SELECTION AND INSTALLATION WILL BE IN COMPLIANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL (SECTION 4).
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING REED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
6. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
7. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.
8. NEW TREES TO BE INSTALLED WITH A SLOW RELEASE WATERING BAG.
9. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS FOR AT LEAST 30 DAYS FOLLOWING INSTALLATION. FOLLOWING THIS PERIOD, THE LANDOWNER OR PROPERTY MANAGEMENT SHALL BE RESPONSIBLE FOR CONTINUED WATERING AND MAINTENANCE. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING FINAL INSTALLATION.
10. ALL PROPOSED PLANTS SHALL BE LOCATED AS SHOWN ON THE PLANS. CONTRACTOR TO NOTIFY ENGINEER WHEN PLANTINGS HAVE BEEN MOBILIZED ON SITE. ENGINEER TO INSPECT AND ACCEPT OR REJECT ANY SPECIMENS ON THE BASIS OF APPARENT HEALTH, HARDINESS, AND CONFORMANCE WITH THE PLANTING SCHEDULE. REJECTED SPECIMENS ARE TO BE REJECTED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER. ACCEPTANCE DOES NOT WAIVE THE REQUIRED ONE YEAR PLANTING WARRANTY.



SHRUB PLANTING DETAIL
NOT TO SCALE



TREE PLANTING DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

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LANDSCAPING DETAILS

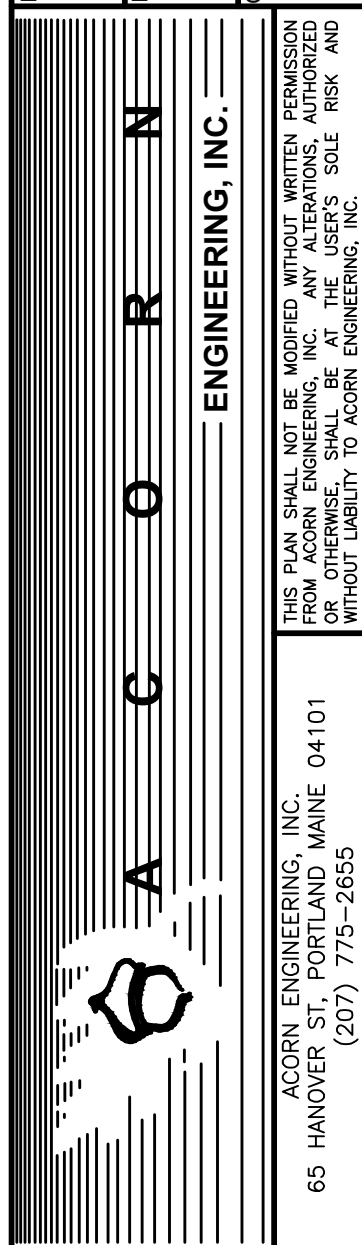
WINCHESTER WOODS APARTMENTS

HAMMOND HOUSE, LLC
94 SOUTH STREET, YARMOUTH, ME 04096

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CLIENT:



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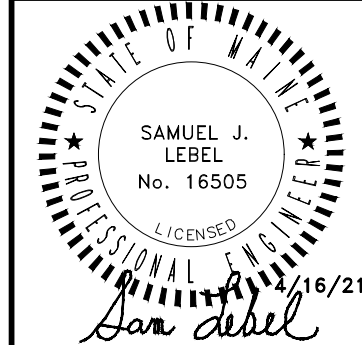
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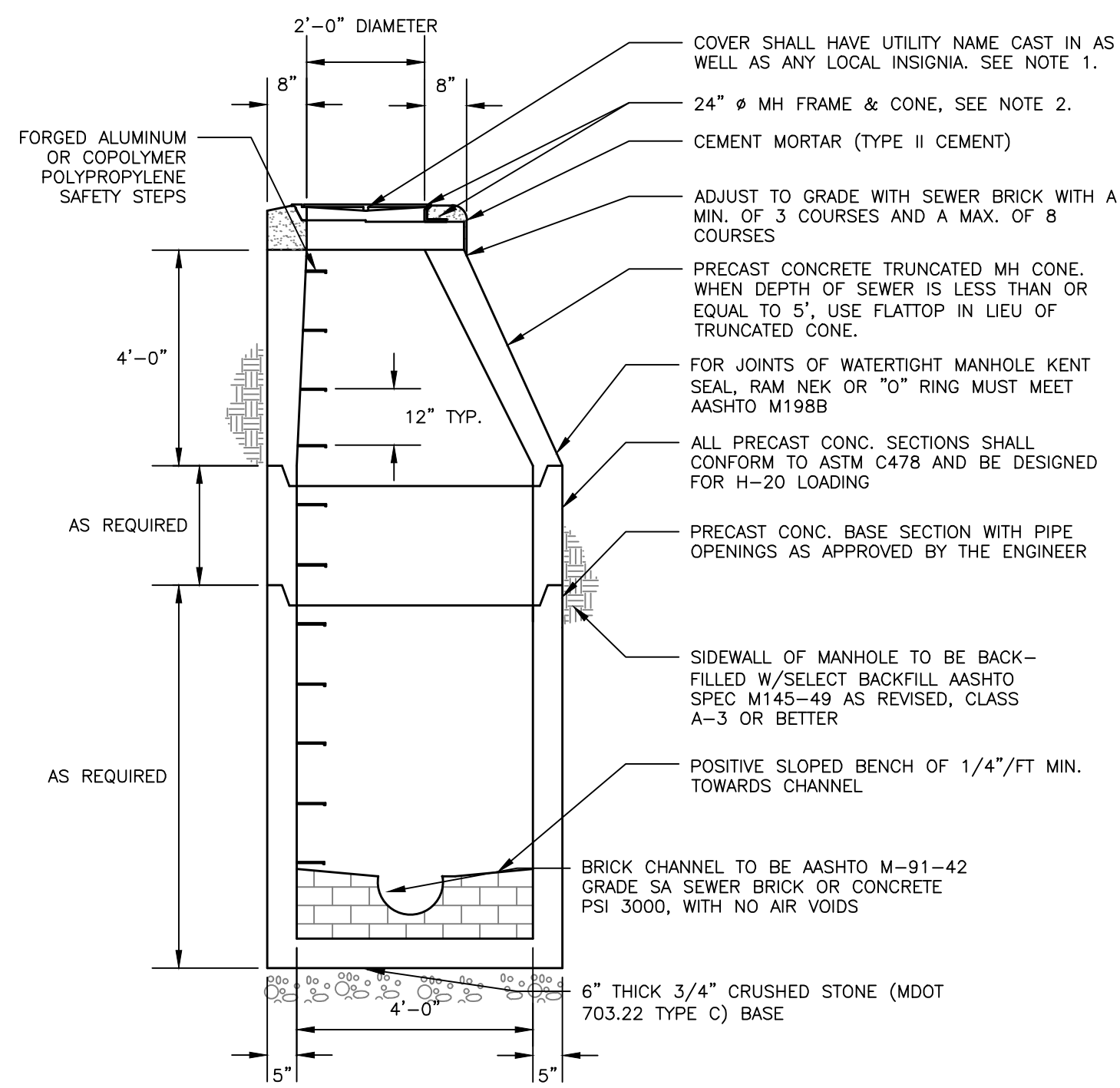
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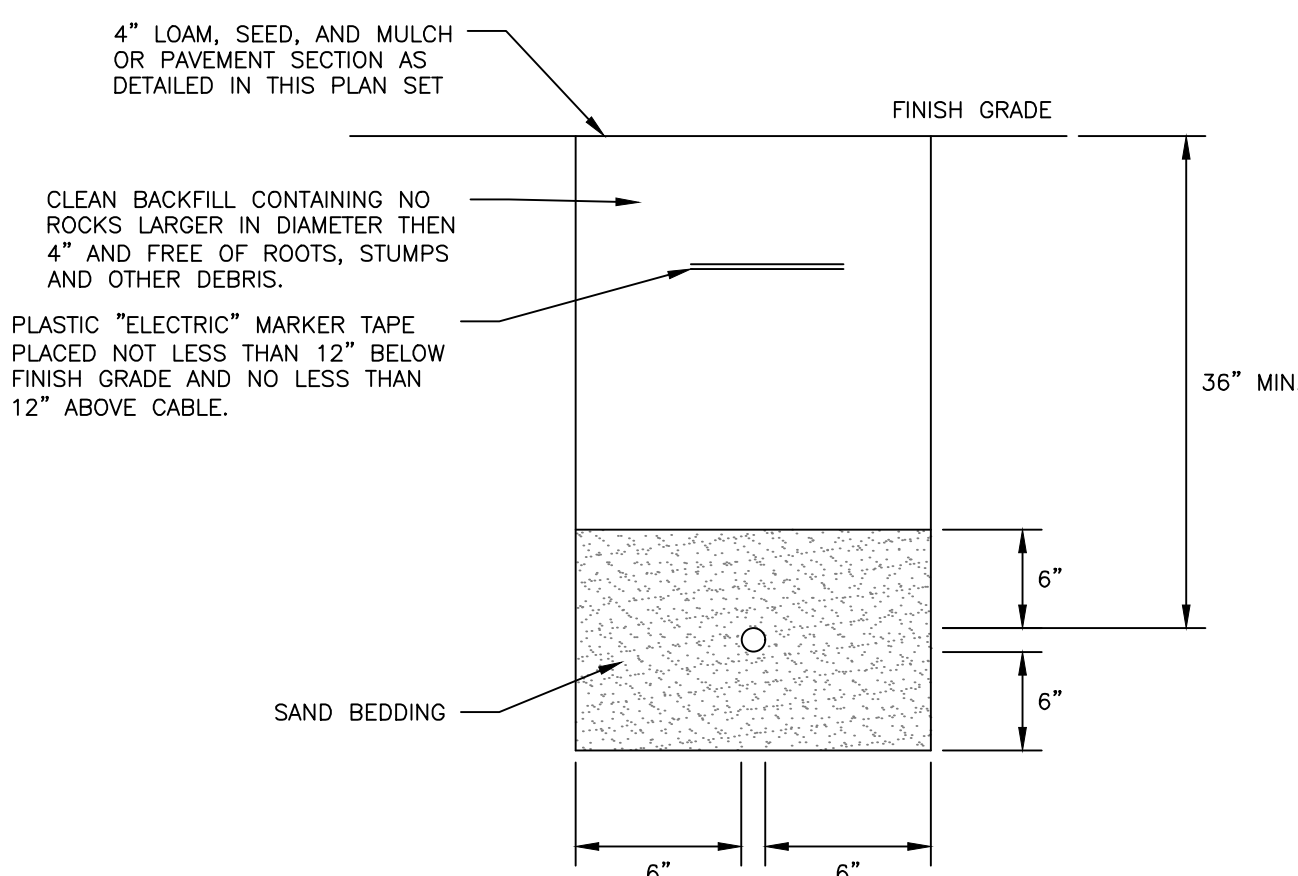
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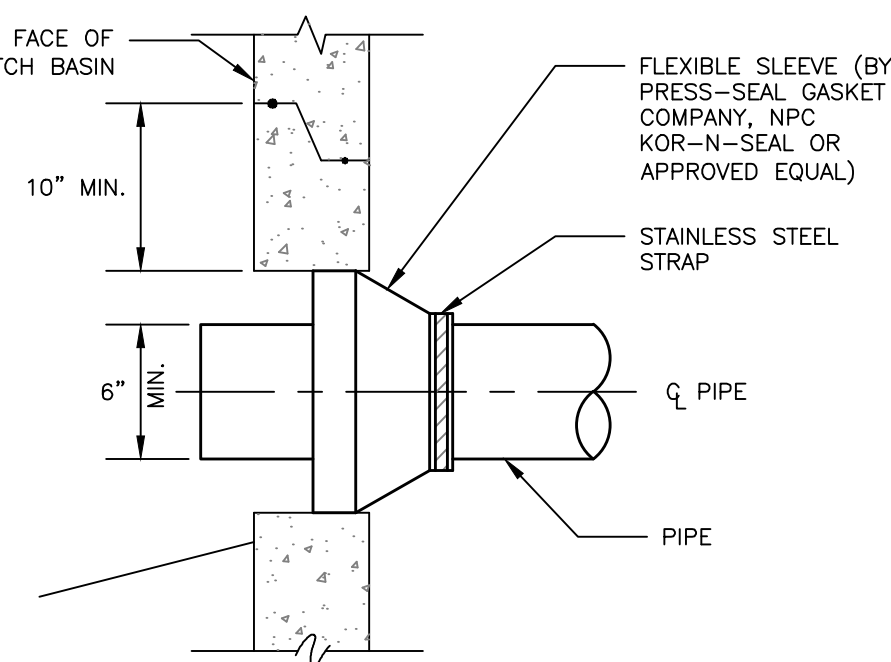
1. MANHOLE COVER FOR SEWER MANHOLE SHALL BE ENGRAVED "SEWER", AND SHALL BE EITHER ITEM # 2160A AS MANUFACTURED BY EAST JORDAN CO. OR ITEM # 14960002 AS MANUFACTURED BY NEEHAH FOUNDRY. MANHOLE COVER FOR STORM SEWER SHALL BE ENGRAVED "DRAIN", AND SHALL BE EITHER ITEM # 2160A AS MANUFACTURED BY EAST JORDAN CO. OR ITEM # 14960003 AS MANUFACTURED BY NEEHAH FOUNDRY.
2. MANHOLE FRAME SHALL BE EITHER ITEM # 14960001, AS MANUFACTURED BY NEEHAH FOUNDRY, OR ITEM # 1960Z, AS MANUFACTURED BY EAST JORDAN CO.
3. WITHIN CITY OF PORTLAND ROW, STORM DRAIN MANHOLE SHALL CONFORM WITH "STANDARD PRECAST SEWER MANHOLE DETAIL", WITH THE EXCEPTION THAT THE COVER SHALL BE MARKED AS "DRAIN". REFER TO CITY OF PORTLAND TECHNICAL MANUAL, SECTION 2 - SANITARY SEWER AND STORM DRAIN, FIGURE II-1
4. SUBMITTAL REQUIRED FOR MANHOLES, MANHOLE FRAMES & MANHOLE COVERS



NOT TO SCALE

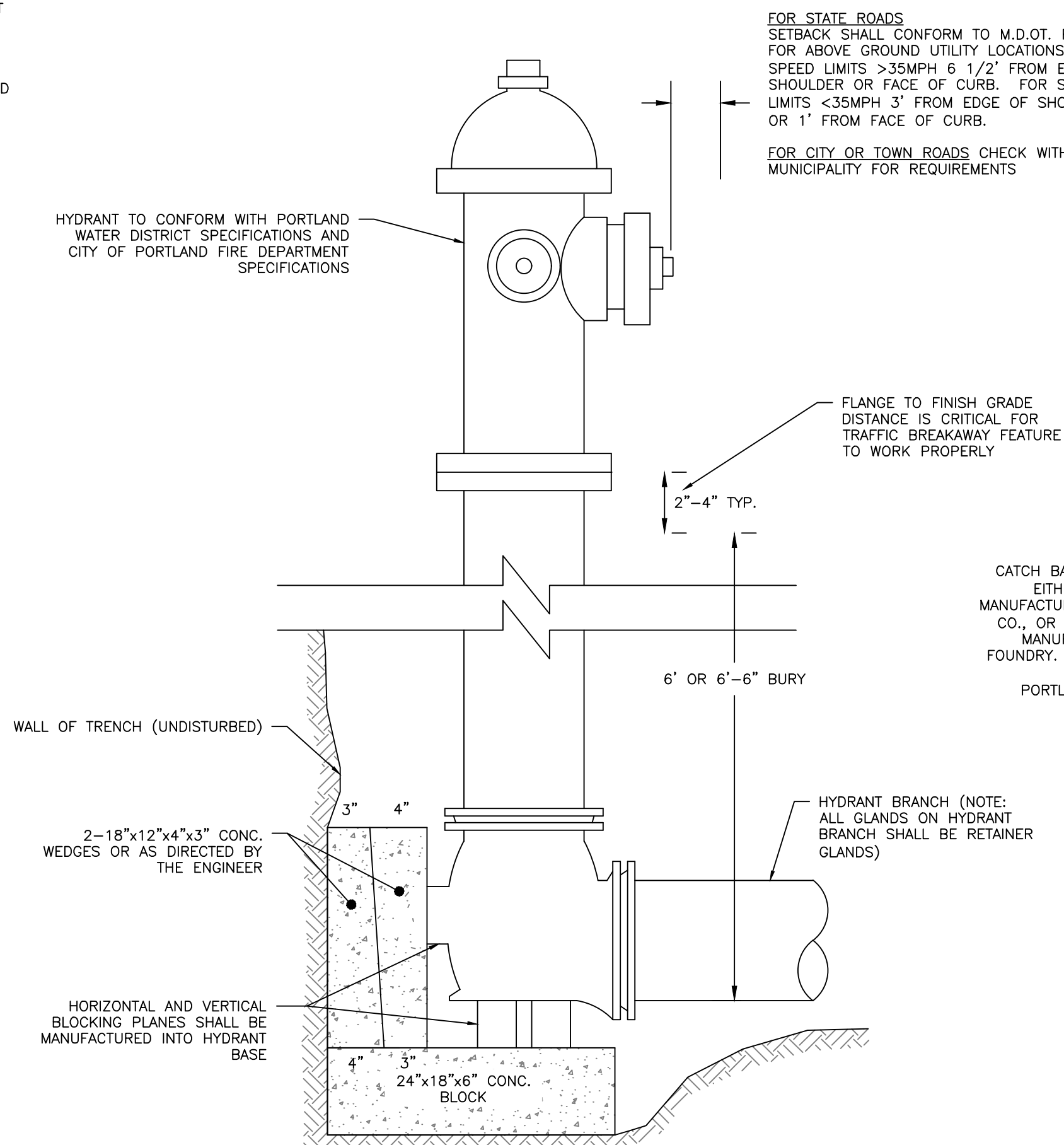


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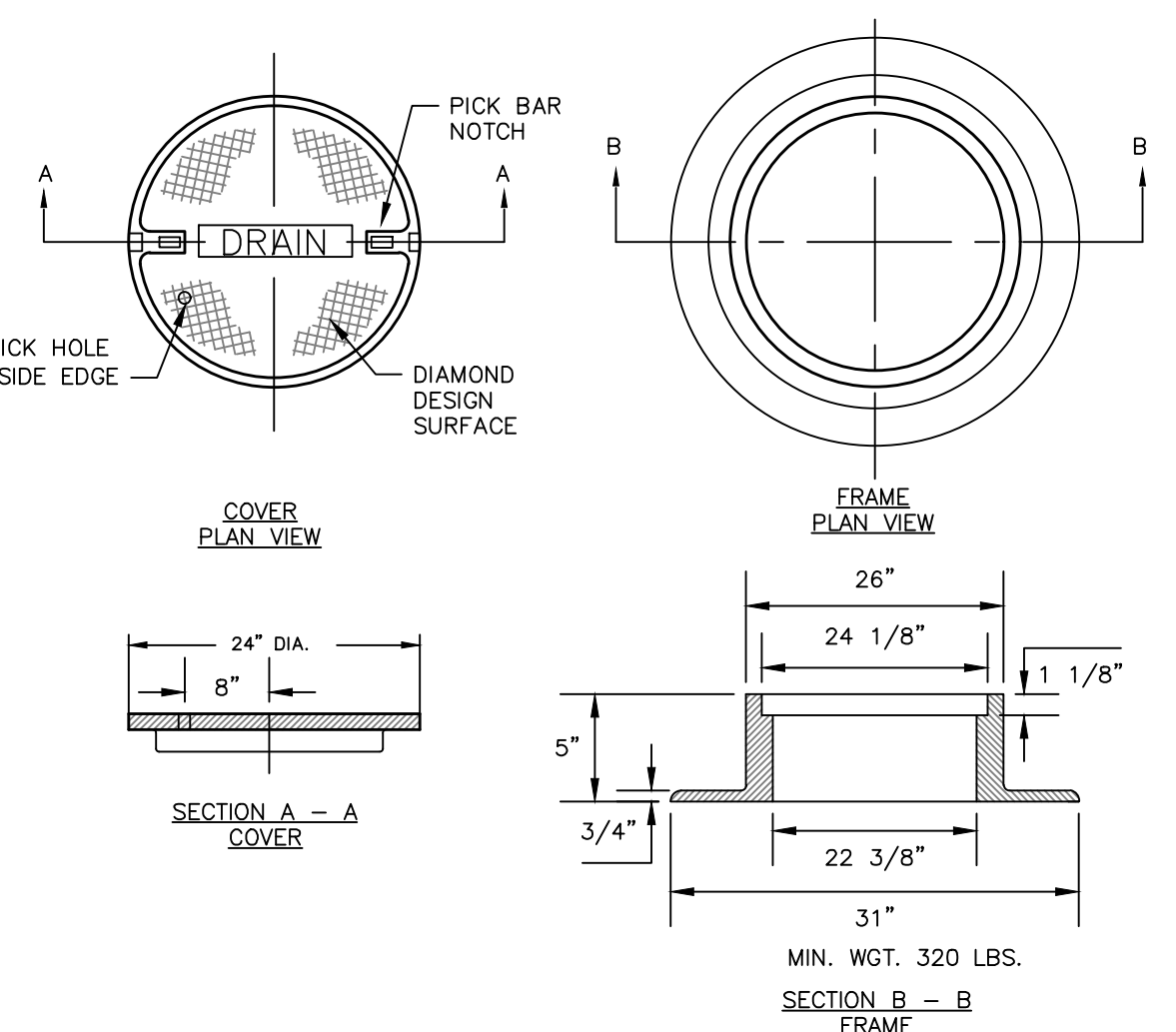


NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL
NOT TO SCALE

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLD AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
7. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
8. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
9. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
10. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CATCH BASIN HOOD.
11. HYDROCARBON ABSORBENT BOOM IN ALL CATCH BASINS REQUIRED BY CONTRACTOR FOLLOWING PAVING. OWNER TO MAINTAIN/REPLACE FOR 1-YEAR FOLLOWING FINAL PAVEMENT.

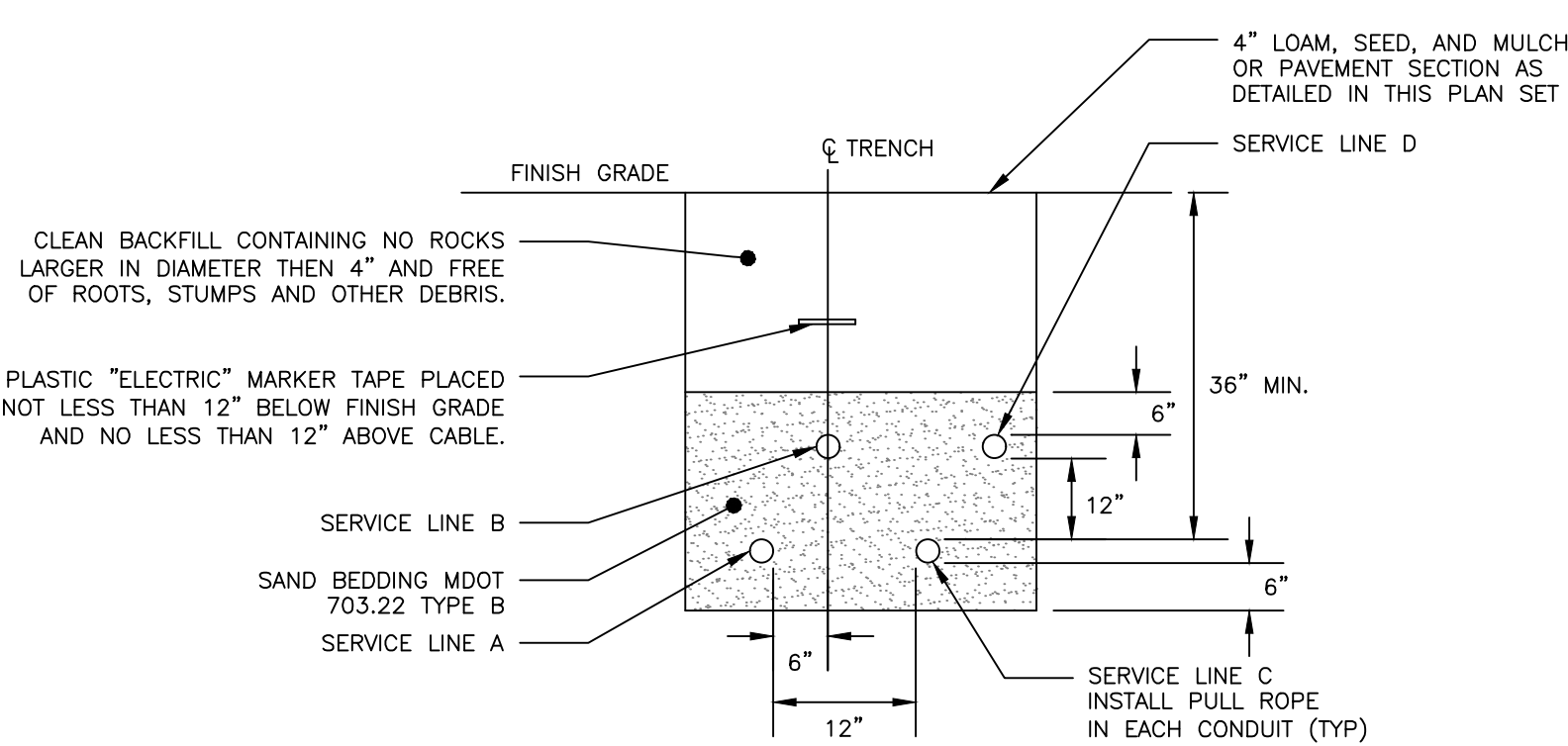


NOT TO SCALE



CAST IRON MANHOLE COVER AND FRAME
NOT TO SCALE

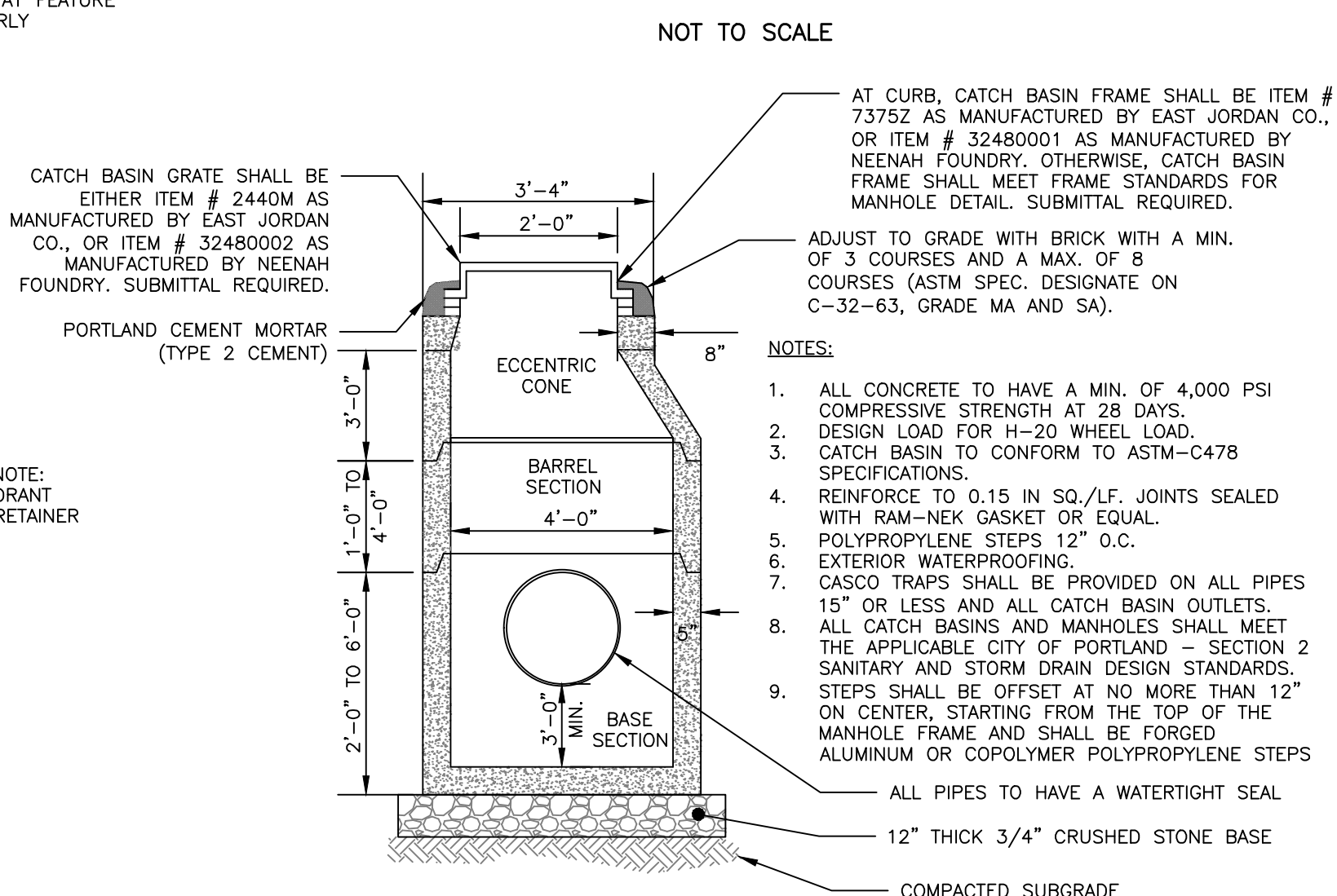
- FOR STATE ROADS
SETBACK SHALL CONFORM TO M.D.OT. POLICY
FOR ABOVE GROUND UTILITY LOCATIONS. FOR
SPEED LIMITS >35MPH 6 1/2' FROM EDGE OF
SHOULDER OR FACE OF CURB. FOR SPEED
LIMITS <35MPH 3' FROM EDGE OF SHOULDER
OR 1' FROM FACE OF CURB.
- FOR CITY OR TOWN ROADS CHECK WITH
MUNICIPALITY FOR REQUIREMENTS



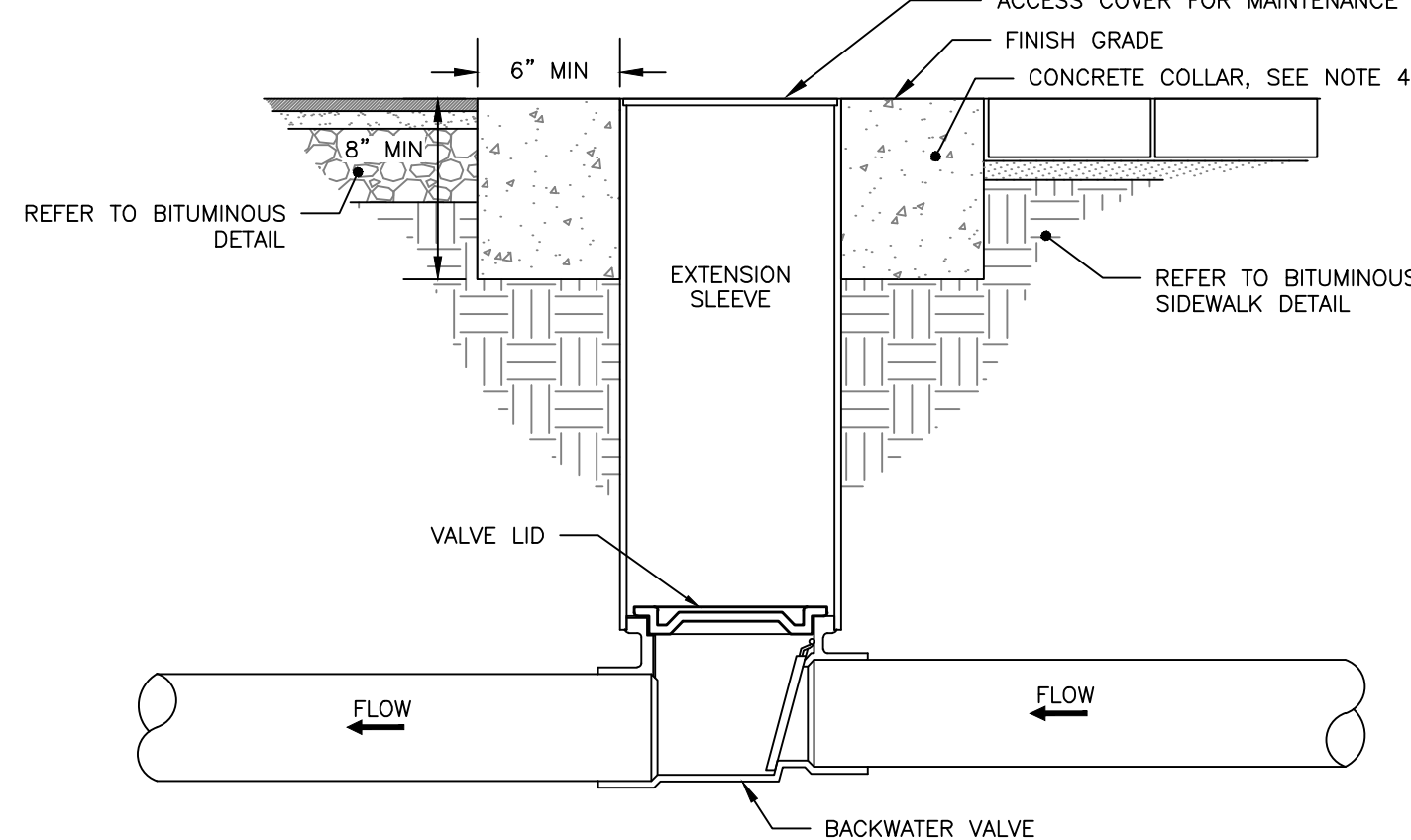
CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	2-5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	2-4"	SCHEDULE 40 PVC	COMMUNICATION	-
C	2-4"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	IF REQUIRED
D	2-4"	SCHEDULE 40 PVC	CABLE	-

1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.
3. CONDUITS WITHIN THE CITY RIGHT-OF-WAY SHALL BE ENCASED IN CONCRETE.

UTILITY TRENCH – PRIMARY AND SECONDARY POWER,
TELEPHONE, AND CABLE



NOT TO SCALE

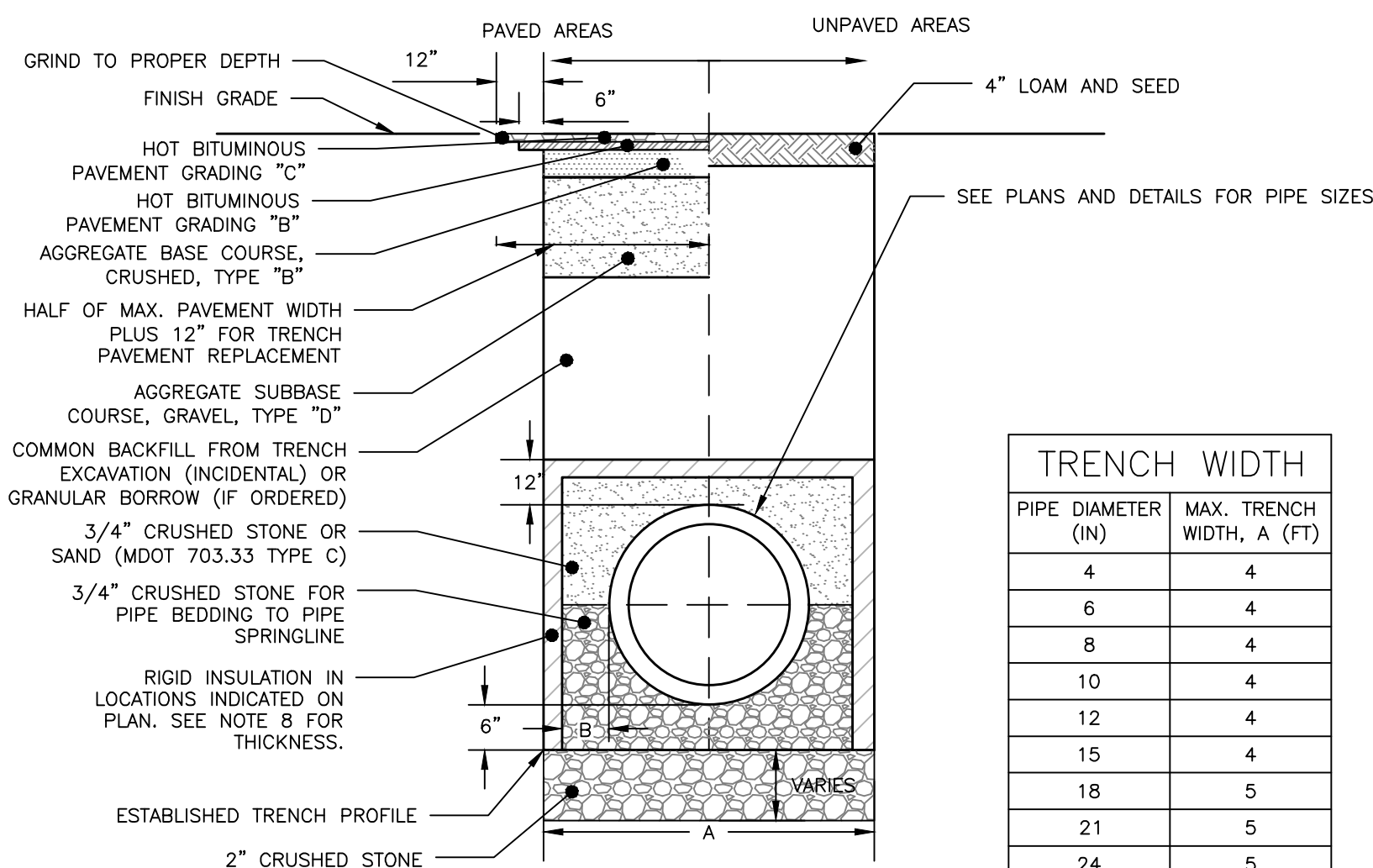


- NOTES:**
1. ALL MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK-LOCK, LOCATED 8" FROM THE CENTER OF THE COVER
 2. ALL SANITARY AND STORMWATER/DRAIN MANHOLE COVERS SHALL BE 24" X 5".
 3. ALL SANITARY MANHOLE COVERS AND SHALL HAVE "SEWER" CAST INTO THE COVER.
 4. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
 5. APPROVED MANHOLE FRAMES:
 1. EAST JORDAN = 1690Z
 2. NEENAH = R-1496
 3. OR APPROVED EQUAL
 6. APPROVED MANHOLE COVERS
 1. EAST JORDAN = 2160A
 2. NEENAH = R-1496
 3. OR APPROVED EQUAL

- NOTES:**
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
 2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
 3. VALVE SHALL BE INSTALLED WITH A VALVE BOX AND COVER TO PROVIDE EASY ACCESS AND MAINTENANCE. VALVE COVER SHALL STATE "SEWER" ON LID FLUSH TO SURFACE. REFER TO VALVE BOX COVER DETAIL FOR ADDITIONAL INFORMATION.
 4. CONCRETE COLLAR AT A MINIMUM 24-HOUR COMPRESSIVE STRENGTH OF 3,000 PSI.

NOT TO SCALE

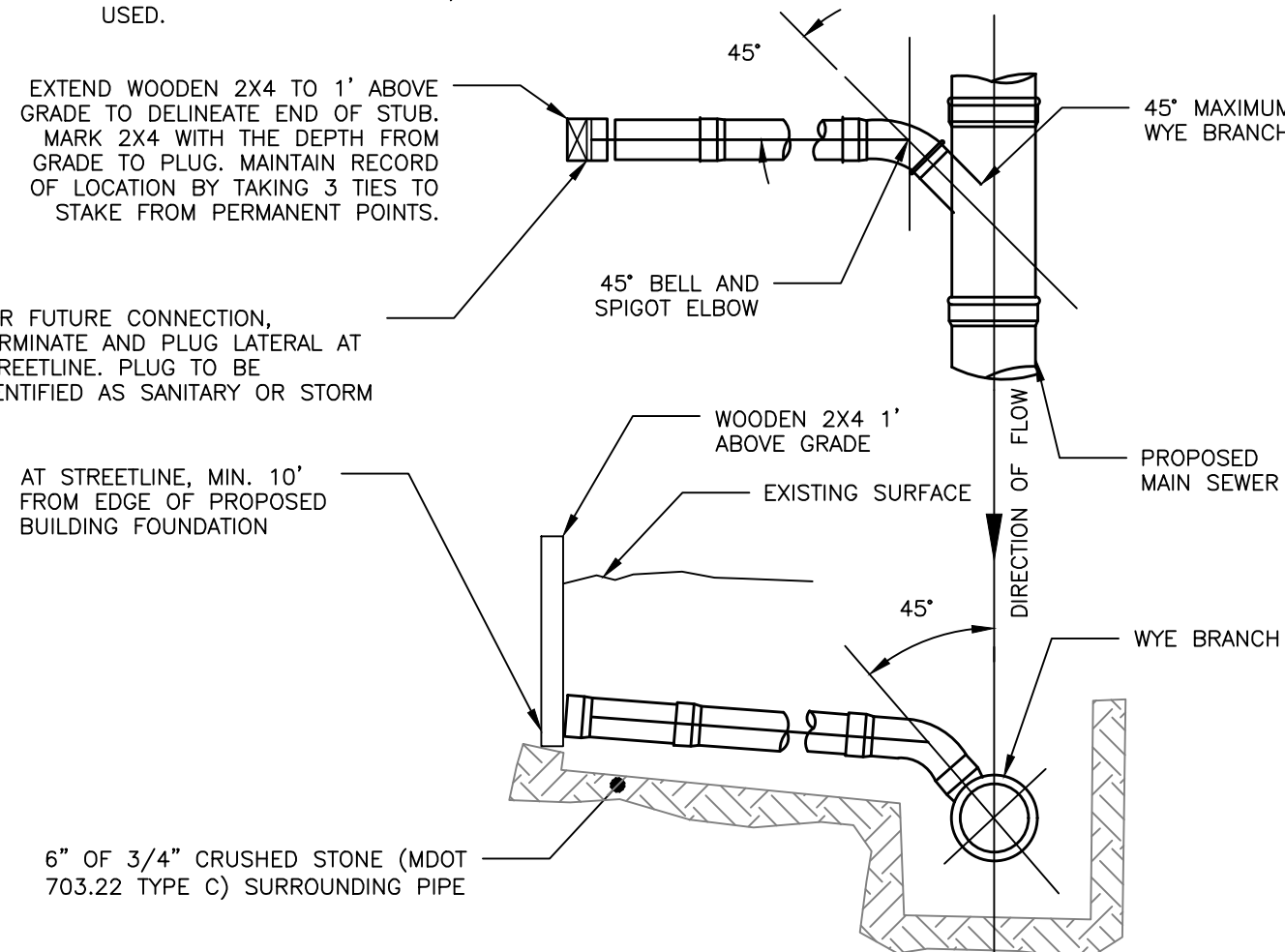
1. ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II-2.
3. BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF. SD) SHALL BE ORIENTED UP.
5. ALL STORM DRAINS SHALL BE PVC SD 36 IN PS-46 (RING OR) OR IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL - SECTION 2 - SANITARY SEWER AND STORM DRAIN - PART 2.5.2
6. PAVE AREAS, EXISTING OR NEW, SHALL BE HOT MIX ASPHALT TO MEET THE REQUIREMENTS OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
7. THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND R.O.W.
8. STORM DRAIN COVER BETWEEN 2" AND 3" SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3" AND 4" SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
9. DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSE SHALL BE DETERMINED BY STREET CLASSIFICATION.
10. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
11. DIMENSION C IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING QUANTITIES UNDER GRADULAR BORROW, CRUSHED STONE, STRUCTURED SAND, EXCAVATION, AND NATURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER, D, AS SET FORTH IN THE TABLE BELOW.



- ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
 - PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
 - PVC RING TYPE SEWER PIPE MEETING ASTM F 789
 - DUCTILE IRON PIPE (DIP)
 - ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
 - ADS SANITITE HP MIN. PS-46

NOT TO SCALE

- NOTES:**
1. LOCATION WITH WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.
 2. SITE CONTRACTOR TO COORDINATE CONNECTION OF SEWER LATERAL TO HOUSEHOLD PLUMBING WITH ARCHITECTURAL CONTRACTOR
 3. CONNECTION OF PROPOSED SEWER LATERAL TO HOUSEHOLD PLUMBING SHOULD INCORPORATE USE OF SIMILAR PIPE MATERIALS. IN THE CASE OF DISSIMILAR PIPES BEING USED, A FERNCO FLEXIBLE COUPLING SHALL BE USED.



NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

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UTILITY DETAILS - 1

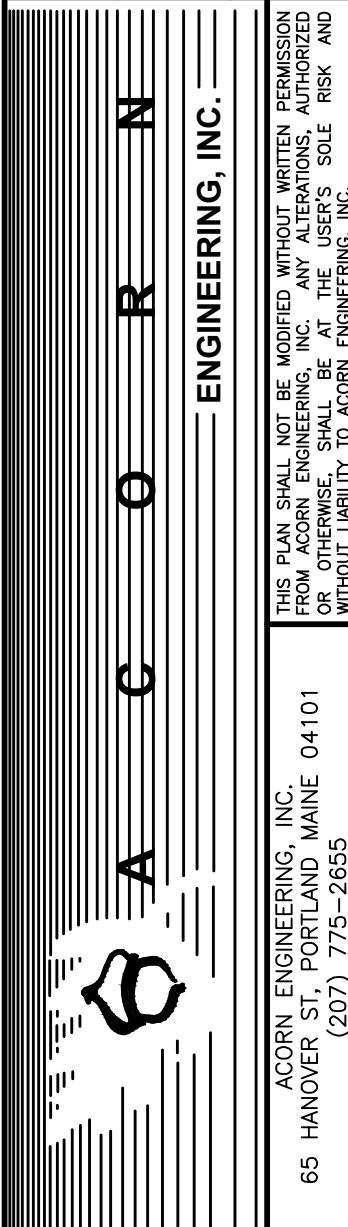
WINCHESTER WOODS APARTMENTS

HAMMOND HOUSE, LLC
94 SOUTH STREET, YARMOUTH, ME 04096

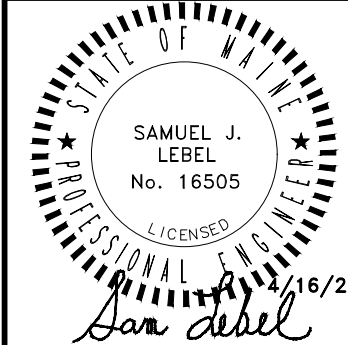
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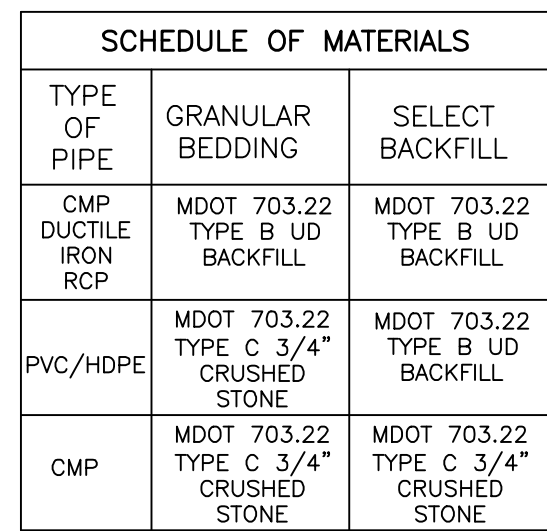


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SCALE:	NTS
DESIGNED BY:	SJL
DRAWN BY:	JHG
CHECKED BY:	WHS



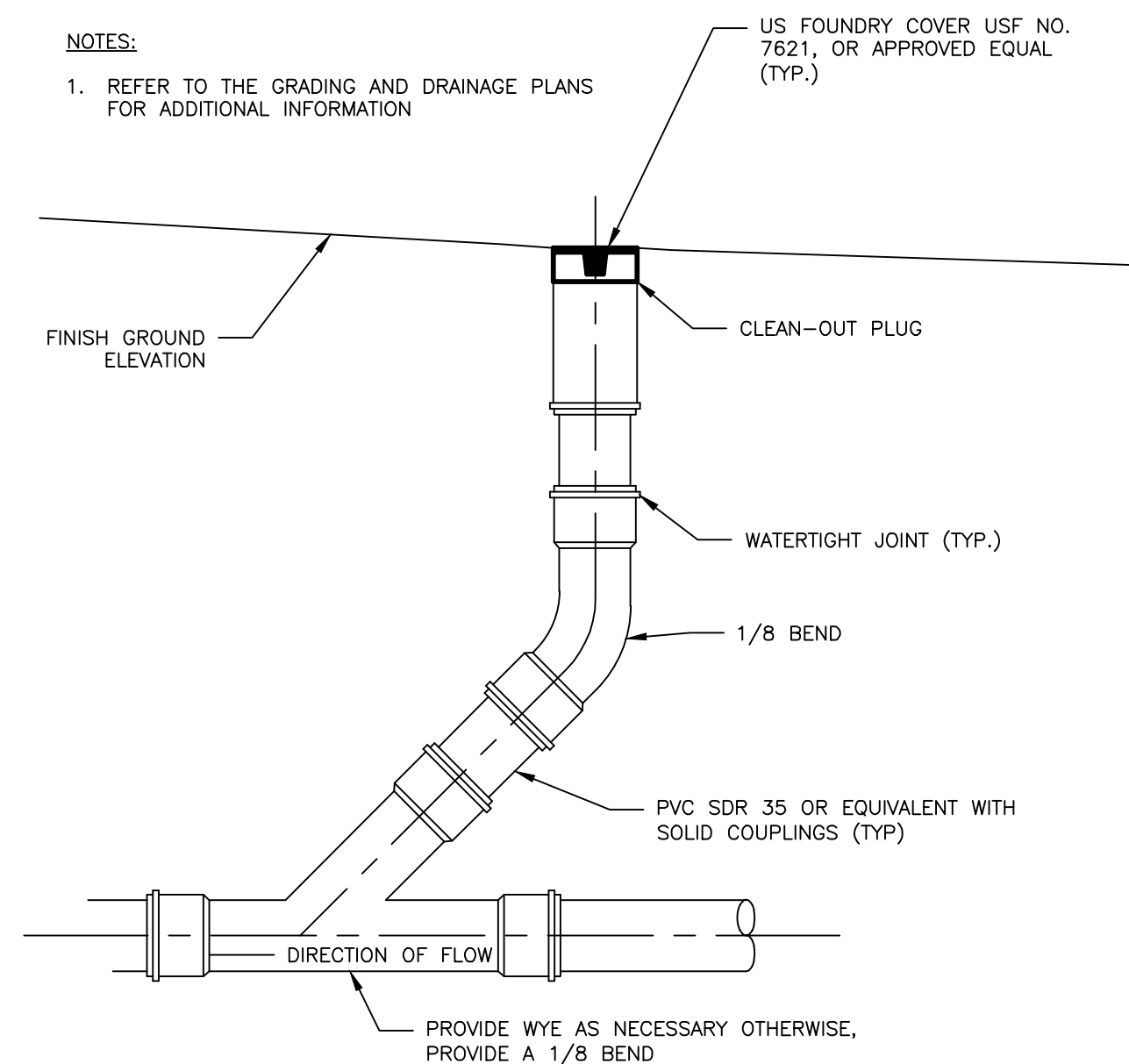
DRAWING NO.

C-43

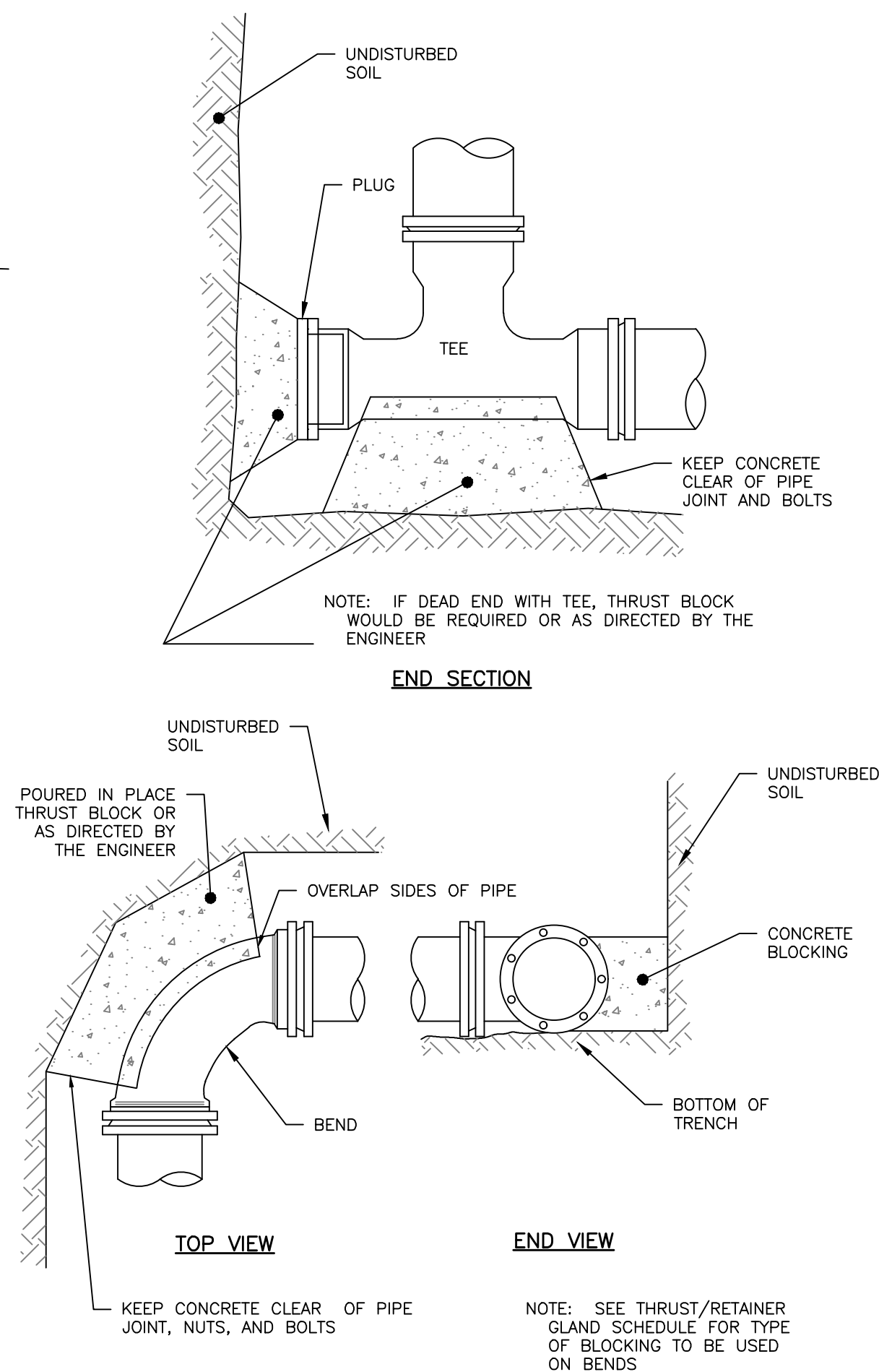


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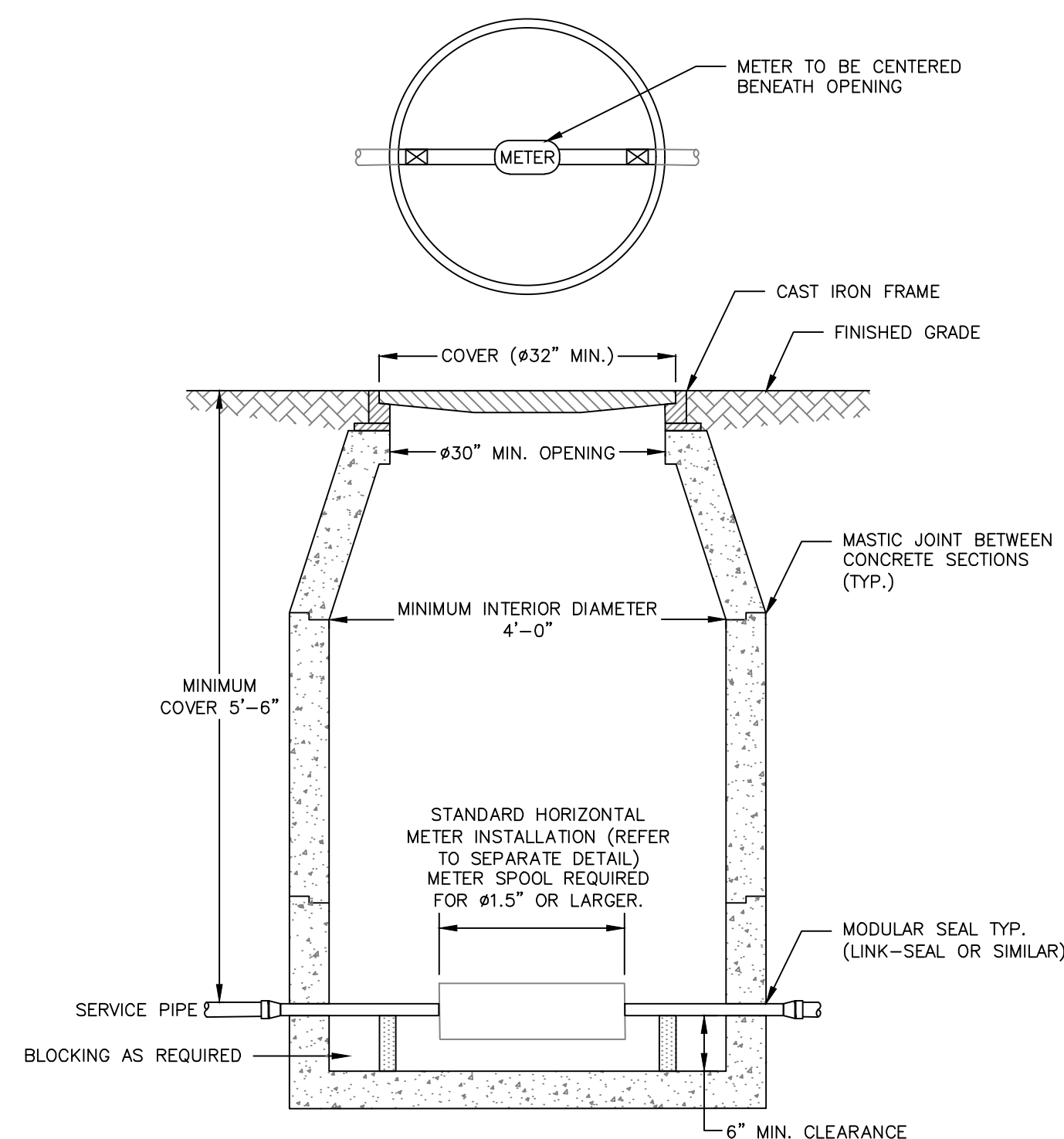
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PIPE COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" THICK OF RIGID INSULATION, COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" THICK RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT OF DEPTH. LESS THAN THE MINIMUM DEPTH, WIDTH OF INSULATION SHALL BE FOUR TIMES THE DIAMETER OF THE PIPE WITH A MINIMUM WIDTH OF 30".
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
 - 4.1. 2'-0" - STORM DRAIN
 - 4.2. 5'-0" - SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. ALL SLOPES TO BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF PORTLAND ROW. THICKNESS AS NOTED BY SURFACE DETAILS



CLEANOUT DETAIL
NOT TO SCALE

REGULAR BEND

THRUST BLOCKING
NOT TO SCALE



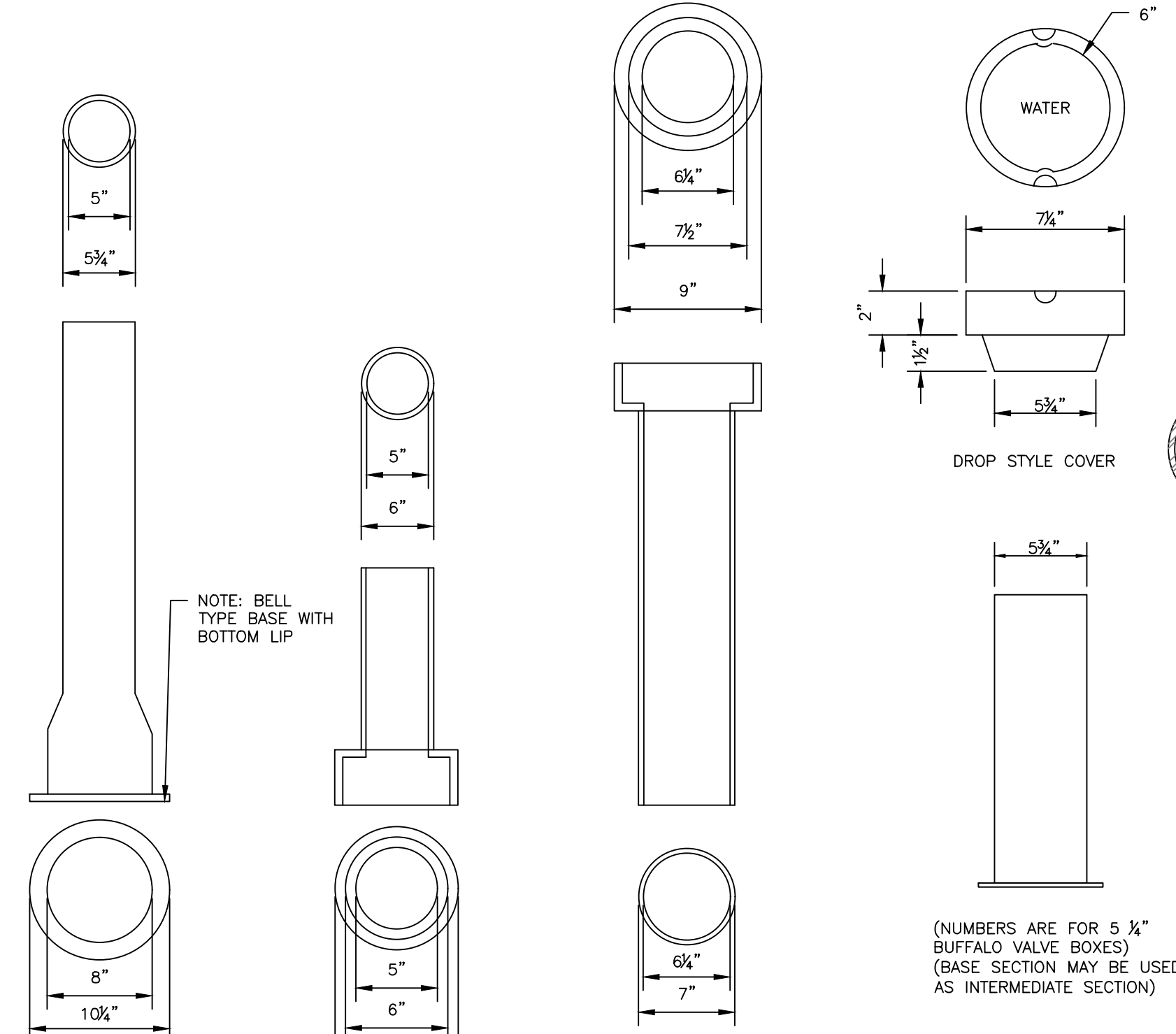
1" DOMESTIC WATER METER PIT
NOT TO SCALE

- METER PIT AND COVER:

1. SPECIAL APPROVAL BY PWD IS REQUIRED, PRIOR TO CONSTRUCTION, FOR ALL PROPOSED METER PIT INSTALLATIONS.
2. TESTABLE BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN SMALL METER PITS.
3. METER PIT SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
4. THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MINIMUM GROUND COVER FORM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
5. ALL 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)
6. METER PIT INTERIOR MUST BE AT LEAST 48" IN DIAMETER. THE OPENING MUST BE AT LEAST 30" IN DIAMETER, WITH A CAST IRON FRAME. THE COVER SHALL BE CAST IRON OR STEEL, 30" MINIMUM IN DIAMETER, AND BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITANT PAINT.
7. WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT
8. ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT WILL BE MADE OF COPPER, WITH A MINIMUM OF 6" CLEARANCE FROM THE METER PIT FLOOR. USE BLOCKING AS NEEDED TO SUPPORT THE PIPE.
9. CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC FLOW, IF APPLICABLE.

METER INSTALLATION:

10. ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
11. PWD WILL SUPPLY THE WATER METER. ALL OTHER FITTINGS, INCLUDING A METER RESETTER FOR 1" OR SMALLER METERS, SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
12. FOR 1.5" AND 2" METERS, CUSTOMER WILL INSTALL A FLANGED METER SPOOL. THE SPOOL WILL BE SUPPLIED BY THE CITY OF PORTLAND. IF NO ADDITIONAL CHARGE, PRIOR TO METER SET, THE METER SPOOL WILL BE MADE AVAILABLE FOR CUSTOMER PICKUP AT PWD CUSTOMER SERVICE, 225 DOUGLASS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.
13. CUSTOMER WILL INSTALL TWO BALL VALVES AT LEAST 24" APART FOR METER INSTALLATION. ALLOWING THE WATER METER TO BE GENTLY TURNED UNDER THE PIT OPENING. THE BALL VALVES SHALL BE SOLDED IN PLACE.

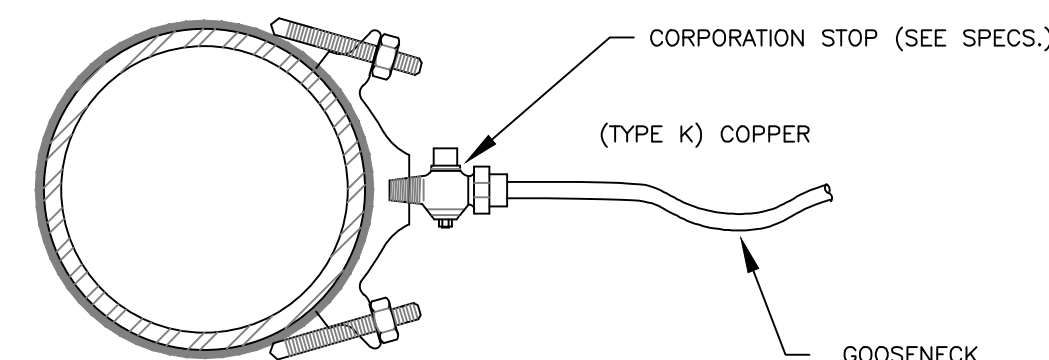


BASE SECTION NO. 645

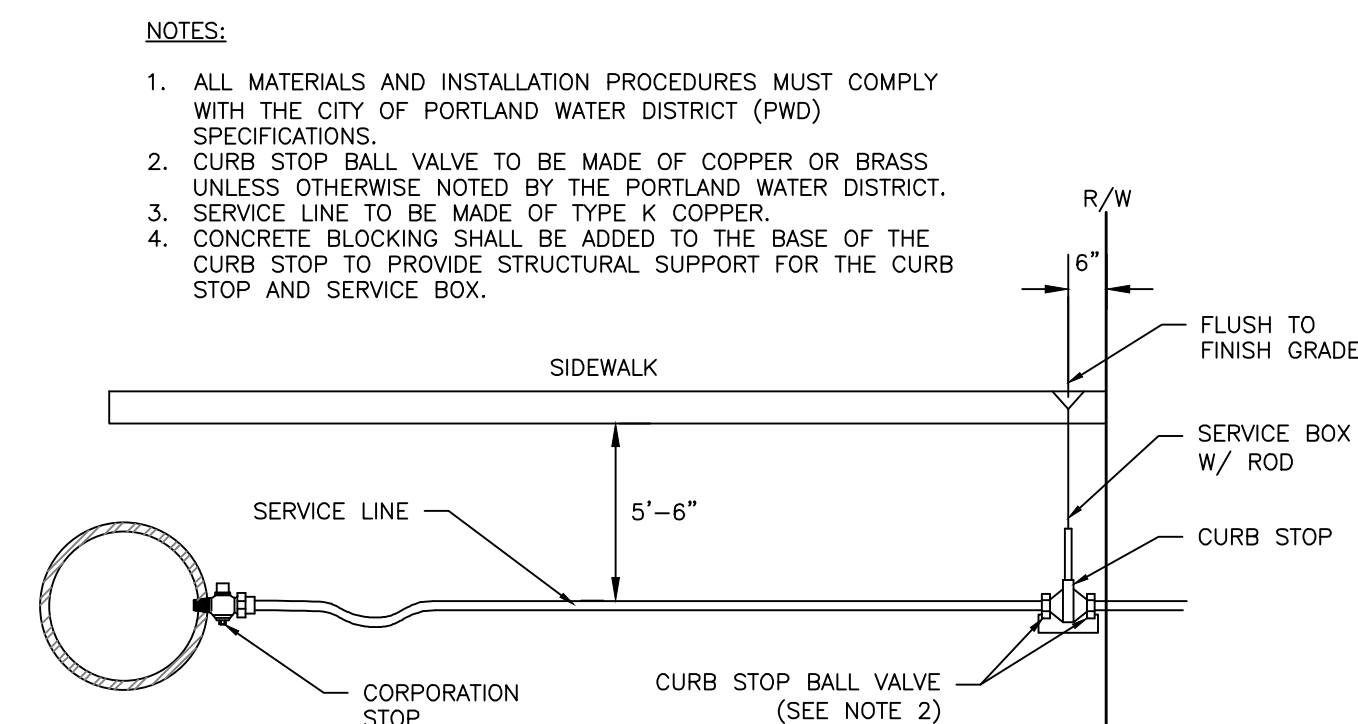
INTERMEDIATE
SECTION NO.58

TOP SECTION
14.5.2

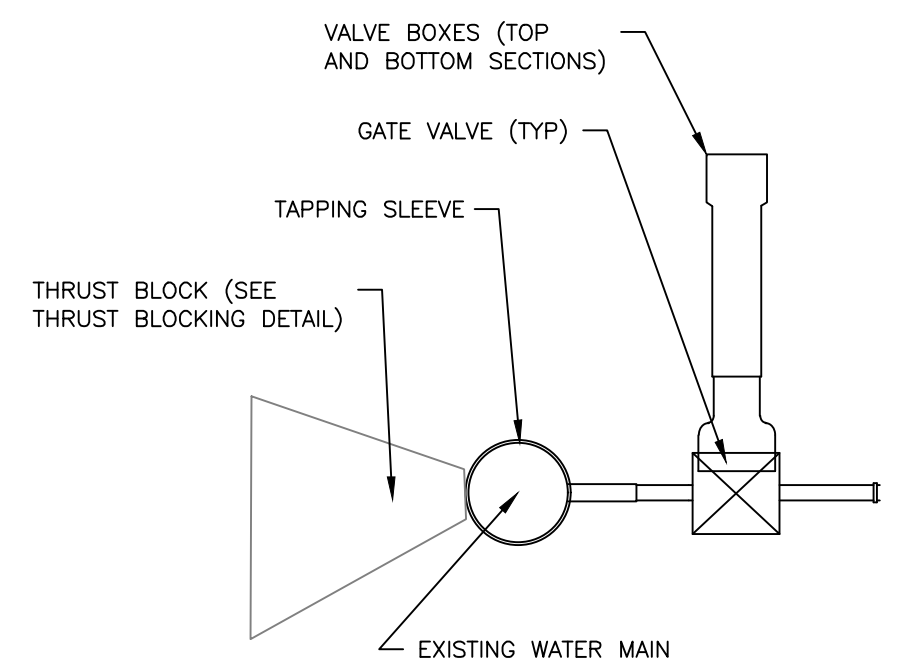
VALVE BOX & COVER
NOT TO SCALE



SERVICE SADDLE: 1-1/2" AND 2" C.C. THREAD
NOT TO SCALE



TYPICAL SERVICE CONNECTION
NOT TO SCALE



SIDE VIEW

TAPPING SLEEVE AND VALVE
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

[illegible]

UTILITY DETAILS - 2

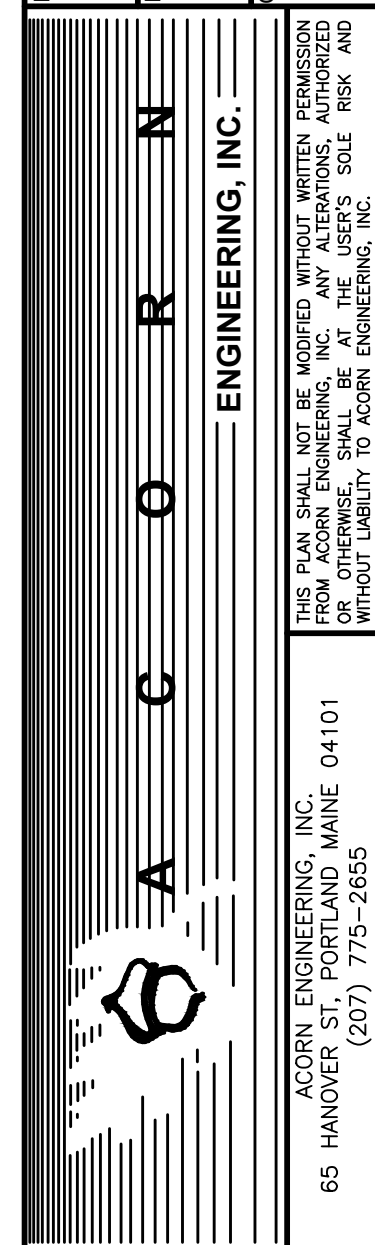
WINCHESTER WOODS APARTMENTS

HAMMOND HOUSE, LLC
94 SOUTH STREET, YARMOUTH, ME 04096

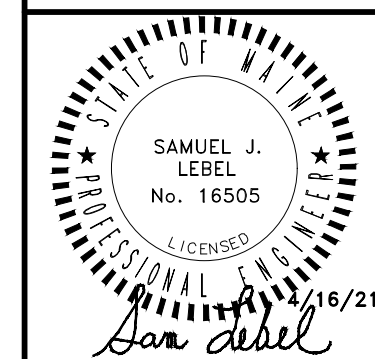
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PROJECT NAME:

CLIENT:

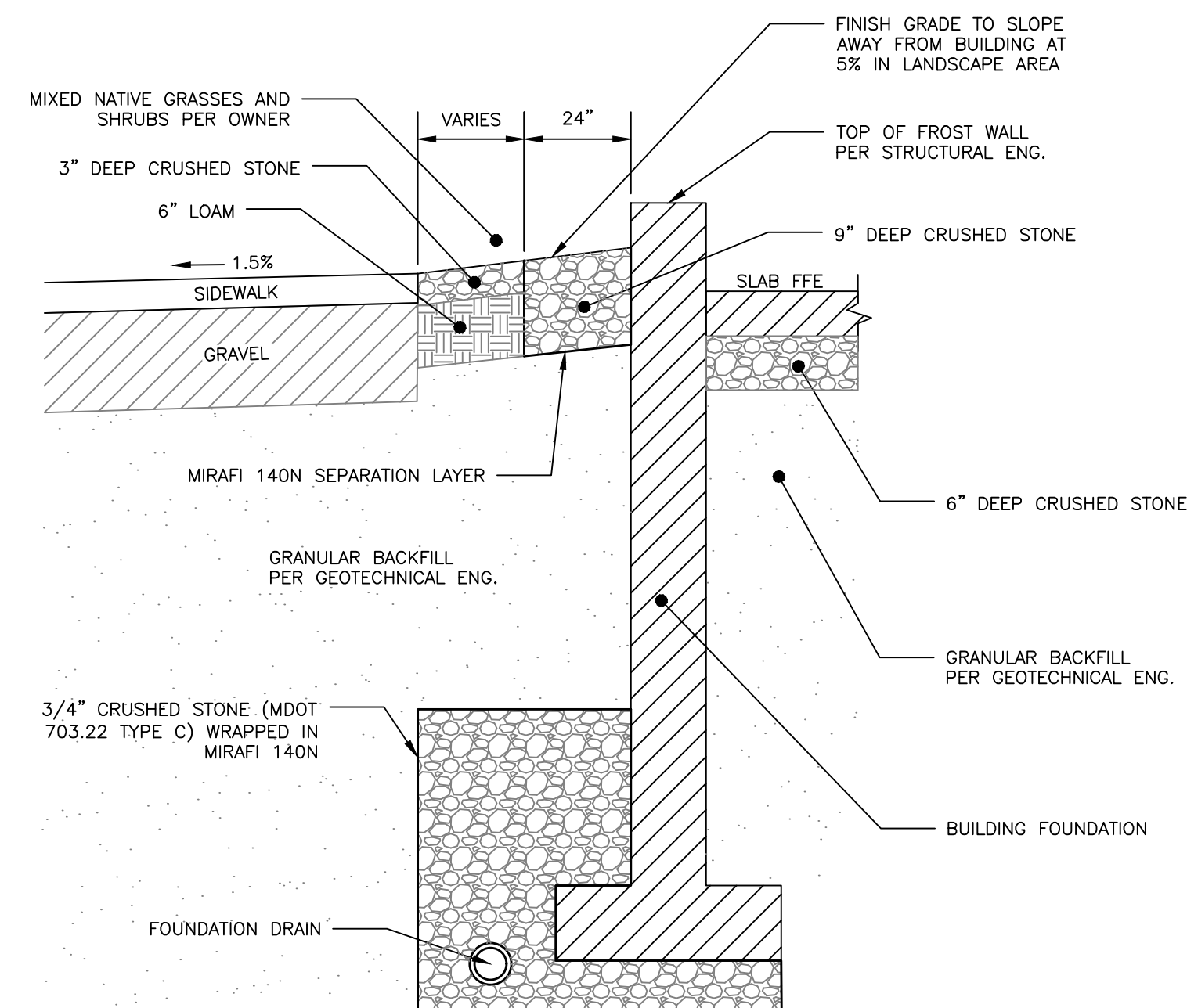


FILE:	1155_CIVIL
JN:	1155
SCALE:	NTS
DESIGNED BY:	SJL
DRAWN BY:	JHG
CHECKED BY:	WHS

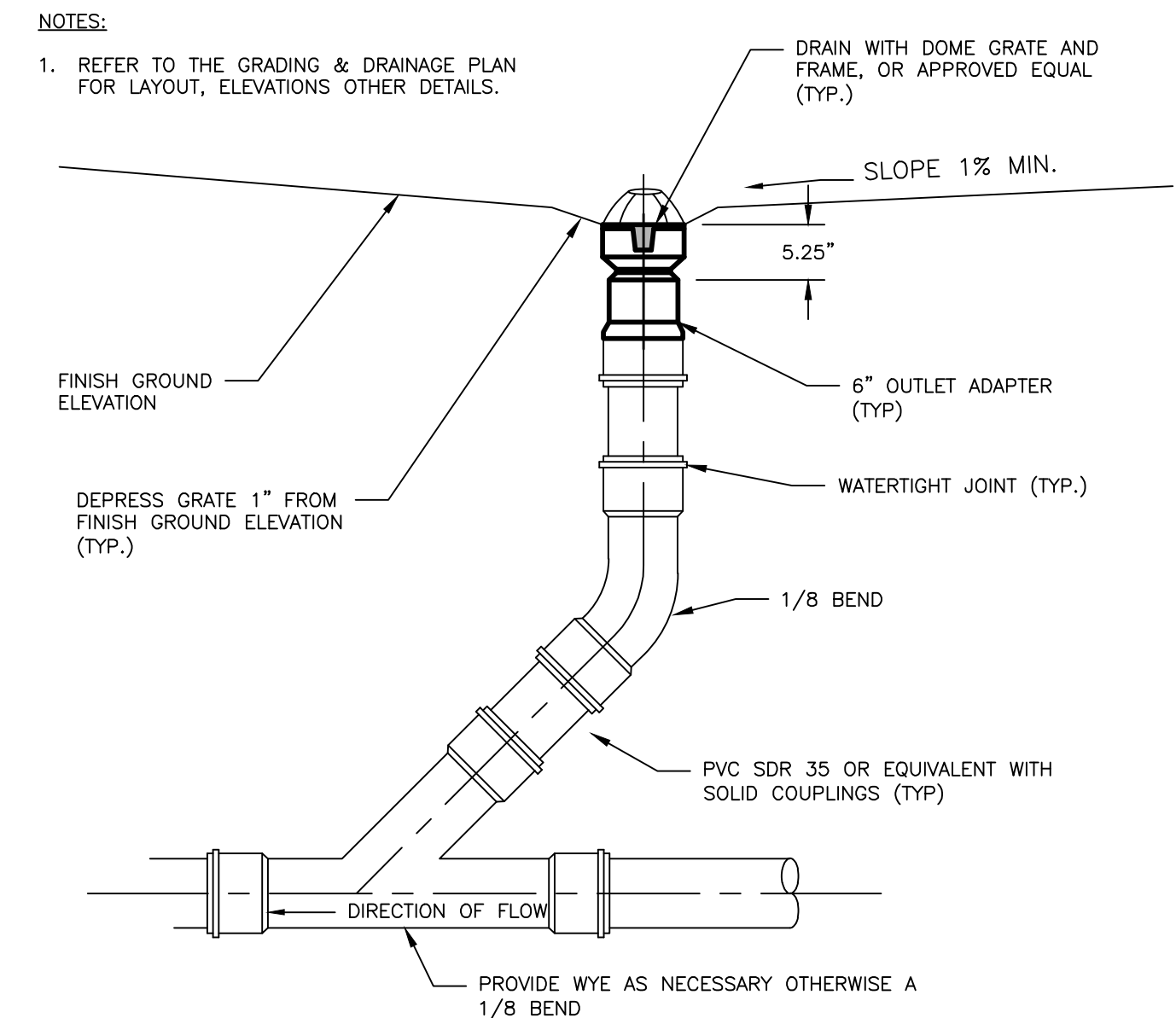


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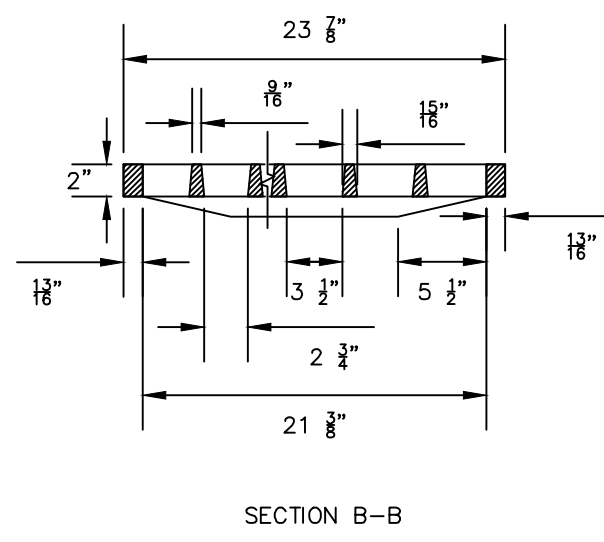
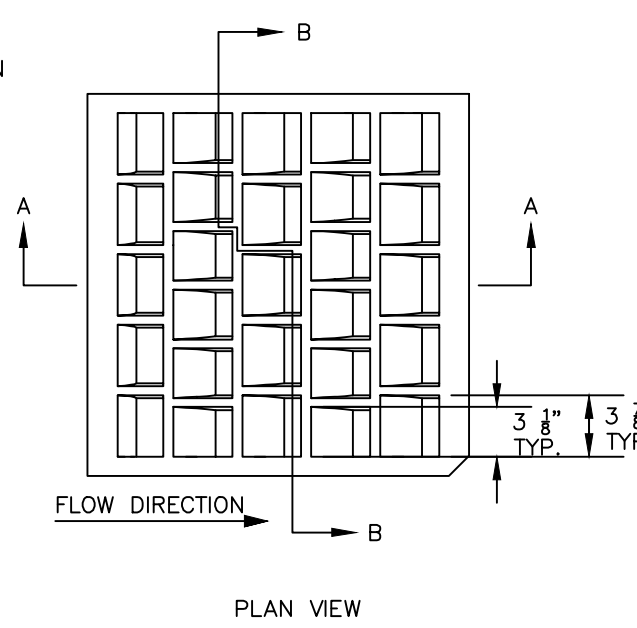
C-44



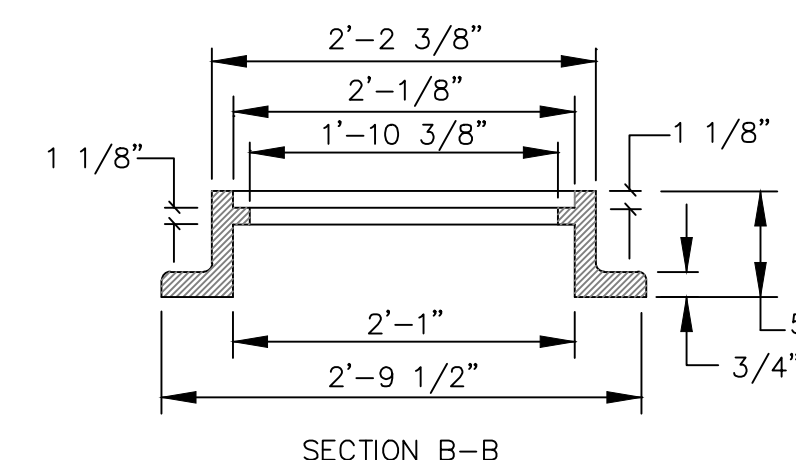
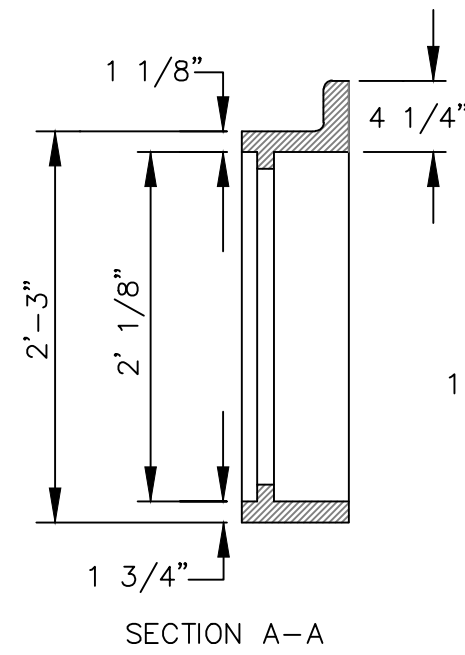
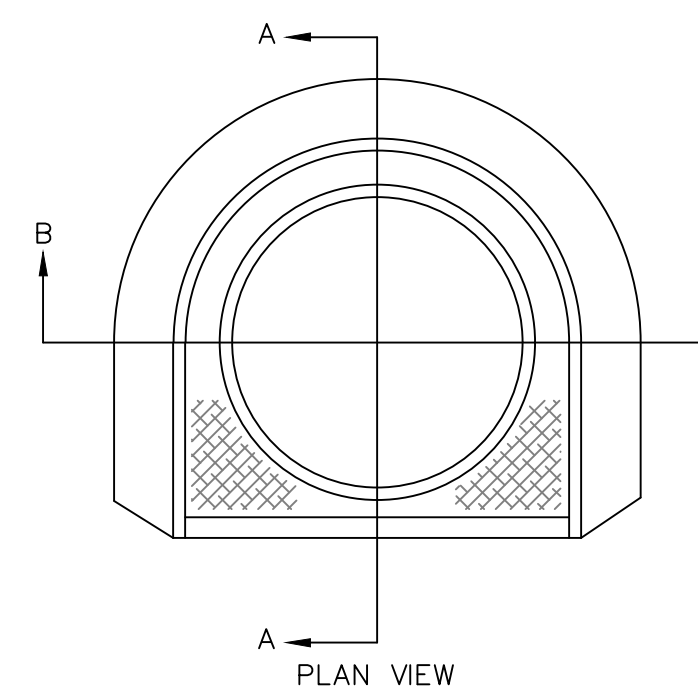
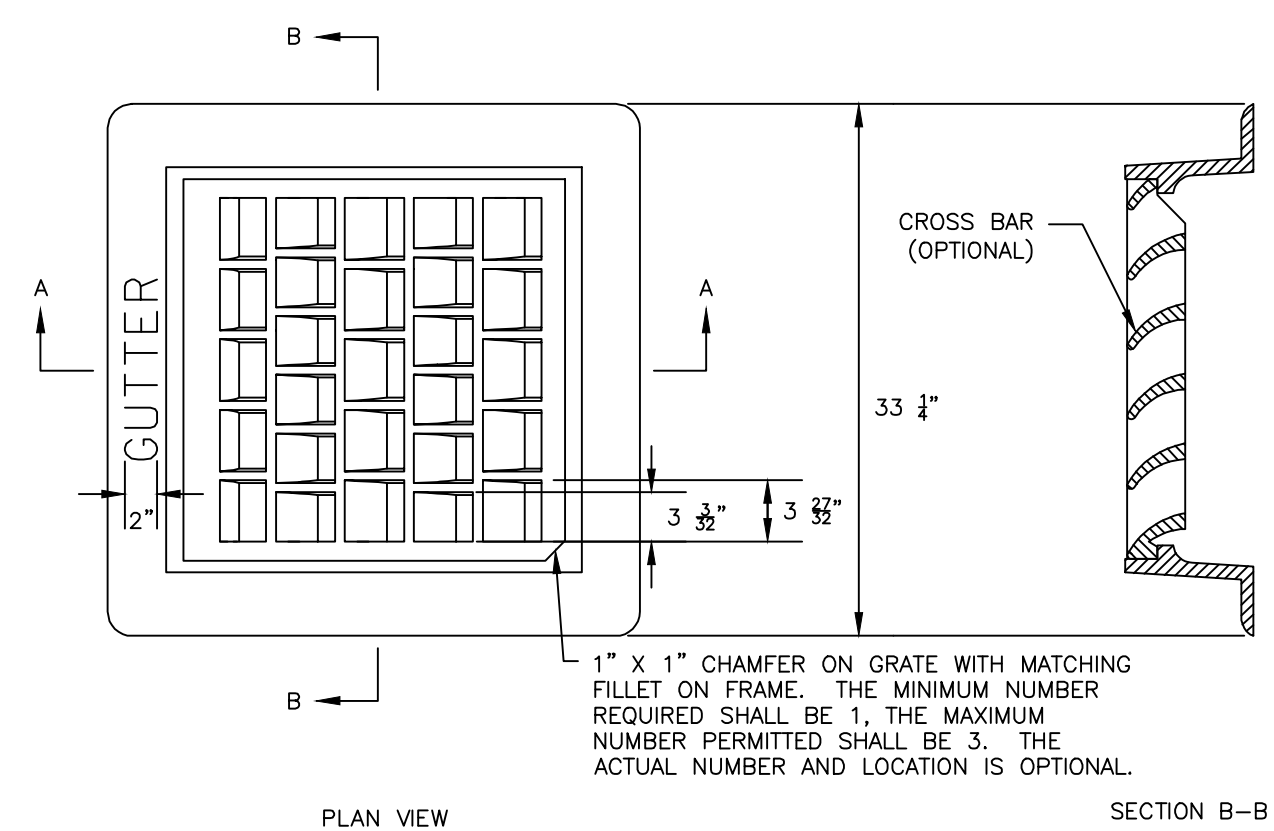
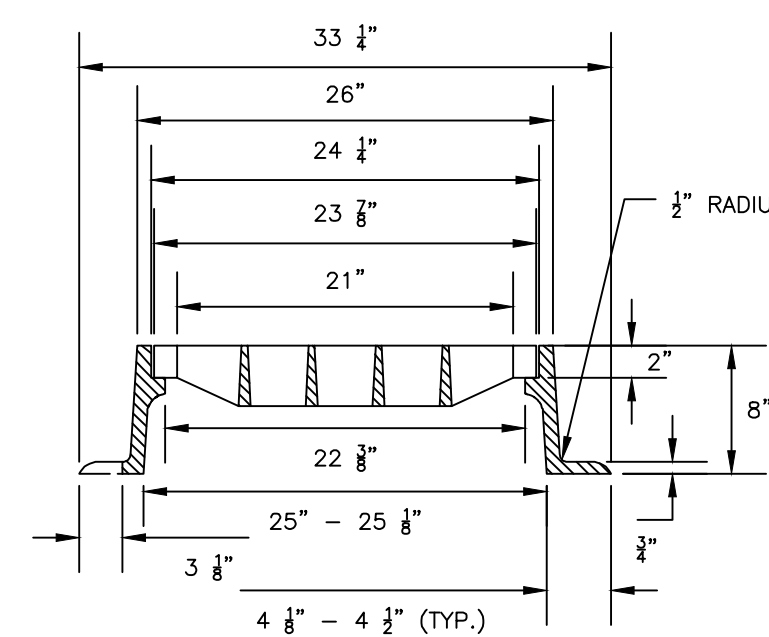
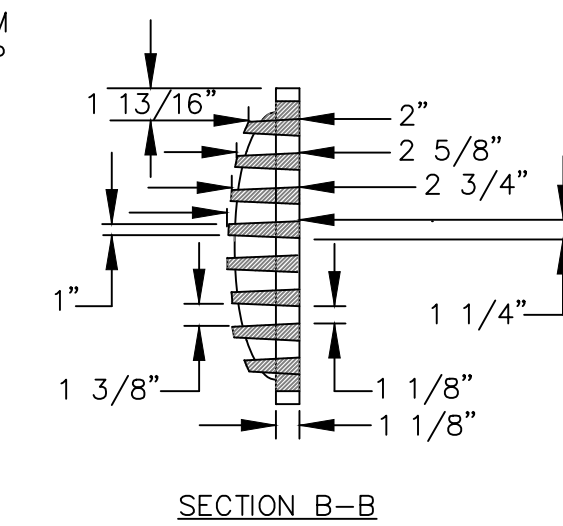
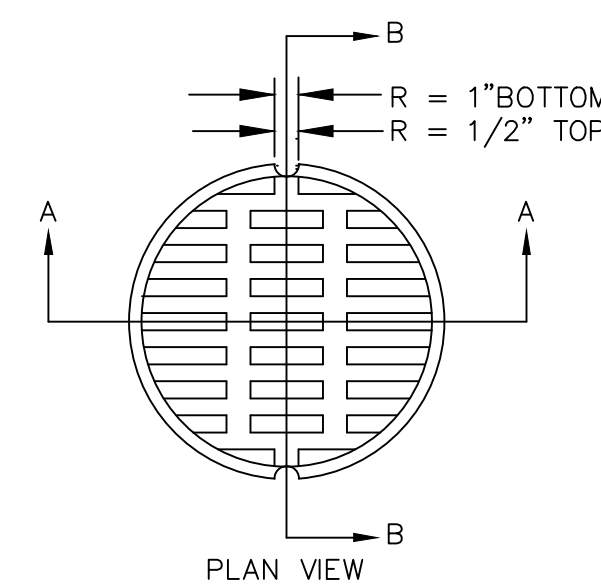
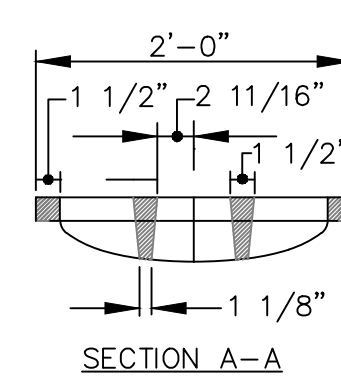
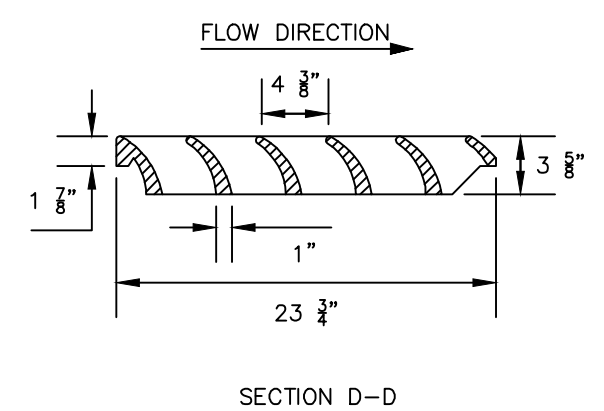
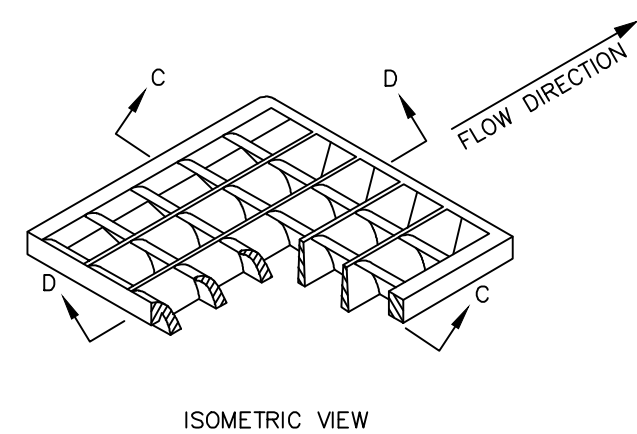
- NOTES:
1. INSTALL CATCH BASIN HOODS IN ALL CATCH BASINS WITH A 12" OR 15" OUTLET PIPE.
 2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
 3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS



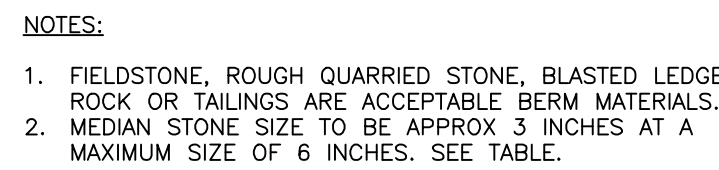
- NOTES:
1. TYPE "A" FRAMES ARE TO HAVE 3 FLANGES.
 2. TYPE "B" FRAMES ARE TO HAVE 4 FLANGES.
 3. THE WORD "GUTTER" IS TO BE MOLDED INTO THE BACK FLANGE - TYPE "B" ONLY.
 4. FRAMES AND GRATES ARE TO BE GRAY CAST IRON OR DUCTILE IRON CONFORMING TO AASHTO M306.
 5. DIMENSIONS ARE NOMINAL.



1. APPROVED CATCH BASIN FRAMES:
 - 1.1. EAST JORDAN = 7375Z
 - 1.2. NEENAH = R-3248
 - 1.3. OR APPROVED EQUAL
2. APPROVED CATCH BASIN GRATES
 - 2.1. EAST JORDAN = 2440M
 - 2.2. NEENAH = R-3248
 - 2.3. OR APPROVED EQUAL

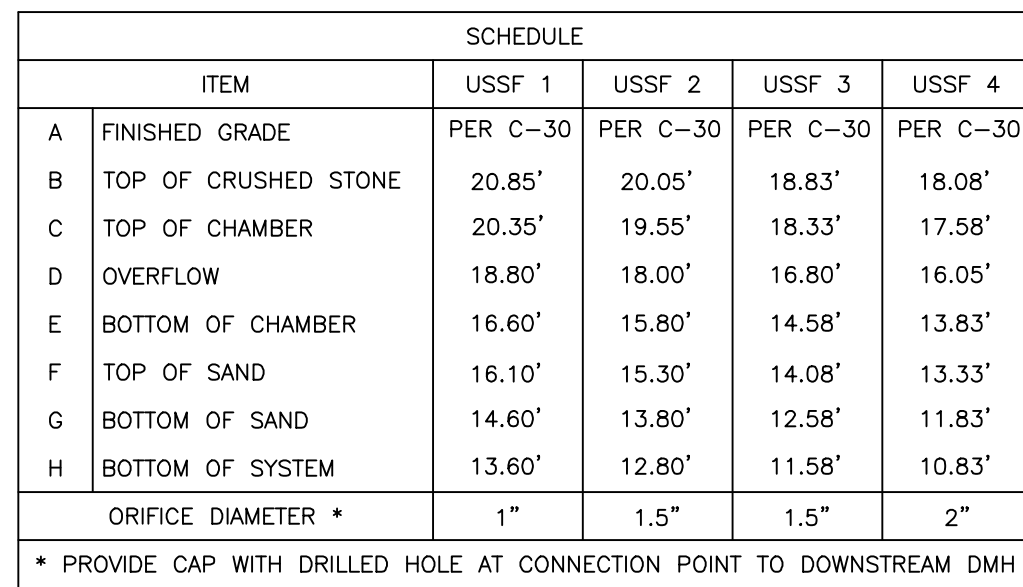


PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION



NOTES:

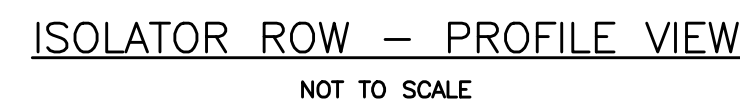
1. REFER TO THE MAINE DEP TECHNICAL DESIGN MANUAL SECTION 7.3 FOR ADDITIONAL DESIGN DETAILS.
2. SAND LAYER COMPACT IN 6" LIFTS TO 92% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557



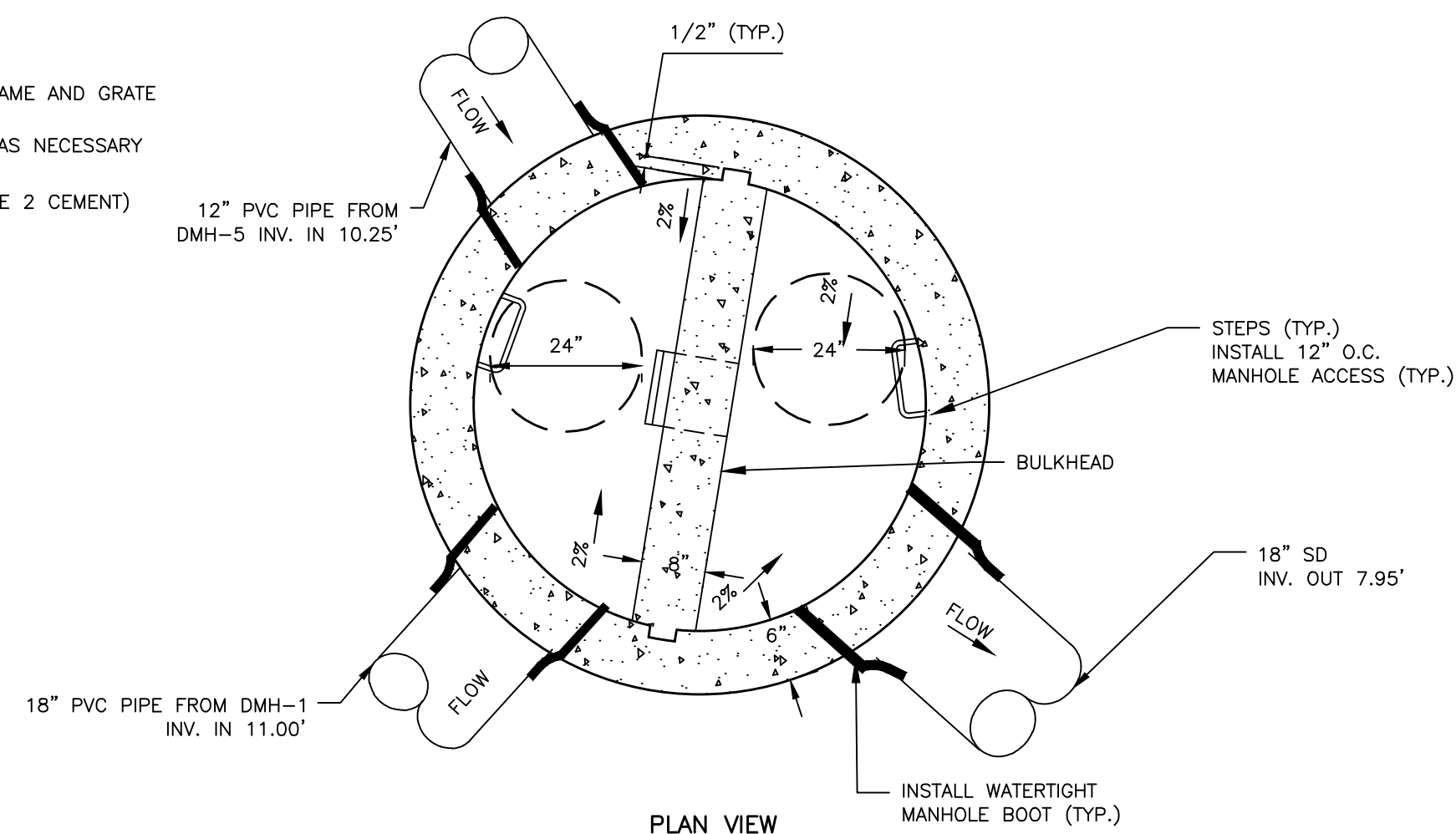
TYPICAL PIPE PENETRATION DETAIL

NOT TO SCALE

1. THE LAYOUT AND DIMENSION OF THE SUBSURFACE DETENTION MAY BE MODIFIED WITH AN ENGINEER APPROVED EQUIVALENT WHICH PROVIDES EQUAL DETENTION STORAGE AND WATER QUALITY TREATMENT.
2. PER CITY OF PORTLAND REQUIREMENT, THE SUBSURFACE DETENTION SHALL BE INSPECTED BY THE DESIGN ENGINEER AT THE FOLLOWING INTERVALS:
 - AFTER PRELIMINARY CONSTRUCTION OF THE SUBSURFACE DETENTION GRADES
 - ONE SITE VISIT DURING THE INSTALLATION OF THE IMPERVIOUS LINER
 - ONE SITE VISIT AFTER THE UNDERDRAINS ARE INSTALLED BUT BEFORE THEY ARE BACKFILLED
 - DURING THE CONSTRUCTION OF THE SAND FILTER LAYER
 - DURING THE INSTALLATION OF THE STORMTECH ISOLATOR ROW
 - BEFORE BACKFILLING THE STORMTECH UNITS
3. THE FIRST YEAR OF MAINTENANCE SHALL BE PERFORMED BY THE MANUFACTURER TO ENSURE THAT THE SYSTEM IS OPERATING ACCORDING TO THE ESTABLISHED SPECIFICATIONS.
4. REFERENCE THE MANUFACTURER'S GUIDE FOR THE OPERATION AND MAINTENANCE PLAN.



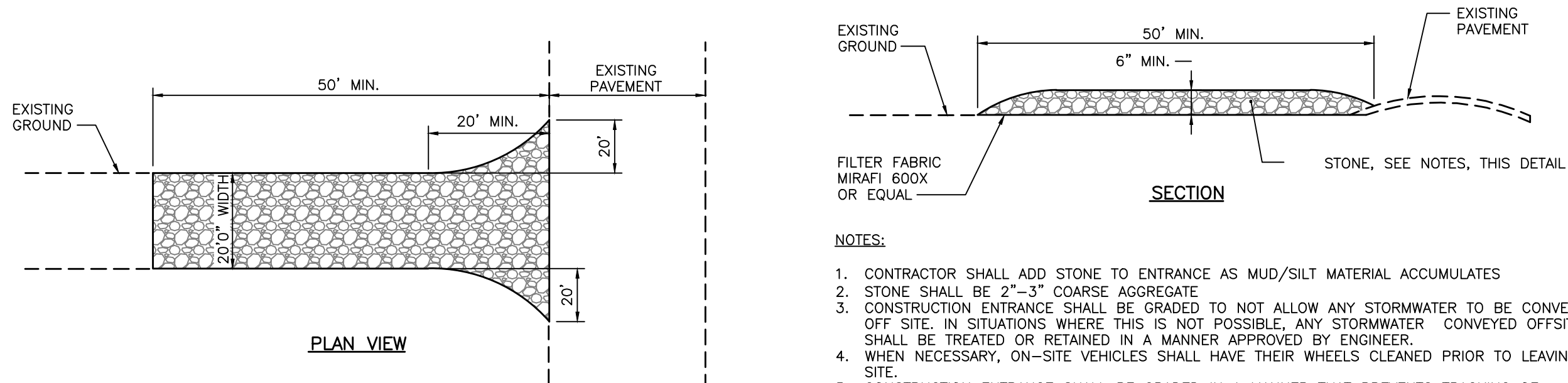
1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF.
5. JOINTS SEALED WITH BUTYL RUBBER.
6. POLYPROPYLENE STEPS 12" O.C.



DRAWING NO.
C-46

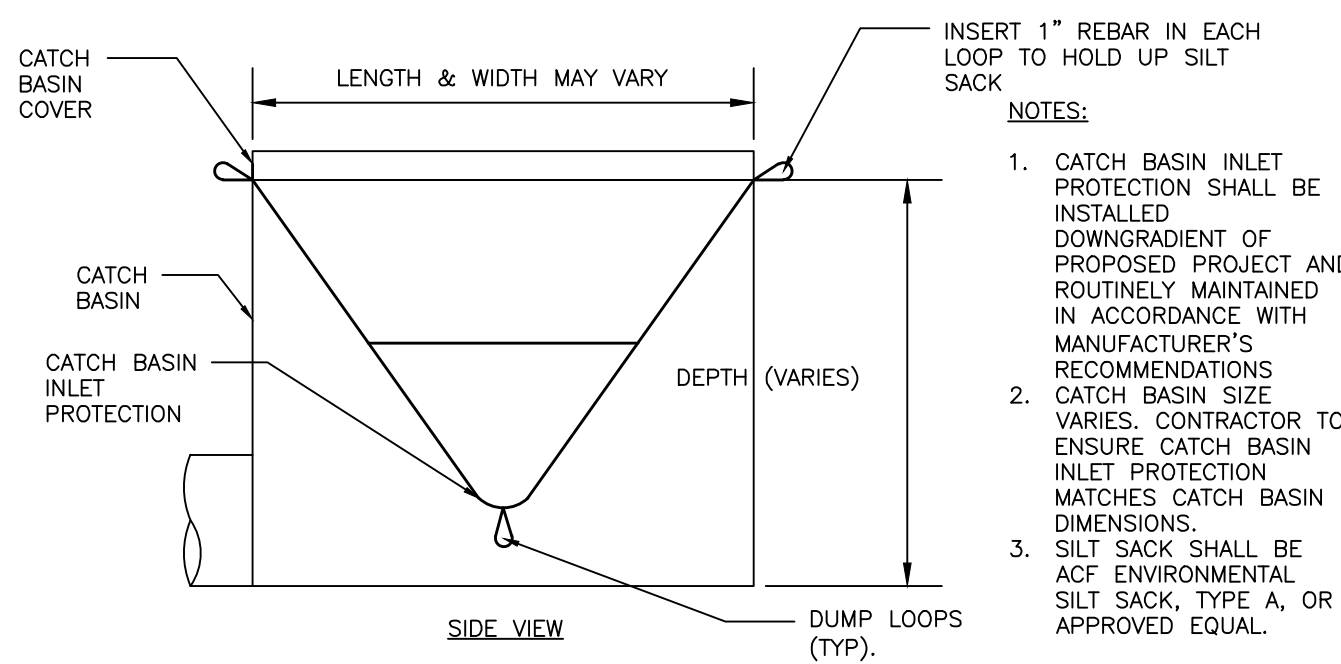
- *NOTE:**
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR
STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY
TO PROPERLY SECURE THE ECB.

NOT TO SCALE



NOT TO SCALE

- NOTES:**
1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
 2. STONE SHALL BE 2" - 3" COARSE AGGREGATE
 3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED AND DETAINED IN A MANNER APPROVED BY ENGINEER.
 4. WHEN NECESSARY, ON-SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
 5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS INTO PUBLIC RIGHT-OF-WAY.

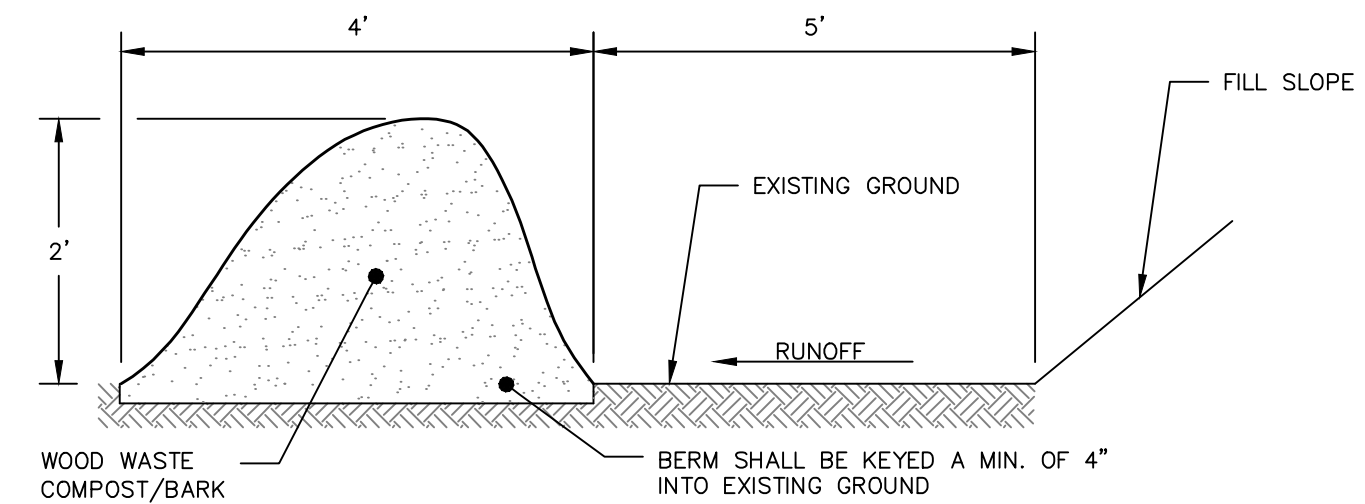


NOT TO SCALE

- NOTES:**
1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
 2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
 3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

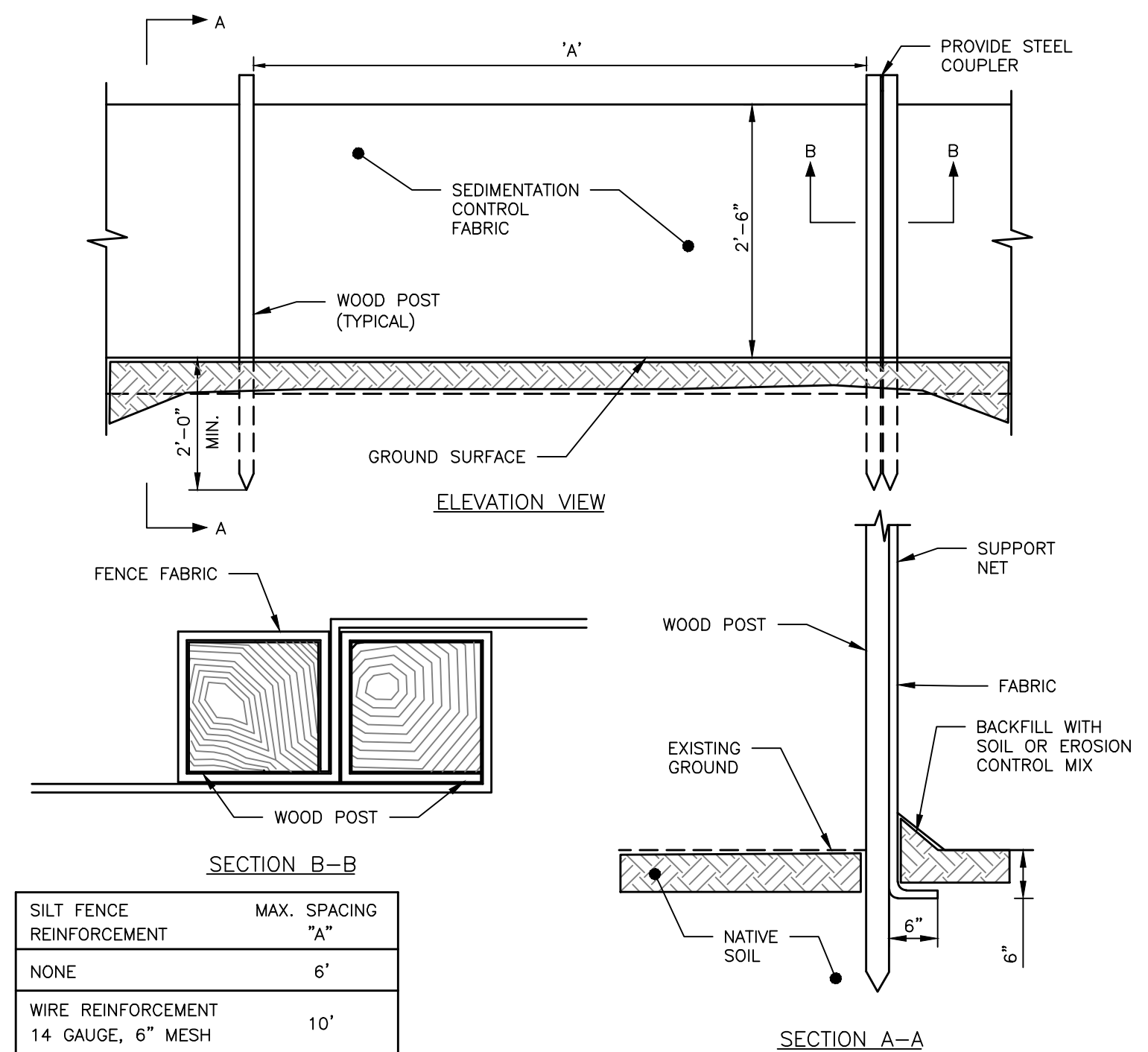
- 1.1. pH BETWEEN 5.0 - 8.0
- 1.2. PARTICLE SIZE (BY WEIGHT):
 - 1.2.1. 100% PASSING A 150 MM (6 IN) SCREEN
 - 1.2.2. 75 TO 85% PASSING A 19 MM (0.75 IN) SCREEN
- 1.3. SOLUBLE SALTS CONTENT < 4.0 MMHOS/CM
- 1.4. ORGANIC MATTER 20 TO 100%, DRY WEIGHT BASIS

2. THE BERM SHOULD BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR, WHEN NECESSARY THE BERM MAY BE PLACED PERPENDICULAR TO THE SLOPE ALONG THE PROPERTY LINE TO CONTAIN THE SEDIMENT PROVIDED A BERM IS LOCATED AT THE BASE OF THE SLOPE.
3. THE BERM MAY BE USED IN LIEU OF SILTATION FENCE, AT THE TOE OF SHALLOW SLOPES, ON FROZEN GROUND, LEDGE OUT CROPS, VERY ROOTED FORESTED AREA OR AT THE EDGE OF GRAVEL PARKING AREAS.
4. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED OR 90% GRADE OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED OFFSITE OR BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.



NOT TO SCALE

1. THE FENCE SHOULD BE ANCHORED TO RESIST PULL-OUT, AND BE STRETCHED TIGHTLY BETWEEN STAKES TO PREVENT SAGGING.
2. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHOULD BE SPLICED BY WRAPPING END STAKES TOGETHER.
3. IN AREAS WHERE THE FLAP CANNOT BE KEYED PROPERLY (DUE TO FROZEN GROUND, BEDROCK, STONY SOIL, ROCKS, NEAR A PROTECTED NATURAL RESOURCE, ETC.), THE SILT FENCE SHOULD BE ANCHORED WITH AGGREGATE, CRUSHED STONE, EROSION CONTROL MIX, OR OTHER MATERIAL.



NOT TO SCALE

SILT FENCE REINFORCEMENT	MAX. SPACING "A"
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

EROSION & SEDIMENTATION CONTROL DETAILS

WINCHESTER WOODS APARTMENTS

HAMMOND HOUSE, LLC
94 SOUTH STREET, YARMOUTH, ME 04096



A C O R N
ENGINEERING, INC.

ACORN ENGINEERING, INC.
655 DANFORTH ST, PORTLAND MAINE 04101
(207) 775-2655

FILE: 1155 CIVIL

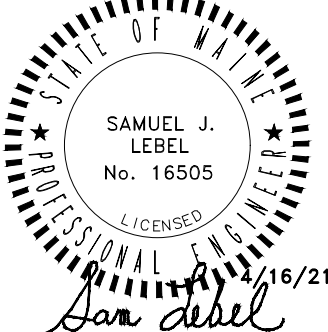
N: 1155

CALE: NTS

DESIGNED BY: SJL

RAWN BY: JHG

HECKED BY: WHS



DRAWING NO.

C-48

1. FOR INFORMATION REGARDING PROPOSED GROUND LEVEL LAYOUT, REFER TO SITE PLAN, SHEET C-10, MOST RECENT VERSION.
2. FOR INFORMATION REGARDING PROPOSED UTILITIES, REFER TO THE UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
3. FOR INFORMATION REGARDING PROPOSED GRADING AND STORMWATER, REFER TO THE GRADING & DRAINAGE PLAN, SHEET C-30, MOST RECENT VERSION.
4. UNLESS TABULATION PROVIDED BY ARCHETYPE ARCHITECTS, REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
5. TOTAL SITE AREA (EXCLUDING SINGLE FAMILY LOT) INCLUDES 3.37 ACRES (146,625.86 S.F.). SITE BOUNDARIES PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS PROVIDED BY OWNER. BOUNDARY SURVEY DATED 12/28/1998. BOUNDARY SURVEY AT DALTON STREET & F STREET, PORTLAND, MAINE DATED DECEMBER 2020.
6. AS OF 3/17/2021, THE SITE IS ENTIRELY BOUNDED BY THE R5 ZONE PER THE CITY OF PORTLAND'S GIS WEBSITE.
7. LOCUS PARCEL IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP CHART, BOOK, LOT: 428-K-008, 428-A-004, 428-A-011, 428-A-012, 428-A-013, 427-I-007, 427-I-008, 427-I-009, 427-K-001, 427-K-002, 427-K-003, 427-K-004, 427-L-005, 427-L-006, 427-L-007, 427-L-008, 427-L-012, 427-N-001, 427-N-002, 427-N-003, 427-N-004, and 427-N-012. THE MENTIONED LOTS HAVE BEEN RECENTLY COMBINED INTO TWO PARCELS.
8. PROPOSED DEVELOPMENT REMAINS OUTSIDE THE 100-YR FLOODPLAIN PER THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 230051 0007 C, INDEX DATED 12/8/1998.
9. ALL BUILDING CORNER POINTS TO BOUNDARY LINES ARE FROM CORNERBOARDS AND NOT BUILDING FOUNDATION, UNLESS OTHERWISE NOTED.
10. THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO **FORTY-EIGHT (48) DWELLING UNITS ON THE EXISTING SUBJECT PROPERTY.**
11. THE PROPERTY MAY BE DEVELOPED WITHIN A PEDESTRIAN OR VEHICULAR WAY SHALL BE FLUSH OR BELOW GRADE AT THE DISCRETION OF THE PROFESSIONAL LAND SURVEYOR AND/OR ENGINEER.
12. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, RETAINING WALLS, AND SNOW REMOVAL.
13. THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF CHAPTER 302 STORMWATER INCLUDING ARTICLE III, POST-CONSTRUCTION STORMWATER MANAGEMENT STANDARDS, WHICH REQUIRE ANNUAL INSPECTIONS AND REPORTING REQUIREMENTS AT A MINIMUM. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF THE SUBMITTED STORMWATER MANAGEMENT PLAN AND THE APPROVED PLANS, AND MEET CITY STANDARDS AND STATE GUIDELINES.
14. THE SUBMITTER MUST COMPLY TO THE FOLLOWING AS APPROVED BY THE CITY:
 - 14.1. POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT:

TBD

ALL PROPOSED EASEMENTS TO BE REVIEWED BY OWEN HASKELL, INC. AND RECORDED IN CCRD. ALL EXISTING EASEMENTS ARE TO REMAIN.

ALL PROPOSED EASEMENTS TO BE REVIEWED BY OWEN HASKELL, INC. AND RECORDED IN CCRD.
ALL EXISTING EASEMENTS ARE TO REMAIN.

1. A 20' WIDE SEWER EASEMENT TO PORTLAND WATER DISTRICT AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 3939, PAGE 146.

SURVEY NOTES

1. BOOK AND PAGE REFERENCES ARE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
2. BEARINGS ARE REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, NAD83, WEST ZONE.
3. ELEVATIONS ARE BASED ON NAVD83 DATUM AS DERIVED FROM GPS OBSERVATIONS. REFER TO THE EXISTING CONDITIONS PLAN BY OWEN HASKELL, INC. DATED 12/11/20 FOR BENCHMARK LOCATIONS.
4. UTIL INFORMATION ON THIS PLAN IS APPROXIMATE, BASED ON LOCATION OF VISIBLE FEATURES AND INFORMATION CONTAINED ON PLANS AND DRAWINGS PROVIDED BY OTHERS. DIGSAFE AND/OR THE APPROPRIATE UTILITIES SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION.

1. "PLAN OF LUNT PROPERTY EAST DEERING, ME. SURVEYED BY E.C. JORDAN, C.E. 1874" RECORDED IN PLAN BOOK " " PAGE 25.
2. "PLAN OF LUNT PROPERTY EAST DEERING, ME. SURVEYED BY MRS. MARY S. LUNT OF WESTBROOK SURVEYED & LOTTED AUGUST 1865 BY JAMES JOHNSON CIV. ENG." RECORDED IN PLAN BOOK 2 PAGE 51.
3. WORKING PLAN COMPLETED AFTER 1930 BY H.I. & E.C. JORDAN - SURVEYORS OF WASHINGTON, DALTON STREET, VERANDA STREET.
4. "CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING SECTION VERANDA STREET MONUMENT LAYOUT PLAN WASHINGTON AVENUE TO RICHMOND STREET JANUARY 1969"
5. "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR PORTLAND WATER DISTRICT PRESUMPSNOT ESTUARY INTERCEPTOR 9-21-1976 H.I. & E.C. JORDAN - SURVEYORS."
6. "CITY OF PORTLAND CITY PROPERTY" MAP 201 LAND CONVEYED TO THE CITY OF PORTLAND FOR PRESUMPSNOT ELEMENTARY SCHOOL.
7. "DURING STATION MAP ATLANTIC & ST. LAWRENCE R.R. OPERATED BY THE CANADIAN NATIONAL RAILWAY COMPANY FROM 1857-2 TO STATION 8615+93.5 JUNE 30, 1917"
8. "BOUNDARY SURVEY AT DALTON STREET, PORTLAND, MAINE MADE FOR WALTER H. LIBBY III, LUCY M. COPP, MAWELINE F. MORRILL & MARK W. LIBBY" SEPT. 16, 2015 REV. 1.
9. 11-07-16 BY OWEN HASKELL, INC.
10. "PLAN OF PROPERTY 30-32 DALTON STREET, PORTLAND, MAINE MADE FOR MARJORIE A. QUEEN 10/10/16 STEPHEN J. MARTIN, PLS."
11. "SURVEY OF LAND OF 149 SHERWOOD STREET PORTLAND, MAINE FOR ROB TOWMBLEY 12-8-09 PREPARED BY: LIVINGSTON-HUGHES"
12. "NOTED LAYOUT PREPARED BY H.I. JORDAN, CIVIL ENGINEER DATED JUNE 8, 1943 BELIEVED TO BE OWNED BY GEORGE AND KATHLEEN HAMALAINEN."

PORTLAND PLANNING AND URBAN DEVELOPMENT
DEPARTMENT

RECORDING INFORMATION STATE OF
MAINE, CUMBERLAND COUNTY
REGISTRY OF DEEDS (CCRD)

ATTEST: _____

REGISTRAR

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION



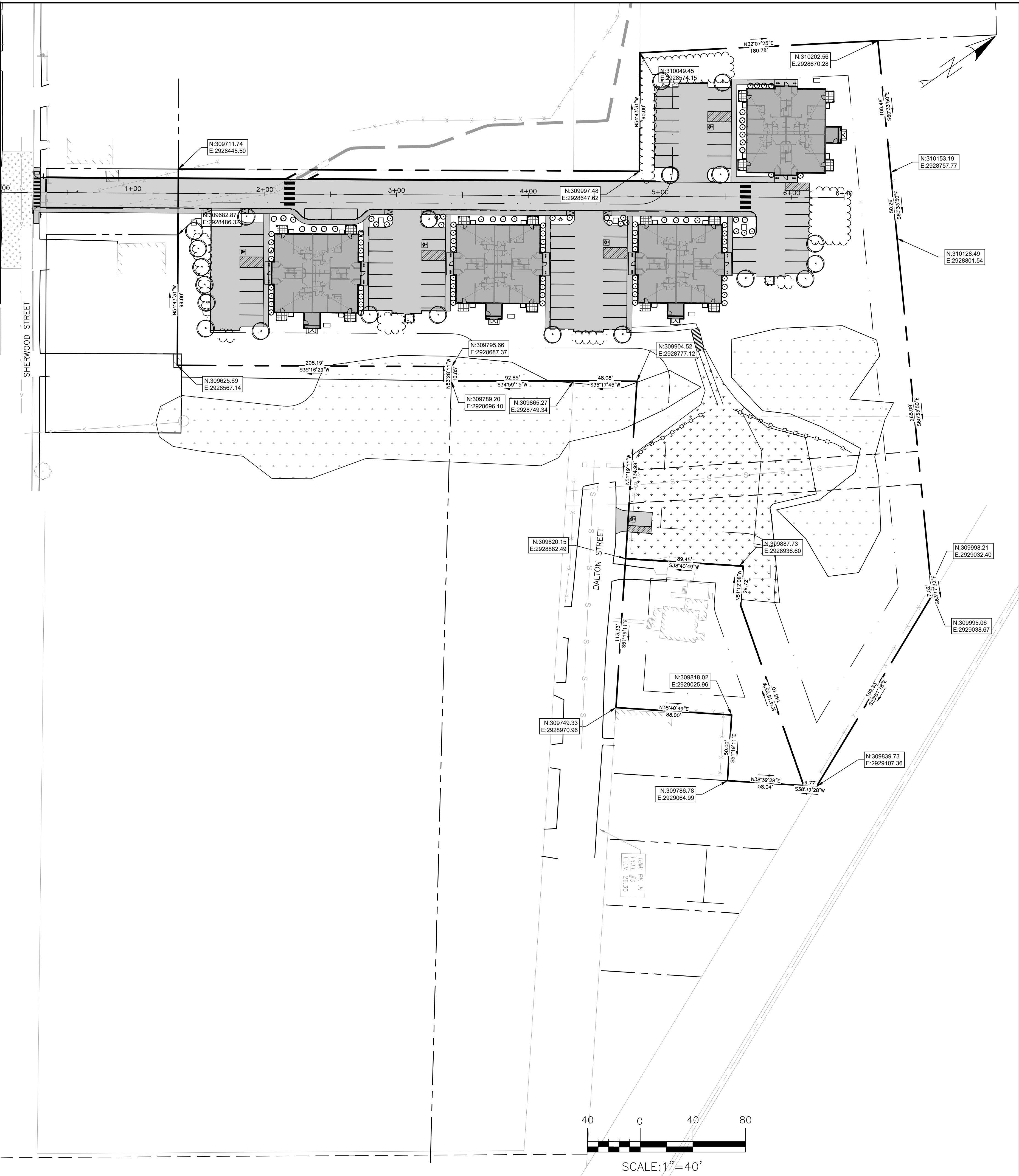
VICINITY MAP
SCALE: 1"=2000'

HAMMOND HOUSE, LLC
94 SOUTH STREET
YARMOUTH, MAINE
CONTACT: KEVIN O'ROURKE

ACORN ENGINEERING, INC.
65 HANOVER STREET
PORTLAND, MAINE
CONTACT: WILLIAM SAVAGE, P.E.

OWEN HASKELL, INC.
390 U.S. ROUTE 1
FALMOUTH, MAINE
CONTACT: RANDY LOUBIER, P.L.S.

SPACE AND BULK STANDARDS		
PLANNED RESIDENTIAL UNIT DEVELOPMENT (PRUD)		
ZONE: R-5	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2 AC	3.40 AC
MINIMUM NET LOT AREA PER DWELLING UNIT	3,000 SF	SEE NET LAND AREA
MAXIMUM NUMBER OF UNITS IN A BUILDING	12	12
MAXIMUM LENGTH OF BUILDING	140'	72'
MAXIMUM LENGTH OF ACCESSORY GARAGE STRUCTURE	60'	N/A
MINIMUM BUILDING SETBACK FROM EXTERNAL SUBDIVISION PROPERTY LINES	25' / 35'***	>25'
MINIMUM RECREATION OPEN SPACE AREA	300 SF/DU****	>300 SF/DU
SINGLE FAMILY RESIDENTIAL		
ZONE: R-5	REQUIRED	PROPOSED
MINIMUM LOT SIZE	6,000 SF	13,986 SF
MINIMUM FRONT SETBACK	20 FT	19.15 FT
MINIMUM REAR SETBACK	20 FT	20.50 FT
MINIMUM SIDE SETBACK	14 FT	21.89 FT
* ACCESSORY DETACHED STRUCTURES WITH GROUND COVERAGE OF 144 SF OR LESS		
** ASSUMES A STRUCTURE HEIGHT OF 2 STORIES. SEE SEC 14-120 OF CITY OF PORTLAND'S CODE OF ORDINANCES FOR HEIGHT BREAKDOWN		
*** FOR A BUILDING LENGTH EQUAL TO OR LESS THAN 100', THE MINIMUM SETBACK IS 25'. A BUILDING LENGTH GREATER THAN 100' REQUIRES A 35' SETBACK.		
**** AT A MINIMUM, A CONTIGUOUS AREA OF 6,000 SF WITH A MIN. DIMENSION OF 50'		

[illegible]

SUBDIVISION PLAT

WINCHESTER WOODS APARTMENTS

PORTLAND, MAINE 04103

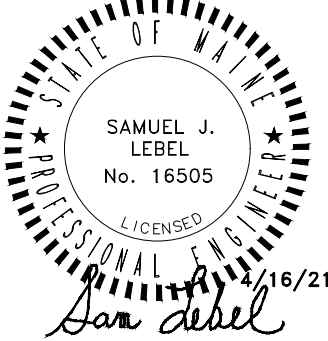
HAMMOND HOUSE, LLC

94 SOUTH STREET, YARMOUTH MAINE 04096

R N
ENGINEERING, INC.

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE:	1155_CIVIL
IN:	1155
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS



DRAWING NO.

PLAT



A0.00

RENDERED VIEW

Date:
04/05/2021

Scale:

Revisions:

Project:
DALTON PRUD

Architect:
**ARCHETYPE
ARCHITECTS**
48 Union Wharf - Portland, Maine 04101

Consultant:

Prepared For:

Kevin O'Rourke

BUILDING CODE SUMMARY

Name of Project: Dalton Prud
Address: Portland, ME Zip Code
Owner/ Authorized Agent: Kevin O'Rourke Phone # () E-Mail kevin@gravitysports.org
Owned By: City/County Private State
Code Enforcement Jurisdiction: City Portland County State

CONTACT:
DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
Architectural Archetype Architects David Lloyd 936 (207) 772-6022
Civil Acorn Engineering
Electrical Bennett Engineering Will Bennett
Fire Alarm Bennett Engineering Will Bennett
Plumbing Bennett Engineering Will Bennett
Mechanical Bennett Engineering Will Bennett
Sprinkler-Standpipe M2 Structural Engineers Matt Miller
Structural Retaining Walls >5' High
Other

Maine Uniform Building and Energy Code with references to 2018 NFPA 1 & NFPA 101

- 2015 International Building Code (IBC)
- 2015 International Existing Building Code (IEBC)
- 2015 International Energy Conservation Code (IECC)

New Construction Addition Renovation
1st Time Interior Completion
Shell/Core
Phased Construction – Shell/Core
Renovation

2015 INTERNATIONAL EXISTING BUILDING CODE:
Alteration: Prescriptive Repair Chapter 14
Level 1 Level II Level III
Historic Property Change of Use
CONSTRUCTED:(date) ORIGINAL OCCUPANCY(S) (Ch. 3):
RENOVATED: (date) CURRENT OCCUPANCY(S) (Ch. 3):

RISK CATEGORY (table 1604.5) Current: I II III IV
Proposed: I II III IV

BASIC BUILDING DATA (table 601)
Construction Type: I-A II-A III-A IV V-A
I-B II-B III-B V-B
mixed types utilizing Horizontal Building Separation Allowance per IBC 510.2
Sprinklers: No Partial Yes NFPA 13 NFPA 13R NFPA 13D
Standpipes: No Yes Class I II III Wet Dry
Flood Hazard Area: No Yes
Special Inspections Required per section 17: No Yes, see attached statement of special inspections

Gross Building Area:				
FLOOR	EXISTING (SQ.FT)	NEW (SQ.FT)	RENO/ALTER (SQ.FT)	SUB-TOTAL
6 th Floor		0		
5 th Floor		0		
4 th Floor		0		
3 rd Floor		3,821		
2 nd Floor		3,821		
Mezzanine		0		
1 st Floor		4072		
Basement		0		
TOTAL		11,914		

NOTE: THIS BUILDING REPEATED (4) TIMES. TOTAL BUILDING AREA = 47,936 SF

ALLOWABLE AREA
Occupancy Classification 302:
Assembly Business Educational Factory Hazardous Institutional
A-1 A-2 A-3 A-4 A-5
F-1 Moderate F-2 Low
H-1 Deteronate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
I-1 Condition I 2
I-2 Condition I 2
I-3 Condition I 2 3 4 5
I-4
Mercantile
Residential R-1 R-2 R-3 R-4
Storage S-1 Moderate S-2 Low High-piled
Parking Garage Open Enclosed Repair Garage
Utility and Miscellaneous
Accessory Occupancy Classification(s) 508.2:
N/A

Incidental Uses (Table 509): NONE
NFPA 101 Table 30.3.2.1.1 Hazardous Area Protection: NONE
Special Uses (Chapter 4 – List Code Sections) NONE
Special Provisions: (Chapter 5 – List Code Sections): NONE

506.2.3 Single Occupancy, Multistory Buildings:

Allowable Area =
The allowable area of a single-occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:

A_a = [A_r + (NS × I_f)] × S_a (Equation 5-2)

Allowable area = [21,000 + (7,000 × 1 (frontage increase not taken))] × 3 = 42,000 SF

EACH 11,914 SF BUILDING < 42,000 SF ALLOWABLE

where:
A_a = Allowable area (square feet).
A_t = Tabular allowable area factor (NS, S13R or SM value, as applicable) in accordance with Table 506.2.
NS = Tabular allowable area factor in accordance with Table 506.2 for a non sprinklered building (regardless of whether th building is sprinklered).
If = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.
Actual number of building stories above grade plane, not to exceed three. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building storie above grade plane, not to exceed four.

No individual story shall exceed the allowable area (A_a) as determined by Equation 5-2 using the value of S_a = 1.

ALLOWABLE HEIGHT			
	ALLOWABLE: (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	60	34'-0"	
Building Height in Stories (Table 504.4)	3	3	

¹ Provide code reference if the "Show on Plans" quantity is not based on Table 504.3 or 504.4.

² The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	NOTES	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Structural Frame, including columns, girders, trusses					
Bearing Walls					
Exterior					
North	0HR			W1, W2/A4.00	
East	0HR			W1, W2/A4.00	
West	0HR			W1/A4.00	
South	0HR			W1/A4.00	
Interior	0HR				
Nonbearing Walls and Partitions					
Exterior walls					
North				N/A	
East				N/A	
West				N/A	
South				N/A	
Interior walls and partitions	0				
Floor Construction Including supporting beams and joists	1HR			F2/A4.02	UL L528
Floor Ceiling Assembly	1HR			F2/A4.02	UL L528
Column Supporting Floors	0HR			N/A	
Roof Construction, including supporting beams and joists	0HR			R1,R2,R3/A4.02	GA FC5406, UL P531, UL P52
Roof Ceiling Assembly	0HR			N/A	
Column Supporting Roof	0HR			N/A	
Shaft Enclosures - Exit	1HR				
Shaft Enclosures - Other	1HR				
Corridor Separation	30 MIN.			W4/A4.01	UL U311
Occupancy/Fire Barrier Separation				W6/A4.01	UL305
Party/Fire Wall Separation	1 HR.				
Smoke Barrier Separation					
Smoke Partition					
Tenant/Dwelling Unit/ Sleeping Unit Separation	1 HR			W5/A4.01	
Incidental Use Separation	1 HR			N/A	

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY LINES)	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
20'-0" MIN	Unprotected, Sprinklered	No Limit	>allowable

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: No Yes
Exit Signs: No Yes
Fire Alarm: No Yes
Smoke Detection Systems: No Yes Partial
Carbon Monoxide Detection: No Yes

LIFE SAFETY PLAN

Life Safety Plan Sheet #:
☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1017)
☐ Common path of travel distances (1006.2.1 & 2006.3.2(1))
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door (NFPA 101 TABLE 7.3.3.1)
☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.
☐ Location of doors with panic hardware (1010.1.10) ☐ N/A
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7) ☐ N/A
☐ Location of doors with electromagnetic egress locks (1010.1.9.9) ☐ N/A
☐ Location of doors equipped with hold-open devices ☐ N/A
☐ Location of emergency escape windows (1030) ☐ N/A
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) ☐ N/A
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ANSI 117.1 ACCESSIBLE UNITS REQUIRED	ANSI 117.1 ACCESSIBLE UNITS PROVIDED	ANSI 117.1 TYPE A UNITS REQUIRED	ANSI 117.1 TYPE A UNITS PROVIDED	ANSI 117.1 TYPE B UNITS REQUIRED	ANSI 117.1 TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE/TYPE A/ TYPE B UNITS PROVIDED
48	0	0	1	1	16	16	16

COMMENTS

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	13'2" ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

PLUMBING FIXTURE REQUIREMENTS (2015 UPC)

USE		WATERCLOSETS			URINALS			LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G												
	NEW REQ'D												

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

ELEVATOR NOT REQUIRED
2 & 3-STORY RESIDENTIAL BUILDING
PER CODE PATH BELOW

The following language is taken from IBC 2015, and exempts the building from the requirements for an elevator, as the building is less than (4) stories.

1009.2.1 Elevators Required

In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, not less than one required accessible means of egress shall be an elevator complying with Section 1009.4.

Exceptions:

- In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge.
- In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1012.

However, questions are often raised about the need for an accessible route (ie, an elevator) to the second and third floor. Exception 2 below eliminates the requirement for an accessible route to floors without accessible elements.

1104.4 Multistory Buildings and Facilities

At least one accessible route shall connect each accessible story and mezzanine in multilevel buildings and facilities.

Exceptions:

- An accessible route is not required to stories and mezzanines that have an aggregate area of not more than 3,000 square feet (278.7 m2) and are located above and below accessible levels. This exception shall not apply to:
 - Multiple tenant facilities of Group M occupancies containing five or more tenant spaces used for the sales or rental of goods and where at least one such tenant space is located on a floor level above or below the accessible levels;
 - Stories or mezzanines containing offices of health care providers (Group B or I);
 - Passenger transportation facilities and airports (Group A-3 or B); or
 - Government buildings.
- Stories or mezzanines that do not contain accessible elements or other spaces as determined by Section 1107 or 1108 are not required to be served by an accessible route from an accessible level.

Exception 3 below allows for all required Type A units to be located on the first floor.

1107.4 Accessible Route

At least one accessible route shall connect accessible building or facility entrances with the primary entrance of each Accessible unit, Type A unit and Type B unit within the building or facility and with

those exterior and interior spaces and facilities that serve the units.

Exceptions:

- If due to circumstances outside the control of the owner, either the slope of the finished ground level between accessible facilities and buildings exceeds one unit vertical in 12 units horizontal (1:12), or where physical barriers or legal restrictions prevent the installation of an accessible route, a vehicular route with parking that complies with Section 1106 at each public or common use facility or building is permitted in place of the accessible route.
- In Group I-3 facilities, an accessible route is not required to connect stories or mezzanines where Accessible units, all common use areas serving Accessible units and all public use areas are on an accessible route.
- In Group R-2 facilities with Type A units complying with Section 1107.6.2.2.1, an accessible route is not required to connect stories or mezzanines where Type A units, all common use areas serving Type A units and all public use areas are on an accessible route.

The language below exempts upper floors without elevator service from containing accessible units.

1107.7.1 Structures Without Elevator Service

Where no elevator service is provided in a structure, only the dwelling units and sleeping units that are located on stories indicated in Sections 1107.7.1.1 and 1107.7.1.2 are required to be Type A units and Type B units, respectively. The number of Type A units shall be determined in accordance with Section 1107.6.2.2.1.

Type B units are only required on the ground floor per the section below.

1107.7.1.1 One Story With Type B Units Required

At least one story containing dwelling units or sleeping units intended to be occupied as a residence shall be provided with an accessible entrance from the exterior of the structure and all units intended to be occupied as a residence on that story shall be Type B units.

The exclusion of an elevator may prompt a question about the use of a single means of egress from the second and third floors. A single means of egress is allowed per the IBC 2015 language below. Emergency Escape and Rescue Openings per section 1030 will be provided.

1006.2.1 Egress Based on Occupant Load and Common Path of Egress Travel Distance

Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1.

Exceptions:

- In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and the common path of egress travel does not exceed 125 feet (38 100 mm).

Prepared For:
Kevin O'Rourke

Consultant:

ARCHETYPE ARCHITECTS
48 Union Wharf - Portland, Maine 04101

Architect:

Project:
DALTON PRUD

PORTLAND, ME

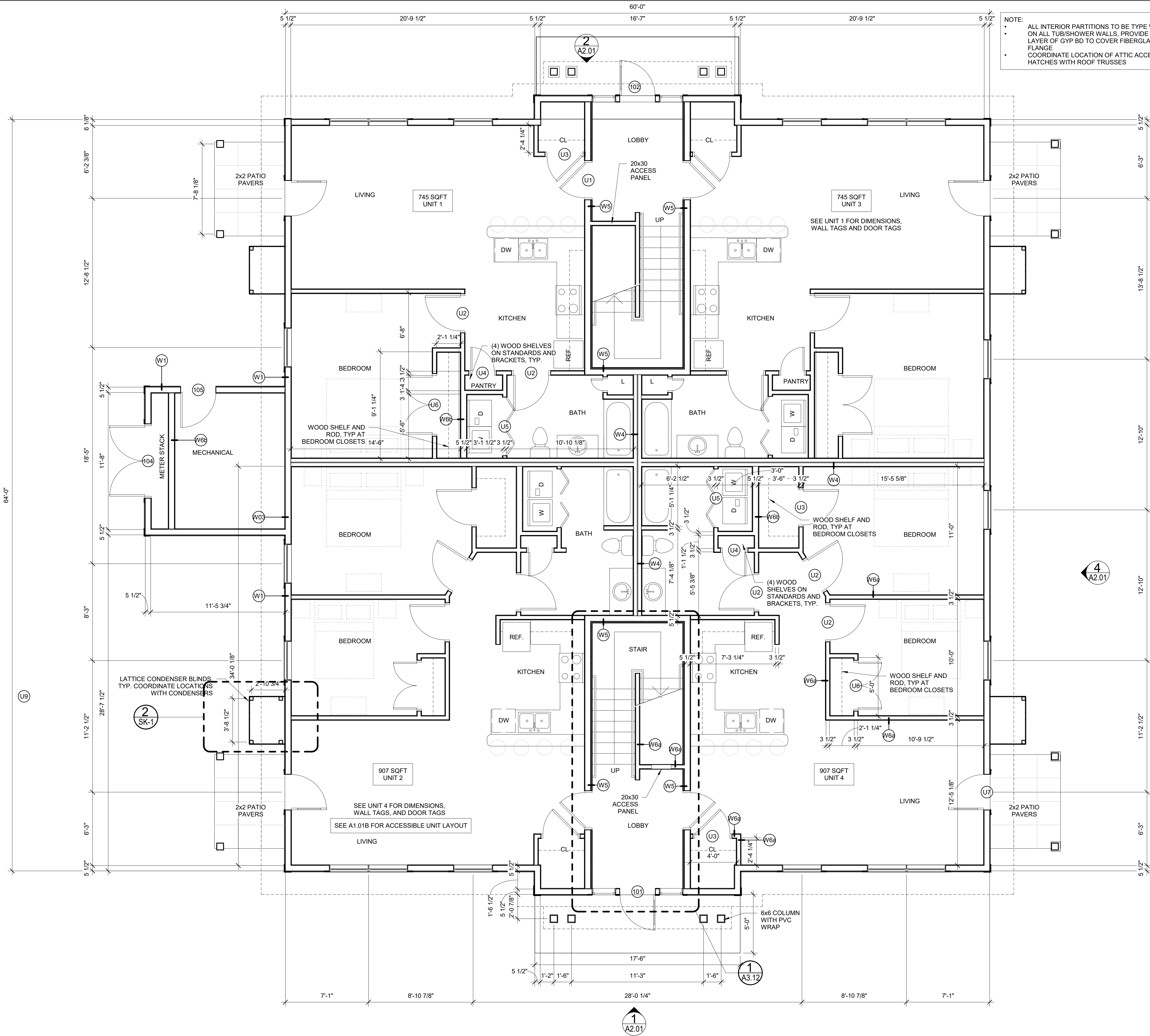
Revisions:

Scale:

Date:
04/05/2021

CODE SUMMARY

A0.01



NOTE:

- ALL INTERIOR PARTITIONS TO BE TYPE W6a U.N.O.
- ON ALL TUB/SOWER WALLS, PROVIDE DOUBLE LAYER OF GYP BD TO COVER FIBERGLASS FLANGE
- COORDINATE LOCATION OF ATTIC ACCESS HATCHES WITH ROOF TRUSSES

AREA		
Level	Area	# units
FIRST FLOOR	4072 SF	4
SECOND FLOOR	3921 SF	4
THIRD FLOOR	3921 SF	4

1ST FLOOR

1/4" = 1'-0"

DATE: 04/05/2021

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

Revisions:

Project: DALTON PRUD

Consultant: ARCHETYPE ARCHITECTS

Architect: ARCHETYPE ARCHITECTS

Prepared For: Kevin O'Rourke

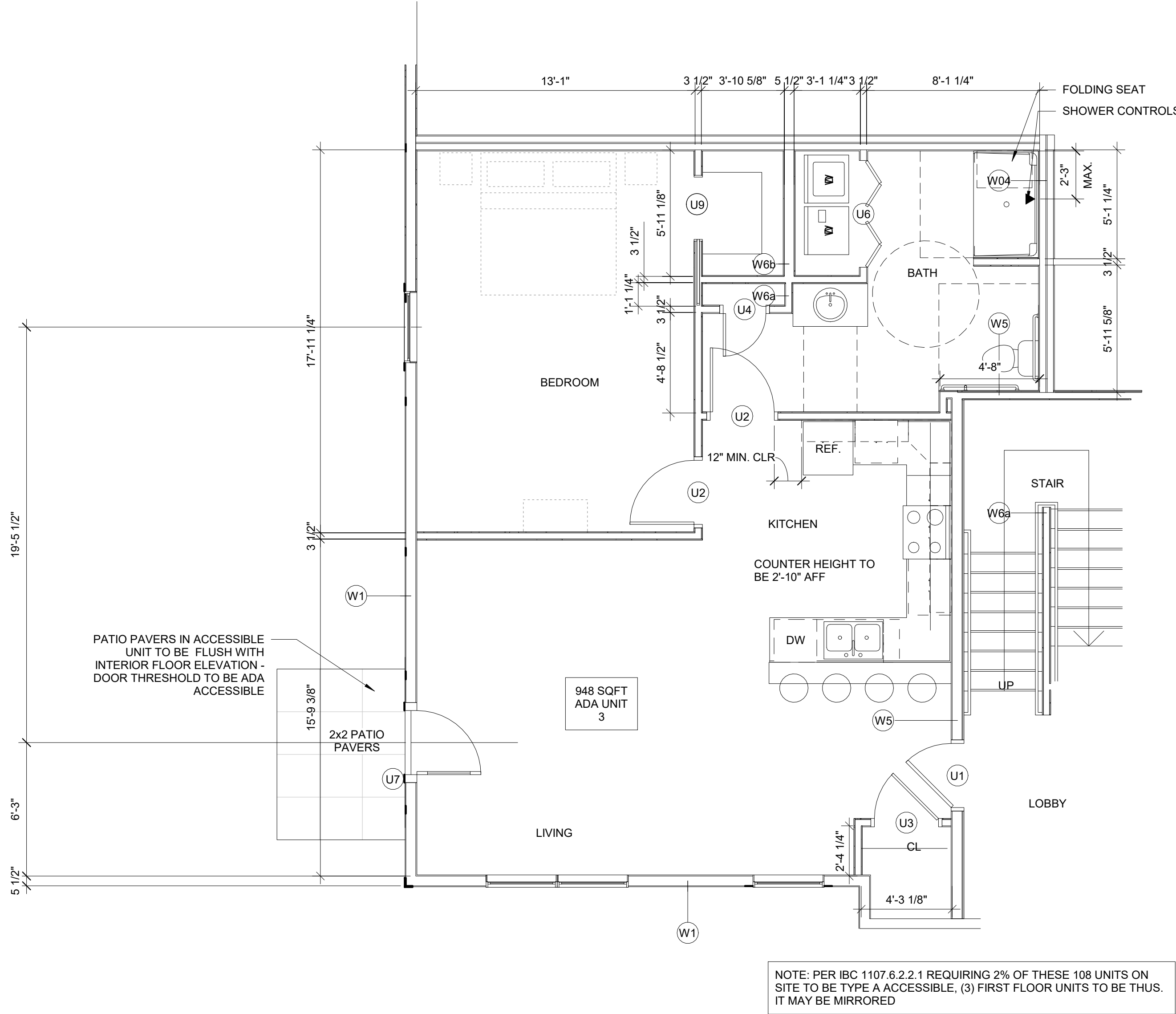
48 Union Wharf - Portland, Maine 04101

PORTLAND, ME

Project: DALTON PRUD

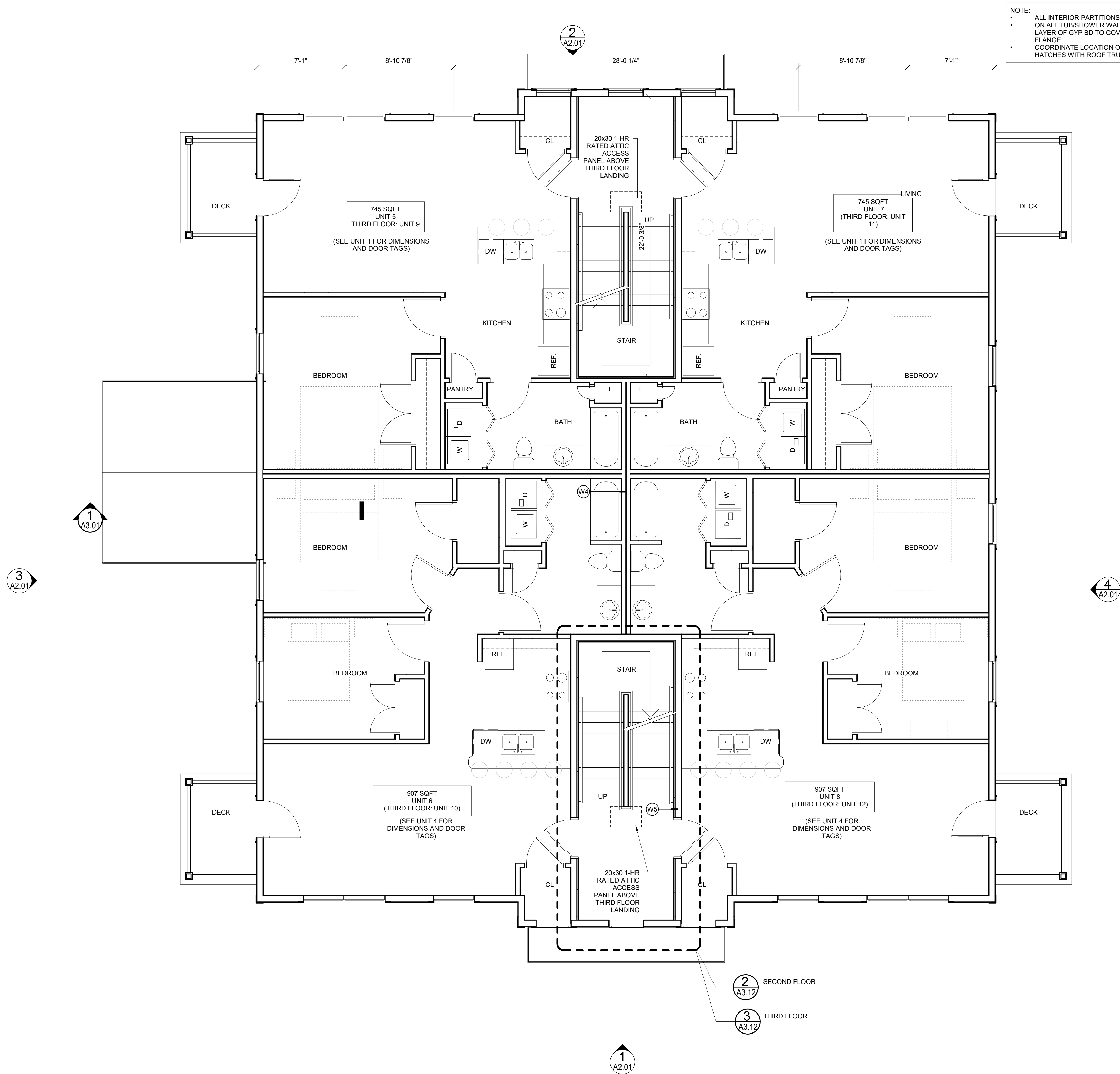
1ST FLOOR PLAN - SECOND AND THIRD FLOORS SIM.

A1.01



1 | ACCESSIBLE UNIT
1/4" = 1'-0"

A1.01B		Date: 04/05/2021	Scale: 1/4" = 1'-0"	Revisions:	Project: DALTON PRUD	Architect: ARCHETYPE ARCHITECTS 48 Union Wharf - Portland, Maine 0410	Consultant:	Prepared For:	
		ACCESSIBLE FIRST FLOOR UNIT						Kevin O'Rourke	



1 | SECOND FLOOR (THIRD FLOOR SIM.)
1/4" = 1'-0"

AREA		
Level	Area	# units
FIRST FLOOR	4072 SF	4
SECOND FLOOR	3921 SF	4
THIRD FLOOR	3921 SF	4

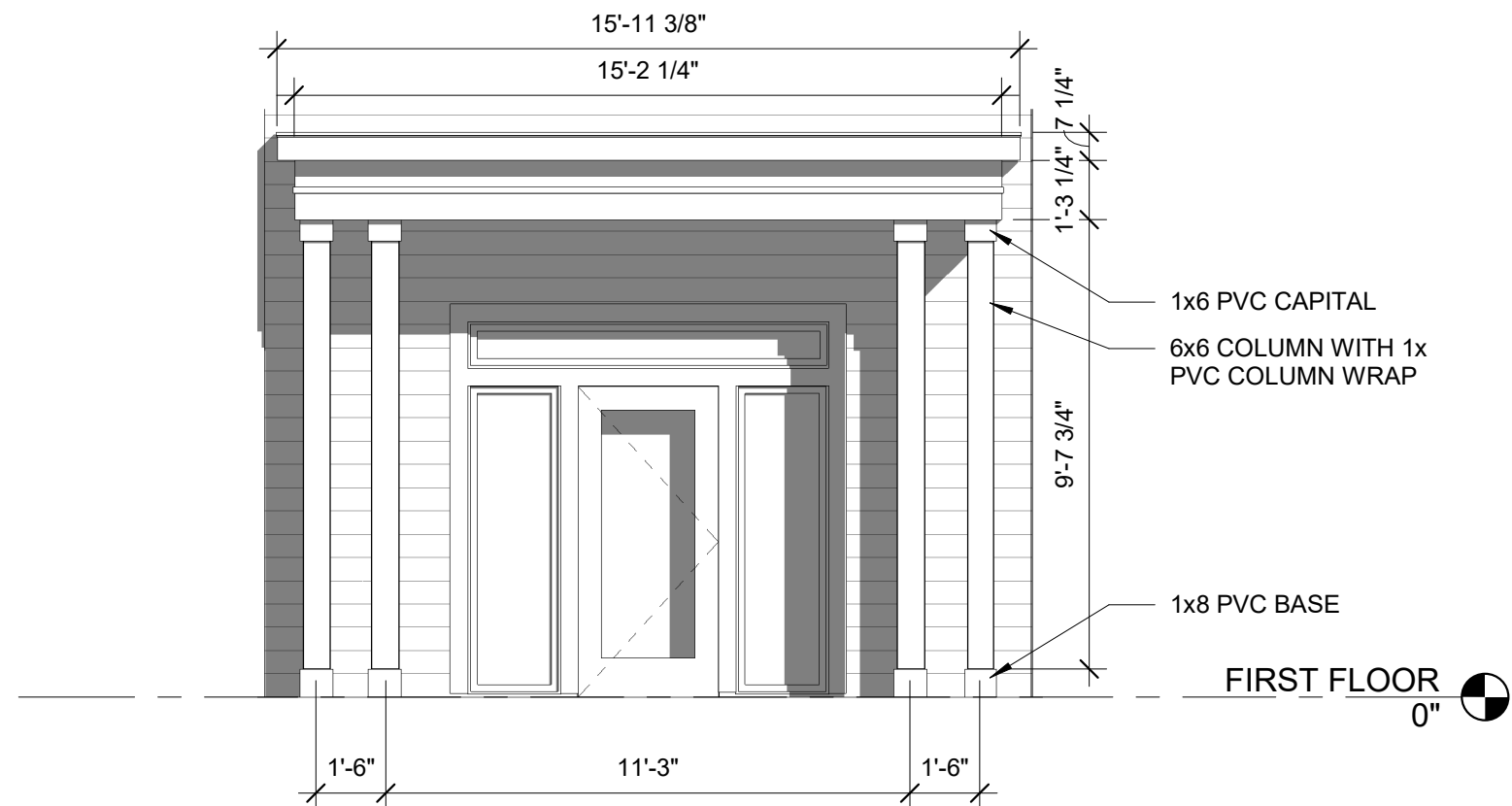
Prepared For: Kevin O'Rourke
Address
City, State

Consultant: ARCHETYPE ARCHITECTS
48 Union Wharf - Portland, Maine 0410

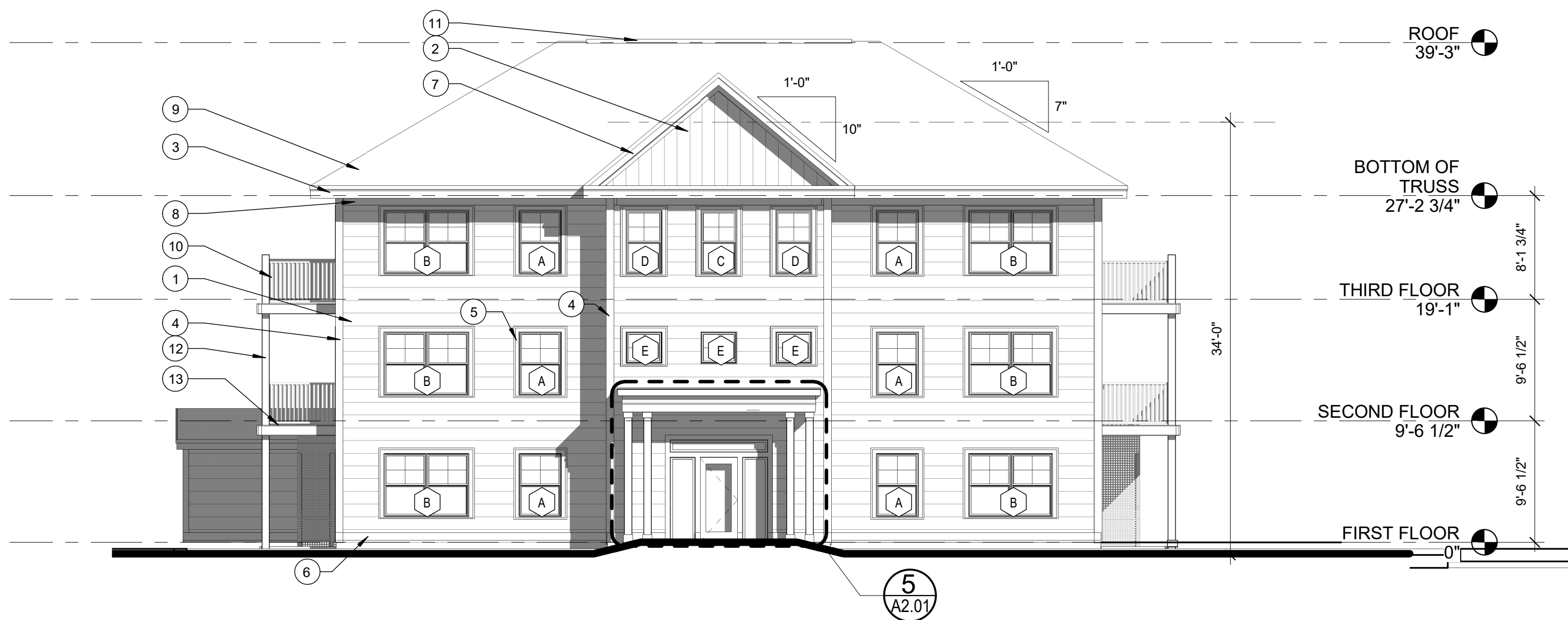
Project: DALTON PRUD
PORTLAND, ME

Date: 04/05/2021
Scale: 1/4" = 1'-0"
SECOND/THIRD FLOOR
PLAN

A1.02



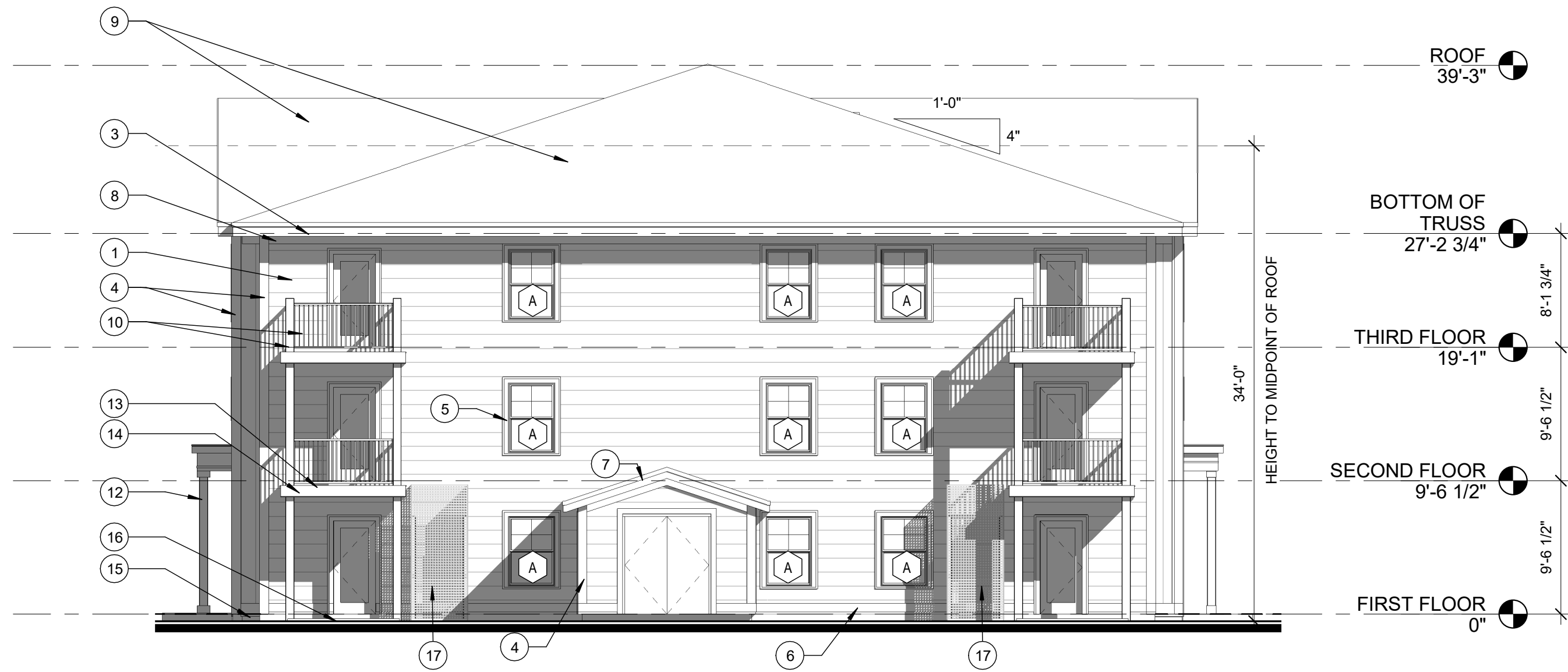
5 | ENTRY ELEVATION
1/4" = 1'-0"



1 | SOUTH ELEVATION
1/8" = 1'-0"



2 | NORTH ELEVATION
1/8" = 1'-0"



3 | WEST ELEVATION
1/8" = 1'-0"



4 | EAST ELEVATION
1/8" = 1'-0"

1. VINYL SIDING - EQUAL TO CERTAINTED MONOGRAM 5" CLAPBOARD - COLOR TO BE SAVANNAH WICKER
2. VINYL BOARD AND BATTEN SIDING - COLOR T.B.D.
3. 1x10 PVC FASCIA WITH 1x4 SHADOW BOARD - COLOR TO BE WHITE
4. 1x8 PVC CORNERBOARDS - COLOR TO BE WHITE
5. 1x4 PVC WINDOW TRIM W/ 1x2 TRIM AROUND PERIMETER - COLOR TO BE WHITE
6. 1x10 PVC WATER TABLE - COLOR TO BE WHITE
7. 1x10 PVC RAKE BOARD WITH 1x4 PVC SHADOW BOARD - COLOR TO BE WHITE
8. 1x6 PVC FRIEZE - COLOR TO BE WHITE
9. 30-YEAR ARCHITECTURAL ASPHALT SHINGLE
10. 42" HIGH VINYL RAILING AND BALUSTERS
11. CONTINUOUS RIDGE VENT
12. PVC TRIM WRAP ON POST - REF STRUCTURAL FOR POST SIZE
13. COMPOSITE DECKING
14. 1x10 PVC TRIM
15. 8" EXPOSED CONCRETE, TYP.
16. 2x2 CONCRETE PATIO PAVERS

Prepared For:

Kevin O'Rourke

Consultant:

ARCHETYPE
ARCHITECTS
48 Union Wharf - Portland, Maine 0410

Architect:

DALTON PRUD

PORTLAND, ME

Project:

Revisions:

Date: 04/05/2021
Scale: As indicated
BUILDING ELEVATIONS

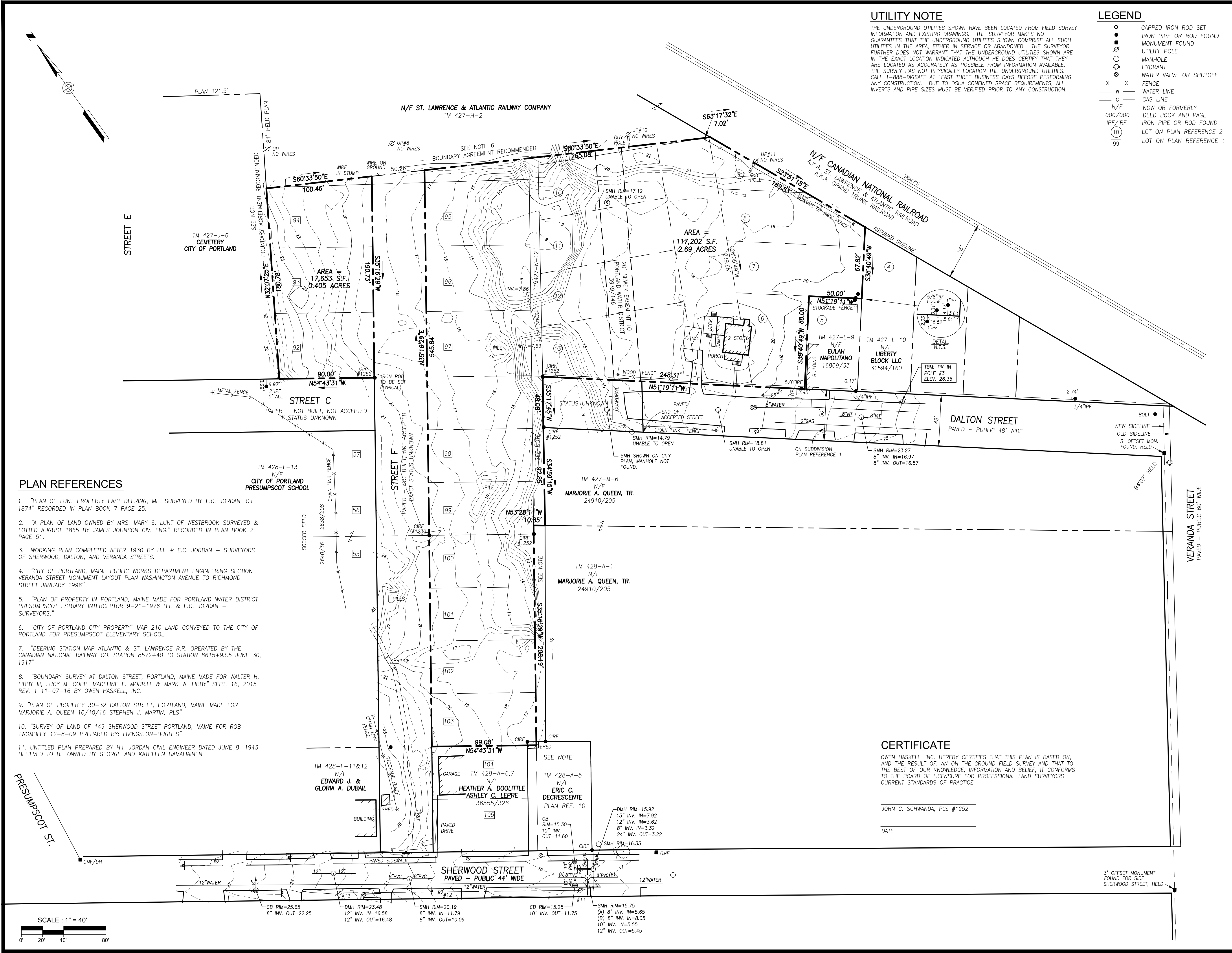
Date:

Scale:

As indicated

BUILDING ELEVATIONS

A2.01



UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATION THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

LEGEND

- CAPPED IRON ROD SET
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- HYDRANT
- WATER VALVE OR SHUTOFF
- FENCE
- W WATER LINE
- G GAS LINE
- N/F
- 000/000 DEED BOOK AND PAGE
- IPF/IRF IRON PIPE OR ROD FOUND
- 10 LOT ON PLAN REFERENCE 2
- 99 LOT ON PLAN REFERENCE 1



LOCATION MAP

GENERAL NOTES

- OWNERS OF RECORD:
HEIRS OF WALTER H. LIBBY, JR. AND MADELINE F. LIBBY, BOOK 12572 PAGE 110, TAX LOTS 427-I- 7,8,9; 427-K-1,2,3,4; 428-A-12,13
WALTER H. LIBBY, III, LUCY M. COPP, MADELINE F. MORRILL, AND MARK W. LIBBY, BOOK 11647 PAGE 187, TAX LOTS 427-L-5,6,7,8 FORTUNE CAPITAL GROUP, BOOK 26405 PAGE 133
TAX MAP 428-A LOTS 8-11

(NOTE - THE CITY OF PORTLAND ASSESSORS RECORDS SHOW MADELINE F. LIBBY AS THE OWNER OF ALL THESE LOTS AND INCLUDES TAX LOT 427-N-12, FOR WHICH NO DEED WAS FOUND, AND LOT 427-I-12 WHICH IS NOT SHOWN ON THE TAX MAP.)

- BEARINGS ARE GRID NORTH AS BASED ON COORDINATES PROVIDED ON PLAN REF. 4 FOR THE THREE FOOT OFFSET MONUMENTS SHOWN ON VERANDA STREET AT DALTON STREET AND SHERWOOD STREET.

- THE CITY ENGINEERING DEPARTMENT BLUE SHEET FOR VERANDA STREET SHOWS A WIDENING AT DALTON STREET OF 10.5 FEET. PLAN REF. 3 SHOWS THE WIDENING AS A LITTLE LESS THAN 10.5 FEET WIDE AND SHOWS AN ANGLE POINT IN THE OLD VERANDA STREET AT THE RAILROAD CROSSING. THIS ANGLE POINT IS NOT SHOWN ON THE BLUE SHEET OR ON PLAN REF. 4, BUT IS INDICATED IN THE 1888 LAYING OUT AND ACCEPTANCE OF DALTON STREET. PLAN REF. 3 SHOWS THE OLD LAYOUT OF VERANDA STREET AS MATCHING THE LINE SHOWN ON PLAN REF. 1. IT ALSO SHOWS THE 1930 NEW LAYOUT OF VERANDA STREET, WHICH APPARENTLY IS AS SHOWN ON PLAN REF. 4. THE OLD LINE, FROM PLAN REF. 3, WAS USED AS THE STARTING LINE FOR LAYING OUT THE LOTS ON PLAN REFERENCE 1.

- PLAN REFERENCE 1 SHOWS DALTON STREET AS 50 FEET WIDE, BUT THE CITY ACCEPTANCE WAS FOR A 48 FOOT WIDE STREET. BASED ON PLAN REF. 3, A TWO FOOT GAP WAS CREATED BETWEEN THE CITY STREET LINE AND THE SUBDIVISION STREET LINE ON THE EAST SIDE OF DALTON STREET. THE EXACT STATUS OF THAT STRIP IS UNKNOWN.

- THE LOT CORNER MARKERS FOUND ON DALTON STREET DO NOT MATCH THE LINES ON PLAN REFERENCE 1. CONFUSION MAY HAVE OCCURRED BASED ON THE 1930 WIDENING OF VERANDA STREET.

- PLAN REFERENCE 1 AND 2 DO NOT SHOW DIMENSIONS TO THE LINE NOW OF THE RAILROAD. PLAN REFERENCE 7 APPEARS TO SHOW A FENCE ALONG THE COMMON LINE AND SHOWS A DISTANCE OF 81 FEET ALONG THE COMMON LINE. THE DEED TO THE RAILROAD HAS A DIMENSION OF 80 FEET. SOME REMAINS OF WIRE FENCE WERE FOUND ALONG THE LINE SHOWN HEREON. THIS LINE INCLUDES MORE LAND THAT IS SHOWN ON PLAN REFERENCE 1 AND 2. A BOUNDARY AGREEMENT IS RECOMMENDED WITH THE RAILROAD.

- NO DEED WAS FOUND FOR THE CEMETERY AND NO EVIDENCE OF THE PROPERTY LINE. THE RAILROAD MAY HAVE GAINED RIGHTS UP TO THE FENCE.

- THE LINE OF STREET F WAS ESTABLISHED BY THE DIMENSIONS SHOWN ON PLAN REFERENCE 2 STARTING AT PRESUMPSCOT STREET. THIS DOES NOT EXACTLY MATCH THE PROJECTION OF CHURCHILL STREET FROM WASHINGTON AVENUE, WHICH SHOULD BE THE SAME.

- THE STATUS OF, AND THE RIGHTS OF THESE OWNERS AND OTHERS IN, THE UNACCEPTED PORTIONS OF DALTON STREET, STREET F AND STREET C ARE UNKNOWN.

- TAX LOT 427-N-12 APPEARS TO BE A GORE BETWEEN THE LOTS OF PLAN REF. 1 AND 2. THE CITY TAX RECORDS INDICATE IT IS OWNED BY LIBBY. THIS GORE SEEMS TO BE SHOWN ON AN UNRECORDED VERSION OF PLAN REF. 1 IN THE RECORDS OF H.I. & E.C. JORDAN-SURVEYORS. THE PORTION OF THE GORE NORTH OF THE NORTHWESTERLY EXTENSION OF THE SOUTHWESTERLY SIDE LINE OF DALTON STREET IS LABELED AS TAX LOT 427-N-12. THE GORE WEST OF SAID EXTENSION IS NOT SHOWN ON THE TAX MAP BUT IS SHOWN AS PART OF THE LAND OF QUEEN. THERE MAY BE A TITLE QUESTION ON THE GORE.

- THE FENCE ALONG THE RAILROAD APPEARS TO EXTEND BEYOND THE PROPERTY LINE. THE RAILROAD MAY HAVE GAINED RIGHTS UP TO THE FENCE.

- PLAN REFERENCE 9 INCORRECTLY SHOWS THE NORTHEAST LINE OF 149 SHERWOOD EXTENDS TO STREET F. DEED RESEARCH BACK TO 1882 CONFIRMS WHAT IS SHOWN ON PLAN REFERENCE 11 AND WHAT IS SHOWN ON THIS PLAN. THIS CREATES AN OVERLAP ONTO PLAN REFERENCE 10, WHICH THIS SURVEYOR BELIEVES IS PART OF THIS SURVEYED PREMISES.

- ELEVATIONS ARE BASED ON CITY DATUM, BENCH MARK: CITY POINT MDOT-PO-295, ELEVATION 12.0'.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

JOHN C. SCHWANDA, PLS #1252

DATE

REV. 01 01-07-2021 TOPOGRAPHY ADDED

Boundary Survey
At
Dalton Street & F Street, Portland, Maine
Made for
Hammond House LLC
94 South Street, Yarmouth, Maine



OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS

390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: SDG/JLW DATE: DEC. 11, 2020 JOB NO. 2020-346 P

CHECKED BY: JCS SCALE: 1" = 40' DRWG. NO. 1



PC 1

Michael Long

May 14, 2021, 4:11:05 PM (3 days ago)



to planni...@portlandmaine.gov, aza...@portlandmaine.gov

Hello,

I live within the 1000' buffer zone for the proposed 0 Dalton Street residential unit development. The planned development will negatively impact some of the last remaining greenspace in the neighborhood, paving over much of the existing walking trail that runs between Sherwood St and the Settlers' cemetery. I cannot in good conscience oppose this development during our housing crisis, but do believe that the developers should be required to offset some of their negative impacts on surrounding parcels.

Specifically, two major areas on the proposed development are seriously infested with invasive Japanese knotweed. A building permit should be contingent on the developer filing a plan to eradicate this knotweed both on their own parcel (along the north edge of the proposed recreational space) and also along the portion of walking path abutting the Presumpscot Elementary School ballfield. Furthermore the plan should account for responsible disposal of excavated material and vegetation to avoid spreading this knotweed elsewhere.

Lastly I would be curious if there will be a requirement for the developer to make any improvements to the wetland area. Perhaps a small dam would be useful for retaining more water and providing better habitat for birds and amphibians?

Michael

Heather Doolittle

to planni...@portlandmaine.gov, Ashley Lepre, shuk...@portlandmaine.gov

May 19, 2021, 6:48:24 PM (2 days ago)



PC 2

Dear Planning Board Members,

We are the property owners and primary residents of 155 Sherwood St, an abutting property to the proposed development in the vicinity of 0 Dalton Street. We have reviewed the proposed plans and have a number of concerns related to the development, as currently shown.

Attached is a letter documenting our concerns for your review and consideration.

Best,

Heather Doolittle and Ashley Lepre

HEATHER DOOLITTLE & ASHLEY LEPRE
155 SHERWOOD ST.
PORTLAND, ME 04103

MAY 19, 2021

PLANNING AND URBAN DEVELOPMENT BOARD
CITY OF PORTLAND
389 CONGRESS STREET
PORTLAND, ME 04101

Re: Response to Proposed Development in the Vicinity of 0 Dalton Street

Dear Planning Board Members,

I am writing in response to the recent Notice from the City regarding the proposed development in the vicinity of 0 Dalton Street (PL-001532-2021). As an abutting property owner of the proposed development, we have a few concerns regarding development as currently proposed, listed below.

- 1. Invasive Plant Species:** The parcels for redevelopment are significantly impacted by the invasive species of bamboo know as Japanese Knotweed. This robust plant is very challenging to remediate and often takes years of continued effort to control the growth. Further, Japanese Knotweed is able to grow from broken off plant fragments, making disturbance of the plant during removal challenging to achieve without further spreading to the site and surrounding area. When plant stress is not properly managed, the species can grow laterally in the ground over distances of up to 65 feet. The proposed development documents provide no mention of knotweed mapping, management, or control. Typical site work and excavation provides significant risk to further spreading Japanese Knotweed in the area. We request that the extent of knotweed in the parcels is evaluated and that a management plan is developed and reviewed by the City Arborist and Maine DEP.
- 2. Site Grading:** The proposed site grading slopes towards the rear of my property, 155 Sherwood Street, and does not provide adequate stormwater collection along the driveway, risking increase runoff, flooding, and water damage to my house, garage, and property.
- 3. Wetlands Impact:** as proposed, the development comes within 30 feet of the existing wetland. The wetland is home to numerous species of birds, including mallard ducks and Great Blue Heron, as well as provides critical habitat for smaller species including turtles, frogs, and salamanders. The development threatens this vibrant habitat by removing the forested buffer that slows runoff and recharges the groundwater.
- 4. Stormwater Collection:** 0 Dalton Street drainage currently feeds the existing wetland. Regrading and stormwater collection risks to wetland recharge and longevity.
- 5. Impervious Surface:** the proposed development installs impervious surface (concrete, pavement, buildings) on approximately 90% of the site, excluding wetland area. This will have a significant impact on ambient temperature, water quality, and groundwater recharge in this area.

6. **Construction Traffic:** Adjacent to the Presumpscot Elementary School, the timing of this project may coincide with renovations at the school. Two significant construction projects cooccurring in this small residential neighborhood will have a significant impact on traffic and quality of life for residents.
7. **Loss of Greenspace:** Access to greenspace is part of sustainable urban development. The existing Portland Trail off Sherwood Street will be shortened by ~1/2 length as a result of the new street access to the proposed development. This highly trafficked trail is used for walking, biking, birding among other activities. In many ways this trail serves as the only park in East Deering north of Washington Ave. As shown on the Portland City Map of Parks, Trails, and Playgrounds, East Deering has much lower density of outdoor recreational spaces available than the rest of the City, a trend that becomes further significant when adjusting for the primarily residential makeup of this neighborhood. The proposed development both decreases greenspace and increases density in East Deering.
8. **Privacy:** Proposed Plantings indicate loam and seed only with no privacy screening along the proposed driveway. I request plantings capable of providing privacy along the drive to account for the loss of the 55-ft wide section of forest.
9. **Aesthetic:** The exterior architecture shown in the proposed renderings neither matches nor elevates the aesthetic of surrounding homes. While it may seek to translate the materiality and form of a small, 1-story home, the fact is that it is a different and new building type to the area. Mimicry is not the same as belonging. As Portland rapidly grows and the development of more R5 parcels is all but guaranteed, it is essential to set a precedent for design excellence through thoughtful use of innovative materials, forms and ideas. We request a design workshops that are open to public participation that will address the exterior treatment of the proposed development as well as other opportunities to participate in design considerations.
10. **Aesthetic:** The proposed development is for three-story buildings. The majority of the houses in this neighborhood are 1-2 story buildings. The added height, proposed grading, and natural topography of the surrounding area will result in the proposed development towering over existing homes. For reference, existing multi-unit buildings in East Deering are only two stories and at lower elevations.
11. **Traffic:** The proposal indicates no mention of added traffic. Existing significant bottleneck points include the Washington Ave and Veranda St Intersection and the Presumpscot St and Washington Ave Intersection. Additionally, Sherwood Street is a small, quite residential street where children frequently play, ride bikes, and walk to the Presumpscot School. Increased traffic on Sherwood Street is a concern for both public safety, noise pollution, air quality, and quality of life for current residents.
12. **No Mention of the intended occupants:** The proposed development does not specify if these units will be occupied by renters or owners. This information has implications on the character of this development and its impact on our neighborhood.
13. **No mention of property management plan:** there is currently no mention of how the property and landscaping will be maintained, where dumpsters will be located, where yard waste will be deposited, etc.
14. **No mention of construction schedule/expected date of competition:** Throughout the duration of construction, noise, sight and traffic disturbances are likely. Further, the potential sale of our

property will likely be negatively impacted during this time. We request to be informed of the expected construction schedule including expected start date, expected completion date and expected date of occupation.

This development is an opportunity to set a high standard of excellence for R5 development throughout Portland. If executed with care, expertise, and thoughtfulness on how we choose to grow our community, it could foster support for the continued development of higher density housing throughout Portland. However, the opposite is also possible. These are our initial concerns related to the proposed development as currently understood. We look forward to having them addressed and intend to remain involved and aware of further planning. Thank you for your time.

Respectfully,

Heather Doolittle and Ashley Lepre



Shukria Wiar <shukriaw@portlandmaine.gov>

Dalton Street

1 message

Tom Errico <thomas.errico@tylin.com>

Mon, May 17, 2021 at 7:32 AM

To: "Shukria Wiar (SHUKRIAW@portlandmaine.gov)" <shukriaw@portlandmaine.gov>

Cc: Michael Tremblay <mtremblay@portlandmaine.gov>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>

Hi Shukria - Based on project trip generation and site location a traffic study is recommended with the scope of work to include the following:

- * Evaluate the intersections of Sherwood Street at Veranda and Presumpscot. This shall include collecting AM and PM intersection turning movements counts and conducting a capacity analysis. The analysis should be performed for No-Build and Build conditions.
- * Conduct a speed study on Sherwood Street and assess the need for traffic calming strategies (including suggestions for pavement marking calming strategies).
- * Crash data for Sherwood Street shall be obtained and assessed.

If you have any questions, please contact me.

Thanks

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
[T.Y. Lin International]
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile

thomas.errico@tylin.com <mailto:thomas.errico@tylin.com>

Visit us online at www.tylin.com <http://www.tylin.com>

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TYLININTERNATIONAL  2K



Shukria Wiar <shukriaw@portlandmaine.gov>

Comments needed for 0 Dalton Street

Mike Tremblay <mtremblay@portlandmaine.gov>

Thu, May 20, 2021 at 12:04 PM

To: Shukria Wiar <shukriaw@portlandmaine.gov>

Cc: "Swett, Lauren" <lszett@woodardcurran.com>, Bruce Hyman <bhyman@portlandmaine.gov>, "Tarling, Jeff" <jst@portlandmaine.gov>

Shukria,

Comments below:

General

- The project name "0 Dalton" has already caused confusion about traffic and access impacts. Members of the public have assumed that primary access will be off Dalton Street. While this isn't the case, residents of Sherwood Street may not be as aware and engaged of this project as they may be otherwise. It is encouraged that the applicant change the project name to clarify.

- Verify that the E-911 process has been completed for this project.

Site Plan

- The site plan shows several crosswalks along Winchester Drive, but there are no ramps shown.

- The northernmost parking area does not have an ADA space. All parking distinct areas should have a van-accessible ADA space.

- The buffer spaces adjacent to ADA parking spaces should have a direct accessible route to the sidewalk. Refer to [this document](#).

- Sidewalk widths are typically 4 feet. While not under the purview of the Technical Manual, the recommended sidewalk width is at least 5 feet. Additionally, the Applicant should be aware of federal ADA requirements for sidewalks, which do apply here. Signs or other obstructions along the sidewalk may pinch the sidewalk down to an unacceptable width. A 5-foot sidewalk width or greater is strongly encouraged.

- Bicycle racks do not appear to be located along a paved access way, requiring users to wheel bikes through grass or another unspecified material. Bike rack symbology is also extremely small (5'x3') and do not adequately reflect the footprint of bike racks with bikes parked in them. The symbol used for a bike rack is a simple rectangle and is not easily distinguishable from other site features like concrete pads.

- "No Thru Traffic" or similar signage is recommended.

Utility Plan

- The sewer connection to Sherwood St. may require a manhole; coordinate with Water Resources.

Mike Tremblay, P.E.

Senior Engineer

Engineering Division

Department of Public Works

City of Portland, ME

mtremblay@portlandmaine.gov

P. 207.874.8881 F. 207.874.8852



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Shukria Wiar <shukriaw@portlandmaine.gov>

0 Dalton Street - Review Comments

Lauren Swett <lswett@woodardcurran.com>
 To: Shukria Wiar <shukriaw@portlandmaine.gov>

Wed, Jul 7, 2021 at 5:54 PM

Hi Shukria,

Here are my comments. They are generally pretty minor, and include the standard comments for stormwater maintenance agreement and utility ability to serve. There are a couple of things related to the stormwater connection through the site related to the school, and the gas line in Dalton Street that appear to need some additional coordination, but I'm guessing that is already going on in the background. Let me know if you have any questions!

- The project is required to provide for stormwater management in accordance with the Maine DEP Chapter 500 and City of Portland Technical Manual Section 5 requirements for stormwater management. In addition to the Site Plan and Subdivision application, the Applicant has also submitted a Maine DEP stormwater permit for review under the City of Portland's Delegated Review Authority. We have the following comments:
 - Basic Standards – The project has provided an erosion and sedimentation control plan with details and notes in accordance with the standards. The plan should be updated to show a double row of sediment barrier along any remaining undisturbed wetlands.
 - General & Flooding Standards – The project is providing for treatment and flow attenuation of stormwater utilizing a series of underdrained subsurface sand filters (USSFs). I just have a few minor comments:
 - The Applicant should check proposed tree location for proximity to the proposed USSF systems, in particular number 1 and 4.
 - A stormwater maintenance plan and agreement will be required for the proposed systems. The agreement should include the 4 USSFs and the connecting outlet control structure.
- A stormwater system is proposed to direct water from the school site to the west through the property, discharging to the west. The Applicant has included narrative describing the system's design in conjunction with the abutting school property. The system includes a structure labeled "DMH By Others" and a "Potential 12" Storm Drain Connection and Drainage Easement from School". Further information confirming the design of this system (specifically pipe sizing) should be provided as well as confirmation of the easement and additional infrastructure required from the abutter.
- The Applicant has provided requests for utility ability to serve. Confirmation of ability to serve should be provided upon receipt.
- The utility plan includes locations of proposed landscaping, which is helpful. The Applicant should generally check for proximity of proposed landscaping to utilities. In addition to proximity to the USSFs as noted above, it also appears that landscaping will be in close proximity to some proposed electrical infrastructure – the Applicant should confirm constructability.
- The utility plan identifies a potential gas main extension in the existing Dalton Street. Confirmation of this extension and further information on impact (repaving, etc.) should be provided.
- With work proposed in close proximity to wetlands, the Applicant should confirm if additional permitting, like a Natural Resource Protection Act Permit By Rule is necessary. Also, I would suggest that a different hatch be used to show loam and seed in the area to the east – the current hatch looks like wetlands and appears to show wetland impact which I don't believe is the intent of this work.

Thanks,

Lauren

[Quoted text hidden]

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.



Shukria Wiar <shukriaw@portlandmaine.gov>

0 Dalton Street - Review Comments

Jen Thompson <jlt@portlandmaine.gov>

Wed, Jul 7, 2021 at 11:53 AM

To: William Scott <wgs@portlandmaine.gov>

Cc: Shukria Wiar <shukriaw@portlandmaine.gov>, Lauren Swett <lszett@woodardcurran.com>, Jeff Tarling <jst@portlandmaine.gov>, Jon Giles <jgiles@portlandmaine.gov>

As I wait to speak with John Cunningham, I can join in Bill's comments or suggest amendments of them as shown in red, below. Additionally, one of the outstanding issues I want to speak with Mr. Cunningham about is the need for easements or license agreements from the City and any other abutters who own the fee in the unaccepted Street F. Those easements/licenses will be needed in order to permit the developer to construct the road as proposed. But, again, I'll follow up after I've spoken with him. Unless something changes, I think this can be a condition of approval to be satisfied prior to issuance of a building permit.

Jen Thompson
Associate Corporation Counsel
City of Portland
City Hall Office 207.874.8915
Cell Phone: 207.749.7445

On Wed, Jul 7, 2021 at 11:25 AM William Scott <wgs@portlandmaine.gov> wrote:

Shukria,

Here are my review comments for the subdivision plat. Please feel free to share my comments with the applicant and their representatives:

1. Please show and label F Street on this plan. Please **include a note to the effect** that it is a dedicated, unaccepted street in which the City has continued its potential future interests. Please show the street lines that are not fee ownership lines for the developer by using a different line type and line width to distinguish them from the fee ownership boundary lines.
2. Please label the vacated portions of C Street and Dalton Street.
3. Please label all abutting landowners' names and deed book & page numbers.
4. It looks like at least 3 of the 4 proposed buildings are encroaching on the limits of F Street. These buildings should not be designed within the street limits. **Yes, this is correct. Structures may not be constructed in the dedicated rights of way as that has the potential to interfere with the dedication as originally made.**
5. Please add the City-approved name of the proposed street.
6. Please add a note to the plan that ~~states the developer's intention to retain this as a private street, not a public one~~ **makes it clear that the road will be a private street until such time as the City accepts it as public.** This note should state that the homeowners' association is responsible for plowing, trash removal, and maintaining the road, parking lots and sidewalks, as well as any drainage and sewer structures and pipes. **A condition of approval should be added that requires submission of HOA docs that also note the status of the road and the HOA's responsibility for maintenance, snow removal, trash, etc.**
7. Please label the "house lot" within this development. Is it to be retained by the developer?
8. Please add a Legend to the plan.
9. Please show boundary markers to be set at the development's lot corners.
10. Please add a Professional Land Surveyor's name, stamp and signature to this plan.
11. Please label the sewer easement that crosses the property near Dalton Street, with its deed reference.

12. Please note encroachments and proposed actions to be taken, if any.
13. Please add notes about the boundary line agreements with the City and with the railroad company. Please label any deed references pertaining to these agreements.
14. Please make sure all boundary lines and street lines have bearings and distances labeled. Many are missing on the current version.
15. Please add the boundary survey plan note about the basis of bearings and coordinates.
16. Please add the number of new unit numbers per building, and whether or not they all are proposed to be residential.
17. Please remove the stray line on the school property.
18. Please label Sherwood Street and Dalton Street as "public" and also label their right-of-way widths.

As usual, I am available to answer any questions about my comments. Thanks Shukria.

On Wed, Jul 7, 2021 at 9:14 AM Shukria Wiar <shukriaw@portlandmaine.gov> wrote:

Good Morning,

I am planning to take Friday off so I need to button this project up asap. Please get me your comments by the end of today.

Thank you so much!

--

Shukria Wiar, Planner
Planning & Urban Development Department
[389 Congress Street 4th Floor](#)
[Portland, ME 04101](#)
Phone 207.756.8083
Fax 207.756.8258
<http://www.portlandmaine.gov/planning>

--

Bill Scott, P.L.S.
Chief Surveyor
City of Portland, Maine
Department of Public Works
Engineering Division
207-874-8825



Shukria Wiar <shukriaw@portlandmaine.gov>

0 Dalton Street

Victoria Volent <vvolent@portlandmaine.gov>
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Wed, Jul 7, 2021 at 9:23 AM

Good Morning,

Please find attached the IZ memo for 0 Dalton Street.

Please note, the applicant proposes construction utilizing Section 18.2.3 E of the Ordinance which allows for a 25% increase in total permitted units if the applicant provides the workforce housing units on site. The applicant may not also take advantage of any bonus they may be eligible for under subsection 18.2.4 A (density bonus per Table 18-C) or 18.2.4 B (PRUD dimensional bonuses and changes).

Please also note, the applicant cannot provide a fee-in-lieu for a portion of the required workforce units as they have chosen to provide the workforce units on site to receive the 25% increase in total permitted units (they are committing to providing 12 workforce units on site).

Please note, if the applicant does not wish to provide up to six two-bedroom units as workforce units, they may provide two additional one-bedroom units instead. Meaning, they could provide eight one-bedroom units and five two-bedroom units, or ten one-bedroom units and four two-bedroom units, or twelve one-bedroom units and three two-bedroom units. I only mention this in case it comes up during the public hearing. I would not suggest you include this information in your memo to the PB or initiate the conversation during the public hearing. For this reason, I have chosen in my memo to recommend "a minimum of twelve (12) workforce units". This language will provide the flexibility for later negotiations.

Thank you,

Victoria

Victoria Volent
Housing Program Manager
Housing and Community Development
Phone: 207-482-5028
www.portlandmaine.gov

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0 Dalton Street PRUD - PB Memo.docx
3603K

PLANNING BOARD REPORT PORTLAND, MAINE



73 and 91 Winter Street
Major Site Plan, Subdivision, IZ Conditional Use
PL-001371-2020
Community Housing of Maine (CHOM), Applicant

Submitted to:	Portland Planning Board	Prepared By:	Caitlin Cameron
Public Hearing Date:	July 13, 2021	Date:	July 9, 2021

I. INTRODUCTION

Community Housing of Maine (CHOM) and the Portland Housing Authority have submitted a Major Site Plan, Subdivision, and Inclusionary Zoning Conditional Use application for two new residential buildings including a four-story, 43-unit affordable multi-family housing building and a four-story, 52-unit senior housing building at 73 and 91 Winter Street (formerly 120/144 State Street), in the West End neighborhood. The project site is currently comprised of a single parcel that includes the Mercy Hospital building and was recently the subject of a zoning map amendment that rezoned the property from R-6 to B-3 approved by the City Council on February 17, 2020 at the recommendation of the Planning Board.

The proposed projects are Phase II of the overall redevelopment of the Mercy Hospital campus. Phase I involves the adaptive reuse of the existing Mercy Hospital building by NewHeight Redfern, LLC under a separate application. The proposed project includes two new buildings with a combined 95 residential units that would lease 15 adjacent parking spaces and share site amenities with the Phase I redevelopment/adaptive reuse of the adjacent Mercy hospital site. The applicant for the proposed Phase II project is working with the landowner (NewHeight Redfern, LLC) for the shared common site improvements including parking and utilities to service the residential sites.

The Planning and Urban Development Department mailed 296 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the July 2 and 3, 2021 editions of the *Portland Press Herald*. The applicant held a Neighborhood Meeting on March 11, 2021, with notes included ([Attachment U](#)). As of the writing of this memo, the Planning Department received two additional public comments (PC3-PC4).

Applicant: CHOM (represented by Brian Kilgallen, Bree LaCasse)
Agent and Civil Engineer: Acorn Engineering (Peter Heil, Will Savage)
Architect: Ryan Senatore Architecture, LLC (Ryan Senatore)
Landscape Architect: Aceto Landscape Architects (Nick Aceto)



Figure 1: Development Site

II. REQUIRED REVIEWS AND REQUESTED WAIVERS

Applicant's Proposal	Applicable Standards
New construction over 10,000 sf	Sec 14.6 Site Plan Review
Subdivision	Sec 15.4 Subdivision Review
Multi-family Residential >10 units	Sec 18.2.3 Inclusionary Zoning Conditional Use
Creation of on-street parking – 2 spaces, Spring Street	Planning Board approval required
West End Historic District	Certificate of Appropriateness (for approval by Historic Preservation Board)
Waivers	Citation
Landscape Preservation – removal of 7 trees (0% preserved)	City of Portland Technical Manual 4.3 Preservation of Existing Vegetation (30% min)
Light Trespass – illumination level at property line exceeding .1 fc	City of Portland Technical Manual 12.3.4 Light Trespass
Illumination Levels – exceeding 5.0 fc max	City of Portland Technical Manual 12.3.2 Illumination Levels

III. PROJECT DATA

SUBJECT	DATA
Total area of the site	32,531 sq ft
Total Disturbed Area	32,531 sq ft
Existing Zoning	B-3 Downtown Business
Existing Use	Surface parking, emergency room
Proposed Use	Residential
Impervious Surface Area	
--Existing	29,225 sq ft
--Proposed	29,501 sq ft
--Net Change	-276 sq ft
Building Footprint (2 buildings)	
--Existing	0 sq ft
--Proposed	10,000 + 10,980 sq ft
--Net Change	+20,980 sq ft
Building Floor Area (2 buildings)	
--Existing	0 sq ft
--Proposed	87,297 sq ft
--Net Change	+87,297 sq ft
Proposed Bedroom Mix	95 total
-Efficiencies	6
-One-bedroom	67
-Two-bedroom	13
-Three-bedroom	9
Parking Spaces	15 off-site; project seeking parking exemption (100%)

Bicycle parking Spaces	40 (0 existing)
------------------------	-----------------

IV. BACKGROUND AND EXISTING CONDITIONS



Figure 2: Existing Conditions (applicant)

a. Current Land Uses and Zoning

The proposed project will subdivide the parcel at Chart 45, Block C, Lot 7 (120 State Street) to create two new parcels located on Winter Street and Spring Street. The site currently includes the existing 1943 Mercy Hospital complex, surface parking, and a loading dock area. Mercy has operated a hospital on the subject site for approximately seven decades and will continue operations on the site through 2022. A large area of surface parking to accommodate the existing uses occupies these blocks, interrupting the historic fabric. The zoning for the site was recently amended from R-6 to B-3 to facilitate the redevelopment of the large parcel (ZN-001163-2020).

The immediate context has an intact historic fabric; the character of Spring and Winter streets is predominantly small-scale residential, with some exceptions for surface parking and the hospital. Most of these properties are protected by historic districts (see section below). Further down Winter Street to the east is 100 State Street, a six-story tower in the park style multi-family building constructed in 1979.

The majority of the West End neighborhood is zoned R-6. Nearby Pine and Congress streets are mapped with mixed-use B-1 and B-3 zones, respectively. Congress Street, Portland's main thoroughfare, is located roughly one block to the northwest and is lined with a mix of residential and commercial buildings ranging between two and eight stories. Brackett and Pine streets are zoned B-1 Neighborhood Center and have seen recent mixed-use, multi-family development, including 189 Brackett Street.

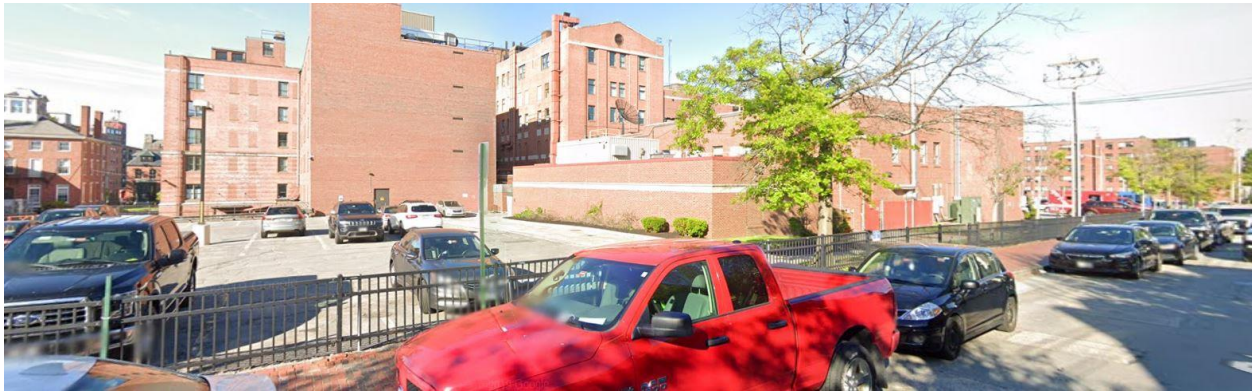


Figure 3: Existing Site Conditions looking from Winter Street

b. Historic Resources

The area under review is within the West End Historic District and is adjacent to the Congress Street Historic District. Therefore, the project is subject for design review under the Historic Preservation Ordinance and the Historic Preservation Board has review authority per Section 14.6.4.1.1. Thus, the site is exempt from the B-3 Design Guidelines. The majority of parcels on Winter Street across from Mercy Hospital are contributing structures to the local historic district. The project received approval from the Historic Preservation Board for each building design (April 21, 2021, June 16, 2021).

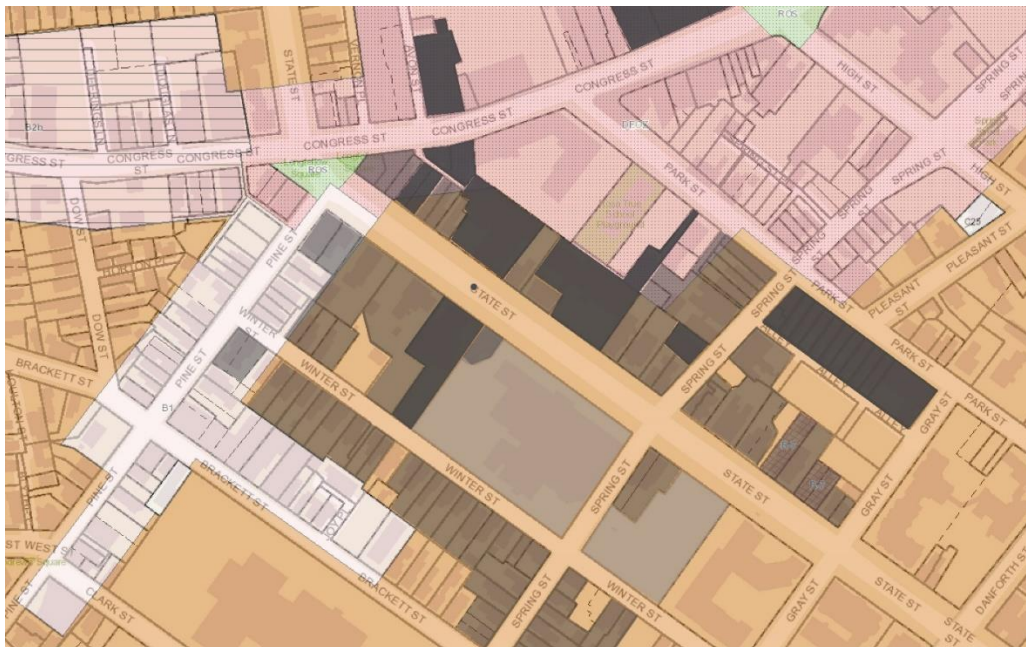


Figure 4: Historic Resources (Landmarks - dark grey, Contributing - light grey)

V. PROPOSED DEVELOPMENT

The applicants propose to develop two residential buildings on two new parcels with frontages on Winter Street. The 73 Winter Street building would be four stories, 44 feet, and include 42,197 square feet of residential space with 43 units all intended to be affordable apartments. Primary entrances would be from

Winter Street with multiple entry points to be consistent with the frequent, smaller scale residential patterns across the street. The project also includes frontage on Spring Street.

The 91 Winter Street building would contain approximately 40,763 square feet of residential space comprising 52 senior one-bedroom residential units. The building would rise four stories, measuring 42 feet with mechanical systems on the roof. Ground floor units have individual entries/access to the street and the building's main entrance faces Winter Street with a residential lobby.

The applicant is eligible for and seeking a parking exemption from the required 95 parking spaces. Fifteen supplemental parking spaces are proposed to be leased off-site at the adjacent surface parking area. Bicycle parking and general storage areas are provided within each building.

Site improvements such as new sidewalks, street trees, and crosswalks are proposed for Winter Street and a portion of Spring Street. On-street parking will be maintained on Winter Street and two spaces added to the Spring Street frontage. An emergency access alley with mountable curb is proposed between the two buildings on Winter Street.

The 148 State Street Phase I proposal (under separate review), includes amenities that will be shared with these two residential buildings. These site amenities include shared parking and woonerf parking, bike parking, benches, landscape, and path lighting. A bus stop and mid-block crosswalk on Spring Street are included as part of the 148 State Street proposal but will be proximate to the residents of this site.

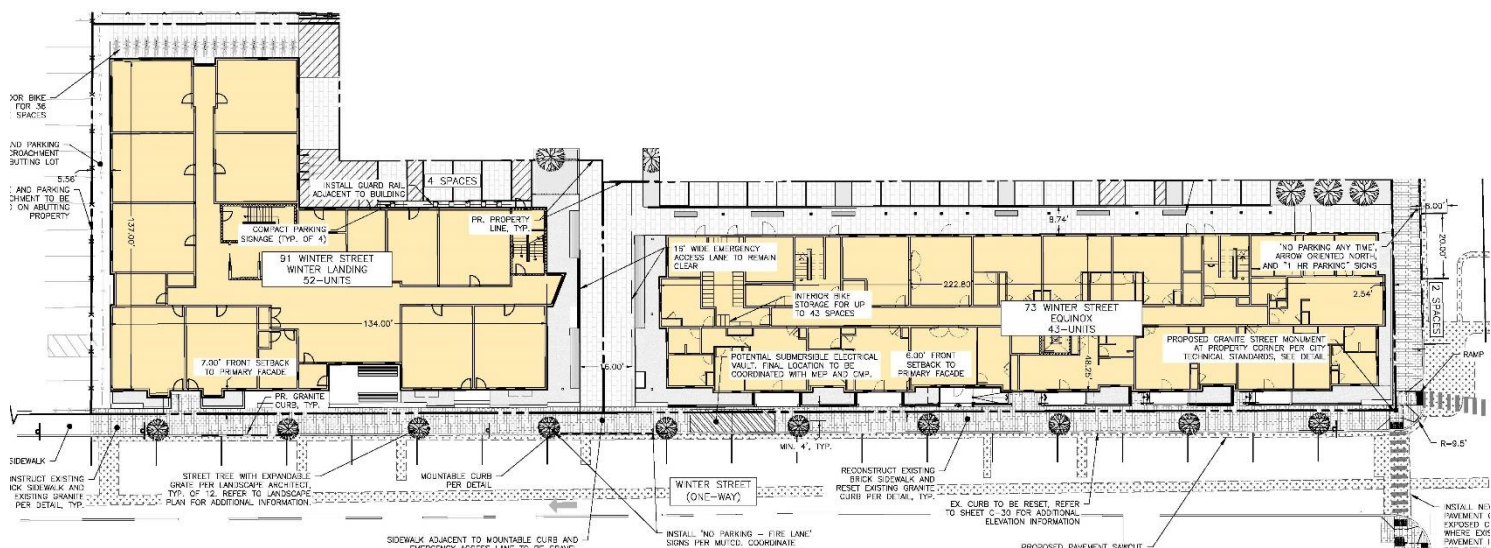


Figure 5 Proposed Site Plan (73 and 91 Winter Streets)

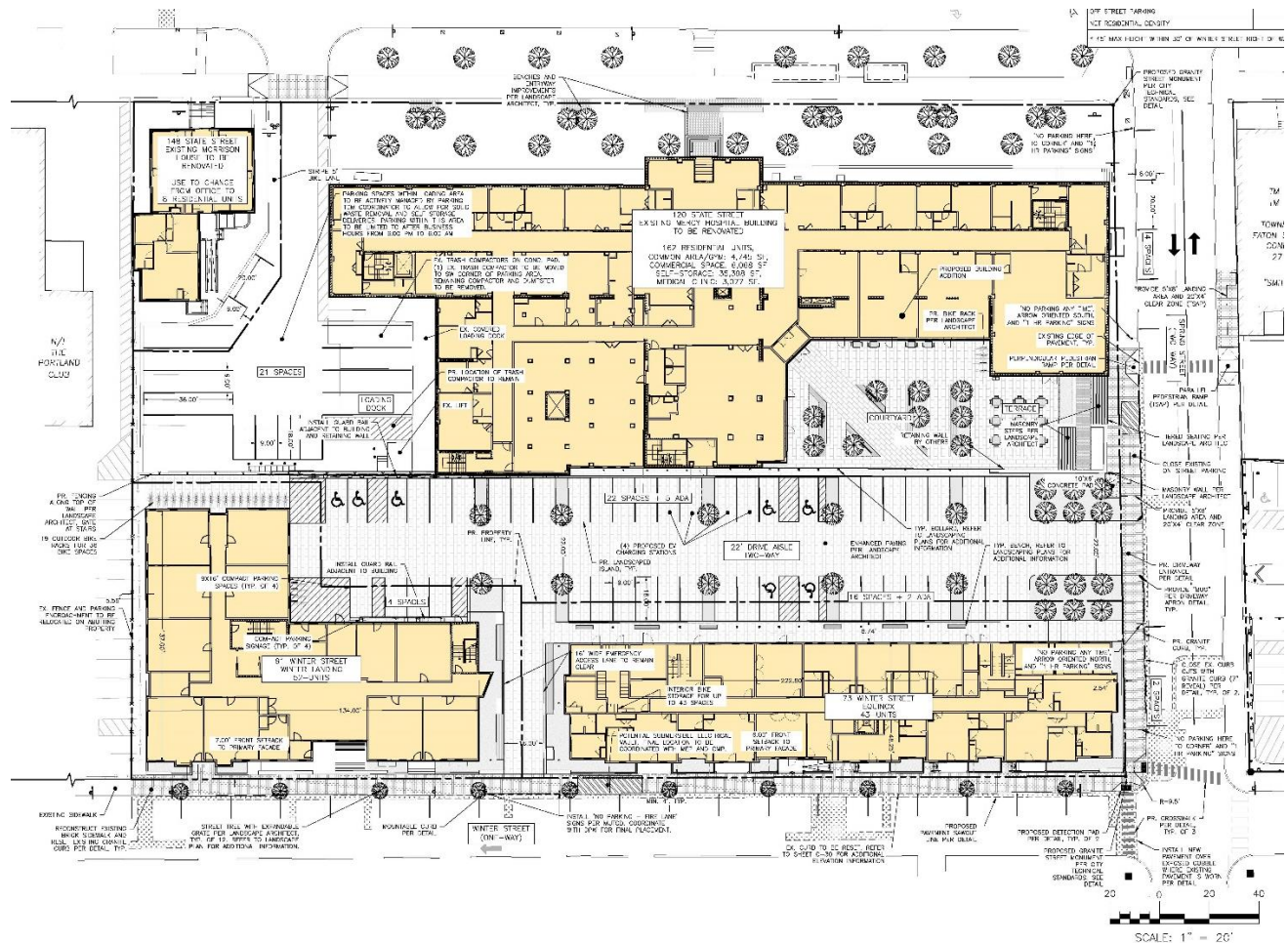


Figure 6: Proposed Site Plan in relation to 148 State Street Phase I Development

VI. STAFF REVIEW

A. RIGHT, TITLE, AND INTEREST

The applicant submitted a deed transferring two parcels from Mercy Hospital to NewHeight Redfern LLC (Attachment C). Two new parcels will be created on Winter Street for the Community Housing of Maine (CHOM) residential buildings – these boundaries are indicated on the Site Plan but are not yet subdivided. The applicant provided an easement plan to indicate the various shared access – these easements have not yet been executed – this will be a condition of approval.

B. ZONING ASSESSMENT

General Assessment: The proposed buildings are located in the B-3 zone. Both buildings face Winter Street; 73 Winter includes two street frontages (Spring Street as a side street).

B-3 Build-to Line - The project proposes to have six-foot front yard setbacks and therefore is subject to the standards for increasing the setback beyond the build-to-line found in the B-3 Downtown Design Guidelines (within the Design Manual).

Appendix 1 Standard II B. Standards for increasing setback beyond street build-to-line

Staff find the criteria are met.

In order for proposed exceptions to this pattern of predominant street wall to be acceptable, the applicant must demonstrate to the Planning Board that the introduction of additional setback at the street level satisfies the following:

1. Open space and amenity

The additional one-foot setback will accommodate landscape plantings, benches accessible from the public way, and front porch stoops to provide scale, amenity, and approachability for the multi-family building. All these elements reinforce pedestrian activity and interest.

2. Prevailing character and continuity

Both new buildings are set back to the same amount and will establish a new, consistent street wall plane on this side of Winter Street. One foot is a small difference from the five-foot requirement and will not substantially detract or alter the prevailing street wall character.

3. Support for existing open space

The additional setback does not create an excessive amount of open space. There are no open space amenities existing nearby that would be detracted from.

4. Quality and orientation

The additional setback is north-facing. However, the additional setback is not intended to create a sizable open space and therefore, the standard is generally not applicable. The additional space will allow for more viable landscape and residential transition frontage with a buffer between public and private realms.

Zoning Dimensional Standards		Proposed Projects	
	Required	91 Winter Street	73 Winter Street
Lot Size (minimum)	none	.35 acres	.39 acres
Street Frontage (minimum)	15'	153'	243'
Build-to Line	5'	6'	6'
Blank Wall (maximum)	30'	No blank walls	No blank walls
Height (min)	35'	45'	45'
Height (max)	35'/85' (+25'bonus)	43'	44'
Rear Setback	-	11.8'	16.5'
Side Setback	-	17.2'	2.54'
Side Setback	-	5.4'	7.2'
Lot coverage (max 100%)	15,375 sf / 17,168 sf (100%)	10,000 sf (65%)	10,900 sf (64%)
Parking	93 residential	0	0
Bike Parking	38	20	20

Parking Requirement Exemption

As per Chapter 14 Section 19 - Off-Street Parking, required parking is calculated as follows:

- 95 residential spaces (1 per 1 residential unit)

The Applicant requests an exemption from the parking requirement (Table 19-B: Categorical Exclusions to Off-street Parking Minimums). The project was evaluated and found to meet the requirements of being within a quarter mile of a fixed transit route, and includes a Traffic Demand Management plan that meets City criteria.

The applicant has provided a Transportation Demand Management (TDM) plan, traffic analysis, and parking analysis ([Attachment S, T](#)). Bruce Hyman, Transportation Program Manager, had the following comment ([Attachment 4](#)):

I have reviewed the Transportation Demand Management Plan (dated 5/28/21) for the 73 and 91 Winter Street Housing Projects and find that it meets the requirements for TDM plans, with no further comments.

The applicant also proposes to provide 15 off-site parking spaces leased from the adjacent surface lot for resident use.

C. SUBDIVISION STANDARDS

Ch 14 15.4.1 Standards of Review

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's subdivision ordinance. Staff comments are below and in [Attachments 1-4](#).

Will not result in undue water and air pollution (Section 15.4.1.A) and will not result in undue soil erosion (Section 15.4.1.D)

The project is not anticipated to result in undue air or water pollution.

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated given the infill/adaptive reuse site. Site Plan ([Plan P5](#)) and Erosion & Sedimentation Control Plan ([Plan P15](#)) provide information about stabilizing the site during and after construction.

Has sufficient water available (Section 15.4.1.B and C)

The applicant is awaiting evidence of capacity from the Portland Water District ([Attachment P](#)).

Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highway or public roads existing or proposed (Section 15.4.1.E)

The proposed residential uses are expected to generate fewer trips and parking demand than the current hospital uses. The applicant provided a traffic and parking assessment to confirm the peak traffic and parking demands ([Attachment S](#)). Tom Errico, the city's consulting traffic engineer, had the following comments regarding traffic impacts ([Attachment 2](#)):

- *The proposed project is estimated to generate approximately 20 peak hour trips and thus would not be expected to have a significant traffic or safety impact to the adjacent roadway system.*

In addition to the initial reduction in traffic from the current situation, the project includes a Transportation Demand Management (TDM) Plan ([Attachments T](#)) in which they propose future trip reductions (see section below).

Will provide for adequate sanitary sewer and stormwater disposal (Section 15.4.1.F) and will not cause unreasonable burden on municipal solid waste and sewage (Section 15.4.1.G)

Existing sewer lines are proposed to service the buildings. The applicant is awaiting a wastewater capacity letter from Department of Public Works ([Attachment P](#)). Staff find all other requirements are

met. A Stormwater Maintenance Agreement is not required for these sites because the stormwater treatment occurs on the abutting property (144 State).

The applicants propose interior trash rooms for each project. The applicant clarified that a private hauler accessing the woonerf will handle the waste hauling.

Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat (Section 15.4.1.H)

This proposal is not deemed to have an adverse impact on the scenic beauty of the area. The project is within the West End historic district and includes a Historic Preservation Board review.

Is in conformance with the Comprehensive Plan (Section 15.4.1.I)

The project is in keeping with the stated goals around affordability, sustainability, equity, and furthers the policy of creating complete neighborhoods. The project takes advantage of a central, downtown location near transit and walkable services. See Section IX. Comprehensive Plan Analysis.

Livable City: Housing – Local Goals met by this project:

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.
- Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.
- Pursue policies to enable people who work in Portland to have the option to live in Portland.

A Healthy City: Environment – Local Goals met by this project:

- Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation.

Adequate Financial and Technical Capacity (Section 15.4.1.J)

As noted above, the applicant has provided evidence of financial and technical capacity (Attachment G, H).

Whenever situated in whole or in part, within the watershed of any pond or lake or within 250 feet of any wetland, great pond, or river, will not adversely affect the quality of such body of water or unreasonably affect the shoreline of such body of water (Section 15.4.1.K)

The project is not located within a watershed of any pond or lake or within 250 feet of any wetland, great pond or river.

Will not, adversely affect the quality and quantity of groundwater (Section 15.4.1.L)

There are no anticipated impacts to groundwater supplies.

Is or is not in a Flood-Prone Area (Section 15.4.1.M)

Per the FEMA flood maps, the site is not located in a flood zone.

Will provide adequate stormwater management (Section 15.4.1.N)

Staff find the stormwater management to be adequate. The majority of stormwater management is handled on the adjacent site.

Depth-to-shore Frontage ratio (Section 15.4.1.O)

Not applicable – no frontage on a water body/wetland

Depth-to-shore Frontage ratio (Section 15.4.1.P)

Not applicable – project does not cross city boundaries.

D. SITE PLAN STANDARDS***Ch 14 14.6 Site Plan Review Standards***

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 and in *Attachments 1-4*.

Traffic - Access, Circulation, Loading and Servicing

There are no curb cuts for the project (parking is accessed via Spring Street and will be evaluated with the 148 State Street application). Access and circulation are under review as part of the 148 State Street application and not being reviewed here. Similarly, loading and servicing are being provided on the adjacent site either in the woonerf or the designated loading/service area next to Morrison House.

Sidewalks

The current site plan shows a portion of Winter Street and Spring Street being reconstructed as part of this project. DPW Senior Engineer Mike Tremblay has the following comments regarding the sidewalks (*Attachment 1*):

- *The vault shown in the Winter Street sidewalk must be set to a precise elevation consistent with the plans. Differences in the vault elevation can render the sidewalk noncompliant with ADA, and it is often too late to make changes without great expense by the time the issue is noticed. Special care should be taken when setting this vault.*

Bruce Hyman had the following comments regarding accessibility of the cobble crosswalk:

- *I am in favor of surface pave and stripe a crosswalk to make it fully ADA-compliant - I don't have any knowledge or sense that they are exposed other than just from degradation of the pavement rather than intentionally.*

Public Transit Access - No transit shelter is required. The project is within a quarter mile of several existing METRO bus stops (Routes 1, 9A, 9B, 21).

Parking – Under the new code, in this circumstance, the applicant may request an exemption from the parking requirement (Table 19-B: Categorical Exceptions to Off-street Parking Minimums). The applicant requests an exemption from the parking requirement based on the following qualifications:

- Project is within a quarter mile of a fixed transit route
- Provide a Traffic Demand Management Plan that meets review criteria

The applicant will also provide 15 off-site parking spaces at the adjacent site. Typically, site plan approval would include evidence of off-street parking lease. The application includes a draft agreement, but staff will not seek to require a finalized lease agreement as evidence as a condition since the parking is not a requirement of this site plan approval.

Snow Storage – Not applicable, no parking provided on-site.

Transportation Demand Management – A TDM plan is included in the submission and is a requirement for the requested parking exemption; the current hospital use has a higher trip generation than the proposed future uses. Bruce Hyman, Transportation Program Manager, had these comments regarding the TDM ([Attachment 4](#)):

- *The Plan describes the transportation context of the projects, sets solid parking and trip reduction targets, establishes a strong mode split goal for the residents, has a robust menu of TDM strategies and contains a good evaluation and monitoring program.*

Targets include (for both projects):

- 10% reduction in peak hour vehicle trips
- 10% reduction in peak hour parking demand
- 65% resident work commute multimodal rate

Strategies include (for both projects):

- Limited parking supply provided
- Infrastructure improvements around site for improved pedestrian/bicycle access
- Bicycle repair station
- Electric bicycle charging
- Secured storage for bikes, strollers, handcarts, car seats
- On-site meeting/work spaces
- Temporary storage for deliveries
- Transit subsidy for residents
- Education and co-promotion regarding alternative modes/resources

Landscape Preservation / Site Landscaping and Screening – The City Arborist noted that the utilities within Spring Street are a conflict with the ability to provide additional street trees. The narrow width of the Winter Street sidewalk creates conflicts between accessibility, tree viability, and utilities. In order to provide viable conditions for street trees, the City Arborist recommended extended grates or pervious pavement as a compromise where raised granite edges are not feasible. The applicant chose to provide extended grates.

Jeff Tarling, City Arborist, has the following comments ([Attachment 3](#)):

- *We would want to ensure that the future tree planting as shown, is protected by raised curbing knowing the negative effect of Winter deicing salts on trees and vegetation. Without protection from salt the trees would unlikely survive...*

Mike Tremblay has the following comments regarding the sidewalks ([Attachment 1](#)):

- *Tree grates aren't supported by PRF, and raised tree planters aren't supported by DPW. The applicant should consider porous rubber tree pits or another hybrid material.*

Landscape Plan –The applicant proposes to plant 21 trees as street trees or within the private landscape along Winter Street and Spring Street. The street tree contribution will be significant given the limited ability to provide trees/landscaping on this dense, urban infill site.

The calculation for the in-lieu fee for street trees is as follows: 95 trees required, 22 provided = net of 73 trees; $73 \times \$400 = \$29,200$ fee-in-lieu.

Water Quality, Stormwater Management and Erosion Control – The project is required to comply with MaineDEP Chapter 500 and City of Portland Section 5 Stormwater Management requirements. The project is reducing impervious surface by 276 square feet and the General and Flooding standards do not apply. Staff comments have been addressed and a Stormwater Maintenance Agreement is not required for this project – the treatment is provided as part of 148 State Street development.

Public Safety – The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime.

The spaces between the buildings, woonerf, parking areas should take into consideration nighttime safety while balancing the light levels appropriate for the residential uses.

The direct access from units to the street with frequent entries/porches create activity, the ground floor living spaces also provide “eyes on the street” and therefore enhance the security of both the public and private spaces.

Fire Prevention and Public Utilities – The applicant has yet to provide the letter from the Water District and Department of Public Works showing capacity to serve. DPW Senior Engineer, Mike Tremblay has the following comment regarding utilities (Attachment 1):

- *Some trenches may need to be repaired with a common trench (typically of trenches are 5 feet or less apart).*

Massing, Ventilation and Wind Impact and Shadows: The project is not adjacent to any public park or open space. The proposed buildings would be four stories and the height of the structures are comparable to surrounding buildings. The proposed buildings are northeast of the existing residential fabric meaning the shadow impact will be minimal on the small-scale abutters for the majority of the day.

Historic Resources – The project is within the West End Historic District and subject to Historic Preservation standards for the design review. In the first Historic Preservation Board workshop held on March 17, 2021 for the 73 Winter Street building, the Board discussed the methods of articulation and differentiation, hierarchy and orientation of facades, rooftop appurtenances, and entry porch design. On April 21, 2021 the Historic Preservation Board granted a Certificate of Appropriateness for 73 Winter Street. On June 16, 2021 the Historic Preservation Board granted a Certificate of Appropriateness for 91 Winter Street.

Exterior Lighting incl Street Lighting – The photometrics plan shows lighting levels are acceptable. Two waivers are needed (Attachment N):

- Light trespass at the alley property line
- Lighting levels exceed 5.0 fc behind the senior building

Building and site lighting must comply with Section 12 of the City of Portland Technical Manual – staff support waivers for light trespass at the alley and fc exceeding 5.0 fc behind the senior building in minimal locations. Some fixtures proposed exceed the 3,000 K color temperature requirement. **The applicant will need to submit updated lighting cut sheets for review and approval, and staff have drafted a condition to allow for post-approval submission of this item.**

Noise and Vibration – The HVAC systems are proposed to be placed on the building roofs, consolidated and centered away from the streets and residential abutters.

VII. INCLUSIONARY ZONING CONDITIONAL USE

CHOM is requesting a HOME or Housing Trust Fund subsidy of \$400,000 for 73 Winter Street and a HOME or Housing Trust Fund subsidy of \$200,000 for 91 Winter Street along with an Affordable Housing Tax Increment Financing (TIF) to benefit both projects. The projects are therefore exempt from Section 18.2.3 B. Ensuring Workforce Housing Applicability. The Housing Program Manager has the following comments (Attachment 5):

- *Staff recommends the Board exempt this project under Section 18.2.3 B of the Code.*

VIII. COMPREHENSIVE PLAN ANALYSIS

a. Portland's Plan 2030

Goals and policies of both the state and the city, as described in the strategic plans that comprise Portland's Comprehensive Plan, relevant to the proposed project have been included below.

The new housing developments align with these vision statements and goals through an increase in residential density, providing a diversity of housing types and at varying affordability in a transit oriented location. The historic, walkable character of the neighborhood is maintained with the existing historic protections and the reuse of existing historic structures.

Vision Statements

- Equity: We will be a state and national leader in achieving a more equitable city.
- Equity: We will incorporate the needs of all our residents in planning for our future.
- Sustainable: Portland has been built and rebuilt to endure; we will balance our historic fabric, sound infrastructure, and the best of new technology and design for the future.
- Sustainable: Portland will grow in order to sustain our community, infrastructure, and economy.
- Secure: We will be committed to accessible housing and healthy food for all our residents.

Environment

- Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation.

An Enduring City – Historic Preservation

- Stabilize and enhance historic areas of the city by ensuring quality investment in existing structures and compatible infill development.
- Ensure an appropriate balance of continuity and change as Portland grows and evolves.

A Livable City: Housing

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.
- Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means

of supporting complete neighborhoods.

- Pursue policies to enable people who work in Portland to have the option to live in Portland.
- Encourage quality, sustainable design in new housing development.
 - Remove housing barriers
 - Leverage underused properties
 - Support age-friendly housing options
 - Adapt affordable housing

An Accessible City – Transportation

- Promote multi-modal accessibility, enabling residents and visitors of all ages and abilities to participate fully in the social and economic life of the community.

Future Land Use

- Complete Neighborhoods
- Reinforce the Center

IX. PUBLIC COMMENT

As of the writing of this memo, two comments were submitted to the Planning Authority ([Attachments PC3-PC4](#)). A neighborhood meeting for the Site Plan application was held on March 11th, 2021 ([Attachment U](#)) with 14 attendees. Generally, there is support for redevelopment of the Mercy campus and optimism for the potential strengthening of the residential neighborhood rather than surface parking. Comments and concerns focus on:

- Scale and impacts of the buildings, street wall compared with the historic, single-family homes
- Concern about viability of the trees on Winter Street
- Accessibility/width of sidewalk on Winter Street
- Traffic and parking impacts on the residential street system
- In-adequate parking supply and impacts to on-street parking

X. MOTIONS FOR THE PLANNING BOARD TO CONSIDER

A. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on July 13, 2021 for application PL-001371-2020 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing:

1. The Planning Board [**finds/does not find**] that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual *Section 4.3 Preservation of Existing Vegetation*. The Planning Board [**waives/does not waive**] Technical Manual Section 4.3 to allow removal of existing trees in excess of 70%.
2. The Planning Board [**finds/does not find**] that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual *Section 12.3.4 Light Trespass*. The Planning Board [**waives/does not waive**] Technical Manual Section 12.3.4 to allow illumination levels to exceed .1 fc at the property line between 91 and 73 Winter.
3. The Planning Board [**finds/does not find**] that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual *Section 12.3.2 Illumination Levels*. The Planning Board [**waives/does not waive**] Technical Manual Section 12.3.2 to allow illumination levels to exceed .5 fc at the rear of the property in limited locations.

B. INCLUSIONARY ZONING CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on July 13, 2021 for application #PL-001371-2020 relevant to Portland's Inclusionary Zoning Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board [~~finds/does not find~~] the proposed conditional use for workforce housing is exempt from the standards of Land Use Code Section 18.2.3.

C. SUBDIVISION REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on July 13, 2021 for application #PL-001371-2020 relevant to the subdivision regulations, and the testimony presented at the Planning Board hearing, the Planning Board [~~finds/does not find~~] that the plan is in conformance with the subdivision standards of the Land Use Code subject to the following conditions of approval:

PRIOR TO THE SUBMISSION OF THE PLAT FOR PLANNING BOARD SIGNATURE

1. Easement and licenses shall be finalized to the satisfaction of the Planning Authority, Department of Public Works, and Corporation Counsel pursuant to the following item:
 - i. Access and Utility Easement
 - ii. Parking and Sidewalk Easement
 - iii. City of Portland Maintenance Easement

PRIOR TO APPLYING FOR A BUILDING PERMIT

2. The applicant shall provide the letters from the Department of Public Works showing capacity to serve.
3. The applicant shall provide the letters from the Portland Water District showing capacity to serve.

D. SITE PLAN REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on July 13, 2021 for application PL-001371-2020 relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan [~~is/is not~~] in conformance with the site plan standards of the Land Use Code and [~~approves/does not approve~~] the application, subject to the following conditions of approval:

PRIOR TO THE ISSUANCE OF A BUILDING PERMIT

1. The applicant shall submit the final Construction Management Plan (CMP) to the Planning Authority and Building Authority for review and approval.
2. The applicant shall submit final site and building lighting cut sheets to the Planning Authority for review and approval.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

3. Due to site constraints preventing the planting of required street trees in the right-of-way, the ninety-five (95) street trees as required in Sec. 14.6.2.C4 of the Site Plan Ordinance cannot be

met; the applicant shall contribute to the tree fund of \$400 per tree for seventy-three (73) trees x \$400 for a total of \$29,200.

E. ON-STREET PARKING

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on July 13, 2021 for application #PL-001371-2020 relevant to on-street parking; and the testimony presented at the Planning Board hearing, the Planning Board [approves/does not approve] the creation of two new on-street parking spaces to be located on Spring Street as shown on the approved Site Plan.

ATTACHMENTS

Attachments to Memorandum

1. Department of Public Works
2. Traffic
3. Landscape
4. TDM
5. IZ Conditional Use

Public Comment

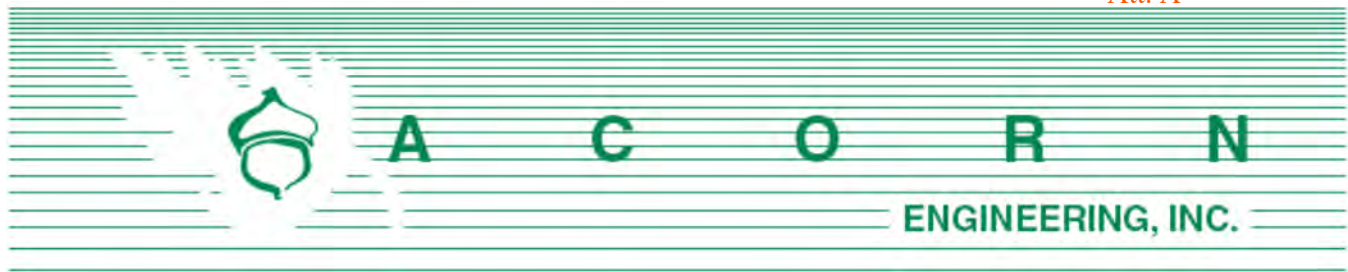
- PC1 George Rheault 2-23-21
 PC2 Ginger Raspiller 2-25-21
 PC 3 Ginger Raspiller 4-28-21
 PC4 Elizabeth Parsons 7-7-21

Applicant's Submittal

- A. Cover Letter
- B. Application
- C. Right, Title, & Interest
- D. Zoning Assessment
- E. Easements
- F. Waivers
- G. Financial Capacity
- H. Technical Capacity
- I. Conformance with Land Use Ordinance
- J. Stormwater Management Plan
- K. Erosion & Sediment Control Report
- L. Fire Department Letter
- M. Wastewater Application
- N. Lighting
- O. Architectural Design Narrative
- P. Utilities
- Q. Construction Management Plan
- R. Solid Waste Disposal
- S. Traffic Parking Analysis
- T. Transportation Demand Management Plan
- U. Neighborhood Meeting Materials

Plans

- P1. Cover Sheet
- P2. General Notes
- P3. Boundary & Topographic Survey
- P4. Construction Management Plan
- P5. Site Plan
- P6. Utility Plan
- P7. Grading Plan
- P8. Site Details – 1
- P9. Site Details – 2
- P10. Utility Details – 1
- P11. Utility Details – 2
- P12. Utility Details – 3
- P13. Drainage Details
- P14. Erosion Sediment Control Notes
- P15. Erosion Sediment Control Details
- P16. Landscape Cover Sheet
- P17. Landscape Materials Plan
- P18. Landscape Planting Plan
- P19. Architectural Drawings
- P20. Subdivision Plat
- P21. Photometrics Plan



Planning and Urban Development Department
Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

October 30, 2020
Revised April 5, 2021

Subject: Mercy CHOM - Level III Site Plan/Subdivision Application
120 State Street (73 & 91 Winter Street)

To Caitlin Cameron,

On behalf of Community Housing of Maine (CHOM), we are pleased to submit the accompanying package of materials related to the proposed redevelopment of the existing Mercy Hospital site at 120 State Street. NewHeight Redfern, LLC (landowner) has recently submitted a separate Level III Site Plan/Subdivision application for redevelopment of the existing Mercy Hospital campus, which includes subdividing two lots along Winter Street. The CHOM proposal includes constructing two separate affordable housing residential apartment buildings on the lots along Winter Street.

The project site is currently comprised of a single parcel, Chart 45, Block C, Lot 7 (120 State Street), encompassed by State, Spring, and Winter Streets. The site is comprised of the existing Mercy Hospital complex which includes multiple additions throughout the years, surface parking, and a loading dock area. The project includes construction of a 52-unit Senior building and 41-unit Family building. The applicant is working with the landowner (NewHeight Redfern, LLC) for the shared common site improvements, including parking and utilities servicing the site.

Portions of the existing Mercy building will be removed to make way for a shared woonerf. The woonerf, although unique, is not new Portland or the development team. The European urban planning technique creates a multi-modal courtyard with a level shared walking and driving space. Combined with extensive landscaping and playful design it will create an inviting community space.

We are pleased to submit an application which will increase the available housing stock consistent with the City's Comprehensive Plan, provide onsite Workforce Housing, implement stormwater treatment, improve the Winter Street streetscape, sidewalk reconstruction, street tree plantings and provide community space in the West End.

Community Housing of Maine and the design team look forward to your review of this exciting project.

Sincerely,

A handwritten signature in black ink, appearing to read 'William H. Savage', is written over a light blue horizontal line.

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

Documents:

- Section A: Cover Letter
- Section B: Level III Final Site Plan Application & Checklist
- Section C: Right, Title, Interest
- Section D: Zoning Assessment
- Section E: Easements
- Section F: Waivers
- Section G: Financial Capacity
- Section H: Technical Capacity
- Section I: Conformity with Land Use Ordinance
- Section J: Stormwater Management Report
- Section K: Erosion & Sedimentation Control Report
- Section L: Fire Department Letter
- Section M: Wastewater Capacity Letter
- Section N: Lighting
- Section O: Architectural Design Narrative
- Section P: Utilities
- Section Q: Construction Management Plan
- Section R: Solid Waste
- Section S: Traffic and Parking Analysis
- Section T: Traffic Demand Management

Drawings:

- Civil Site Plan Set
- Landscaping Plan Set
- Architectural Plan Set



Right, Title, or Interest

The Option Agreements between Community Housing of Maine (applicant) and NewHeight Redfern, LLC (landowner) for the two (2) proposed lots along Winter Street are attached to this section providing the applicant with Right, Title and Interest in the property.

OPTION AGREEMENT

THIS OPTION AGREEMENT (the "Agreement") made and entered into as of the 28th day of July, 2020 (the "Effective Date"), by and between NEWHEIGHT REDFERN LLC a Maine limited liability company with a place of business in Portland, Maine and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 ("Grantor") and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Maine 04101 ("Grantee").

WITNESSETH:

WHEREAS, Grantor wishes to grant the option set forth below to Grantee on the terms and conditions set forth in this Agreement; and

NOW THEREFORE, in consideration of [REDACTED] paid by Grantee to Grantor (the "Option Consideration"), the receipt of which is hereby acknowledged by Grantor, Grantor and Grantee hereby agree as follows:

1. Grant of Option. Grantor hereby grants to Grantee, its successors and assigns, the exclusive and irrevocable option to purchase a parcel of land having not less than 13,025 square feet, with frontage on or deeded access to Winter Street, together with a leasehold interest in other land for parking of up to 10 cars on the former Mercy Hospital campus on Spring and Winter Streets, all as more particularly depicted on the drawing attached hereto as Exhibit A (the "Property"). The Property is a portion of the real property conveyed to Grantor by deed of Mercy Hospital dated February 25, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36459, Page 218. Included in the Property shall be deeded easement rights in common with others to use common areas adjacent to the Property.

2. Expiration. This option shall expire on June 30, 2022, at midnight, Maine time (the "Option Period") unless extended as set forth below, or exercised by that date and time.

3. Notice of Exercise; Failure to Exercise. This option may be exercised only by Grantee giving written notice of election to exercise ("Grantee's Notice of Election") to Grantor by first class mail, postage prepaid, registered or certified, return receipt requested, addressed to Grantor at the address set forth at the beginning of this Agreement, or to such other address as Grantor may designate to Grantee in writing. Said notice shall be deemed to have been duly given if postmarked prior to the expiration date and time specified in Section 2 above. In the event that Grantee fails to exercise the option granted in this Agreement within the Option Period, as it may be extended, the Option Consideration shall be retained by Grantor, and thereafter neither Grantor nor Grantee shall have any further rights or claims against the other.

4. Extension.

- (a) Subject to the conditions provided in this paragraph 4(a), Grantee may extend the Option Period for up to twelve (12) months, on a month-to-month basis, beginning on July 1, 2022, provided Grantee pays additional

consideration for each month of such extension in the amount of [REDACTED] (each an "Extension Payment" and collectively, the "Extension Payments") to Grantor before the expiration date of the Option Period, as it may be extended. Grantee shall have the right to elect to extend the Option Period only if, prior to the expiration date of the initial Option Period, and before any extensions, Grantee has:

- i. Made application for City of Portland site plan and subdivision approvals and received them;
- ii. Made application for Federal Home Loan Bank of Boston Affordable Housing Grant funds;
- iii. Made application for Tax Increment Financing from the City of Portland;
- iv. Made application to MaineHousing for an allocation of Low Income Housing Tax Credits; and
- v. Made application for and diligently pursue receipt of an allocation of project-based vouchers.

- (b) The Option Consideration [REDACTED] apply to and be credited against the Purchase Price (as defined below). The Extension Payments, if any, shall be refundable as provided in this Agreement but shall not apply to the Purchase Price.

5. Exercise. In the event that Grantee exercises the option granted in this Agreement and proceeds to purchase the Property as provided herein, the following provisions shall be applicable:

a. Purchase Price. At the Closing Date as defined below, Grantee shall pay to Grantor the sum of [REDACTED], by wire transfer or bank cashier's check at closing (the "Purchase Price"). Notwithstanding anything to the contrary elsewhere in this Agreement, the Option Consideration and the Extension Payments (if paid) are fully refundable to the Grantee until satisfactory completion of the environmental review process required by the United States Department of Housing and Urban Development, at which time the Option Consideration and all Extension Payments made shall become non-refundable, unless Grantor defaults in its obligations hereunder or is unable to transfer the Property to Grantee with good and marketable title free and clear of liens and encumbrances. The Option Consideration shall in all instances be credited against the Purchase Price at closing.

b. Title. Title to the Property shall be good and marketable and free and clear of all liens, claims and encumbrances. In the event that title to the Property is not in accordance with the preceding sentence as of the Closing Date, Grantor shall be given a reasonable period of time, not to exceed thirty (30) days, after receipt of notice from Grantee in which to remedy any title defects. In the event that said defects cannot be corrected or remedied within said time period, or in the event that Grantor elects not to remedy same, then this

Agreement shall terminate whereupon Grantor shall fully refund to Grantee the Option Consideration. Grantee may elect to close notwithstanding such defects as may exist at no cost or liability to Grantor.

c. Closing. The closing under this Agreement shall take place not later than ten (10) days after the date of Grantee's Notice of Election (the "Closing Date") at 10:00 AM, local time, at Grantee's counsel's office, or at such other time and place as Grantor and Grantee shall mutually agree upon in writing. At the closing, Grantor shall execute and deliver a Quitclaim Deed with Covenant to the Property and such other customary certificates and affidavits as Grantee shall request.

d. Adjustments, Prorations and Closing Costs. The recording fee for the deed and any expenses related to Grantee's financing will be paid for by Grantee. The parties shall share equally the cost of all real estate transfer taxes.

e. Possession. Grantor shall deliver possession of the Property to Grantee at the closing, free and clear of all leases, tenancies or occupancies by any person.

f. Risk of Loss. All risk of loss to the Property prior to the closing shall be on Grantor.

g. Default; Remedies. In the event either party defaults under this Agreement, and such default is not cured within thirty (30) days of written notice thereof, the sole remedy of either party shall be to terminate this Agreement. In addition, if Grantor is the defaulting party, the Option Consideration shall immediately be returned to Grantee, and if the Grantee is the defaulting party, Grantor shall be entitled to retain the Option Consideration as liquidated damages and not as a penalty.

h. Condition Precedent. Grantee's obligation to purchase the Property is conditioned upon there having occurred no material adverse change in or to the Property between the Effective Date and the Closing Date. If this condition is not satisfied as of the Closing Date, Grantee may terminate this Agreement and receive a full and complete refund of the Option Consideration.

6. Inspection. At all times during the Option Period, as it may be extended, upon reasonable prior notice, Grantee and any prospective lender or investor of Grantee's shall have the right to enter the Property and perform, at Grantee's expense, any and all inspections, tests, surveys or other due diligence inquiries with respect to the Property as Grantee deems necessary or appropriate. Grantee agrees to return the Property as nearly as possible to its original condition after any of such tests and inspections. Grantee shall indemnify Grantor for any property damage, bodily injury or death occurring by reason of such entry and/or testing. Grantor shall cooperate with Grantee in such inspections. In the event Grantee is not satisfied for any reason by the results of such due diligence inspections, Grantee shall have the option of terminating this Agreement by written notice to Grantor. Without limiting the generality of the foregoing, this Agreement and Grantee's purchase of the Property are subject to a determination by Maine State Housing Authority ("MaineHousing") as to the desirability of the Property for

Grantee's intended use as a result of the completion of the environmental review process required by the United States Department of Housing and Urban Development, and if such determination is unsatisfactory, Grantee may terminate this Agreement, whereupon the Option Consideration and any Extension Payments actually made shall promptly be refunded to Grantee.

7. Assignment. Grantee may assign this Agreement and all its rights and obligations hereunder to a limited partnership controlled by Grantee. Upon notice to such assignment, Grantor agrees to look solely to such affiliate for performance of the obligations of the Grantee hereunder.

8. Brokerage. Neither party has engaged a real estate broker in connection with the transaction described in this Agreement. Each party agrees to indemnify the other from and against the claims of any brokers arising from breach of the above representation, which indemnity shall survive the closing and shall include reasonable costs of collection, including reasonable attorney's fees.

9. Recording of Option. Grantor and Grantee agree that this Option shall not be recorded. Grantor agrees upon request of Grantee to execute and tender for recording a memorandum summarizing the terms of this Agreement (except the Purchase Price).

10. Notices. Except as provided in Section 3 above, all notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after mailing if mailed to the party to whom notice is to be given by first class mail, postage prepaid, registered or certified, return receipt requested, addressed to the recipient at the addresses set forth at the beginning of this Agreement. Either party may change its address for purposes of this Section by giving the other party notice of the new address in the manner described herein.

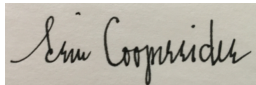
11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within ninety (90) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a "choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

12. Miscellaneous. Time is of the essence hereof. This Agreement constitutes the entire agreement between Grantor and Grantee, there are no agreements or understandings between the parties except as set forth herein, and all prior agreements and understandings, including, are superseded by this Agreement. This Agreement will inure to the benefit of and bind the respective successors and assigns of Grantor and Grantee. As used in this Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender

shall be deemed applicable to all genders. This Agreement shall be governed by and construed in accordance with the laws of Maine. The recitals contained in this Agreement are deemed by the parties to be accurate statements of fact. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

IN WITNESS WHEREOF, Grantor and Grantee have executed this Option Agreement as of the Effective Date.

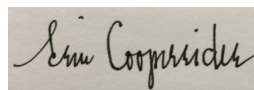
WITNESS:





NEWHEIGHT REDFERN LLC, Grantor

By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

[remainder of page left blank intentionally—signatures continue on next page]

IN WITNESS WHEREOF, Grantor and Grantee have executed this Option Agreement as of the Effective Date.

WITNESS:

Kyra Walker

COMMUNITY HOUSING OF MAINE, INC.,
Grantee

By: 
Cullen Ryan, its Executive Director

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AMENDMENT TO THE OPTION AGREEMENT

THIS AMENDMENT TO THE OPTION AGREEMENT (“**Amendment**”) made and entered into as of this 26th day of October, 2020 (the “**Effective Date**”), is by and between NEWHEIGHT REDFERN LLC., a Maine limited liability company with a place of business and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 (hereinafter referred to as “**Grantor**”), and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Maine 04101 (hereinafter referred to as “**Grantee**”).

WITNESSETH:

WHEREAS, Grantor and Grantee made and entered into that certain Option Agreement dated July 28, 2020 (the “**Contract**”) regarding the exclusive and irrevocable option to purchase a parcel of land having not less than 13,025 square feet, with frontage on or deeded access to Winter Street, together with a leasehold interest in other land for parking of up to 10 cars on the former Mercy Hospital campus on Spring and Winter Streets. The Property is a portion of the real property conveyed to Grantor by deed of Mercy Hospital dated February 25, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36459, Page 218.

WHEREAS, Grantor and Grantee desire to further amend the Contract as hereinafter set forth (all capitalized terms not defined herein shall have the meaning ascribed in the Contract).

NOW THEREFORE, for and in consideration of [REDACTED] and other good and valuable consideration, Grantor and Grantee hereby agree that the Contract is amended as follows:

1. The following clause is hereby stricken from the contract,

11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within ninety (90) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a “choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

2. and is hereby replaced with the following clause:

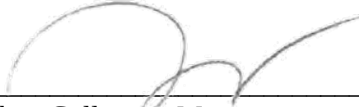
11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within one hundred eighty (180) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a “choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

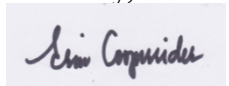
[signatures included on the next page]

IN WITNESS WHEREOF, this Grantor and Grantee Amendment has been executed by duly authorized officers or representatives of Seller and Purchaser as of the date and year first above written.

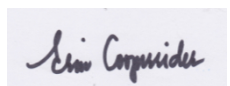
Grantor:

NewHeight Redfern LLC

By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

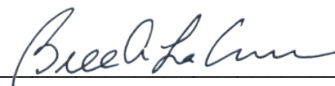
Witness:




Grantee:

Community Housing of Maine, INC

By: 
Cullen Ryan, its Executive Director



SECOND AMENDMENT TO THE OPTION AGREEMENT

THIS SECOND AMENDMENT TO THE OPTION AGREEMENT made and entered into as of this 18th day of January, 2021 (the “**Effective Date**”), is by and between NEWHEIGHT REDFERN LLC., a Maine limited liability company with a place of business and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 (hereinafter referred to as “**Grantor**”), and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Main 04101 (hereinafter referred to as “**Grantee**”).

WITNESSETH:

WHEREAS, Grantor and Grantee made and entered into that certain Option Agreement dated July 28, 2020, as amended by First Amendment thereto dated October 26, 2020 (collectively the “**Contract**”) regarding the exclusive and irrevocable option to purchase a parcel of land having not less than 13,025 square feet, with frontage on or deeded access to Winter Street, together with a leasehold interest in other land for parking of up to 10 cars on the former Mercy Hospital campus on Spring and Winter Streets. The Property is a portion of the real property conveyed to Grantor by deed of Mercy Hospital dated February 25, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36459, Page 218.

WHEREAS, Grantor and Grantee desire to further amend the Contract as hereinafter set forth (all capitalized terms not defined herein shall have the meaning ascribed in the Contract).

NOW THEREFORE, for and in consideration of One Dollar and No/100 Dollars (\$1.00) and other good and valuable consideration, Grantor and Grantee hereby agree that the Contract is amended as follows:

Section 11 of the Contract, as previously amended, is hereby deleted and is replaced with the following:

11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within two hundred seventy (270) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a “choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

2. As amended hereby, and as previously amend, the Contract continues in full force and effect.

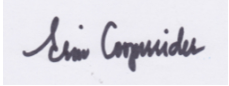
[signatures included on the next page]

IN WITNESS WHEREOF, this Grantor and Grantee Amendment has been executed by duly authorized officers or representatives of Seller and Purchaser as of the date and year first above written.

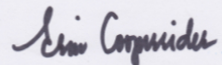
Grantor:

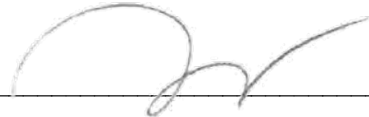
NewHeight Redfern LLC

By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

Witness:





Grantee:

Community Housing of Maine, INC

By: 
Cullen Ryan, its Executive Director



ADDENDUM TO OPTION AGREEMENTS

THIS ADDENDUM TO OPTION AGREEMENTS amends those certain Option Agreements, both dated July 28, 2020 (the “Agreements”), by and between NEWHEIGHT REDFERN LLC a Maine limited liability company with a place of business in Portland, Maine and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 (“NHRF”) and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Maine 04101 (“CHOM”).

NHRF and CHOM agree to amend the Agreements as contemplated in Section 11 of the Agreements (and hereby waive the 90-day period set forth in Section 11), by adding the following paragraph to Section 11 of the Agreements:

“NHRF and CHOM agree to allocate responsibility (including responsibility for bearing all related costs) for completing and paying for certain aspects of the scope of work and maintenance of the Property to be undertaken both prior to and after the Closing Date as follows (reference is made to the attached subdivision plat for limits of work areas described below):

- Building demolition and rubble removal: NHRF responsibility
- Backfill of demolition area: NHRF responsibility to backfill with structural fill meeting the MaineDOT Standard Spec 703.20
- Winter Street sidewalk construction and street tree installation: CHOM responsibility
- “Woonerf” parking area Construction: NHRF responsibility, including drive aisle portion of the pocket park between CHOM buildings with shared design responsibilities for the drive aisle/pocket park area
- Woonerf Maintenance: NHRF responsibility, including snow removal for drive aisle portion of the pocket park between CHOM buildings
- Woonerf parking spaces for both CHOM buildings: CHOM responsibility for market rate lease payments for up to 15 parking spaces
- All Environmental remediation: NHRF responsibility
- Undergrounding three-phase power: NHRF will have responsibility to remove on-site poles and to install conduit for underground power to CHOM vault, CHOM will have responsibility to install vault and submersible transformer to be shared between two CHOM buildings, and pay for the cost of the primary utility connection to the vault and transformer.
- Pocket park between CHOM buildings: CHOM will own and maintain this area, NHRF will retain an access easement over this area and provide snow removal for the drive aisle
- Utility connections including water, sewer, communications, & gas: NHRF responsible for hospital building; CHOM responsible for its two new buildings

Both parties shall complete their respective work in a good and workerlike manner free and clear of all mechanics and material suppliers’ liens. If any lien is filed, the responsible party shall promptly cause the lien to be discharged or bonded off at no cost to the non-responsible party. Except as amended hereby, the Agreements shall remain unmodified and in full force and effect.

None of the work described in this Addendum shall be commence until CHOM after has received written notice of environmental clearance as described in Section 11 of the Agreements.

[signatures appear on following page]

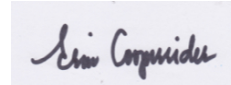
IN WITNESS WHEREOF, NRHF and CHOM have executed this Addendum as of the
30 day of March, 2021.

WITNESS:

Emily McConnell

NEWHEIGHT REDFERN LLC

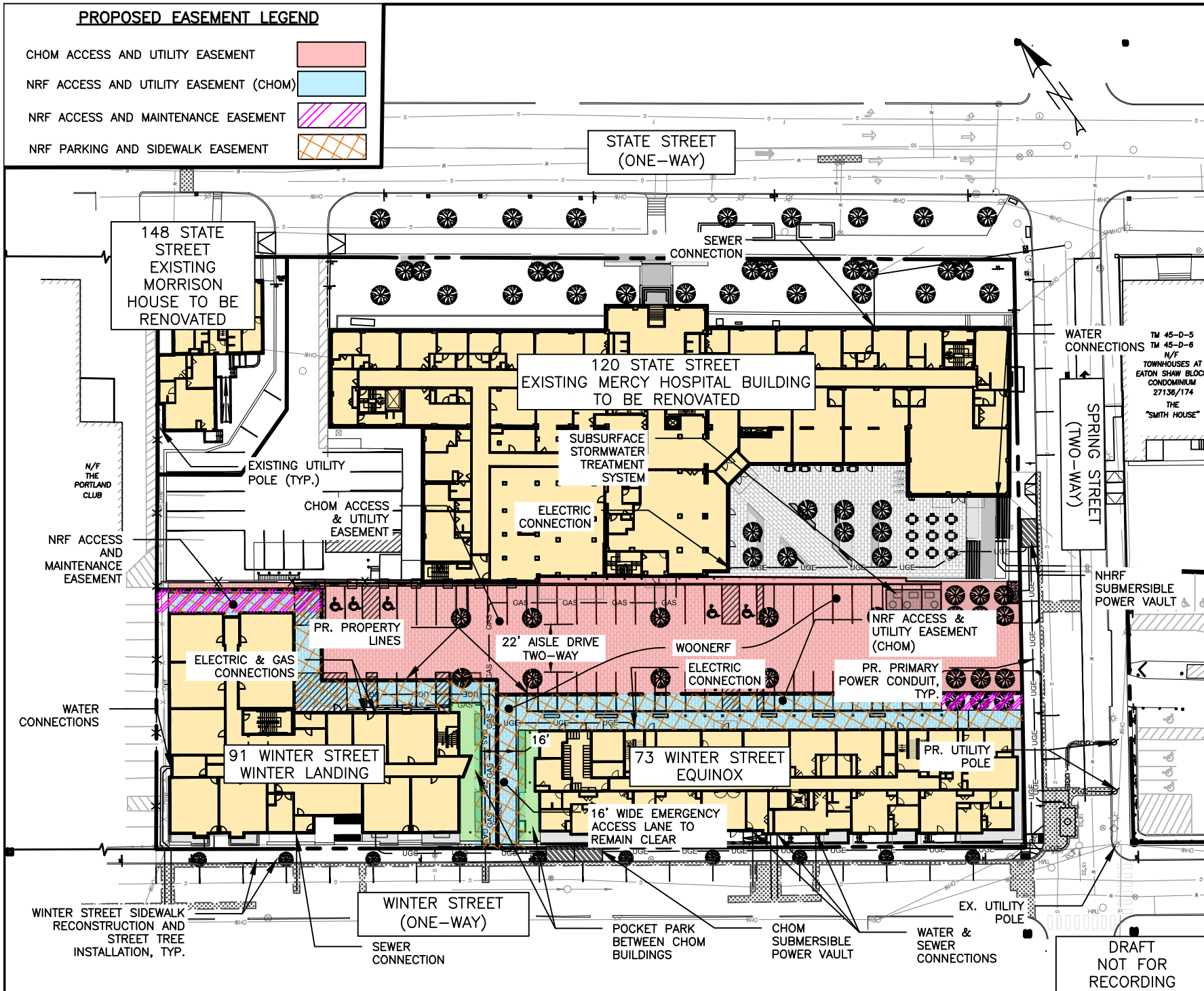
By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

Kyra Walker

COMMUNITY HOUSING OF MAINE, INC.

By: 
Cullen Ryan, its Executive Director



ISSUED FOR		BY DATE
ADDENDUM		PH 3/30/21
DRAWING NAME:		
ADDENDUM TO OPTION AGREEMENTS EXHIBIT - POST-CONSTRUCTION		
PROJECT NAME:		
MERCY HOSPITAL REDEVELOPMENT		
CLIENT:		
NEWHEIGHT REDFERN, LLC		
ACORN ENGINEERING, INC. P.O. BOX 3372 PORTLAND, MAINE 04104 (207) 775-2655		
1140 CIVIL		
3/30/2021		
1129		
SCALE:		1"=60'
DESIGN BY:		PFH
DRAWN BY:		MKT
CHECKED BY:		PFH
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.		
DRAWING NO.		
EX-1		

OPTION AGREEMENT

THIS OPTION AGREEMENT (the "Agreement") made and entered into as of the 28th day of July, 2020 (the "Effective Date"), by and between NEWHEIGHT REDFERN LLC a Maine limited liability company with a place of business in Portland, Maine and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 ("Grantor") and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Maine 04101 ("Grantee").

WITNESSETH:

WHEREAS, Grantor wishes to grant the option set forth below to Grantee on the terms and conditions set forth in this Agreement; and

NOW THEREFORE, in consideration of [REDACTED] paid by Grantee to Grantor (the "Option Consideration"), the receipt of which is hereby acknowledged by Grantor, Grantor and Grantee hereby agree as follows:

1. Grant of Option. Grantor hereby grants to Grantee, its successors and assigns, the exclusive and irrevocable option to purchase a parcel of land having not less than 11,887 square feet, with frontage on or deeded access to Winter Street, together with a leasehold interest in other land for parking of up to 5 cars on the former Mercy Hospital campus on Spring and Winter Streets, all as more particularly depicted on the drawing attached hereto as Exhibit A (the "Property"). The Property is a portion of the real property conveyed to Grantor by deed of Mercy Hospital dated February 25, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36459, Page 218. Included in the Property shall be deeded easement rights in common with others to use common areas adjacent to the Property.

2. Expiration. This option shall expire on June 30, 2022, at midnight, Maine time (the "Option Period") unless extended as set forth below, or exercised by that date and time.

3. Notice of Exercise; Failure to Exercise. This option may be exercised only by Grantee giving written notice of election to exercise ("Grantee's Notice of Election") to Grantor by first class mail, postage prepaid, registered or certified, return receipt requested, addressed to Grantor at the address set forth at the beginning of this Agreement, or to such other address as Grantor may designate to Grantee in writing. Said notice shall be deemed to have been duly given if postmarked prior to the expiration date and time specified in Section 2 above. In the event that Grantee fails to exercise the option granted in this Agreement within the Option Period, as it may be extended, the Option Consideration shall be retained by Grantor, and thereafter neither Grantor nor Grantee shall have any further rights or claims against the other.

4. Extension.

- (a) Subject to the conditions provided in this paragraph 4(a), Grantee may extend the Option Period for up to twelve (12) months, on a month-to-

month basis, beginning on July 1, 2022, if Grantee pays additional consideration for each month of such extension in the amount of [REDACTED] (each an "Extension Payment" and collectively, the "Extension Payments") to Grantor before the expiration date of the Option Period, as it may be extended. Grantee shall have the right to elect to extend the Option Period only if, prior to the expiration date of the initial Option Period, and before any extensions, Grantee has:

- i. Made application for City of Portland site plan and subdivision approvals and received them;
 - ii. Made application for Federal Home Loan Bank of Boston Affordable Housing Grant funds;
 - iii. Made application for Tax Increment Financing from the City of Portland;
 - iv. Made application to MaineHousing for an allocation of Low Income Housing Tax Credits; and
 - v. Made application for and diligently pursue receipt of an allocation of project-based vouchers.
- (b) The Option Payments [REDACTED] shall apply to and be credited against the Purchase Price (as defined below). The Extension Payments, if any, shall be refundable as provided in this Agreement but shall not apply to the Purchase Price.

5. Exercise. In the event that Grantee exercises the option granted in this Agreement and proceeds to purchase the Property as provided herein, the following provisions shall be applicable:

a. Purchase Price. At the Closing Date as defined below, Grantee shall pay to Grantor the sum of [REDACTED] by wire transfer or bank cashier's check at closing (the "Purchase Price"). Notwithstanding anything to the contrary elsewhere in this Agreement, the Option Consideration and the Extension Payments (if paid) are fully refundable to the Grantee until satisfactory completion of the environmental review process required by the United States Department of Housing and Urban Development, at which time the Option Consideration and all Extension Payments made shall become non-refundable, unless Grantor defaults in its obligations hereunder or is unable to transfer the Property to Grantee with good and marketable title free and clear of liens and encumbrances. The Option Consideration shall in all instances be credited against the Purchase Price at closing.

b. Title. Title to the Property shall be good and marketable and free and clear of all liens, claims and encumbrances. In the event that title to the Property is not in accordance with the preceding sentence as of the Closing Date, Grantor shall be given a reasonable period of time, not to exceed thirty (30) days, after receipt of notice from Grantee in which to remedy any title defects. In the event that said defects cannot be corrected or remedied within said time period, or in the event that Grantor elects not to remedy same, then this Agreement shall terminate whereupon Grantor shall fully refund to Grantee the Option

Consideration. Grantee may elect to close notwithstanding such defects as may exist at no cost or liability to Grantor.

c. Closing. The closing under this Agreement shall take place not later than ten (10) days after the date of Grantee's Notice of Election (the "Closing Date") at 10:00 AM, local time, at Grantee's counsel's office, or at such other time and place as Grantor and Grantee shall mutually agree upon in writing. At the closing, the parties shall execute and deliver a Quitclaim Deed with Covenant to the Property and such other customary certificates and affidavits as Grantee shall request.

d. Adjustments, Prorations and Closing Costs. The recording fee for the deed and any expenses related to Grantee's financing will be paid for by Grantee. The parties shall share equally the cost of all real estate transfer taxes.

e. Possession. Grantor shall deliver possession of the Property to Grantee at the closing, free and clear of all leases, tenancies or occupancies by any person.

f. Risk of Loss. All risk of loss to the Property prior to the closing shall be on Grantor.

g. Default; Remedies. In the event either party defaults under this Agreement, and such default is not cured within thirty (30) days of written notice thereof, the sole remedy of either party shall be to terminate this Agreement. In addition, if Grantor is the defaulting party, the Option Consideration shall immediately be returned to Grantee, and if the Grantee is the defaulting party, Grantor shall be entitled to retain the Option Consideration as liquidated damages and not as a penalty.

h. Condition Precedent. Grantee's obligation to purchase the Property is conditioned upon there having occurred no material adverse change in or to the Property between the Effective Date and the Closing Date. If this condition is not satisfied as of the Closing Date, Grantee may terminate this Agreement and receive a full and complete refund of the Option Consideration.

6. Inspection. At all times during the Option Period, as it may be extended, upon reasonable prior notice, Grantee and any prospective lender or investor of Grantee's shall have the right to enter the Property and perform, at Grantee's expense, any and all inspections, tests, surveys or other due diligence inquiries with respect to the Property as Grantee deems necessary or appropriate. Grantee agrees to return the Property as nearly as possible to its original condition after any of such tests and inspections. Grantee shall indemnify Grantor for any property damage, bodily injury or death occurring by reason of such entry and/or testing. Grantor shall cooperate with Grantee in such inspections. In the event Grantee is not satisfied for any reason by the results of such due diligence inspections, Grantee shall have the option of terminating this Agreement by written notice to Grantor. Without limiting the generality of the foregoing, this Agreement and Grantee's purchase of the Property are subject to a determination by Maine State Housing Authority ("MaineHousing") as to the desirability of the Property for Grantee's intended use as a result of the completion of the environmental review process

required by the United States Department of Housing and Urban Development, and if such determination is unsatisfactory, Grantee may terminate this Agreement, whereupon the Option Consideration and any Extension Payments actually made shall promptly be refunded to Grantee.

7. Assignment. Grantee may assign this Agreement and all its rights and obligations hereunder to a limited partnership controlled by Grantee. Upon notice to such assignment, Grantor agrees to look solely to such affiliate for performance of the obligations of the Grantee hereunder.

8. Brokerage. Neither party has engaged a real estate broker in connection with the transaction described in this Agreement. Each party agrees to indemnify the other from and against the claims of any brokers arising from breach of the above representation, which indemnity shall survive the closing and shall include reasonable costs of collection, including reasonable attorney's fees.

9. Recording of Option. Grantor and Grantee agree that this Option shall not be recorded. Grantor agrees upon request of Grantee to execute and tender for recording a memorandum summarizing the terms of this Agreement (except the Purchase Price).

10. Notices. Except as provided in Section 3 above, all notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after mailing if mailed to the party to whom notice is to be given by first class mail, postage prepaid, registered or certified, return receipt requested, addressed to the recipient at the addresses set forth at the beginning of this Agreement. Either party may change its address for purposes of this Section by giving the other party notice of the new address in the manner described herein.

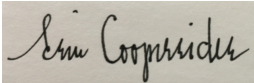
11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within ninety (90) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a "choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

12. Miscellaneous. Time is of the essence hereof. This Agreement constitutes the entire agreement between Grantor and Grantee, there are no agreements or understandings between the parties except as set forth herein, and all prior agreements and understandings, including, without limitation, are superseded by this Agreement. This Agreement will inure to the benefit of and bind the respective successors and assigns of Grantor and Grantee. As used in this Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed by

and construed in accordance with the laws of Maine. The recitals contained in this Agreement are deemed by the parties to be accurate statements of fact. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

IN WITNESS WHEREOF, Grantor and Grantee have executed this Option Agreement as of the Effective Date.

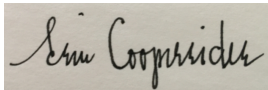
WITNESS:





NEWHEIGHT REDFERN LLC, Grantor

By: 

Jonathan Culley, its Manager
By: 

Erin Cooperrider, its Manager

[remainder of page left blank intentionally—signatures continue on next page]

IN WITNESS WHEREOF, Grantor and Grantee have executed this Option Agreement as of the Effective Date.

WITNESS:

Kyla Walker

COMMUNITY HOUSING OF MAINE, INC.,
Grantee

By: 

Cullen Ryan, its Executive Director

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AMENDMENT TO THE OPTION AGREEMENT

THIS AMENDMENT TO THE OPTION AGREEMENT (“**Amendment**”) made and entered into as of this 26th day of October, 2020 (the “**Effective Date**”), is by and between NEWHEIGHT REDFERN LLC., a Maine limited liability company with a place of business and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 (hereinafter referred to as “**Grantor**”), and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Main 04101 (hereinafter referred to as “**Grantee**”).

WITNESSETH:

WHEREAS, Grantor and Grantee made and entered into that certain Option Agreement dated July 28, 2020 (the “**Contract**”) exclusive and irrevocable option to purchase a parcel of land having not less than 11,887 square feet, with frontage on or deeded access to Winter Street, together with a leasehold interest in other land for parking of up to 5 cars on the former Mercy Hospital campus on Spring and Winter Streets, all as more particularly depicted on the drawing attached hereto as Exhibit A (the “**Property**”). The Property is a portion of the real property conveyed to Grantor by deed of Mercy Hospital dated February 25, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36459, Page 218.

WHEREAS, Grantor and Grantee desire to further amend the Contract as hereinafter set forth (all capitalized terms not defined herein shall have the meaning ascribed in the Contract).

NOW THEREFORE, for and in consideration of [REDACTED] and other good and valuable consideration, Grantor and Grantee hereby agree that the Contract is amended as follows:

1. The following clause is hereby stricken from the contract,

11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within ninety (90) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a “choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

2. and is hereby replaced with the following clause:

11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within one hundred eighty (180) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a “choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

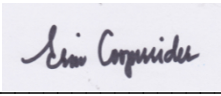
[signatures included on the next page]

IN WITNESS WHEREOF, this Grantor and Grantee Amendment has been executed by duly authorized officers or representatives of Seller and Purchaser as of the date and year first above written.

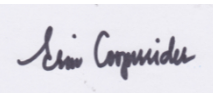
Grantor:

NewHeight Redfern LLC

By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

Witness:




Grantee:

Community Housing of Maine, INC

By: 
Cullen Ryan, its Executive Director



SECOND AMENDMENT TO THE OPTION AGREEMENT

THIS SECOND AMENDMENT TO THE OPTION AGREEMENT made and entered into as of this 18th day of January, 2021 (the “**Effective Date**”), is by and between NEWHEIGHT REDFERN LLC., a Maine limited liability company with a place of business and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 (hereinafter referred to as “**Grantor**”), and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Main 04101 (hereinafter referred to as “**Grantee**”).

WITNESSETH:

WHEREAS, Grantor and Grantee made and entered into that certain Option Agreement dated July 28, 2020, as amended by First Amendment thereto dated October 26, 2020 (**collectively** the “**Contract**”) exclusive and irrevocable option to purchase a parcel of land having not less than 11,887 square feet, with frontage on or deeded access to Winter Street, together with a leasehold interest in other land for parking of up to 5 cars on the former Mercy Hospital campus on Spring and Winter Streets, all as more particularly depicted on the drawing attached hereto as Exhibit A (the “**Property**”). The Property is a portion of the real property conveyed to Grantor by deed of Mercy Hospital dated February 25, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36459, Page 218.

WHEREAS, Grantor and Grantee desire to further amend the Contract as hereinafter set forth (all capitalized terms not defined herein shall have the meaning ascribed in the Contract).

NOW THEREFORE, for and in consideration of One Dollar and No/100 Dollars (\$1.00) and other good and valuable consideration, Grantor and Grantee hereby agree that the Contract is amended as follows:

Section 11 of the Contract, as previously amended, is hereby deleted and is replaced with the following:

11. Condition of Property as of the Closing Date. The parties agree in good faith to negotiate and enter into an amendment to this Agreement within two hundred seventy (270) days of the Effective Date, which amendment will specify the scope of work to be undertaken before the Closing Date by the Grantor in preparing the Property for transfer to Grantee. The parties agree that no work shall be done on the Property between the Effective Date and the date Grantee receives written notice of environmental clearance from MaineHousing. In the event Grantor takes any action on or near the Property before the Closing Date that is determined to be a “choice limiting action and thus causes Grantee to lose either any MaineHousing funding or any project based vouchers awarded to it, Grantee shall have the option of terminating this Agreement in writing and receiving a full refund of the Option Consideration and all Extension Payment actually made.

2. As amended hereby, and as previously amend, the Contract continues in full force and effect.

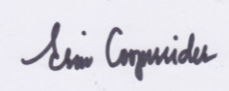
[signatures included on the next page]

IN WITNESS WHEREOF, this Grantor and Grantee Amendment has been executed by duly authorized officers or representatives of Seller and Purchaser as of the date and year first above written.

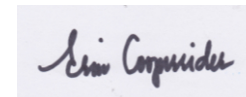
Grantor:

NewHeight Redfern LLC

By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

Witness:




Grantee:

Community Housing of Maine, INC

By: 
Cullen Ryan, its Executive Director



ADDENDUM TO OPTION AGREEMENTS

THIS ADDENDUM TO OPTION AGREEMENTS amends those certain Option Agreements, both dated July 28, 2020 (the “Agreements”), by and between NEWHEIGHT REDFERN LLC a Maine limited liability company with a place of business in Portland, Maine and mailing address of 217 Commercial Street, Suite 205, Portland, Maine 04101 (“NHRF”) and COMMUNITY HOUSING OF MAINE, INC., a Maine nonprofit corporation with a place of business and mailing address of One City Center, 4th Floor, Portland, Maine 04101 (“CHOM”).

NHRF and CHOM agree to amend the Agreements as contemplated in Section 11 of the Agreements (and hereby waive the 90-day period set forth in Section 11), by adding the following paragraph to Section 11 of the Agreements:

“NHRF and CHOM agree to allocate responsibility (including responsibility for bearing all related costs) for completing and paying for certain aspects of the scope of work and maintenance of the Property to be undertaken both prior to and after the Closing Date as follows (reference is made to the attached subdivision plat for limits of work areas described below):

- Building demolition and rubble removal: NHRF responsibility
- Backfill of demolition area: NHRF responsibility to backfill with structural fill meeting the MaineDOT Standard Spec 703.20
- Winter Street sidewalk construction and street tree installation: CHOM responsibility
- “Woonerf” parking area Construction: NHRF responsibility, including drive aisle portion of the pocket park between CHOM buildings with shared design responsibilities for the drive aisle/pocket park area
- Woonerf Maintenance: NHRF responsibility, including snow removal for drive aisle portion of the pocket park between CHOM buildings
- Woonerf parking spaces for both CHOM buildings: CHOM responsibility for market rate lease payments for up to 15 parking spaces
- All Environmental remediation: NHRF responsibility
- Undergrounding three-phase power: NHRF will have responsibility to remove on-site poles and to install conduit for underground power to CHOM vault, CHOM will have responsibility to install vault and submersible transformer to be shared between two CHOM buildings, and pay for the cost of the primary utility connection to the vault and transformer.
- Pocket park between CHOM buildings: CHOM will own and maintain this area, NHRF will retain an access easement over this area and provide snow removal for the drive aisle
- Utility connections including water, sewer, communications, & gas: NHRF responsible for hospital building; CHOM responsible for its two new buildings

Both parties shall complete their respective work in a good and workerlike manner free and clear of all mechanics and material suppliers’ liens. If any lien is filed, the responsible party shall promptly cause the lien to be discharged or bonded off at no cost to the non-responsible party. Except as amended hereby, the Agreements shall remain unmodified and in full force and effect.

None of the work described in this Addendum shall be commence until CHOM after has received written notice of environmental clearance as described in Section 11 of the Agreements.

[signatures appear on following page]

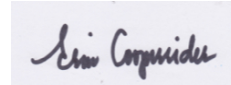
IN WITNESS WHEREOF, NRHF and CHOM have executed this Addendum as of the
30 day of March, 2021.

WITNESS:

Emily McConnell

NEWHEIGHT REDFERN LLC

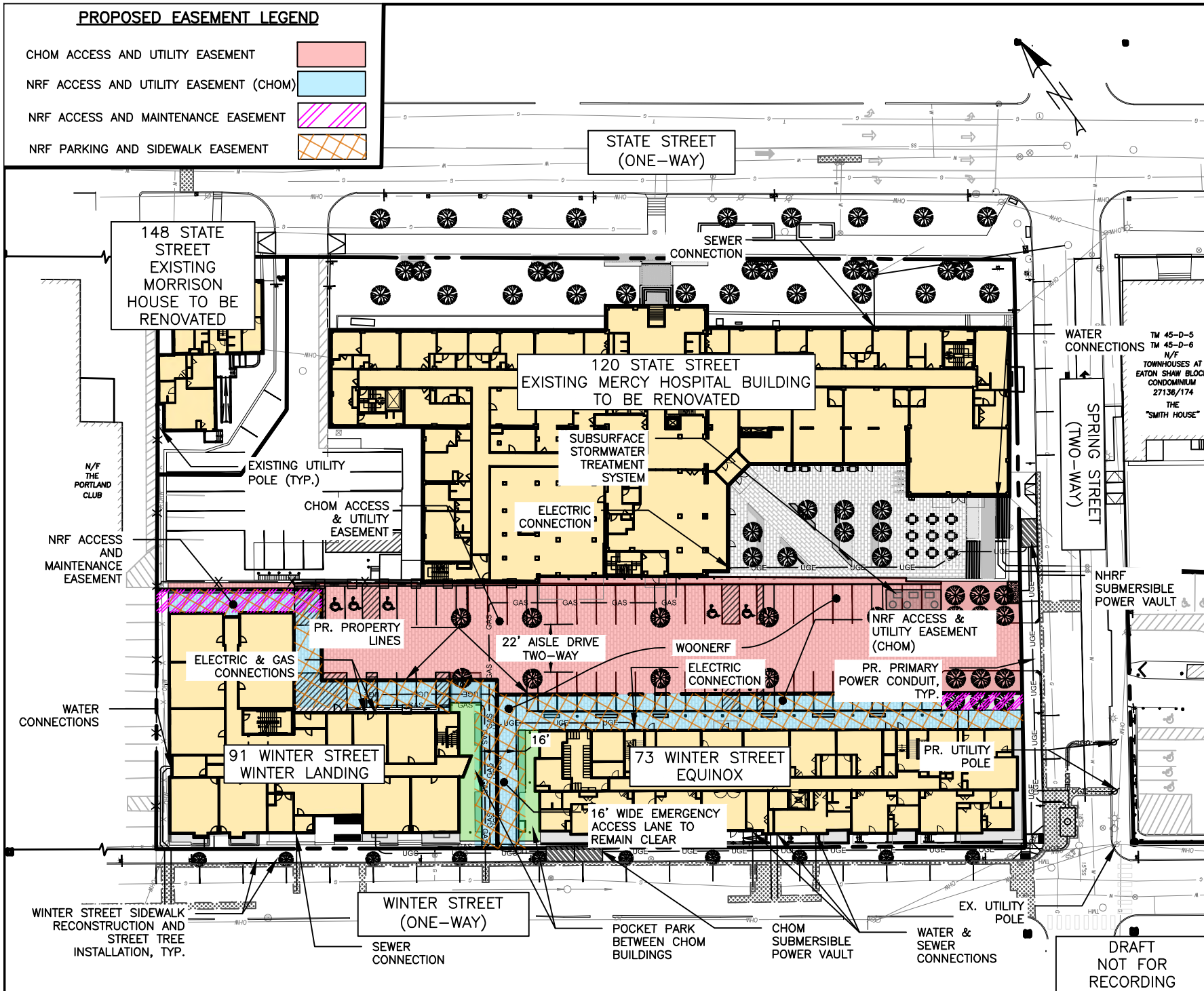
By: 
Jonathan Culley, its Manager

By: 
Erin Cooperrider, its Manager

Kyra Walker

COMMUNITY HOUSING OF MAINE, INC.

By: 
Cullen Ryan, its Executive Director



ISSUED FOR		BY DATE
ADDENDUM		PH 3/30/21
DRAWING NAME:		
ADDENDUM TO OPTION AGREEMENTS EXHIBIT - POST-CONSTRUCTION		
PROJECT NAME:		
MERCY HOSPITAL REDEVELOPMENT		
CLIENT:		
NEWHEIGHT REDFERN, LLC		
ACORN ENGINEERING, INC. P.O. BOX 3372 PORTLAND, MAINE 04104 (207) 775-2655		
1140 CIVIL		
3/30/2021		
1129		
SCALE:		1"=60'
DESIGN BY:		PFH
DRAWN BY:		MKT
CHECKED BY:		PFH
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.		
DRAWING NO.		
EX-1		



ZONING ANALYSIS Relevant Zone(s) B3

All Projects:

	Required	Proposed
Lot Size	None	0.35 / 0.39 ac.
Area Per Dwelling Unit	None	0.007 / 0.009
Minimum Street Frontage	15'	153' / 243'
Front Yard Minimum	N/A	N/A
Front Yard Maximum	5'	5'
Rear Yard	None	16.5' min
Yard Right	None	2.54' min
Yard Left	None	5.56' min.
Side Street Setback	N/A	N/A
Step Back	30' @ 45' Winter	30' @ 45' Winter
Maximum Lot Coverage	100%	92.2%
Minimum Lot Coverage	N/A	N/A
Maximum Height	85' / 45'*	45' / 45'
Open Space	N/A	7.8%
Maximum Impervious Area	100%	92.2%
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	TBD	70
Loading Bays	None	None
Other 1		
Other 2		
Other 3		

Summary of Written Easements

Existing Easements

- The following agreements are listed within the deed recorded at the Cumberland County Registry of Deeds:
 - o Easement and Memorandum of Agreement and Mercy Hospital and Time Warner of Maine dated November 18, 1998 and recorded in Book 5936, Pages 65-67.
 - o Easement Deed by Mercy Hospital and Central Maine Power Company dated November 21, 1977 and recorded in Book 4171, Page 66.
 - o Easement Deed by Mercy Hospital and Central Maine Power Company dated September 4, 2010 and recorded in Book 28512, Page 45.
 - o Easement Deed by Mercy Hospital and Central Maine Power Company dated March 6, 1968 and recorded in Book 3046, Page 716.
 - o Easement Deed by Mercy Hospital and Central Maine Power Company dated August 22, 1966 and recorded in Book 2978, Page 31.
 - o Easement Deed by Mercy Hospital and Central Maine Power Company dated May 24, 2001 and recorded in Book 639, Page 232.

Proposed Easements

- The following agreement are proposed as part of the project. Please refer to the Subdivision Plat for additional information:
 - o Easement Deed by Community Housing of Maine and Central Maine Power Company for access and maintenance of proposed electric transformer and/or subsurface utility vault and associated electric utility conduits.
 - o Access and utility easement from Community Housing of Maine to NewHeight Redfern, LLC for the access and maintain the emergency alleyway in between the Senior and Family buildings.
 - o Access easement from NewHeight Redfern, LLC to Community Housing of Maine for access to the woonerf and plaza areas.
 - o Access easement from Community Housing of Maine to NewHeight Redfern, LLC for parking spaces within the woonerf
 - o Maintenance easements from Community Housing of Maine to the City of Portland for the portion of the sidewalk along Winter Street that is within the proposed CHOM property lines
 - o Maintenance and Access easement from Community Housing of Maine to NewHeight Redfern, LLC for access and maintenance of the proposed stormwater infrastructure within the CHOM Senior building lot.

0000490

BK 15936PG 165

EASEMENT AND MEMORANDUM OF AGREEMENT

THE STATE OF MAINE

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF CUMBERLAND

THAT **Mercy Hospital**, a Maine corporation (herein called the "Grantor"), acting herein by and through its duly authorized general manager, in consideration of, and pursuant to, that certain Standard Form of Service and Easement Agreement dated November 18, 1998 (the "Agreement") by and between Grantor, and **Time Warner Cable of Maine** (herein called the "Grantee") and in consideration of One and no/100 Dollars and other good and valuable consideration, which consideration is hereby confessed and acknowledged by the Grantor, has GRANTED, BARGAINED, SOLD AND CONVEYED, and does hereby GRANT, BARGAIN, SELL AND CONVEY, unto the Grantee, its successors and assigns, an easement and right-of-way in, on, over, under, through and across all that certain parcel of land described on Exhibit A hereto and all the improvements now or hereafter situated (said real property, improvements, easements and appurtenances being herein collectively called the "Premises"), and every part and portion thereof (including, without limitation, all improvements and fixtures included therein), for the purposes of (i) providing cable television services to the Premises; and (ii) owning, installing, operating, upgrading, maintaining, relocating, removing and replacing the "Services Delivery System" (which is all wires, cables, poles, conduits, pipes, antennas, signal converters, signal decoders, facilities and equipment on the Premises from time to time which are necessary or desirable, in the opinion of the Grantee, to make Services available to the Premises (said purposes being hereinafter collectively called the "Easement Purposes")).

This Easement and Memorandum of Agreement is executed and delivered by Grantor and Grantee for the purpose of evidencing of record and giving notice of the existence of the Agreement, to which reference is made and the same is incorporated herein as fully and for all purposes as if set forth in this Easement and Memorandum of Agreement in full. If any conflict shall exist between this Easement and Memorandum of Agreement and the Agreement, the latter shall control.

TO HAVE AND TO HOLD said easement and right to serve, together with all the rights and appurtenances thereunto in anywise belonging, unto the Grantee, its successors and assigns, for the duration of the term, including any extensions and renewals, stated in the Agreement; and the Grantor does hereby bind itself, its successors and legal representatives, to warrant and forever defend, all and singular, said easement and right to serve herein granted, unto the Grantee, its successors and assigns, against the claims of all persons whomsoever lawfully claiming or to claim the same, or any part thereof, subject to the matters set forth herein.

BK 15936 PG 166

EXECUTED on this 18 day of Nov 1998.

Mercy Hospital
a Maine corporation
By: [Signature]
Name: Thomas Gruber
Title: Vice President, Clinical Services

THE STATE OF MAINE

COUNTY OF CUMBERLAND

This instrument was acknowledged before me on the 18 day of Nov 1998, by Thomas Gruber, Vice President, Clinical Services of Mercy Hospital, a Maine corporation, on behalf of said Mercy Hospital.

My Commission Expires:

12/6/2002

(SEAL)

[Signature]
Notary Public in and for
the State of Maine
GEORGIA E. JONES
NOTARY PUBLIC, MAINE
MY COMMISSION EXPIRES
DECEMBER 6, 2002

(Printed Name of Notary)

BK 15936 PG 167

EXHIBIT A

**LEGAL DESCRIPTION OF PREMISES
COVERED BY EASEMENT AND MEMORANDUM OF AGREEMENT**

**MERCY HOSPITAL
144 State Street
Portland, ME 04101**

Legal Description of Premises attached.

**RECEIVED
RECORDED REGISTRY OF DEEDS**

2001 JAN -3 AM 8: 33

CUMBERLAND COUNTY

John B O'Brien

Mercy Hospital, a corporation organized and existing by law and having an office in the City

of Portland, Cumberland County, Maine,
~~(being a corporation)~~ for consideration paid, grant to CENTRAL MAINE POWER COMPANY, a Maine corporation having its principal office at Edison Drive, Augusta, Maine 04336, the right and easement to erect, bury, maintain, repair, rebuild, operate and patrol electric transmission and distribution wires and/or cables, consisting of suitable and sufficient poles with wires strung upon and extending between the same and/or underground cables buried under the surface, together with all necessary fixtures and appurtenances, over, across and/or under the surface of my land in the ~~Town~~/City of Portland, Cumberland County, Maine, the location of said poles and/or underground cables to be as follows:

for area lighting in Mercy Hospital Parking Lot #1 on land of this Grantor lying on the northeasterly side of Winter Street, specifically, poles #8.1, 8.2, 8.3, 8.4, 8.13 and 8.15 as shown on plan of Blue Rock Industries, Westbrook, Maine titled Mercy Hospital Parking Lot Reconstruction, Lot #1, scale 1" = 10', dated 6/8/77 by G.M.H.. This plan on file at Central Maine Power Company Engineering Office, 162 Canco Road, Portland, Maine.

This location crosses a portion of the premises conveyed to the Grantor(s) by deed of _____, dated _____, 19____, recorded in the _____ County Registry of Deeds, Book _____, Page _____.

Together with the right to cut down, keep trimmed and control such trees, branches and underbrush as the Grantee believes may interfere with the operation and maintenance of its wires and/or cables; the right to restrict the construction of buildings or structures within _____ feet of its wires and/or cables; the right to keep the surface of the ground above said underground cables and other electrical equipment free from structures and growth which, in the judgment of the Grantee, would interfere with or endanger the proper operation or maintenance of said underground cables; and the right to enter upon the Grantor's premises for any and all of the foregoing purposes.

Mercy Hospital has caused this instrument to be sealed with its corporate seal and ~~signed~~ signed in its corporate name by Howard R. Buckley, its Executive ~~(and its authorized agent)~~ of this and all other premises, powers, rights and interests of the same by descent and otherwise. Director, hereunto duly authorized

~~WITNESSES~~ _____ this 21st day of NOVEMBER, 1977.

Signed, Sealed and Delivered
 in the presence of

Margaret M. Haley

MERCY HOSPITAL

By: *Howard R. Buckley*

Its Executive Director

STATE OF MAINE

Cumberland ss.

Nov. 21

1977

Personally appeared the above-named Howard R. Buckley and acknowledged this instrument to be his free act and deed, ~~in his own right~~ in his said capacity and the free act and deed of said corporation, before me,

MY COMMISSION EXPIRES
 MARCH 14, 1980

Margaret M. Haley
 Notary Public
 Justice of the Peace

STATE OF MAINE

CUMBERLAND, ss.

REGISTRY OF DEEDS

Received at 8 H 30 M A M on FEB 3 1978 and recorded in
 Book 4171 Page 66 Attest

Edward D. Brewster Register

Easement

WO# 300436353

Form 1199, Rev. 07/08

Mercy Hospital, a Maine corporation with a mailing address of 144 State St, Portland, ME, 04101 (Grantor(s)), for consideration given, grants to CENTRAL MAINE POWER COMPANY, a Maine Corporation with an office at 83 Edison Drive, Augusta, Maine 04336, and Northern New England Telephone Operations, LLC, a limited liability company organized under the laws of the State of Delaware, and having its principal place of business at 521 East Moorehead Street, Suite 250, Charlotte, NC 28202, and their respective successors and assigns (collectively Grantees), with warranty covenants, the right and easement to erect, bury, maintain, rebuild, respace, patrol, operate, and remove and do all other actions involving electric and communication distribution equipment and facilities, consisting of poles, wires and cables, anchors, guywires or pushbraces, together with all necessary fixtures and appurtenances over, across and under a portion of the surface of the land of the Grantor(s) in the City/Town of Portland, Cumberland County, Maine. The said equipment and facilities are attached to a line commencing at Pole/Pad Pole 11, Winter Street, Portland and extending to include Pole(s)/Pad(s) Poles 11.1 & 11.2, Winter Street. This easement affects land conveyed to the Grantor(s) in a deed from Robert M. Morrison, dated December 04, 1975, and recorded in the Cumberland County Registry of Deeds in Book 3779 Page 204. This easement is an easement in gross and is not for the sole purpose of serving the Grantor(s) or Grantor's land. The rights granted herein include the right to cut down and trim trees and other vegetation and to use formulations registered with the Environmental Protection Agency or its successor to eliminate vegetation, and modify the growth of trees, which vegetation or growth, in the judgment of Grantees, may interfere with the operation and maintenance of its equipment or facilities; and the right to restrict the construction of buildings, structures and improvements within 15 feet of its equipment and facilities; and the right to keep the surface of ground above its underground cables and other electrical equipment free from structures, improvements and growth which, in the judgment of the Grantees, may interfere with the proper operation or maintenance of said underground cables; and the right to enter upon the land of the Grantor(s) for any and all of the foregoing purposes.

WITNESS the hand(s) and seal(s) of Grantor(s) duly authorized representatives on 9/4, 10.

Signed, Sealed and Delivered in the presence of:

Mercy Hospital

Eileen Skinner
Eileen Skinner, President & CEO

State Of Maine

County Of Cumberland

The above-named Eileen F. Skinner, personally appeared before me this 4th day of September, 2010 and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said Mercy Hospital.

Robinson R. Poulin
Notary Public/Attorney

Printed Name:

ROBIN R. POULIN
Notary Public, Maine

My Commission Expires My Commission Expires December 3, 2011

SEAL

Received
Recorded Register of Deeds
Feb 09, 2011 08:33:57A
Cumberland County
Pamela E. Lovley

KNOW ALL MEN BY THESE PRESENTS, that MERCY HOSPITAL, a corporation organized and existing by law and having an office in the City

of Portland, in the County of Cumberland

and State of Maine in consideration of One Dollar and other valuable consideration (the sum being less than one hundred dollars) paid by CENTRAL MAINE POWER COMPANY, a Maine corporation and NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY, a New York corporation, the receipt whereof is hereby acknowledged, does hereby give, grant, bargain, sell and convey unto the said Central Maine Power Company and New England Telephone and Telegraph Company, their successors and assigns, the right and easement to construct, erect, rebuild, operate, maintain and remove electric distribution and communication lines for the transmission of electricity and intelligence; together with the necessary poles, wires, cables, cross-arms, braces, anchors, guys and other electrical equipment and appurtenances connected therewith, over, along and across premises owned by the Grantor(s) in the City/Town of Portland, County of Cumberland and State of Maine, along the route as now staked out, extending in a southeasterly direction from pole 27 Spring Street to pole 27.1

Also the right to cut down and keep trimmed and/or spray or treat with a chemical preparation of the Grantee's selection such trees, branches and underbrush as in the judgment of the Grantee, interfere with or endanger the proper operation and maintenance of the lines constructed along the above described location, together with the right to enter upon the Grantor's premises for any and all of the foregoing purposes.

It is understood and agreed that the rights and easements hereby conveyed are to be jointly owned by Central Maine Power Company and New England Telephone and Telegraph Company, their successors and assigns. If either Central Maine Power Company or New England Telephone and Telegraph Company, or the successors or assigns of either, shall relinquish or abandon the rights and easements hereby conveyed, the same shall become the sole property of the remaining company.

TO HAVE AND TO HOLD the above granted rights and easements to the said Central Maine Power Company and New England Telephone and Telegraph Company, their successors or assigns, to their own use and behoof forever.

IN WITNESS WHEREOF, the said Mercy Hospital has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Donald F. Plunkett, its Executive Director, hereunto duly authorized,

and Merle R. Mahany wife (husband) of the said Donald F. Plunkett joining in this instrument as grantor(s) and relinquishing and conveying all (-----) rights by descent and all other rights in the above described rights and easements have hereunto set their hands and seals this March day of 1968.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF

Merle R. Mahany

MERCY HOSPITAL

By Donald F. Plunkett
Its Executive Director

STATE OF MAINE
County of Cumberland

Personally appeared the above named Donald F. Plunkett and acknowledged the foregoing instrument to be his free act and deed, before me, Merle R. Mahany in his said capacity and the free act and deed of said corporation, before me, Merle R. Mahany Justice of the Peace for said County.

41-1

STATE OF MAINE

CUMBERLAND, ME.

REGISTRY OF DEEDS

Received at 2:00 P.M. on JUL 1 1968 and recorded in Book 3046 Page 716 Attest Seward P. H. [Signature] Register

4508

1-58
1-586

13891

31

KNOW ALL MEN BY THESE PRESENTS, that MERCY HOSPITAL, a corporation organized and existing by law and having an office in the City

of Portland, in the County of Cumberland

and State of Maine in consideration of One Dollar and other valuable consideration (the sum being less than one hundred dollars) paid by CENTRAL MAINE POWER COMPANY, a Maine corporation and NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY, a New York corporation, the receipt whereof is hereby acknowledged, does hereby give, grant, bargain, sell and convey unto the said Central Maine Power Company and New England Telephone and Telegraph Company, their successors and assigns, the right and easement to construct, erect, rebuild, operate, maintain and remove electric distribution and communication lines for the transmission of electricity and intelligence; together with the necessary poles, wires, cables, cross-arms, braces, anchors, guys and other electrical equipment and appurtenances connected therewith, over, along and across premises owned by the Grantor(s) in the City/Town of Portland

County of Cumberland and State of Maine, along the route as now staked out, extending in a northeasterly direction from Winter Street to pole 8.1, thence northerly to pole 8.2; another line extending northeasterly from Winter Street to pole 9.1, thence northwesterly to pole 9.2; another line extending westerly from Spring Street to pole 26.1; another line extending southwesterly from State Street to pole 8.1; also another line extending southwesterly from State Street to pole 9.1, thence southerly to pole 9.2, thence southeasterly to pole 9.4.

Also the right to cut down and keep trimmed and/or spray or treat with a chemical preparation of the Grantees' selection such trees, branches and underbrush as in the judgment of the Grantees, interfere with or endanger the proper operation and maintenance of the lines constructed along the above described location, together with the right to enter upon the Grantor's premises for any and all of the foregoing purposes.

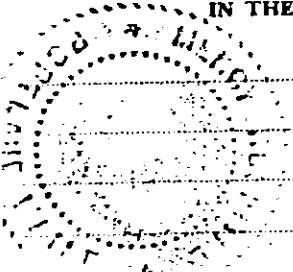
It is understood and agreed that the rights and easements hereby conveyed are to be jointly owned by Central Maine Power Company and New England Telephone and Telegraph Company, their successors and assigns. If either Central Maine Power Company or New England Telephone and Telegraph Company, or the successors or assigns of either, shall relinquish or abandon the rights and easements hereby conveyed, the same shall become the sole property of the remaining company. This easement may be terminated on ninety (90) days written notice.

TO HAVE AND TO HOLD the above granted rights and easements to the said Central Maine Power Company and New England Telephone and Telegraph Company, their successors or assigns, to their own use and behoof forever.

IN WITNESS WHEREOF, the said Mercy Hospital has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Donald F. Plunkett, its Executive Director, hereunto duly authorized,

and ~~the~~ ~~jointing in this easement as grantor(s) and relinquishing and conveying all () rights by descent and all other rights in the above described rights and easements have herunto set their hands and seals this~~
22nd day of August, 1966.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF



MERCY HOSPITAL

By Donald F. Plunkett
Its Executive Director

P.K. 11-285

STATE OF MAINE

County of Cumberland

Personally appeared the above named Donald F. Plunkett

and acknowledged the foregoing instrument to be his free act and deed, before me, in his said capacity and the free act and deed of said corporation, before me,

Aug 22 1966
Paul R. Mahoney
Justice of the Peace
Holmes, Maine

STATE OF MAINE

CUMBERLAND, ss.

Received at 9 H - M. U. M on OCT 26 1966 and recorded in
Book 2978 Page 31

Attest

Edward R. H. Jr.

Register

0039564

Corporation Easement Deed

BK 1639 | PG 232

Underground Line Easement

MERCY HOSPITAL, a MAINE corporation with a mailing address of 144 State Street, Portland, ME, 04101 ('Grantor(s)'), for consideration given, grants to CENTRAL MAINE POWER COMPANY, a Maine Corporation with an office at 83 Edison Drive, Augusta, Maine 04336, and VERIZON NEW ENGLAND, INC. A New York corporation with a mailing address of 125 High Street, Boston, Massachusetts, 02110, and their respective successors and assigns (collectively 'Grantees'), with warranty covenants, the right and easement to erect, bury, maintain, rebuild, respace, patrol, operate, and remove and do all other actions involving electric and communication distribution equipment and facilities, consisting of wires, cables, together with all necessary fixtures and appurtenances under the surface of the land of the Grantor(s) in the City/Town of Portland, Cumberland County, Maine. The said equipment and facilities are attached to a line commencing at Pole(s)/Pad(s) 28, Winter Street, Portland and extending to include Pole(s)/Pad(s) 28.1 to serve Grantor(s) and others. This easement affects land or rights conveyed to the Grantor(s) in a deed from Portland Renewal Authority, dated August 22, 1966, and recorded in the Cumberland County Registry of Deeds in Book 2978 Page 31. The rights granted herein include the right to keep the surface of ground above its underground cables and other electrical equipment free from structures, improvements and growth which, in the judgment of the Grantees, may interfere with the proper operation or maintenance of said underground cables; and the right to enter upon the land of the Grantor(s) for any and all of the foregoing purposes.

WITNESS the hand(s) and seal(s) of Grantor(s) duly authorized representatives on May 24, 2001.

Signed, Sealed and Delivered in the presence of:

Witness(es)

Linda Lockart
Printed LINDA LOCKART

MERCY HOSPITAL

Jeffrey Thomas
Jeffrey Thomas
Manager
Jeffrey Thomas

State of Maine

County of Cumberland

The above-named Jeffrey Thomas, personally appeared before me this 24 day of MAY, 2001 and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said MERCY HOSPITAL.

WR# 0004101841 Acct# 441-1670410-001
WO# 041-09695

Beryl C McGrath
Notary Public/Attorney
Printed Name: Beryl C. McGrath
My Commission Expires: 9-23-2006

RECEIVED
RECORDED REGISTRY OF DEEDS
2001 JUN -8 AM 9: 23
CUMBERLAND COUNTY
John B O'Brien

BERYL C. McGRATH
Notary Public, Maine
My Commission Expires September 23, 2006

SEAL

Request for Waivers

The following waivers are being requested for the proposed project located at 120 State Street.

1. ***Parking drive aisle width*** – Per the City of Portland Technical Manual, Standard Parking Spaces Figure 1-27, the required drive aisle width for 90-degree parking spaces is 24 feet. The project is requesting a waiver to allow for a reduction to a 22-foot drive aisle.
2. ***Landscape Preservation*** – There are six (6) existing trees on the lot along the Winter Street sidewalk / ROW that are in poor condition. We are requesting removal of these trees and a waiver for the 30% preservation of existing trees for the construction of the future buildings along Winter Street. The project is proposing to install new street trees spaced approx. 30 feet on center within the Winter Street sidewalk / ROW where there are currently none to provide replacement for the landscaping to be removed. Additional landscaping is also proposed within the project and along the State Street frontage. Please refer to the Landscaping Plan for additional information.
3. ***Parking Lot Landscaping*** – The project parking area is proposed as a “woonerf” or living street, which incorporates trees, shrubs and plantings within the area. The proposed condition of the woonerf is to provide a flush surface across the area to provide accessible routes and promote pedestrian flow through the space. As such, no curbing is proposed, however the “landscaped islands” provide separation from the parking stalls and incorporates stormwater collection leading to a proprietary modular wetland water quality treatment system.



Financial Capacity

The Applicant's most recent audited financial statement confirming financial capacity is attached to this section.



COMMUNITY HOUSING OF MAINE, INC.

FINANCIAL STATEMENTS

June 30, 2020 and 2019

COMMUNITY HOUSING OF MAINE, INC.

FINANCIAL STATEMENTS

June 30, 2020 and 2019

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INDEPENDENT AUDITOR'S REPORT

Board of Directors
Community Housing of Maine, Inc.

We have audited the accompanying financial statements of Community Housing of Maine, Inc., which comprise the statements of financial position as of June 30, 2020 and 2019, and the related statements of activities, functional expenses, change in net assets and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Basis for Qualified Opinion

As more fully described in Note 1 to the financial statements, the accompanying financial statements do not include the activity for 14 entities of which Community Housing of Maine, Inc. either wholly owns, shares a common Board with, or is the General Partner in. In our opinion, accounting principles generally accepted in the United States of America require that the consolidation of these entities' activities be reflected in the financial statements.

Qualified Opinion

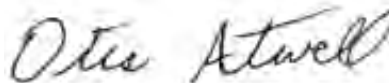
In our opinion, except for the effects of not consolidating all commonly-controlled entities, the financial statements referred to in the first paragraph present fairly, in all material respects, the financial position of Community Housing of Maine, Inc. as of June 30, 2020 and 2019, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Other Information

Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying supplementary information shown on pages 20 to 31 is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

The consolidating schedule of financial position - unaudited and consolidating schedule of revenues, support, expenses and change in net assets - unaudited (shown on pages 32 to 37) are presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.



Certified Public Accountants

November 12, 2020
South Portland, Maine
Employer Identification No: 20-3690847
Engagement Partner: Ron Worden

COMMUNITY HOUSING OF MAINE, INC.

STATEMENTS OF FINANCIAL POSITION

June 30, 2020 and 2019

ASSETS

	2020	2019
CURRENT ASSETS		
Cash (Note 18)		
Development Operations Accounts	\$ 1,412,289	\$ 870,629
Restricted Reserves and Escrows (Note 4)	1,487,035	1,128,967
Total Cash	2,899,324	1,999,596
Accounts Receivable		
Accounts Receivable -Tenants, Net of Allowance for Doubtful		
Accounts of \$10,000 in both 2020 and 2019	13,252	57,757
Due from Affiliates (Note 11)	192,907	196,061
Other	81,009	93,225
Total Receivables	287,168	347,043
Prepaid Expenses		
Insurance	19,144	18,492
Other	3,128	3,128
Total Prepaid Expenses	22,272	21,620
Total Current Assets	3,208,764	2,368,259
DEPOSITS HELD IN TRUST		
Tenant Security Deposits	152,514	149,364
PROPERTY AND EQUIPMENT (Notes 2 and 3)		
Land	2,720,035	2,729,534
Land Improvements	166,526	166,526
Buildings	25,381,192	24,679,996
Construction in Progress	643,869	196,402
Furniture and Equipment	364,931	368,801
Total	29,276,553	28,141,259
Less Accumulated Depreciation	6,988,946	6,381,276
Net Property and Equipment	22,287,607	21,759,983
OTHER ASSETS		
Accounts Receivable - Other (Non-current)	32,000	-
Note Receivable (Note 5)	3,674,172	3,674,172
Development Fee Receivable (Note 8)	1,876,903	2,991,238
Total Other Assets	5,583,075	6,665,410
TOTAL ASSETS	\$ 31,231,960	\$ 30,943,016

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.

STATEMENTS OF FINANCIAL POSITION
(Continued)

June 30, 2020 and 2019

LIABILITIES AND NET ASSETS

LIABILITIES

	2020	2019
CURRENT LIABILITIES		
Accounts Payable - Operations	\$ 251,909	\$ 66,379
Accrued Interest	14,818	12,975
Current Portion of Long-term Debt	193,321	130,819
Total Current Liabilities	460,048	210,173
DEPOSITS LIABILITY		
Tenant Security Deposits	152,825	151,684
LONG-TERM LIABILITIES		
Notes Payable - MaineHousing (Note 2)	1,361,105	1,497,971
Notes Payable - Other (Note 2)	1,836,903	2,144,533
Less Debt Issuance Costs, Net	(144)	(173)
Total Notes Payable	3,197,864	3,642,331
Refundable Advances (Note 3)	18,453,242	17,506,269
Total	21,651,106	21,148,600
Less Current Portion	193,321	130,819
Net Long-term Liabilities	21,457,785	21,017,781
TOTAL LIABILITIES	22,070,658	21,379,638
NET ASSETS		
Without Donor Restrictions	9,114,873	9,516,949
With Donor Restrictions	46,429	46,429
TOTAL NET ASSETS	9,161,302	9,563,378
TOTAL LIABILITIES AND NET ASSETS	\$ 31,231,960	\$ 30,943,016

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.

STATEMENTS OF ACTIVITIES

For the Year Ended June 30, 2020

	Without Donor Restrictions	With Donor Restrictions	Total
REVENUE, GAINS AND OTHER SUPPORT			
Rental Operations			
Tenant Rent	\$ 1,671,630	\$ -	\$ 1,671,630
Vacancy	(86,822)	-	(86,822)
Housing Assistance Payments (Note 7)	706,008	-	706,008
Total Rental Operations	2,290,816	-	2,290,816
Other Support and Revenue			
Development Fees (Note 8)	125,000	-	125,000
Income from Project Investments	100,017	-	100,017
Grants	301,350	-	301,350
Donations	6,249	-	6,249
Interest Income	22,967	-	22,967
Other Income	27,632	-	27,632
Refundable Historic Rehabilitation Credit (Note 10)	159,150	-	159,150
Total Support and Revenue	3,033,181	-	3,033,181
EXPENSES AND LOSSES			
Rental Housing Expenses			
Administrative	72,730	-	72,730
Operating	372,057	-	372,057
Maintenance	690,028	-	690,028
Depreciation and Amortization	668,514	-	668,514
Interest Expense	187,514	-	187,514
General	80,130	-	80,130
Total Rental Housing Expenses	2,070,973	-	2,070,973
Other Income (Expenses)			
Debt Relief (Note 3)	109,500	-	109,500
General and Administration	(1,030,845)	-	(1,030,845)
Gain on Sale of Fixed Assets	27,186	-	27,186
Development Expenses	(310,975)	-	(310,975)
Total Other Income (Expenses)	(1,205,134)	-	(1,205,134)
Change in Net Assets	\$ (242,926)	\$ -	\$ (242,926)

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.

STATEMENTS OF ACTIVITIES
(Continued)

For the Year Ended June 30, 2019

	Without Donor Restrictions	With Donor Restrictions	Total
REVENUE, GAINS AND OTHER SUPPORT			
Rental Operations			
Tenant Rent	\$ 1,525,756	\$ -	\$ 1,525,756
Vacancy	(61,588)	-	(61,588)
Housing Assistance Payments (Note 7)	638,016	-	638,016
Department of Veteran Affairs Per Diem (Note 9)	25,992	-	25,992
Total Rental Operations	2,128,176	-	2,128,176
Other Support and Revenue			
Development Fees (Note 8)	3,352,045	-	3,352,045
Income from Project Investments	100,339	-	100,339
Grants	82,163	15,000	97,163
Department of Veteran Affairs Per Diem (Note 9)	101,755	-	101,755
Donations	8,923	-	8,923
Interest Income	24,751	-	24,751
Other Income	14,874	-	14,874
Refundable Historic Rehabilitation Credit (Note 10)	159,150	-	159,150
Total Support and Revenue	5,972,176	15,000	5,987,176
EXPENSES AND LOSSES			
Rental Housing Expenses			
Administrative	71,738	-	71,738
Operating	385,649	-	385,649
Maintenance	586,192	-	586,192
Depreciation and Amortization	639,137	-	639,137
Interest Expense	200,777	-	200,777
General	87,115	-	87,115
Total Rental Housing Expenses	1,970,608	-	1,970,608
Other Income (Expenses)			
Debt Relief (Note 3)	704,615	-	704,615
General and Administration	(996,942)	-	(996,942)
Other Expense	(156,812)	-	(156,812)
Gain on Sale of Fixed Assets	36,595	-	36,595
Sub-Grantee Costs (Note 9)	(101,755)	-	(101,755)
Development Expenses	(350,502)	-	(350,502)
Total Other Income (Expenses)	(864,801)	-	(864,801)
Change in Net Assets	\$ 3,136,767	\$ 15,000	\$ 3,151,767

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.
STATEMENTS OF FUNCTIONAL EXPENSES
For the Years Ended June 30, 2020 and 2019

	2020	2019
PROGRAM SERVICES		
RENTAL HOUSING PROGRAM		
Management Fee	\$ 40,600	\$ 38,600
Other Administrative	32,130	33,138
Fuel	151,217	179,615
Electricity	95,129	92,303
Water and Sewer	103,414	94,675
Cable	1,291	1,312
Garbage and Trash Removal	21,006	17,744
Maintenance	690,028	586,192
Depreciation and Amortization	668,514	639,137
Interest Expense	187,514	200,777
Real Estate Taxes	8,710	18,257
Property and Liability Insurance	71,420	68,858
Other Expense	-	156,812
Development Expenses	310,975	350,502
Sub-Grantee Costs	-	101,755
TOTAL RENTAL HOUSING PROGRAM	<u>2,381,948</u>	<u>2,579,677</u>
SUPPORT SERVICES		
GENERAL AND ADMINISTRATION EXPENSES		
Bank Fees	12,018	8,641
Consulting Fees	8,516	9,875
Depreciation and Amortization	360	360
Donations	-	100
Dues and Subscriptions	2,550	1,584
Insurance - Health	86,692	91,646
Insurance - Liability and Workers Compensation	14,797	15,231
Late Fees	184	190
Legal	1,582	5,460
Meals and Entertainment	5,390	5,282
Miscellaneous Expense	6,250	3,765
Office Supplies	2,776	5,291
Parking	15,438	15,760
Pension	63,245	47,250
Postage and Delivery	2,294	2,132
Printing and Production	1,545	1,901
Professional Services	18,850	18,500
Rent	48,815	45,379
Staff Training	8,116	8,038
Telephone	6,917	10,133
Travel	13,891	17,959
Wages and Payroll Taxes	710,619	682,465
TOTAL GENERAL AND ADMINISTRATIVE EXPENSES	<u>1,030,845</u>	<u>996,942</u>
TOTAL FUNDRAISING	<u>-</u>	<u>-</u>
TOTAL EXPENSES	<u><u>\$ 3,412,793</u></u>	<u><u>\$ 3,576,619</u></u>

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.

STATEMENTS OF CHANGES IN NET ASSETS

For the Years Ended June 30, 2020 and 2019

	Net Assets Without Donor Restrictions	Net Assets With Donor Restrictions	Total
Net Assets, June 30, 2018	\$ 6,534,689	\$ 36,072	\$ 6,570,761
Distributions (Note 17)	(159,150)	-	(159,150)
Change in Net Assets	3,136,767	15,000	3,151,767
Release from Restrictions	<u>4,643</u>	<u>(4,643)</u>	<u>-</u>
Net Assets, June 30, 2019	9,516,949	46,429	9,563,378
Distributions (Note 17)	(159,150)	-	(159,150)
Change in Net Assets	<u>(242,926)</u>	<u>-</u>	<u>(242,926)</u>
Net Assets, June 30, 2020	<u><u>\$ 9,114,873</u></u>	<u><u>\$ 46,429</u></u>	<u><u>\$ 9,161,302</u></u>

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.

STATEMENTS OF CASH FLOWS

For the Years Ended June 30, 2020 and 2019

	2020	2019
Cash Flows from Operating Activities:		
Increase (Decrease) in Net Assets	\$ (242,926)	\$ 3,151,767
Adjustments to Reconcile Increase (Decrease) in Net Assets to Net Cash Provided by Operating Activities:		
Depreciation	668,874	639,137
Amortization of Debt Issuance Costs (Included in Interest Expense)	29	29
Gain on Sale of Property and Equipment	(27,186)	(36,595)
Debt Relief	(109,500)	(704,615)
Loss on Abandoned Projects	11,216	23,836
Deferred Interest	4,968	-
Changes in Operating Assets and Liabilities:		
Accounts Receivable - Tenant Rent	44,505	(29,634)
Accounts Receivable - Other	(19,784)	54,994
Due from Affiliates	3,154	(126,128)
Prepaid Expenses	(652)	(720)
Development Fee Receivable	1,114,335	(2,497,696)
Accounts Payable - Operations	(56,628)	(51,803)
Accrued Interest Payable	1,843	-
Other Accrued Expenses	-	(1,566)
Tenant Security Deposit Liability	1,141	10,277
Net Cash Provided by Operating Activities	<u>1,393,389</u>	<u>431,283</u>
Cash Flows from Investing Activities:		
Purchases of Property and Equipment	(1,048,629)	(1,880,884)
Reimbursement from Central Commons	-	385,245
Proceeds from Sale of Property	110,259	141,604
Net Cash Used by Investing Activities	<u>(938,370)</u>	<u>(1,354,035)</u>
Cash Flows from Financing Activities:		
Loan Proceeds - Maine Housing	862,473	4,708
Loan Proceeds - Other	261,000	1,313,406
Payments of Long-term Debt - Maine Housing	(149,841)	(184,607)
Payments of Long-term Debt - Other	(366,623)	(52,777)
Distributions	(159,150)	(159,150)
Net Cash Provided by Financing Activities	<u>447,859</u>	<u>921,580</u>
Net Increase (Decrease) in Cash, Cash Equivalents and Restricted Cash	902,878	(1,172)
Cash, Cash Equivalents and Restricted Cash at Beginning of Year	<u>2,148,960</u>	<u>2,150,132</u>
Cash, Cash Equivalents and Restricted Cash at End of Year	<u>\$ 3,051,838</u>	<u>\$ 2,148,960</u>
Supplemental Disclosure of Cash Flows Information:		
Cash Paid During the Year for:		
Interest	<u>\$ 180,674</u>	<u>\$ 200,777</u>

See accompanying notes to the financial statements.

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS

NOTE 1 - NATURE OF ACTIVITIES AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Activities - Community Housing of Maine, Inc. (CHOM) was incorporated as a not-for-profit corporation under the laws of the State of Maine. CHOM was organized to promote the general welfare of the community by constructing and operating rental housing and related facilities suited to the special needs and living requirements of eligible occupants as determined under U.S. Department of Housing and Urban Development regulations.

Reporting Entity - As required by accounting principles generally accepted in the United States of America, these financial statements should include the statements of financial position and results of operations of the following affiliated entities, related through common controlling interest:

Housing by Design, LLC
Rocky Coast Housing Inc.
Harbor Lights Housing

The financial statements should also consolidate limited partnerships in which CHOM or a related affiliate is the sole general partner, regardless of the amount of ownership interest. Based on management's assessment, the financial statements should also include the financial position and results of operations of the following limited partnerships:

Stevens Green Associates LP	Davis Island Housing Partners, LP
Reed Street Neighborhood Housing, LP	Seminary Housing Partners LP
Campbell Creek Housing Partners LP	Children's Hospital Housing Partners LP
Danforth on High, LP	Village Centre Housing Partners, LP
Parish House Associates, LP	NFG Housing Partners, LP
Central Commons Housing Partners LP	

Due to the financial considerations of consolidating entities with different year ends, and the relevancy of the data to the various financial statement users, management has elected to not consolidate the entities listed above.

Had the above entities been consolidated, it is estimated that total assets would be increased by \$77,820,053, total liabilities would be increased by \$41,363,519, revenues would be increased by \$5,595,825 and expenses would be increased by \$7,180,287.

Method of Accounting - The financial statements of CHOM are prepared on the accrual basis of accounting.

Property and Equipment - Property and equipment are stated at cost. Buildings, improvements, and equipment are being depreciated using the straight-line method over their estimated useful lives (generally 5 to 40 years). Repairs and maintenance are expensed and renewals are capitalized as incurred. When assets are retired or disposed of, their costs and related accumulated depreciation are removed from the accounts and resulting gains or losses are reflected in income.

Income Taxes - No provision for taxes on income is made in CHOM's financial statements since, as a not-for-profit corporation, it is exempt from income taxes under I.R.C. Section 501(c)(3).

COMMUNITY HOUSING OF MAINE, INC.
NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 1 - NATURE OF ACTIVITIES AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES
(Continued)

In accordance with accounting principles generally accepted in the United States of America, management has evaluated the Organization's exposure to material tax positions and determined that there are no such tax positions requiring accounting recognition. Information returns filed by the Organization are subject to examination by the Internal Revenue Service for a period of three years. While no information returns are currently being examined by the Internal Revenue Service, the three previous tax years remain open. No interest or penalties from federal or state tax authorities were recorded in the accompanying financial statements.

Cash - For the purposes of reporting cash flows, cash, cash equivalents and restricted cash includes cash on hand and amounts due from banks.

Tenant Receivables and Allowance for Doubtful Accounts - Tenant rent charges for the current month are due on the first of the month. Tenants who are evicted or move out are charged with damages or cleaning fees, if applicable. Tenant receivables consist of amounts due for rental income, charges for damages and cleaning fees. CHOM does not accrue interest on the tenant receivable balances.

Accounts Receivable are stated at the amount management expects to collect on outstanding balances. Management estimates the allowance for doubtful accounts based on historical collection experience and a review of the current status of tenant accounts receivable. It is reasonably possible that management's estimate of the allowance will change.

Revenue Recognition - CHOM recognizes net rental revenue in the period in which the rent is earned. Leases are for periods of up to one year, with rent and associated payments due monthly. Payments collected in advance are deferred until the rental income is earned. Other revenue can include fees for late payment, damages, laundry, concessions, and other charges and is recorded when earned.

Advertising - CHOM expenses advertising costs as they incur.

Impairment of Long-Lived Assets - In accordance with the provisions of accounting for the impairment or disposal of long-lived assets, management reviews long-lived assets for impairments when circumstances indicate the carrying amount of an asset may not be recoverable based on the undiscounted future cash flows of the asset. If the carrying amount of an asset may not be recoverable, a write-down to fair value is recorded. Fair values are determined based on the discounted cash flows, quoted market values, or external appraisals, as applicable. Long-lived assets are reviewed for impairment at the individual asset or the asset group level for which the lowest level of independent cash flows can be identified.

Use of Estimates - The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 1 - NATURE OF ACTIVITIES AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES
(Continued)

Debt Issuance Costs - Debt issuance costs incurred in connection with the issuance of long-term debt are capitalized and amortized to interest expense over the term of the debt using the straight-line method, which approximates the effective interest method. The unamortized amount is presented as a reduction of long-term debt on the balance sheet.

Reclassification - Certain prior year amounts have been reclassified for consistency with the current year presentation. These reclassifications had no effect on the previously reported change in net assets.

Subsequent Events - Subsequent events have been evaluated through November 12, 2020, the date the financial statements were available to be issued.

NOTE 2 - MORTGAGE NOTES PAYABLE

Mortgage notes payable at June 30, 2020 and 2019 consisted of the following:

Lender/Project	Maturity	Interest Rate	Monthly Payment	2020 Balance	2019 Balance
MaineHousing:					
CHOM (Allen Street)	3/2032	7%	\$ 298	\$ 28,599	\$ 30,117
CHOM (Arboretum Drive)	2/2030	7%	690	58,052	62,115
CHOM (Broadway)	10/2029	7%	1,638	134,424	144,292
CHOM (Chesley Street)	5/2028	8%	713	50,084	54,447
CHOM (Fairview Ave)	12/2032	7%	662	66,096	69,295
CHOM (Grace Street)	5/2027	8%	406	25,803	28,490
CHOM (Hammond Street)	12/2036	7%	998	115,402	119,156
CHOM (Holly Street)	6/2027	8%	183	11,770	12,977
CHOM (Limerock Street)	4/2027	8%	354	22,330	24,693
CHOM (Middle Road)	8/2027	8%	478	31,204	34,306
CHOM (Moosehead Boulevard)	6/2030	7%	546	46,985	50,122
CHOM (Owls Head)	3/2026	8.5%	1,263	68,736	77,632
CHOM (Plossay Shores)	12/2032	7%	694	69,207	72,557
CHOM (Plummer Street)	10/2028	7%	865	-	70,978
CHOM (Ralph Street)	4/2029	7%	1,079	85,093	91,822
CHOM (Randolph Drive)	1/2029	7%	386	29,810	32,260
CHOM (St. John Street)	7/2032	7%	431	42,140	44,285
CHOM (Veazie)	8/2028	8%	553	39,714	43,030
CHOM (Wall Street)	7/2029	5.5%	449	38,487	41,667
CHOM (Winding Way)	4/2039	5.5%	369	51,876	53,405
CHOM (Vinalhaven)	6/2042	5.5%	Interest Only	250,000	250,000
CHOM (Vinalhaven)	6/2042	5.5%	-	95,293	90,325
Subtotal				<u>\$1,361,105</u>	<u>\$1,497,971</u>

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 2 - MORTGAGE NOTES PAYABLE (Continued)

<u>Lender/Project</u>	<u>Maturity</u>	<u>Interest Rate</u>	<u>Monthly Payment</u>	<u>2020 Balance</u>	<u>2019 Balance</u>
Other Notes Payable:					
City of Bangor:					
CHOM (Bolling-Langley)	5/2026	3%	428	\$ 22,149	\$ 26,301
TD Bank USA:					
CHOM Operations	Due upon refinance or syndication	5%	Interest Only	480,000	800,000
Bangor Savings Bank:					
CHOM (Brighton Ave.)	11/2028	5.18%	3,017	427,211	435,308
CHOM (Hampshire Street)	11/2021	3.34%	1,677	250,440	269,377
CHOM (Windham)	3/2028	7.54%	1,488	114,549	122,554
The Genesis Fund, Inc.:					
CHOM (Ohio)	1/19/2023	5.5%	\$25,000 annually	67,000	-
CHOM (George Street and Kenduskeag Avenue)	10/2021	6.25%	585	57,689	60,227
CHOM (Vinalhaven)	11/2021	5.25%	Interest Only	40,000	40,000
Mercy Investment Services					
CHOM (Lamb Street)	11/2021	2%	1,568	<u>377,865</u>	<u>390,766</u>
Subtotal Other Notes Payable				<u>1,836,903</u>	<u>2,144,533</u>
Total				<u>\$3,198,008</u>	<u>\$3,642,504</u>

The mortgage notes payable are secured by real estate and personal property. The Regulatory Agreements with MaineHousing prohibits the transfer or encumbrance of title to the rental property without prior approval.

Maturities of mortgage notes principal are as follows at June 30, 2020:

	<u>Fiscal Year Maturity</u>
2021	\$ 193,321
2022	293,543
2023	269,386
2024	254,851
2025	263,759
Thereafter	<u>1,923,148</u>
	<u>\$ 3,198,008</u>

COMMUNITY HOUSING OF MAINE, INC.
NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 3 - FORGIVEABLE LOANS

MaineHousing, the City of Portland and the Federal Home Loan Bank of Boston have loaned funds to CHOM to finance the acquisition and rehabilitation of various low income housing projects. Most of the loans will be forgiven over various time periods and at various rates so long as CHOM remains in compliance with the terms of the loans. The majority of the loans will be forgiven in full 30 years after their issuance dates. The loans are secured by real estate, personal property and rental income. Loans of \$109,500 and \$704,615 were forgiven during 2020 and 2019, respectively. Forgiveable loans totaled \$18,453,242 and \$17,506,269 at June 30, 2020 and 2019, respectively.

NOTE 4 - RESTRICTED DEPOSITS AND FUNDED RESERVES

Under the terms of the various Regulatory Agreements with MaineHousing, CHOM is required to make deposits to escrow accounts to fund expected future costs. Escrow funding requirements typically begin upon completion of project construction.

NOTE 5 - NOTES RECEIVABLE

As of both June 30, 2020 and 2019, CHOM was owed \$854,937 from affiliated entities for advances to the entities. CHOM expects to collect \$750,000 of the outstanding balance. An allowance account was set up for the remaining \$104,937.

During 2018, Northfield Green Apartments was sold and its assets were transferred to a new limited partnership, NFG Housing Partners, LP. CHOM has set up a note receivable for the portion of sale price that was not paid at closing. As of both June 30, 2020 and 2019, CHOM was owed \$2,924,172.

NOTE 6 - 401(k) PLAN

CHOM has established a 401(k) retirement plan qualified under Section 401(k) of the Internal Revenue Code. The plan covers all employees of the Organization and the Organization contributes up to 5% of gross salaries. Effective 9/1/2019, CHOM is contributing 100% on the first 3% of employee contributions. Employer contribution expenses were \$63,245 and \$47,250 for the years ended June 30, 2020 and 2019, respectively.

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS (Continued)

NOTE 7 - HOUSING ASSISTANCE PAYMENTS/RENTAL ASSISTANCE

CHOM has contracted with various housing authorities to provide project based housing assistance payments for various properties they own. These funds are not federal awards to CHOM as the Organization is not considered a sub-recipient.

NOTE 8 - RELATED PARTY TRANSACTIONS

Development Fee Income - During 2020 and 2019, the Organization earned \$125,000 and \$3,352,045, respectively, in development fees for development and construction supervision services provided to various affiliated limited partnerships. The fees are expected to be paid from partnership (project) operations or various partner capital contributions provided to the partnerships. As of June 30, 2020 and 2019, CHOM was owed \$1,876,903 and \$2,991,238, respectively, in unpaid development fees as follows:

	2020	2019
Davis Island Housing Partners LP	\$ 206,424	\$ 206,424
Campbell Creek Housing Partners LP	130,806	130,806
NFG Housing Partners LP	1,539,673	2,654,008
	<u>\$ 1,876,903</u>	<u>\$ 2,991,238</u>

NOTE 9 - DEPARTMENT OF VETERAN AFFAIRS PER DIEM

In 2019, CHOM received \$127,747 in grant funds from the Department of Veteran Affairs. During 2019, \$25,992 was used for rental operations and \$101,755 was granted to a sub-recipient. No grant funds were received or granted to sub-recipients during 2020.

NOTE 10 - REFUNDABLE HISTORIC REHABILITATION CREDIT

CHOM participates in the Maine Refundable Historic Rehabilitation program. Under the terms of the program, CHOM is entitled to receive a Refundable Historic Rehabilitation Credit related to the rehabilitation and preservation of certain historic properties. During 2020 and 2019, CHOM received \$159,150, from the State of Maine related to the historic rehabilitation of a property owned by Parish House Associates, L.P. The Refundable Historic Rehabilitation funds were contributed to Parish House Associates, L.P. and used to repay a certain bridge loan.

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 11 - DUE FROM AFFILIATES

During 2020 and 2019, CHOM paid expenses on behalf of affiliated projects. CHOM was owed the following amounts as of June 30:

	2020	2019
Children's Hospital Housing Partners, L.P.	\$ 10,464	\$ -
Campbell Creek Housing Partners, L.P.	557	-
Davis Island Housing Partners, L.P.	491	-
Danforth On High, L.P.	2,798	2,284
Central Commons Housing Partners, L.P.	102,994	130,439
Harbor Lights Housing	1,439	-
Housing By Design, LLC	1,000	1,000
NFG Housing Partners, L.P.	64,626	61,780
Parish House Associates, L.P.	3,623	-
Reed Street Neighborhood Housing, L.P.	428	-
Rocky Coast Housing, Inc.	1,979	-
Seminary Housing Partners, L.P.	615	-
Stevens Green Associates, L.P.	437	-
Village Centre Housing Partners, L.P.	1,456	558
Total	<u>\$ 192,907</u>	<u>\$ 196,061</u>

NOTE 12 - LIQUIDITY AND AVAILABILITY OF FINANCIAL ASSETS

The following reflects CHOM's financial assets as of the statement of financial position date, reduced by amounts not available for general use within one year of the statement of financial position date based on regulatory, contractual, or donor-imposed restrictions or internal designations. Financial assets available to meet cash needs for general expenditures within one year consisted of the following at June 30:

	2020	2019
Cash	\$ 1,412,289	\$ 870,629
Accounts Receivable	13,252	57,757
Due from Affiliates	192,907	196,061
Other Receivables	81,009	93,225
Restricted Reserves	1,487,035	1,128,967
Total Financial Assets	3,186,492	2,346,639
Contractual (Regulatory) Restrictions:		
Restricted Reserves	(1,487,035)	(1,128,967)
Financial Assets Available to Meet Cash Needs for General Expenditures Within One Year	<u>\$ 1,699,457</u>	<u>\$ 1,217,672</u>

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS (Continued)

NOTE 13 - CURRENT VULNERABILITY DUE TO CERTAIN CONCENTRATIONS

CHOM operates in a heavily regulated environment. The operations of CHOM are subject to the administrative directives of federal, state, and local agencies, including but not limited to MaineHousing and HUD. Such administrative directives, rules, and regulations are subject to changes by acts of Congress or administrative changes mandated by the agencies or other situations. Such changes may occur with little notice or with inadequate funding to pay for the related costs, including the additional burden to comply with the changes.

NOTE 14 - CASH, CASH EQUIVALENTS AND RESTRICTED CASH

The following provides a reconciliation of cash, cash equivalents and restricted cash reported within the Balance Sheet that sum to the total of the same such amounts shown in the Statements of Cash Flows.

	2020	2019
Development Operations Account	\$ 1,412,289	\$ 870,629
Replacement Reserve	1,487,035	1,128,967
Tenant Security Deposits	152,514	149,364
Total Cash, Cash Equivalents and Restricted Cash Accounts	<u>\$ 3,051,838</u>	<u>\$ 2,148,960</u>

NOTE 15 - ADOPTION OF ACCOUNTING PRONOUNCEMENTS

In November 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-18 *Statement of Cash Flows* (Topic 230): *Restricted Cash*. ASU 2016-18 requires that a statement of cash flows explain the change during the period in the total cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. The new standard is effective for annual reporting periods beginning after December 15, 2018. Any adjustments must be reflected as of the beginning of the fiscal year.

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 15 - ADOPTION OF ACCOUNTING PRONOUNCEMENTS (Continued)

CHOM adopted ASU 2016-18 effective July 1, 2019, which resulted in the following changes to the balances that were previously reported for the year ended June 30, 2019:

Increase in Operating Activities	\$	10,139
Increase in Cash	\$	10,139
Increase in Cash at Beginning of Year	\$	139,225
Increase in Cash at End of Year	\$	149,364

In June 2018, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2018-08 Not-for-Profit Entities (Topic 958): Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made. ASU 2018-08 clarifies whether transactions should be accounted for as contributions or as exchange transactions and how to determine whether a contribution is conditional. These decisions affect the timing of the revenue recognized. The new standard is effective for annual reporting periods beginning after December 15, 2018.

CHOM adopted ASU 2018-08 effective July 1, 2019 retrospectively with the cumulative effect of initially applying the Update recognized on the date of initial application. The adoption of this Update did not result in an adjustment to the opening net assets or any other account balance and no account has been affected in the current period by the application of the guidance.

NOTE 16 - METHOD USED FOR ALLOCATION OF EXPENSES AMONG PROGRAM AND SUPPORTING SERVICES

The financial statements of CHOM report certain categories of expenses that are attributable to more than one program or supporting function. Therefore, these expenses require allocation on a reasonable basis that is consistently applied. The expenses that are allocated include administrative services, maintenance expenses, and other general and administrative expenses, which are allocated based on the nature and purpose of each individual expenditure, as determined by management on a reasonable basis that is consistently applied. There were no fundraising activities during 2020 and 2019 and therefore there were no associated fundraising costs during 2020 and 2019.

NOTE 17 - DISTRIBUTIONS

During 2020 and 2019, CHOM transferred \$159,150 to Housing by Design, LLC, a related party through common control, in the form of a distribution.

COMMUNITY HOUSING OF MAINE, INC.

NOTES TO THE FINANCIAL STATEMENTS
(Continued)

NOTE 18 - CONCENTRATION OF CREDIT RISK

CHOM maintains cash balances in financial institutions. These accounts are insured by the Federal Deposit Insurance Corporation up to \$250,000 for each financial institution. At June 30, 2020 and 2019, CHOM's uninsured cash balances totaled \$75,694 and \$639,400, respectively.

NOTE 19 - SUBSEQUENT EVENT

On March 13, 2020, a national emergency was declared in the United States as a result of the coronavirus pandemic. This public health crisis has had a significant and wide-ranging effect on the United States economy and is expected to continue for some time. There has been limited impact on CHOM's financial position and operations. Management continues to monitor and actively assess the impact of this evolving situation on its operations and financial position but the full duration, magnitude and potential future financial effect is indeterminable at this time.

COMMUNITY HOUSING OF MAINE, INC.
SUPPLEMENTARY INFORMATION

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS

For the Year Ended June 30, 2020

	Allen Street	Arboretum Drive	Bolling Drive	Brighton	Broadway	Butler	Canaan	Cedar Street	Charles Street	Chesley Street	Church St.	Cindy Cookson House	Court St. 84-86	Dalton Street	Fairfield Street	Fairview Avenue	Sub Totals
REVENUE AND SUPPORT																	
Rental Operations																	
Rental Revenue	30,084	19,464	10,463	78,000	53,784	7,395	20,088	27,448	10,999	24,480	21,458	71,472	8,227	24,036	47,550	22,612	477,560
Vacancy	(2,045)	-	-	-	(4)	(1,078)	(3)	(6,904)	-	-	(2,674)	(3,084)	(1,588)	-	(771)	(1)	(18,152)
Housing Assistance Payments	-	-	38,929	-	-	36,669	-	-	28,313	-	35,278	-	31,085	-	-	-	170,274
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operations	28,039	19,464	49,392	78,000	53,780	42,986	20,085	20,544	39,312	24,480	54,062	68,388	37,724	24,036	46,779	22,611	629,682
Other Support and Revenue																	
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Investment in Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	242	105	461	-	476	104	30	-	669	348	777	505	-	832	273	455	5,277
Other Income	-	-	-	-	-	91	-	-	207	-	-	-	523	-	-	-	821
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUE AND SUPPORT	28,281	19,569	49,853	78,000	54,256	43,181	20,115	20,544	40,188	24,828	54,839	68,893	38,247	24,868	47,052	23,066	635,780
EXPENSES																	
Rental Housing Expenses																	
Administrative																	
Management Fee	600	600	600	600	600	500	600	600	600	600	900	900	600	600	600	600	10,100
Other Administrative Expense	1,881	-	-	-	-	21	-	6,981	-	-	54	3,036	1,352	-	27	12	13,364
Total Administrative	2,481	600	600	600	600	521	600	7,581	600	600	954	3,936	1,952	600	627	612	23,464
Operating																	
Fuel	1,297	-	3,207	1,925	-	2,899	2,357	2,259	2,028	1,567	2,741	4,915	1,139	3,072	2,988	1,729	34,123
Electricity	1,629	-	3,881	2,051	-	458	1,844	1,145	436	1,944	780	2,286	728	-	2,624	1,463	21,269
Water and Sewer	1,303	520	2,906	2,250	2,234	1,954	-	1,165	1,197	675	2,774	4,453	1,608	1,101	3,177	-	27,317
Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trash Removal	-	-	-	-	-	10	-	1,876	-	-	2,092	3,224	-	-	840	-	8,042
Total Operating	4,229	520	9,994	6,226	2,234	5,321	4,201	6,445	3,661	4,186	8,387	14,878	3,475	4,173	9,629	3,192	90,751
Maintenance	8,968	4,810	8,136	7,123	8,903	3,158	3,235	10,862	9,590	3,227	11,934	25,732	9,442	7,527	9,860	4,537	137,044
Depreciation	3,798	6,027	8,974	9,565	12,729	18,762	3,572	3,422	10,756	5,402	23,936	38,762	14,762	7,648	13,740	4,452	186,307
Interest Expense	2,060	4,219	492	21,123	9,788	-	-	-	-	4,197	-	-	-	-	-	4,749	46,628
General																	
Real Estate Taxes	-	-	-	12	898	1,564	353	-	-	-	-	-	-	-	-	-	2,827
Property and Liability Insurance	763	538	1,208	1,210	1,323	1,740	600	558	1,536	512	1,881	2,817	1,320	756	1,514	492	18,768
Total General	763	538	1,208	1,222	2,221	3,304	953	558	1,536	512	1,881	2,817	1,320	756	1,514	492	21,595
Total Rental Housing Expenses	22,299	16,714	29,404	45,859	36,475	31,066	12,561	28,868	26,143	18,124	47,092	86,125	30,951	20,704	35,370	18,034	505,789
Other Income (Expenses)																	
Debt Relief	-	95,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95,000
General & Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on Sale of Fixed Asset	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Income (Expenses)	-	95,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95,000
CHANGE IN NET ASSETS	5,982	97,855	20,449	32,141	17,781	12,115	7,554	(8,324)	14,045	6,704	7,747	(17,232)	7,296	4,164	11,682	5,032	224,991

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS
(Continued)

For the Year Ended June 30, 2020

	Brought Forward	Flagg Street	Fourth Street	George Street	Gilman Street	Grace Street	Grand Street	Hammond Street	308 Hammond Street	Hampshire Street	High Street	Holly Street	Howe Street	James Street	Kenduskeag Street	Knight's Court	Lamb Street	Langley Street	Limerock Street	Lisbon Street	Main Street Fairfield	Main Street Waterville	Sub Totals
REVENUE AND SUPPORT																							
Rental Operations																							
Rental Revenue	\$ 477,560	\$ 31,224	\$ 8,995	\$ 17,196	\$ 8,445	\$ 25,404	\$ 35,472	\$ 55,620	\$ 8,219	\$ 48,300	\$ 10,718	\$ 23,421	\$ 30,396	\$ 29,796	\$ 17,145	\$ 21,277	\$ 42,000	\$ 9,414	\$ 11,604	\$ 34,860	\$ 36,840	\$ 11,183	\$ 995,089
Vacancy	(18,152)	-	(3,768)	-	-	-	-	-	(5,097)	-	(2,829)	-	(2,048)	(4,263)	(2)	(3,276)	-	-	-	(934)	183	(8,805)	(48,991)
Housing Assistance Payments	170,274	-	27,581	-	24,099	-	-	-	8,161	-	28,882	19,839	-	-	-	47,519	-	56,442	-	-	-	25,273	408,070
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operations	629,682	31,224	32,808	17,196	32,544	25,404	35,472	55,620	11,283	48,300	36,771	43,260	28,348	25,533	17,143	65,520	42,000	65,856	11,604	33,926	37,023	27,651	1,354,168
Other Support and Revenue																							
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Investment in Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	5,277	155	321	-	-	89	-	345	69	-	-	70	-	-	-	764	-	-	99	-	157	-	7,346
Other Income	821	-	376	-	106	-	-	-	-	-	515	-	-	-	-	70	-	-	-	100	-	456	2,444
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUE AND SUPPORT	635,780	31,379	33,505	17,196	32,650	25,493	35,472	55,965	11,352	48,300	37,286	43,330	28,348	25,533	17,143	66,354	42,000	65,856	11,703	34,026	37,180	28,107	1,363,958
EXPENSES																							
Rental Housing Expenses																							
Administrative																							
Management Fee	10,100	600	600	600	600	600	600	1,200	300	600	500	600	600	600	600	900	600	600	600	600	600	600	23,200
Other Administrative Expense	13,364	-	2,265	-	138	-	-	-	126	-	243	129	21	21	-	165	-	-	-	100	1,390	2,498	20,460
Total Administrative	23,464	600	2,865	600	738	600	600	1,200	426	600	743	729	621	621	600	1,065	600	600	600	700	1,990	3,098	43,660
Operating																							
Fuel	34,123	3,989	1,359	-	3,982	2,237	1,717	3,668	666	3,237	1,026	-	4,912	3,114	2,183	1,892	2,445	4,994	-	4,895	4,485	3,915	88,839
Electricity	21,269	1,926	852	-	716	1,988	671	8,349	770	-	294	-	3,553	1,038	1,104	2,562	2,162	4,421	1,128	2,980	2,181	1,602	59,566
Water and Sewer	27,317	1,272	1,083	889	500	908	1,066	2,941	423	1,689	1,936	4,072	1,547	1,846	829	3,640	1,561	3,431	960	1,732	1,214	1,378	62,234
Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trash Removal	8,042	-	-	-	-	906	-	1,577	-	-	-	-	510	-	-	1,203	-	-	484	510	1,903	10	15,145
Total Operating	90,751	7,187	3,294	889	5,198	6,039	3,454	16,535	1,859	4,926	3,256	4,072	10,522	5,998	4,116	9,297	6,168	12,846	2,572	10,117	9,783	6,905	225,784
Maintenance	137,044	5,114	10,122	1,776	7,033	4,664	4,263	22,215	4,252	5,834	6,402	12,399	8,448	43,865	4,531	15,738	12,004	7,018	11,811	3,818	16,272	32,573	377,196
Depreciation	186,307	10,197	15,971	3,734	13,750	5,618	4,852	19,452	5,182	8,111	16,469	6,893	4,218	6,921	3,222	22,542	7,138	9,587	5,802	5,395	10,803	15,308	387,472
Interest Expense	46,628	-	-	3,113	-	2,182	-	8,222	-	9,001	-	995	-	-	781	-	6,125	492	1,890	-	-	-	79,429
General																							
Real Estate Taxes	2,827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,853	-	-	-	-	-	7,680
Property and Liability Insurance	18,768	1,141	1,356	750	1,141	540	729	1,954	1,003	1,264	1,411	762	873	1,065	476	2,190	1,061	1,337	467	1,068	996	1,250	41,602
Total General	21,595	1,141	1,356	750	1,141	540	729	1,954	1,003	1,264	1,411	762	873	1,065	476	2,190	5,914	1,337	467	1,068	996	1,250	49,282
Total Rental Housing Expenses	505,789	24,239	33,608	10,862	27,860	19,643	13,898	69,578	12,722	29,736	28,281	25,850	24,682	58,470	13,726	50,832	37,949	31,880	23,142	21,098	39,844	59,134	1,162,823
Other Income (Expenses)																							
Debt Relief	95,000	-	12,500	-	-	-	-	-	-	-	-	2,000	-	-	-	-	-	-	-	-	-	-	109,500
General & Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on Sale of Fixed Asset	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Income (Expenses)	95,000	-	12,500	-	-	-	-	-	-	-	-	2,000	-	-	-	-	-	-	-	-	-	-	109,500
CHANGE IN NET ASSETS	\$ 224,991	\$ 7,140	\$ 12,397	\$ 6,334	\$ 4,790	\$ 5,850	\$ 21,574	\$ (13,613)	\$ (1,370)	\$ 18,564	\$ 9,005	\$ 19,480	\$ 3,666	\$ (32,937)	\$ 3,417	\$ 15,522	\$ 4,051	\$ 33,976	\$ (11,439)	\$ 12,928	\$ (2,664)	\$ (31,027)	\$ 310,635

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS
(Continued)

For the Year Ended June 30, 2020

	Brought Forward	Middle Road	Mitchell Street	Moosehead Boulevard	Nye Street	Ohio Street	44 Ohio Street	Otis Street	Owl's Head	Pearl Street	Pier Street	Pleasant Avenue	Pleasant Street	Plossay Shores	Plummer Street	Quail	Ralph Street	Subtotals
REVENUE AND SUPPORT																		
Rental Operations																		
Rental Revenue	\$ 995,089	\$ 17,952	\$ 54,659	\$ 15,744	\$ 60,372	\$ 12,708	\$ 19,512	\$ 31,020	\$ 50,964	\$ 13,801	\$ 12,179	\$ 20,292	\$ 24,184	\$ 22,660	\$ 21,864	\$ 46,716	\$ 36,048	\$ 1,455,764
Vacancy	(48,991)	-	(875)	-	(7,381)	(3,964)	-	-	-	(2,686)	(2,526)	-	4	(2)	(7,288)	-	4	(73,705)
Housing Assistance Payments	408,070	-	-	-	-	31,476	-	-	-	26,759	27,133	-	-	-	-	-	-	493,438
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operations	1,354,168	17,952	53,784	15,744	52,991	40,220	19,512	31,020	50,964	37,874	36,786	20,292	24,188	22,658	14,576	46,716	36,052	1,875,497
Other Support and Revenues																		
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Project Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	7,346	350	-	69	-	332	-	-	105	584	439	502	915	527	36	3	295	11,503
Other Income	2,444	-	-	-	-	-	-	-	-	-	367	-	-	-	22	-	-	2,833
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUE AND SUPPORT	1,363,958	18,302	53,784	15,813	52,991	40,552	19,512	31,020	51,069	38,458	37,592	20,794	25,103	23,185	14,634	46,719	36,347	1,889,833
EXPENSES																		
Rental Housing Expenses																		
Administrative																		
Management Fee	23,200	600	600	600	600	600	300	600	600	600	600	600	600	600	600	600	600	32,500
Other Administrative Expense	20,460	-	768	-	139	1,996	-	21	-	63	52	-	109	-	92	-	-	23,700
Total Administrative	43,660	600	1,368	600	739	2,596	300	621	600	663	652	600	709	600	692	600	600	56,200
Operating																		
Fuel	88,839	-	4,810	-	4,871	2,376	1,483	2,331	4,998	3,402	1,343	1,733	3,344	1,311	36	-	-	120,877
Electricity	59,566	-	4,038	-	3,504	458	1,495	327	3,354	329	558	1,680	835	1,354	63	-	-	77,561
Water and Sewer	62,234	580	3,911	1,695	1,653	1,291	356	1,418	-	1,272	1,343	861	541	-	1,792	1,201	1,772	81,920
Cable	-	-	-	-	1,291	-	-	-	-	-	-	-	-	-	-	-	-	1,291
Trash Removal	15,145	-	-	-	-	-	-	510	582	392	-	-	-	-	-	-	-	16,629
Total Operating	225,784	580	12,759	1,695	11,319	4,125	3,334	4,586	8,934	5,395	3,244	4,274	4,720	2,665	1,891	1,201	1,772	298,278
Maintenance	377,196	12,305	11,106	4,842	13,825	14,274	5,642	4,496	12,909	6,416	8,665	8,276	18,158	11,065	5,337	21,408	10,145	546,065
Depreciation	387,472	4,471	6,020	3,790	9,812	8,736	795	5,475	8,657	8,011	15,184	8,631	6,706	4,567	2,891	8,395	7,658	497,271
Interest Expense	79,429	2,632	-	3,409	-	-	1,843	-	6,257	-	-	-	-	4,973	4,231	8,365	6,214	117,353
General																		
Real Estate Taxes	7,680	-	-	-	1,030	-	-	-	-	-	-	-	-	-	-	-	-	8,710
Property and Liability Insurance	41,602	477	1,325	482	1,578	1,006	830	912	1,109	1,276	1,309	599	610	492	517	883	999	56,006
Total General	49,282	477	1,325	482	2,608	1,006	830	912	1,109	1,276	1,309	599	610	492	517	883	999	64,716
Total Rental Housing Expenses	1,162,823	21,065	32,578	14,818	38,303	30,737	12,744	16,090	38,466	21,761	29,054	22,380	30,903	24,362	15,559	40,852	27,388	1,579,883
Other Income (Expenses)																		
Debt Relief	109,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109,500
General Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on Sale of Fixed Asset	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27,186	-	-	27,186
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Income (Expenses)	109,500	-	-	-	-	-	-	-	-	-	-	-	-	-	27,186	-	-	136,686
CHANGE IN NET ASSETS	\$ 310,635	\$ (2,763)	\$ 21,206	\$ 995	\$ 14,688	\$ 9,815	\$ 6,768	\$ 14,930	\$ 12,603	\$ 16,697	\$ 8,538	\$ (1,586)	\$ (5,800)	\$ (1,177)	\$ 26,261	\$ 5,867	\$ 8,959	\$ 446,636

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS
(Continued)

For the Year Ended June 30, 2020

	Brought Forward	Randolph Drive	School Street Waterville	Silver 67	Silver 82	St. John - 253	St John - 548	Stone Street	Veazie	Vinalhaven	Wall Street	West Street	Winding Way	Winthrop Street	CHOM Operations	CHOM Development	Totals
REVENUE AND SUPPORT																	
Rental Operations																	
Rental Revenue	1,455,764	15,216	5,856	4,107	8,788	20,667	13,203	17,087	11,820	52,236	34,272	-	23,792	8,822	-	-	1,671,630
Vacancy	(73,705)	-	(452)	-	(2,095)	-	(4,739)	(1,393)	-	-	-	-	(4,438)	-	-	-	(86,822)
Housing Assistance Payments	493,438	-	26,688	25,605	24,188	21,069	41,781	20,533	-	-	-	-	28,120	24,586	-	-	706,008
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operations	1,875,497	15,216	32,092	29,712	30,881	41,736	50,245	36,227	11,820	52,236	34,272	-	47,474	33,408	-	-	2,290,816
Other Support and Revenues																	
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125,000	125,000
Income from Project Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,017	-	100,017
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,350	300,000	301,350
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,249	-	6,249
Interest Income	11,503	81	477	-	247	93	106	446	103	301	295	547	366	194	8,208	-	22,967
Other Income	2,833	-	-	210	233	-	381	260	-	268	-	22,646	-	-	801	-	27,632
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159,150	159,150
TOTAL REVENUE AND SUPPORT	1,889,833	15,297	32,569	29,922	31,361	41,829	50,732	36,933	11,923	52,805	34,567	23,193	47,840	33,602	116,625	584,150	3,033,181
EXPENSES																	
Rental Housing Expenses																	
Administrative																	
Management Fee	32,500	600	600	600	600	600	600	600	600	900	600	600	600	600	-	-	40,600
Other Administrative Expense	23,700	-	21	-	5,583	-	55	470	-	1,360	-	870	-	71	-	-	32,130
Total Administrative	56,200	600	621	600	6,183	600	655	1,070	600	2,260	600	1,470	600	671	-	-	72,730
Operating																	
Fuel	120,877	-	1,392	2,578	4,478	-	1,617	2,139	-	6,626	1,962	4,470	3,221	1,857	-	-	151,217
Electricity	77,561	-	480	696	809	174	364	692	-	3,513	2,951	2,388	4,482	1,019	-	-	95,129
Water and Sewer	81,920	2,185	754	799	759	3,630	1,222	770	518	5,369	2,857	-	1,233	1,398	-	-	103,414
Cable	1,291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,291
Trash Removal	16,629	-	-	-	-	-	-	-	-	3,457	920	-	-	-	-	-	21,006
Total Operating	298,278	2,185	2,626	4,073	6,046	3,804	3,203	3,601	518	18,965	8,690	6,858	8,936	4,274	-	-	372,057
Maintenance	546,065	2,343	7,854	8,686	28,403	11,494	8,050	16,411	3,802	8,095	11,310	7,928	20,994	8,593	-	-	690,028
Depreciation	497,271	3,991	16,181	13,252	16,165	8,487	17,320	9,487	4,102	37,978	5,067	9,294	11,118	13,833	-	4,968	668,514
Interest Expense	117,353	2,181	-	-	-	3,032	-	-	3,323	20,818	2,212	-	2,899	-	35,696	-	187,514
General																	
Real Estate Taxes	8,710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,710
Property and Liability Insurance	56,006	521	1,379	1,262	1,315	823	1,155	1,535	478	2,674	810	946	1,270	1,246	-	-	71,420
Total General	64,716	521	1,379	1,262	1,315	823	1,155	1,535	478	2,674	810	946	1,270	1,246	-	-	80,130
Total Rental Housing Expenses	1,579,883	11,821	28,661	27,873	58,112	28,240	30,383	32,104	12,823	90,790	28,689	26,496	45,817	28,617	35,696	4,968	2,070,973
Other Income (Expenses)																	
Debt Relief	109,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109,500
General & Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,030,845)	-	(1,030,845)
Gain on Sale of Fixed Asset	27,186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27,186
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(310,975)	(310,975)
Total Other Income (Expenses)	136,686	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,030,845)	(310,975)	(1,205,134)
CHANGE IN NET ASSETS	446,636	3,476	3,908	2,049	(26,751)	13,589	20,349	4,829	(900)	(37,985)	5,878	(3,303)	2,023	4,985	(949,916)	268,207	(242,926)

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS

For the Year Ended June 30, 2019

	Allen Street	Arboretum Drive	Bolling Drive	Brighton	Broadway	Butler	Canaan	Cedar Street	Charles Street	Chesley Street	Church Street	Cindy Cookson House	Court St.	Dalton Street	Fairfield Street	Fairview Avenue	Sub Totals
Income																	
Rental Revenue	\$ 28,814	\$ 18,540	\$ 10,578	\$ 26,000	\$ 51,216	\$ 3,457	\$ 18,864	\$ 26,304	\$ 8,725	\$ 23,316	\$ 24,142	\$ 69,300	\$ 7,291	\$ 24,036	\$ 45,108	\$ 21,876	\$ 407,567
Vacancies	(2,113)	-	(2,406)	-	3	(4,191)	-	(5,886)	-	-	(600)	(4,305)	(1,645)	-	(715)	5	(21,853)
Housing Assistance Payments	-	-	36,624	-	-	7,559	-	-	28,307	-	26,738	-	29,285	-	-	-	128,513
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operations	26,701	18,540	44,796	26,000	51,219	6,825	18,864	20,418	37,032	23,316	50,280	64,995	34,931	24,036	44,393	21,881	514,227
Other Support and Revenues																	
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Investment in Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	362	127	657	-	668	97	48	-	985	544	1,083	757	-	1,241	399	685	7,653
Other Income	-	-	-	-	-	-	-	-	272	-	3	20	324	-	-	-	619
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUE AND SUPPORT	27,063	18,667	45,453	26,000	51,887	6,922	18,912	20,418	38,289	23,860	51,366	65,772	35,255	25,277	44,792	22,566	522,499
EXPENSES																	
Administrative																	
Management Fee	600	450	600	300	600	100	600	600	600	600	900	900	600	600	600	600	9,250
Other Administrative Expense	428	-	(559)	1,000	42	238	361	3,049	-	-	65	2,597	2,391	49	2,706	-	12,367
Total Administrative	1,028	450	41	1,300	642	338	961	3,649	600	600	965	3,497	2,991	649	3,306	600	21,617
Operating																	
Fuel	3,211	-	4,489	1,423	-	614	2,749	3,223	2,665	1,629	3,588	6,913	2,235	3,757	2,918	2,543	41,957
Electricity	1,270	-	3,433	872	-	156	1,966	1,432	478	1,954	898	2,711	901	-	2,592	1,354	20,017
Water and Sewer	634	250	2,006	834	2,787	-	-	717	975	683	3,786	4,131	1,826	1,304	2,586	-	22,519
Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trash Removal	-	-	-	-	-	-	-	1,602	-	-	943	2,751	-	-	720	-	6,016
Total Operating	5,115	250	9,928	3,129	2,787	770	4,715	6,974	4,118	4,266	9,215	16,506	4,962	5,061	8,816	3,897	90,509
Maintenance	12,491	3,563	7,234	7,856	9,841	1,873	7,517	9,407	9,536	1,827	11,162	30,914	11,977	5,301	9,779	5,256	145,534
Depreciation	3,629	6,027	8,974	5,181	12,819	3,909	3,612	3,577	10,872	5,475	23,936	38,762	14,762	7,648	13,740	4,452	167,375
Interest Expense	2,161	4,492	427	10,214	10,540	-	-	-	-	4,533	-	-	-	-	-	4,965	37,332
General																	
Real Estate Taxes	-	-	-	3,089	9,029	-	353	-	-	-	-	-	-	-	-	-	12,471
Property and Liability Insurance	772	551	1,238	465	1,362	560	611	571	1,573	522	1,914	2,883	1,309	768	1,547	503	17,149
Total General	772	551	1,238	3,554	10,391	560	964	571	1,573	522	1,914	2,883	1,309	768	1,547	503	29,620
Tenant Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL RENTAL HOUSING EXPENSES	25,196	15,333	27,842	31,234	47,020	7,450	17,769	24,178	26,699	17,223	47,192	92,562	36,001	19,427	37,188	19,673	491,987
Other Income (Expenses)																	
Debt Relief	-	-	125,421	-	-	-	-	-	-	-	-	-	-	54,800	-	-	180,221
General Administration (Schedule 4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on Sale of Fixed Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL OTHER INCOME (EXPENSES)	-	-	125,421	-	-	-	-	-	-	-	-	-	-	54,800	-	-	180,221
CHANGE IN NET ASSETS	\$ 1,867	\$ 3,334	\$ 143,032	\$ (5,234)	\$ 4,867	\$ (528)	\$ 1,143	\$ (3,760)	\$ 11,590	\$ 6,637	\$ 4,174	\$ (26,790)	\$ (746)	\$ 60,650	\$ 7,604	\$ 2,893	\$ 210,733

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS
(Continued)

For the Year Ended June 30, 2019

	Brought Forward	Flagg Street	Fourth Street	George Street	Gilman Street	Grace Street	Grand Street	Hammond Street	Hampshire Street	High Street	Holly Street	Howe Street	James Street	Kenduskeag Street	Knight's Court	Lamb Street	Langley Street	Limerock Street	Lisbon Street	Main Street Fairfield	Main Street Waterville	Sub Totals
Income																						
Rental Revenue	\$ 407,567	\$ 31,038	\$ 8,847	\$ 16,380	\$ 13,219	\$ 24,192	\$ 35,472	\$ 55,620	\$ 48,300	\$ 8,793	\$ 23,787	\$ 31,800	\$ 30,715	\$ 16,524	\$ 21,090	\$ 42,000	\$ 11,341	\$ 11,604	\$ 32,676	\$ 36,840	\$ 4,232	\$ 912,037
Vacancies	(21,853)	(75)	(1,041)	-	(3,122)	-	(152)	-	-	(4,605)	-	(1,996)	(2,006)	-	(2,400)	-	-	-	(4,272)	(205)	-	(41,727)
Housing Assistance Payments	128,513	-	27,589	-	16,493	-	-	-	-	20,907	15,957	-	-	-	42,918	-	51,595	-	-	-	32,224	336,196
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operation Income	514,227	30,963	35,395	16,380	26,590	24,192	35,320	55,620	48,300	25,095	39,744	29,804	28,709	16,524	61,608	42,000	62,936	11,604	28,404	36,635	36,456	1,206,506
Other Support and Revenues																						
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Investments in Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants	-	-	-	-	-	-	-	-	-	77,945	-	-	-	-	-	-	-	-	-	-	-	77,945
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	7,653	219	414	-	-	158	-	451	-	-	86	-	-	-	1,076	-	-	144	-	213	-	10,414
Other Income	619	167	744	-	193	-	-	-	-	201	-	-	-	-	1,097	-	-	-	234	-	620	3,875
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Support and Revenues	522,499	31,349	36,553	16,380	26,783	24,350	35,320	56,071	48,300	103,241	39,830	29,804	28,709	16,524	63,781	42,000	62,936	11,748	28,638	36,848	37,076	1,298,740
EXPENSES																						
Administrative																						
Management Fee	9,250	600	600	600	600	450	600	1,200	600	400	600	600	600	600	900	600	600	450	600	600	600	21,650
Other Administrative Expense	12,367	-	162	-	8,519	-	-	-	-	155	-	-	500	-	41	1,000	21	701	4,786	1,295	-	29,547
Total Administrative	21,617	600	762	600	9,119	450	600	1,200	600	555	600	600	1,100	600	941	1,600	621	1,151	5,386	1,895	600	51,197
Operating																						
Fuel	41,957	4,955	2,164	-	4,803	2,908	1,823	5,255	3,794	1,021	-	4,142	4,212	1,927	2,510	3,169	5,709	-	5,054	6,684	4,842	106,929
Electricity	20,017	2,172	761	-	1,050	2,072	903	8,995	36	582	-	2,679	879	1,257	2,549	2,299	4,401	-	2,931	2,765	1,438	57,786
Water and Sewer	22,519	1,184	895	886	667	1,985	1,323	2,833	1,408	698	3,489	1,204	1,615	948	3,294	1,497	3,360	797	1,461	2,169	782	55,014
Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trash Removal	6,016	-	-	-	-	873	-	1,251	-	-	-	510	-	-	967	-	-	530	510	1,629	-	12,286
Total Operating	90,509	8,311	3,820	886	6,520	7,838	4,049	18,334	5,238	2,301	3,489	8,535	6,706	4,132	9,320	6,965	13,470	1,327	9,956	13,247	7,062	232,015
Maintenance	145,534	7,980	6,849	6,518	14,246	12,399	5,174	11,867	5,392	3,766	7,682	15,018	17,561	4,547	15,927	5,146	6,830	4,159	15,422	12,837	9,074	333,928
Depreciation	167,375	9,708	15,971	3,620	13,750	5,541	4,852	19,935	8,110	11,665	6,933	4,218	6,585	3,222	22,542	7,138	9,021	5,772	5,426	10,549	15,308	357,241
Interest Expense	37,332	-	-	3,533	-	2,389	-	8,476	13,218	-	1,088	-	-	923	-	8,223	427	2,070	-	-	-	77,679
General																						
Real Estate Taxes	12,471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,756	-	-	-	-	-	17,227
Property and Liability Insurance	17,149	1,163	1,388	769	1,167	552	736	1,992	1,296	653	776	890	1,084	488	2,233	1,118	1,361	475	1,090	1,009	1,283	38,672
Total General	29,620	1,163	1,388	769	1,167	552	736	1,992	1,296	653	776	890	1,084	488	2,233	5,874	1,361	475	1,090	1,009	1,283	55,899
Tenant Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL RENTAL HOUSING EXPENSES	491,987	27,762	28,790	15,926	44,802	29,169	15,411	61,804	33,854	18,940	20,568	29,261	33,036	13,912	50,963	34,946	31,730	14,954	37,280	39,537	33,327	1,107,959
Other Income (Expenses)																						
Debt Relief	180,221	-	12,500	-	-	-	-	-	-	-	2,000	73,080	-	-	-	-	125,421	-	76,800	-	-	470,022
General Administration (Schedule 4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on Sale of Fixed Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL OTHER INCOME (EXPENSES)	180,221	-	12,500	-	-	-	-	-	-	-	2,000	73,080	-	-	-	-	125,421	-	76,800	-	-	470,022
CHANGE IN NET ASSETS	\$ 210,733	\$ 3,587	\$ 20,263	\$ 454	\$ (18,019)	\$ (4,819)	\$ 19,909	\$ (5,733)	\$ 14,446	\$ 84,301	\$ 21,262	\$ 73,623	\$ (4,327)	\$ 2,612	\$ 12,818	\$ 7,054	\$ 156,627	\$ (3,206)	\$ 68,158	\$ (2,689)	\$ 3,749	\$ 660,803

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS
(Continued)

For the Year Ended June 30, 2019

	Brought Forward	Middle Road	Mitchell Street	Moosehead Boulevard	Nye Street	Ohio Street	Otis Street	Owl's Head	Pearl Street	Pier Street	Pleasant Avenue	Pleasant Street	Plossay Shores	Plummer Street	Quail	Ralph Street	Subtotals
Income																	
Rental Revenue	\$ 912,037	17,100	\$ 51,348	\$ 15,000	\$ 55,944	\$ 7,654	\$ 31,020	\$ 48,540	\$ 14,957	\$ 7,307	\$ 16,296	\$ 22,711	\$ 21,924	\$ 20,820	\$ 44,496	\$ 34,332	\$ 1,321,486
Vacancy	(41,727)	-	(1,539)	-	(547)	(287)	-	-	(2,100)	(1,299)	(2,842)	-	(2)	-	-	3	(50,340)
Housing Assistance Payments	336,196	-	-	-	-	34,030	-	-	22,219	29,269	-	-	-	-	-	-	421,714
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Rental Operation Income	1,206,506	17,100	49,809	15,000	55,397	41,397	31,020	48,540	35,076	35,277	13,454	22,711	21,922	20,820	44,496	34,335	1,692,860
Other Support and Revenues																	
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Project Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants	77,945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77,945
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	10,414	666	-	116	701	476	-	172	877	598	755	1,385	796	90	3	410	17,459
Other Income	3,875	-	-	-	-	-	-	-	-	429	-	-	-	-	-	-	4,304
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Support and Revenues	1,298,740	17,766	49,809	15,116	56,098	41,873	31,020	48,712	35,953	36,304	14,209	24,096	22,718	20,910	44,499	34,745	1,792,568
EXPENSES																	
Administrative																	
Management Fee	21,650	450	600	600	600	600	650	450	600	600	600	600	600	600	600	600	30,400
Other Administrative Expense	29,547	-	-	-	723	-	31	-	31	21	-	-	-	-	-	-	30,353
Total Administrative	51,197	450	600	600	1,323	600	681	450	631	621	600	600	600	600	600	600	60,753
Operating																	
Fuel	106,929	-	5,452	-	5,326	3,489	2,206	6,406	3,320	1,904	3,195	3,332	1,949	-	-	-	143,508
Electricity	57,786	-	3,602	-	3,945	397	279	3,339	317	598	2,085	1,604	846	-	-	-	74,798
Water and Sewer	55,014	280	3,168	1,543	1,835	1,298	1,311	-	1,069	2,478	958	512	-	788	1,239	2,266	73,759
Cable	-	-	-	-	1,312	-	-	-	-	-	-	-	-	-	-	-	1,312
Trash Removal	12,286	-	-	-	-	-	580	624	490	-	-	-	-	-	-	-	13,980
Total Operating	232,015	280	12,222	1,543	12,418	5,184	4,376	10,369	5,196	4,980	6,238	5,448	2,795	788	1,239	2,266	307,357
Maintenance	333,928	1,525	10,429	8,488	8,811	8,427	5,663	13,273	7,345	6,685	9,287	9,923	13,114	3,877	15,082	9,132	464,989
Depreciation and Amortization	357,241	4,294	5,924	4,142	9,590	8,736	5,696	8,833	8,011	15,184	8,631	6,422	4,567	3,223	8,523	7,782	466,799
Interest Expense	77,679	2,870	-	3,620	-	-	-	6,979	-	-	-	-	5,200	5,170	10,821	6,669	119,008
General																	
Real Estate Taxes	17,227	-	-	-	1,030	-	-	-	-	-	-	-	-	-	-	-	18,257
Property and Liability Insurance	38,672	488	1,345	495	1,602	1,027	911	1,146	1,299	1,336	612	623	503	533	901	1,028	52,521
Total General	55,899	488	1,345	495	2,632	1,027	911	1,146	1,299	1,336	612	623	503	533	901	1,028	70,778
Tenant Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL RENTAL HOUSING EXPENSES	1,107,959	9,907	30,520	18,888	34,774	23,974	17,327	41,050	22,482	28,806	25,368	23,016	26,779	14,191	37,166	27,477	1,489,684
Other Income (Expenses)																	
Debt Relief	470,022	-	-	-	234,593	-	-	-	-	-	-	-	-	-	-	-	704,615
General Administration (Schedule 4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on Sale of Fixed Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL OTHER INCOME (EXPENSES)	470,022	-	-	-	234,593	-	-	-	-	-	-	-	-	-	-	-	704,615
CHANGE IN NET ASSETS	\$ 660,803	\$ 7,859	\$ 19,289	\$ (3,772)	\$ 255,917	\$ 17,899	\$ 13,693	\$ 7,662	\$ 13,471	\$ 7,498	\$ (11,159)	\$ 1,080	\$ (4,061)	\$ 6,719	\$ 7,333	\$ 7,268	\$ 1,007,499

COMMUNITY HOUSING OF MAINE, INC.

COMBINING SCHEDULE OF REVENUE, SUPPORT AND EXPENSES - CHOM OPERATIONS
(Continued)

For the Year Ended June 30, 2019

	Brought Forward	Randolph Drive	School Street Waterville	Silver 67	Silver 82	St. John - 253	St. John - 548	Stone Street	Summer Street	Veazie	Vinalhaven	Wall Street	West Street	Winding Way	Winthrop Street	CHOM Operations	CHOM Development	Totals
Income																		
Rental Revenue	\$ 1,321,486	\$ 14,496	\$ 9,142	\$ 3,875	\$ 8,783	\$ 20,299	\$ 10,327	\$ 13,022	\$ -	\$ 11,820	\$ 51,209	\$ 34,272	\$ -	\$ 18,579	\$ 8,446	\$ -	\$ -	\$ 1,525,756
Vacancy	(50,340)	-	(1,877)	-	(1,774)	(4,059)	-	-	-	-	(1,143)	-	-	(2,395)	-	-	-	(61,588)
Housing Assistance Payments	421,714	-	24,458	25,837	22,225	20,060	44,657	20,770	-	-	-	-	-	33,333	24,962	-	-	638,016
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	25,992	-	-	-	-	25,992
Total Rental Operation Income	1,692,860	14,496	31,723	29,712	29,234	36,300	54,984	33,792	-	11,820	50,066	34,272	25,992	49,517	33,408	-	-	2,128,176
Other Support and Revenues																		
Development Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,352,045	3,352,045
Income from Project Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,339	-	100,339
Grants	77,945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,218	15,000	97,163
Department of Veteran Affairs Per Diem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101,755	-	101,755
Donations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,923	-	8,923
Interest Income	17,459	108	665	-	521	127	143	647	35	144	466	456	810	589	369	2,206	6	24,751
Other Income	4,304	-	-	371	314	-	153	183	70	-	1,649	-	-	-	-	7,830	-	14,874
Historic Tax Credit Refund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159,150	159,150
TOTAL REVENUE AND SUPPORT	1,792,568	14,604	32,388	30,083	30,069	36,427	55,280	34,622	105	11,964	52,181	34,728	26,802	50,106	33,777	225,271	3,526,201	5,987,176
EXPENSES																		
Administrative																		
Management Fee	30,400	600	600	600	600	600	600	600	100	600	900	600	600	600	600	-	-	38,600
Other Administrative Expense	30,353	-	205	-	1,021	30	-	100	-	-	1,226	-	200	-	-	-	3	33,138
Total Administrative	60,753	600	805	600	1,621	630	600	700	100	600	2,126	600	800	600	600	-	3	71,738
Operating																		
Fuel	143,508	-	2,386	3,209	6,110	828	1,787	2,759	-	(359)	6,215	2,239	4,583	4,718	1,632	-	-	179,615
Electricity	74,798	-	642	599	783	303	5	638	37	-	3,094	2,911	2,108	4,454	1,931	-	-	92,303
Water and Sewer	73,759	2,242	750	748	731	3,312	1,668	1,052	152	586	4,625	2,470	-	1,180	1,400	-	-	94,675
Cable	1,312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,312
Trash Removal	13,980	-	1,027	-	-	-	-	-	-	-	1,840	897	-	-	-	-	-	17,744
Total Operating	307,357	2,242	4,805	4,556	7,624	4,443	3,460	4,449	189	227	15,774	8,517	6,691	10,352	4,963	-	-	385,649
Maintenance	464,989	8,591	6,230	12,709	7,441	15,687	6,572	4,319	-	3,825	8,104	11,145	18,647	13,614	3,877	440	2	586,192
Depreciation and Amortization	466,799	4,034	16,181	13,252	15,895	8,723	17,320	9,487	1,144	4,102	37,847	5,200	9,381	11,160	13,644	-	4,968	639,137
Interest Expense	119,008	2,344	-	-	-	3,177	-	-	1,058	3,578	20,559	2,382	-	2,981	-	45,690	-	200,777
General																		
Real Estate Taxes	18,257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,257
Property and Liability Insurance	52,521	534	1,414	1,295	1,349	863	1,152	1,577	555	490	2,736	831	973	1,290	1,278	-	-	68,858
Total General	70,778	534	1,414	1,295	1,349	863	1,152	1,577	555	490	2,736	831	973	1,290	1,278	-	-	87,115
TOTAL RENTAL HOUSING EXPENSES	1,489,684	18,345	29,435	32,412	33,930	33,523	29,104	20,532	3,046	12,822	87,146	28,675	36,492	39,997	24,362	46,130	4,973	1,970,608
Other Income (Expenses)																		
Debt Relief	704,615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	704,615
General & Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(996,942)	-	(996,942)
Gain on Sale of Fixed Asset	-	-	-	-	-	-	-	-	36,595	-	-	-	-	-	-	-	-	36,595
Other Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(156,312)	(500)	(156,812)
Sub-Grantee Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(101,755)	-	(101,755)
Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(350,502)	(350,502)
TOTAL OTHER INCOME (EXPENSES)	704,615	-	-	-	-	-	-	-	36,595	-	-	-	-	-	-	(1,255,009)	(351,002)	(864,801)
CHANGE IN NET ASSETS	\$ 1,007,499	\$ (3,741)	\$ 2,953	\$ (2,329)	\$ (3,861)	\$ 2,904	\$ 26,176	\$ 14,090	\$ 33,654	\$ (858)	\$ (34,965)	\$ 6,053	\$ (9,690)	\$ 10,109	\$ 9,415	\$ (1,075,868)	\$ 3,170,226	\$ 3,151,767

COMMUNITY HOUSING OF MAINE, INC.

SCHEDULES OF RECEIPTS AND DISBURSEMENTS /
DEVELOPMENT OPERATING FUND - CHOM OPERATIONS

For the Years Ended June 30, 2020 and 2019

	2020	2019
SOURCE OF FUNDS		
Rental Operations		
Revenues		
Tenant Rent	\$ 2,335,321	\$ 2,072,550
Interest Income	8,206	905
Other Revenue	1,817,103	1,291,411
Total Rental Operations Receipts	4,160,630	3,364,866
EXPENSES		
Administrative	106,960	44,449
Operating	374,666	382,554
Maintenance	702,365	668,777
Interest	180,674	200,748
General Services Administration	1,330,244	1,582,175
General	88,234	89,003
Total Rental Operations Disbursements	2,783,143	2,967,706
Net Cash Provided by Rental Operations Before Amortization of Mortgages	1,377,487	397,160
Amortization of Mortgages	(516,464)	(184,607)
Net Cash Provided by Rental Operations After Debt Service	861,023	212,553
OTHER RECEIPTS		
Transfers from Restricted Cash		
Reserves and Escrows (Schedule 4)	150,871	580,703
Loan Proceeds	1,123,473	1,318,114
Proceeds from Sale of Property and Equipment	110,259	141,604
Cash Transfer from Northfield Green Project (old)	-	191,228
Transfer from Tenant Security Deposit Account	-	138
Reimbursements from Related Projects	-	385,245
OTHER DISBURSEMENTS OR TRANSFERS		
Transfers to Restricted Cash		
Reserves and Escrows (Schedule 4)	(494,178)	(263,642)
Purchases and Rehabilitation of Fixed Assets	(1,048,629)	(1,880,884)
Loan Repayments - Other	-	(52,777)
Transfer to Tenant Security Deposit Account	(2,009)	-
Distributions to Related Projects	(159,150)	(159,150)
Net Increase (Decrease) in Development Fund Cash	541,660	473,132
Development Fund Cash Balance at Beginning of Year	870,629	397,497
Development Fund Cash Balance at End of Year	\$ 1,412,289	\$ 870,629

COMMUNITY HOUSING OF MAINE, INC.

SCHEDULE OF CASH IN FINANCIAL INSTITUTIONS - CHOM OPERATIONS

June 30, 2020

Account Name	Account Number	Financial Institution	Account Type	Interest Rate	Maturity Date	Signatory Control	Balances
Development Operations	4529-8538	Charles Schwab	Sweep/CD	0.30%	N/A	Sole	\$ 1,121,678
Development Operations Account	02-9185908	TD Bank	Checking	-	N/A	Sole	36,432
Entity Unrestricted - Replacement Fund	24-1090828	TD Bank	Money Market	0.20%	N/A	Sole	246,588
Entity Unrestricted - Hampshire St	4021134778	Bangor Savings Bank	Checking	-	N/A	Sole	7,591
Total Development Operations Cash							<u>\$ 1,412,289</u>
Tenant Security Deposit Account	720765968	TD Bank	Money Market	0.10%	N/A	Sole	<u>\$ 152,514</u>

NOTE: As was done in prior years, the above schedule excludes replacement reserves, rehabilitation escrows and operating deficit escrows held by Federated Investors and MaineHousing.

COMMUNITY HOUSING OF MAINE, INC.
SCHEDULE OF RESTRICTED CASH RESERVES AND ESCROWS
CHOM OPERATIONS
For the Year Ended June 30, 2020

DESCRIPTION OF FUND	Balance Beginning of Year	Transfers From Operations Account	Interest Earned	Transfers to Operations Account	Balance End of Year	Estimated Required Balance	Excess/ (Deficiency)
<u>Reserves for Rehabilitation</u>							
NFG Letter of Credit	\$ 6,070	\$ -	\$ -	\$ -	\$ 6,070	\$ 6,070	\$ -
Hammond Street - MSHA	44,780	-	-	44,780	-	-	-
Third Street	-	322,400	-	-	322,400	322,400	-
Total Reserves for Rehabilitation	50,850	322,400	-	44,780	328,470	328,470	-
<u>Replacement Reserves</u>							
Allen Street	14,670	1,463	201	-	16,334	16,323	11
Arboretum	7,131	2,376	105	-	9,612	9,604	8
Bolling & Langley	33,354	5,388	461	23,186	16,017	16,009	8
Broadway	34,298	6,072	477	6,641	34,206	34,191	15
Butler	7,264	1,836	105	-	9,205	9,205	-
Canaan Street	2,255	-	30	-	2,285	2,285	-
Charles Street	48,897	5,064	669	-	54,630	54,623	7
Chesley Street	25,993	2,784	347	676	28,448	28,443	5
Cindy Cookson House	37,144	3,864	505	3,569	37,944	37,932	12
Court Street	54,854	8,604	763	-	64,221	64,212	9
Dalton Street	61,119	5,376	832	-	67,327	67,324	3
Fairfield Street	19,209	4,224	273	-	23,706	23,696	10
Fairview Avenue	33,663	2,795	457	329	36,586	36,584	2
Flagg Street	10,269	4,344	155	-	14,768	14,765	3
Fourth Street	22,304	5,916	321	-	28,541	28,536	5
Grace Street	6,118	1,896	89	4,942	3,161	3,157	4
Hammond Street	24,242	6,996	345	2,815	28,768	28,757	11
Hammond Street - 308	5,220	600	69	-	5,889	5,889	-
Holly Street	4,687	2,064	70	550	6,271	6,265	6
Limerock	7,825	2,148	100	2,826	7,247	7,235	12
Main Street - Fairfield	11,183	3,227	158	1,009	13,559	13,550	9
Middle Road	25,763	4,212	350	2,302	28,023	28,014	9
Moosehead Boulevard	4,662	1,728	69	-	6,459	6,457	2

COMMUNITY HOUSING OF MAINE, INC.
SCHEDULE OF RESTRICTED CASH RESERVES AND ESCROWS
CHOM OPERATIONS
(Continued)
For the Year Ended June 30, 2020

DESCRIPTION OF FUND	Balance Beginning of Year	Transfers From Operations Account	Interest Earned	Transfers to Operations Account	Balance End of Year	Estimated Required Balance	Excess/ (Deficiency)
<u>Replacement Reserves, continued</u>							
Ohio Street	23,964	3,888	332	606	27,578	27,579	(1)
Owl's Head	7,229	2,364	105	2,182	7,516	7,513	3
Pearl Street	42,805	3,972	583	-	47,360	47,356	4
Pier Street	31,242	6,408	439	605	37,484	37,479	5
Pleasant Avenue	36,746	4,332	502	1,896	39,684	39,678	6
Pleasant Street	67,313	6,456	915	16,702	57,982	57,980	2
Plossay Shores	38,928	2,869	527	-	42,324	42,313	11
Plummer Street	3,096	960	36	3,226	866	857	9
Ralph Street	21,079	3,636	294	1,052	23,957	23,952	5
Randolph Drive	5,691	1,284	81	-	7,056	7,042	14
School St. Ellsworth	55,579	9,456	777	-	65,812	65,802	10
School St. Waterville	34,396	6,360	477	600	40,633	40,632	1
Silver Street	16,814	5,496	247	-	22,557	22,554	3
253 St. John Street	6,849	2,544	93	1,998	7,488	7,476	12
548 St John Street	7,468	1,524	106	-	9,098	9,097	1
Stone Street	32,536	4,224	446	5,624	31,582	31,572	10
Veazie	7,396	1,332	103	1,155	7,676	7,670	6
Vinalhaven	23,418	3,036	301	7,607	19,148	19,143	5
Wall Street	21,911	2,340	295	4,350	20,196	20,185	11
West Street	39,902	6,204	547	1,973	44,680	44,674	6
Winding Way	29,414	4,620	366	7,670	26,730	26,729	1
Winthrop Street	12,795	5,496	194	-	18,485	18,479	6
Various Properties	6,318	-	3	-	6,321	5,107	1,214
Total Replacement Reserves	1,075,013	171,778	14,720	106,091	1,155,420	1,153,925	1,495
<u>Operating Deficit Escrow</u>							
Allen Street	3,104	-	41	-	3,145	3,145	-
Total Restricted Cash	\$ 1,128,967	\$ 494,178	\$ 14,761	\$ 150,871	\$ 1,487,035	\$ 1,485,540	\$ 1,495

COMMUNITY HOUSING OF MAINE, INC.
CONSOLIDATED SCHEDULE OF FINANCIAL POSITION - UNAUDITED
June 30, 2020

ASSETS																
CURRENT ASSETS	CHOM OPERATIONS	AFFILIATED PROJECTS														TOTAL
		HOUSING BY DESIGN	HARBOR LIGHTS	ROCKY COAST	STEVENS GREEN	DAVIS ISLAND	REED STREET	SEMINARY HOUSING	CAMPBELL CREEK	CHILDREN'S HOSPITAL	DANFORTH ON HIGH	VILLAGE CENTRE	PARISH HOUSE	NFG HOUSING	CENTRAL COMMONS	
Cash																
Development Operations Accounts	\$ 1,412,289	\$ -	\$ 14,948	\$ 6,529	\$ 6,283	\$ 5,293	\$ 61,542	\$ 5,530	\$ 73,407	\$ 4,430	\$ 34,923	\$ 29,717	\$ 12,269	\$ 922,898	\$ 39,007	\$ -
Restricted Reserves and Escrows	1,487,035	-	20,155	84,879	157,213	27,822	78,407	206,983	322,610	284,130	323,087	326,176	16,189	875,236	-	-
Total Cash	2,899,324	-	35,103	91,408	163,496	33,115	139,949	212,513	396,017	288,560	358,010	355,893	28,458	1,798,134	39,007	-
Accounts Receivable																
Accounts Receivable - Tenants	13,252	-	-	242	5,529	6,474	3,736	682	1,523	12,199	2,386	2,379	-	4,794	-	-
Accounts Receivable - HUD/RD	-	-	-	32	-	-	4,164	3,627	48,022	5,053	1,067	6,134	-	11,537	-	-
Due from Affiliates	192,907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(192,907)
Other	81,009	-	161	-	3,859	2,128	570	22,386	628	920	300	2,338	-	-	-	-
Total Receivables	287,168	-	161	274	9,388	8,602	8,470	26,695	50,173	18,172	3,753	10,851	-	16,331	-	(192,907)
Prepaid Expenses																
Insurance	19,144	-	1,054	188	2,753	11,200	3,055	4,661	5,076	6,361	4,671	9,837	899	20,189	-	-
Other	3,128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Prepaid Expenses	22,272	-	1,054	188	2,753	11,200	3,055	4,661	5,076	6,361	4,671	9,837	899	20,189	-	-
Total Current Assets	3,208,764	-	36,318	91,870	175,637	52,917	151,474	243,869	451,266	313,093	366,434	376,581	29,357	1,834,654	39,007	(192,907)
DEPOSITS HELD IN TRUST																
Tenant Security Deposits	152,514	-	1,206	502	13,300	11,144	13,555	13,372	14,381	11,912	11,864	27,788	4,451	78,924	-	-
PROPERTY AND EQUIPMENT																
Land	2,720,035	-	80,000	115,435	111,500	551,500	526,069	25,000	276,943	164,000	233,500	17,822	500	1,407,552	-	-
Land Improvements	166,526	-	10,000	-	600,235	860,398	6,922	200,072	198,035	758,694	215,514	642,996	20,592	-	-	-
Buildings	25,381,192	-	553,080	957,948	3,203,319	4,060,261	4,707,581	5,477,427	3,968,505	9,112,992	4,685,689	8,269,357	1,994,370	30,624,173	-	(614,386)
Construction in Progress	643,869	-	-	-	-	-	-	-	-	-	-	-	-	-	6,569,305	-
Furniture and Equipment	364,931	-	10,910	4,325	79,657	56,018	28,041	108,360	95,940	177,184	110,711	282,838	19,537	282,064	-	-
Total	29,276,553	-	653,990	1,077,708	3,994,711	5,528,177	5,268,613	5,810,859	4,539,423	10,212,870	5,245,414	9,213,013	2,034,999	32,313,789	6,569,305	(614,386)
Less Accumulated Depreciation	6,988,946	-	233,905	332,156	1,850,213	1,810,826	1,389,251	1,307,811	777,219	1,987,794	894,182	890,663	130,696	1,305,570	-	-
Net Property and Equipment	22,287,607	-	420,085	745,552	2,144,498	3,717,351	3,879,362	4,503,048	3,762,204	8,225,076	4,351,232	8,322,350	1,904,303	31,008,219	6,569,305	(614,386)
OTHER ASSETS																
Accounts Receivable - Other (Non-current)	32,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Note Receivable	3,674,172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(3,674,172)
Investment in Affiliates	-	3,045,886	-	-	-	-	-	-	-	-	-	-	-	-	-	(3,045,886)
Development Fee Receivable	1,876,903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,876,903)
Other Assets	-	-	-	-	43	2,757	2,788	10,307	9,842	23,703	7,935	43,513	-	160,072	-	-
Total Other Assets	5,583,075	3,045,886	-	-	43	2,757	2,788	10,307	9,842	23,703	7,935	43,513	-	160,072	-	(8,596,961)
TOTAL ASSETS	\$ 31,231,960	\$ 3,045,886	\$ 457,609	\$ 837,924	\$ 2,333,478	\$ 3,784,169	\$ 4,047,179	\$ 4,770,596	\$ 4,237,693	\$ 8,573,784	\$ 4,737,465	\$ 8,770,232	\$ 1,938,111	\$ 33,081,869	\$ 6,608,312	\$ (9,404,254)

COMMUNITY HOUSING OF MAINE, INC.
CONSOLIDATED SCHEDULE OF FINANCIAL POSITION - UNAUDITED
June 30, 2020

LIABILITIES AND NET ASSETS

	CHOM OPERATIONS	HOUSING BY DESIGN	HARBOR LIGHTS	ROCKY COAST	STEVENS GREEN	DAVIS ISLAND	REED STREET	SEMINARY HOUSING	CAMPBELL CREEK	CHILDREN'S HOSPITAL	DANFORTH ON HIGH	VILLAGE CENTRE	PARISH HOUSE	NFG HOUSING	CENTRAL COMMONS	ELIMINATIONS	TOTAL
CURRENT LIABILITIES																	
Accounts Payable - Operations	\$ 251,909	\$ -	\$ 6,403	\$ 6,061	\$ 584	\$ 3,971	\$ 11,023	\$ 1,908	\$ 238	\$ 1,976	\$ 1,106	\$ 1,255	\$ 2,525	\$ 38,879	\$ -	\$ -	\$ 327,838
Accounts Payable - Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	465,412	-	465,412
Due to Affiliates	-	1,000	1,439	1,979	437	491	428	615	557	10,464	2,798	1,456	3,623	64,626	102,994	(192,907)	-
Accrued Interest	14,818	-	-	-	582	577	1,116	-	2,754	1,725	1,379	2,750	4,699	238,711	-	-	269,111
Other Accrued Expenses	-	-	179	502	16,325	26,635	37,841	20,897	35,922	19,487	29,854	19,891	-	14,217	348,804	-	570,554
Prepaid Rent	-	-	37	606	8,214	1,889	7,941	3,618	528	6,291	8,109	14,887	-	6,477	-	-	58,597
Construction Loan Payable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,816,002	-	3,816,002
Current Portion Long-term Debt - Bridge Loans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current Portion Long-term Debt	193,321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	193,321
Total Current Liabilities	460,048	1,000	8,058	9,148	26,142	33,563	58,349	27,038	39,999	39,943	43,246	40,239	10,847	362,910	4,733,212	(192,907)	5,700,835
DEPOSITS LIABILITY																	
Tenant Security Deposits	152,825	-	1,206	487	13,299	11,131	13,539	13,357	14,363	11,899	11,850	27,753	4,493	78,891	-	-	355,093
LONG TERM LIABILITIES																	
Notes Payable - MaineHousing	1,361,105	-	100,000	306,072	2,571,748	620,998	1,082,217	818,035	3,130,526	1,021,249	3,699,608	1,894,060	-	21,348,900	175,000	-	38,129,518
Notes Payable - Other	1,836,903	-	-	2,879	-	-	51,118	-	-	403,795	-	50,940	1,026,772	-	500,000	(3,674,172)	198,235
Less: Debt Issuance Costs	(144)	-	-	-	(2,796)	(6,409)	(11,027)	(803)	(17,390)	(13,800)	(15,538)	(28,383)	-	(369,099)	-	-	(465,389)
Deferred Interest Payable	-	-	-	-	-	386,036	584,584	-	97,852	187,492	-	-	-	-	-	-	1,255,964
Development Fee Payable	-	-	-	-	-	206,424	-	-	130,806	-	-	-	-	1,539,673	-	(1,876,903)	-
Total Notes Payable	3,197,864	-	100,000	308,951	2,568,952	1,207,049	1,706,892	817,232	3,341,794	1,598,736	3,684,070	1,916,617	1,026,772	22,519,474	675,000	(5,551,075)	39,118,328
Refundable Advances	18,453,242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,453,242
Total	21,651,106	-	100,000	308,951	2,568,952	1,207,049	1,706,892	817,232	3,341,794	1,598,736	3,684,070	1,916,617	1,026,772	22,519,474	675,000	(5,551,075)	57,571,570
Less Current Portion of Long-term Debt	193,321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	193,321
Total Long-term Liabilities	21,457,785	-	100,000	308,951	2,568,952	1,207,049	1,706,892	817,232	3,341,794	1,598,736	3,684,070	1,916,617	1,026,772	22,519,474	675,000	(5,551,075)	57,378,249
TOTAL LIABILITIES	22,070,658	1,000	109,264	318,586	2,608,393	1,251,743	1,778,780	857,627	3,396,156	1,650,578	3,739,166	1,984,609	1,042,112	22,961,275	5,408,212	(5,743,982)	63,434,177
NET ASSETS																	
Without Donor Restrictions	9,114,873	3,044,886	348,345	519,338	(274,915)	2,532,426	2,268,399	3,912,969	841,537	6,923,206	998,299	6,785,623	895,999	10,120,594	1,200,100	(3,660,272)	45,571,407
With Donor Restrictions	46,429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46,429
Total Net Assets	9,161,302	3,044,886	348,345	519,338	(274,915)	2,532,426	2,268,399	3,912,969	841,537	6,923,206	998,299	6,785,623	895,999	10,120,594	1,200,100	(3,660,272)	45,617,836
TOTAL LIABILITIES AND NET ASSETS	\$ 31,231,960	\$ 3,045,886	\$ 457,609	\$ 837,924	\$ 2,333,478	\$ 3,784,169	\$ 4,047,179	\$ 4,770,596	\$ 4,237,693	\$ 8,573,784	\$ 4,737,465	\$ 8,770,232	\$ 1,938,111	\$ 33,081,869	\$ 6,608,312	\$ (9,404,254)	\$ 109,052,013

COMMUNITY HOUSING OF MAINE, INC.
CONSOLIDATED SCHEDULE OF FINANCIAL POSITION - UNAUDITED

June 30, 2019

ASSETS

	CHOM OPERATIONS	AFFILIATED PROJECTS														ELIMINATIONS	TOTAL
		HOUSING BY DESIGN	HARBOR LIGHTS	ROCKY COAST	STEVENS GREEN	DAVIS ISLAND	REED STREET	SEMINARY HOUSING	CAMPBELL CREEK	CHILDREN'S HOSPITAL	DANFORTH ON HIGH	VILLAGE CENTRE	PARISH HOUSE	NFG HOUSING	CENTRAL COMMONS		
CURRENT ASSETS																	
Cash																	
Development Operations Accounts	\$ 870,629	\$ -	\$ 8,591	\$ 480	\$ 7,596	\$ 1,174	\$ 55,539	\$ 3,835	\$ 99,234	\$ 18,476	\$ 47,336	\$ 9,391	\$ 7,409	\$ 1,288,274	\$ -	\$ -	\$ 2,417,964
Restricted Reserves and Escrows	1,128,967	-	17,355	70,454	147,004	48,755	81,707	187,712	317,107	277,156	313,932	328,885	18,050	773,279	-	-	3,710,363
Total Cash	1,999,596	-	25,946	70,934	154,600	49,929	137,246	191,547	416,341	295,632	361,268	338,276	25,459	2,061,553	-	-	6,128,327
Accounts Receivable																	
Accounts Receivable - Tenants	57,757	-	41	475	5,760	15,664	5,956	2,916	4,148	10,346	3,027	147	96	4,013	-	-	110,346
Accounts Receivable - HUD /RD	-	-	-	22,507	-	-	4,364	3,352	14,706	6,847	1,249	7,375	-	19,256	-	-	79,656
Due from Affiliates	196,061	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(196,061)	-
Other	93,225	-	330	-	936	606	679	22,701	1,653	990	297	2,079	-	-	-	-	123,496
Total Receivables	347,043	-	371	22,982	6,696	16,270	10,999	28,969	20,507	18,183	4,573	9,601	96	23,269	-	(196,061)	313,498
Prepaid Expenses																	
Insurance	18,492	-	772	194	2,662	8,245	1,911	4,457	4,543	5,567	4,166	10,149	890	15,587	-	-	77,635
Other	3,128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,128
Total Prepaid Expenses	21,620	-	772	194	2,662	8,245	1,911	4,457	4,543	5,567	4,166	10,149	890	15,587	-	-	80,763
Total Current Assets	2,368,259	-	27,089	94,110	163,958	74,444	150,156	224,973	441,391	319,382	370,007	358,026	26,445	2,100,409	-	(196,061)	6,522,588
DEPOSITS HELD IN TRUST																	
Tenant Security Deposits	149,364	-	1,450	497	15,167	8,572	15,013	13,160	15,372	12,703	13,583	25,007	4,449	77,531	-	-	351,868
PROPERTY AND EQUIPMENT																	
Land	2,729,534	-	80,000	115,435	111,500	551,500	526,069	25,000	276,943	164,000	233,500	17,822	500	1,407,552	-	-	6,239,355
Land Improvements	166,526	-	10,000	-	600,235	860,398	6,922	200,072	198,035	758,694	215,514	642,996	20,592	-	-	-	3,679,984
Buildings	24,679,996	-	553,080	941,734	3,203,319	4,060,261	4,707,581	5,477,427	3,968,505	9,112,992	4,685,689	8,265,319	1,994,370	30,250,592	-	(665,504)	101,235,361
Construction in Progress	196,402	-	-	-	-	-	-	-	-	-	-	-	-	-	963,100	-	1,159,502
Furniture and Equipment	368,801	-	10,910	4,325	75,949	56,018	24,074	106,936	95,940	177,184	110,711	282,838	19,537	278,799	-	-	1,612,022
Total	28,141,259	-	653,990	1,061,494	3,991,003	5,528,177	5,264,646	5,809,435	4,539,423	10,212,870	5,245,414	9,208,975	2,034,999	31,936,943	963,100	(665,504)	113,926,224
Less Accumulated Depreciation	6,381,276	-	219,717	306,046	1,730,094	1,662,959	1,270,646	1,150,047	653,826	1,702,012	753,022	623,276	72,722	503,172	-	-	17,028,815
Net Property and Equipment	21,759,983	-	434,273	755,448	2,260,909	3,865,218	3,994,000	4,659,388	3,885,597	8,510,858	4,492,392	8,585,699	1,962,277	31,433,771	963,100	(665,504)	96,897,409
OTHER ASSETS																	
Note Receivable	3,674,172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(3,674,172)	-
Investment in Affiliates	-	2,886,736	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,886,736)	-
Development Fees Receivable	2,991,238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,991,238)	-
Other Assets	-	-	-	-	610	3,745	3,566	12,025	10,935	26,666	8,868	47,297	-	169,888	-	-	283,600
Total Other Assets	6,665,410	2,886,736	-	-	610	3,745	3,566	12,025	10,935	26,666	8,868	47,297	-	169,888	-	(9,552,146)	283,600
TOTAL ASSETS	\$ 30,943,016	\$ 2,886,736	\$ 462,812	\$ 850,055	\$ 2,440,644	\$ 3,951,979	\$ 4,162,735	\$ 4,909,546	\$ 4,353,295	\$ 8,869,609	\$ 4,884,850	\$ 9,016,029	\$ 1,993,171	\$ 33,781,599	\$ 963,100	\$ (10,413,711)	\$ 104,055,465

COMMUNITY HOUSING OF MAINE, INC.
CONSOLIDATED SCHEDULE OF FINANCIAL POSITION - UNAUDITED
June 30, 2019

LIABILITIES AND NET ASSETS

	CHOM OPERATIONS	AFFILIATED PROJECTS												NFG HOUSING	CENTRAL COMMONS	ELIMINATIONS	TOTAL
		HOUSING BY DESIGN	HARBOR LIGHTS	ROCKY COAST	STEVENS GREEN	DAVIS ISLAND	REED STREET	SEMINARY HOUSING	CAMPBELL CREEK	CHILDREN'S HOSPITAL	DANFORTH ON HIGH	VILLAGE CENTRE	PARISH HOUSE				
CURRENT LIABILITIES																	
Accounts Payable - Operations	\$ 66,379	\$ -	\$ 6,278	\$ 8,750	\$ 1,915	\$ 5,222	\$ 12,466	\$ 3,583	\$ 186	\$ 2,945	\$ 622	\$ 1,161	\$ 2,706	\$ 38,619	\$ -	\$ -	\$ 150,832
Accounts Payable - Development	-	-	-	-	-	-	-	-	-	-	-	-	-	1,802,870	52,035	-	1,854,905
Due to Affiliates	-	1,000	-	-	-	-	-	-	-	-	2,284	558	-	61,780	130,439	(196,061)	-
Accrued Interest	12,975	-	-	-	605	592	1,116	-	935	1,755	1,379	2,750	3,341	159,453	-	-	184,901
Other Accrued Expenses	-	-	296	2,053	12,525	23,698	32,314	7,353	23,983	30,078	45,296	16,440	325	5,423	5,626	-	205,410
Prepaid Rent	-	-	226	1,330	3,347	2,019	5,775	5,162	-	6,627	5,053	5,622	-	4,944	-	-	40,105
Construction Loan Payable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current Portion Long-term Debt - Bridge Loans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current Portion Long-term Debt	130,819	-	-	-	4,576	2,734	-	-	11,309	5,648	5,006	-	-	2,366,699	-	-	2,526,791
Total Current Liabilities	210,173	1,000	6,800	12,133	22,968	34,265	51,671	16,098	36,413	47,053	59,640	26,531	6,372	4,439,788	188,100	(196,061)	4,962,944
DEPOSITS LIABILITY																	
Tenant Security Deposits	151,684	-	1,205	487	15,166	8,561	14,994	13,144	13,492	12,687	13,566	25,348	4,446	77,112	-	-	351,892
LONG TERM LIABILITIES																	
Notes Payable - MaineHousing	1,497,971	-	100,000	308,951	2,576,323	623,733	1,082,217	-	1,440,000	1,026,898	3,704,614	1,945,000	-	20,588,059	175,000	-	35,068,766
Notes Payable - Other	2,144,533	-	-	-	-	-	-	-	1,699,729	403,795	-	-	1,171,922	2,924,172	-	(3,674,172)	4,669,979
MaineHousing Tax Credit Exchange Funds	-	-	-	-	-	-	-	934,897	-	-	-	-	-	-	-	-	934,897
Less: Debt Issuance Costs	(173)	-	-	-	(2,981)	(6,765)	(11,621)	(936)	(18,115)	(14,400)	(16,199)	(29,454)	-	(362,257)	-	-	(462,901)
Deferred Interest Payable	-	-	-	-	-	345,199	520,609	-	84,223	161,561	-	-	-	-	-	-	1,111,592
Unreimbursed Development Costs	-	-	-	-	-	-	51,118	-	-	-	-	-	-	-	-	(51,118)	-
Development Fee Payable	-	-	-	-	-	206,424	-	-	130,806	-	-	-	-	2,654,008	-	(2,991,238)	-
Total Notes Payable	3,642,331	-	100,000	308,951	2,573,342	1,168,591	1,642,323	933,961	3,336,643	1,577,854	3,688,415	1,915,546	1,171,922	25,803,982	175,000	(6,716,528)	41,322,333
Refundable Advances	17,506,269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,506,269
Total	21,148,600	-	100,000	308,951	2,573,342	1,168,591	1,642,323	933,961	3,336,643	1,577,854	3,688,415	1,915,546	1,171,922	25,803,982	175,000	(6,716,528)	58,828,602
Less Current Portion of Long-term Debt	130,819	-	-	-	4,576	2,734	-	-	11,309	5,648	5,006	-	-	2,366,699	-	-	2,526,791
Total Long-term Liabilities	21,017,781	-	100,000	308,951	2,568,766	1,165,857	1,642,323	933,961	3,325,334	1,572,206	3,683,409	1,915,546	1,171,922	23,437,283	175,000	(6,716,528)	56,301,811
TOTAL LIABILITIES	21,379,638	1,000	108,005	321,571	2,606,900	1,208,683	1,708,988	963,203	3,375,239	1,631,946	3,756,615	1,967,425	1,182,740	27,954,183	363,100	(6,912,589)	61,616,647
NET ASSETS																	
Without Donor Restrictions	9,516,949	2,885,736	(195,993)	52,684	(166,256)	2,743,296	2,453,747	3,946,343	978,056	7,237,663	1,128,235	7,048,604	810,431	5,827,416	600,000	(3,501,122)	41,365,789
With Donor Restrictions	46,429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46,429
HUD Capital Advances	-	-	550,800	475,800	-	-	-	-	-	-	-	-	-	-	-	-	1,026,600
Total Net Assets	9,563,378	2,885,736	354,807	528,484	(166,256)	2,743,296	2,453,747	3,946,343	978,056	7,237,663	1,128,235	7,048,604	810,431	5,827,416	600,000	(3,501,122)	42,438,818
TOTAL LIABILITIES AND NET ASSETS	\$ 30,943,016	\$ 2,886,736	\$ 462,812	\$ 850,055	\$ 2,440,644	\$ 3,951,979	\$ 4,162,735	\$ 4,909,546	\$ 4,353,295	\$ 8,869,609	\$ 4,884,850	\$ 9,016,029	\$ 1,993,171	\$ 33,781,599	\$ 963,100	\$ (10,413,711)	\$ 104,055,465

COMMUNITY HOUSING OF MAINE, INC.
CONSOLIDATED SCHEDULE OF REVENUE, SUPPORT, EXPENSES AND CHANGE IN NET ASSETS - UNAUDITED
For the Year Ended June 30, 2020

	CHOM OPERATIONS	HOUSING BY DESIGN	HARBOR LIGHTS	ROCKY COAST	STEVENS GREEN	DAVIS ISLAND	REED STREET	SEMINARY HOUSING	AFFILIATED PROJECTS CAMPBELL CREEK	CHILDREN'S HOSPITAL	DANFORTH ON HIGH	VILLAGE CENTRE	PARISH HOUSE	NFG HOUSING	CENTRAL COMMONS	ELIMINATIONS	TOTAL
REVENUE AND SUPPORT																	
Rental Operations																	
Tenant Rent	\$ 1,671,630	\$ -	\$ 15,600	\$ 19,042	\$ 226,031	\$ 221,479	\$ 124,673	\$ 111,925	\$ 98,349	\$ 219,801	\$ 94,760	\$ 193,935	\$ 56,419	\$ 913,392	\$ -	\$ -	\$ 3,967,036
Vacancy	(86,822)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(86,822)
Housing Assistance Payments	706,008	-	29,780	33,272	-	-	152,395	104,751	167,294	117,834	184,041	211,717	-	2,125,763	-	-	3,832,855
Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	808	-	-	808
Total Rental Operations	2,290,816	-	45,380	52,314	226,031	221,479	277,068	216,676	265,643	337,635	278,801	405,652	56,419	3,039,963	-	-	7,713,877
OTHER SUPPORT AND REVENUE																	
Development Fees	125,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125,000
Income from Project Investments	100,017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,017)	-
Grants	301,350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301,350
Donations	6,249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,249
Interest Income	22,967	-	-	767	2,300	982	1,759	3,971	4,839	5,573	5,777	6,734	10	21,113	-	-	76,792
Other Income	27,632	-	644	12,682	3,792	6,679	8,419	604	4,342	9,088	4,525	7,353	-	21,533	-	-	107,253
Historic Tax Credit Refund	159,150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159,150
Tax Credit Exchange Fund Income	-	-	-	-	-	-	-	116,862	-	-	-	-	-	-	-	-	116,862
Interest Credit Subsidy	-	-	-	-	-	-	-	-	22,433	-	-	-	-	-	-	-	22,433
TOTAL REVENUE AND SUPPORT	3,033,181	-	46,024	65,763	232,123	229,140	287,246	338,113	297,257	352,296	289,103	419,739	56,429	3,082,609	-	(100,017)	8,629,006
EXPENSES																	
Rental Housing Expenses																	
Administrative																	
Management Fees	40,600	-	4,020	4,143	13,590	15,849	16,860	13,104	27,671	23,428	16,848	28,514	5,642	151,925	-	-	362,194
Other Administrative Expenses	32,130	-	9,599	14,288	38,777	48,978	37,838	46,096	47,511	59,168	53,154	39,147	7,132	137,587	-	-	571,405
Total Administrative Expenses	72,730	-	13,619	18,431	52,367	64,827	54,698	59,200	75,182	82,596	70,002	67,661	12,774	289,512	-	-	933,599
Operating																	
Fuel	151,217	-	3,536	4,812	30,364	27,541	34,719	10,431	-	16,537	7,678	5,024	6,049	69,795	-	-	367,703
Electricity	95,129	-	3,903	4,041	5,823	8,767	7,273	21,142	10,608	15,557	10,090	39,392	5,261	141,033	-	-	368,019
Water and Sewer	103,414	-	2,378	7,540	17,861	28,230	11,724	16,154	25,271	11,868	10,238	20,249	2,630	63,170	-	-	320,727
Cable	1,291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,291
Trash Removal	21,006	-	1,446	-	5,390	2,839	6,119	7,376	4,519	9,992	7,514	3,579	952	-	-	-	70,732
Miscellaneous	-	-	-	-	-	-	3,793	-	-	-	-	-	-	-	-	-	3,793
Total Operating Expenses	372,057	-	11,263	16,393	59,438	67,377	63,628	55,103	40,398	53,954	35,520	68,244	14,892	273,998	-	-	1,132,265
Maintenance	690,028	-	7,495	9,456	68,976	74,860	49,123	53,844	98,317	74,695	59,643	118,630	11,800	309,909	-	-	1,626,776
Depreciation and Amortization	668,514	-	14,188	26,110	120,686	148,855	119,383	159,482	124,486	288,745	142,093	271,173	53,100	813,809	-	-	2,950,624
Interest Expense	187,514	-	2,041	-	7,300	48,198	77,959	133	54,022	47,400	17,075	34,071	15,358	1,096,906	-	-	1,587,977
General																	
Property and Miscellaneous Taxes	8,710	-	263	429	15,766	16,118	39,473	15,334	21,758	61,491	48,226	32,159	14,569	277,793	-	-	552,089
Property and Miscellaneous Insurance	71,420	-	3,522	4,090	8,903	10,038	8,936	12,580	10,140	21,034	12,793	19,317	7,518	82,253	-	-	272,544
Total General Expenses	80,130	-	3,785	4,519	24,669	26,156	48,409	27,914	31,898	82,525	61,019	51,476	22,087	360,046	-	-	824,633
Tenant Services	-	-	-	-	-	8,437	9,344	7,944	-	10,024	-	-	-	67,151	-	-	102,900
Total Rental Housing Expenses	2,070,973	-	52,391	74,909	333,436	438,710	422,544	363,620	424,303	639,939	385,352	611,255	130,011	3,211,331	-	-	9,158,774
Other Income (Expenses)																	
Debt Relief	109,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109,500
General Administration (Schedule 4)	(1,030,845)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,030,845)
Other Expense	-	-	(95)	-	-	-	-	-	-	(17,160)	(7,930)	(20,793)	-	(7,635)	-	-	(53,613)
Asset/Incentive Management Fees	-	-	-	-	(7,346)	(1,300)	(33,034)	(6,894)	(9,473)	(7,000)	(20,018)	(7,200)	-	(7,500)	-	60,892	(38,873)
Gain on Sale of Fixed Assets	27,186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27,186
Sub-Grantee Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Development Expense	(310,975)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(310,975)
Total Other Income (Expenses)	(1,205,134)	-	(95)	-	(7,346)	(1,300)	(33,034)	(6,894)	(9,473)	(24,160)	(27,948)	(27,993)	-	(15,135)	-	60,892	(1,297,620)
Change in Net Assets	(242,926)	-	(6,462)	(9,146)	(108,659)	(210,870)	(168,332)	(32,401)	(136,519)	(311,803)	(124,197)	(219,509)	(73,582)	(143,857)	-	(39,125)	(1,827,388)
Net Assets - Beginning of Year	9,563,378	2,885,736	354,807	528,484	(166,256)	2,743,296	2,453,747	3,946,343	978,056	7,237,663	1,128,235	7,048,604	810,431	5,827,416	600,000	(3,501,122)	42,438,818
Capital Contributions (Net of Syndication Costs)	-	159,150	-	-	-	-	-	-	-	-	-	-	159,150	4,437,035	600,100	(159,150)	5,196,285
Transfers/Distributions	(159,150)	-	-	-	-	-	(17,016)	(973)	-	(2,854)	(5,739)	(43,472)	-	-	-	39,125	(189,879)
Net Assets - End of Year	\$ 9,161,302	\$ 3,044,886	\$ 348,345	\$ 519,338	\$ (274,915)	\$ 2,532,426	\$ 2,268,399	\$ 3,912,969	\$ 841,537	\$ 6,923,206	\$ 998,299	\$ 6,785,623	\$ 895,999	\$ 10,120,594	\$ 1,200,100	\$ (3,660,272)	\$ 45,617,836

COMMUNITY HOUSING OF MAINE, INC.
CONSOLIDATED SCHEDULE OF REVENUE, SUPPORT, EXPENSES AND CHANGE IN NET ASSETS - UNAUDITED
For the Year Ended June 30, 2019

REVENUE AND SUPPORT	CHOM OPERATIONS	AFFILIATED PROJECTS														ELIMINATIONS	TOTAL
		HOUSING BY DESIGN	HARBOR LIGHTS	ROCKY COAST	STEVENS GREEN	DAVIS ISLAND	REED STREET	SEMINARY HOUSING	CAMPBELL CREEK	CHILDREN'S HOSPITAL	DANFORTH ON HIGH	VILLAGE CENTRE	PARISH HOUSE	NFG HOUSING	CENTRAL COMMONS		
Rental Operations																	
Tenant Rent	\$ 1,525,756	\$ -	\$ 15,223	\$ 18,816	\$ 229,244	\$ 210,338	\$ 137,086	\$ 82,848	\$ 95,592	\$ 213,116	\$ 94,060	\$ 160,116	\$ 51,722	\$ 442,500	\$ -	\$ -	\$ 3,276,417
Vacancy	(61,588)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(61,588)
Housing Assistance Payments	638,016	-	27,317	33,783	-	-	128,448	112,550	173,633	124,925	177,608	209,722	-	1,041,326	-	-	2,667,328
Rental Assistance Payments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Department of Veteran Affairs Per Diem	25,992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,992
Total Rental Operations	2,128,176	-	42,540	52,599	229,244	210,338	265,534	195,398	269,225	338,041	271,668	369,838	51,722	1,483,826	-	-	5,908,149
OTHER SUPPORT AND REVENUE																	
Development Fees	3,352,045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,352,045
Income from Project Investments	100,339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,339)	97,163
Grants (Restated)	97,163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97,163
Department of Veteran Affairs Per Diem	101,755	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101,755
Donations	8,923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,923
Interest Income	24,751	-	8	827	1,550	764	1,140	2,473	2,741	3,455	3,625	3,991	10	9,103	-	-	54,438
Other Income	14,874	-	682	14,634	2,879	14,552	3,206	1,819	6,931	5,217	2,793	2,480	-	13,347	-	-	83,414
Historic Tax Credit Refund	159,150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159,150
Tax Credit Exchange Fund Income	-	-	-	-	-	-	-	116,862	-	-	-	-	-	-	-	-	116,862
Interest Credit Subsidy	-	-	-	-	-	-	-	-	22,433	-	-	-	-	-	-	-	22,433
TOTAL REVENUE AND SUPPORT	5,987,176	-	43,230	68,060	233,673	225,654	269,880	316,552	301,330	346,713	278,086	376,309	51,732	1,506,276	-	(100,339)	9,904,332
EXPENSES																	
Rental Housing Expenses																	
Administrative																	
Management Fees	38,600	-	3,240	4,947	14,040	13,800	16,065	11,546	27,090	23,360	16,584	25,372	3,757	72,906	-	-	271,307
Other Administrative Expenses	33,138	-	13,706	15,052	33,425	65,114	23,433	59,949	56,252	48,124	42,582	62,312	3,200	66,882	-	-	523,169
Total Administrative Expenses	71,738	-	16,946	19,999	47,465	78,914	39,498	71,495	83,342	71,484	59,166	87,684	6,957	139,788	-	-	794,476
Operating																	
Fuel	179,615	-	3,381	4,438	24,029	28,585	30,444	11,908	-	17,932	8,737	4,329	5,097	22,231	-	-	340,726
Electricity	92,303	-	3,433	4,209	5,587	8,583	6,985	18,072	6,879	9,792	7,844	4,633	67,867	-	-	254,774	
Water and Sewer	94,675	-	2,486	8,448	16,177	26,726	10,634	9,540	24,230	11,919	11,104	18,540	2,900	40,343	-	-	277,722
Cable	1,312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,312
Trash Removal	17,744	-	1,268	-	6,475	4,434	6,443	5,589	3,322	8,459	6,256	2,883	891	-	-	-	63,764
Miscellaneous	-	-	-	-	-	-	3,642	-	-	-	-	-	-	-	-	-	3,642
Total Operating Expenses	385,649	-	10,568	17,095	52,268	68,328	58,148	45,109	34,431	56,897	35,889	33,596	13,521	130,441	-	-	941,940
Maintenance	586,192	-	12,502	11,409	59,300	60,882	56,592	49,783	57,865	67,541	56,404	105,584	10,822	143,719	-	-	1,278,595
Depreciation and Amortization	639,137	-	14,576	24,370	123,675	148,911	120,197	159,046	124,002	288,361	141,085	270,959	53,100	242,794	-	-	2,350,213
Interest Expense	200,777	-	-	-	7,567	46,540	75,157	133	53,530	47,000	17,342	34,071	22,729	571,190	-	-	1,076,036
General																	
Property and Miscellaneous Taxes	18,257	-	1,136	6	15,258	15,304	33,813	15,000	21,410	59,803	45,458	31,999	11,866	132,649	-	-	401,959
Property and Miscellaneous Insurance	68,858	-	-	1,643	8,532	6,269	8,662	4,763	7,396	13,035	7,169	15,957	3,060	53,648	-	-	198,992
Total General Expenses	87,115	-	1,136	1,649	23,790	21,573	42,475	19,763	28,806	72,838	52,627	47,956	14,926	186,297	-	-	600,951
Tenant Services	-	-	-	-	-	-	8,940	-	-	-	-	-	-	32,427	-	-	41,367
Total Rental Housing Expenses	1,970,608	-	55,728	74,522	314,065	425,148	401,007	345,329	381,976	604,121	362,513	579,850	122,055	1,446,856	-	-	7,083,578
Other Income (Expenses)																	
Debt Relief	704,615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	704,615
General Administration (Schedule 4)	(996,942)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(996,942)
Other Expense	(156,812)	-	-	-	-	-	-	-	-	(5,400)	(810)	(6,068)	-	(5,000)	-	-	(174,090)
Asset Management Fee	-	-	-	-	(26,560)	(1,300)	(29,262)	-	(10,298)	(7,000)	(30,243)	(7,200)	-	-	-	84,165	(27,698)
Gain on Sale of Fixed Assets	36,595	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36,595
Sub-Grantee Costs	(101,755)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(101,755)
Development Expense	(350,502)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(350,502)
Total Other Income (Expenses)	(864,801)	-	-	-	(26,560)	(1,300)	(29,262)	-	(10,298)	(12,400)	(31,053)	(13,268)	-	(5,000)	-	84,165	(909,777)
Change in Net Assets	3,151,767	-	(12,498)	(6,462)	(106,952)	(200,794)	(160,389)	(28,777)	(90,944)	(269,808)	(115,480)	(216,809)	(70,323)	54,620	-	(16,174)	1,910,977
Net Assets - Beginning of Year	6,570,761	2,726,586	367,305	534,946	(55,745)	2,944,090	2,617,188	3,975,120	1,069,000	7,522,559	1,254,532	7,283,384	565,292	3,035,844	-	(3,341,972)	37,068,890
Capital Contributions (Net of Syndication Costs)	-	159,150	-	-	-	-	-	-	-	-	-	-	315,462	2,138,915	600,000	(159,150)	3,054,377
Transfers/Distributions	(159,150)	-	-	-	(3,559)	-	(3,052)	-	-	(15,088)	(10,817)	(17,971)	-	598,037	-	16,174	404,574
Net Assets - End of Year	\$ 9,563,378	\$ 2,885,736	\$ 354,807	\$ 528,484	\$ (166,256)	\$ 2,743,296	\$ 2,453,747	\$ 3,946,343	\$ 978,056	\$ 7,237,663	\$ 1,128,235	\$ 7,048,604	\$ 810,431	\$ 5,827,416	\$ 600,000	\$ (3,501,122)	\$ 42,438,818

Technical Capacity

Community Housing of Maine (CHOM) Development Corporation was formed in 2003 and is the managing General Partner in eleven (11) limited partnerships. Each partnership was formed for the purpose of owning affordable rental housing created, in part, by an allocation of Low-Income Housing Tax Credits. Please refer to the attached CHOM Development Corporation Resume for additional information.

Portland Housing Development Corporation (PHDC) has over 20 years of experience in real estate development, sustainable design, community planning, finance, and construction. They have collectively developed nearly 2,000 affordable homes in their career. PHDC will co-own the proposed buildings with Community Housing of Maine. Please refer to the attached PHDC Resume for additional information.

CWS Architects was founded in 1992 and has an extensive portfolio of multifamily housing, historic preservation, commercial and industrial buildings mostly concentrated in Southern and Central Maine. With numerous awards and over 75 residential developments with over 3,200 units completed, CWS is one of Northern New England's most respected residential apartment design firms. Notable local developments include the Passive House certified Village Centre Apartments in Brewer, 409 Cumberland, Oak Street Lofts (LEED Silver) and Elm Terrace (LEED Platinum) and the recently completed 57 unit Solterra (58 Boyd St Apts), all located in Portland.

Ryan Senatore Architecture has designed several important multifamily residential projects in Southern and Central Maine, including the nine-story, 139-unit, concrete and steel framed high-rise apartment building known as the Hiawatha (for Redfern Properties). RSA's residential clients include private developers as well as public housing authorities, and completed projects include both new construction and adaptive reuse of existing historic structures.

Acorn Engineering specializes in providing urban redevelopment, civil/site design, environmental services, municipal consulting and construction administration. Together, Acorn Engineering, Inc. and Ryan Senatore Architecture have successfully designed and permitted more than 20 level II/III projects in Portland during the past 5 years, including four for Redfern Properties: Munjoy Heights, East Bayside Lofts, The Hiawatha, and 70 Anderson.

ALA is a process-driven, landscape architecture and urban design firm committed to thoughtful, creative intervention at the intersection of environment, economics, art, and culture. ALA has worked on a number of important projects throughout Maine and the U.S. Locally, ALA has been the prime design consultant for the redevelopment of the 500-acre Scarborough Downs property in addition to numerous public and private development projects across Maine. ALA's clients include private developers, housing authorities, and municipalities.



CHOM Development Corporation Resume

CHOM Development Corporation was formed in 2003 and is the managing General Partner in eleven (11) limited partnerships. Each partnership was formed for the purpose of owning affordable rental housing created, in part, by an allocation of Low Income Housing Tax Credits.

Stevens Green



2004 / Stevens Green Associates, L.P.

4% bond financing and tax credits / 26 family units, 24,871 Sq. Ft., 5 Lovejoy Street, Rockland, Maine

New construction, \$4.1 million total development cost

Delivered on time and slightly under budget / Benchmark as General Contractor by Select Bid

Initial occupancy December 2005

Architect: Ben Walter, CWS Architects

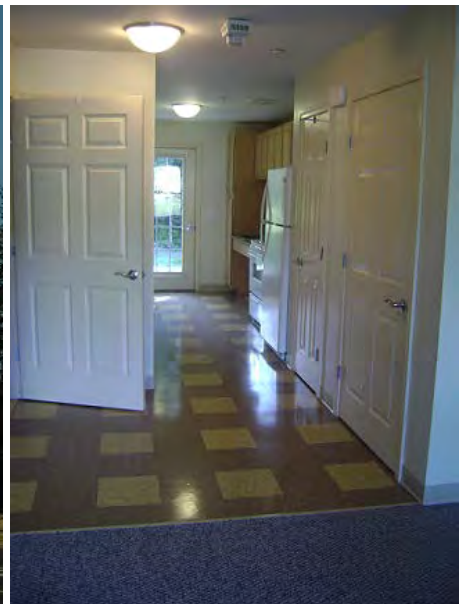
Construction Lender: Camden National Bank

Syndicator: Michael Associates, Ltd.

Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Townhouses at Davis Island



2006 / Davis Island Housing Partners, L.P.

9% tax credits / 26 family units, 27,376 Sq. Ft., 45 US Route 1, Edgecomb, Maine

New construction, \$5.5 million total development cost

Delivered early and on budget / Portland Builders as General Contractor by Select Bid

Initial occupancy October 2007

Architect: Ben Walter, CWS Architects

Construction Lender: Camden National Bank

Syndicator: Boston Capital Corporation

Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Meets MaineHousing's green design requirements

Clearwater Bend



2007 / Reed Street Neighborhood Housing, L.P.
9% tax credits / 23 family units, 26,190 Sq. Ft., 27 Reed Street, Westbrook, Maine
New construction, \$5.5 million total development cost
Delivered early and under budget / Benchmark as Construction Manager-at-Risk
Initial occupancy July 2008
Architect: Ben Walter, CWS Architects
Construction Lender: Camden National Bank
Syndicator: Boston Capital Corporation
Property Manager: Preservation Management, Inc.
Project Manager: Erin Cooperrider for CHOM Development Corporation
Meets MaineHousing's green design requirements

Maine Hall





2009 / Seminary Housing Partners, L.P.

9% tax credits / state and federal historic tax credits / 28 senior units, 25,350 Sq. Ft., 288 Union Street, Bangor, Maine

Acquisition and rehabilitation of historic brick building with new construction addition

\$6 million total development cost

Delivered on time and on budget / Nickerson O'Day as Construction Manager-at-Risk

Initial occupancy August 2011

Architect: Ben Walter, CWS Architects

Construction Lender: People's United Bank

Syndicator: Boston Capital Corporation

Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Certified by the U.S. Green Building Council (USGBC) and achieved Leadership in Energy and Environmental Design (LEED) Silver Certification

Elm Terrace



2010 / Children's Hospital Housing Partners, L.P.

9% tax credits / state and federal historic tax credits / 38 family units, 42,864 Sq. Ft., 68 High Street, Portland, Maine

Acquisition and rehabilitation of historic brick building with new construction addition

\$10.5 million total development cost

Delivered on time and on budget / Wright-Ryan as Construction Manager-at-Risk

Initial occupancy February 2013

Architect: Ben Walter, CWS Architects

Construction Lender: TD Bank

Syndicator: Boston Capital Corporation

Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Certified by the U.S. Green Building Council (USGBC) and achieved Leadership in Energy and Environmental Design (LEED) Platinum Certification

Danforth on High





2011 / Danforth on High, L.P.

4% bond deal / 30 senior units, 23,450 Sq. Ft., 81 Danforth Street, Portland, Maine

New construction, \$5.6 million total development cost

Delivered on time and under budget / Hebert Construction as General Contractor by Select Bid

Initial occupancy July 2013

Architect: David Lloyd, Archetype

Construction Lender: Gorham Savings Bank

Syndicator: Boston Capital Corporation

Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Meets MaineHousing's green design requirements

Campbell Creek Village (formerly Harbor Pines and West Harbor Pines)



2012 / Campbell Creek Housing Partners, L.P.

4% bond financing and tax credits / USDA Rural Development Multifamily Revitalization Program

16 family units and 20 senior units, 31,165 Sq. Ft., Andrea Lane, Boothbay Harbor, Maine

Acquisition and occupied rehabilitation; \$ 4.8 million total development cost

Delivered early and on budget / Great Falls Construction as General Contractor by Open Bid

Initial Occupancy September 2012 (occupied renovation)

Architect: Ben Walter, CWS Architects

Construction Lender: Maine State Housing Authority

Syndicator: Northern New England Housing Investment Fund

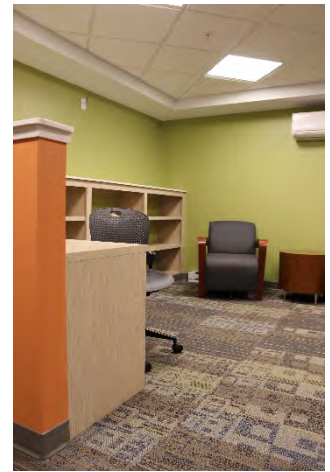
Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Meets MaineHousing's green design requirements

Village Centre Family Apartments





2015 / Village Centre Housing Partners, L.P.
9% tax credits / 48 family units, 54,886 Sq. Ft., 266 Center Street, Brewer, Maine
New construction, \$9.5 million total development budget
Delivered on time and on budget / Wright-Ryan as Construction Manager-at-Risk
Initial occupancy April 2016
Architect: Ben Walter, CWS Architects
Construction Lender: TD Bank
Syndicator: Northern New England Housing Investment Fund
Architect: Ben Walter, CWS Architects
Property Manager: Preservation Management, Inc.
Project Manager: Erin Cooperrider for CHOM Development Corporation
Certified by the Passive House Institute US (PHIUS) achieving PHIUS+ 2015
Passive House certification.

Parish House



2016 / Parish House Associates, L.P.

State and federal historic tax credits / 6 units, 6,561 Sq. Ft., 27 Kennebec St., Bar Harbor, Maine

Acquisition and rehabilitation of historic brick building

\$2.03 million development cost

Delivered on time and on budget / E. L. Shea as Construction Manager-at-Risk

Initial occupancy August 2017

Architect: George Lavigne, CWS Architects

Construction Lender: Camden National Bank

Investment Limited Partner: Camden National Bank

Property Manager: Community Housing of Maine

Project Manager: Erin Cooperrider for CHOM Development Corporation

Northfield Green



2017 / NFG Housing Partners, L.P.

4% tax credits / 201 units, 198,898 Sq. Ft., 145 Allen Ave., Portland, Maine

Occupied rehabilitation; \$30 million development cost

Anticipated on time and on budget / Zachau Construction as Construction Manager-at-Risk

Initial occupancy December 2017 (occupied rehabilitation)

Architect: Ben Walter, CWS Architects

Construction Lender: TD Bank

Syndicator: Boston Capital Corporation

Property Manager: Preservation Management, Inc.

Project Manager: Erin Cooperrider for CHOM Development Corporation

Central Commons



2018 / Central Commons Housing Partners, L.P.
4% tax credits / state and federal historic tax credits / 29 senior units, 25,000 Sq. Ft., 6 Beech St.,
Hallowell, Maine
Acquisition and rehabilitation of historic brick building
\$7.9 million development cost
On time and on budget / Wright-Ryan as Construction Manager-at-Risk
Initial occupancy in June 2020
Architect: Ryan Senatore Architects
Construction Lender: Bangor Savings Bank and Maine State Housing Authority
Syndicator: Evernorth (formerly Northern New England Housing Investment Fund (NNEHIF))
Property Manager: Preservation Management, Inc.
Project Manager: Bree LaCasse for CHOM Development Corporation



Firm Profile

Development Experience

Established in 1983, Portland Housing Development Corporation (PHDC) is the real estate development arm of the Portland Housing Authority (PHA). PHDC is a 501(c)(4) non-profit organization that provides real estate development services for the preservation and expansion of affordable housing opportunities in Portland, Maine. PHDC creates permanently affordable housing for households in need and ensures the agency's portfolio remains viable for the long-term. It is governed by a seven-member volunteer board of directors.

PHDC staff have over 20 years of experience in real estate development, sustainable design, community planning, finance and construction. They have collectively developed nearly 2,000 affordable homes in their careers. PHDC utilizes private and public financing to renovate PHA's aging multifamily housing stock and create new units of attractive, affordable and workforce housing for Portland residents. Our in-house development staff are practiced in environmentally responsible building techniques, smart growth planning and community revitalization. PHDC staff are skilled in securing and assembling project financing from a broad range of local, state and federal sources. With a strong track record of on-time and on-budget projects, PHDC has the ability to reasonably project hard, soft and operating costs onto an array of project types.

PHDC's new construction and preservation projects provide residents with quality, energy-efficient homes in growing Portland neighborhoods and areas of opportunity. These projects help foster sustainable and diverse and vibrant communities near transit, schools, services, and jobs. PHDC's efforts, in concert with public and private partnerships, encourage community revitalization, create essential affordable housing opportunities, and contribute to a better built environment for future generations.

Development Approach

As a non-profit affordable housing developer, PHDC is guided by the following principals:

- Provide high-quality, safe, healthy and energy-efficient homes to residents.

- Provide attractive, desirable and marketable homes that instill a sense of pride in residents and neighbors.
- Provide homes that integrate with and add value and amenities to the surrounding neighborhood.

PHDC projects offer a continuum of permanent housing types and sizes to meet identified community needs. These include rental housing projects for families, seniors and persons with disabilities; supportive housing with services; and homeownership opportunities. PHDC also strives to accommodate economic diversity and mixed-incomes within our properties. Our portfolio accommodates a range of incomes groups – from extremely low-income families to middle-income households, and everything in between.

Our approach to multifamily design and development focus on achieving superior sustainability, livability, and community engagement in all our projects. We accomplish this through:

- Engaging residents, neighborhood and other local stakeholders to identify user values, community needs, project goals, constraints and opportunities.
- Completing master planning and a site analysis to determine a property's best use and complements the surrounding community character.
- Promoting smart growth principals, including concentrating on infill, low-impact and compact projects.
- Incorporating Passive House, green building practices and sustainable material usage to reduce energy and water utilization, conserve resources, minimize operating costs, and improve tenant health and wellbeing.
- Analyzing the 'first costs' and long-term lifecycle costs of each design decision to optimize a property's financial and environmental sustainability.
- Value engineering projects to maximize building performance and control costs.
- Including accessibility and universal design features that improve property visitability and adaptation to the changing needs and lifestyles of residents.
- Encouraging use of mass transit and alternative transportation options while minimizing land used for parking.
- Connecting residents to nature and open space through creative design.
- Utilizing placemaking principals that provide better health, food security, arts and community connectivity.

Property Management and Voucher Services

In addition to development activities, our agency manages long-term rental housing and rental assistance to more 6,500 residents, nearly 10% of the City's population. Through Low-Income Public Housing (LIPH) and the Housing Choice Voucher (HCV) programs, PHA and its affiliates serve low-income families, seniors, persons with disabilities and many more. This includes property management of nearly 1,000 units of LIPH and market-rate apartments, as well as the administration of 1,800 housing vouchers. PHA believes that providing safe, quality, affordable housing offers its residents the stability they need and the opportunity for success they deserve.

PHA employs an experienced Property Management and Compliance team with extensive training in programs including the Low Income Housing Tax Credit (LIHTC), LIPH, HCV, and Project-Based Section 8 subsidies. Our agency has a proven track record of compliance with HUD and annual audits.

On-site Property Management staff communicate with the Director of Property Management on a regular basis to formally review the status and condition of the project, to review outstanding issues and provide detailed reports on continuing operations of the property. Property Management personnel have experience preparing and monitoring annual budgets; resolving resident complaints; marketing and leasing vacant units; reviewing and approving reasonable accommodations requests; implementing risk management and crime preventative safety measures; performing site and unit inspections; coordinating maintenance activities and unit turnover work; and ensuring compliance with all federal, state and local regulations. PHA's Maintenance department provides 24-hour maintenance services, including routine, emergency, and preventative maintenance repairs and replacement.

Resident Services

Our agency's commitment to meeting resident needs led to the creation of the Resident Services department. Resident Services has a direct role in assessing community and resident needs and organizing to address those needs. Resident Services staff process referrals and connect residents with services and resources. They develop and operate programs that enable residents to gain educational, financial and self-sufficiency skills. Resident Services build collaborative relationships with area providers and solicit resources. Our long-term community partners include Shalom House, Opportunity Alliance, Head Start, Greater Portland Health, Sweetser, Good Shepard Food Bank, USM Nursing Program, and Boys & Girls Club. The Resident Services department also encourages and facilitates tenant organizations at our properties.

Development Awards and Recognition

- Bayside Anchor - 2018 PHIUS Award for Best Affordable Housing from Passive House Institute US (PHIUS)
- Bayside Anchor - 2017 Citation Award for Design from AIA Maine
- Portland Housing Authority - 2016 Mike Yandell Award from Avesta Housing
- Bayside Anchor – 2013 Lowering The Cost Of Housing Award from Enterprise Communities and Deutsche Bank
- Front Street Re-Development – 2017 Housing for Everyone Award and \$125,000 from the TD Charitable Foundation

Bayside Anchor



PHDC's first new construction project, Bayside Anchor, models our approach to sustainability, affordability and innovation in affordable housing development. Completed in 2016, the project provides 45 affordable, energy-efficient homes in Portland, Maine. Utilizing cost-effective technologies, the property was built to Passive House standards and received PHIUS+ Certification. As a result, Bayside Anchor won the 2013 "Lowering The Cost Of Housing" national competition by Enterprise Communities and Deutsche Bank; the 2018 PHIUS award for Best Affordable Housing; and a 2017 Citation Award for Design from AIA Maine. Additionally, Bayside Anchor serves as a service hub for low-income residents in the East Bayside neighborhood. The building includes a Community Police Station, Head Start classroom, artist-commissioned murals and property management offices. As a social catalyst for East Bayside, the project earns its name as a stabilizing "anchor" for the community.

Solterra (58 Boyd Street)



During the 1960s, more than 200 structures in Bayside were demolished as part of Urban Renewal and “slum clearance”. The historical street grid and existing properties were razed to make way for Franklin Arterial.

A generation later, the City and the community have re-embraced the urbanism previously destroyed. Solterra at 58 Boyd Street, a 55-unit infill development, is across the street and follows PHDC’s Bayside Anchor project. The mixed-income project offers 44 affordable and 11 market-rate apartments. Twenty-eight (28) units benefit from project-based vouchers and five units are reserved for homeless households. Rents are 11% to 64% below market, placing it in a strong competitive position within the market. The project provides the neighborhood with much-needed resident services and affordability, as well as new commercial space for Cultivating Community, a local Food Security, nutrition and farming organization.

Solterra employs the Passive House principles of plentiful fresh air, passive solar design, superinsulation and airtightness, used in conjunction with highly efficient energy recovery ventilation, to dramatically reduce energy demand and simplify overly complex and expensive multifamily mechanical systems. Solterra’s design meets and significantly exceeds the City’s Green Building Ordinance. The team’s design professionals (CWS Architects) are leaders in the Passive House ultra-low-energy building movement.

Construction was complete in October 2020 and we are currently leasing units.

Public Housing Re-Positioning - Section 18 and RAD

PHDC is an integral part of PHA's Strategic Vision Plan ("Plan") to redevelop its aging Public Housing stock through HUD's Rental Assistance Demonstration (RAD) and/or Section 18 Demolition-Disposition programs. The Agency is approaching the conversion of all or some of its Public Housing portfolio to HUD's Project-Based Voucher Platform. The Agency is guided by its mission and long-term goals set forth within the Plan.

With RAD and Section 18, our Agency aims to expand its suite of affordable housing and services, improve residents' quality of life, enhance safety, build community, and promote success for the people we serve and the neighborhood where they reside. Much of the public housing stock is at the end of its useful life. Steps need to be taken to ensure the long-term viability of our portfolio. Furthermore, we view the underutilized land where housing units are located as a resource for the addition of new units. New inventory will help alleviate the affordable housing crisis the City of Portland faces.

Appropriate planning allows the Agency to take advantage of available federal, state, City and private resources to create development and management opportunities that enhance the diversification of programs and revenues, improve integration of our properties into the city neighborhoods, and mitigate the stigmatization of public housing in the community.

Conformity with Land Use Ordinance

The following outline is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526 as well as the City of Portland Technical Manual, Chapter 14 Standards for Local Site Location of Development Review.

OVERVIEW

The proposed redevelopment of the existing Mercy Hospital complex, including the CHOM Senior and Family buildings along Winter Street, has been designed to conform to City standards where possible as well as improve upon existing non-conformities. This project conforms with the majority of the applicable standards of Portland's Land Use Ordinance Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

The site is bounded by Winter, Spring and State Streets. State Street is classified as a minor arterial with an average annual daily traffic volume of approximately 15,550 vehicles per day. Spring Street is classified as a local road with an average annual daily traffic volume of approximately 4,820 vehicles per day (Maine DOT 2017). The project design provides 68 on-site parking spaces. Residents are expected to also use other modes of travel (i.e. walking, bicycle, transit, etc) other than automobiles. As a result, a very insignificant increase in motorized traffic is expected on either State and/or Spring Street.

2. Access and Circulation:

a. Site Access and Circulation:

This project conforms with the majority of design standards of Section 14-526 as demonstrated in the following narrative.

- (i) The development will provide safe access and internal circulation for both pedestrians and vehicles as seen on the Site Plan.
- (ii) The proposed entrances have been located to provide ample site distance from oncoming traffic on Spring Street.
- (iii) The site does not feature drive up services.

b. Loading and Servicing:

- (i) It is anticipated that deliveries will temporarily load/unload within the proposed parking area off Spring Street.

c. Sidewalks:

- (i) A brick sidewalk exists along both State Street, Spring Street, and Winter Street and will be rebuilt to City standards as part of the project if disturbed.
- (ii) The existing sidewalk not disturbed as part of the project is not in need of rebuilding.



- (iii) The main entrances to the building will be from the proposed parking area. Pedestrian access to the site will be provided by sidewalks and within parking areas. Please refer to the Site Plan, Sheet C-10, for more information.

3. Public Transit Access:

- a. Existing Metro Bus Stop on Spring Street is located directly across the street from the project site. As a result, no transit facility is required for the project.
- b. Not applicable. See a above.
- c. Not applicable. See a above.

4. Parking:

a. Location and Required Number of Vehicle Parking Spaces:

- (i) See attached Section S: Traffic and Parking Analysis and Section T: Traffic Demand Management strategies.
- (ii) See attached Section T: Traffic Demand Management strategies.
- (iii) The amount of parking does not exceed the minimum requirement by more than 10%.
- (iv) The parking space dimensions are in conformance with the Technical Standards. The parking aisle dimensions are not in conformance with the Technical Standards. See attached Section F: Request for Waivers for additional information (reduction from 24' to 22').
- (v) The driveway and parking areas proposed are to be constructed with pavers, bituminous pavement & brick.

b. Location and Required Number of Bicycle Parking Spaces:

- (i) The site will be served by two bicycle hitches within the shared courtyard near the redeveloped Mercy hospital new building entrance and additional bicycle storage within each of the two proposed buildings along Winter Street, for a minimum total of 23 bicycle parking spaces within the CHOM Senior building and 17 bicycle parking spaces within the CHOM Family building.

c. Motorcycles and Scooter Parking:

- (i) There are no areas designated for motorcycles or scooters at this time; however, adequate room exists for the storage of these motor vehicles.

d. Snow Storage:

- (i) The Owner will have snow removed from the site when necessary.
- (ii) The Owner will have snow removed from the site when necessary to provide minimum parking requirements and pedestrian circulation.



5. Transportation Demand Management (TDM):

- a. See attached Section T: Traffic Demand Management strategies.
- b. See attached Section T: Traffic Demand Management strategies.
- c. The TDM shall comply with the City of Portland TDM standards as described in Section 1 of the Technical Manual.

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

- a. Not applicable.
- b. Not applicable.

2. Landscaping and Landscape Preservation:

a. Landscape Preservation.

(i) The few existing trees and vegetation on site are of low value or dead. The project proposes to install new street trees, trees within the proposed parking area and various plantings along the proposed buildings and within the internal parking area. Please refer to the Landscaping Plan for specific information.

(ii) See attached Section F: Request for Waivers.

(iii) It is not anticipated that the project will necessitate any tree protection.

(iv) See attached Section F: Request for Waivers.

(v) Not applicable.

b. Site Landscaping.

(i) Landscaped Buffers:

- a. The existing loading and servicing areas, exterior dumpsters, storage areas are screened from public sidewalks, streets and adjacent properties by the existing building and retaining walls. The proposed pad mounted transformer will be screen by a combination of fencing and/or landscaping.
- b. The project includes a total of approximately 1,006 lf of frontage improvements along Winter, Spring and State Streets All development subject to required zoning setbacks shall include a minimum of six (6) shrubs per forty-five (45) linear feet of all frontages as measured along the property line, which equates to 134 shrubs. Please refer to the Landscaping Plan for additional information.
- c. Not applicable.
- d. Not applicable.



(ii) Parking Lot Landscaping:

- a. Per Section 4.6 of the Portland Maine Technical Manual, two trees are required (or one (1) tree and three (3) shrubs) per five (5) parking spaces. The project proposes 51 space, which require 20 trees to be installed in the parking area. The project proposes to install 21 trees and additional shrubs and trees planted along the parking and courtyard areas.
- b. There is no proposed area with greater than 40 parking spaces without interrupted pavement.
- c. The project parking area is proposed as a “woonerf” or living street, which incorporates trees, shrubs and plantings within the area. The proposed condition of the woonerf is to provide a flush surface across the area to provide accessible routes and promote pedestrian flow through the space. As such, no curbing is proposed, however the “landscaped islands” provide separation from the parking stalls and incorporates stormwater collection leading to a proprietary modular wetland water quality treatment system.
- d. Not applicable.
- e. See attached Section F: Request for Waivers.

(iii) Street Trees:

- a. Street trees are to be provided every 30 to 45 feet along the Winter Street frontage. A total of approximately 400 ft of frontage improvements along Winter Street are included within this project, which equates to a minimum of nine street trees. The project proposes twelve street trees. The Spring Street frontage currently has no existing street trees, with new street trees proposed at the entrance to the parking area. The landscaped area along State Street in front of the existing building proposes to add and improve the existing landscaping features. Please refer to the Landscaping Plan for additional information.
- b. Not applicable.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

- (i) The site drainage will not be directed to flow or pond onto adjacent lots. The drainage patterns will be altered to intercept the roof runoff as well as the parking area runoff, with the addition of stormwater management practices to treat and attenuate the flows.
- (ii) Any stormwater that flows onto adjacent lots will not exceed the pre-development flows.
- (iii) The runoff from the site into the City property will not increase from the pre-development condition.
- (iv) Not applicable.



- b. A site-specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic standards of MEDEP Chapter 500. Please refer to sections J and K, the Stormwater Management and Erosion & Sedimentation Control Plans, respectively, for more information.
- c. The project is not located in a watershed of an urban impaired stream as listed by the MEDEP.
- d. Not applicable.
- e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project will be serviced by a public wastewater system.
- f. The development will provide for adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual.

(c) Public Infrastructure and Community Safety Standards

- 1. Consistency with City Master Plans:
 - a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.
 - b. Not applicable.
- 2. Public Safety and Fire Prevention:
 - a. The site has been designed to promote safe and inviting public access.
 - b. Adequate emergency access has been provided within the parking area, emergency access lane off Winter Street, and along Winter Street, Spring Street and State Street.
 - c. One existing hydrant is located in front of the building on State Street, two existing hydrants are located on Spring Street and one existing hydrant is located on Winter Street, approximately 44 feet from the southwest property corner.
- 3. Availability and Adequate Capacity of Public Utilities:
 - a. Ability to Serve letters have been sent to the respective utility companies to determine adequate capacity for the project. Responses will be submitted upon receipt.
 - b. The electrical service will be wired underground through coordination with CMP, including relocating portions of the existing Winter Street overhead power lines to go underground along the Winter Street parcel frontage.
 - c. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual.
 - d. The project will be served by connection to the public sewer system within Winter Street, Spring Street (existing connection) and State Street (existing connection).
 - e. The sanitary sewer collection system meets all applicable sections of the Technical Manual. The stormwater management system is designed to meet the standards of Chapter 500.
 - f. Temporary storage and timely removals of all trash and recyclable materials will be provided.



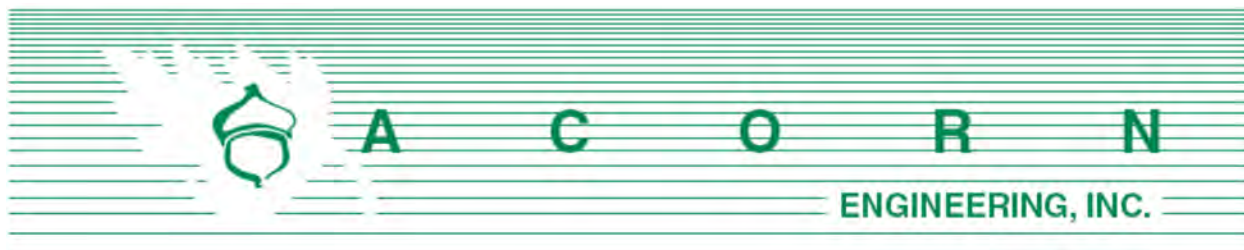
(d) Site Design Standards

1. Massing, Ventilation and Wind Impact:
 - a. See attached Section O: Architectural Design Narrative
 - b. See attached Section O: Architectural Design Narrative
 - c. See attached Section O: Architectural Design Narrative
2. Shadows:
 - a. See attached Section O: Architectural Design Narrative
3. Snow and Ice Loading:
 - a. The structures will not distribute snow and ice onto adjacent properties.
4. View Corridors:
 - a. See attached Section O: Architectural Design Narrative
5. Historic Resources:
 - a. The development is located in the West End historic district and therefore will conform to the standards set in Appendix 8 of the Portland Maine Design Manual. The building has yet to go through the historic preservation approval process.
 - b. The development is located within the West End Historic District. Development will be compatible with the character-defining elements of the district in the immediate vicinity.
 - c. There are no known archaeological resources on the site.
6. Exterior Lighting:
 - a. Site Lighting.
 - (i) Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. A photometric plan will be provided under separation cover.
 - (ii) Any lighting that may adversely impact the abutting residential properties will feature house-side shielding.
 - b. Architectural and Specialty Lighting.
 - (i) Any architectural or specialty lighting shall be designed to any specific details or attributes only and shall meet the standards of Section 12 of the Technical Manual. Final architectural or specialty light will be submitted under separate cover.



- (ii) Up-lighting for landscape features and public art shall be designed by a lighting professional and shall be scaled and placed to minimize the visibility and installed in accordance with the standards contained in Section 12 of the Technical Manual. A photometric plan will be provided under separation cover.
- c. Street Lighting.
 - (i) Streetlighting will conform to specific lighting district requirements, as specified in Section 10 of the Technical Manual. As there are existing street lights on the opposite side of the street, no additional street lights are proposed at this time.
- 7. Noise and Vibration:
 - a. The HVAC system will meet the applicable state and federal emissions requirements and will be enclosed within a roof “penthouse.” See Architectural Plans for additional information.
- 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 located in the West End Historic District.
 - (ii) See attached Section O: Architectural Design Narrative
 - (iii) All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.
- 9. Zoning Related Design Standards:
 - a. The project has been designed to meet the standards set forth in the B3 zone and West End Historic District. Please refer to the Site Plan for more information on the Space & Bulk Standards





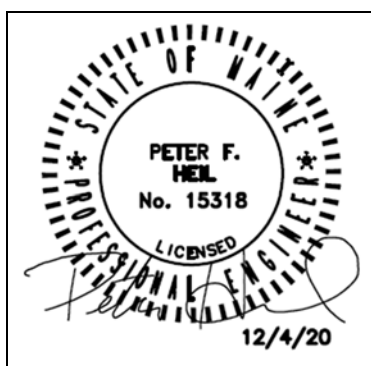
STORMWATER MANAGEMENT **REPORT**

Prepared For:

**NewHeight Redfern, LLC
217 Commercial Street, Suite 205
Portland, ME 04101**

Prepared By:

**Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104**



December 2020



INTRODUCTION

Acorn Engineering, Inc. has been retained by NewHeight Redfern, LLC to provide civil engineering services for the proposed work located at 120 and 148 State Street, Portland, ME 04101. The site is currently comprised of the existing Mercy Hospital complex, including the Morrison House, with surface parking, landscaping, and a loading dock area. The project proposes to redevelop the existing lot into a mixed-use development, consisting of redevelopment of the existing hospital building and Morrison House and proposes two (2) new residential buildings with exterior parking. The two (2) new residential buildings will be submitted under a separate Site Plan application. The existing hospital building will be redeveloped to include 167 residential units, and the Morrison House to include 8 residential units, with associated common areas, office, and fitness area, as well as self-storage, commercial/retail space, and a medical clinic.

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

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

The property consists of approximately 2.48 acres of land in Portland's West End neighborhood. The site is currently comprised of approximately 2.19 impervious area. The proposed project will decrease the impervious area by approximately 1,214 sf (0.028 acres) and includes redevelopment of non-roof impervious area greater than 5,000 sf.

EXISTING CONDITIONS

The proposed project site is located on 120 and 148 State Street, bounded by State Street, Spring Street and Winter Street. A Boundary & Topographic Survey has been prepared by Owen Haskell, Inc., dated August 4, 2020.

The existing property is covered by approximately 93% impervious surfaces including the existing Mercy Hospital, Morrison House, pavement, and concrete. The existing site has relatively flat slopes, with an approximate 13 foot retaining wall from the parking lot along Winter Street to the loading dock area off State Street.

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



PROPOSED DEVELOPMENT

The project proposes to redevelop the existing hospital building and Morrison House with future residential buildings along Winter Street with a parking lot and courtyard area in the internal area of the site. Pedestrian access to the site shall be provided off all three adjacent streets. The development will be served by Portland Water District, Department of Public Works (sewer/storm), Unitil (natural gas), CMP (electric), Charter (cable), and Fairpoint (telephone).

The proposed project will decrease the impervious area by approximately 1,214 sf (0.028 acres) and includes redevelopment of non-roof impervious area greater than 5,000 sf, which triggers the City's water quality requirement. Water quality treatment will be provided by collecting the runoff through a new storm drain system which leads to a proprietary modular wetland system prior to discharging into the combined sewer within Spring Street. The project has been designed to meet Chapter 500 General Standards.

BASIC STANDARDS – EROSION & SEDIMENT CONTROL

The development shall provide erosion and sediment control, inspection and maintenance, and housekeeping standards as specified in the attached Exhibit K: Erosion and Sediment Control Report and that the grading and construction activity will not impede or otherwise alter drainageways so as to have an unreasonable adverse impact on an adjacent downslope parcel.

GENERAL STANDARDS - WATER QUALITY

The development shall provide water quality treatment in accordance with the DEP Chapter 500 General Standards for no less than 50% of the redeveloped impervious area. Water quality treatment will be provided through the use of proprietary modular wetland system, which is an approved system per Appendix B of the Maine Stormwater BMP Manual. Filtration BMPs have been shown to be very effective at removing a wide range of pollutants from stormwater runoff.

The treatment of the impervious & disturbed areas are as follows:

Table 1 – Impervious Area Treatment Table				
Existing Impervious Area (SF)	Total Proposed Impervious Area (SF)	Redeveloped Impervious Area (SF)	Proposed Impervious Area with Treatment (SF)	Overall New Imp. Area Treated
96,680	95,446	42,427	28,862	68.0%

As shown above, the project anticipates meeting and exceeding the required treatment for 50% of the redeveloped impervious surfaces as ample stormwater treatment is being provided.



SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County

The area within and surrounding the project includes soils types listed in the table below.

Table 2 – Hydrologic Soil Group	
Soils Type	HSG
Hinkley Loamy Sand, 3-8% slopes	A

The HSG for the soils, listed above, show soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained sands, with a high rate of water transmission. Implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance to provide proper stabilization of the site.

Conclusion

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

Attachments

Attachment A: Soils Map

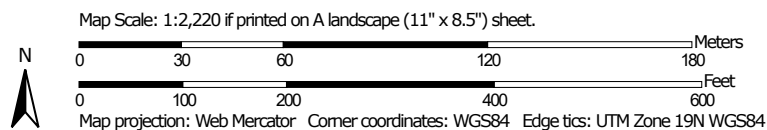
Attachment B: Redevelopment Exhibit



Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine



Soil Map may not be valid at this scale.



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey
Page 565

8/26/2020
Page 1 of 4

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 17, Jun 5, 2020

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
HIB	Hinckley loamy sand, 3 to 8 percent slopes	A	8.5	100.0%
Totals for Area of Interest			8.5	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.

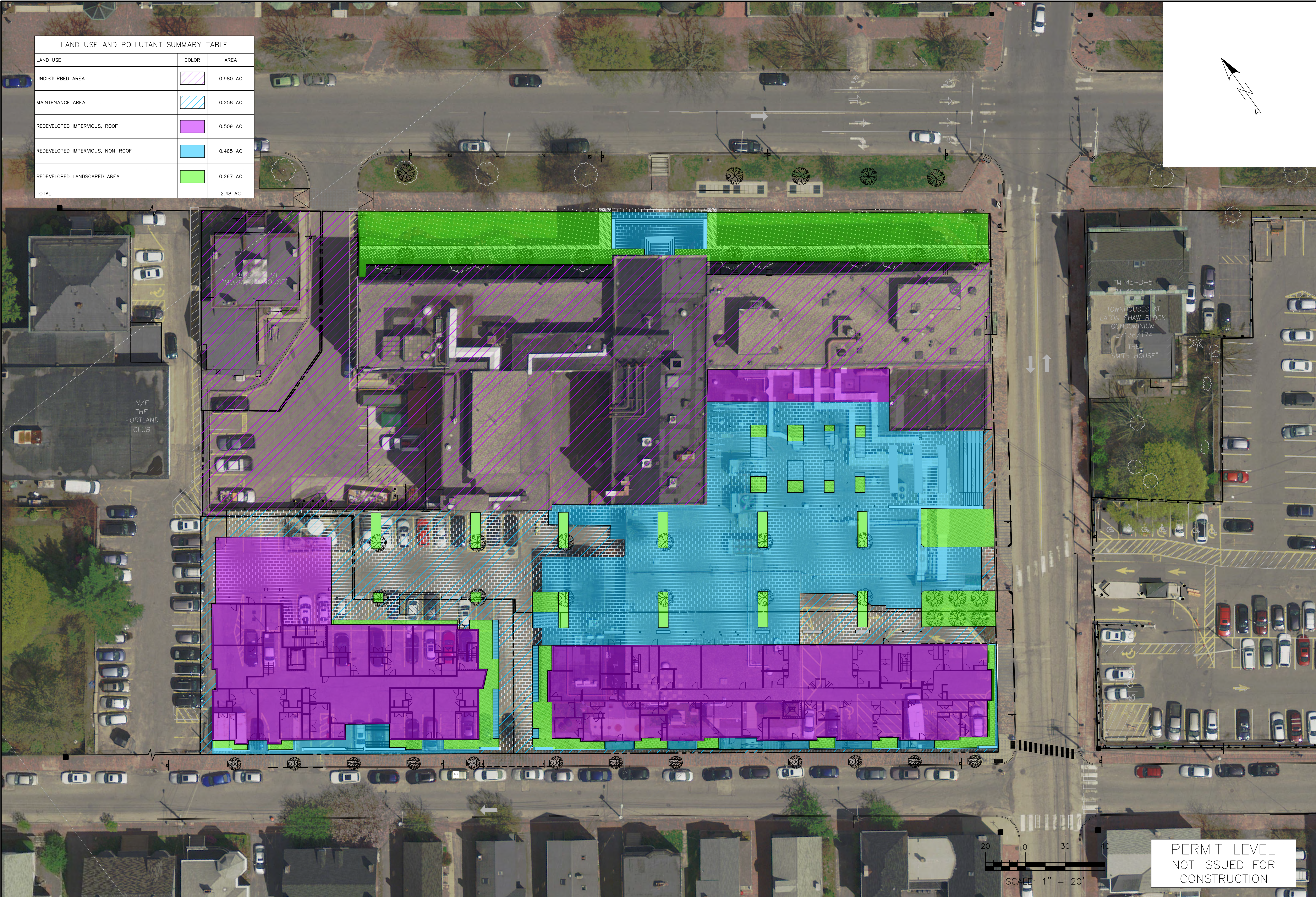
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over 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

Component Percent Cutoff: None Specified



LAND USE AND POLLUTANT SUMMARY TABLE		
LAND USE	COLOR	AREA
UNDISTURBED AREA		0.980 AC
MAINTENANCE AREA		0.258 AC
REDEVELOPED IMPERVIOUS, ROOF		0.509 AC
REDEVELOPED IMPERVIOUS, NON-ROOF		0.465 AC
REDEVELOPED LANDSCAPED AREA		0.267 AC
TOTAL		2.48 AC

ISSUED FOR
CHOM CITY REVIEW

BY
DATE
12/4/26

REDEVELOPMENT EXHIBIT

PROJECT NAME/
ADDRESS
MERCY HOSPITAL REDEVELOPMENT

CLIENT/OWNER OF RECORD
NEWHEIGHT REDFERN, LLC
217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101

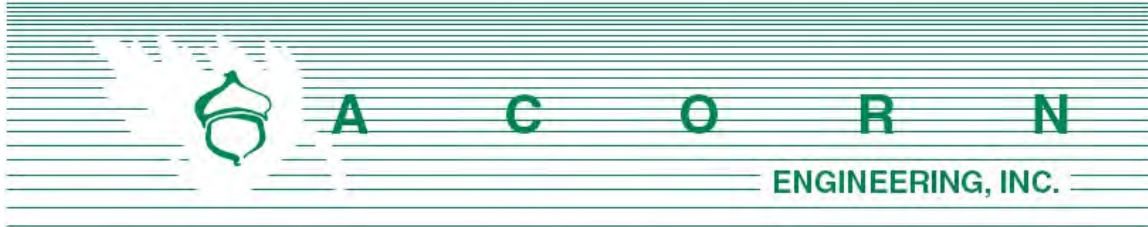
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

ENGINEERING, INC.

THIS PLAN SHALL NOT BE ASSIGNED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR UNAUTHORIZED, SHALL BE THE SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE: 1140_CIVIL
JN: 1140
SCALE: AS NOTED
DESIGNED BY: PPH
DRAWN BY: KRB
CHECKED BY: WHS

DRAWING NO.
EXHIBIT



EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

NewHeight Redfern, LLC
217 Commercial Street, Suite 205
Portland, ME 04101

Prepared By:

Acorn Engineering, Inc.
P.O. Box 3372
Portland, Maine 04104



September 2020



ACORN Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104

1.0 INTRODUCTION

Acorn Engineering, Inc. has been retained by NewHeight Redfern, LLC to provide civil engineering services for the proposed work located at 120 and 148 State Street, Portland, ME 04101. The site is currently comprised of the existing Mercy Hospital complex, including the Morrison House, with surface parking, landscaping, and a loading dock area. The project proposes to redevelop the existing lot into a mixed-use development, consisting of redevelopment of the existing hospital and Morrison House buildings and proposes two (2) new residential buildings with exterior parking. The two (2) new residential buildings will be submitted under a separate Site Plan application. The existing hospital building will be redeveloped to include 167 residential units and the Morrison House to include 8 residential units, with associated common areas, office, and fitness area, as well as self-storage, commercial/retail space, and a medical clinic.

The following Erosion and Sedimentation Control Report was developed in accordance with the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1) and the City of Portland Code of Ordinance, Chapter 14, Article V, Section 14-526, as well as the City of Portland Technical Manual. This narrative also meets the standards required in the 2016 Maine DEP's Erosion & Sediment Control BMP's Manual.

2.0 EXISTING CONDITIONS

The proposed project includes a boundary and topographic survey that has been prepared by Owen Haskell, Inc. dated August 4, 2020.

2.1 Existing Soils

Per the attached USDA NRCS Web Soil Survey, the site is mapped with Hinckley loamy sand, 3-8% slopes with a Hydrologic Soil Group A.

2.2 Existing Erosion Problems

The existing site surface is largely impervious and does not show signs of erosion within the property.

2.3 Critical Areas

There were no critical areas identified.

2.4 Protected Natural Resource

There are no known protected natural resources on site.



2.5 Previous Construction Activity (5 years)

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

2.6 Timber Harvesting

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

3.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

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

3.1 Temporary Erosion Control Measures

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

- 3.1.1 Construction activities will be performed in a manner to prevent impact to trees and shrubs within and adjacent to the property that are to remain.
- 3.1.2 Siltation fence, erosion control berm, and/or filter socks shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The sediment barrier shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.
- 3.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.



- 3.1.4 Winter Street and Spring Street shall be swept to control mud and dust as necessary.
- 3.1.5 If a silt fence is used, silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be “toed” into the ground.
- 3.1.6 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used, including in any areas where there has been site disturbance, but unworked areas > 7 days. Application rates for seeding are provided at the end of this report.
- 3.1.7 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.
- 3.1.8 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

3.2 Permanent Erosion Control Measures

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

- 3.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4” of loam, limed, fertilized, seeded, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 3.1 of this report.
- 3.2.2 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

4.0 EROSION AND SEDIMENTATION CONTROL PLAN

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

5.0 DETAILS AND SPECIFICATIONS

Erosion Control Details and Specification are included in the plan set.



6.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

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

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

The following measures shall be implemented during winter construction periods:

6.1 Sediment Barriers

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

6.2 Mulching

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

6.3 Soil Stockpiling

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



6.4 Seeding

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

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

6.5 Over winter stabilization of disturbed soils

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

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.
- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.
- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.



6.6 Over winter stabilization of disturbed slopes

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

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.
- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.



7.0 INSPECTION AND MAINTENANCE

The Contractor has a responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards. Contractor to inspect after a rainfall event, and at least monthly and shall use the City's ESC inspection form.

8.0 IMPLEMENTATION SCHEDULE

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

1. Install perimeter silt fence or erosion control berm and construction entrance.
2. Install all other erosion control devices as necessary throughout the remainder of this schedule.
3. Pave any areas that were disturbed during construction.
4. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
5. Once the site is stabilized and 90% catch of vegetation has been obtained, remove all temporary erosion control measures.
6. Touch up areas without a vigorous catch of grass with loam and seed.
7. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

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

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



9.0 CONCLUSION

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

10.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan
- Housekeeping Plan



TEMPORARY SEEDING PLAN

Site Preparation

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

Seedbed Preparation

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

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

Seeding

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

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

Mulching

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

Conclusion

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



PERMANENT SEEDING PLAN

Site Preparation

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

Seedbed Preparation

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

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

Seeding

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

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

Mulching

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

Recommendations

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

Conclusion

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



HOUSEKEEPING PLAN

The following housekeeping plan has is developed in accordance with Maine DEP Chapter 500 Stormwater Management standards. For additional information, reference Appendix C of Chapter 500.

1. **Spill prevention.** Controls must be used to prevent pollutants from construction and waste materials stored on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

NOTE: Any spill or release of toxic or hazardous substances must be reported to the Department. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at: <http://www.maine.gov/dep/spills/emergspillresp/>

2. **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. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

See Chapter 500 Appendix D for license by rule standards for infiltration of stormwater.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

3. **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, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.



NOTE: Dewatering a stream without a permit from the Department may violate state water quality standards and the *Natural Resources Protection Act*.

4. **Debris and other materials.** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Excavation de-watering.** Excavation de-watering is the removal of water from trenches, foundations, 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 removed from the ponded area, either through gravity or pumping, 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 sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.

NOTE: Dewatering controls are discussed in the “Maine Erosion and Sediment Control BMPs, Maine Department of Environmental Protection.”

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

- (a) Discharges from firefighting activity;
- (b) Fire hydrant flushings;
- (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
- (d) Dust control runoff in accordance with permit conditions and Section 3, above;
- (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;



- (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
- (g) Uncontaminated air conditioning or compressor condensate;
- (h) Uncontaminated groundwater or spring water;
- (i) Foundation or footer drain-water where flows are not contaminated;
- (j) Uncontaminated excavation dewatering (see requirements in Section 5, above);
- (k) Potable water sources including waterline flushings; and
- (l) Landscape irrigation.

7. Unauthorized non-stormwater discharges. The Department's approval under Chapter 500 does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Section 6, above. Specifically, the Department's approval does not authorize discharges of the following:

- (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
- (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
- (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
- (d) Toxic or hazardous substances from a spill or other release.

(8) Additional requirements. Additional requirements may be applied on a site-specific basis.



Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey
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8/26/2020
Page 1 of 4

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 17, Jun 5, 2020

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
HIB	Hinckley loamy sand, 3 to 8 percent slopes	A	8.5	100.0%
Totals for Area of Interest			8.5	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.

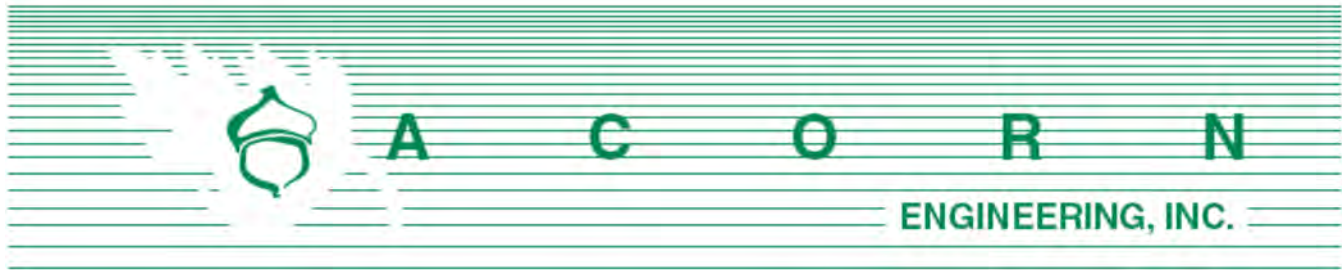
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



Chief Robert Thompson
 City of Portland Fire Department
 380 Congress St.
 Portland, ME 04101

December 4, 2020

Subject: 120 State Street (73 & 91 Winter Street)
 Mercy Redevelopment – CHOM Senior & Family Building Lots
 Fire Department Checklist

On behalf of Community Housing of Maine (CHOM), the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of Applicant:

Community Housing of Maine
 brian@chomhousing.org
 bree@chomhousing.org
 (207) 879-0347

2. Name address, telephone number of Architects:

CHOM Family
 Ryan Senatore Architecture
 Ryan Senatore
ryan@senatorearchitecture.com
 (207) 650-6414

CHOM Senior
 CWS Architects
 Maggie Stanley
mstanley@cwsarch.com
 (207) 774-4441

3. Proposed uses of any structures [NFPA and IBC classification]
 Please refer to attached code review

4. Square footage of all structures

The existing parking lot, landscaping & brick patio area are to be removed to facilitate the proposed structures with the following floor areas:

CHOM Family		
1 st Floor	10,418	sf
2 nd -4 th Floor	10,593	sf
Total	42,197	sf

CHOM Senior		
1 st Floor	8,015	sf
2 nd -4 th Floor	10,295	sf
5 th Floor	7,100	sf
Total	46,000	sf

5. Elevation of all structures

Based upon the average grade plane defined by the IBC, the CHOM Family building will be 45 feet and the CHOM Senior building will be 53 feet at the maximum height. For additional information, please refer to the building elevations provided by the Architects.

6. Proposed fire protection of all structures

The building shall have NFPA 13 fire protection system (wet) and standpipes in the stairwells to comply with NFPA 14 and Local Authority.

7. Hydrant locations

One existing hydrant is located in front of the building on State Street, two existing hydrants are located on Spring Street and one existing hydrant is located on Winter Street, approximately 44 feet from the southwest property corner. Once received, hydrant flow data from the Portland Water District may be made available to the Fire Department upon request.

8. Water main size and location

There are existing mains located on Winter Street, Spring Street, and State Street. The two (2) new residential buildings (Buildings A-1 and A-2) along Winter Street are proposing to tap two different 6" fire water service lines and two different 2" domestic water service lines for a total of four different connections off of the existing main on Winter Street.

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

Access to the proposed structure is provided directly on the northeast along State Street, southeast along Spring Street and southwest within the proposed parking area.

10. The Architect has provided code summaries (attached).



NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The portion of the parcel to be developed has frontage along both State Street, Spring Street and Winter Street, with the following public street widths available:

- State Street (Northeast): 99 feet
- Spring Street (Southeast): 50 feet
- Winter Street (Southwest): 40 feet

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

City of Portland Technical Manual – Section 3 Public Safety

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

Response: Not applicable, the proposed parking area will have two-way access off Spring Street, with an emergency access lane accessed from Winter Street. The fire access lane shall have a minimum clear width of 16 ft without obstructions. The fire access lane has been designed to allow a ladder truck to circulate from Winter Street into the interior parking drive aisle and vice versa. The curb along Winter Street will be an angled mountable curb as used elsewhere throughout the City.

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

Response: As outlined in #9 above, the parcel's geometry allows for at least two sides of access along public streets (State Street and Spring Street), as well as access to the other two side of the building within the parking and loading dock areas. In addition, the building has an existing a sprinkler system.

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

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

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



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

Response: The existing buildings have exterior doors within 50' of a Fire Department access route, along both State Street and Spring Street. Access is also provided from the parking lot and loading dock areas.

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

Response: There are no proposed overhead obstructions between the street and proposed building, meeting the required 9-foot clearance height minimum.

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

Response: See Section O: Architectural Design Narrative

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

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

Thank you for your review. Please let me know if you have any additional questions or comments.

Sincerely,



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



Code Review					11/13/2020
CHOM Family Residences, Winter Street, Portland, Maine					
		IBC 2015		NFPA 101 2009	
4 floors above grade	502.1				
Sprinklers		NFPA 13R		NFPA 13R	
Fire Alarm		Monitored Fire Alarm Required		Monitored Fire Alarm Required	
Smoke and CO Detectors		Smoke and CO detectors required		Smoke and CO detectors required	
Deferred and Design/Build Submittals will include: Emergency Lighting, Sprinklers, Fire Alarms, Standpipes, CO and Smoke Detectors.					
Occupant Load	T 1004.1.1			7.3.1.2	
		Floor 1 = 9443 sf Residential (200 gsf/oc) = 48		Floor 1 = 9443 sf Residential (200 gsf/oc) = 48	
		Floor 1 = 1120 sf Community room (15gsf/oc) = 75		Floor 1 = 1120 sf Community room (15gsf/oc) = 75	
		Floor 2 = 10,563 sf Residential (200 gsf/oc) = 53		Floor 2 = 10,563 sf Residential (200 gsf/oc) = 53	
		Floor 3 = 10,563 sf Residential (200 gsf/oc) = 53		Floor 3 = 10,563 sf Residential (200 gsf/oc) = 53	
		Floor 4 = 10,563 sf Residential (200 gsf/oc) = 53		Floor 4 = 10,563 sf Residential (200 gsf/oc) = 53	
		Total Building Occupant Load = 282		Total Building Occupant Load = 282	
Use Group(s)					
	310.1	Apartments (R2)		30.1	Apartment Building
Constr. Type	T 503	5A - non-combustible protected			V (111) combustible protected
Building Height	T 504.3	Sprinkler NFPA13R = 60' max.			
Number of Stories	T 504.4	R2 = 4 Stories with sprinkler			

Building Area		T 506.2	Sprinkler 13R = 12,000 sf max per floor			
Building Elements 1A		T 601	1 hr Structural Frame	30.1.6	Apartments -No Minimum Construction requirements	
		T 602	0 hr Bearing Walls Exterior (sep. dist $\geq 30'$)			
		T 602	1 hr Bearing Walls Exterior (sep. dist $< 30'$)			
		T 601	1 hr Bearing Walls Interior			
		T 601	0 hr Non-Bearing Walls Interior			
		T 602	0hr Non-Bearing Walls Exterior (sep. dist $\geq 30'$)			
		T 602	1 hr Non-Bearing Walls Exterior (sep. dist $< 10'$)			
		705.5	Exterior Wall with $> 10'$ sep. needs rating only from inside			
		T 601	1 hr Floor Construction			
		T 601	1 hr Roof Construction			
		705.5	Exterior Wall with $> 10'$ sep. needs rating only from inside			
Separations						
		708	2 hr Mechanical Shaft > 4 stories			
		1022.1	2 hr Stair Shaft > 4 stories			
		709.1	1 hr Between Dwelling Units	30.3.7.2	1/2 hr vertical and horizontal sep. between dwellings	
		1018.1	1/2 hr Corridor	30.2.4.4.7	1 hr corridor	
		508.2.5	1 hr Boiler Room	T 31.3.2.1.1	0 hr Boiler Room w/sprinklers	
		508.2.5	1 hr Trash Room	T 31.3.2.1.1	0 hr Trash Room w/sprinklers	
		508.2.5	1 hr Storage Room	T 31.3.2.1.1	1 hr Storage Room w/sprinklers	
		508.2.5	1 hr Laundry Room	T 31.3.2.1.1	0 hr Laundry Room w/sprinklers	
		715.4	90 minute Stairwell Doors (2hr shaft)			
		715.4	20 minute Apartment Entry Doors (1/2 hr corridor wall)	30.3.6.2.1	20 minute Apartment Entry Doors	
Distances and Exits						
		1017.2	250' Travel Distance to exits with Sprinklers	30.2.6.2.3	200' Travel distance from apt. door to exit	
		1006.2.1	125' Common Path of Travel for R use	30.2.5.3.2	50' Common Path of Travel	
		1020.4	50' Dead End	30.2.5.4	50' Dead End	
				30.2.6.1.2	125' Travel Distance within Dwelling to Corridor	

		1009.2.1	Elevator as Means of Egress - Not required as building is not			
			4 stories ABOVE the level of exit discharge			
Unprotected Openings	T 705.8	15% when exterior wall sep. dist. is 3'>5'				
	T 705.8	25% when exterior wall sep. dist. is 5'>10'				
	T 705.8	45% when exterior wall sep. dist. is 10'>15'				
	T 705.8	75% when exterior wall sep. dist. is 15'>20'				
	T 705.8	Unlimited when exterior wall sep. dist. is 25'>30'				
	T 705.8	Unlimited when exterior wall sep. dist. is >30'				
Parapets	705.11 (ex 6)	Parapets are NOT required when the wall is allowed 25% or more				
		Unprotected openings				
Egress Windows	1030.1	NOT Required at the building has two means of egress				
Elevator Lobbies	3006.2	NOT required as building is not a High-rise and is sprinkled				
Egress Stairs	1009.1	Occ. Load >50 = 44" min width				
	1003.3	Handrails can protrude into stair 4.5" max	7.2.2.2.1.2	Handrails can protrude into stair 4.5" max		
	1005.2	Door Swings may not reduce egress width by > 1/2				
	1009.2	80" min headroom	7.2.2.2.1.1(a)	6'-8" min. headroom		
	1009.3	7" max. riser	7.2.2.2.1.1(a)	8" max. riser		
	1009.3	11" min Tread depth	7.2.2.2.1.1(a)	9" min. tread		
	1009.6	12' max. total rise between floors or landings	7.2.2.2.1.1(a)	12' max. height between landings		
Ramps	1010.2	1:12 (8%) Max slope	7.2.5.2(a)	1:8 max. slope		
	1010.6	60" long landings at top and bottom				
	1010.6	2% max slope of landings	7.2.5.2(a)	1:48 max. cross slope		
	1010.8	>6" rise must have handrails on both sides of ramp				
Egress Corridors	1018.2	44" min. when Occ. > 50				
	1018.2	24" min. at service corridors to mechanical equipment				
Sound	1207.2	STC > 50 at walls and floors/ceilings				

			1207.3	IIC > 50 at walls and floors/ceilings		
Energy IECC 2009		T 402.1.1		0.35 Fenestration U-Factor		
Zone 6				R-49 Ceiling		
Residential				R-20 or 13+5c Framed wall		
				R-30 Floor		
				R-19 or 15c Basement wall		
				R-10 to 4ft Slab		
Accessibility			IBC 2015 Chapter 11 - 2% of units to be ANSI TYPE-A, rest are TYPE-B			
			Fair Housing Act Applies			
			Maine Human Rights Act Applies			

CHOM Winter St Senior Apartments					CWS Architects
Portland, ME					4-Dec-20
Code Analysis					
	IBC 2015		NFPA 101 - 2018		
Category	Reference	Code Requirements	Reference	Code Requirements	Proposed
Special Provisions	510.2	Horizontal Building Separation Allowance			
		Type 1A Construction below 3 HR Horizontal Assembly with 2 hour shafts and stairs, 5 Level Type 5A Construction allowed above			First Floor Podium: Provide 3H Fire Proofing of Primary Structural Frame and 3H Rated Assembly separating first level from the Type 5A building above. Upper 5 Floors: Provide 1&2 HR Rating of Exterior Bearing Walls via membrane protection
Use Group	310.4	R-2 Apartments	6.1.8.1.5	Residential - New Apartment Building, Re: 30.1.1.2	57 Apartments
	303.4	A-3 Assembly (Separated)	6.1.2	Assembly	1 Hour Separated Occupancy
	311.3	S-2 Parking Garage (Separated)	6.1.13	Parking	1 Hour Separated Occupancy
Building Construction	Table 601				
	Ground Level	Type 1A - Non-Combustible Protected		Type 1 (332)	Protected Steel Frame & Concrete Deck
	Upper Five Levels	Type 5A - Combustible Protected		Type V (111)	New Protected Wood Frame structure
Height & Area Limitations					
Max allowable height	Tables 504.3/504.4	1+4 Stories (Section 510.2) / 70' above 3-hour second floor deck			48'-6" Above rated floor deck 62'-11" Above grade plane
Max allowable area	Table 506.2	36,000 SF (VA, R-2, SM)			6402 SF 5th 10030 SF 4th
Frontage Increase		57% frontage = 32% increase (15,360)			10030 SF 3rd 10030 SF 2nd 7725 SF ground
		51,360 Total			44,217 SF total
IBC Stories					5
IBC Stories above grade plane	Story Above Grade Plane is defined by IBC as any story having its finished floor entirely above the grade plane or in which the finished surface of the floor next above is more than 6' above grade plane or more than 12' above the finished ground level at any point.				5
	1002/202 - Level of Exit Discharge is defined by IBC as the story at the point at which an exit terminates and exit discharge begins.				Ground floor discharge
NFPA Stories	Story is defined by NFPA as the portion of a building located <i>between</i> the upper surface of a floor and the upper surface of the floor or roof next above.				5
NFPA Stories in Height	Stories in Height is defined by NFPA the story count starting with the level of exit discharge and ending with the highest Level of exit discharge is defined by NFPA as the story that is either (1) the lowest story from which not less than 50				5
					Ground floor discharge
Fire Ratings	508.3/508.4	Separated occupancies: Assembly Use (A-3); Retail Space (M); Parking (S-2) 1-Hour	6.1.14.4	Separated Occupancy: Apartment Building (6.1.8.1.5); Mercantile (6.1.10); Storage Occupancy (6.1.13)	1 Hour Separation
			6.1.14.1.3	Small assembly use permitted non-separated from Residential Occupancy	
	Table 601 and 602	Fire Resistance Rating Requirements for Building Elements: See IBC Code Calculations	8.2.1.2	Fire Resistance Ratings for Type 1 (332) and Type V (111) Construction (hours)	Exterior bearing walls on south, west and north sides rated from inside only per IBC 705.5. Exterior non-bearing walls on east side rated on both inside and exterior side per IBC Table 602 and Fire Separation Distance between 5-10'
	705.5	Fire resistance Ratings - rated for exposure from interior only if Fire Separation Distance is greater than 10' and both sides if less than 10'			Both conditions exist: Assemblies shall be rated as required.
	Table 1020.1	Exit access corridors - 1/2 hour fire partitions (with sprinkler system)	30.3.6.1.2	Exit access corridors - 1/2 hour	1/2 hour (1 hour protected wood frame provided)
			30.3.6.2	Exit access corridor doors - 20-minute self-closing & latching	20 minute doors, spring hinges
			30.2.2.1.2	Exit Enclosures: 1 Hour (Sprinklered)	1 hour
	1023.2	Fire Enclosure of 6 story Vertical Exit Enclosures - 2 hour fire barriers	30.3.1.1.4/ 7.1.3.2.1 / 30.2.2.1.2	Vertical Exit Enclosures: 1 Hour (Sprinklered)	2 hour
	713.4	6 story Shafts & Elevator Hoistways - 2 hr			2 hour

	708.3	Dwelling Unit Separation Walls 1/2 hour (sprinklered)	30.3.7.2	Dwelling Unit Separation Walls - 1/2 hour	1 hour
	711.2.4.3	Dwelling Unit Separation Floor/Ceiling 1/2 hour (sprinklered)	30.3.7.2	Dwelling Unit Separation Floors - 1/2 hour	1 hour
	Table 509	Boiler Rooms over 10 HP - 1 hour or automatic fire extinguishing	T 30.3.2.1.1	Boiler Rooms - 1 Hour and sprinkler	1 Hour and Sprinklered
	Table 509	Laundry Rooms over 100 s.f. - 1 hour or automatic fire extinguishing	T 30.3.2.1.1	Laundries over 100 s.f. - 1 hour and sprinklers with smoke partitions	1 Hour and Sprinklered
			T 30.3.2.1.1	Storage rooms outside of dwelling units - 1 hour or sprinklers with smoke partitions	Sprinklered
	Table 509	Waste Collection Rooms over 100 s.f. - 1 hour or automatic fire extinguishing	T 30.3.2.1.1	Trash collection rooms* - 1 hour and sprinklers	1 Hour and Sprinklered
				*Trash collection room is included in parking area	
Opening Protectives	Table 716.5	2 hour rated fire barriers - 90 min.			90 min
	Table 716.5	1 hour rated fire barriers - 60 min.			60 min.
	Table 716.5	2 Hour Shafts & Exits - 90 min.			90 min.
	Table 716.5	1 Hour Shafts & Exits (Barriers) 60 min.			60 min.
	Table 716.5	1 hour rated Exit access corridors (fire partitions) - 20 min.			20 min.
	Table 716.5	1/2 hour rated Exit access corridors (fire partitions) - 20 min.	30.3.6.2	Exit access corridor doors - 20-minute self-closing & latching	20 min.
	Table 716.5	Other 1 Hour Partitions - 45 min.			45 min.
Allowable area of unprotected openings	Table 705.8				
		Between 5-10' - Unprotected 10% Max, Protected 25% Max			
		* NFPA 13 Sprinkler System Required			
		Between 10-15' - Unprotected 15% Max, Protected 45% Max			
		Between 10-15' - Unprotected 15% Max, Protected 45% Max			
		Between 15-20' - Unprotected 25% Max, Protected 75% Max			
Fire Rated Vision Panels	Table 716.5	20 min. opening = Max Tested			As required
	Table 716.5	3/4 hour opening = Max Tested			As required
	Table 716.5	1 hour opening = 100 sq in			
	Table 716.5	1-1/2 hour opening = 100 sq in			As required
Interior Flame Spread Index	Table 803.11	Required vertical exits and passageways - C	30.3.3.2	In exit enclosures - Class A	As required
	Table 803.11	Corridors providing exit access - C	30.3.3.2	Lobbies and corridors - Class A or B	As required
	Table 803.11	Rooms or enclosed spaces - C	30.3.3.2	Other Spaces - Class A, B or C	As required
			30.3.3.3	Exit enclosures and corridor floors - Class I or II	As required
Occupant Load	T 1004.1.2	Residential Occupancy = 1/200 GSF	T7.3.1.2	Residential Apartment occupant load = 1/200 SF	
	T 1004.1.2	Accessory storage areas, mechanical equipment room = 1/300 GSF	T7.3.1.2	Storage areas, mechanical equipment rooms = 1/500 GSF	
	T 1004.1.2	Assembly, unconcentrated = 1/15 NSF	T7.3.1.2	Assembly, Less Concentrated = 1/15 NSF	
	T 1004.1.2	Parking Garages = 1/200 GSF	T7.3.1.2	Storage occupancies = 1/500 GSF	
	T 1004.1.2	Mercantile areas = 1/60 GSF	T7.3.1.2	Mercantile areas = 30/150/300 depending on usage	
	Assembly	1st Floor Community Room 624/15 = 42		1st Floor Community Room 624/15 = 42	
	Assembly	5th Floor Exterior Patio 340/15 = 23		5th Floor Exterior Patio 340/15 = 23	
	Office	1st Floor Office 183/100 = 2		1st Floor Office 183/100 = 2	
	Storage	1st Floor Waste Mgt 227/300 = 1		1st Floor Waste mgt 227/500 = 1	
	Storage	1st Floor Bike Storage 261/300 = 1		1st Floor Bike storage 261/500 = 1	
	Storage	1st Floor Closet 38/300 = 1		1st Floor Closet 38/500 = 1	
	Residential	1st floor 3804 SF / 200 = 19		1st floor 3804 / 200 = 19	
	Residential	2nd floor 7634 SF / 200 = 39		2nd floor 7634 / 200 = 39	
	Residential	3rd floor 7634 SF / 200 = 39		3rd floor 7634 / 200 = 39	
	Residential	4th floor 7634 SF / 200 = 39		4th floor 7634 / 200 = 39	
	Residential	5th Floor 4042 SF / 200 = 21		5th Floor 4042 SF / 200 = 21	
	Mechanical	1st Floor mechanical rm 473/ 300 = 2		1st Floor mechanical rm 473/500 = 1	
		Total Building Occupancy = 229		Total Building Occupancy = 228	
Means of Egress	1006				
	1009	2 Accessible Means of Egress Required			(1) Stair (1) Elevator
	T 1020.2	Egress width per occupant @ stairways = 0.3" x 39 = 12"	T7.3.3.1	Egress width per occupant @ stairways = 0.3" x 39 = 12"	(2) two stairs @ 50.5" = 101"
	T 1005.3.2	Egress width capacity per occupant @ doors and corridors = .15 x 89 (max) = 13.35"	T7.3.3.1	Egress width capacity = 0.2" per occupant @ level components & ramps .2 x 89(max) = 17.8"	(Typ.) 36" Doors = 34" net clear opening. And 57.75 Egress corridor width
	1010.1.1	Minimum door opening width = 32"	7.2.1.2.4	Minimum door opening width = 32"	36"
	T 1017.2	Length of travel distance < 250' (sprinklered)	30.2.6.4	Max travel from non-unit areas to exit = 250' (sprinklered)	60'-0"
	1020.4	Dead ends < 50' w/ NFPA 13	30.2.5.4.2	Dead ends = 50' max (sprinklered)	33'-0"
	1016.2.1	Common path of travel < 75'	30.2.5.3.2	Common path of travel = 50' max. (sprinklered)	42'-0"
	T 1020.2	Minimum corridor width = 44"	7.3.4.1	Minimum corridor width = 36"	57.75" corridor
	T 1006.3.1	Number of exits <500 occupants = 2	30.2.4	Minimum number of exits = 2	2 Min.
			30.2.6.2	Max travel within unit = 125'	35'-0"
			30.2.6.3.2	Max travel from unit entrance to exit = 200' (Sprinklered)	72'
	1013.1 (exc.	Exit Signs are required except at main	7.10.1.2	Exit Signs are required except at obvious main	Provided

Emergency Lighting	1013.1 (exc. #2)	Exit Signs are required except at approved main exterior exit doors	7.10.1.2	Exit Signs are required except at obvious main exterior exit doors	Provided
	1008	Emergency lighting is required except in dwelling units	30.2.9	Emergency lighting is required	Provided
Fire Suppression Systems	903.2.8	Sprinkler Required: 13,13R or 13D	30.3.5.1	NFPA 13 Sprinklers Required	NFPA 13 Provided
Standpipes	905.3.1	Standpipe Required: Class I Standpipe Permitted (vs. Class III)			Class III Standpipe Provided
	905.4	Hose connections shall be provided in every required exit stairway			
Fire Alarm Systems	907.2.7	Fire Alarm System is Not Required in Mercantile Use <500 persons			
	907.2.9	Full Fire Alarm System is Required S-2: No Fire Alarm Requirements	30.3.4.1.1	Full Fire Alarm System Required	Provided
Smoke Detectors	907.2.11.2	Smoke Detectors Required in units	30.3.4.5	Required in and outside every sleeping area	Provided
Extinguishment requirements	906	Portable fire extinguishers shall be installed as per NFPA 10	30.3.5.13	Not Required	Provided
Elevators	Section	Summary Discription			
Construction	713	Constructed per 703.2.1: 2 Hour if 4 stories or more			
Lobby	3006 (Formerly 708.14)	Elevator Lobby separation from corridor not required per 3006.2			
	Table 716.5	2 Hour Shaft Openings: 1 1/2 Hour			
Means of Egress	1003.7	Elevators may be used as a Means of Egress in accordance with 1009.4			
Accessibility	1009.1	Accessible means of egress required from all accessible spaces.			
	1009.2.1	Four or more stories above a level of exit discharge, at least one accessible means of egress shall be an elevator per 1007.4			
	1009.3	One stair is used as an Accessible Means of Egress (Stair B)			
Car Size	3002.4	Ambulance Stretcher sizing required.			
Standby Power	1009.4	Standby Power is Required because building height and Elevator is used as one Accessible Means of Egress.			
Fire Service	3007 / 403.6.1	Not Required			
Emergency Operations	3003.2	Phase I Recall and Phase II in-car operation required			

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
212 Canco Road
Portland, Maine 04103



Bradley Roland, P.E.
Water Resources Division
Department of Public Works
212 Canco Road
Portland, ME 04103

Date: _____

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

Site Address: 120 State Street (73 & 91 Winter Street)

Chart Block Lot Number: 45/C/7

Proposed Use: Residential

Previous Use: N/A

Existing Sanitary Flows: 0 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

Winter Street (12" Brick combined)

Site Category | Commercial (see part 4 below)
Industrial (complete part 5 below)
Governmental
Residential
Other (specify)

☐
☐
☐
☒
☐

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

2. Please, Submit Contact Information.

City Planner's Name: Caitlin Cameron Phone: 207-874-8901

Owner/Developer Name: Community Housing of Maine

Owner/Developer Address: 1 City Center, 4th Floor, Portland, ME 04101

Phone: 207-879-0347 Fax: _____ E-mail: brian@chimhousing.org

Engineering Consultant Name: Acorn Engineering

Engineering Consultant Address: 65 Hanover Street, Portland, ME 04010

Phone: 207-775-2655 Fax: _____ E-mail: pheil@acorn-engineering.com

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 14,130* GPD

Peaking Factor/ Peak Times: Diurnal

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)

Handbook of Subsurface Wastewater Disposal in Maine

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.

*Flows included as part of the separate recently submitted Mercy redevelopment Level III Site Plan application

CHOM Senior: (58) 1-bedroom units x 120 gpd/unit = 6,960 gpd

CHOM Family: ((17) 1-bdrm x 120 gpd/unit) + ((15) 2-bdrm x 180 gpd/unit) + ((9) 3-bdrm x 270 gpd/unit) = 7,170 gpd

Total: 6,960 gpd + 7,170 gpd = 14,130 gpd

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A
Size of External Grease Interceptor: _____
Retention Time: _____
Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

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.



Date: Jul 9, 2021

Att. N

Swaney Lighting
PO Box 1597
Scarborough ME 04070
Phone: (207) 883-7100
Fax: (207) 885-9606

Job Name
MERCY HOSPITAL SITE LIGHTING
SLA20-47120
PORTLAND ME

Bid Date
Dec 8, 2020

Submittal Date
Jul 9, 2021



Transmittal

Swaney Lighting

PO Box 1597

Scarborough ME 04070

Phone: (207) 883-7100

From: Therese "TC" Freeman X-103

Project MERCY HOSPITAL SITE LIGHTING**Quote#** SLA20-47120**Location** PORTLAND ME

Contact:

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- | | | |
|-----------------------------------|--|--------|
| ☐ Drawings | ☐ Specifications | Other: |
| ☐ Prints | ☐ Information | |
| ☐ Plans | ☒ Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| ☐ Prior Approval | ☐ Resubmittal for Approval | ☐ Record |
| ☒ Approval | ☐ Corrections | Bids due on: |
| ☐ Approval as Submitted | ☐ Your Use | Other: |
| ☐ Approval as Noted | ☐ Review and Comment | |

Type	MFG	Part
B2	KIM	SL1/18L3KUV/**
	Item Note:	SPECIFY FINISH
DL	PRESCOLITE	LTR-4RD-H-SL06L-DM1 / LTR-4RD-T-SL35K8WD-S
K4	Architectural Area Lighting	K51-T4-MO-9030-WIRED120-277V-PS520-188-**
	Item Note:	SPECIFY FINISH
TL	KIM	C24F3/9L4KUV
	Item Note:	SPECIFY FINISH
SL	KIM	EL807/9L4KUV/**
	Item Note:	SPECIFY FINISH
W1	KIM	WDS/D/24L-30/3K7/3/UNV/**
	Item Note:	SPECIFY FINISH
W2	Hubbell Outdoor	LNC-7LU-3K-2**
	Item Note:	SPECIFY FINISH


SL1 LED

Site Lightforms

revision 3/30/21 • kl_sl1led_spec.pd

Type:**Job:****Catalog number:****Approvals:****SL1**

Fixture

/

Electrical Module

/

Finish

/

Options

See page 2

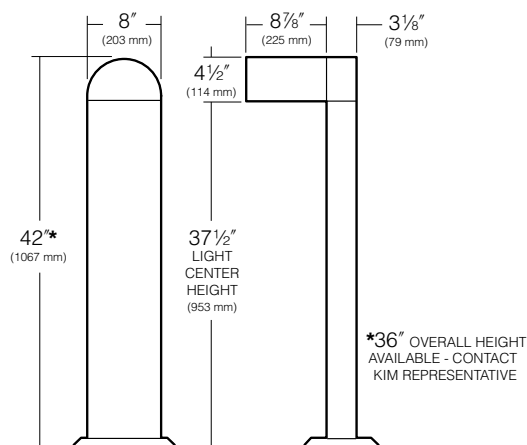
See page 3

Date:**Page: 1 of 4**

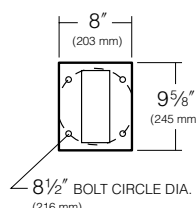
Specifications

SL1 LED

Maximum weight: 37 lb



BASE PLAN SL1


HUBBELL
 Lighting

Head: One-piece cast, low-copper (<0.6% Cu) aluminum, 3/16" wall thickness with external reveal unifying head and shaft. Attachment to shaft is by four bolts concealed within the head.

Shaft: One-piece extruded aluminum with internal tracks for attaching head and base.

Base: One-piece cast, low-copper (<0.6% Cu) aluminum secured to shaft by four concealed stainless steel bolts.

Lens: Clear flat 1/8" thick tempered glass retained by two stainless steel brackets, and four stainless steel, hex socket cap screws, fully gasketed.

LED Optical System: A total of 27 mid power LED emitters configured in a rectangular array comprised together as a module. Two (2) modules for 18 version and four (4) modules for 36 version. Available in 580nm Amber, 3000K, 4200K and 5100K color temperatures.

LED Driver: Universal voltage from 120 to 277V with a $\pm 10\%$ tolerance. -40°F starting temperature. All drivers are Underwriters Laboratories recognized.

Anchor Bolts: Four 3/8" x 10" + 2" zinc plated L-hooks complete with leveling nuts, washers, couplings, rigid pressed board template and black stainless steel bolts.

Finish: Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.

Listed to: UL 1598 Standard for Luminaires - UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products and CSA C22.2#250.0 Luminaires. RoHS compliant. Meets Buy American provisions within ARRA.

Warranty: For full warranty see <http://www.hubbellighting.com/resources/warranty>.

CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

KIM LIGHTING RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.



Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:

SL1/18L3KUV/**

Notes: SPECIFY FINISH

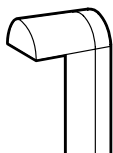
Type:**B2**

SLA20-47120

KIMLIGHTING®**SL1 LED**

Site Lightforms

revision 3/30/21 • kl_sl1led_spec.pd

Type:**Job:****Page: 2 of 4****Standard Features****Fixture**Cat. No. **SL1 Site Lightforms****Electrical Module****LED** = Light Emitting Diode

Cat. Nos. for LED Electrical Modules available:

xL**Source:**

- ☐ **18L** = 18 version
☐ **36L** = 36 version

xK**Color Temperature:**

- ☐ 2K = 580nm - Amber
☐ **3K = 3000K**
☐ 4K = 4000K
☐ 5K = 5000K

UV**Voltage:**

- ☐ **UV Universal Voltage**
 shall range from
120V-277V

Finish

TGIC powder coat paint

Specify Std. finish

Cat. No.: Color:

- ☐ **BLS** Black Gloss Smooth
☐ **BLT** Black Matte Textured
☐ **DBS** Dark Bronze Gloss Smooth
☐ **DBT** Dark Bronze Matte Textured
☐ **GTT** Graphic Matte Textured
☐ **LGS** Light Grey Gloss Smooth

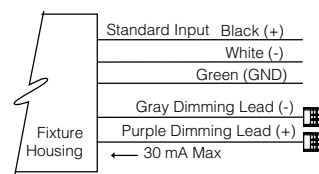
Cat. No.: Color:

- ☐ **LGT** Light Grey Matte Textured
☐ **PSS** Platinum Silver Gloss Smooth
☐ **VGT** Verde Green Matte Textured
☐ **WHS** White Gloss Smooth
☐ **WHT** White Matte Textured
☐ **CC**² Custom Color

² Custom colors subject to additional charges, minimum quantities and extended lead times.

0-10V Dimming Interface

Driver has a 0-10V dimming interface with a dimming range of 10-100%. Is compatible with most control systems. Note: Not compatible with current sourcing dimmers. Controls compatible via Gray and Purple dimming lead.





Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:

SL1/18L3KUV/**

Notes: SPECIFY FINISH

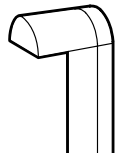
Type:**B2**

SLA20-47120

KIMLIGHTING®**SL1 LED**

Site Lightforms

revision 3/30/21 • kl_sl1led_spec.pd

Type:**Job:****Page: 3 of 4****Optional Features****Battery Back-up**

Cat. No. ☐ **EM**
☐ **No Option**

Internal battery pack provides 90 minutes of supplemental light at 25% of initial lamp lumens.



battery back-up

Optional Duplex Receptacle

Cat. No. ☐ **DR**
☐ **DR-GFI**
☐ **No Option**

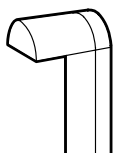
Mounted 18" from bottom of shaft with a gasketed While-In-Use cover with locking tab. Painted to match bollard.

DR weather proof duplex receptacle rated 20A, 125V.**DR-GFI** weather proof duplex receptacle with ground fault circuit interrupter rated 20A, 125V.

**SL1 LED**

Site Lightforms

revision 3/30/21 • kl_sl1led_spec.pd

Type:**Job:****Page: 4 of 4****Lumen Data****Electrical Drive Current**

450mA					
18 Version			36 Version		
Volts - AC	Amps - AC	System Watts	Volts - AC	Amps - AC	System Watts
120	0.22	26	120	0.48	56
208	0.13	26	208	0.27	56
240	0.11	26	240	0.24	56
277	0.09	26	277	0.21	56

B.U.G. Rating for 450mA (TM15) in Lumens where B = Backlight, U = Uplight, G = Glare

Temperature	18 VERSION	36 VERSION
3000K	B1 U0 G1	B2 U0 G1
4000K	B1 U0 G1	B2 U0 G1
5000K	B1 U0 G1	B2 U0 G1

Absolute Lumens for 450mA

Temperature	18 VERSION	36 VERSION
3000K	2448	5058
4000K	2511	5188
5000K	2540	5247

LED performance and lumen output continues to improve at a rapid pace. Log onto www.kimlighting.com to download the most current photometric files from Kim Lighting's IES File Library. For custom optics and color temperature configurations, contact factory.



LTR-4RD

LITEISTRY 4" ROUND DOWNLIGHT

FEATURES

- 4" architectural LED downlight delivering 600 – 4000 lm
- Five beam distributions from 0.3 to 1.2 Spacing Criteria
- Quiet reflector appearance with superior 50° optical cutoff
- 2700K – 5000K, 80+ and 90+ CRI options
- Available for New Construction (non-IC), IC and Chicago Plenum applications
- Variety of dimming protocol options including 0–10V, DALI, DMX, Lutron Forward Phase and EcoSystem
- NX Distributed Intelligence™ wired and wireless controls capability available



CONTROL TECHNOLOGY



SPECIFICATIONS

CONSTRUCTION

- Standard Non-IC, Chicago Plenum and IC options
- Painted black durable steel platform with pre-installed bar hangers
- Pre-wired junction box with snap-on covers for easy access
- Snap-in connection from driver compartment allows easy installation
- Light Engine connections use plenum rated (CMP) cable

OPTICS

- Visually pleasing 50° cutoff to source and source image
- The light distribution is free of distracting bright spots or pixelation and the perimeter has a smooth transition
- Optical grade silicone lens integral to light engine
- High purity spun aluminum reflector, self-flanged
- Flush Mount flange option with mud-in ring available
- Large selection of anodized finishes and colors
- Painted cones and flange options available

ELECTRICAL

- Chip-on-board LED with 2 SDCM
- Multiple CCTs, 80+ or 90+ CRI
- Long LED life: L90 at >55,000 hours (TM-21)
- Universal voltage 120V–277V driver, 347V optional
- UL Class 2, inherent short circuit and overload protection, RoHS compliant
- Flicker free 0-10V dimming with 1% or <1% performance
- DALI, DMX, and Lutron Forward Phase and EcoSystem options
- Integral and remote emergency controller and battery pack options available
- NX or Lutron Vive control options available
- Refer to additional spec sheets for information on [SpectraSync™ Tunable White or Dim-to-Warm](#) or [PowerHUBB™ PoE enabled](#) solutions

INSTALLATION

- Accommodates ceiling thickness up to 2"
- Universal adjustable mounting brackets also accept 0.5" EMT conduit or 1.5" or 0.75" lathing channel (by others) or Prescolite accessory bar hangers (B24 or B6)
- Light Engine/Driver fully serviceable from above or below the ceiling

CERTIFICATIONS

- cCSAus certified to UL 1598
- Suitable for wet locations, covered ceiling, EM/ EMR: Suitable for damp locations.
- EM/EMR: Certified under UL 924 standard for emergency lighting and power equipment
- Approved for 8 (4 in/4 out) No. 12AWG conductors rated for 90°C through wiring
- ENERGY STAR® certified models available (See list and additional information on page 7)
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction. Materials under Trade Agreements effective 6/6/2020. See [Buy American Solutions](#).

WARRANTY

- 5 year warranty
- See [HLI Standard Warranty](#) for additional information



RELATED PRODUCTS

Ø [LTR-4RD-RFH Retrofit](#)

Ø [4" LITEISTRY Family](#)

Ø [LTR-4RD SpectraSync](#)

Ø [LTR-4RD PowerHUBB](#)

SERVICE PROGRAMS



KEY DATA	
Lumen Range	600-4000
Wattage Range	8-52
Efficacy Range (LPW)	90-99*
Reported Life (Hours)	L90 / >55,000
Input Current (mA)	65-433 (120V)

*Based on Specular, 35K, 80 CRI

Submitted by Swaney Lighting



Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:
LTR-4RD-H-SL06L-DM1 / LTR-4RD-T
SL35K8WD-S
Notes:

Type:

DL

SLA20-47120



LTR-4RD

LITEISTRY 4" ROUND DOWNLIGHT

DATE:
LOCATION:

TYPE:
PROJECT:

CATALOG #:

☐ = Service Program



Click icons for a list of Stocked or Quick-Ship options

ORDERING GUIDE

Example: LTR-4RD-H-SL10L-DM1-LTR-4RD-T-SL35K8MD-S

CATALOG #

HOUSING

LTR-4RD-H						
Aperture/Shape/Function	Lumen Package	Lumen Output	Driver Options	Control Options	Voltage	Housing Options
LTR-4RD-H 4" Round Downlight New Construction Housing	SL Standard Lumen ML Medium Lumen HL High Lumen	06L 600 10L 1000 15L 1500 20L 2000 25L 2500 30L 3000 35L 3500 40L 4000	DM1 0-10V Dimming to 1% DM01 0-10V Dimming to < 1% DMX DMX with RDM dimming to < 0.1% ² DALI DALI Dimming to 1% 2DM Lutron Hi-Lume 2-wire Dimming to 1% (120V Forward Phase only) ² EDM Lutron Hi-Lume EcoSystem Dimming to 1% ²	NXE NX Enabled, Dual SmartPorts ³ NXWE NX Wireless Enabled ³ NXWD NX Wireless Enabled, Dual SmartPorts ³ LV Lutron Vive Enabled, 0-10V (requires 0-10V driver) LVE Lutron Vive Enabled, EcoSystem, (requires EDM)	Standard 120-277V 34 347V ⁶	CP Chicago Plenum ^{7,9} IC IC rated ^{8,9} EM Emergency Battery Pack with integral test switch and indicator light ⁹ EMR Emergency Battery Pack with remote test switch and indicator light ⁹ DTS Device Transfer Switch with Dimming Bypass ^{9,11} GTD Generator Transfer Device ⁹ F Fuse

TRIM

LTR-4RD-T				
Aperture/Shape/Function	Lumen Package	CCT	CRI	Distribution
LTR-4RD-T 4" Round Downlight Light Engine/Trim Assembly	SL Standard Lumen ML Medium Lumen HL High Lumen	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K ¹	8 80+CRI 9 90+CRI	VNR Very Narrow (0.3 SC/20") ¹³ NR Narrow (0.4 SC/29") MD Medium (0.7 SC/44") WD Wide (0.9 SC/61") XW Extra Wide (1.2 SC/78")

TRIM CONTINUED

Reflector Finish	Reflector Color	Flange Color Options	Lower Trim Options	Reflector Options
Finish not applicable with painted reflectors (WC or BC)	Standard Clear	Standard matches reflector color	EM Pre-punched reflector for EM integral test switch and indicator	AM Antimicrobial Coating ⁵
S Specular	CG Champagne Gold	WT White Flange ⁴	FM Flush Mount Mud-in Ring ¹⁰	
SS Semi-Specular	BL Black	BT Black Flange ⁴	WF Wide Flange	
MFC American Matte™	LW Light Wheat			
VS Softglow®	PW Pewter			
VSS SoftSheen™	WC Painted White Cone and Flange			
	BC Painted Black Cone and Flange			

Accessories

- ☐ B24 Set of two (2) 24" bar hangers for T-bar ceilings
- ☐ B6 Set of two bar hangers for ceiling joist up to 24" centers
- ☐ FMR4-R Flush Mount Mud-In Ring Accessory, 4" Round
- ☐ LiteGear LiteGear® Inverter, 125VA-250VA
- ☐ LPS Series LightPower Micro-Inverter, 20VA-55VA
- ☐ MOR4-R-WH Metal Oversized Ring, 4" Round, White (8.25" outside diameter)
- ☐ MOR4-R-BL Metal Oversized Ring, 4" Round, Black (8.25" outside diameter)
- ☐ LTR-SCA4-__ Sloped Ceiling Adapter, 4", White ¹²

Notes:

- 5000K available in 80+ CRI only.
- 2DM, EDM, DMX available in 10L-35L.
- NX requires DM1 driver option.
- WT not needed for WC, BT not needed for BC.
- AM available with WC or Specular Clear (S or SWT). Consult factory for other colors.
- 347V requires DM1 driver option; not available in 06L or with Controls F, DTS, GTD, EM, EMR.
- CP available up to 20L; not available with DMX, Controls, or EMR options.
- IC available up to 20L; not available with Controls options.
- Housing options (except Fuse) not available in combination.
- Flush Mount Flange (FM) requires FMR accessory (sold separately).
- DTS available with DM1, DM01, DALI, or EDM; not available with LVE.
- Specify slope angle 5°-35° in 5° increments. Not available with EM, WF, or FM options.
- VNR available up to 30L.

Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: LTR-4RD-H-SL06L-DM1 / LTR-4RD-T SL35K8WD-S Notes:	Type: DL SLA20-47120
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LTR-4RD

LITEISTRY 4" ROUND DOWNLIGHT

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

CONTROLS

NX Distributed Intelligence™ Lighting Controls:

Supports applications in a variety of deployment options- wired, wireless, hybrid. Integrates with and enables a wide array of luminaires including those with SpectraSync™ Color Tuning Technology.



NX INTEGRATED CONTROLS REFERENCE								
NX Option	Sensor	Networkable	Scheduling	Occupancy	Daylight Harvesting	0-10V Dimming	On/off Control	Bluetooth® App Programming
NX Networked – Wired								
NXE	N/A	Yes	Yes	No	No	Yes	Yes	Requires NXBTC/R ¹
NX Networked – Wireless								
NXWE ²	N/A	Yes	Yes	No	No	Yes	Yes	No ³
NX Networked – Wired/Wireless								
NXWD	N/A	Yes	Yes	No	No	Yes	Yes	Requires NXBTC/R ^{1,3}

1 NXBTC/R needs to be plugged into an available NX SmartPort™ on the fixture network

2 Programming via App requires factory assistance

3 To program NXWE option, need to consult factory. If connected to an area controller, programming can be done from that

Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: LTR-4RD-H-SL06L-DM1 / LTR-4RD-T SL35K8WD-S Notes:	Type: DL SLA20-47120
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LTR-4RD

LITEISTRY 4" ROUND DOWNLIGHT

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

PERFORMANCE DATA TABLE

Performance data provided below is for 3500K, 80 CRI with Specular Clear reflector finish/color

Lumen Package	Nominal Lumens	Distribution	"Delivered Lumens"	Watts	LPW
06L	600	Very Narrow	691	7.6	91
		Narrow	785	7.8	101
		Medium	726	7.8	93
		Wide	664	7.8	85
		Extra Wide	644	7.8	83
10L	1000	Very Narrow	1132	11.8	96
		Narrow	1255	12.0	105
		Medium	1160	12.0	97
		Wide	1062	12.0	89
		Extra Wide	1030	12.0	86
15L	1500	Very Narrow	1623	17.2	94
		Narrow	1795	18.6	97
		Medium	1660	18.6	89
		Wide	1519	18.6	82
		Extra Wide	1474	18.6	79
20L	2000	Very Narrow	2032	22.4	91
		Narrow	2238	22.5	99
		Medium	2152	22.5	96
		Wide	2059	22.5	92
		Extra Wide	2028	22.5	90
25L	2500	Very Narrow	2447	28.6	86
		Narrow	2985	27.8	107
		Medium	2760	27.8	99
		Wide	2526	27.8	91
		Extra Wide	2451	27.8	88
30L	3000	Very Narrow	2855	35.9	80
		Narrow	3583	34.6	104
		Medium	3313	34.6	96
		Wide	3032	34.6	88
		Extra Wide	2941	34.6	85
35L	3500	Narrow	4280	42.9	100
		Medium	3957	42.9	92
		Wide	3622	42.9	84
		Extra Wide	3514	42.9	82
40L	4000	Narrow	4885	51.5	95
		Medium	4517	51.5	88
		Wide	4134	51.5	80
		Extra Wide	4011	51.5	78

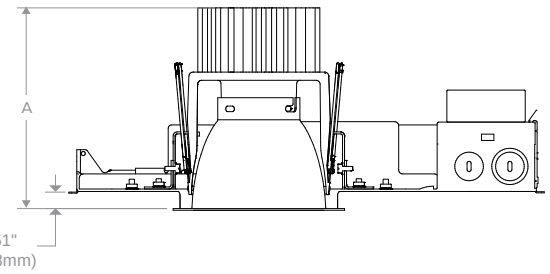
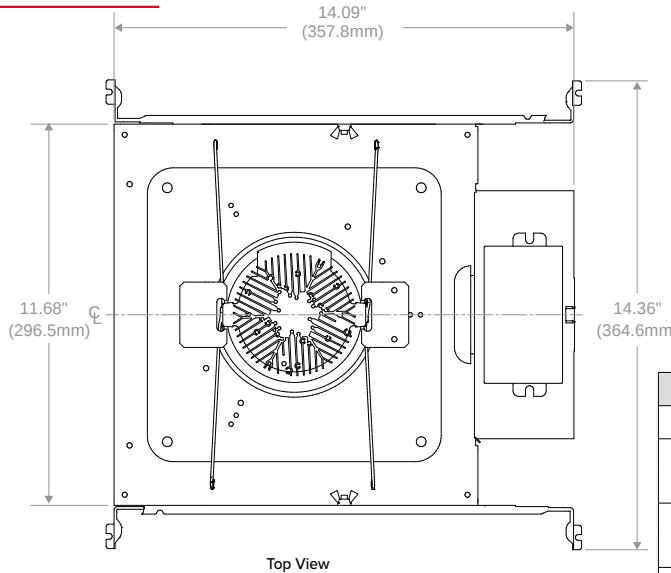
**LTR-4RD**

LITE|STRY 4" ROUND DOWNLIGHT

DATE: _____ LOCATION: _____

TYPE: _____ PROJECT: _____

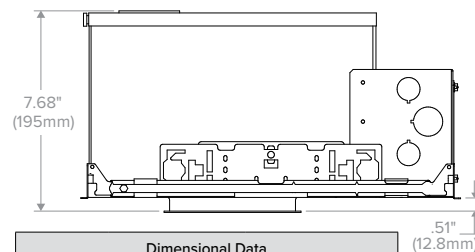
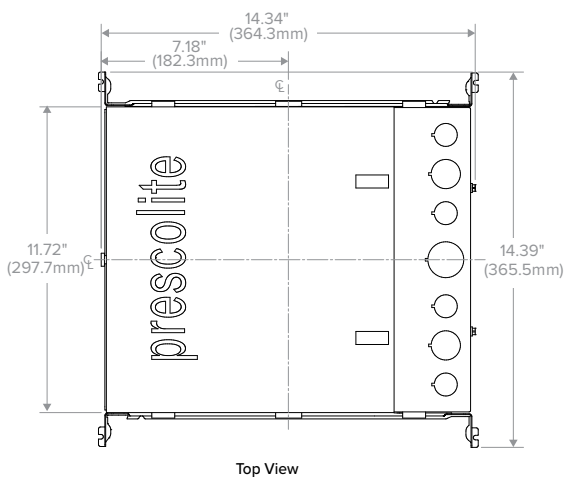
CATALOG #: _____

DIMENSIONS

Dimensional Data		
Flange:	Aperture	4.00" (101.6mm)
	Standard	5.25" (133.4mm)
Ceiling Cutout:	Flush Mount	4.50" (114.3mm)
	Standard	5.00" (127.0mm)
Ceiling Thickness:	Flush Mount	5.12" (130.0mm)
	Standard or w/ SCA 5-20° slope	0.50" to 2.00" (12.7mm to 50.8mm)
Ceiling Thickness:	With SCA 25-35° slope	0.50" to 1.75" (12.7mm to 44.6mm)

Lumen Package	"A"
06L-15L	4.97" (126.2mm)
20L-30L	6.15" (156.2mm)
35L-40L	7.33" (186.2mm)

SCA Sloped Ceiling Adapter accessory available, see [LTR-SCA specification sheet](#) and [installation instructions](#) for dimensional data and other details.

LTR-4RD-H New Construction

Dimensional Data		
Flange:	Aperture	4.00" (101.6mm)
	Standard	5.25" (133.4mm)
Ceiling Cutout:	Flush Mount	4.50" (114.3mm)
	Standard	5.00" (127.0mm)
Ceiling Thickness:	Flush Mount	5.12" (130.0mm)
	Standard or w/ SCA 5-20° slope	0.50" to 2.00" (12.7mm to 50.8mm)
Ceiling Thickness:	With SCA 25-35° slope	0.50" to 1.75" (12.7mm to 44.6mm)

SCA Sloped Ceiling Adapter accessory available, see [LTR-SCA specification sheet](#) and [installation instructions](#) for dimensional data and other details.

LTR-4RD-H IC/CP


Job Name:
 MERCY HOSPITAL SITE LIGHTING

Catalog Number:
 LTR-4RD-H-SL06L-DM1 / LTR-4RD-T
 SL35K8WD-S

Notes:

Type:**DL**

SLA20-47120

**LTR-4RD**

LITEISTRY 4" ROUND DOWNLIGHT

DATE: LOCATION:

TYPE: PROJECT:

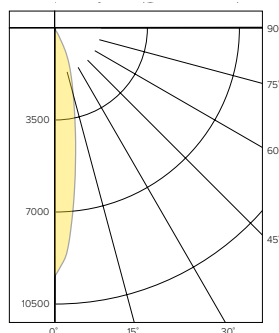
CATALOG #:

PHOTOMETRY**LTR-4RD-H-ML20L-DM1 / LTR-4RD-T-ML35K8VNR-S****LUMINAIRE DATA**

Test No.	20.01331
Description	2000 lm, Very Narrow, 3500K, 80 CRI
Delivered Lumens	2032
Watts	22.4W
Efficacy	91
Mounting	Recessed
Spacing Criterion	0.3
Beam Angle (FWHM)	20

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	2011	99.0
0-60	2032	100.0
0-90	2032	100.0
0-180	2032	100.0

POLAR GRAPH**CANDELA DISTRIBUTION**

Degree	Candela
0	9388
5	7360
15	2780
25	1073
35	198
45	20
55	0
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	3489
55°	0
65°	0
75°	0
85°	0

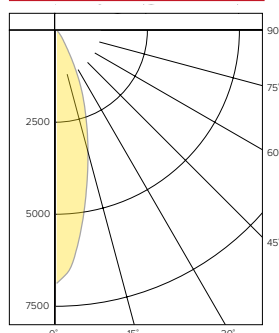
*Candela/Square Meter

LTR-4RD-H-ML20L-DM1 / LTR-4RD-T-ML35K8NR-S**LUMINAIRE DATA**

Test No.	19.00532
Description	2000 lm, Narrow, 3500K, 80 CRI
Delivered Lumens	2238
Watts	22.5W
Efficacy	99.3
Mounting	Recessed
Spacing Criterion	0.4
Beam Angle (FWHM)	29

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	2208	98.6
0-60	2237	99.9
0-90	2238	100.0
0-180	2238	100.0

POLAR GRAPH**CANDELA DISTRIBUTION**

Degree	Candela
0	6877
5	6035
15	3284
25	1313
35	260
45	26
55	3
65	1
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	4535
55°	645
65°	292
75°	0
85°	0

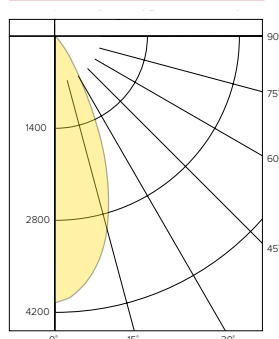
*Candela/Square Meter

LTR-4RD-H-ML20L-DM1 / LTR-4RD-T-ML35K8MD-S**LUMINAIRE DATA**

Test No.	19.00533
Description	2000 lm, Medium, 3500K, 80 CRI
Delivered Lumens	2152
Watts	22.5W
Efficacy	95.6
Mounting	Recessed
Spacing Criterion	0.7
Beam Angle (FWHM)	44

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	2113	98.2
0-60	2151	99.9
0-90	2152	100.0
0-180	2152	100.0

POLAR GRAPH**CANDELA DISTRIBUTION**

Degree	Candela
0	4053
5	3893
15	3037
25	1493
35	366
45	34
55	3
65	1
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	5931
55°	645
65°	292
75°	0
85°	0

*Candela/Square Meter

**LTR-4RD**

LITEISTRY 4" ROUND DOWNLIGHT

DATE: _____ LOCATION: _____

TYPE: _____ PROJECT: _____

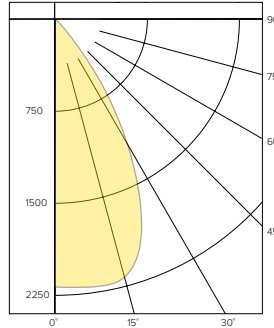
CATALOG #: _____

PHOTOMETRY CONTINUED**LTR-4RD-H-ML20L-DM1 / LTR-4RD-T-ML35K8WD-S****LUMINAIRE DATA**

Test No.	19.00534
Description	2000 lm, Wide, 3500K, 80 CRI
Delivered Lumens	2059
Watts	22.5W
Efficacy	91.6
Mounting	Recessed
Spacing Criterion	0.9
Beam Angle (FWHM)	61

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1983	96.3
0-60	2056	99.8
0-90	2059	100.0
0-180	2059	100.0

POLAR GRAPH**CANDELA DISTRIBUTION**

Degree	Candela
0	2201
5	2210
15	2051
25	1504
35	692
45	169
55	10
65	3
75	1
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	11338
55°	1075
65°	584
75°	477
85°	0

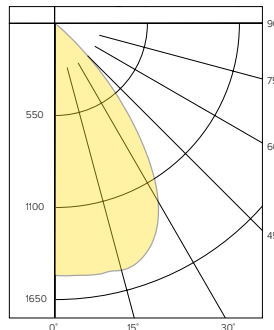
*Candela/Square Meter

LTR-4RD-H-ML20L-DM1 / LTR-4RD-T-ML35K8XW-S**LUMINAIRE DATA**

Test No.	19.00535
Description	2000 lm, Extra Wide, 3500K, 80 CRI
Delivered Lumens	2028
Watts	22.5W
Efficacy	90.2
Mounting	Recessed
Spacing Criterion	1.2
Beam Angle (FWHM)	78

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1794	88.5
0-60	2025	99.8
0-90	2028	100.0
0-180	2028	100.0

POLAR GRAPH**CANDELA DISTRIBUTION**

Degree	Candela
0	1235
5	1252
15	1392
25	1454
35	1010
45	256
55	6
65	2
75	1
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	44656
55°	1290
65°	584
75°	231
85°	477

*Candela/Square Meter

LUMEN MULTIPLIER

Option	27K8	30K8	35K8	40K8	50K8	27K9	30K9	35K9	40K9
Multiplier	0.94	0.98	1.00	1.01	1.02	0.81	0.84	0.85	0.85

Photometrics are published below at a nominal 3500 Kelvin, 80+ CRI. This table may be used to approximate the lumen values at different Kelvin temperatures. Power consumption would stay the same.

REFLECTOR FINISH MULTIPLIER (Based on Clear (Standard) Color)

Option	Specular (S)	Semi-Specular (SS)	American Matte (MFC)	Softglow (VS)	Softsheen (VSS)
Multiplier	1	1	0.984	0.888	0.938

REFLECTOR COLOR MULTIPLIER (Based on Semi-Specular (SS) Finish)

Option	Clear (Standard)	Champagne Gold (CG)	Black (BL)	Light Wheat (LW)	Pewter (PW)	White Cone (WC)	Black Cone (BC)
Multiplier	1	0.974	0.444	0.861	0.915	0.984	0.442

Multiply FINISH x COLOR to calculate other reflector finish and color combinations. Example: SoftGlow Pewter (VSPW) = 0.888 (VS) x 0.915 (PW) = 0.813



Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:

LTR-4RD-H-SL06L-DM1 / LTR-4RD-T
SL35K8WD-S

Notes:

Type:

DL

SLA20-47120



LTR-4RD

LITEISTRY 4" ROUND DOWNLIGHT

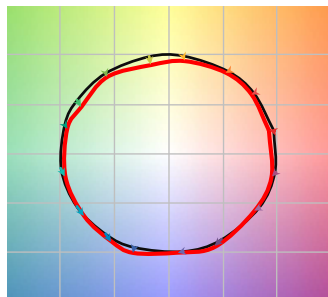
DATE: _____ LOCATION: _____

TYPE: _____ PROJECT: _____

CATALOG #: _____

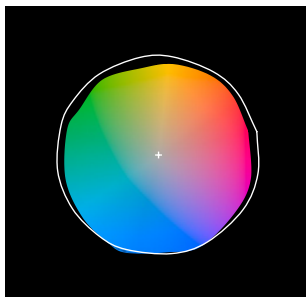
TM-30 DATA

COLOR VECTOR GRAPHIC
3500K, 90 CRI



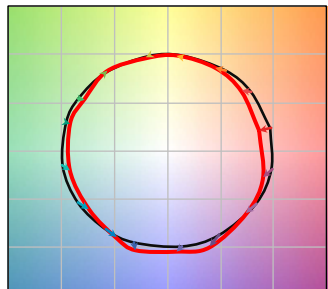
— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
3500K, 90 CRI



TEST RESULTS - 3500K		
Value	80+ CRI	90+ CRI
R_t	84	88
R_g	95	95
CCT (K)	3411	3419
D_{uv}	0.0015	0.0042
x	0.4120	0.4147
y	0.3974	0.4052
CIE R_a	84	93
CIE R_g	11	62

COLOR VECTOR GRAPHIC
3500K, 80 CRI



— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
3500K, 80 CRI



HUBBELL
Lighting

Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: LTR-4RD-H-SL06L-DM1 / LTR-4RD-T SL35K8WD-S Notes:	Type: DL SLA20-47120
------------------------------	--	---	--



LTR-4RD

LITEISTRY 4" ROUND DOWNLIGHT

DATE: _____ LOCATION: _____
TYPE: _____ PROJECT: _____
CATALOG #: _____

ELECTRICAL DATA

DRIVER DATA		
Input Voltage	120-277 V	347 V
Input Frequency	50/60 Hz	50/60 Hz
Power Factor	≥0.90	≥0.90
THD	<20%	<20%
EMI Filtering (FCC 47 CFR Part 15)	Class A	Class A

* Values for DM1 option shown, values for other dimming options may vary.

WATTAGE DATA		
Lumen Output	Nominal Lumens	Wattage
06L	600	8
10L	1000	12
15L	1500	19
20L	2000	23
25L	2500	28
30L	3000	35
35L	3500	43
40L	4000	52

* Wattage may vary based on configuration and options selected

ADDITIONAL INFORMATION

DIMMING COMPATIBILITY CHART		
Dimming Driver	Manufacturer	Web Link
DM1 /DM01	Lutron DDTV	http://bit.ly/1jSvZg
DM1	Leviton AWRMG-7xx, AWSMG-7xx, AWSMT-7xx	http://bit.ly/1Bjn2R9
EDM	Lutron	http://bit.ly/1vtjHA1
2DM	Lutron	http://bit.ly/1S4WjXK

DMX

See instruction sheet on www.prescolite.com for connection & installation information.

Central Inverters

For full fixture output in back-up mode, we recommend you visit www.dual-lite.com for your Central Lighting Inverter options. Please contact your local Hubbell representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

LiteGear: www.dual-lite.com/products/litegear_lg_series

LPS Series: www.dual-lite.com/products/lps

ENERGY STAR®

For a list of certified models, click on the ENERGY STAR® MODELS link or visit www.energystar.gov.

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Submitted by Swaney Lighting		Catalog Number: LTR-4RD-H-SL06L-DM1 / LTR-4RD-T SL35K8WD-S Notes:	Type: DL SLA20-47120
	Job Name: MERCY HOSPITAL SITE LIGHTING		

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Submitted by Swaney Lighting		Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: K51-T4-MO-9030-WIRED120-277V-PS520-188-** Notes: SPECIFY FINISH	Type: K4
			SLA20-47120	

Kick™ – K5 Medium Scale

TYPE

FEATURES

- Integral Motion Sensor
- wiScape enabled
- IDA approved
- 20kV/10kA surge protection
- ANSI C136.41 receptacle
- IES Type II, III and IV distributions
- 3000K , 4000K, 5000K CCT
- Integral thermal protection
- 0-10V dimming ready
- IP66 optical system
- 120-277, 347 and 480VAC input
- Staggered twin mounting
- ANSI C136.31-2010 4G Rated



IK10



See QPL



3000K and warmer CCTs only
MO-XX30 configurations only



See Certification Specifications

ORDERING CODE

1	2	3	4	5	6	7	8	9	10
Model	Optics	Optical Finish	Light Engine	Controls	Fuse	Voltage	Mounting	Mounting Options	Fixture Finish

1. MODEL

5" wide luminaire

- K51 Single fixture**
- K52 Two fixtures 180° apart
- K53 Three fixtures 90° apart
- K54 Four fixtures 90° apart

2. OPTICS

Distribution Type, see "Luminaire Performance" on page 3

- T2 IES Type II
- T3 IES Type III
- T4 IES Type IV**

3. OPTICAL FINISH

Standard white or may choose one. See

'Luminaire Performance' on page 3 for detail.

- MO Optics in Matte Black finish⁰⁵**
- FO Optics in fixture finish

4. LIGHT ENGINE

See 'Luminaire Performance' on page 3 for detail, 70 CRI

- 18050 18,000 nominal lumens, 5000K CCT, 174 watts
- 18040 18,000 nominal lumens, 4000K CCT, 174 watts
- 18030 18,000 nominal lumens, 3000K CCT, 174 watts
- 12050 12,000 nominal lumens, 5000K CCT, 122 watts
- 12040 12,000 nominal lumens, 4000K CCT, 122 watts
- 12030 12,000 nominal lumens, 3000K CCT, 122 watts
- 9050 9,000 nominal lumens, 5000K CCT, 87 watts
- 9040 9,000 nominal lumens, 4000K CCT, 87 watts
- 9030 9,000 nominal lumens, 3000K CCT, 87 watts**

560nm monochromatic amber and or custom lumen package available by request. ¹

5. CONTROL

May choose one

- MCPCR 7-Position Receptacle
- WIR wiScape connectivity
- WIRSC wiScape + motion sensor
- SCP Motion sensor + Photocell ⁴
- SWP SiteSync Pre-commissioned ⁵
- SWPM SiteSync Pre-commissioned + Motion Sensor⁶

SCPREMOTE Handheld commissioning tool ⁴

SWUSB SiteSync loaded on USB flash drive (Windows® operating system only) ⁶

SWTAB SiteSync Windows® based Tablet ⁶

SWBRG SiteSync Wireless Bridge Node ⁶

SW7PR SiteSync 7 Pin on fixture module On/Off/ Dim, Daylight Sensor 120-480VAC

6. FUSE

May choose one

- SF 120, 277, 347 Volt input
- DF 208, 240, 480 Volt input

7. VOLTAGE

120-277VAC input standard or may choose one

- 347 347VAC input
- 480 480VAC input

8. MOUNTING

Integral Aluminum Pole

- PS510-188 10' luminaire height
- PS512-188 12' luminaire height
- PS514-188 14' luminaire height
- PS516-188 16' luminaire height
- PS518-188 18' luminaire height
- PS520-188**

Integral Steel Pole

- PS525-250 25' luminaire height
- PS530-250 30' luminaire height

Tenon Mount

- TA23 Slips over a 2 3/8" / 60mm
Ø x 4" / 102mm tall tenon

Side Mount

- SMK Mounts to the side of a square pole,
K51 only

Wall Mount

- WMK K51 only

9. MOUNTING OPTIONS

Twin mount at staggered heights

Mounting holes for a fixture at 180°, K51...PS5... only, may choose one

- TS8 8' from bottom
- TS10 10' from bottom
- TS12 12' from bottom
- TS14 14' from bottom
- TS16 16' from bottom
- TS18 18' from bottom

Pole Accessories

May choose one

- GFI GFCI receptacle, 24" from top of pole
- RBC Duplex receptacle box with clear cover,
wiring device(s) not included

10. FIXTURE FINISH

Specify Std. finish

Standard Color

- AGN Antique Green
- BL Black
- BLT Matte Black
- CRT Corten
- DB Dark Bronze
- DGN Dark Green
- GT Graphite
- LG Light Grey
- MAL Matte Aluminum
- MDB Bronze Metallic
- MG Medium Grey
- TT Titanium
- WH Arctic White
- WDB Weathered Bronze
- VBU Verde Blue

Premium Color

- SHK Shamrock
- SPP Salt and Pepper
- SFM Seafoam
- WCP Weathered Copper
- RAL RAL 4 digit Color
- CUSTOM Custom Color

¹ Contact factory

⁴ Handheld commissioning tool is required to separately configure or adjust any number of SCP sensors

⁵ Specify group and zone at time of order. See www.hubbellighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.

⁶ When ordering with SiteSync, one of the following interface options must be chosen and ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.



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JOB	_____
TYPE	_____
NOTES	_____

| 1 |



Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:
K51-T4-MO-9030-WIRED120-277V-
PS520-188-**

Notes: SPECIFY FINISH

Type:

K4

SLA20-47120

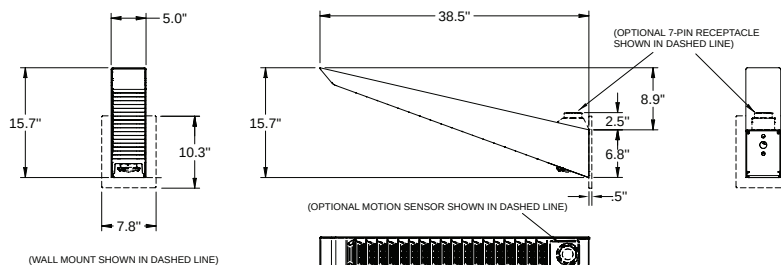
Kick™ – K5 Medium Scale

TYPE

Side Mounted Luminaire

Mounts to the side of 5"/127mm square pole.

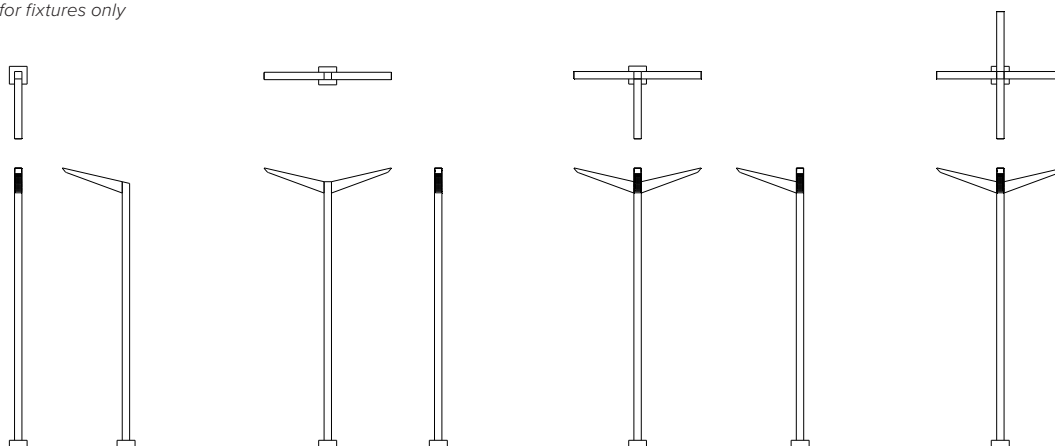
MODEL	K51-...-SMK
OVERALL HEIGHT	15.7" / 399mm
OVERALL LENGTH	38.6" / 980mm
OVERALL WIDTH	5" / 127mm
WEIGHT	20 lbs.
EPA	1.4



Integral Pole Luminaire

See page 6 for height and mounting detail

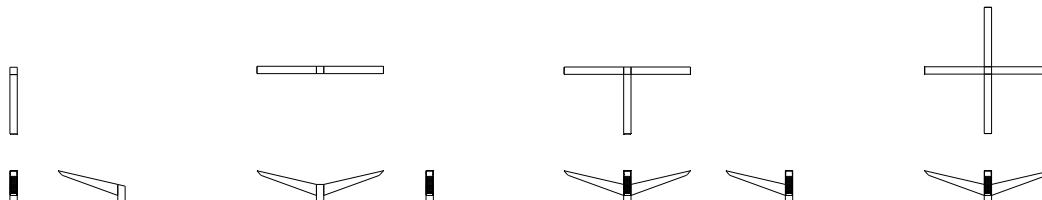
* Weight and EPA for fixtures only



MODEL	K51-...-PS5XX-188	K52-...-PS5XX-188	K53-...-PS5XX-188	K54-...-PS5XX-188
OVERALL LENGTH	43.5" / 1106mm	15.5" / 390mm	49" / 1238mm	82" / 2083mm
OVERALL WIDTH	15.5" / 390mm	82" / 2083mm	82" / 2083mm	82" / 2083mm
WEIGHT	20 lbs.	40 lbs.	60 lbs.	80 lbs.
EPA*	1.4	2.7	3.1	3.1

Tenon Mount Luminaire

Slips over a 2 3/8"/60mm diameter by 4"/102mm tall tenon



MODEL	K51-...-TA23	K52-...-TA23	K53-...-TA23	K54-...-TA23
OVERALL HEIGHT	19" / 483mm	19" / 483mm	19" / 483mm	19" / 483mm
OVERALL LENGTH	43.5" / 1106mm	5" / 127mm	43.5" / 1106mm	82" / 2083mm
OVERALL WIDTH	5" / 127mm	82" / 2083mm	82" / 2083mm	82" / 2083mm
WEIGHT	25 lbs.	40 lbs.	55 lbs.	70 lbs.
EPA	1.8	3.2	3.5	3.5



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JOB _____
TYPE _____
NOTES _____

| 2 |

Kick™ – K5 Medium Scale

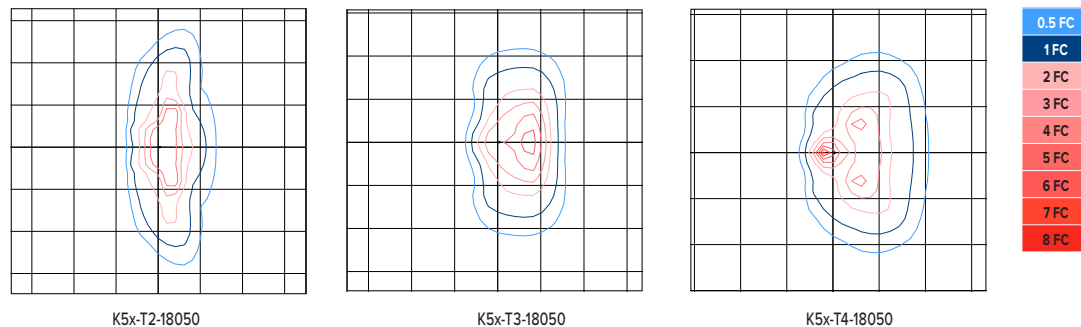
TYPE

LUMINAIRE PERFORMANCE

Configuration				Ordering Code															
Light Engine	Optical Finish	Distribution	Ordering Code	Bright White (5000K)					Neutral White (4000K)					Warm White (3000K)					Average System Watts
				Delivered Lumens	Efficacy (Lm/W)	B	U	G	Delivered Lumens	Efficacy (Lm/W)	B	U	G	Delivered Lumens	Efficacy (Lm/W)	B	U	G	
				18050					18040					18030					
18000 series	Standard White	Type 2	T2	17910	103	3	3	3	17532	101	3	3	3	17006	98	3	3	3	174
		Type 3	T3	17721	102	3	3	3	17347	100	3	3	3	16826	97	3	3	3	
		Type 4	T4	18763	108	3	3	2	18080	104	3	3	2	17537	101	3	3	2	
		Type 2	T2-FO	14593	84	3	3	3	14286	82	3	3	3	13856	80	3	3	3	
	Fixture Matched	Type 3	T3-FO	14497	84	2	3	2	14191	82	2	3	2	13765	79	2	3	2	
		Type 4	T4-FO	15794	91	3	3	2	15460	89	2	3	2	14996	86	2	3	2	
		Type 2	T2-MO	15315	88	3	0	2	14787	85	3	0	2	14343	83	3	0	2	
		Type 3	T3-MO	15153	87	2	0	2	14631	84	2	0	2	14192	82	2	0	2	
	Matte Black	Type 3	T3-MO	15153	87	2	0	2	14631	84	2	0	2	14192	82	2	0	2	
		Type 4	T4-MO	15794	91	3	0	2	15249	88	3	0	2	14791	85	3	0	2	
				12050					12040					12030					
12000 series	Standard White	Type 2	T2	13369	109	3	3	3	13087	107	3	3	3	12694	104	3	3	3	122
		Type 3	T3	13228	108	2	3	2	12949	106	2	3	2	12560	103	2	3	2	
		Type 4	T4	13787	112	3	3	2	13496	110	2	3	2	13091	107	2	3	2	
		Type 2	T2-FO	10893	90	3	3	3	10664	88	3	3	3	10344	85	3	3	3	
	Fixture Matched	Type 3	T3-FO	10821	89	2	3	2	10593	87	2	3	2	10275	84	2	3	2	
		Type 4	T4-FO	11789	97	3	3	2	11541	95	2	3	2	11194	92	2	3	2	
		Type 2	T2-MO	10893	90	3	0	2	10664	88	3	0	2	10343	85	3	0	2	
		Type 3	T3-MO	10821	89	2	0	2	10593	87	2	0	2	10275	84	2	0	2	
	Matte Black	Type 3	T3-MO	10821	89	2	0	2	10593	87	2	0	2	10275	84	2	0	2	
		Type 4	T4-MO	11789	97	2	0	2	11541	95	2	0	2	11194	92	2	0	2	
				9050					9040					9030					
9000 series	Standard White	Type 2	T2	10103	117	2	3	2	9895	114	2	3	2	9692	111	2	3	2	87
		Type 3	T3	9920	115	2	2	2	9715	112	2	2	2	9462	109	2	2	2	
		Type 4	T4	10437	119	2	3	2	10223	117	2	3	2	9957	114	2	3	2	
		Type 2	T2-FO	8171	94	2	3	2	8003	92	2	3	2	7794	90	2	3	2	
	Fixture Matched	Type 3	T3-FO	8118	94	2	2	2	7951	92	2	2	2	7744	89	2	2	2	
		Type 4	T4-FO	8927	103	2	3	2	8744	100	2	3	2	8516	98	2	3	2	
		Type 2	T2-MO	8171	94	2	0	1	8003	92	2	0	1	7794	90	2	0	1	
		Type 3	T3-MO	8118	94	1	0	1	7951	92	1	0	1	7744	89	1	0	1	
	Matte Black	Type 3	T3-MO	8118	94	1	0	1	7951	92	1	0	1	7744	89	1	0	1	
		Type 4	T4-MO	8927	103	2	0	2	8744	101	2	0	2	8516	98	2	0	2	

-MO.ies files should be used for -FO configurations in application layouts.

ISOLINE TEMPLATES 30' Mounting Height



ELECTRICAL CHARACTERISTICS

Ordering Code	LED Current (mA)	System Wattage (W)	Input				Min. Power Factor	Max THD (%)	Dimming Range (V)	Source/Sink Current (mA)	Inrush Current Peak										
			Amps AC								HZ	(A)				T@50% (μs)					
												120	277	347	480	120	277	347	480		
180XX	1000	173	1.4	0.6	0.5	0.4	50/60	>0.9	20	0-10	1	44	131	48	127	190	400	140			
120XX	700	122	1.0	0.4	0.4	0.3															
90XX	500	87	0.7	0.3	0.3	0.2															

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JOB _____
TYPE _____
NOTES _____

| 3 |



Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:
K51-T4-MO-9030-WIRED120-277V-
PS520-188-**

Notes: SPECIFY FINISH

Type:

K4

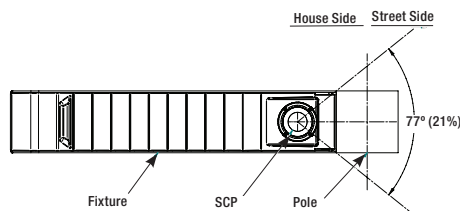
SLA20-47120

Kick™ – K5 Medium Scale

TYPE

SENSOR DETECTION RANGE

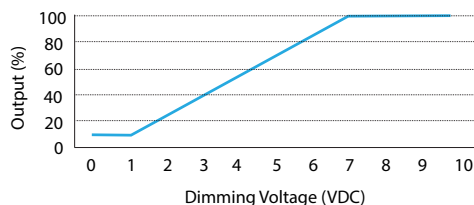
		SENSOR MOUNTING HEIGHT							RATIO
		8'	10'	12'	14'	16'	18'	20'	
COVERAGE DIAMETER	SCP	20'	25'	30'	35'	40'	45'	50'	1:2.5
	WIRSC	16'	20'	24'	28'	32'	36'	40'	1:2



TM-21 LIFETIME CALCULATION

Ambient Environment °C	Projected Lumen Maintenance (Khrs)					Reported L70
	25	50	60 (TM-21)	75	100	
25	98%	97%	96%	95%	94%	>60Khrs.
40	97%	96%	95%	94%	93%	

DIMMING CURVE



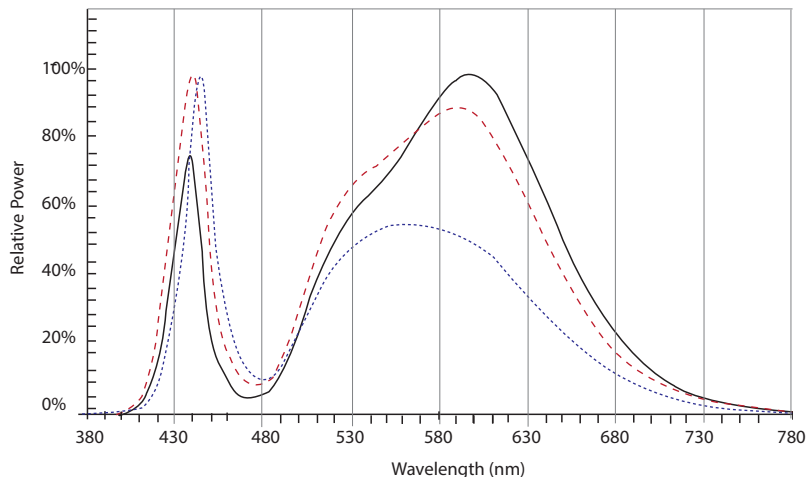
Note: Fixture does not dim to off, fixture dims to 10% minimum output.

COLOR CHARACTERISTICS

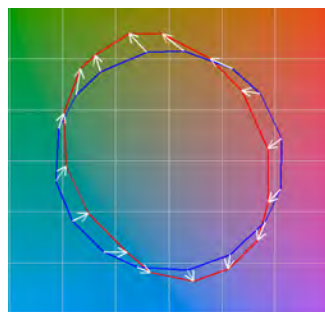
Value	Ordering Code		
	XX30	XX40	XX50
Rf	69	69	71
Rg	99	99	98
CCT(K)	3122	3852	5020
Duv	0.001	0.0004	0.0005
CIE Ra	74	73	74

Note: TM-30 reported at the discrete LED level, not fixture level.

SPECTRAL POWER DISTRIBUTION COMPARISON

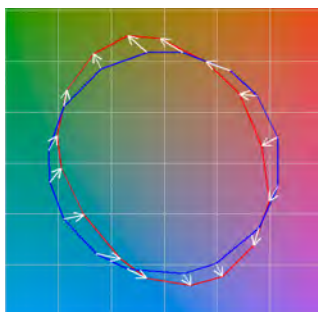


COLOR VECTOR GRAPHIC



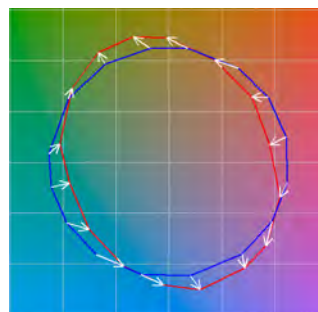
Reference Illuminant Test Source Series1 Series2 Series3 Series4 Series5 Series6 Series7 Series8 Series9 Series10

XX30



Reference Illuminant Test Source Series1 Series2 Series3 Series4 Series5 Series6 Series7 Series8 Series9 Series10

XX40



Reference Illuminant Test Source Series1 Series2 Series3 Series4 Series5 Series6 Series7 Series8 Series9 Series10

XX50



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JOB

TYPE

NOTES

| 4 |

Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: K51-T4-MO-9030-WIRED120-277V-PS520-188-** Notes: SPECIFY FINISH	Type: K4 SLA20-47120
------------------------------	--	--	--

Kick™ – K5 Medium Scale

TYPE

SPECIFICATIONS

HOUSING

- Housing shroud shall be of fabricated 5052-H32 aluminum alloy with a rear mounting interface that shall be of fabricated 304 stainless steel.
- Housing mounting interface shall have a stamped silicone gasket.
- Luminaire housing shall be free of any visible heat fins, hardware or fasteners.
- Bracketry and hardware shall be stainless steel.

OPTICAL ARRAY

- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB) with a uniform conformal coating over the panel surface and electrical features.
- Optical lenses shall be clear injection molded PMMA acrylic.
- Each MCPCB and optic shall be sealed to an extruded 6063-T6 aluminum alloy heat spreader and sealed with a continuous one piece injection molded silicone rubber gasket. IP66.
- Patent Pending design of optical array shall independently shield each LED optic across the length of the aperture.
- Optical surfaces shall be painted white unless the optional fixture finish (FO) or matte black finish (MO) is selected.
- Optional matte black finish optics (MO) are required to meet UO classification with zero percent uplight.
- Optional fixture finish optical surfaces (FO) shall not exceed BUG ratings of the standard white finish and shall be greater than or equal to the delivered lumens of the optional matte black optical surface finish (MO).

ELECTRICAL

- Drivers shall be in direct contact with the aluminum housing across the entire surface area of the widest face for maximum thermal transfer.
- Luminaires shall have integral surge protection that shall be U.L. recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 372J. Surge protection device shall be wired in series.
- Drivers shall be U.L. recognized.
- Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems approved dimmers include Lutron Diva AVTV, Lutron Nova NDTV and NDTV.
- Luminaire shall be capable of operating at

100% brightness in a 40°C environment. Both driver and optical array shall have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.

- Luminaires not configured with a control system or ANSI C136 receptacle option shall be provided with 0-10 purple and gray dimming leads.



CONTROLS

- Wireless enabled fixtures shall support bi-directional radio frequency (RF) communications utilizing IEEE 802.15.4 operating in the 2.4GHz ISM band.
- Up to 1000' wireless range may be reduced by physical obstructions between lighting fixtures.
- Motion Sensor shall use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Careful consideration must be given to obstructions that may block the sensor's line of sight.
- Factory default settings for SCP option shall be:
 - High mode: 10V
 - Low mode: 1V
 - Ramp-up rate: disabled
 - Fade-down rate: disabled
 - Photocell: Off
 - Sensitivity: Full
 - Time Delay: Fade to low: 5 minutes
 - Time Delay: Fade to off: 1 hour

MOUNTING AND INSTALLATION

- Integral pole mount luminaires shall require assembly of fixture(s) to the pole, mounting hardware, anchor bolts and anchor bolt template shall be included. *See page 6 for additional considerations specific to the integral pole.*
- Tenon mount luminaires shall require assembly of fixture(s) to the tenon adapter, mounting hardware shall be included. Tenon adapter shall be secured to the tenon with eight 5/16-18 stainless steel set screws.
- Side mount luminaires shall be supplied

with hardware compatible with AAL mountings.

- Twin mounted staggered height fixtures shall be configured separately.

SERVICING

- Service access to the optical array and driver assembly shall be via a tool-less internal latch and have an audible click.
- Optical array shall be able to hang freely in an open service position for inspection of internal wire connections. Once in service position, the optical array shall be able to be removed for service by lifting the assembly up off the rear hinge and disconnecting the wiring plugs.
- Driver assembly shall be mounted to a prewired internal tray with quick disconnects for removal.

FINISH

- Luminaire finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- Luminaire finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

- Luminaire shall be listed with UL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250.
- ANSI C136.31-2010 4G Vibration tested and compliant.
- IEC 66262 Mechanical Impact Code IK10
- IDA approved, 3000K and warmer CCTs only.
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 6/06/2020. [See Buy American Solutions.](#)

WARRANTY / TERMS AND CONDITIONS OF SALE

Download:
<http://www.hubbellighting.com/resources/warranty/>



ARCHITECTURAL AREA LIGHTING
17760 Rowland Street | City of Industry | CA 91748
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JOB _____
TYPE _____
NOTES _____

| 5 |



Kick™ – K5 Medium Scale

TYPE

SPECIFICATIONS

Integral Pole

MODEL	HEIGHT		SHAFT		WT	MAXIMUM ALLOWABLE EPA (MPH)									
	OVERALL	POLE	SECTION	MATERIAL		85	90	100	105	110	120	130	140	145	150
K5X-PS510-188	10'9" / 3.28m	10'	5"SQ x .188"	ALUMINUM	61	25	25	23	20.5	18.5	15	12.3	10.1	9.1	8.3
K5X-PS512-188	12'9"/3.89m	12'	5"SQ x .188"	ALUMINUM	69	25	22.5	17.8	15.7	14	11	8.7	6.9	6.1	5.4
K5X-PS514-188	14'9"/4.50m	14'	5"SQ x .188"	ALUMINUM	78	20.6	17.9	13.7	11.9	10.4	7.9	6	4.4	3.7	3.1
K5X-PS516-188	16'9"/5.10m	16'	5"SQ x .188"	ALUMINUM	86	16.5	14.1	10.4	8.9	7.6	5.4	3.7	2.3	1.7	1.1
K5X-PS518-188	18'9"/5.71m	18'	5"SQ x .188"	ALUMINUM	95	12.9	10.9	7.6	6.3	5.1	3.2	1.7	0.5	-	-
K5X-PS520-188	20'9"/6.32m	20'	5"SQ x .188"	ALUMINUM	103	9.8	8.1	5.2	4	3	1.3	-	-	-	-
K5X-PS525-250	25'9"/7.85m	25'	5"SQ x .25"	STEEL	427	25	25	19.4	17.1	15.1	11.7	9	6.9	6	5.1
K5X-PS530-250	30'9"/9.38m	30'	5"SQ x .25"	STEEL	507	20.1	17.3	12.7	10.9	9.3	6.6	4.5	2.8	2.1	1.4

CONSTRUCTION

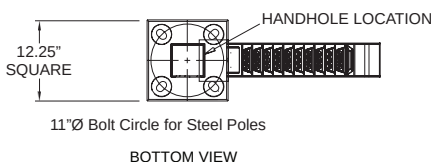
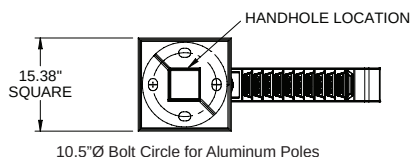
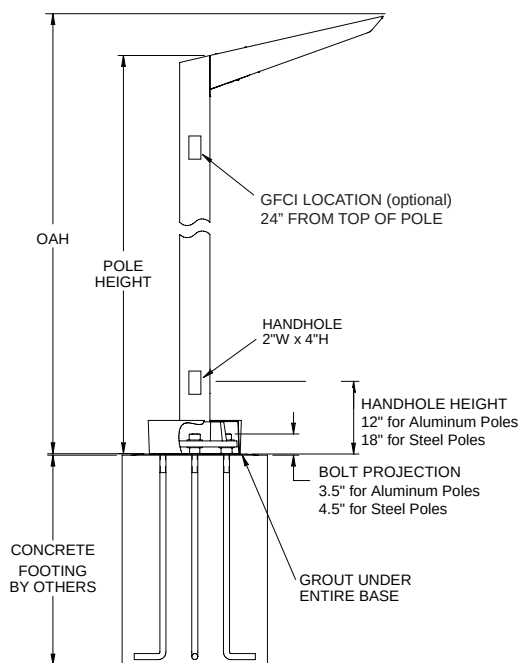
- Aluminum pole bases shall be cast aluminum #356 alloy and be heat treated to a T-6 condition.
- Aluminum pole shafts shall be extruded aluminum 6061 alloy and heat treated to a T-6 condition.
- Aluminum poles shall have a one-piece base cover included standard.
- Steel poles shall be one-piece straight steel with square cross section, flat sides and minimum 0.238" 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 flush to pole shaft having minimum yield of 36,000 psi (ASTM A36).
- Steel poles shall have a two-piece square aluminum base cover included standard.
- All poles shall be supplied with removable top cap.
- All poles shall have a hand hole with mounting provisions for grounding lug located behind a gasket lined cover.
- Anchor bolts shall be 1" x 36" x 4" hot dip galvanized steel, with two galvanized washers and two galvanized nuts per bolt.
- Bolt circle template shall be provided.

WARNINGS

- Caution must be exercised in the selection of a design wind speed when the pole is to be installed in a special wind region (as indicated by the wind map) or in an area where wind speed is unpredictable.
- AAL recommends consulting a local engineer when the pole is to be installed in an area that may be subject to vibration, oscillations, and other fatigue effects which are not covered by the AAL warranty.
- The use of banners or other appendages can severely affect the loading of a pole. No banner or other appendage may be attached to an AAL pole unless approved by AAL.
- If the products are to be used on an existing foundation or on other structures, the customer assumes all responsibility for the structural integrity of the existing foundation, anchorage or structures and all the consequences arising there from.

CAUTION

- Poles should never be erected without the luminaire installed. Warranty is voided if the pole is erected without the luminaire.



BOTTOM VIEW



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JOB

TYPE

NOTES

| 6 |

**KIM LIGHTING**

Spun Copper Bullet C24

120 to 277 Volt Spun Copper LED

revision 11/7/14 • kl_c24led_spec.pdf

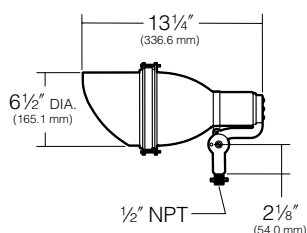
Type:
Job:
Mounting Options:**Approvals:****Fixture Catalog number:**

Fixture

 Ordered Separately from Fixture
 See pages 3-5

Date:
Page: 1 of 5

Specifications



Ordering Information

Fixture	Source
☐ C24S3/9L3KUV ¹	350mA, 11W, 9 LEDs, 3000K
☐ C24S3/9L4KUV ¹	350mA, 11W, 9 LEDs, 4200K
☐ C24S3/9L5KUV ¹	350mA, 11W, 9 LEDs, 5100K
☐ C24F3/9L3KUV ¹	350mA, 11W, 9 LEDs, 3000K
☐ C24F3/9L4KUV¹	350mA, 11W, 9 LEDs, 4200K
☐ C24F3/9L5KUV ¹	350mA, 11W, 9 LEDs, 5100K

¹S = Spot, F = Narrow Flood, UV = Universal Voltage from 120 to 277V with a ±10% tolerance.

Housing and Shield: Spun copper with cast bronze clamping rings and swivel base.

Swivel: Cast bronze with set screw lock and 1/2" NPT plus solid brass locknut for mounting.

Optical System: High Performance acrylic lens optic securely attached to internal heat sink for maximum thermal dissipation.

Gasketing: Silicone gaskets throughout.

Fasteners: Brass and stainless steel.

Wiring: No. 18AWM rated 105°C.

Driver: Universal Voltage from 120 to 277V with a ±10% tolerance, -40°F. starting temperature. All drivers are Underwriters Laboratories recognized.

Finish: Natural copper and bronze. Will rapidly age to a deep rich bronze color, and may develop areas of patina.

Listed to: UL 1598 Standard for Luminaires - UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products and CAN/CSA C22.2 No. 250.0 -80 Luminaires, LEDs and drivers are RoHS compliant.

CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes, Failure to do so may result in serious personal injury.


HUBBELL LIGHTING, INC.



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Job Name:
MERCY HOSPITAL SITE LIGHTING

Catalog Number:
C24F3/9L4KUV

Notes: SPECIFY FINISH

Type:

TL

SLA20-47120



Spun Copper Bullet **C24** 120 to 277 Volt Spun Copper LED

revision 11/7/14 • kl_c24led_spec.pdf

Type:

Job:

Page: 2 of 5



Lumen Data

Spectroradiometric

	3000K	4200K	5100K
Correlated Color Temp. CCT (K)	2800 to 3175K	3800 to 4600K	4600 to 5600K
Color Rendering Index (CRI)	≥80	≥75	≥65
Power Factor	>.90	>.90	>.90

Electrical Drive Current

Current	C24		
	Volts -AC	Amps - AC	System Watts
350mA	120	0.09	11
	208	0.06	11
	240	0.05	11
	277	0.04	11

Absolute Lumens

Current	C24		
	Temp.	Spot	Narrow Flood
350mA	3000K	991	625
	4200K	1287	812
	5100K	1442	909

Main Beam Candela and Beam Angle

Current	C24				
	Temp.	Spot	Beam°	Narrow Flood	Beam°
350mA	3000K	7486	15°	2170	30°
	4200K	9722	15°	2819	30°
	5100K	10893	15°	3159	30°

Projected Lumen Maintenance

mA	50,000 hrs	100,000 hrs
350	96.15%	93.48%

LED performance and lumen output continues to improve at a rapid pace. Log onto www.kimlighting.com to download the most current photometric files from Kim Lighting's IES File Library. For custom optics and color temperature configurations, contact factory.

**KIM LIGHTING**

Spun Copper Bullet C24

120 to 277 Volt Spun Copper LED

revision 11/7/14 • kl_c24led_spec.pdf

Type:**Job:****Page: 3 of 5**

Mounting Options

Ordered Separately from Fixture

Landscape Light Post by Engineered Products Co.

Cat. No.

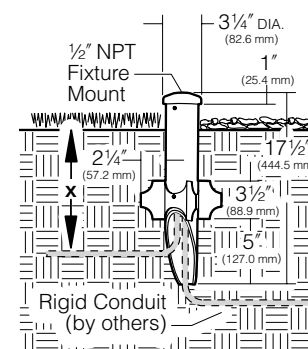
- ☐ EP17
☐ No Option

PVC fixture molded in black with 1/2" NPT mount is corrosion free and UV resistant. Replaces EMT, conduit connectors and weatherproof boxes. 100% shatter resistant against denting and cracking. Angled bottom to eliminate cable congestion.

17 1/2" post length

NOTE: EP17 should be used with a UL listed fixture and grounding means (i.e., third wire) suitable for use in wet locations.

"x" = required depth of conduit per local codes.



Architectural Junction Box

Cat. No.

Finish

- ☐ JB1/BL Black
☐ JB1/DB Dark Bronze
☐ JB1/GR Verde Green
☐ No Option

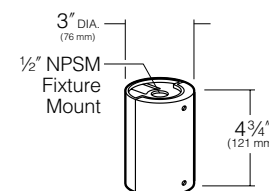
Die-cast aluminum with 1/2" NPSM fixture mount. Internal set screw provided for locking position. Two 1/2" NPSM in bottom, 17 cu in. internal volume. Super TGIC powder coat paint over clear anodizing and titanated zirconium conversion coating.

NOTE: May also be used to hard mount low voltage fixtures.

Application Notes

- Elevates Accent Lights above ground cover to prevent foliage from blocking the light.
- Elevates Path Lights above ground cover to achieve a greater light throw.

CAUTION: Junction box must be installed high enough to avoid contact with soil or standing water.



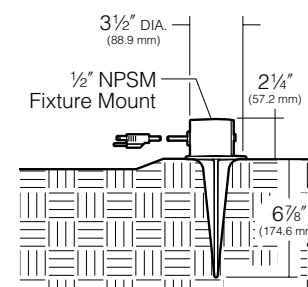
Portable Spear Mount

Cat. No.

- ☐ J-25N
☐ No Option

Cast iron with 1/2" NPSM fixture mount. Hot dip galvanized finish. 5.5 cu in. splice compartment. (SJTW-A) 3 wire cord and plug.

9' cord length





Spun Copper Bullet C24

120 to 277 Volt Spun Copper LED

revision 11/7/14 • kl_c24led_spec.pdf

Type:**Job:****Page: 4 of 5**

Mounting Options

Ordered Separately from Fixture

Brass In-grade Architectural Junction Box

Cat. No.

- ☐ JBR-2
☐ JBR-3
☐ JBR-21
☐ JBR-24
☐ No Option

Die-cast brass with 1/2" NPSM fixture mount and die-cast cover. Internal set screw provided for locking position. 18 cu in. internal volume.

- JBR-2** (2) 1/2" NPT in bottom
JBR-3 (2) 3/4" NPT in bottom
JBR-21 (2) 1/2" NPT in sides, (2) 1/2" NPT in bottom
JBR-24 (4) 1/2" NPT in sides, (2) 1/2" NPT in bottom

All side taps provided with plugs.

NOTE: May also be used to hard mount low voltage fixtures.

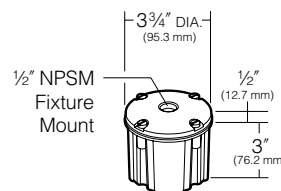
25 Year Limited Warranty:

Solid brass junction boxes are warranted for 25 years, from date of sale, against manufacturing defects and failure due to corrosion.

Application Notes

- Creates a flush-mounted appearance.
- May be cast in concrete for increased stability.

CAUTION: Fixture stem and swivel must not contact soil or standing water. Provide drainage away from junction box.



Brass In-grade Staked Junction Box

Cat. No.

- ☐ JBR30
☐ No Option

JBR30 BRASS IN-GRADE STAKED JUNCTION BOX

Die-cast brass with 1/2" NPSM fixture mount and die-cast cover. Internal set screw provided for locking position. 18 cu in. internal volume.

- (2) 1/2" NPT in bottom with (2) 19" long brass stakes

NOTE: May also be used to hard mount low voltage fixtures.

Brass In-grade Staked Junction Box with Cord

Cat. No.

- ☐ JBR32
☐ No Option

JBR32 BRASS IN-GRADE STAKED JUNCTION BOX WITH CORD

Die-cast brass with 1/2" NPSM fixture mount and die-cast cover. Internal set screw provided for locking position. 18 cu in. internal volume. (SJTW-A) 3 wire cord and plug.

- (2) 19" long brass stakes with 9' cord

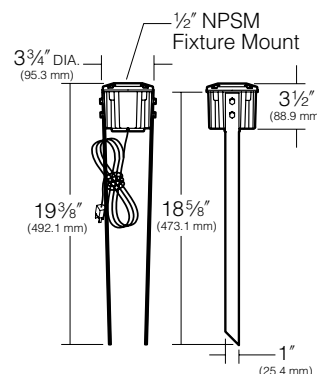
25 Year Limited Warranty:

Solid brass junction boxes are warranted for 25 years, from date of sale, against manufacturing defects and failure due to corrosion.

Application Notes

- Creates a flush-mounted appearance.
- May be cast in concrete for increased stability.

CAUTION: Fixture stem and swivel must not contact soil or standing water. Provide drainage away from junction box.



**KIM LIGHTING**

Spun Copper Bullet C24

120 to 277 Volt Spun Copper LED

revision 11/7/14 • kl_c24led_spec.pdf

Type:**Job:****Page: 5 of 5**

Mounting Options

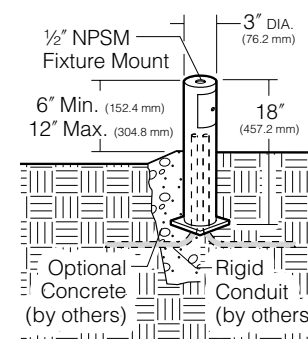
Ordered Separately from Fixture

Stanchion Mount

- Cat. No. Finish
- ☐ **SM18/BL** Black
- ☐ **SM18/DB** Dark Bronze
- ☐ **SM18/GR** Verde
- Green
- ☐ **No Option**

3" O.D. by .188" wall cast aluminum with 1/2" NPSM fixture mount and hand hole with flush cover. Internal set screw fixture lock accessible through hand hole. Internal ground lug supplied with installed lead. Super TGIC powder coat paint over clear anodizing and titanated zirconium conversion coating.

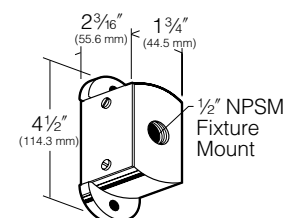
NOTE: May also be used to hard mount low voltage fixtures.

**Surface Mount**

- Cat. No. Finish
- ☐ **J-27N/BL** Black
- ☐ **J-27N/DB** Dark Bronze
- ☐ **J-27N/GR** Verde
- Green
- ☐ **No Option**

Cast aluminum with 1/2" NPSM fixture mount. Internal set screw provided for locking position. 5 cu in. internal volume. Super TGIC powder coat paint over clear anodizing and titanated zirconium conversion coating.

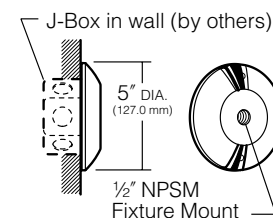
NOTE: May also be used to hard mount low voltage fixtures.

**Brass Architectural Wall Mount**

- Cat. No. Finish
- ☐ **JWBR/NB** Natural Brass
- ☐ **JWBR/VG** Verde
- Green
- Patina
- ☐ **No Option**

Die-cast brass with 1/2" NPSM fixture mount. Internal set screw provided for locking position. Canopy attaches to stainless steel wall plate for mounting to any standard electrical outlet box.

NOTE: May also be used to hard mount low voltage fixtures.



Submitted by Swaney Lighting		Catalog Number: C24F3/9L4KUV	Type: TL
	Job Name: MERCY HOSPITAL SITE LIGHTING	Notes: SPECIFY FINISH	SLA20-47120

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**KIM LIGHTING****Wall, Step, Path Light EL807**

120 / 277 Volt Die-Cast Aluminum LED

revision 5/21/14 • kl_el807_spec.pdf

Type:**Job:****Fixture Catalog number:**

 Fixture Mode Finish
Approvals:**Date:****Page: 1 of 1****Specifications**

Housing: Die-cast low copper alloy (<0.6% Cu) aluminum with clear anodized finish. Two 1/2" NPT in sides. Housing mounts into concrete, brick, or masonry (non-combustible materials). Internal splice area provided behind lamp plate.

Lens Frame: Die-cast aluminum, with silicone gasket, attaches to housing with two captive 10-32 stainless steel, hex socket cap screws.

Lens: Tempered prismatic glass with silicone gasket, concealed above lens frame opening.

Finish: On lens frame only, Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a titanated zirconium conversion coating; 2500 hour salt spray test endurance rating. Standard colors are Black (**BL**), Dark Bronze (**DB**), and Verde Green (**GR**).

Optical System: A total of 3 or 9 LED emitters are configured together as a module. Available in 3000K, 4200K, 5100K and 580nm (amber).

Driver: Universal Voltage from 120 to 277V with a ±10% tolerance. -40° F. starting temperature. All drivers are Underwriters Laboratories recognized.

ORDERING INFORMATION

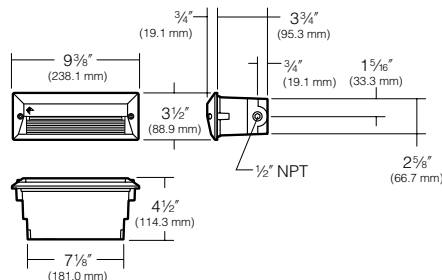
Fixture	Source
☐ EL807 / 3L2KUV ¹	3.6W, 3 LED's, 580nm
☐ EL807 / 3L3KUV ¹	3.6W, 3 LED's, 3000K
☐ EL807 / 3L4KUV ¹	3.6W, 3 LED's, 4200K
☐ EL807 / 3L5KUV ¹	3.6W, 3 LED's, 5100K

Fixture	Source
☐ EL807 / 9L2KUV ¹	10.8W, 9 LED's, 580nm
☐ EL807 / 9L3KUV ¹	10.8W, 9 LED's, 3000K
☒ EL807 / 9L4KUV ¹	10.8W, 9 LED's, 4200K
☐ EL807 / 9L5KUV ¹	10.8W, 9 LED's, 5100K

¹ Universal Voltage from 120 to 277V with a ±10% tolerance.
 For 3.6W, Max Amps. are .030 for 120V, .020 for 208V, .015 for 240V, .013 for 277V. For 10.8W, Max Amps. are .090 for 120V, .050 for 208V, .045 for 240V, .040 for 277V..

Specify Std. finish

- ☐ BL - Black
☐ DB - Dark Bronze
☐ GR - Verde Green


 Hubbell
 Lighting, Inc.
**Listings and Ratings**

UL cUL 1598 ¹	IP66 Rated	25C Ambient
--------------------------	------------	-------------

¹Suitable for wet locations

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Submitted by Swaney Lighting		Catalog Number: EL807/9L4KUV/**	Type: SL
	Job Name: MERCY HOSPITAL SITE LIGHTING	Notes: SPECIFY FINISH	SLA20-47120

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KIMLIGHTING®

WDS
WALL MOUNTED

FEATURES

- -5° to +10° tilt adjustment
- High performance optics deliver up to 7,500 lumens
- up or down mountable without modification
- Programmable occupancy sensor (dimming)
- NX and SiteSync wireless controls
- 130+ lumens per watt
- UL/cUL listed for wet locations, IP66 Listed



CONTROL TECHNOLOGY

NX DISTRIBUTED INTELLIGENCE™

SPECIFICATIONS

CONSTRUCTION

- Optical housing is a one-piece, die-cast low copper (<0.6%) aluminum alloy with integral heat sink. The housing rotates against mounting arm housing to provide -5° to 10° of adjustment with degree markers label. At 0° adjustment, lens is totally concealed from view above horizontal with fixture mounted in the downward position.
- Mounting arm housing is one-piece die-cast, low copper (<0.6%) aluminum alloy with provisions for tilt mechanism. Mounting arm fastens to the mounting plate with keyhole slots freeing both hands for securing and wiring. One stainless steel socket-head screw on the tilt mechanism frees the optical housing to rotate for aiming. Tightening the screws locks the housing and lens frame together with sealing provided by a silicone gasket. For visual aiming, adjustment may be accomplished with the fixture on.
- Lens Frame is a one-piece, die-cast low copper (<0.6%) aluminum alloy with integral cooling fins to dissipate driver thermal.
- Bracketry and hardware shall be stainless steel.
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB).
- Optical lenses are clear injection molded PMMA acrylic.
- Secondary lens is impact resistant 1/8" tempered glass with anti-reflective coating.

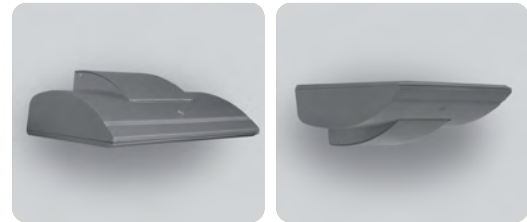
INSTALLATION

- Junction box (by others): Standard with steel, quick-mount junction box plate that mounts directly to 4" J-Box.
- Mounting plate is stainless steel and features a one-piece EPDM gasket on back side of plate to firmly seal fixture to wall surface, forbidding entry of moisture and particulates.
- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

SERVICING

- Housing should hang freely in an open service position for inspection of primary wire connections. Once in service position, the housing can be removed for service by sliding the assembly to the left (for down mounting) or to the right (for up mounting) and disconnecting the wiring plugs.
- Driver assembly shall be mounted to a prewired internal tray with quick disconnects for removal.

Wall Director



Wall Director Small

RELATED PRODUCTS

[Wall Director Medium](#)

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed.
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories listed.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C
- Modular wiring harness in the service area provides user access to the dimming circuitry
- Optional factory programmed dimming profile
- Surge protection: 10,000k in parallel, 20,000k in series
- Wiring: No. 18AWM rated 90°C, wet rating.

(Specifications continued on page 3)

KEY DATA	
Lumen Range	2,855–8,567
Wattage Range	29–74
Efficacy Range (LPW)	89–129
Reported Life (Hours)	L70/60,000
Weight	20 lbs/9.07 kg

Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: WDS/D/24L-30/3K7/3/UNV/**	Type: W1
		Notes: SPECIFY FINISH	SLA20-47120



WDS
WALL MOUNTED

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

ORDERING GUIDE

Example: WDS-D-24L-30-3K7-1-UNV-BLS-PC-EM-SWUSB

CATALOG #

HOUSING

WDS					
Model	Mounting	Source	Wattage	Light Engine	Distribution
WDS WallDirector Small	D Down	24L 24 LEDs	30 30 Watts, 3000 lm	AM ⁶ Amber-595nm Peak	1 Type I
	U ¹ Up		40 40 Watts, 4500 lm	3K7 3000K/70CRI	2 Type II
			60 60 Watts, 6000 lm	3K8 3000K/80CRI	3 Type III
			75 75 Watts, 7500 lm	4K7 4000K/70CRI	4W Type IV Wide
				4K8 4000K/80CRI	4F Type IV Forward
				5K7 5000K/70CRI	WG ² Wall Graze
					SP Spot/Column
					FTD ² Forward Throw Diffuse
					WTD ² Wide Throw Diffuse

Specify Std. finish					
Voltage	Fixture Finish	Control Options	Options	Control Accessories	
UNV 120-277V	BLS Black Gloss Smooth	PC ³ Button Photocell	EM ³ Integral Battery Backup Unit (8W)	SCPREMOTE	SCP configuration tool
347 ^{3,10} 347V	BLT Black Matte Textured	SCP-8F ^{3,4,5,9} Programmable Occ. Sensor (<9' height)	SF Single Fuse & Fuse holder	SWUSB	SiteSync Software on USB
480 ^{3,10} 480V	DBS Dark Bronze Gloss Smooth	SCP-20F ^{3,4,5,9} Programmable Occ. Sensor (9' - 20' height)	DF Double Fuse & Fuse holder	SWTAB	SiteSync Windows [®] Tablet
	DBT Dark Bronze Matte Textured	SWP ^{3,4,5,7} SiteSync Wireless Pre-Commission	SCM1 1/2" Surface Conduit Mount	SWBRG	SiteSync Software Bridge Node
	GTT Graphite Matte Textured	NXWE ^{4,5} NX Wireless Enabled	SCM2 3/4" Surface Conduit Mount		
	LGS Light Grey Gloss Smooth				
	LGT Light Grey Matte Textured				
	PSS Platinum Silver Gloss Smooth				
	VGT Verde Green Matte Textured				
	WHS White Gloss Smooth				
	WHT White Matte Textured				
	Color Option				
	CC ⁸ Custom Color				

Notes:

- Not available with EM option or with SCP,SWPM, NXSPW14 and NXSP14F sensor options.
- WG, FTD, and WTD come with a diffused lens
- Not available with other control options
- Input voltage 120-347V
- Not available in 480V
- Turtle friendly
- Specify group and zone at time of order. See www.hubbellighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
- Consult factory for custom color, marine and corrosive finish options
- SCPREMOTE SCP configuration tool needed.
- Not available with 30 watt or 40 watts

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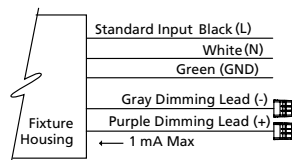


KIMLIGHTING®

SPECIFICATIONS (CONT')

DIMMING:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.



- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.

BUTTON PHOTOCELL

- Optional universal voltage (120-277V) button photocontrol for dusk to dawn energy savings. Photocontrol is factory installed inside the housing with a fully gasketed sensor on the side wall. For multiple fixture mountings, one fixture is supplied with a photocell to operate the others.

WIRELESS CONTROLS SITESYNC™1

- SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbellighting.com/products/sitesync for more details.

NX DISTRIBUTED INTELLIGENCE™

- Hubbell Control Solutions' NX Distributed Intelligence™ lighting control platform utilizes a Distributed Network Architecture (DNA) that connects intelligent devices including luminaires, controllers, panels, occupancy sensors, photocells, wall switches and dimmers, creating a system with an unmatched level of reliability, scalability and simplicity

OPTIONAL FUSING:

- SF for 120, 277, and 347 Line volts
- DF for 208, 240, and 480 Line volts
- High temperature fuse holders factory installed inside the fixture housing.
- Fuse is included.

OPTIONAL BACKUP BATTERY

- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for 0°C ambient.

CAUTION:

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

CERTIFICATIONS AND LISTINGS

- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- IEC 66262 Mechanical Impact Code IK08
- IP66 certified
- RoHS compliant
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 04/16/2020. [See Buy American Solutions.](#)

WARRANTY

- 5 year warranty
- See [HLI Standard Warranty](#) for additional information
- *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.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928
- Examples:
WDS-D-48L-55-3K7-1-UNV-BLS-PC-SF

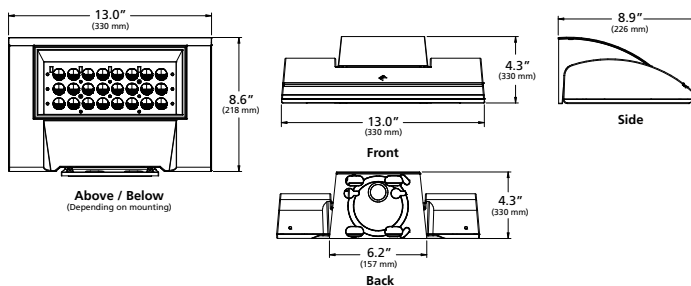
Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: WDS/D/24L-30/3K7/3/UNV/**	Type: W1
		Notes: SPECIFY FINISH	SLA20-47120

KIMLIGHTING

WDS
WALL MOUNTED

DATE: _____ LOCATION: _____
TYPE: _____ PROJECT: _____
CATALOG #: _____

DIMENSIONS



Weight: 20 lbs

DELIVERED LUMENS

LEDs #	Drive Current	Lumens Package	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
24L	350mA	3,000	30	Clear	1	3433	1	0	0	119	3519	1	0	0	122	3560	1	0	0	123
					2	3351	1	0	1	116	3436	1	0	1	119	3475	1	0	1	120
					3	3340	1	0	1	116	3424	1	0	1	119	3463	1	0	1	120
					4F	3343	1	0	1	116	3427	1	0	1	119	3466	1	0	1	120
					4W	3267	1	0	1	113	3349	1	0	1	116	3387	1	0	1	117
					SP	3600	3	0	0	125	3691	3	0	0	128	3733	3	0	0	129
				Diffused	WG	3144	1	0	1	109	3223	2	0	1	112	3260	2	0	1	113
					FTD	2855	1	0	1	99	2927	1	0	1	101	2960	1	0	1	103
					WTD	3151	1	0	1	109	3230	1	0	1	112	3267	1	0	1	113
	500mA	4,500	40	Clear	1	4593	1	0	0	111	4708	1	0	0	113	4762	1	0	0	115
					2	4484	1	0	1	108	4596	1	0	1	111	4649	1	0	1	112
					3	4468	1	0	1	108	4581	1	0	1	110	4633	1	0	1	112
					4F	4472	1	0	1	108	4585	1	0	1	110	4637	1	0	1	112
					4W	4370	1	0	2	105	4480	1	0	2	108	4531	1	0	2	109
					SP	4817	3	0	0	116	4938	3	0	0	119	4994	3	0	0	120
				Diffused	WG	4206	2	0	1	101	4312	2	0	1	104	4361	2	0	1	105
					FTD	3819	1	0	1	92	3915	1	0	1	94	3960	1	0	1	95
					WTD	4215	1	0	1	102	4321	1	0	1	104	4371	1	0	1	105

**KIMLIGHTING****WDS**

WALL MOUNTED

DATE: _____ LOCATION: _____

TYPE: _____ PROJECT: _____

CATALOG #: _____

DELIVERED LUMENS (CONTINUED)

LEDs #	Drive Current	Lumens Package	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
24L	725mA	6,000	60	Clear	1	6333	1	0	1	108	6492	1	0	1	111	6566	1	0	1	112
					2	6182	1	0	1	106	6338	1	0	1	108	6410	1	0	1	110
					3	6161	1	0	2	105	6316	1	0	2	108	6388	1	0	2	109
					4F	6166	1	0	2	105	6321	1	0	2	108	6393	1	0	2	109
					4W	6025	1	0	2	103	6177	1	0	2	106	6248	1	0	2	107
					SP	6641	4	0	0	114	6808	4	0	0	116	6886	4	0	0	118
				Diffused	WG	5800	2	0	1	99	5945	2	0	1	102	6013	2	0	1	103
					FTD	5266	1	0	1	90	5398	2	0	1	92	5460	2	0	1	93
					WTD	5812	1	0	1	99	5958	1	0	1	102	6026	1	0	1	103
	925mA	7,500	75	Clear	1	7879	1	0	1	106	8077	1	0	1	109	8170	1	0	1	110
					2	7692	1	0	1	104	7885	1	0	1	107	7975	1	0	2	108
					3	7665	1	0	2	104	7858	1	0	2	106	7948	1	0	2	107
					4F	7672	1	0	2	104	7865	1	0	2	106	7955	1	0	2	107
					4W	7497	1	0	2	101	7685	1	0	2	104	7773	1	0	2	105
					SP	8263	4	0	0	112	8471	4	0	0	114	8567	4	0	0	116
				Diffused	WG	7216	3	0	1	98	7397	3	0	1	100	7482	3	0	1	101
					FTD	6552	2	0	1	89	6717	2	0	1	91	6793	2	0	2	92
					WTD	7231	2	0	1	98	7413	2	0	1	100	7498	2	0	1	101



WDS

WALL MOUNTED

PHOTOMETRY

WDS-D-24L-75-4K7-1

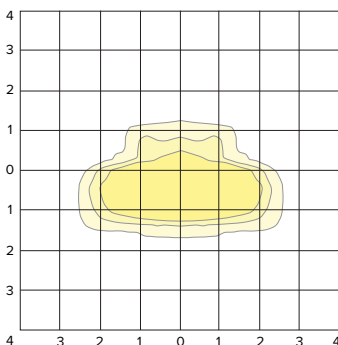
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	8077
Watts	74
Efficacy	109.1
IES Type	I
BUG Rating	B1-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	7166	88.7%
Downward House Side	912	11.3%
Downward Total	8077	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	8077	100%

ISOFOOT CANDLE PLOT



WDS-D-24L-75-4K7-2

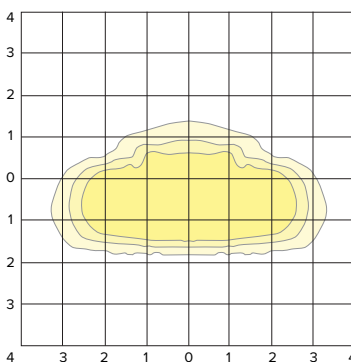
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	7885
Watts	74
Efficacy	106.6
IES Type	II
BUG Rating	B1-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6393	81.1%
Downward House Side	1492	18.9%
Downward Total	7885	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7885	100%

ISOFOOT CANDLE PLOT



WDS-D-24L-75-4K7-3

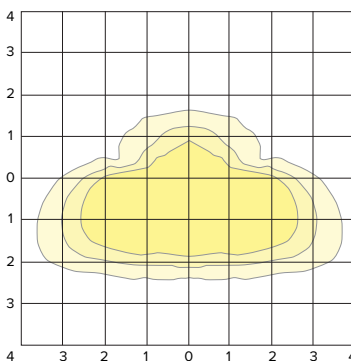
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	7858
Watts	74
Efficacy	106.2
IES Type	III
BUG Rating	B1-U0-G2
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6551	83.4%
Downward House Side	1307	16.6%
Downward Total	7858	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7858	100%

ISOFOOT CANDLE PLOT




KIMLIGHTING
WDS

WALL MOUNTED

PHOTOMETRY

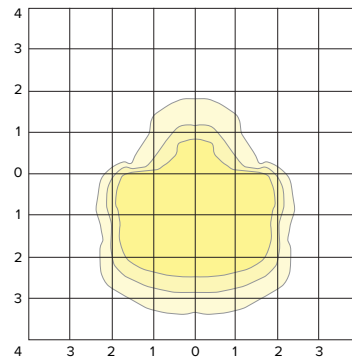
WDS-D-24L-75-4K7-4F

LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	7865
Watts	74
Efficacy	106.3
IES Type	III
BUG Rating	B1-U0-G2
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6782	86.2%
Downward House Side	1083	13.8%
Downward Total	7865	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7865	100%

ISOFOOT CANDLE PLOT


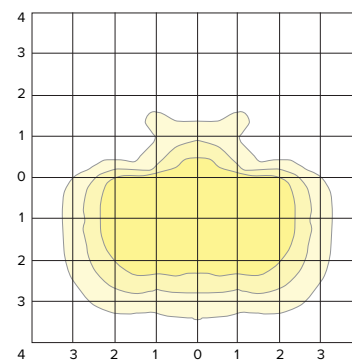
WDS-D-24L-75-4K7-4W

LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	7685
Watts	74
Efficacy	103.9
IES Type	III
BUG Rating	B1-U0-G2
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6794	88.4%
Downward House Side	892	11.6%
Downward Total	7685	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7685	100%

ISOFOOT CANDLE PLOT


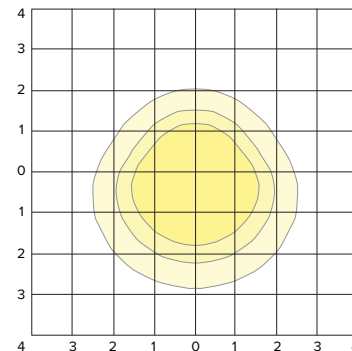
WDS-D-24L-75-4K7-FTD

LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	6717
Watts	74
Efficacy	90.8
IES Type	III
BUG Rating	B2-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	4462	66.4%
Downward House Side	2255	33.6%
Downward Total	6717	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	6717	100%

ISOFOOT CANDLE PLOT




WDS

WALL MOUNTED

PHOTOMETRY

WDS-D-24L-75-4K7-SP

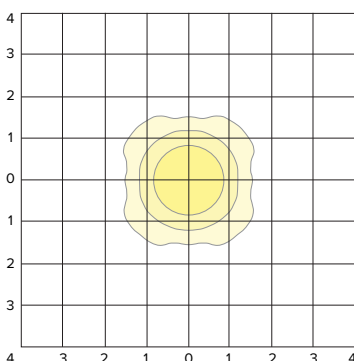
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	8471
Watts	74
Efficacy	114.5
IES Type	VS
BUG Rating	B4-U0-G0
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	4236	50.0%
Downward House Side	4236	50.0%
Downward Total	8471	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	8471	100%

ISOFOOT CANDLE PLOT



WDS-D-24L-75-4K7-WG

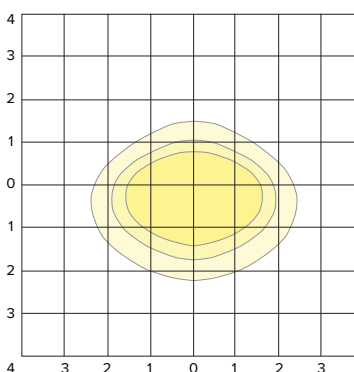
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	7396
Watts	74
Efficacy	99.9
IES Type	I
BUG Rating	B3-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	4931	66.7%
Downward House Side	2465	33.3%
Downward Total	7396	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7396	100%

ISOFOOT CANDLE PLOT



WDS-D-24L-75-4K7-WTD

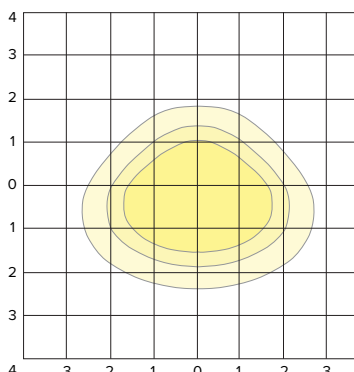
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	7413
Watts	74
Efficacy	100.2
IES Type	I
BUG Rating	B2-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	5341	72.1%
Downward House Side	2072	27.9%
Downward Total	7413	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7413	100%

ISOFOOT CANDLE PLOT



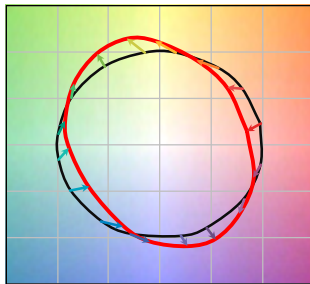

KIMLIGHTING
WDS

WALL MOUNTED

DATE: _____ LOCATION: _____

TYPE: _____ PROJECT: _____

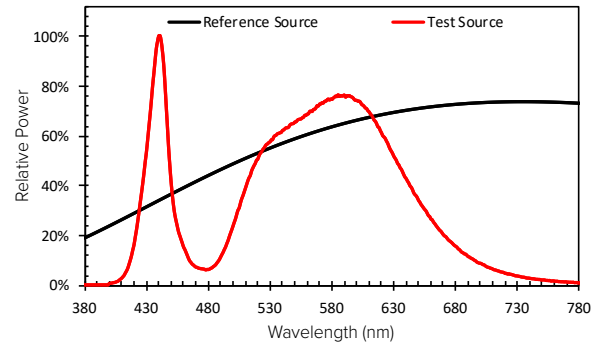
CATALOG #: _____

TM-30 DATA
COLOR VECTOR GRAPHIC


— Reference Illuminant — Test Source

TEST SOURCE

R _f	68
R _g	99
CCT(K)	3947
D _{uv}	0.0004
x	0.3831
y	0.3793
CIE R _a	72

SPECTRAL POWER DISTRIBUTION COMPARISON

ELECTRICAL DATA

Drive Current	System Watts	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Dimming		Absolute voltage range on 0-10V (+)	
		VAC	Hz	120	208	240	277	347	480				Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
													Min	Max	Min	Max
350mA	29	120-480	50/60	0.24	0.14	0.12	0.10	0.08	0.06	>0.9	20	10% to 100%	0mA	1mA	0V	10V
500mA	42			0.38	0.22	0.19	0.16	0.13	0.09							
725mA	59			0.48	0.27	0.24	0.21	0.16	0.12							
925mA	74			0.67	0.39	0.34	0.29	0.23	0.17							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)

Ambient Temp.	0	25,000	36,000	50,000	100,000	Reported L70
25°C / 77°F	100%	97%	95%	93%	86%	60khrs
40°C / 104°F	100%	92%	89%	86%	75%	

CRI Lumen Multiplier

CCT	70 CRI	80 CRI	90 CRI
3000K	1	0.9119	0.7033
4000K	1	0.8941	0.734
5000K	1	0.879	0.7712

Amber Multiplier

CCT	Multiplier
5000K	1
AM	0.1727

2700K Multiplier

CCT	Multiplier
5000K	1
2700K	0.897

Submitted by Swaney Lighting		Catalog Number:	Type:
	Job Name: MERCY HOSPITAL SITE LIGHTING	WDS/D/24L-30/3K7/3/UNV/** Notes: SPECIFY FINISH	W1 SLA20-47120

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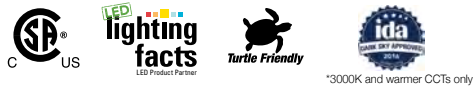


LNC

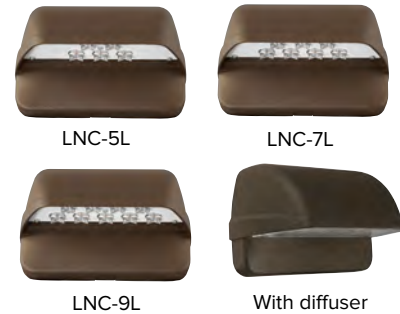
COMPACT LED LITEPAK

FEATURES

- Compact LNC LED is designed for perimeter illumination and available in 3 lumen packages for safety, security and identity
- 3000K, 4000K, 5000K and Amber color temperatures
- Up to 4:1 spacing to mounting height ratio means fewer fixtures to install
- Acrylic diffuser included! Use for applications near entrances or locations where reduced brightness is desired. (Maximum spacing with diffuser 30ft)
- Die-cast aluminum housing with decorative Laredo styling
- Full cut-off neighbor friendly
- Listed to UL1598 for use in wet locations



DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	



RELATED PRODUCTS

⌘ [LNC2](#) ⌘ [INC3](#) ⌘ [LNC4](#)

SPECIFICATIONS

CONSTRUCTION

- Decorative die-cast aluminum housing and door
- Rugged design protects internal components and provides excellent thermal management for long life
- Powder paint finishes provide lasting appearance in outdoor environments
- Full cut-off distribution; Ambient diffuser included, use for applications near entrances or locations where reduced brightness is desired

OPTICS

- Drivers are 120-277V, 50/60Hz Type II, III and Type IV lenses provide wide lateral spread
- 3000K - 80 CRI, 4000K - 70 CRI, and 5000K - 70 CRI, CCT nominal
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion

INSTALLATION

- Quick mount adapter provides quick installation, designed for recessed box 4" square junction box

ELECTRICAL

- 60,000 hours minimum LED life at L96 rating per IESNA TM-21-11
- Minimum operating temperature is -40°C/-40°F
- 0-10V dimming 120-277V only
- LNC5L - 5 LEDs, Types II, III or IV available, see page 2 for electrical details
- LNC7L - 7 LEDs, Type II, III or IV available, see page 2 for electrical details
- LNC9L - 9 LEDs, Types II, III or IV available, see page 2 for electrical details

CONTROLS

- Photocontrol option is available to provide dusk-to-dawn control for additional energy savings

CERTIFICATIONS

- Listed and labeled to UL 1598 for wet locations, 25°C ambient environments

WARRANTY

- 5 year limited warranty
- See [HLI Standard Warranty](#) for additional information

KEY DATA	
Lumen Range	800-2100
Wattage Range	13-22
Efficacy Range (LPW)	64-95
Fixture Projected Life (Hours)	L96>60K
Weights lbs. (kg)	9.6 (24.5)

Submitted by Swaney Lighting	Job Name: MERCY HOSPITAL SITE LIGHTING	Catalog Number: LNC-7LU-3K-2**	Type: W2
		Notes: SPECIFY FINISH	SLA20-47120



LNC
COMPACT LED LITEPAK

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

ORDERING GUIDE

Example: LNC-5L-U-3K-2-BLT-PCU

CATALOG #

ORDERING INFORMATION

Series	# LEDs	Voltage	CCT/CRI	IES Distribution	Specify Std. finish	Mounting
LNC LNC Zero Uplight	5L 5 LEDs 7L 7 LEDs 9L 9 LEDs	U 120-277V 1 120V 2 208V 3 240V 4 277V	3K 3000K nominal, 70 CRI 4K 4000K nominal, 70 CRI 5K 5000K nominal, 70 CRI AM Amber (590 µm available for "Turtle Friendly"/ observatory applications, 350mA (consult factory) ¹	2 Type II 3 Type III 4 Type IV	BLT Black Matte Textured BLS Black Gloss Smooth DBT Dark Bronze Matte Textured DBS Dark Brone Gloss Smooth GTT Graphite Matte Textured LGS Light Grey Gloss Smooth PSS Platinum Silver Smooth WHT White Matte Textured WHS White Gloss Smooth VGT Verde Green Textured Color Option CC Custom Color	PCU Universal Button Photocell

Notes:

¹ Amber LEDs only available on 7L and 9L configurations, 350mA

REPLACEMENT PARTS AND ACCESSORIES

Catalog Number	Description
☐ 93039574	Frosted comfort shield, improved uniformity with only 5% reduction

PERFORMANCE DATA

# Of LEDs	Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)		4K (4000K NOMINAL 70 CRI)		3K (3000K NOMINAL 80 CRI)		AM (<580 nm wave-length)		
				Lumens	LPW*	Lumens	LPW	Lumens	LPW	Lumens	System Watts	LPW
5	STD. (700mA) AM (350mA)	13W	2	1,150	88.5	1,052	81	883	68	—	—	—
			3	1,132	87	1,077	83	833	64	—	—	—
			4	1,146	88	1,053	81	849	65	—	—	—
7		17W	2	1,515	89	1,369	80.5	1,272	75	—	—	—
			3	1,500	88	1,539	90.5	1,392	82	268	6.6	59
			4	1,557	91.5	1,535	90	1,425	84	—	—	—
9		22W	2	2,069	94	2,033	92	1,588	72	—	—	—
			3	2,024	92	1,989	90	1,623	74	—	—	—
			4	2,095	95	2,059	93.5	1,680	76	382	8.3	46

* 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. Please consult IES files for BUG ratings.

PROJECTED LUMEN MAINTENANCE

Ambient Temperature	OPERATING HOURS					
	0	25,000	50,000	TM-21-11* L96 60,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.97	0.97	0.96	0.95	>791,000
40°C / 104°F	0.99	0.96	0.96	0.96	0.94	>635,000

* 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


HUBBELL
 Outdoor Lighting

DATE: _____ LOCATION: _____

TYPE: _____ PROJECT: _____

CATALOG #: _____

LNC

COMPACT LED LITEPAK

ELECTRICAL DATA

# OF LEDS	Drive Current (mA)	Input Voltage (V)	Oper. Current (Amps)	System Power (W)
9	STD. (700mA)	120	0.11	13
		277	0.05	
12	STD. (700mA)	120	0.14	17
		277	0.07	
12	STD. (700mA)	120	0.17	22
		277	0.09	

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

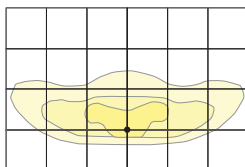
Ambient Temperature		Lumen Multiplier
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

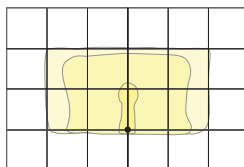
PHOTOMETRY

The following diagrams represent the general distribution options offered for this product. For detailed information on specific product configurations, see [website photometric test reports](#).

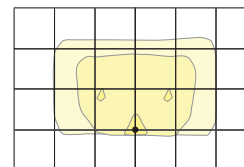
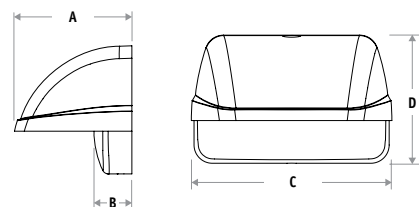
LNC9LU – Type II



LNC9LU – Type III



LNC9LU – Type IV

**DIMENSIONS**

A	B	C	D
4.81" (122 mm)	1.55" (39 mm)	8.22" (209 mm)	5.25" (133 mm)

ADDITIONAL INFORMATION**SHIPPING INFORMATION**

Catalog Number	G.W(kg)/ CTN	Carton Dimensions			Carton Qty. per Master Pack
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	
LNC-5LU	9.6 (4.36)	14.5 (37)	9.6 (24.5)	6.8 (17.5)	2
LNC-7LU	9.6 (4.36)	14.5 (37)	9.6 (24.5)	6.8 (17.5)	2
LNC-9LU	9.6 (4.36)	14.5 (37)	9.6 (24.5)	6.8 (17.5)	2

USE OF TRADEMARKS AND TRADE NAMES

All product and company names, logos and product identifies are trademarks ™ or registered trademarks ® of Hubbell Lighting, Inc. or their respective owners. Use of them does not necessarily imply any affiliation with or endorsement by such respective owners.



Submitted by Swaney Lighting		Catalog Number:	Type:
	Job Name: MERCY HOSPITAL SITE LIGHTING	LNC-7LU-3K-2** Notes: SPECIFY FINISH	W2 SLA20-47120

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April 29, 2021

Caitlin Cameron
Urban Designer
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: The Equinox (CHOM and PHDC) - Design Narrative

The proposed building to be located on Winter Street in Portland's West End Neighborhood consists of 43 residential apartment units intended for individuals and families. The building is a 4 story structure along the street.

Prior to developing the building concept we spent much time walking the streets of the West End, analyzing existing streetscapes, building massing, forms, materials and textures. This approach allowed us to develop a design concept that is grounded by the existing neighborhood context but reflects our contemporary time.

The neighborhood is comprised of a diverse palate of Architectural forms, scales and density. Winter Street and the surrounding neighborhood blocks have a variety of Architectural forms and massing.

We designed the building using color, massing and texture to scale the building as reflected on the Winter Street elevation, to create a facade rhythm similar in proportion to the local residential building types. The building is broken along the street wall with projecting facade bays to scale the facade and create visual interest and shadow lines. The punched opening window pattern also helps scale the facade, which is a common pattern throughout the surrounding neighborhood. The ground floor apartment units have exterior porches that open onto Winter Street, this is a common element along the street and provides a direct connection for the residents of the building to the sidewalk and neighborhood.

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

The siding materials proposed are factory finished composite lap siding and composite shiplap siding, chosen for their traditional crisp appearance and long term durability. The windows proposed are dark in color to compliment the siding colors and also further reinforce the crisp simplicity of the design. The roofing proposed is an EPDM roof membrane.

The design of The Equinox apartments is derived from the Vernacular Architecture that exists in the neighborhood, we have used color, texture, massing and rhythm as tools to scale the project and integrate it into the existing neighborhood fabric.

We look forward to discussing the project at the upcoming Planning Board Board Public Hearing.

Sincerely,



Ryan Senatore, AIA LEED AP

Principal

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

05/21/2021

HISTORIC NARRATIVE/PROJECT DESCRIPTION: WINTER ST. SENIOR BUILDING

The Senior Building on Winter Street as part of the Mercy redevelopment will be a self-contained building with separate financing but will share certain site amenities, including parking and common exterior space with the family building also on Winters Street and the Mercy building at 144 State Street.

The senior building is meant to contrast the architecture of the family building as the architecture on Winter street is small scale and eclectic. The thought is that having two large buildings with similar architecture may feel too much like a campus and take away from the granular fabric of the neighborhood.

There are two distinct architectural moves on the senior building that attempt to work with the neighborhood. The first is the breakup of the massing into three distinct portions along the street. The part of the building heading up Winter and closest to Pine attempts to feel more like three story building as the 4th floor is set back 2' from the lower floors. The central part of the building where the main entrance is set back in this plane and creates an open patio for residents to gather and activate the street. The portion closest to the family building along the courtyard is 4 stories matching the family building. The second move is the creation of stoops along the street to create more of a town house feel and a pedestrian scale to better match the nature of the street.

The details of the building will include a mix of modern and traditional detailing of a granular scale with the pedestrian/residential street in mind. An example of this is the traditional clapboard siding on the "town house" portions of the building. A light perforated metal band creates a louvered canopy over each "town house" entry and a more pronounced canopy over the main entrance and open patio space. This will help de-emphasize the height of the building and add interest texture of light along the street façade. The window sizing is intended to be residential proportioned with a consistent pattern and simple detailing. There are window bays along the Winter St façade to speak to the traditional forms of the 3 story apartment flats that are common place around Portland's denser residential neighborhoods including on Winter Street.

Roof top mechanicals will be centered on each wing and set in the middle of the building. Given the width of the street, the parapet around the building and minimal long views, these units will be very difficult to see from any public way.

Utilities

The proposed project will include installation of multiple utility services to the new building.

Water:

Existing domestic and fire suppression water services are anticipated to be continued to be utilized for the redevelopment of the hospital building and Morrison House. MEP to coordinate which existing fire suppression and domestic water services will continue to be utilized. Any unused services will need to be retired per PWD standards. The project proposes to tap two different 6" fire water service lines and two different 2" domestic water service lines for a total of four different connections off of the existing main on Winter Street to serve the future residential buildings along Winter Street.

Sewer:

Existing sanitary sewer services are anticipated to be continued to be utilized for the redevelopment of the hospital building and Morrison House. No additional sewer service upgrades to the existing building are proposed at this time. Two 6-inch sanitary sewer services are proposed, one for each of the future residential buildings along Winter Street. The new sewer services will connect into a combined sewer main within Winter Street.

Stormwater:

There are currently catch basins and stormwater sewer lines on site that are to be removed. The proposed measures to handle runoff include roof drain connections, catch basins, new stormwater sewer lines and a modular wetland system proprietary water quality treatment unit. These systems will connect to a combined sewer main within Spring Street. Please see the Stormwater Management Report for more information.

UGE/T/C:

The existing building on site is currently serviced by underground electric. An additional service is proposed to be routed from the existing electric service in Winter Street. The plans show both an above ground transformer and a potential subsurface electrical vault. Final configuration dependent on final MEP design.

Gas:

The existing gas service lines to the existing buildings are anticipated to be continued to be utilized for the redevelopment. The proposed two new residential buildings will have new gas services installed via a tap off the existing main in Winter Street as seen on the Utility Plan, Sheet C-20.

Ability to serve letters were sent out to the respective utility companies on August 28, 2020 in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Responses from the utility companies will be forwarded upon receipt.



Construction Management Plan

Project Address: 120 State Street (73 & 91 Winter Street)

Project Description:

Acorn Engineering, Inc. has been retained by Community Housing of Maine (CHOM) and Portland Housing Development Corporation (PHDC) to provide civil engineering services for the proposed redevelopment of 120 State Street. The proposed project site is currently comprised of a single parcel, Chart 45, Block C, Lot 7 (120 State Street), encompassed by State, Spring, and Winter Streets. The site is currently comprised of the existing Mercy Hospital complex, with surface parking, landscaping, and a loading dock area. As part of the separate, recently submitted, Mercy Redevelopment Level III Site Plan application, the project proposes to redevelop the existing lot into a mixed-use development, consisting of redevelopment of the existing hospital building and proposes two (2) new residential buildings along Winter Street with exterior off-site parking. The two (2) new residential buildings proposed by CHOM/PHDC consist of a 57-unit Senior building and a 43-unit multi-family Family building.

Project Team Summary:

Applicant:	Community Housing of Maine and Portland Housing Development Corporation
Applicant's Representative:	Community Housing of Maine and Portland Housing Development Corporation
Construction Manager (CM):	TBD
Civil Engineer:	Acorn Engineering, Inc.
Structural Engineer:	TBD
Architects:	Ryan Senatore Architecture (Family) CWS Architects (Senior)

The Applicant, CM and all subcontractors will work with the City of Portland and adjacent landowners to minimize any project impacts.

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

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

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



A. Construction Management Principles

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

B. Development Review of Construction Management Plan

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

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

Guarantees and fees will be paid at the time of the respective application. All necessary permits will be obtained prior to work and compliance with Sections 14-530 and 14-532 is required.

1. Street Opening and Street Occupancy Permits:

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

2. Blasting:

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

3. Building Code:

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

D. Construction Administration and Communication

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



Bree LaCasse and Brian Kilgallen
Community Housing of Maine
(207) 879-0347

CM and Subcontractor information will be posted along the State Street, Spring Street & Winter Street frontages once contracted.

E. Construction Schedule

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

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

The estimated timeframe of the proposed project is outlined below:

<u>Project Start Date:</u>	Spring 2022
<u>Project End Date:</u>	Fall 2023

A more detailed work schedule shall be provided by the CM at or before the pre-construction meeting with the City.

F. Security

1. The Construction Management Plan, Sheet C-03, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations*.
3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - o Good Housekeeping
 - o On-site security
 - o Installation of new fire protection systems as construction progresses
 - o Preservation of existing systems during demolition



- o Organization and training of an on-site fire brigade
 - o Development of a pre-fire plan with the local fire department
 - o Rapid communication
 - o Consideration of special hazards resulting from previous occupancies
 - o Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
 5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

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

2. Sewer and Stormwater

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

3. Traffic Control Plans

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

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

The MOT plan shall provide for the safe passage of the public through or along the construction work zone. It may be permissible to close a portion of Winter and Spring Streets during utility connections and/or detour a mode of traffic when absolutely



necessary for safety. All requests shall be subject to City approval. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

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

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

- Traffic control for bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

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

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately and removal of such shall comply with all local, state, and federal regulations.
2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.
3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.
4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.
5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.
6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:



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

I. Erosion & Sedimentation Control

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

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for material staging areas, on-site temporary construction trailers, on-site truck delivery holding areas, on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Upon arrival to site, all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.
3. All deliveries for materials shall comply with the City's noise requirements.



K. Parking During Construction

1. Adequate parking for construction workers shall be provided along Spring and Winter Streets or arrangements for off-street parking at an off-site location shall be provided.
2. Truck Routes: Trucks will access the site via State Street, Spring Street and Winter Street.

L. Special Measures as Necessary

The abutting buildings will be subject to a pre and post construction survey to monitor any effects from construction. The surveys shall consist of photographs of the foundation as viewed from outside and inside if granted permission.

M. Construction Phasing

It is anticipated that the separate Mercy Hospital redevelopment project will begin construction ahead of the CHOM/PHDC Winter Street affordable housing developments, including demolition of the existing hospital emergency wing, installation of shared utilities and woonef / parking area construction. The CHOM/PHDC projects will be responsible for all site improvements specifically required for the construction of the affordable housing projects, including water, sewer, gas, electrical utility installation along Winter Street, Winter Street sidewalk reconstruction, affordable housing building construction for each building, street trees, etc. Please refer to the plan set for specific information on the proposed improvements specifically related to the CHOM/PHDC affordable housing development.

N. Public Improvements

As part of the Winter Street affordable housing project, the Winter Street sidewalk will be reconstructed, including the addition of new ADA accessible ramps and crosswalks at the Spring Street and Winter Street intersection. On street parking along Winter Street will be modified to allow for a new emergency access mountable curb cut, however there will be no net change to existing parking spots along the frontage of Winter Street. New street trees and signage is proposed along the frontage of Winter Street. The existing overhead utility lines on the east side of Winter Street along the project frontage will be brought underground to a proposed submersible vault within the Winter Street sidewalk.

O. Site Safety Protocols

During construction, the site will have construction fencing with gated access along the perimeter of property line to restrict public access to the site. Jersey barriers will be installed along the street where sidewalk and utility improvements are proposed. Please refer to the Construction Management Plan for specific locations and proposed safety precautions for additional information.



Solid Waste Disposal

Solid waste disposal areas will be located within the interior of each of the proposed buildings. Solid waste will be collected via roll out bins and brought out to the woonerf for a private hauler to collect. See architectural drawings and Sheet C-10, Site Plan for additional information.





Traffic Solutions
 William J. Bray, P.E.
 17 Mountview Drive
 Gorham, ME 04038
 (207) 400-6890
trafficsolutions@maine.rr.com

May 14, 2021

Parking Assessment

Proposed

“Mercy Hospital Redevelopment”

INTRODUCTION

NEWHEIGHT REDFERN, LLC are proposing redevelopment of the existing Mercy Hospital building creating a total of 162 residential apartment units and 8 additional residential units in the adjoining Morrison building for a total of 170 residential units. The proposed mixed-use redevelopment project also provides a self-storage facility, commercial/retail space, and a medical clinic. The applicant is also working with Community Housing of Maine (CHOM), a Portland-based, non-profit affordable housing developer that is expected to construct an additional 95 affordable residential housing units.

The proposed 170 residential housing units include 153 market rate units and 17 affordable workforce units. Thirty-seven (37) of the proposed units are studios, 131 units are one-bedroom, and the remaining two units are two-bedrooms.

The proposed CHOM housing project constructs two new buildings along the Winter Street frontage of the Mercy Hospital property that is expected to provide a total of 52 affordable senior housing units and 43 family housing units. The affordable senior units include (52) one-bedroom units. The proposed affordable family units include: (6) studio unit, (15) one-bedroom, (13) two-bedroom and (9) three-bedroom units.

The proposed redevelopment project provides a total of 70 parking spaces within the Mercy Hospital campus with 49 of the spaces designated as full-size (9'x18') spaces and the remaining 21 spaces are “tandem” or time-restricted spaces.

This document provides a determination of the “average” peak parking demand for the proposed “Mercy Hospital Redevelopment” and CHOM projects, appropriately applying both national parking trends and local parking data. The analytical determination of “average” peak parking demand for a mixed-use development must also account for the time-of-day distribution of the actual parking demand. For example, the peak parking demand requirements of one proposed use could likely occur at 7:00 p.m.; whereas the peak parking demand of

a second building use may occur at 1:00 p.m. The net result is that the parking demand of multiple land-uses may be able to use the same parking space at different times of the day; thereby, reducing the actual peak parking demand of the site. Further, the analytical process followed in forecasting the peak parking demand of the proposed Mercy and CHOM sites also accounts for internally captured trips; oftentimes referred to as “*shared-use*” trips. It is reasonable to expect a resident in one of the proposed housing units to purchase coffee in the proposed neighborhood coffee shop and/or perhaps groceries in the proposed variety store. As a result, unless these internal trips are accounted for the projection of trips and, ultimately, parking demand requirements of the proposed project are overstated.

The parking demand requirements of the proposed Mercy Hospital Redevelopment and CHOM projects are partially met with the provision of the proposed 70 on-site parking spaces and the remaining balance of required parking spaces will be met with a combination of one or more of the following options; payment of the City’s in-lieu fee, off-site parking leases, and/or other undefined possibilities.

PARKING DEMAND

National parking demand data presented in the 5th edition of the Institute of Transportation Engineers (ITE) “**PARKING GENERATION**” publication is typically the instrument used in estimating the actual parking demand of a development site. The 5th edition, which was published in January 2019, represents the most current copy of the noted ITE document. The ITE manual provides “*average*” peak parking demand rates for more than 100 land-use categories including: residential, lodging, recreational, institutional, medical, retail, office, services, etc. Occasionally proposed development uses are more locally specific and/or are not presently accounted for in the national parking publication. In those instances, the average peak parking demand is typically determined based upon local studies conducted at similar development uses. Parking rates are provided for both a weekday and Saturday condition.

The “*average*” peak parking demand requirements of the proposed Mercy Hospital Redevelopment mixed-use project and the CHOM housing project are estimated based upon the following projected site uses:

Mercy Hospital Redevelopment Mixed-Use Project

Market Rate Residential Apartment Units

- (33) studio units
- (118) one-bedroom units
- (2) two-bedroom units

Affordable Workforce Units

- (4) studio units
- (13) one-bedroom units

Self-Storage Facility – 35,398sf

Medical Clinic – 3,077sf

Commercial Retail Units ⁽¹⁾

- Neighborhood cafe – 2,086sf

- Hardware/Paint Store – 1,080sf
- Co-working Office Space – 2,074sf
- Hair Salon – 855sf

NOTE: ⁽¹⁾ The identified commercial retail uses applied in determining the peak parking demand requirements of the proposed project are speculative at this time. The actual tenant for each or all of the four proposed commercial spaces could potentially be different than the uses presented above. Individual parking assessments will be provided for each tenant in support of their respective City issued occupancy permit; defining their peak parking demand requirements and parking supply options.

CHOM Affordable Residential Housing Units

- 52 Affordable Senior Residential Housing Units
- 43 Affordable Family Residential Housing Units

Parking Demand Requirement Procedures

Mercy Hospital Redevelopment Mixed-Use Project: The peak parking demand requirements of the proposed market rate apartment units is based upon Land-Use #221- Multi-Family Housing (Mid-Rise) presented in the noted ITE “**PARKING GENERATION**” publication. This land-use category is generally used for buildings between three and 10 floors in height. A peak parking rate of 0.48 spaces per bedroom was applied in calculating the peaking demand requirements of the proposed market rate units.

Similarly, the peak parking demand requirements of the proposed affordable workforce apartment units is based upon Land-Use #223 - Affordable Housing – Income Limits in the national parking document. The parking rate used in determining the peak parking demand of the 17 workforce apartment units for a weekday is 0.30 spaces per bedroom.

Peak parking demand for the proposed self-storage facility was determined based upon Land-Use #151 - Mini-Warehouse in the 5th edition of the parking publication. The parking rate applied is 0.10 spaces per 1,000sf of total buildings(s) area.

The peak parking demand for the proposed medical clinic facility is based upon Land-Use #630 - Clinic in the noted publication. The parking demand rate applied is 3.89 spaces per 1,000sf of building area.

Parking demand for the proposed neighborhood café is based upon a traffic study conducted at an existing neighborhood coffee/café located on Munjoy Hill at Congress and Atlantic Streets. The results of the field survey, as presented below in Table A, demonstrates the majority of the customers (approximately 92%) of the total recorded trips are pedestrian trips generated within the local neighborhood. It is expected that any customer arriving via automobile to the proposed neighborhood café will park on-street and, as a result, off-street parking is not required. To conservatively project the parking demand of the proposed coffee shop a total of three parking spaces are provided.

Table A
Trip Generation Summary
Neighborhood Coffee Shop
(Congress Street @ Atlantic Street)

<u>Survey Time</u>	<u>Entering Trips</u>		<u>Exiting Trips</u>		<u>Total Trips</u>	
	<u>Pedestrian Trips</u>	<u>Vehicle Trips</u>	<u>Pedestrian Trips</u>	<u>Vehicle Trips</u>	<u>Pedestrian Trips</u>	<u>Vehicle Trips</u>
8:00 to 8:15 AM	7	1	7	1	14	2
8:15 to 8:30 AM	5	2	3	2	8	4
8:30 to 8:45 AM	9	2	7	2	16	4
8:45 to 9:00 AM	12	3	8	2	20	5
9:00 to 9:15 AM	8	1	10	2	18	3
9:15 to 9:30 AM	4	1	6	1	10	2
Total Trips	45	10	41	10	86	20

Parking demand for the hardware/paint store is based upon Land-Use #816 Hardware/Paint Store. The parking rate applied is 0.54 spaces per 1,000sf GFA.

Parking demand for the Co-Working Office Space is based upon Land-Use #710 - General Office Building. The parking demand rate applied is 1.63 spaces per 1,000sf GFA.

A total of one (1) parking space is allocated to the proposed hair salon shop, which assumes the majority of the customer base will walk and/or share a ride to the proposed local hair salon shop.

Table 1, as follows, presents the “average” peak parking demand requirement for the proposed Mercy Hospital project for a typical weekday:

Table 1
“Peak” Parking Demand Summary
For
“Mercy Hospital Development”
(Weekday Condition)

Proposed Use	Unit Size	Land-Use Code	Peak Parking Demand Rate	Parking Space Requirements
Market Rate Apartments	155 bedrooms	LUC 221	0.48 spaces/bedroom	74 spaces
Affordable Workforce Apartments	17 bedrooms	LUC 223	0.30 spaces/bedroom	5 spaces
Medical Clinic	3,077sf	LUC 630	3.89 spaces/1,000 GFA	12 spaces
Self-storage Facility	35,398sf	LUC 151	0.10 spaces/1,000 GFA	4 spaces
Neighborhood Café	2,086sf	n/a	Parking is provided for 3 employees	3 spaces
Hardware/Paint Store	1,080sf	LUC 816	0.54 spaces/1,000 GFA	1 space
Co Working Office Space	2,074sf	LUC 710	1.63 spaces/1,000 GFA	3 spaces
Hair Salon	855sf	n/a	Parking is provided for owner only	1 space
			TOTAL Spaces	103 spaces

The “average” unadjusted peak parking demand of the combined Mercy Hospital project is estimated at 103 spaces for a typical weekday condition.

CHOM Affordable Residential Unit Project: Parking demand for the proposed affordable senior housing units is based upon the following descriptive process used for a similar recent CHOM project located at 83 Middle Street:

Land-use #223 Affordable Housing – Seniors: A subset of the *Affordable Housing* land-use category was selected in estimating the average peak parking demand of the proposed project. An average peak parking demand rate of 0.42 spaces per unit is provided under this land-use category. The projected parking rate is based upon a total of three study sites with a combined number of 97 apartment units. Both study metrics are less than what is typically desirable in projecting, with a high level of confidence, the average peak parking demand rate for a specific development site. Based upon the national parking data, the proposed 50-unit residential apartment project is expected to generate an average peak parking demand of 21 parking spaces.

Local parking data previously collected at two senior low-income housing sites located on the Portland Peninsular suggests the national parking rate likely over states the actual peak parking demand requirements of a low-income senior housing project. Parking utilization surveys were conducted at two existing senior, adult low-income housing facilities on the Portland Peninsular to augment the national parking demand data. The existing sites included: 1) 47 Smith Street a 20-unit site and 2) Danforth on High, a 30-unit site. A total of 20 spaces are provided at the 47 Smith Street site and 13 parking spaces are located at the Danforth on High apartment site. Parking utilization data was gathered at both sites in the early morning (prior to 6:00 a.m.) on two separate days. Table 1, as follows, presents the results of the parking surveys:

Table 1
Parking Utilization Data
Existing Portland Peninsular Senior Housing Facilities

<i>Facility Location</i>	<i>Number of Apartment Units</i>	<i>Number of Parking Spaces</i>	<i>Occupied Spaces – Day 1</i>	<i>Occupied Spaces – Day 2</i>
<i>47 Smith Street</i>	<i>20</i>	<i>20</i>	<i>5 spaces</i>	<i>6 spaces</i>
<i>Danforth on High</i>	<i>30</i>	<i>13</i>	<i>4 spaces</i>	<i>4 spaces</i>
<i>TOTAL</i>	<i>50</i>	<i>33</i>	<i>9 spaces</i>	<i>10 spaces</i>

The results of the local Portland based parking survey shows a combined average peak parking demand of **9.5** parking spaces for the two senior, adult apartment sites or an average peak parking demand of 0.19 spaces per apartment unit ($9.5 \div 50 = 0.19$ spaces per apartment unit). The local parking data would suggest a total of ten spaces is adequate to meet the parking demand requirements of the proposed 83 Middle Street low-income senior apartment project.

Traffic Solutions applies an average parking demand rate of 0.31 spaces per unit which, represents the average of the national ITE parking rate (0.42 spaces per unit) and local survey data (0.19) spaces per unit collected in the City of Portland. Accordingly, the proposed peak parking demand rate of 0.31 spaces per unit was applied in determining the peak parking demand of the proposed affordable senior housing units.

Parking demand for the proposed affordable family housing units is based upon Land-Use #223 Affordable Housing – Income Limits in the 5th edition of the “**PARKING GENERATION**” publication. The parking rate applied is 0.53 spaces per unit.

Table 2, as follows, presents the “*average*” peak parking demand requirements for both the proposed Mercy and CHOM projects for a typical weekday:

Table 2
“Peak” Parking Demand Summary
For
“Mercy Hospital Development/CHOM Sites”
(Weekday Condition)

Proposed Use	Unit Size	Land-Use Code	Peak Parking Demand Rate	Parking Space Requirements
Affordable Senior Housing Units	52 units	LUC 223/ Local Data	0.31 spaces/unit ⁽¹⁾	16 spaces
Affordable Family Housing Units	43 units	LUC 223	0.53 spaces/unit	23 spaces
Market Rate Apartments	155 bedrooms	LUC 221	0.48 spaces/bedroom	74 spaces
Affordable Workforce Apartments	17 bedrooms	LUC 223	0.30 spaces/bedroom	5 spaces
Medical Clinic	3,077 sf	LUC 630	3.89 spaces/1,000 GFA	12 spaces
Self-storage Facility	35,398sf	LUC 151	0.10 spaces/1,000 GFA	4 spaces
Neighborhood Café	2,086sf	n/a	Parking is provided for 3 employees	3 spaces
Hardware/Paint Store	1,080sf	LUC 816	0.54 spaces/1,000 GFA	1 space
Co Working Office Space	2,074sf	LUC 710	1.63 spaces/1,000 GFA	3 spaces
Hair Salon	855sf	n/a	Parking is provided for owner only	1 space
			TOTAL Spaces	142 spaces

NOTE: ⁽¹⁾ parking demand rate based upon an average of LUC #223 and local parking data.

The “*average*” unadjusted peak parking demand of the combined Mercy and CHOM projects is estimated at **142 spaces** for a typical weekday condition.

Parking Demand Adjustments: Due to the diversity of proposed uses within the proposed Mercy/CHOM project site, an adjustment is applied to refine the actual parking demand of the proposed development. The adjustment accounts for multi-purpose trips that occur between one or more tenant spaces within the development site; often referred to as “*shared or internally captured*” trips. These trips must be accounted for or the projection of peak parking demand overstates the actual peak parking demand of a specific development site. The National Cooperative Highway Research Program’s (NCHRP) 684 Internal Trip Capture Estimation Tool was utilized in calculating the number of shared or captured trips generated by the proposed sites. Separate analyses were conducted for both the weekday morning and evening peak hour time periods and the trip rates calculated for each time period (11% AM Peak Hour and 16% PM Peak Hour) were then averaged to provide a conservative estimate of 13% percent. Copies of the NCHRP worksheets for both the weekday AM and PM peak hours are attached for reference.

Tables 3, below, summarizes the adjusted “average” peak parking demand for the proposed sites for a typical weekday condition:

Table 3
Adjusted Parking Demand Summary
For
“Mercy Hospital Development/CHOM Sites”
(Weekday Condition)

Proposed Use	Peak Parking Demand (Spaces)	Shared Trip Adjustment ⁽¹⁾	Adjusted Parking Demand
Affordable Senior Housing Units	16 spaces	-2	14 spaces
Affordable Family Housing Units	23 spaces	-3	20 spaces
Market Rate Apartments	74 spaces	-10	64 spaces
Affordable Workforce Apartments	5 spaces	-1	4 spaces
Medical Clinic	12 spaces	-2	10 spaces
Self-storage Facility	4 spaces	-1	3 spaces
Neighborhood Café	3 spaces	0	3 spaces
Hardware/Paint Store	1 space	0	1 space
Co-Working Office Space	3 spaces	0	3 spaces
Hair Salon	1 space	0	1 space
TOTAL	142 spaces	-19 spaces	123 spaces

NOTE: ⁽¹⁾ Percentage of “shared trips” is based upon an average of values determined through the NCHRP 684 tool for the weekday AM and PM peak hours.

Hourly Parking Demand: The noted ITE “**PARKING GENERATION**” publication provides further guidance in estimating the actual parking demand of a mixed-use or multi-use project. They state the following: *“the hourly variation in parking demand for the individual land uses can result in conditions where the parking demand for one land use is high while the demand for a different land use is low. In this situation, parking demand for both land uses may be able to use the same parking space at different times of the day. The end result can be a reduction in overall peak parking demand.”*

The ITE “**PARKING GENERATION**” manual provides time-of-day percent peak parking demand values for each land-use category for completing this determination. The actual percent values applied in completing these calculations are presented in Table 4 as follows:

Table 4
Hourly Peak Parking Demand (percent value) Summary
For
“Mercy Hospital Development Site”
(Weekday Condition)

<u>Time of Day</u>	<u>Senior Housing Units</u>	<u>Family Housing Units</u>	<u>Market Rate Apartments</u>	<u>Affordable Workforce Apartments</u>	<u>Medical Clinic</u>	<u>Self-storage Facility</u>	<u>Café ⁽¹⁾</u>	<u>Hardware/Paint Store</u>	<u>Co-Working Office Space</u>	<u>Hair Salon ⁽²⁾</u>
7:00 AM	71	71	71	71	0	0	100	9	13	0
8:00 AM	61	61	61	61	63	14	100	55	48	0
9:00 AM	55	55	55	55	93	71	100	73	88	100
10:00 AM	54	54	54	54	96	50	100	100	100	100
11:00 AM	53	53	53	53	100	79	100	64	100	100
12:00 PM	50	50	50	50	80	57	100	95	85	100
1:00 PM	49	49	49	49	75	64	100	68	84	100
2:00 PM	49	49	49	49	90	64	100	91	93	100
3:00 PM	50	50	50	50	89	79	100	50	94	100
4:00 PM	58	58	58	58	74	71	100	45	85	100
5:00 PM	64	64	64	64	41	100	100	36	56	100
6:00 PM	67	67	67	67	15	14	0	5	20	0
7:00 PM	70	70	70	70	0	0	0	0	11	0
8:00 PM	76	76	76	76	0	0	0	0	0	0
9:00 PM	83	83	83	83	0	0	0	0	0	0
10:00 PM	90	90	90	90	0	0	0	0	0	0
11:00 PM	93	93	93	93	0	0	0	0	0	0
12:00 - 4:00 AM	100	100	100	100	0	0	0	0	0	0
5:00 AM	94	94	94	94	0	0	0	0	0	0
6:00 AM	83	83	83	83	0	0	0	0	0	0

NOTES:

- (1) A total of three parking spaces are allocated to the proposed café for employees during the noted time period only. Both determinations are based upon the consultant’s projections.
- (2) One parking space is provided to the owner of the proposed hair salon; it is assumed that the majority of customers will either walk or share a trip with another driver.

Finally, Table 5 estimates the “average” adjusted hourly peak parking demand requirements of the proposed project based upon the procedures described in the ITE “**PARKING GENERATION**” publication.

Table 5
Hourly Peak Parking Demand Summary
For
“Mercy Hospital Development/CHOM Sites”
(Weekday Condition)

Adjusted Peak Parking Demand	Affordable Senior Housing	Affordable Family Housing	Market Rate Apartments	Affordable Workforce Apartments	Medical Clinic	Self- Storage Facility	Café	Hardware/Paint Store	Co- Working Office Space	Hair Salon	Total
	14 spaces	20 spaces	64 spaces	4 spaces	10 spaces	3 spaces	3 spaces	1 space	3 spaces	1 space	123 spaces
<u>Time of Day</u>											
7:00 AM	10 spaces	14 spaces	45 spaces	3 spaces	0	0	3 spaces	0	1 space	0	76 spaces
8:00 AM	9 spaces	12 spaces	39 spaces	2 spaces	6 spaces	1 space	3 spaces	1 space	1 space	0	74 spaces
9:00 AM	8 spaces	11 spaces	35 spaces	2 spaces	9 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	75 spaces
10:00 AM	8 spaces	11 spaces	35 spaces	2 spaces	10 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	76 spaces
11:00 AM	7 spaces	11 spaces	34 spaces	2 spaces	10 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	74 spaces
12:00 PM	7 spaces	10 spaces	32 spaces	2 spaces	8 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	69 spaces
1:00 PM	7 spaces	9 spaces	31 spaces	2 spaces	8 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	67 spaces
2:00 PM	7 spaces	9 spaces	31 spaces	2 spaces	9 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	68 spaces
3:00 PM	7 spaces	10 spaces	32 spaces	2 spaces	9 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	70 spaces
4:00 PM	8 spaces	12 spaces	37 spaces	2 spaces	7 spaces	2 spaces	3 spaces	1 space	3 spaces	1 space	76 spaces
5:00 PM	9 spaces	13 spaces	41 spaces	3 spaces	4 spaces	3 spaces	3 spaces	1 space	2 spaces	1 space	80 spaces
6:00 PM	9 spaces	13 spaces	41 spaces	3 spaces	2 spaces	1 space	0	0	1 space	0	70 spaces
7:00 PM	10 spaces	14 spaces	45 spaces	3 spaces	0	0	0	0	0	0	72 spaces
8:00 PM	11 spaces	15 spaces	49 spaces	3 spaces	0	0	0	0	0	0	78 spaces
9:00 PM	12 spaces	17 spaces	53 spaces	3 spaces	0	0	0	0	0	0	85 spaces
10:00 PM	13 spaces	18 spaces	58 spaces	4 spaces	0	0	0	0	0	0	93 spaces
11:00 PM	13 spaces	19 spaces	60 spaces	4 spaces	0	0	0	0	0	0	96 spaces
12:00 to 4:00 AM	14 spaces	20 spaces	64 spaces	4 spaces	0	0	0	0	0	0	102 spaces
5:00 AM	13 spaces	19 spaces	60 spaces	4 spaces	0	0	0	0	0	0	96 spaces
6:00 AM	12 spaces	17spaces	53 spaces	3 spaces	0	0	0	0	0	0	85 spaces

Accordingly, the average adjusted peak hourly parking demand of the combined sites for a typical weekday occurs mid-morning between 12:00 a.m. and 4:00 a.m. with a peak parking demand of **102** spaces.

PARKING SUPPLY

Per the City's Land Use Code, Section 14-332.1: "*Zone specific off-street parking exceptions and modifications, (e), B-3 Zone: No off-street parking is required for changes of use.*" The project proposes a change of use for both the existing Mercy hospital building and the Morrison House; and as such, the Applicant requests an exemption in meeting the off-street parking demand requirements of the combined Mercy Hospital Redevelopment mixed-use project. The present site design; however, with construction of 70 on-site parking spaces satisfies the calculated peak parking demand requirements of the proposed project.

The CHOM Winter Street affordable housing projects, per Section 19, Table 19-3: Categorical Exceptions to Off-Street Parking Minimums; requests an exemption in meeting the peak parking demand of the proposed projects. The City's parking provision requires the project to be located within a ¼ mile of a fixed route transit service and provide a Transportation Demand Management (TDM) plan. Both conditions are met; the proposed CHOM sites are located within ¼ mile of a fixed route transit service and a detailed TDM plan has been submitted in support of the proposed project. (Please refer to the provided Transportation Management Plan submitted for the proposed project)

Separately per Table 19-3, the Planning Board may establish a parking requirement less than 1 space/low-income housing unit, regardless of the size of the structure. As part of the purchase and sale agreement with the property owners (NewHeight Redfern, LLC), CHOM will provide (15) parking spaces within the "woonerf" area.

SUMMARY

- The proposed Mercy Hospital Redevelopment mixed-use project and the adjoining CHOM affordable residential apartment projects is projected to generate an "*average*" peak parking demand of approximately **142** spaces on a typical weekday. The estimates of peak parking demand were developed based upon national parking demand rates presented in the 5th edition of the Institute of Transportation's "**PARKING GENERATION**" publication and parking data collected locally within the City of Portland.
- The determination of "*average*" peak parking demand for the proposed project includes an adjustment for "*shared-use*" trips, which account for the occurrence of multi-purpose trips between one or more tenant spaces. The noted parking adjustments reduce the "*average*" peak parking demand of the site to **123** weekday spaces.
- The final step in forecasting the "*average*" peak parking demand requirements of the proposed Mercy Hospital Redevelopment mixed-use site and the CHOM affordable residential apartment projects considers the "*shared parking space*" benefits of a mixed-use or multi-use project. The previously referenced "**PARKING GENERATION**" publication provides the following guidance: "*the hourly variation in parking demand for the individual land uses can result in conditions where the parking demand for one land use is high while the demand for a different land use is low. In this situation, parking demand for both land uses may be able to use the same parking space at different times of the day. The end result can be a reduction in overall peak parking demand.*" The parking manual provides time-of-day percent of peak parking demand values for each land-use category; whereby, the actual hourly parking demand of the project site can be calculated. The results of this final process show the "*average*" peak parking demand of the combined Mercy Hospital/CHOM site

projects occurs between 12:00 a.m. and 4:00 a.m. during a typical weekday. The peak hourly parking demand for this time period is estimated at **102** spaces.

- Traffic Solutions recommends a total of 102 parking spaces should be secured for the evening hours (7:00 p.m. and 7:00 a.m.) and a lesser number of spaces (80 spaces) for the daylight hours to meet the expected peak parking demand requirements of the combined development sites.
- The Applicant will provide off-street parking for the combined development projects with construction of 70 on-site parking spaces.
- Per the City's Land Use Code, Section 14-332.1: Zone specific off-street parking exceptions and modifications, (e), B-3 Zone: No off-street parking is required for changes of use. As the project proposes a change of use for both the existing Mercy hospital building and the Morrison House, it is requested that the project not be required to provide any off-street parking associated with the Mercy hospital and Morrison House redevelopment project.
- The CHOM Winter Street affordable housing projects, per Section 19, Table 19-3: Categorical Exceptions to Off-Street Parking Minimums, requests an exemption in providing off-street parking. The CHOM project meets both standards required in Section 19, Table 19-3; the project is located within ¼ mile of a fixed route transit service and the Applicant has provided a detailed Transportation Demand Management plan for the proposed project. Separately per Table 19-3, the Planning Board may establish a parking requirement of less than 1 space/low-income housing unit, regardless of the size of the structure. As part of the purchase and sale agreement with the property owners (NewHeight Redfern, LLC), CHOM will be provided (15) parking spaces within the "woonerf" area.

A handwritten signature in black ink is written over a circular official seal. The seal contains the text "CITY OF CHICAGO" and "PLANNING BOARD" around the perimeter, with a star in the center. The signature is a cursive, stylized name.



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May 13, 2021

Traffic Assessment

For Proposed

“Mercy Hospital Redevelopment”

Portland, Maine

INTRODUCTION

NEWHEIGHT REDFERN, LLC are proposing redevelopment of the existing 242,000 square foot Mercy Hospital creating a total of 162 residential apartment units and eight additional residential units in the adjoining Morrison building for a total of 170 residential units. The proposed mixed-use redevelopment project also provides; a self-storage facility, commercial/retail space, and a medical clinic. The applicant is also working with Community Housing of Maine (CHOM), a Portland-based non-profit affordable housing developer, who proposes to construct an additional 95 affordable residential housing units within the proposed development site.

The proposed redevelopment project provides a total of 70 parking spaces within the Mercy Hospital campus with 49 of the spaces designated as full-size (9'x18') spaces and the remaining 21 spaces are “tandem” or time restricted spaces.

Primary access to the Mercy Hospital site is provided with construction of a 22-foot-wide driveway entrance intersecting Spring Street just north of the Winter Street intersection. The proposed redevelopment project also retains the existing State Street driveway entrance as a secondary means of ingress/egress to the project site. A 16-foot-wide emergency access lane is also proposed off Winter Street connecting to the internal parking area.

Traffic projections are developed for both the existing Mercy Hospital facility and the proposed CHOM site applying a combination of both national trip generation data published in the 10th edition of Institute of Transportation Engineers “**TRIP GENERATION**” publication and local traffic surveys conducted on the Portland peninsular. For analysis purposes, traffic projections for the proposed multi-use Mercy Hospital Redevelopment project and adjoining CHOM site are based upon the following site details:

Mercy Hospital Redevelopment Mixed-Use Site

- 153 Market Rate Residential Apartment Units
- 17 Affordable Workforce Residential Apartment Units
- Self-Storage Facility – 35,398sf
- Medical Clinic – 3,077sf
- Unit #1: Commercial Space – Café (2,086sf)
- Unit #2: Commercial Space – Hardware/Paint Store (1,080sf)
- Unit #3: Commercial Space – Hair Salon (855sf)
- Unit #4: Commercial Space - Co-Working Space (2,047sf)

CHOM Affordable Residential Housing Units

- 52 Affordable Senior Residential Housing Units
- 43 Affordable Family Residential Housing Units

Existing road safety conditions in the immediate area of the project site are also reviewed based upon MaineDOT's highway safety reports for the time period of 2017 through 2019.

SITE TRAFFIC GENERATION

Peak hour trip forecasts for the Mercy Hospital Redevelopment project are prepared applying trip rate information detailed in the 10th edition of the noted ITE “**TRIP GENERATION**” publication and traffic data gathered at a local City of Portland establishment. The following specific site uses are defined as follows:

- 153 Market Rate Residential Apartment Units
- 17 Affordable Workforce Residential Apartment Units
- Self-Storage Facility – 35,398sf
- Medical Clinic – 3,077sf
- Commercial Retail Development ⁽¹⁾
 - Unit #1: Commercial Space – Café (2,086sf)
 - Unit #2: Commercial Space – Hardware/Paint Store (1,080sf)
 - Unit #3: Commercial Space – Hair Salon (855sf)
 - Unit #4: Commercial Space - Co-Working Space (2,047sf)

NOTE: ⁽¹⁾ The identified commercial retail uses are speculative at this time. Separate peak hour trip assignments will be developed individually for each pad site upon application for a City construction permit.

The following procedures were applied:

1. **Site Trip Generation – Self-Storage Facility (35,398sf):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation's Engineers “**TRIP GENERATION**” manual. The following trip rates were applied in that effort:

Land-Use #151: Mini-Warehouse

Weekday AM Peak Hour (Street)	= 0.10 trips/1,000sf GFA
Weekday PM Peak Hour (Street)	= 0.17 trips/1,000sf GFA
Weekday AM Peak Hour (Generator)	= 0.20 trips/1,000sf GFA
Weekday PM Peak Hour (Generator)	= 0.20 trips/1,000sf GFA

Table 1, below provides a summary of the trip generation for the proposed self-storage facility:

Table 1
Peak Hour Trip Generation Summary
(Self-Storage Facility)

<u>Peak Hour Time Period</u>	<u>Peak Hour Trip Generation</u>
AM Peak Hour (Street)	4
PM Peak Hour (Street)	6
AM Peak Hour (Generator)	7
PM Peak Hour (Generator)	7

2. **Site Trip Generation – Proposed Market Rate and Affordable Workforce Residential Apartments (170 Units):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation's Engineers "TRIP GENERATION" manual. The following trip rates were applied in that effort:

Land-Use #221: Multi-family Housing (Mid-Rise)

Weekday AM Peak Hour (Street)	= 0.20 trips/unit
Weekday PM Peak Hour (Street)	= 0.18 trips/unit
Weekday AM Peak Hour (Generator)	= 0.15 trips/unit
Weekday PM Peak Hour (Generator)	= 0.18 trips/unit

Table 2, below, provides a summary of the trip generation for the proposed 170 market rate and affordable workforce residential apartments units:

Table 2
Peak Hour Trip Generation Summary
(170 Residential Apartments)

<u>Peak Hour Time Period</u>	<u>Peak Hour Trip Generation</u>
AM Peak Hour (Street)	34 trips
PM Peak Hour (Street)	31 trips
AM Peak Hour (Generator)	26 trips
PM Peak Hour (Generator)	31 trips

3. **Site Trip Generation – Medical Clinic (3,077sf):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation's Engineers "TRIP GENERATION" manual. The following trip rates were applied in that effort:

Land-Use #630: Clinic

Weekday AM Peak Hour (Street)	= 3.69 trips/1,000sf GFA
Weekday PM Peak Hour (Street)	= 3.28 trips/1,000sf GFA
Weekday AM Peak Hour (Generator)	= 5.22 trips/1,000sf GFA
Weekday PM Peak Hour (Generator)	= 4.64 trips/1,000sf GFA

Table 3, below, provides a summary of the trip generation for the proposed medical clinic:

Table 3
Peak Hour Trip Generation Summary
(Medical Clinic)

<u>Peak Hour Time Period</u>	<u>Peak Hour Trip Generation</u>
AM Peak Hour (Street)	11
PM Peak Hour (Street)	10
AM Peak Hour (Generator)	16
PM Peak Hour (Generator)	14

4. **Site Trip Generation – General Office Building (2,047sf):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation's Engineers "TRIP GENERATION" manual. The following trip rates were applied in that effort:

Land-Use #710: General Office Building

Weekday AM Peak Hour (Street)	= 0.83 trips/1,000sf GFA
Weekday PM Peak Hour (Street)	= 0.87 trips/1,000sf GFA
Weekday AM Peak Hour (Generator)	= 0.91 trips/1,000sf GFA
Weekday PM Peak Hour (Generator)	= 0.87 trips/1,000sf GFA

Table 4, below, provides a summary of the trip generation for the proposed professional office space:

Table 4
Peak Hour Trip Generation Summary
(General Office Building)

<u>Peak Hour Time Period</u>	<u>Peak Hour Trip Generation</u>
AM Peak Hour (Street)	2
PM Peak Hour (Street)	2
AM Peak Hour (Generator)	2
PM Peak Hour (Generator)	2

5. **Site Trip Generation – Hardware/Paint Store (1,080sf):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation's Engineers "TRIP GENERATION" manual. The following trip rates were applied in that effort:

Land-Use #816: Hardware/Paint Store

Weekday AM Peak Hour (Street)	= 1.08 trips/1,000sf GFA
Weekday PM Peak Hour (Street)	= 2.68 trips/1,000sf GFA
Weekday AM Peak Hour (Generator)	= 1.36 trips/1,000sf GFA
Weekday PM Peak Hour (Generator)	= 1.13 trips/1,000sf GFA

Table 5, below, provides a summary of the trip generation for the proposed hardware/paint store:

Table 5
Peak Hour Trip Generation Summary
(Hardware/Paint Store)

<u>Peak Hour Time Period</u>	<u>Peak Hour Trip Generation</u>
AM Peak Hour (Street)	1
PM Peak Hour (Street)	3
AM Peak Hour (Generator)	2
PM Peak Hour (Generator)	1

6. **Site Trip Generation – Hair Salon (855sf):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation’s Engineers “**TRIP GENERATION**” manual. The following trip rates were applied in that effort:

Land-Use #918: Hair Salon ⁽¹⁾

Weekday AM Peak Hour (Street)	= 1.21 trips/1,000sf GFA
Weekday PM Peak Hour (Street)	= 1.45 trips/1,000sf GFA
Weekday AM Peak Hour (Generator)	= 1.21 trips/1,000sf GFA
Weekday PM Peak Hour (Generator)	= 1.94 trips/1,000sf GFA

NOTE: ⁽¹⁾ Trip rate information published for LUC #918 is based upon a single field survey.

Table 6, below, provides a summary of the trip generation for the proposed hair salon:

Table 6
Peak Hour Trip Generation Summary
(Hair Salon)

<u>Peak Hour Time Period</u>	<u>Peak Hour Trip Generation</u>
AM Peak Hour (Street)	1
PM Peak Hour (Street)	1
AM Peak Hour (Generator)	1
PM Peak Hour (Generator)	2

7. **Site Trip Generation – Proposed Neighborhood Café (2,086sf):** Site trip generation is developed based upon a local traffic study conducted at an existing neighborhood coffee & café shop located at the intersection of Diamond and Fox Streets. Tables A and B provide a summary of the results of the noted traffic survey; respectively, for the AM and PM peak hours:

Table A
Trip Generation Summary – AM Study Hours
Neighborhood Coffee Shop
(Diamond Street @ Fox Street)

<u>Survey Time</u>	<u>Total Trips</u>	
	<u>Entering Trips</u>	<u>Exiting Trips</u>
7:00 to 7:15 AM	6	7
7:15 to 7:30 AM	7	8
7:30 to 7:45 AM	12	5
7:45 to 8:00 AM	6	5
8:00 to 8:15 AM	6	8
8:15 to 8:30 AM	19	9
8:30 to 8:45 AM	21	10
8:45 to 9:00 AM	15	8
Peak Hour Total Volume	61	35

Table B
Trip Generation Summary – PM Study Hours
Neighborhood Coffee Shop
(Diamond Street @ Fox Street)

<u>Survey Time</u>	<u>Total Trips</u>	
	<u>Entering Trips</u>	<u>Exiting Trips</u>
3:00 to 3:15 PM	10	11
3:15 to 3:30 PM	8	7
3:30 to 3:45 PM	8	8
3:45 to 4:00 PM	6	9
4:00 to 4:15 PM	5	10
4:15 to 4:30 PM	2	2
4:30 to 4:45 PM	7	5
4:45 to 5:00 PM	11	13
5:00 to 5:15 PM	8	12
5:15 to 5:30 PM	5	6
5:30 to 5:45 PM	2	2
5:45 to 6:00 PM	4	3
Peak Hour Total Volume	31	36

NOTE: The existing neighborhood coffee & café shop located on Diamond Street near Fox Street generates a total of 96 vehicle trips during the AM peak hour and 67 trips in the evening peak hour. A total of 62 seats were counted at the existing Diamond Street site. The morning peak hour occurs between 8:00 and 9:00 a.m. with a total volume of 96 trips recorded. A total of 67 trips were recorded in the evening peak hour, which occurs between 4:30 and 5:30 p.m. [The recorded number of peak hour trips generated in each peak hour time period is divided by the total number of seats resulting in a predicted trip rate per seat of 1.55 trips/seat in the morning peak hour and 1.08 trips/seat in the evening peak hour.]

Trip generation for the proposed coffee & café shop is based upon a total of 35 seats. Accordingly, the proposed coffee & café shop can be expected to generate a total of 54 trips in the morning peak hour and 38 trips in the evening peak hour of the street. Trip projections for both peak hour time periods of the generator are estimated assuming a similar trip volume as the trip projections for the peak hours of the street.

Table 7
Peak Hour Trip Generation Summary
Neighborhood Coffee & Café Shop

Peak Hour Time Period	Peak Hour Trip Generation
AM Peak Hour (Street)	54 trips
PM Peak Hour (Street)	38 trips
AM Peak Hour (Generator)	54 trips (1)
PM Peak Hour (Generator)	38 trips (1)

NOTES: ⁽¹⁾ Trip estimates, as noted, are based upon street peak hour trip projections.

Mercy Hospital Redevelopment – Total Trip Generation: The proposed Mercy Hospital Redevelopment Project is projected to generate approximately **107** vehicle trips in the AM peak hour of the street, an additional **91** trips during the evening peak hour of the street and similar trip volumes of **108** and **95** vehicles, respectively, in the morning and evening peak hours of the site.

Proposed Community Housing of Maine (CHOM) Affordable Residential Housing Units (95 total units): Peak hour trip forecasts for the proposed CHOM development are prepared by applying trip rate information detailed in the 10th edition of the noted ITE trips publication, as follows:

- Site Trip Generation – Proposed Affordable Senior and Family Housing Apartments (95 Units):** Trip generation is based upon tables presented in the 10th edition of the Institute of Transportation's Engineers "TRIP GENERATION" manual. The following trip rates were applied in that effort:

Land-Use #221: Multi-family Housing (Mid-Rise)

Weekday AM Peak Hour (Street)	= 0.20 trips/unit
Weekday PM Peak Hour (Street)	= 0.18 trips/unit
Weekday AM Peak Hour (Generator)	= 0.15 trips/unit
Weekday PM Peak Hour (Generator)	= 0.18 trips/unit

Table 1, below, provides a summary of the trip generation for the proposed 95 CHOM affordable residential housing units:

Table 1
Peak Hour Trip Generation Summary
(95 Affordable Senior and Family Residential Apartments)

Peak Hour Time Period	Peak Hour Trip Generation
AM Peak Hour (Street)	20 trips
PM Peak Hour (Street)	17 trips
AM Peak Hour (Generator)	14 trips
PM Peak Hour (Generator)	17 trips

The proposed Community Housing of Maine project is expected to generate approximately **20** vehicle trips in the AM peak hour of the street, an additional **17** trips during the evening peak hour of the street and similar trip volumes of **14** vehicles and **17** vehicles, respectively, in the morning and evening peak hours of the site.

Mercy Hospital Redevelopment and Community Housing of Maine – Total Trip Generation: Combined, the proposed Mercy Hospital Redevelopment and the adjoining Community Housing of Maine sites are

expected to generate approximately 127 vehicle trips in the AM peak hour of the street, an additional 108 trips during the evening peak hour of the street and similar trip volumes of 122 vehicles and 112 vehicles, respectively, in the morning and evening peak hours of the site.

SITE TRIP ADJUSTMENT

A finite number of residents, employees of the proposed commercial spaces and/or customers of those same spaces, are classified as internal or shared trips; trips that do not leave the confines of the proposed Mercy Hospital Redevelopment site. These multi-purpose trips, if not accounted for, overestimate the actual vehicular traffic impacts of the combined project site (*For example, an apartment resident purchasing their morning coffee at the proposed neighborhood coffee shop doing so by simply walking from their apartment to the proposed coffee shop.*). Numerous other likely internal trip patterns will be generated by the proposed site and their impact must be accounted for.

The National Cooperative Highway Research Program's (NCHRP) 684 Internal Trip Capture Estimation Tool provides a process for estimating the number of shared or captured trips generated by a development project. Copies of the spreadsheets used in the analysis are attached as an appendix to the report. The summarized internal capture rates, as determined from the NCHRP 684 Worksheet Section 5-A, provide the following internal capture rates (percentages) applicable to the Mercy Hospital Redevelopment site uses:

<u>Trip Capture Percent</u>	<u>Total</u>	<u>Entering Trips</u>	<u>Exiting Trips</u>
AM Peak Hour	11%	13%	10%
PM Peak Hour	15%	14%	16%

Traffic Solutions, to conservatively forecast the number of internally captured or shared trips generated by the proposed combined Mercy Hospital Redevelopment and CHOM projects, has applied a 13% captured trip rate; which, is the average of the estimated percentage calculated for the AM and PM peak hours.

Based upon the described methodology presented above, a total of 16 internal captured or shared trips are generated in the AM peak hour and 14 trips in the evening peak hour.

Accounting for these shared use trips; which do not travel to or from the public street system, the combined Mercy and CHOM project sites are expected to generate **110** trips in the morning peak hour and **94** vehicle trips in the PM peak hour that travel on the public street system.

EXISTING MERCY HOSPITAL TRIP GENERATION

Existing Mercy Hospital Site Trip Generation: Peak hour trip generation for the existing 242,000 square foot hospital is estimated based upon trip rates presented in the 10th edition of the Institute of Transportation Engineers (ITE) "TRIP GENERATION" publication. The following trip rates were used in that effort:

Land-Use Code #610 – Hospital

<i>AM Peak Hour of Street</i>	<i>= 0.89 trips/1,000sf GFA</i>
<i>PM Peak Hour of Street</i>	<i>= 0.97 trips/1,000sf GFA</i>
<i>AM Peak Hour of Generator</i>	<i>= 0.85 trips/1,000sf GFA</i>
<i>PM Peak Hour of Generator</i>	<i>= 0.97 trips/1,000sf GFA</i>

The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the latest three-year (2017 through 2019) crash data for the following street segments adjacent to the Mercy Hospital campus: State Street between Pine and Gray Streets; Winter Street between Pine and Gray Streets; Spring Street between State and Brackett Streets and Gray Street between State and Brackett Streets, combined a total distance of 0.75 miles.

Their report is presented as follows:

2017 -2019 Traffic Accident Summary

<u>Location</u>	<u>Total Crashes</u>	<u>Critical Rate Factor</u>
1. State Street @ Pine Street	9	1.66
2. State Street @ Spring Street	6	0.28
3. State Street @ Gray Street	6	1.27
4. Brackett Street @ Gray Street	2	1.46
5. Brackett Street @ Winter Street	4	22.71
6. Brackett Street @ Spring Street	2	0.66
7. Spring Street @ Winter Street	2	0.75
8. State Street btw. Pine Street and Spring Street	6	0.69
9. State Street btw. Spring Street and Gray Street	8	1.48
10. Gray Street btw. State Street and Winter Street	3	10.98
11. Gray Street btw. Winter Street and Brackett Street	1	59.05
12. Spring Street btw. State Street and Winter Street	2	0.48
13. Spring Street btw. Winter Street and Brackett Street	5	1.66
14. Winter Street btw. Gray Street and Spring Street	1	2.48
15. Winter Street btw. Spring Street and Pine Street	2	0.80

The MaineDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- *8 or more accidents*
- *A Critical Rate Factor greater than 1.00*

As highlighted in red, the State Street/Pine Street intersection meets both MaineDOT's criteria as a high crash location with a reported total of nine vehicle crashes and a corresponding critical rate factor of 1.66. Additionally, the street section of State Street located between Spring Street and Gray Street meets both criteria as a high crash location with a total of eight reported crashes and a critical rate factor of 1.48.

MaineDOT's Safety Bureau prepared vehicle collision diagrams for both identified locations that illustratively present the details of each reported vehicle crash. A copy of MaineDOT's reports is attached for reference.

A summary of the accident reconstruction details is provided as follows for both locations:

Location #1: State Street @ Pine Street Five (5) of the nine reported crashes occurring within the intersection involve a pedestrian struck crossing the State Street approach of the intersection. Push-button activated rapid flashing beacons are present at the intersection aiding pedestrians crossing the

State Street approach. The remaining four crashes reported at the intersection included; “*following too close*”; “*hit and run*” and “*failure to yield*” crashes.

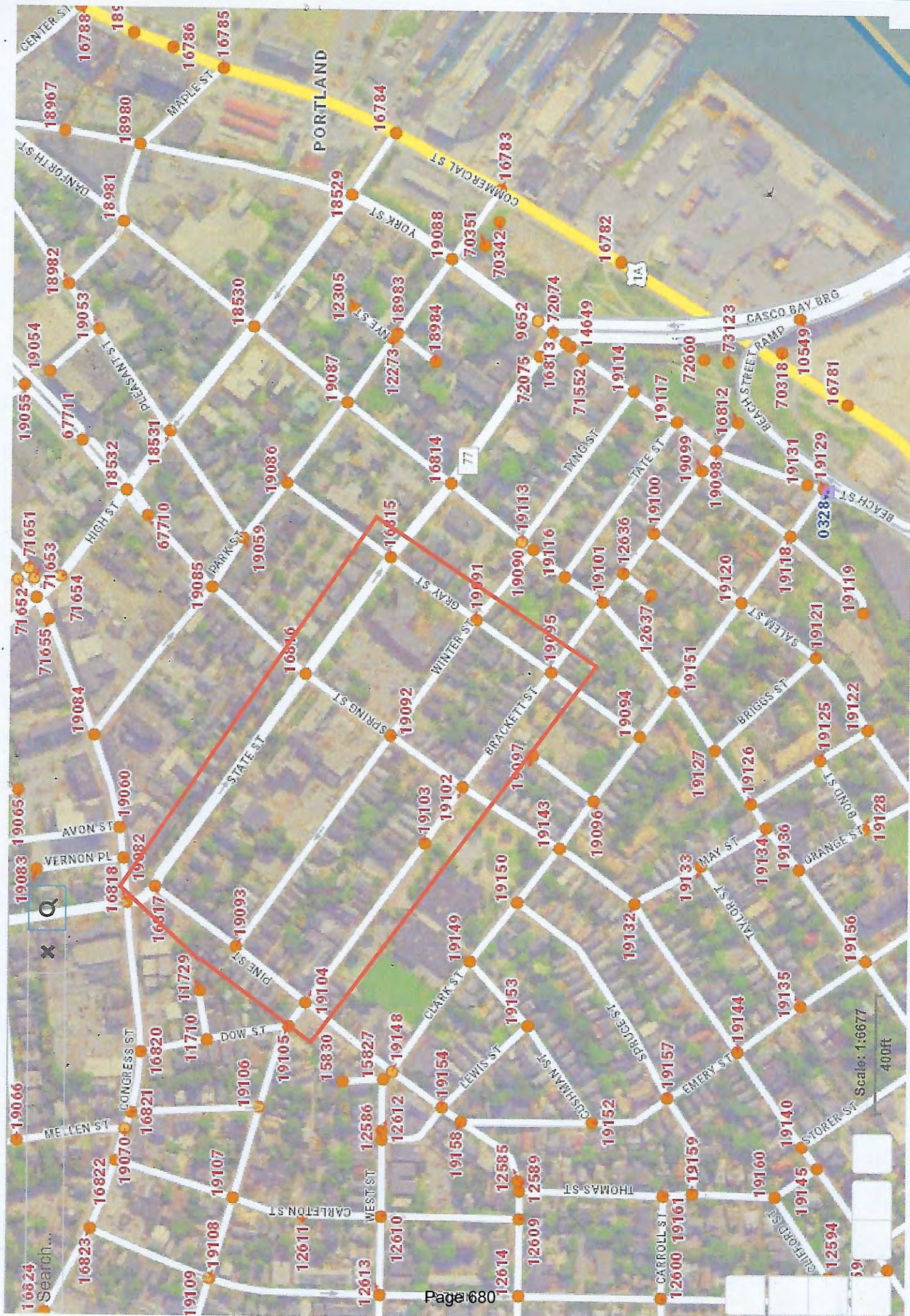
Location #9: State Street between Spring Street and Gray Street MaineDOT’s crash diagram does not identify a specific crash pattern occurring within the very short section of State Street. There was a total of two (2) “*OUT*” crashes; three (3) “*failure to keep in lane*” crashes; two (2) “*improper turn*” accidents and a single “*slippery road conditions*” crash.

SUMMARY

1. The existing Mercy Hospital Campus, based upon national trip data, generates between 206 and 235 vehicle trips during each peak hour of a typical weekday. The lower volume of trips is expected in the morning hours of the day and the higher volume is found in the early evening hours.
2. The proposed Mercy Hospital Redevelopment project, which includes 170 residential apartments, a medical clinic, self-storage facility and four commercial/retail development pads is predicted to generate a total of 107 trips in the morning peak hour of the street and 91 trips in the evening peak hour of the street.
3. Community Housing of Maine, a Portland based, non-profit affordable housing developer is proposing to construct a total of 95 affordable housing units on two other parcels located along the Winter Street frontage of the Mercy Hospital property. These affordable senior and family housing units are projected to generate a high of 20 trips in the morning peak hour and slightly lower volumes (between 14 and 17 trips) during the remaining peak hour time periods.
4. Combined, the Mercy Hospital Redevelopment and Community Housing of Maine development projects are forecast to generate between a high of 127 vehicles trips in the morning peak hour to a slightly lower total of 108 trips in the evening peak hour of the street.
5. A finite number of residents, employees of the proposed commercial spaces and/or customers of those same spaces, located in the proposed Mercy Hospital Redevelopment site are classified as internal captured or shared trips; trips that do not leave the confines of the proposed development property. These multi-purpose trips, if not accounted for, overestimate the actual vehicular traffic impacts of the combined project site (*For example, an apartment resident purchasing their morning coffee at the proposed neighborhood coffee shop doing so by simply walking from their apartment to the proposed coffee shop.*). The National Cooperative Highway Research Program’s (NCHRP) 684 Internal Trip Capture Estimation Tool predicts trip capture rates between 11 and 15% will likely occur within the combined development sites. An average of the predicted capture rates was applied, which results in 17 fewer trips in the morning peak hour and 14 in the evening peak hour impacting the public highway system.
6. The proposed Mercy Hospital Redevelopment projects, after deducting the internal capture trip estimates, is expected to generate approximately 110 AM trips and 94 trips in the evening peak hour that impact the local transportation system. These trip forecasts represent a net reduction of about 100 fewer peak hour trips when compared to the present peak hour trip generation of Mercy Hospital.
7. The Maine Department of Transportation’s (MaineDOT) Accident Records Section provided the latest three-year (2017 through 2019) crash data for the following street segments adjacent to the Mercy Hospital campus: State Street between Pine and Gray Streets; Winter Street between Pine and Gray

Streets; Spring Street between State and Brackett Streets and Gray Street between State and Brackett Streets - combined a total distance of 0.75 miles. Their safety report identified the section of State Street between Spring and Gray Streets as a high crash location, with a total of eight reported vehicle crashes and a corresponding critical rate factor of 1.48. A detailed vehicle collision diagram prepared by the MaineDOT Safety office shows the reported vehicle crashes occur somewhat randomly within the very short road segment. Four different crash types were identified that included: two (2) "*OUT*" crashes; three (3) "*failure to keep in lane*" crashes; two (2) "*improper turn*" accidents and a single "*slippery road condition*" crash. The second-high crash location highlighted by MaineDOT was the intersection of State Street and Pine Street, where a total of nine crashes were reported with a critical rate factor 1.66. The MaineDOT collision diagram for this location clearly shows a crash pattern at the intersection. Five (5) of the nine total crashes involved a motor vehicle striking a pedestrian crossing in the State Street crosswalk. Traffic Solutions conducted an inspection of the intersection and found that the "*rapid rectangular flashing beacon*" system that assists pedestrians in crossing the State Street approach is not working correctly. The flashing beacon on the northside of State Street has been disconnected and when the pedestrian push button is activated the flashing beacon on this side of the intersection is blank. It is recommended that the inoperative beacon be repaired as soon as practical.





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: State St (nodes 16817-16815), Gray St (nodes 19095-16815), Spring St (nodes 19102-16816), and Winter St (nodes 19091-19093)

REPORT PARAMETERSYear 2017, Start Month 1 through Year 2019 End Month: 12 *State St. Btw. Pine and Gray*

Route: 0077X

Start Node: 16817
End Node: 16815Start Offset: 0
End Offset: 0☐ Exclude First Node
☐ Exclude Last Node

Route: 0560331

Start Node: 19095 *Gray St. Btw. Brackett and State*
End Node: 16815Start Offset: 0
End Offset: 0☐ Exclude First Node
☒ Exclude Last Node

Route: 0560672

Start Node: 19102 *Spring St. Btw. Brackett and State*
End Node: 16816Start Offset: 0
End Offset: 0☐ Exclude First Node
☒ Exclude Last Node

Route: 0560803

Start Node: 19091 *Winter Street Btw. Gray & Spring*
End Node: 19092Start Offset: 0
End Offset: 0☒ Exclude First Node
☒ Exclude Last Node

Route: 0560803

Start Node: 19092 *Winter Street Btw. Spring & Pine*
End Node: 19093Start Offset: 0
End Offset: 0☒ Exclude First Node
☒ Exclude Last Node

Crash Summary I

Sections																	
Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
16816	16817	3130489	0 - 0.16	0077X - 0.32 ST RTE 77	0.16	2	6	0	0	0	0	6	0.0	0.00599	334.11	478.41	0.00
16815	16816	192499	0 - 0.09	0077X - 0.48 ST RTE 77	0.09	2	8	0	1	0	1	6	25.0	0.00322	828.08	558.28	1.48
19091	19095	194803	0 - 0.06	0560331 - 0.07 RD INV 05 60331	0.06	2	1	0	0	0	0	1	0.0	0.00003	11798.99	199.82	59.05
16815	19091	5080298	0 - 0.07	0560331 - 0.13 RD INV 05 60331	0.07	2	3	0	0	0	0	1	0.0	0.00006	16797.83	1530.55	10.98
19092	19102	194805	0 - 0.05	0560672 - 0.49 RD INV 05 60672	0.05	2	5	0	0	0	0	5	0.0	0.00079	2118.40	1278.67	1.66
16816	19092	192504	0 - 0.07	0560672 - 0.54 RD INV 05 60672	0.07	2	2	0	0	0	0	2	0.0	0.00123	541.34	1138.90	0.00
19091	19092	194802	0 - 0.09	0560803 - 0.06 RD INV 05 60803	0.09	2	1	0	0	0	0	0	0.0	0.00008	4227.97	1702.89	2.48
19092	19093	5080269	0 - 0.16	0560803 - 0.15 RD INV 05 60803	0.16	2	2	0	0	0	0	2	0.0	0.00061	1091.35	1363.00	0.00
Study Years: 3.00					Section Totals:	0.75	28	0	1	0	1	23	7.1	0.01200	777.65	472.79	1.64
Grand Totals:					0.75		59	0	1	3	6	46	16.9	0.01200	1638.61	623.27	2.63

Crash Summary I

Nodes																
Node	Route - MP	Node Description	U/R	Total Crashes	K	A	B	C	PD	Injury	Percent Annual M	Crash Rate	Critical Rate	CRF		
16817	0077X - 0.32	Int of PINE ST STATE ST	2	9	0	0	0	2	7	22.2	4.460	0.67	0.40	1.66		
											Statewide Crash Rate:	0.16				
16816	0077X - 0.48	Int of SPRING ST, STATE ST	9	6	0	0	1	1	4	33.3	5.528	0.36	1.27	0.00		
											Statewide Crash Rate:	0.75				
16815	0077X - 0.57	Int of GRAY ST STATE ST	2	6	0	0	2	0	4	33.3	3.729	0.54	0.42	1.27		
											Statewide Crash Rate:	0.16				
19095	0560331 - 0.07	Int of BRACKETT ST GRAY ST	2	2	0	0	0	1	1	50.0	0.729	0.91	0.63	1.46		
											Statewide Crash Rate:	0.16				
19091	0560331 - 0.13	Int of GRAY ST WINTER ST	2	4	0	0	0	1	3	25.0	0.120	11.10	0.49	22.71		
											Statewide Crash Rate:	0.16				
19102	0560672 - 0.49	Int of BRACKETT ST SPRING ST	2	2	0	0	0	0	2	0.0	2.036	0.33	0.50	0.00		
											Statewide Crash Rate:	0.16				
19092	0560672 - 0.54	Int of SPRING ST WINTER ST	2	2	0	0	0	0	2	0.0	1.754	0.38	0.51	0.00		
											Statewide Crash Rate:	0.16				
Study Years: 3.00			NODE TOTALS:		31	0	0	3	5	23	25.8	18.356	0.56	0.53	1.06	

H. C. L. CRASH COLLISION DIAGRAM DATA PACKAGE

COUNTY: CUMBERLAND

TOWN: PORTLAND

LOW NODE: 16815 HIGH NODE: 16816

REGION: 1

U/R: URBAN

DESCRIPTION: State St from Gray St to Spring St

RTE # / RD #: 0077X

DATE DRAWN: 6/19/2020 DRAWN BY: BOB K

STUDY FROM: 1/1/2017

STUDY TO: 12/31/2019

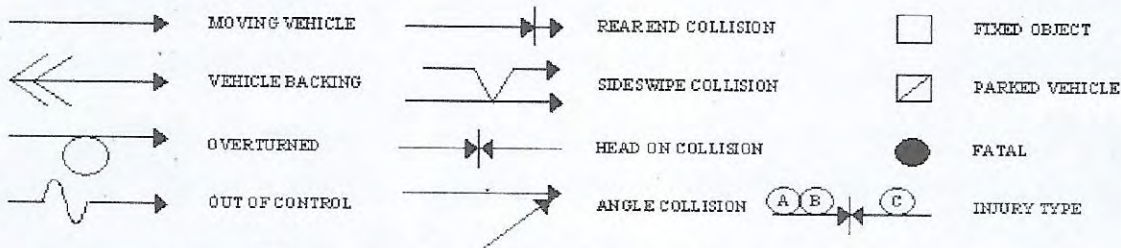
CRASH RATE: 828.08

CRF: 1.48

% INJURY: 25

TOTAL CRASHES: 8

LEGEND



PATH OF: P PEDESTRIAN B BICYCLE A ANIMAL S SLED

PAVEMENT: D - DRY, I - ICY, W - WET, S - SNOW

WEATHER: C - CLEAR, F - FOG, R - RAIN, SL - SLEET, S - SNOW, CL - CLOUDY

TIME: A - AM, P - PM

Portland

Link: 16815-16816

Element: 192499

Study Period: 2017-2019

of Crashes: 8 / CRF: 1.48

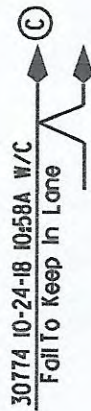
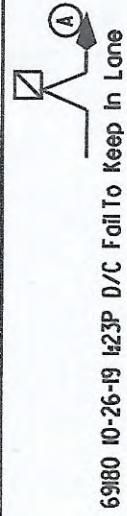
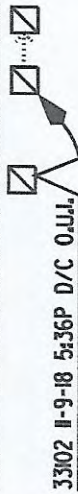
Prepared by Office of Safety

RFK3 6-19-20

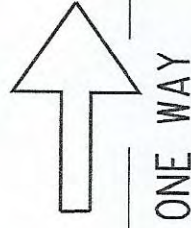


16816

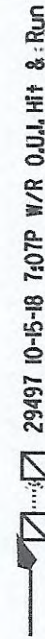
16815



9109 3-19-18 11:31A D/C Fail To Keep In Lane



State Street (Route 77)



2497 1-20-17 12:50P SL/C Road Conditions

19547 7-1-17 10:10A D/C Improper Turn

1085 1-7-18 3:16P SL/C Improper Turn



H. C. L. CRASH COLLISION DIAGRAM DATA PACKAGE

COUNTY: CUMBERLAND

TOWN: PORTLAND

LOW NODE: 16817 HIGH NODE: 0000

REGION: 1

U/R: URBAN

DESCRIPTION: Int of Pine St and State St

RTE # / RD #: 0077X

DATE DRAWN: 6/1/2020 DRAWN BY: BOB K

STUDY FROM: 1/1/2017

STUDY TO: 12/31/2019

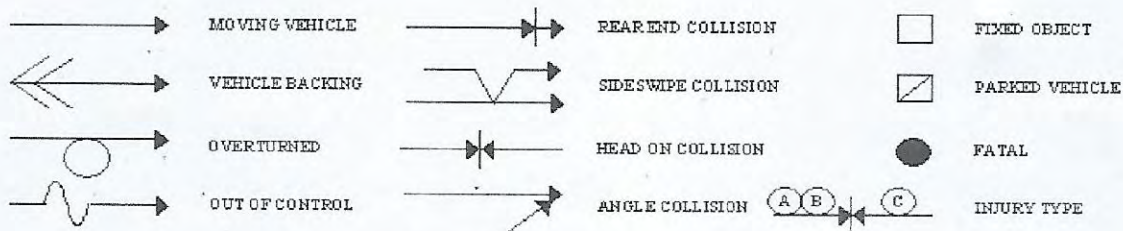
CRASH RATE: 0.67

CRF: 1.66

% INJURY: 22.2

TOTAL CRASHES: 9

LEGEND



--- PATH OF ☐ P PEDESTRIAN ☐ B BICYCLE ☐ A ANIMAL ☐ S SLED

PAVEMENT: D - DRY, I - ICY, W - WET, S - SNOW

WEATHER: C - CLEAR, F - FOG, R - RAIN, SL - SLEET, S - SNOW, CL - CLOUDY

TIME: A - AM, P - PM

ONE WAY



63283 8-22-19 6:00P D/C Fail to keep in lane

11013 4-5-18 6:59P D/C Follow Too Close (C)
6627 2-21-17 8:40A D/C Follow Too Close (P)

15348 5-21-17 4:00P D/C Follow Too Close (P)
31073 10-18-17 5:05P D/C Fail To Yield (P)
73185 11-25-19 12:50P D/C Follow too close (P)

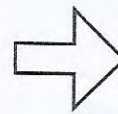
22397 7-28-17 12:48P D/C Fail To Yield

25790 8-24-17 9:00A D/C Follow Too Close

228 1-3-17 12:55P W/CL Hit & Run (C)



ONE WAY



Pine St

State St
Rt 77

Portland
Node: 16817

Study Period: 2017-2019
of Crashes: 9 / CRF: 1.66

Prepared by Office of Safety
RFK3 6-1-20

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Mercy Hospital Re-Development			Organization:	Traffic Solutions
Project Location:	Portland, ME			Performed By:	MMI
Scenario Description:	AM Peak Hour			Date:	8/31/2020
Analysis Year:	2020			Checked By:	
Analysis Period:	AM Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	712, 630	4,636	SF	16	13	3
Retail	814	1,635	SF	5	3	2
Restaurant	936 (*local)	1,059	SF	16	8	8
Cinema/Entertainment				0		
Residential	221	266	DU	53	6	47
Hotel				0		
All Other Land Uses ²	918, 151	41,857	SF	6	4	2
Total				96	34	62

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	1			0	0	0
Restaurant	2	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	2	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	96	34	62
Internal Capture Percentage	15%	21%	11%
External Vehicle-Trips ³	82	27	55
External Transit-Trips ⁴	0	0	0
External Non-Motorized Trips ⁴	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	23%	67%
Retail	33%	50%
Restaurant	38%	25%
Cinema/Entertainment	N/A	N/A
Residential	0%	4%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁴Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	Mercy Hospital Re-Development
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	13	13	1.00	3	3
Retail	1.00	3	3	1.00	2	2
Restaurant	1.00	8	8	1.00	8	8
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	6	6	1.00	47	47
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	2	0	0	0
Retail	1		0	0	0	0
Restaurant	2	1		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	9	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	2	0	0	0
Retail	1		4	0	0	0
Restaurant	2	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	2	0		0
Hotel	0	0	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	3	10	13	10	0	0
Retail	1	2	3	2	0	0
Restaurant	3	5	8	5	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	6	6	6	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	4	4	4	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	2	1	3	1	0	0
Retail	1	1	2	1	0	0
Restaurant	2	6	8	6	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	45	47	45	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	2	2	2	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Mercy Hospital Re-Development			Organization:	Traffic Solutions
Project Location:	Portland, ME			Performed By:	MMI
Scenario Description:	PM Peak Hour			Date:	8/31/2020
Analysis Year:	2020			Checked By:	
Analysis Period:	PM Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	712, 630	4,636	SF	15	5	10
Retail	814	1,635	SF	11	6	5
Restaurant	936 (*local)	1,059	SF	0		
Cinema/Entertainment				0		
Residential	221	266	DU	48	35	13
Hotel				0		
All Other Land Uses ²	918, 151	41,857	SF	9	3	6
Total				83	49	34

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	83	49	34
Internal Capture Percentage	7%	6%	9%
External Vehicle-Trips ³	77	46	31
External Transit-Trips ⁴	0	0	0
External Non-Motorized Trips ⁴	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	20%	0%
Retail	17%	20%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	3%	15%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁴Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	Mercy Hospital Re-Development
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	5	5	1.00	10	10
Retail	1.00	6	6	1.00	5	5
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	35	35	1.00	13	13
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	0	0	0	0
Retail	0		1	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	5	3	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	1	0
Retail	2		0	0	16	0
Restaurant	2	3		0	6	0
Cinema/Entertainment	0	0	0		1	0
Residential	3	1	0	0		0
Hotel	0	0	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	1	4	5	4	0	0
Retail	1	5	6	5	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	34	35	34	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	3	3	3	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	10	10	10	0	0
Retail	1	4	5	4	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	11	13	11	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	6	6	6	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Winter Street Affordable Housing Development Transportation Demand Management Plan

May 20, 2021



Summary

Cushman Transportation Consulting, LLC provides this Transportation Demand Management (TDM) Plan for the Community Housing of Maine (CHOM) and Portland Housing Development Corporation's (PHDC) Winter Street Affordable Housing Development, at the corner of Winter and Spring Streets in Portland's West End. Specifically, this is the construction of two new affordable housing buildings at 73 & 91 Winter Street, on what until now has been the rear parking lot of the original Mercy Hospital at 120 State Street. CHOM and PHDC will co-develop, own and manage 73 and 91 Winter Street.

Site Uses Overview at 73 & 91 Winter Street

- *Residential*: 95 total proposed dwelling units
 - o 52 one-bedroom senior units for residents aged 55 and older
 - o 43 family apartments (6 studio, 15 one-bedroom, 13 two-bedroom, and 9 three-bedroom)
- *Parking*: CHOM/PHDC will have a leasehold interest in 15 surface parking spaces

TDM Plan & Targets

This project is another key opportunity for urban infill and redevelopment on the Portland Peninsula, new housing for local workers and families, and alternate transportation and reverse commuting options for residents. *Of significant note, the new uses at the full Mercy Hospital Redevelopment site (which includes 73 and 91 Winter and 120 and 148 State Street) will result in a net reduction of more than 100 vehicle trips to and from the site, compared with the existing hospital uses.* The site's TDM Plan works further to reduce parking demand, encourage multimodal trips to and from the site and benefit the local transportation system. This includes marketing the housing to Peninsula employees; providing leases exclusive of parking; offering on-site amenities; and supporting transportation alternatives such as walking, bicycling and using public transportation.

The plan sets the following TDM targets for 3 years after 73 and 91 Winter Street are fully occupied. These targets will be reassessed after the first full year of occupancy by tenants:

- 10% reduction in 73 and 91 Winter Street peak hour vehicle trips and 10% reduction in peak hour parking demand
- 65% resident work commute multimodal rate

COVID-19 NOTE: Site occupancy is forecast for 2023 and with this year's public vaccination campaign for the COVID-19 virus, transportation alternatives that have been less viable during the pandemic – such as transit and carpooling – are anticipated to make significant recoveries by that time. COVID-related parking demand increases to enable drive alone options are also expected to decline. In addition, TDM efforts will likely be supported by a long-term increase in telework and walkable access to the largest number of jobs in the state.

Interim Site TDM Coordinators:

- Brian Kilgallen, Community Housing of Maine, brian@chomhousing.org, (207) 879-0347
- Jay Waterman, Portland Housing Development Corporation, jwaterman@porthouse.org, (207) 221-8009

TDM Table of Contents

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73 & 91 Winter Street (currently Mercy Hospital rear parking lot at corner of Spring and Winter Streets)

A. Property Description & Transportation Context

The Winter Street Housing Development is part of the larger Mercy Hospital Redevelopment - a 2.48-acre parcel recently and appropriately redesignated as a B-3 site, encompassing most of the southern half of the block bordered by State, Spring and Winter Streets in the larger R6 zone of Portland's West End Neighborhood. After 80 years of community service as the original Mercy Hospital in Portland, the main hospital building at 120 State Street - adjacent to 73 and 91 Winter Street - will continue to offer a medical clinic open to the general public, while also providing robust residential housing and small retail amenities.

The new B3 designation of the full redevelopment area – including 73 and 91 Winter Street and 120 and 148 State Street - fits in well with the uses identified by the City and adopted in the recent ReCode effort:

B-3 & B-3b	To maintain and enhance the role of the downtown as the business and commercial center of the region; to enhance and <u>promote the orderly expansion of retail and service businesses downtown, satisfying the related needs of the city's resident, working, and visitor populations; to encourage increased housing opportunity downtown for a diverse residential population; to enhance the pedestrian environment through the encouragement of intensive mixed-use activities, through the enhancement and maintenance of public and private open space, and through the enlivenment and increased attractiveness of the street environment; to encourage excellence in urban design; to preserve and capitalize on the unique character and historic fabric of the downtown through the encouragement of reuse of significant existing structures; to provide opportunity for an enhanced presence and integration of the arts and cultural activities; to reinforce the role of the downtown as a meeting place for community residents and visitors alike from all walks of life and all socio- economic groups; to provide adequate parking and transportation facilities which promote accessibility, enhance and encourage development opportunity, and enhance and protect the pedestrian environment;</u> In the Pedestrian Activities District (PAD) Overlay Zone, to create continuity of pedestrian-oriented uses along streets where such uses predominate and along streets which, over time, will establish and maintain a strong retail and pedestrian-oriented use pattern; and to provide for the relocation of residents who are displaced by development.
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The site redevelopment of the Winter Street and Spring Street frontages will improve the human scale of the pedestrian environment through active building facades, entrances, signage, lighting, new street trees and landscaping. The location has a Compact Neighborhood Score of 9.3 out of 10. This scoring is based on a natural logarithm of household density, provided through the Housing + Transportation Affordability Index using U.S. Census data. Winter Street's pedestrian access will also benefit from the site's redevelopment by the closure of the curb cut to the existing parking lot and the addition of a mountable curb - solely for emergency vehicles to enter the site between the 73 and 91 Winter St. buildings.

Residential Housing at the Winter Street Development

Infill development of any kind contributes to single-occupancy automobile trip reduction. That much more in the case of in-town housing, which is the use proposed for the Winter Street Housing Development. As noted in the Summary above, the new uses at the full Mercy Hospital Redevelopment (which includes 73 and 91 Winter Street and 120 and 148 State Street) will result in a net reduction of more than 100 vehicle trips to and from the site, compared with the trip rate for the existing hospital uses at full capacity.

Behavioral research illuminates one of the reasons for this further. When people move from an individual residence to another, this provides a key opportunity and critical juncture at which to help them



understand their transportation choices and the benefits of alternate transportation. Individuals are more receptive to this information as their daily living and commute patterns have changed with relocation. (Kirkman, 2019; Thøgersen, 2012; Verplanken, Walker, Davis & Jurasek, 2008; Bamberg, 2006; Fujii, Gärling & Kitamura, 2001)

In addition, new residential sites like the Winter Street Housing Development provide real opportunity to help meet the City's goals for population growth. In *Portland's Plan 2030* (2017 Comprehensive Plan), analysis showed the number of people both living and working in the city decreased between 2002 and 2014. According to the *City of Portland Parking Study for the Eastern Waterfront & Downtown* (2017), just 12% of people live and also work in the study area – which is immediately adjacent to the Winter Street Housing Development. The Comprehensive Plan “supports the principle that all who work in Portland should have the option of living in Portland.” The City set a 10-year population goal of 75% of the municipality's approximate daytime population of 96,000.

...One of the more interesting studies found in reviewing the literature was a 2003 German social science experiment conducted by three researchers (Bamberg, Rolle and Weber) where an individualized marketing intervention was used at a time of what they called a "changed decision" context, meaning immediately after relocation. The research found that if, when in a new situation, people received personally relevant and persuasive information, they were more likely to use it for making new behavioral decisions.

Portland Oregon SmartTrips Welcome Program, Tools of Change Landmark Case Study, 2012

A total of ninety-five (95) affordable housing units are proposed for the 73 and 91 Winter Street buildings. These include:

- 52 one-bedroom senior housing units
- 43 family apartments - consisting of 6 studio, 15 one-bedroom, 13 two-bedroom, and 9 three-bedroom units).

CHOM and PHDC will co-own, and PHA will be the managing agent the 73 and 91 Winter Street properties. CHOM and PHDC will have a leasehold interest in 15 parking spaces.

Significant on-site and near-site amenities provide residents with a full-service living environment. People in residential settings often perceive they are dependent upon driving alone because of the number of errands and activities they must carry out in different locations. The Winter Street Housing Development will reduce this dependence through building facilities and proximity to services close to the site.

Site features that encourage alternate transportation and discourage drive alone vehicle trips include:

- indoor bicycle/stroller/carseat/handcart storage areas
- package delivery and storage locations
- hardwired infrastructure for broadband and wireless internet
- communal gathering spaces, including those that can be used to do telework
- outdoor courtyard
- drop-off and pick-up area available at the mountable curb between the two Winter Street buildings (designated for emergency vehicle site access); this provides ADA access and opportunities for residents and visitors to more easily carpool and use taxis and Transportation Network Companies (such as Uber and Lyft) to get to and from the site.





Commercial and Small Retail Uses on the Larger Mercy Redevelopment Site

As part of the larger Mercy Redevelopment site, residents at the Winter Street Housing Development will have easy access to additional site-adjacent services. For example, Mercy Hospital will continue to lease and manage a clinic open to the public, at 120 State Street. This will provide 73 and 91 Winter Street residents with highly accessible general healthcare services. In addition, 120 State Street will house a self-storage business on the basement and ground floors.

There will also be four small retail spaces at 120 State Street with easy access from the courtyard area for the public and all site residents. Intended leases for these individual spaces are:

- cafe
- hardware store
- co-working space
- hair salon

Health care and self-storage visits and hardware store runs are often taken by personal vehicle, so these site amenities will reduce drive alone trips as well.

Parking

Based on the City of Portland's recently amended Land Use Code, Article 19, Table 19-B: Categorical Exceptions To Off-Street Parking Minimums, "No off-street parking shall be required within ¼ mile of fixed route transit service. New uses or changes of use of more than 10,000 SF taking advantage of this exception shall be required to provide a Transportation Demand Management Plan if they use this provision in lieu of parking requirements." Thus, the provision of this TDM Plan.

Per the Mercy Hospital and Morrison House site development agreement at 120 and 148 State Street, the project proposes to build and maintain 70 surface parking spaces, centrally located and with access off of



Spring Street. As part of the Option to Purchase agreement with the original property owners (NewHeight Redfern, LLC), CHOM/PHDC will be provided 15 of these parking spaces.

These 15 spaces for 73 and 91 Winter Street will be managed by Portland Housing Authority's TDM Coordinator. With the adjacent NewHeight Redfern Mercy Hospital Redevelopment, CHOM/PHDC will also explore the possible longer-term management of the full site's parking through Unified Parking Partners (UPP); UPP could likely expand this parking resource's most strategic and effective use.

Under the affordable housing financing regulations, low-income tenants are not permitted to be charged for on-site parking. However, in strong support of site TDM efforts, all residential leases at the Winter Street Housing Development will be exclusive of parking. Parking that is unbundled from tenant leases is of tremendous benefit and a linchpin strategy to discourage drive alone trips and encourage the use of alternate transportation.

Occupant Demographics

The development team anticipates the Winter Street Affordable Housing Development will attract a diverse group of tenants, interested in a highly-walkable, low-car-use lifestyle. This will include singles, couples, and families. As stated in *Portland's Plan*, "Millennials (20-29) and Gen Xers (30-39) comprise the largest share of Portland's population, while Baby Boomers (50-69) are the fastest growing age group."

One of the buildings will be for seniors only (55+), including those who are semi or fully retired. According to local affordable housing developers, a 55+ residential community often skews a bit older in age and the developer expects the units to be primarily 1-person households.

Other residents are likely to range from Generation Z and Millennial tenants (under age 40), New Mainer families, and other mid-to-late career workers. Working tenants will include people employed on the Peninsula, to avoid the traffic congestion coming into the City. Downtown Portland is the largest employment center in the state and the Winter Street Housing Development has an excellent Job Access





Score of 9.4 out of 10. This is based on employment location and the variety of employment types, similarly provided through the Housing + Transportation Affordability Index (H+T Index) utilizing census data. In general, tenant occupations and the timing of people's work shifts are also expected to be varied, including times outside the peak weekday morning and afternoon commute hours.

Regarding senior resident demographics and vehicle travel, the percentage of the population that drives plateaus for the general public through the ages of 30-55 - and then starts declining after the age of 55 for women and after age 60 for men. Similarly, vehicle miles and person miles traveled per capita both fall precipitously starting at the age of 55. Car ownership has had a slight rebound since the Great Recession. However, between 2015 and 2016, the one increase in car-free living (above the margin of error) was among householders age 65 or older who rent. (Source: American Community Survey of the U.S. Census).

For residents who are students, post-secondary education opportunities such as the Maine College of Art, the University of Southern Maine, Portland Adult Education, and Southern Maine Community College are readily accessible from the site on foot, by bicycle and via public transportation.

From an equity standpoint, the site also has an enviable H+T Index rate of 34%; that is, housing (18%) and transportation (16%) costs combined are 34% of household income. Housing by itself is considered affordable if it totals 30% or less of income. Housing and Transportation Affordability (HTA) is considered to be combined housing and transportation costs equaling 45% or less of income. For comparison, the average Cumberland County household spends 52% of income on housing and transportation and the average Maine household spends 58% - both of which are well over what is considered within one's means.

Often lower transportation costs at sites like the Winter Street Housing Development are because people don't need to own as many (or any) private vehicles; that is, vehicle ownership rates are lower for people who live in urban centers. They are also lower for people with less income.

Tables 9 and 10 on the following page, from the census data analysis in the 2017 Downtown parking study, show that workers who live in the Downtown and Eastern Waterfront study area (as stated above, directly adjacent to the Winter Street Housing Development) and commute to all jobs – including anywhere in the region:

- Own far fewer vehicles: 0.7 per household - vs. 1.34 in the city and 1.79 in the region;
- Drive alone considerably less: 40.6% in the study area - vs. 67.4% in the city and 78.3% in the region;



- Use alternate modes of transportation and/or telecommute significantly more: 59.4% in the study area vs. 32.8% in the city and 21.9% in the region.

Table 9: Commute Mode Share Trends by Home Origin

	Commuter Home Origin	Drive Alone	Carpool	Transit	Bicycle	Walked	Work from Home & Other
2015	Portland-South Portland-Biddeford MSA	78.3%	9.3%	1.1%	0.6%	3.9%	7.0%
	City of Portland	67.4%	8.6%	3.1%	1.6%	12.2%	7.3%
	On the Peninsula	49.2%	6.9%	4.7%	2.8%	28.6%	7.9%
	Within the Study Area	40.6%	10.2%	3.5%	0%	42.5%	3.2%

Table 10: Auto Ownership 2000-2015

	Home Location	Vehicles	Occupied Households	Veh/HH
2015	Total U.S.	205,767,452	116,926,305	1.76
	Portland-South Portland-Biddeford MSA	383,798	214,667	1.79
	City of Portland	40,495	30,119	1.34
	On the Peninsula	11,611	11,917	0.97
	Within the Study Area	1,206	1,729	0.70



Similarly, *Portland's Plan* found:

[T]he percentage of people who drive alone to work on the peninsula is as low as 36%, while the percentage of people who walk to work is in the 30% - 40% range, the percentage of people who bike to work is in the 4% - 9% range, and the percentage of people who take public transportation to work is in the 7% - 13% range. Off the peninsula, these figures shift dramatically to reflect a higher reliance on single-occupancy vehicles for commuting purposes.

Per U.S. Census data, Generation Z and Millennials have been shown to prefer urban environments; they also tend to be more comfortable using modes other than the single-occupancy automobile for transportation. These multimodal habits were heavily influenced by the Great Recession and driving by these generations increased slowly as the economy improved. (It has been impacted once again by the COVID-19 pandemic – which has negatively affected bus and carpool rates; although it is positively impacting the number of people who walk and bicycle.) Overall, from a behavior change perspective, this familiarity with different ways of getting around will greatly facilitate these tenants' participation in the Winter Street Housing Development TDM program.

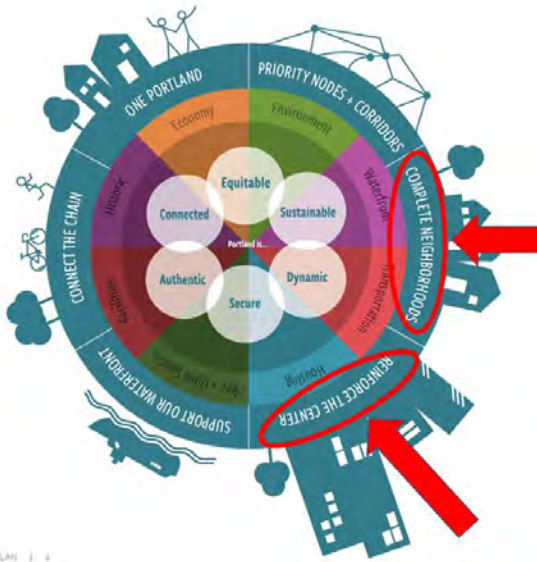
For site residents working off the Peninsula, who may commute by single occupancy vehicle, there is also a reverse commute phenomenon. This change in the directionality of trips creates a more balanced inbound-outbound flow of vehicular traffic during the morning and evening peak travel hours.

Larger Transportation Setting

The Winter Street Housing Development and its TDM initiatives bring to fruition of number of the mixed-use, Peninsula neighborhood, housing, urban form, and transportation goals of several recent and historically important Portland studies and plans. This includes:

- *A Time of Change: Portland Transportation Plan* (1993)
- *Green Spaces Blue Edges* (2001)
- *Housing, Sustaining Portland's Future* (2002)
- *Portland Peninsula Transit Study* (2008)
- *Sustainable Portland* (2009)
- *City of Portland Parking Study for the Eastern Waterfront & Downtown* (2017)
- *Comprehensive Plan, Portland's Plan 2030* (2017)
- *Portland – South Portland Smart Corridor Plan* (2018)
- *Cultural Plan Update* (2018)
- *Transit Tomorrow Plan* (2021)





For example, redevelopment of this site in the center of Portland addresses the land use diversity, housing, and downtown-strengthening outlined in *Portland's Plan* (2017) – described further as Complete Neighborhoods and Reinforce the Center.

The Winter Street Housing Development's TDM efforts align well with additional observations from the Downtown parking study - for instance, regarding reducing the need for parking on the Peninsula:

If future residential development in the study area were to attract a higher percentage of residents who also work in the study area, and do not use their vehicle to commute to work, this would raise the internal capture rate for office parking demand. An internally captured office trip does not need an additional office parking space because the resident employee leaves their vehicle at home. In this way, a single parking space would serve either a residential purpose or an office purpose depending on the time of day. It would help lower parking demand to promote or incentivize the occupancy of new residential development with employees (of any kind) who also work in the study area.

Bicycle & Pedestrian Access

From a pedestrian and bicycling perspective, the Winter Street Housing Development is very friendly, located within the strong sidewalk network and lower-speed street grid of the Peninsula. In addition, the property is just two blocks from the Pedestrian Activities District Overlay Zone, the Portland Downtown and Arts Districts, the Downtown Entertainment Overlay Zone and the Congress Street Historic District.

From the perspective of residents with any mobility concerns, sidewalks on nearby Pine, Brackett, Spring, Clark and Danforth - and all streets to the east of State Street, throughout Downtown - are maintained year-round by the City and the Portland Downtown district, including the removal of snow and ice during the winter months.





The Winter Street Housing Development also sits in close proximity following bicycle and pedestrian facilities:

- Casco Bay Bridge bicycle lanes and separated pedestrian facility
- Protected bicycle lanes on Park Avenue
- Deering and Forest Avenue bike lanes
- Fore River Parkway Trail
- Several proposed West End sections of the Neighborhood Byway network.

These are all pivotal links in Portland's alternate transportation system. Moreover, the site is just three blocks from Gorham Bike & Ski, which offers bicycle rentals and provides maintenance services for bicycle commuters. Residential tenants at 73 and 91 Winter Street who work anywhere on the Peninsula will be within comfortable walking distance of their home. Those residents whose employers are located within a five-mile commute distance can also easily bike to work, especially as bicycle networks in Portland, South Portland, Westbrook and Falmouth continue to improve.

Significant near-site amenities and recreational facilities also provide people with a full-service living and working environment. These abound within easy walking distance of the Winter Street Housing Development for residential tenants and site visitors. They include:

- Neighborhood markets such as Rosemont and Fresh Approach; the Portland Farmer's Market; and home product suppliers such as Reny's department store





- Services such as the U.S. Post Office, Walgreen's Pharmacy, Enterprise Car Rental, and the Portland Public Library
- Recreational spaces and gardens such as the Reiche Elementary School playground, basketball court and field; the Reiche Community Center Pool; Congress Square Park; McIntyre Park; Clark Street Community Garden; Harbor View Memorial Park; Deering Oaks Park; Western Cemetery; and Western Promenade Park
- Food and entertainment venues, such as many neighborhood and Congress Street restaurants and cafes, the State Theatre, programming at Congress Square Park and the Portland Museum of Art

These nearby offerings also provide an attractive dual-purpose trip for any 73 and 91 Winter Street visitors who do end up driving to the site. For example, walking to run errands at neighboring businesses or meeting up with family and friends for after-hours events nearby. In addition, these internally captured trips represent no net new trip generation or parking demand beyond the original trip to the site.





Public Transportation Access

In terms of transit service, the Winter Street Housing Development is well-located for site residents and visitors:

- Direct Regional Transportation Program (RTP) paratransit service at 73 and 91 Winter Street
- Two blocks from Congress Street METRO stops with access to the primary Peninsula Route 1 and the important off-Peninsula bidirectional Route 9A and 9B. In addition, these two routes are timed to provide service every 15 minutes along the Congress Street corridor from the West End to the East End.
- One block from the METRO Route 8 with service to various Peninsula destinations
- Three blocks to access the South Portland Bus Service Routes 21, 24A and 24B
- 7-minute walk to the METRO Breez with service to Yarmouth, Freeport and Brunswick and the ZOOM Turnpike Express bus to Saco and Biddeford
- 9-minute walk to METRO Route 5 traveling the Outer Congress corridor to the Portland Jetport
- 11-minute walk to METRO Routes 2 and 4 serving the Forest and Brighton Avenue corridors
- 12-minute walk to Monument Square and the METRO Pulse at Elm Street with access to all of the rest of Greater Portland's public transportation options:
 - o METRO Route 7 to Falmouth
 - o METRO Husky Line express bus to Westbrook and Gorham
 - o RTP Lakes Region Explorer with Route 302 service to Westbrook, Windham, Raymond, Casco, Naples and Bridgton
 - o Shuttlebus Intercity bus to the Maine Mall, Scarborough, Old Orchard Beach and Saco

A number of the above stop locations include benches and/or bus shelters. At the METRO Pulse, services include ticket sales, a staffed indoor waiting room, restroom, and outdoor seating. METRO, South Portland Bus and Casco Bay Ferry Lines all provide real-time arrival information for riders, through the Southern Maine Transit Tracker website and smartphone apps such as Google Maps, Transit and Moovit. In addition, the Lakes Region Explorer and Biddeford Saco Old Orchard Beach Transit also provide live-time bus data through the organizations' websites. All local and express buses are equipped with bicycle racks with space for 2-3 bikes. In addition, the ZOOM bus and most METRO buses and offer Wi-Fi access; some provide in-seat USB ports.



In October 2020, METRO, South Portland Bus Service and Biddeford Saco Old Orchard Beach Transit launched the highly desirable DiriGO TouchPass electronic fare system. This enables riders and sites like the Winter Street Housing Development to pay only for transit trips taken, versus paying for multi-ride or monthly passes that may or may not be used fully. In addition, the system caps fares so that riders never pay more than a certain amount each day and each month; once they hit the cap, they ride free for the rest of that time period. For COVID-19 purposes, because the TouchPass is available via either a smartphone application or smart card, it is also a contactless and safe way to pay one's fare.



In addition, METRO's Peninsula Loop Reboot project (still in process as part of the larger *Transit Together* regional planning effort) is likely to provide more frequent and better aligned transit service in the area. This could enable increased ridership of Peninsula residents to and from the Winter Street Housing Development.



Shared Mobility Access

In terms of shared mobility, the use of transportation network companies (TNCs) such as Uber and Lyft has grown substantially in recent years and Community Housing of Maine has offered tenants a base amount each year to use these services. A TNC trip does not reduce traffic congestion, unless users are carpooling; however, it does reduce parking demand.



With the end of UhaulCarshare service in Portland in February 2020, Community Housing of Maine and Portland Housing Development Corporation will be exploring other carshare possibilities for the Winter Street Housing Development. If an option is found feasible, the site's TDM program will offer a discount for resident carshare vehicle use for the first year of residency.

Over the past several years, the City has explored various bikeshare possibilities for Portland. If and when the system is launched, the developer will provide monthly bikeshare memberships for tenants.



B. Winter Street TDM Coordination

Community Housing of Maine and the Portland Housing Development Corporation are committed to reducing drive-alone resident and visitor automobile trips, improving multi-modal safety, and easing traffic congestion and area parking demand near the Winter Street Housing Development through its TDM efforts.

Each of these development team entities have a history of in-fill and workforce housing development projects. They have encouraged residents' mobility and financial wellness through initiatives such as offering rent reductions for tenants who are car-free and separating housing leases and sales from parking space rental or purchase, providing bus pass subsidies, and constructing on-site bicycle/stroller/handcart rooms. Both groups have experience with TDM plan implementation at other locations in Portland. They see this site's TDM program as part of their larger affordable housing, sustainability, and quality-of-life missions.

Community Housing of Maine has designated Brian Kilgallen as the interim TDM Coordinator for the construction of 73 and 91 Winter Street. His contact information is: Brian Kilgallen, Community Housing of Maine, One City Center, 4th Floor, Portland, ME 04101, brian@chomhousing.org, (207) 879-0347.

Highly successful TDM programs share three vital characteristics – they are:

1. Dynamic - piloting strategies, assessing impacts, and modifying tactics as needed;
2. Rigorously supported and monitored by local governing bodies, in this case, the City of Portland;
3. Managed by committed and enthusiastic staff who are responsible for overseeing, promoting and sustaining the program.



Jay Waterman will serve as the Portland Housing Development Corporation's interim TDM Coordinator for the Winter Street Housing Development. His contact information is: Jay Waterman, Portland Housing Development Corporation, jwaterman@porthouse.org, (207) 221-8009.

The subsequent property manager for 73 and 91 Winter Street will be the long-term TDM Coordinator. Acknowledging that roles and responsibilities change over time in any position, the two organizations and their future site property manager will use the first year of TDM implementation to enumerate the TDM Coordinator's responsibilities in detail for any future staff to uphold the responsibility of the position.

Day-to-day operations and monitoring of the TDM plan will be conducted in-house by the TDM Coordinator longer-term and CHOM/PHDC will retain the services of a TDM consultant to review initiatives, problem-solve and develop new strategies if and when necessary.

C. Trip Generation & Parking Demand Projections & Targets

Community Housing of Maine has hired Cushman Transportation Consulting, LLC (CTC) to assist with its transportation demand management process. CTC specializes in TDM efforts locally and connects with TDM research and programs across North America – including aspects of setting and managing TDM targets. This all informs the following trip reduction, parking reduction and multimodal goals.

The development team has also hired Traffic Solutions to produce trip generation and parking demand projections to assess the potential impact of the Winter Street Housing Development. Traffic Solutions has utilized recent local parking and traffic study data, as well as the latest data from the Institute for Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition) and the ITE *Parking Generation Manual* (5th Edition). The traffic and parking assessments each include distinctions for the multimodal context of the site.

The Winter Street Housing TDM Coordinator(s) are responsible for:

- Ensuring strategic parking management and monitoring parking usage
- Coordinating tenant TDM policies and incentives
- Connecting tenants with nearby transportation resources
- Encouraging greater use of preferred modes – walking, bicycling, carpooling, taking bus or rail transit, and telecommuting-through transportation kiosk and site-wide promotion
- Overseeing/conducting surveying of tenants
- Filing annual reports and updating the plan with the City
- Exploration of additional TDM strategies, as needed

Projections & Targets

The TDM Plan sets the following targets:

- **Trip & parking reduction target:** a 10% reduction in resident vehicle trips and parking demand within 3 years after full occupancy - resulting from TDM program; i.e., 2 weekday morning peak trips, 2 weekday evening peak trips, 4 spaces
- **Multi-modal target:** 65% of resident trips will be via transit, carpooling, by bicycle, on foot or telecommuting within 3 years after full occupancy
- Will reassess targets after the first full year of occupancy at 73 and 91 Winter Street



A complication for setting ambitious targets for this particular site is the existing high multimodal rate of low-income households and individuals who currently live in the West End and downtown. That is, when a multimodal rate is already extraordinary, mode change is much more incremental and moderate than if the rate has significant room for growth.

Projected Trip Generation & Parking Demand

As stated earlier, the new uses at the full Mercy Redevelopment site (which includes 120 and 148 State Street and 73 and 91 Winter) will result in a net reduction of more than 100 vehicle trips to and from the site, compared with the trip rate for the existing hospital uses at full capacity.

Also mentioned previously, based on City Land Use Code Article 19, Table 19-B: Categorical Exceptions To Off-Street Parking Minimums, "No off-street parking shall be required within ¼ mile of fixed route transit service. New uses or changes of use of more than 10,000 SF taking advantage of this exception shall be required to provide a Transportation Demand Management Plan if they use this provision in lieu of parking requirements."

According to the traffic analysis, full occupancy at the Winter Street Housing Development can be expected to generate 17 total vehicle trips in the morning peak hour and 15 total vehicle trips during the evening peak hour of a typical weekday.

Per the parking demand projection analysis for the combined State and Winter Street buildings, the average peak weekday demand for parking at the site is expected to be 34 parking spaces between the hours of 12:00 to 4:00 AM.

Trip Reduction Target

Given the multimodal accessibility of the site, the high existing rate of alternate transportation use by those living in the area, and the transportation demographics of expected tenants, the Winter Street Housing Development's TDM efforts should enable a further 10% reduction in resident drive alone vehicle trips by the end of 3 years of full site occupancy. That is, 2 weekday morning peak trips and 2 weekday evening peak trips. The TDM Coordinators plans to revisit this reduction target after the first year of 100% occupancy of the site's buildings.

Parking Reduction Target

Given the strong strategy of limiting on-site parking, the implementation of TDM incentives, and the lower vehicle ownership rate of urban dwellers in general and low-income households specifically, it is anticipated that an achievable on and off-site parking demand reduction is 10% by the end of 3 years; i.e., 4 spaces. The parking demand target will also be revisited after 73 and 91 Winter Street is fully occupied for the first year. Winter Street's TDM program will also collaborate as needed with the NewHeight Redfern Mercy Hospital TDM Program to reduce the larger redevelopment area's parking demand.



Multimodal Target

The Winter Street Housing Development is setting an initial target of 65% of all resident work commute trips to and from the site being multimodal, by 3 years after full occupancy of 73 and 91 Winter Street. This includes transit, carpooling or vanpooling, bicycle, pedestrian and telecommute trips or some combination of these modes.

As mentioned on the previous page, it is a complex target to set because of the current high multimodal rate already existing in the area. The target is also different from the trip and parking reduction ones above, because it includes the diverse commuting habits of the site's resident populations. That is – with the range of potential tenants and tenant occupations (including students and semi-retirees), as well as nontraditional retail and clinic work shifts - a number of these trips are likely to be outside of the morning and evening peak periods. CHOM/PHDC plans to closely monitor existing trends to attain a reasonable mode-shift goal over time.

It is most useful for the site's TDM efforts to address the specific needs of transit users, carpoolers, bicyclists, walkers and telecommuters and set an overarching multimodal trip target – versus targets for each mode. From other TDM experiments across North America, it is clear that individuals' use of various alternate modes shift over time as different residents come and go and/or their needs change. For example, a tenant who uses transit might move to another location or an employee who walks might switch primarily to bicycling. In another instance, a tenant who was able to drive may lose the ability to do so and switch to using transit or carpooling for errands.





D. Trip and Parking Reduction Strategies

In the table on the following page, Community Housing of Maine and Portland Housing Development Corporation propose a number of best-practice and sensible parking and trip reduction strategies for the site's TDM Plan. These are based on the development team's understanding of the transportation context, likely residents and the usefulness of various TDM efforts. For example, unsubsidized and unbundled parking will produce the strongest results for decreasing single-occupancy vehicle trips to and from the site.

In addition, the team acknowledges the various needs of different multimodal commuters. For instance, tenants who use transit, walk or bicycle are more able to do so if they have on-site, secure storage for larger commuting gear like strollers, bicycle trailers and shopping handcarts. Moreover, even if current drive-alone residents have to pay for parking off-site, likely this will need to be combined with tangible financial incentives like transit pass subsidies or parking cash outs. These are vital to encourage people to experiment with other ways of getting around.

Another critical component for the success of the Winter Street Housing Development TDM Plan is a carefully thought-out marketing plan that engages tenants from when they first move in regarding preferred modes of transportation, and provides easily accessible information and subsidies. As shared by Portland, Oregon's SmartTrips Welcome program, a residential move is a unique and powerful opportunity for mode experimentation and change. This marketing also builds the site's TDM culture and the sense of multimodal travel as the social norm. As Winter Street Housing is developed and under construction, the team will design a promotion strategy to encourage walking, bicycling, telework and teleservices, carpooling and the use of public transit.

...When a person changes residence, everything changes: the way to the store, the way to work, even the steps to the fridge.

This time of change offers a unique opportunity to create new neural pathways or reinforce old ones that haven't been used for a while and make these stronger than habitual pathways.

Andrew Pelsma, SmartTrips Program Specialist, Portland, Oregon

...To us, this represents a significant number of people with an immediate gap in knowledge about their local travel options.

Linda Ginenthal, SmartTrips Program Manager



Finally, the region recently reexamined the need for a Transportation Management Association (TMA) to benefit sites like the Winter Street Housing Development - and this is now a recommendation in the Portland Area Comprehensive Transportation System's *Transit Tomorrow Plan*. TMAs are public-private entities that assist sites with TDM implementation, outreach and monitoring; advocate for improved transit and act as brokers for services such as shuttles. CHOM and PHDC plan to support the development of a local TMA and have the Winter Street Housing Development participate as a member.

Infrastructure		
Remote Parking/Reduced Parking/Shared Parking/Fee in Lieu of Parking	<i>Reduced parking:</i> Winter Street Housing is limiting parking supply by providing fewer spaces than required in the past by the City's former land use ordinance.	
Affordable Housing	Far beyond the current City standard for workforce housing, 100% of the Winter Street Housing Development's dwelling units will be considered affordable housing, with total household income not exceeding 60% percent of Area Median Income (AMI). Affordable housing units at a lower rate of AMI generate fewer vehicle trips and less parking demand than higher AMI or market-rate housing units.	
Pedestrian & Bicycle Access	<i>Sidewalks:</i> reconstruction of street sidewalk segments abutting development on Winter and Spring Streets	
	<i>ADA-accessible pedestrian amenities:</i> barrier-free ramp improvements	
	<i>Crosswalks:</i> striping improvements for crosswalks at Winter and Spring Streets	
	<i>Lighting:</i> street and building lighting improvements to improve sidewalk illumination	
	<i>Outdoor, within-site bicycle parking:</i> 36 spaces using custom bike racks	
	<i>Indoor, secure bicycle/stroller/handcart parking:</i> for bicycles, electric bikes, cargo bikes or trailers, handcarts and strollers	
	<i>Electric bicycle charging:</i> To provide charging station/outlets for resident electric bikes in storage room	
	<i>Bicycle repair station:</i> To provide bike repair stand in storage room	
Shared Mobility	<i>Flexible passenger loading curb space</i> for resident and visitor pick-up, drop-off and carpooling at the mountable curb between 73 and 91 Winter Street (designated for emergency vehicle site access)	
	<i>Carseat storage space:</i> To facilitate child carseat storage, for those commuting by carpool, there will be an open storage space for carseats in the indoor, secure bicycle parking room.	
	<i>Carshare possibilities:</i> With the end of UhaulCarshare service in Portland in February 2020, site owner will explore other carshare possibilities for 73 & 91 Winter Street.	
On-Site Amenities	<i>Co-working/community space:</i> work area and meeting space for tenants' use to encourage community-building and telecommuting	
	<i>Broadband access:</i> hardwired infrastructure for broadband and WiFi	
	<i>Adjacent health clinic at 120 State:</i> general health services available to the public	
Delivery Supportive Amenities	To facilitate delivery services by providing temporary storage for packages and other deliveries	
Incentives		



Transit Subsidies	<i>Transit passes:</i> Transit subsidy for residents to use transit	
	<i>Transit pass reduced payments, fare capping and processing:</i> Will explore new DiriGo TouchPass system to simplify management of transit subsidy for individual resident trips (launched in October 2020 by METRO, City of South Portland Bus Service and Biddeford Saco Old Orchard Beach Transit)	
Shared Mobility Subsidies	<i>Transportation Network Companies:</i> Alternative to (in lieu of) utilizing transit pass subsidy, \$100 annual tenant incentive for use of Uber or Lyft	
	<i>Carshare:</i> Discount for resident vehicle use of any on-site or near-site carshare that becomes available, for first year of residency	
	<i>Bikeshare:</i> Monthly bikeshare memberships for residents when/if bikeshare starts in Portland	
Information		
Education for Travel Choice	<i>Webpage:</i> To maintain active web page on property management website for residents. Page to include same information as orientation packet below.	
	<i>TDM orientation packets:</i> New residents will be provided with orientation packets regarding the site's TDM program and access to site by various travel modes. Includes: (1) Map of area, showing major streets, nearby landmarks, walk/bike times, closest bus stops and walk times, recommended walk/bike routes, etc. (2) Transit service frequency, fares, first and last runs, and schedules if possible, phone numbers and web addresses for transit service providers and taxi companies. (3) How to reach the site from major transportation terminals (bus and train stations, airport, ferry terminal, etc.) (4) Access for people with disabilities; (5) Availability of bicycle facilities, including secure bike parking; (6) Encouraging residents to become members of GO MAINE and access rewards system, carpool matching and Emergency Ride Home Benefit; (7) automobile parking availability and price; (8) Any future carshare or bikeshare info; (9) Info regarding building TDM program and contacting the TDM Coordinator.	
	<i>New Resident TDM Engagement & Acknowledgement:</i> TDM Coordinator will engage with each new resident to share about the TDM program. All new tenants will be provided with the site's TDM program overview goals. They will be asked to sign an acknowledgement of the goals of the project and a commitment to participate in the annual resident commute surveys.	
	<i>Ongoing TDM program education:</i> 1 or more times per year, TDM Coordinator will email all residents (new and existing, including subletters) the same information as is in the TDM orientation packets	
	<i>Transportation fairs/tabling:</i> Explore hosting tabling event in lobby 2-3 times per year, to engage residents in conversation about their transportation choices as they head out or come home. Consider offering light refreshments.	
	<i>Experiment with walking tour of multi-modal options:</i> Offer a hands-on walking tour of all nearby transportation options. E.g., a visit to the METRO Pulse on Elm Street, including how to ride the bus and practice putting a bicycle on the bus.	
	<i>Experiment with offering on-site bicycle safety class:</i> As residents show interest, host a bicycle safety/information class or bicycle repair event	
	<i>TDM surveying:</i> Required resident transportation surveys and reporting to City will also serve as education tool	
Promotion of Alternate Modes	<i>Co-promotion with City and downtown agencies:</i> Work with Portland Downtown and City of Portland's Drive Less, Do More marketing campaign to promote alternatives with residents	





E. Plan for Monitoring, Data Collection and Reporting

Recognizing that the implementation of a TDM Plan is a dynamic process, the Winter Street Housing Development TDM Coordinator(s) will work with the City to monitor the effectiveness of the site's TDM Plan components - and to assess whether the site is achieving the trip and parking reduction and multimodal targets listed above. Portland Housing Authority will work with tenants to evaluate leased off-site parking use and incentives for preferred modes and make improvements. Another important piece will be to determine the flexibility of tenants to utilize various travel modes.

Tenant Surveys

The TDM Coordinator will conduct annual tenant surveys that provide quantitative data (e.g., trip, parking and mode split) and qualitative data (e.g., perception of alternate transportation, area parking and the site's TDM programming). The site will carry out these surveys once annually for the first three years of full occupancy and then every two years thereafter, with at least 50% tenant participation.

The survey will be developed in consultation with the city's TDM manager and conform to overall city TDM modeling and planning. Survey questions will include:

- Number of people in household
- Resident mode of travel to and from work and/or for other trips away from the site – plus frequency of use of those modes
- If parking personal vehicle(s), where parked
- Whether the resident drives during morning or afternoon peak periods



- Use of/participation in:
 - o On-site bicycle parking/stroller/hand cart storage
 - o Any use of site TDM incentives (such as transit passes) or other benefits or programming
 - o GO MAINE membership and program participation
 - o Any use of off-site future carshare and/or Portland bikeshare
- TDM marketing effectiveness
- Preferences, barriers or concerns with modes of travel and likelihood of changing travel behavior given specific incentives or disincentives
- Rating knowledge of walking, bicycling and using the bus in the community
- Space to add suggestions and comments

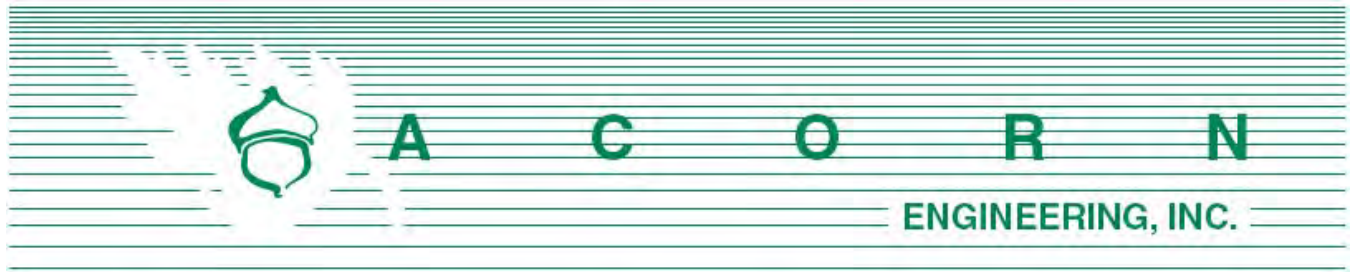
Note: the use of these survey tools will also assist the Winter Street Housing Development with its TDM education efforts. That is, the questions themselves help people think differently about their transportation behavior. The surveys will also provide a reminder of the TDM online/on-site information center and the TDM Coordinators for more information about options.

Annual Report

The TDM Coordinator will then produce an annual TDM Report to meet the City's monitoring requirements. The report will include:

- a. the above survey data and percent of units occupied;
- b. how the data directly relates to the plan's reduction targets;
- c. details of that year's TDM operations – including management, strategies, marketing, number of contact points with residents, and any new infrastructure development;
- d. lessons learned and any changes in the TDM plan during the year;
- e. plans for the following year.





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

March 19, 2021

Subject: 144 State Street Neighborhood Meeting

I, Peter Heil, hereby certify that a neighborhood meeting was held on March 11, 2021 remote via Zoom at 5:30 pm.

I also certify that on February 25th, 2021 invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.
2. Residents on the “interested parties” list.

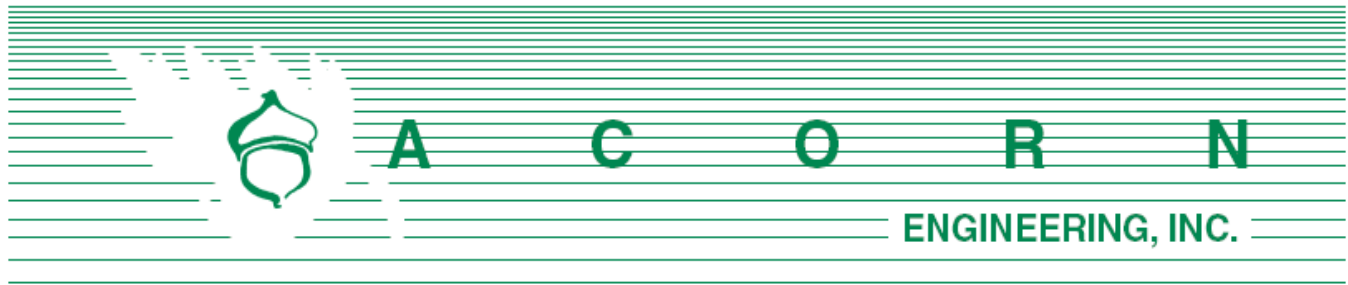
Sincerely,

A handwritten signature in blue ink, appearing to read 'Peter Heil', is positioned above the printed name.

Peter Heil, P.E.
Project Manager
Acorn Engineering, Inc.

Included with this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes



February 25th, 2021

Dear Neighbor:

On behalf of Community Housing of Maine and Portland Housing Development Corp., we are pleased to invite you to a virtual neighborhood meeting to discuss a proposed Level III Site Plan/Subdivision Application related to the property located at 144 State Street (Chart 45, Block C, Lot 7). The project proposes to redevelop the existing lot to provide two (2) affordable housing buildings along Winter Street, for a total of 93 units. This proposal is separate from the recent Mercy hospital redevelopment project located on the same parcel. The exiting parcel will be subdivided into three lots, including 2 lots along Winter Street for the new affordable housing buildings.

Meeting Location:

This meeting will **be held remotely via Zoom** according to state and local requirements around social distancing and will be available for public viewing and participation. **Please email admin@acorn-engineering.com to request a link or phone number to join the meeting.** You may also call the office line (listed below) to request this information.

Meeting Date/Time: Thursday, March 11, 2021 at 5:30 p.m.

The City code requires that property owners within 500 feet of the proposed development and residents on an “interested parties list” be invited to participate in a neighborhood meeting. Both the sign-in sheet and recorded meeting minutes will be submitted to the Planning Board. If you have any questions, please do not hesitate to call the office at (207) 775-2655. We look forward to seeing you at the meeting.

Sincerely,

A handwritten signature in black ink, appearing to read 'Will Savage'.

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

Sign In Sheet

3/11/2021

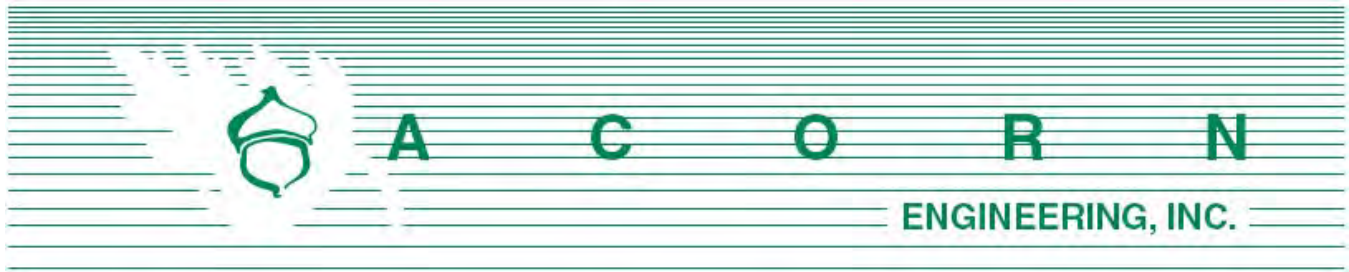
144 State Street Portland, ME 04101

Members of the Public in Attendance:

NAME	E-MAIL
1. Amy Grommes Pulaski	Amygrommes@gmail.com
2. Ian Jacob	lancasperjacob@gmail.com
3. Jennifer Defilipp	Jend@townendre.com
4. Suzanne Hunt	Shuntdoherty@gwi.net
5. Rose Marasco	Info@rosemarasco.com
6. Robert MacIntosh	Bob22mac@gmail.com
7. Elizabeth Parsons	Ecparsons33@hotmail.com
8. Charles Morris	Kittyandcharles@gmail.com
9. Kitty Gilbert	Kittyandcharles@gmail.com
10. Robert O'Brien	Rjobrien@mail.com
11. Michelle Dunham	Mdunham@hallkeen.com
12. Demetra Giatas	Demetragiatas@yahoo.com
13. Kent Avery	Kentcavery@yahoo.com
14. Michael Pulaski	Michael.pulaski@gmail.com

Developer and Consultant Team in Attendance:

NAME	E-MAIL
1. Will Savage	wsavage@acorn-engineering.com
2. Peter Heil	pheil@acorn-engineering.com
3. Ryan Senatore	ryan@senatorearchitecture.com
4. Nick Aceto	na@acetola.com
5. Bree Lacasse	Bree@chomhousing.org
6. Brian Kilgallen	Brian@chomhousing.org
7. Jay Waterman	Jwaterman@porthouse.org
8. Maggie Stanley	Mstanley@cwsarch.com
9. Ben Walter	Bwalter@cwsarch.com



**144 State Street
Level III Site Plan Submission**

Neighborhood Meeting Minutes

March 11, 2021 / 5:30 pm

Remote meeting via Zoom

Project Team Attendees:

Will Savage (WS): Civil Engineer/Presenter (Acorn Engineering)

Peter Heil (PH): Civil Engineer/Presenter (Acorn Engineering)

Ryan Senatore (RS): Architect/Presenter (RSA)

Maggie Stanley (MS): Architect/Presenter (CWS)

Ben Walter (BW) Architect (CWS)

Nick Aceto (NA): Landscape Architect/Presenter (ALA)

Bree LaCasse (BL): Applicant/Presenter (Community Housing of Maine)

Brian Kilgallen (BK): Applicant/Presenter (Community Housing of Maine)

Jay Waterman (JW): Applicant/Presenter (Portland Housing Development Corp.)

Meeting started at approximately 5:30 pm.

Presentation:

Peter Heil:

- Project Manager
- Overview of meeting, housekeeping and Agenda
 - o This meeting is part of the planning board approval process, a sign in sheet is available for everyone which will become public record along with the meeting minutes.
- We will open to public comment at the end of the meeting.

Bree LaCasse:

- Introduction of Community Housing of Maine
- Introduction of project and project team
- This is the official neighborhood meeting that is required by the site plan application.
- We are using the same civil and landscapeteam from the larger Mercy redevelopment as part of this project. We believe this cohesiveness will result in a well-rounded design.

Jay Waterman:

- Intro of Portland Housing Development Corp.
 - o Partners with Community Housing of Maine on this project
- Has property in the project vicinity.
- Looking forward to the future and believes this project will be a great addition to the neighborhood.

Peter Heil:

- Professional Engineer and Project Manager
- Please enter contact information into chat box to act as a sign in sheet as required by the site plan application.
- Overview of site in relation to neighborhood
- Overview of CHOM / PHDC parcels & site development programming
 - o Family Building – 41 units
 - o Senior Building – 52 units
 - o Total of 93 units for affordable housing units
- Overview of zoning.
 - o Property was recently approved to rezone the parcel to the B3 Downtown Business Zoning District with height limitations along Winter Street.
- Portions of the existing Mercy building will be removed to make way for a shared woonerf.
- The site will handle stormwater runoff and provide water quality treatment prior to connecting to the municipal system.
 - o Modular Wetland System
- Parking overview – the proposal provides 70 parking spaces on site and 6 new parking spaces along Spring Street.
- As part of the B3 zoning there is a 35' height limitation along Winter Street but allows for height increase with affordable housing incentives. The project is proposing each building to be around 45' in height. The projects architects are also working through the City's Historic Preservation approval process.

Ryan Senatore:

- Project architect
- Overview of building uses: Family Building



- o Residential floor plans
- o Community Room
- o Bike Room
- o Utility Room
- Entry & Façade
 - o Materials description
 - o Main entry
 - o Porches
- Massing and material to help integrate this building into the neighborhood.
- Overview of elevations

Maggie Stanley:

- Overview of floor plans: Senior Apartments
- Overview of elevations
- Overview of Massing, Scale and Landscaping

Nick Aceto:

- Landscape architect
- Utilize site and landscape design to stitch these projects together using consistency.
- Overall approach to design
 - o Woonerf
 - o Emergency access
 - o Pedestrian scale courtyard
- Outline of different spaces within site
- Prospective views of site showing landscaped areas.
 - o Street trees
 - o Steel tree grate
 - o Hardscape elements
 - Stone blocks / Informal seating
- Plantings and textures
- Overview of planting material
- Overview of Woonerf

Peter Heil:

- Conclusion – Thank you for coming.
- Next step is a planning board workshop.
 - o Keep an eye out for the city agenda – all are welcome to join us at the planning board workshop.
- The floor is now open for public comment. We are excited to discuss this project with everyone.



Comments, Questions & Answers:

Please note that the following questions and answers were not recorded verbatim and aim to represent and summarize the actual questions, answers, and discussion that took place at the meeting.

Charles Morris: The height generally is one of my concerns. Is there a commercial space as part of this project?

- **Brian Kilgallen:** There is no commercial space in the two CHOM/PHA projects. There is a 5' setback from the sidewalk. We will have to go through historic review.
- **Mat Morris** – Will the area between the senior building and the family building be a drive aisle?
- **Brian Kilgallen:** This area is more emergency access only. Not for normal traffic.

Robert Macintosh: Where can I read more about the stormwater collection system?

- **Peter Heil:** Information is available through the planning board. The system is a subsurface water quality system, and it will be collecting all the subsurface water from the woonerf to provide treatment and handle flooding control for a 25-year storm event.

Liz: Are there fewer street trees because of the underground utilities?

- **Peter Heil:** We are anticipating 12 street trees to replace the 3 existing street trees. The landscaping does need to be designed around utilities and required separation needed to not conflict.
- **Nick Aceto:** we have had to pull out a couple trees to allow for utilities. We have more than the average amount of street trees as part of this project.

Amy Pulaski: I thought there is a 35-height maximum not a 45' maximum.

- **Peter Heil:** With affordable housing an additional 25' is allowed.
- **Amy Pulaski:** Will the underground electric serve both sides of the street?
- **Peter Heil:** The underground electric will only serve the project side of the street.
- **Amy Pulaski:** One thing we talked about is units having direct access to Winter Street. What is the timeline on this project? How many parking spaces?
- **Bree Lacasse:** There is direct access to the street from the units along winter street. The fences have doors which will allow direct access to the street for the units that have porches. We hope to start construction in June 2022. We will be leasing parking from Redfern for up to 20 spaces.

Jennifer Defilipp: There is a blank wall on the Senior Center, why is there no windows? What building standard is passive housing? Will we improve Winter Street?

- **Maggie Stanley:** We do have the opportunity to add windows on that side.
- **Brain Kilgallen:** They will adopt 2021 passive house standards. It is a super tight envelope of buildings. Then it is heated in a manner without fossil fuels.



Ian Jacob: Where are the AC units located? Have you looked into screening those?

- **Ryan Senatore:** We centered them on the corridor of the building, I don't think they will be visible from the street.
- **Ian Jacob:** I think we should look at the long views specifically and add screening if necessary. Looking at the ground floor windows, usually it is higher than what is shown.
- **Ryan Senatore:** Due to the sloping grades along Winter and Spring Street.
- **Ian Jacob:** For the senior building, same question on the AC unit locations
- **Maggie Stanley:** Similar to the family building, they will be located centered on the corridor of the building.
- **Ian Jacob:** Questions the various architectural elements, including windows, locations of vertical and horizontal massing.
- **Maggie Stanley:** Used to break up the massing of the building and incorporate different architectural features into the building.
- **Ian Jacob:** I would still push back on this need to break up this massing.
- **Brian Kilgallen:** you bring up some great points and we will look into this.

Demetra Giatas: – Will there be onsite management and security? Is there a plan on how to handle rodents during construction?

- **Bree Lacasse:** Yes, there will be onsite management.
- **Jay Waterman:** We don't typically put security in our operation budget, it's more of an as needed basis. We have a site manager, resident service coordinator, and maintenance staff and with the open layout we hope that any issues would be resolved before we had to hire security.
- **Brian Kilgallen:** The existing site isn't a vacant building, so we hope this is not much of a problem. We'll keep issue in mind.

Michelle: What is the average square foot of the units for the Senior building?

- **Brian Kilgallen / Maggie Stanley:** there is 52 units proposed all one bedroom. 540 SF is the average.

Comment: How wide are the sidewalks?

- **Bree Lacasse:** The sidewalks are 8' wide.

Charles: I think we should talk about street lighting; Winter Street is a very dark street. With a proposed 45' structure the street will only darken.

- **Ryan Senatore:** Lighting on the street is something we have not talked about yet but we will defiantly start to look into it.

Bree Lacasse: Thank you all for coming. Brian and I will be putting our cell phone number in the chat. Reach out with any questions or concerns. We invite you to participate in the PB workshop. Thanks!

Meeting concluded at approximately 7:15 pm.



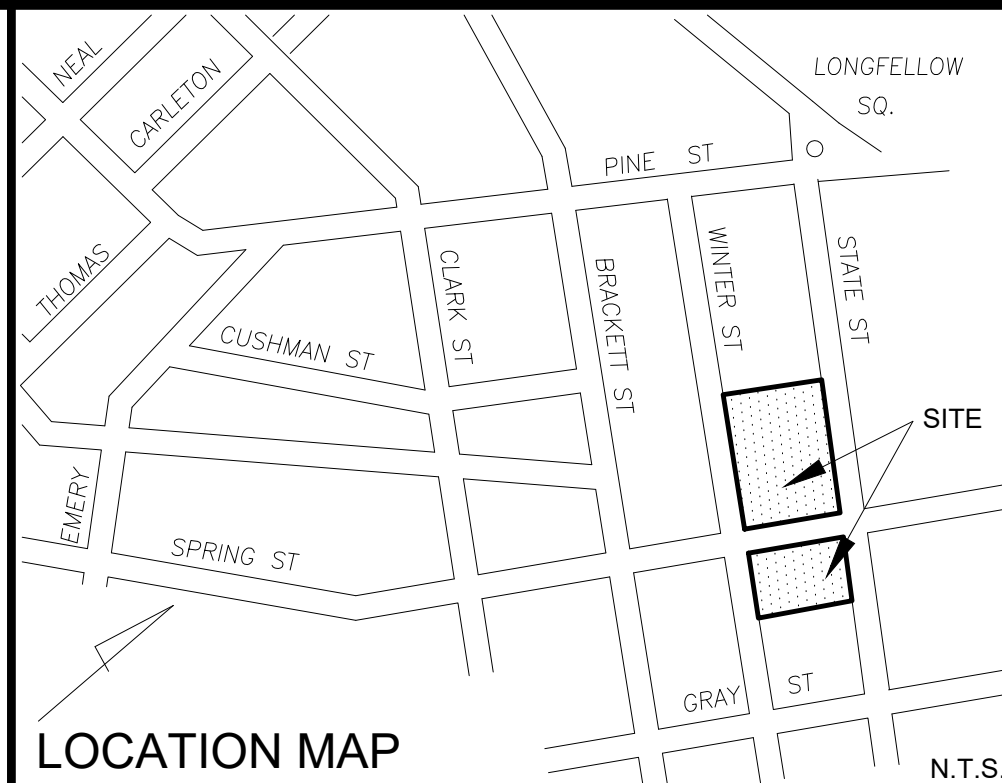
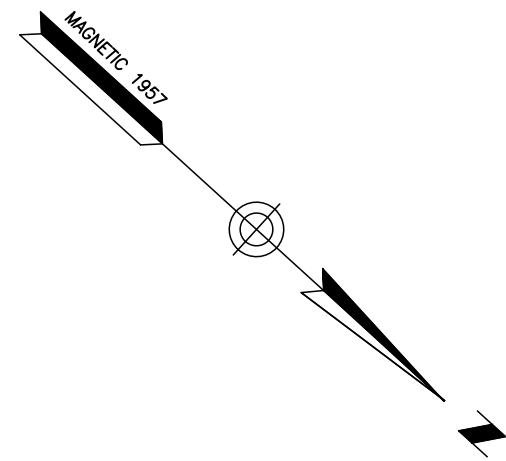
The abovementioned material was as interpreted and recorded from handwritten notes. Please note and relay any discrepancies or disputed information in the recorded minutes to the below address so that they can be reviewed, revised, and resubmitted, as necessary.

Recorded by,

A handwritten signature in blue ink, appearing to read 'P. Heil'.

Peter F. Heil, PE
Project Manager
Acorn Engineering, Inc.
pheil@acorn-engineering.com





LEGEND	
●	IRON PIPE OR ROD FOUND
●	MONUMENT FOUND
○	GAS VALVE
○	UTILITY POLE
○	MANHOLE
⊗	EM/GM ELECTRIC/GAS METER
⊗	SIGN
⊗	CATCH BASIN
⊗	HYDRANT
⊗	WATER VALVE OR SHUTOFF
⊗	LIGHT POLE
⊗	DECIDUOUS TREE
⊗	CONIFEROUS TREE
—X—X—	GUARDRAIL
—	FENCE
—	CURB
—OHW—	OVERHEAD WIRES
—E—	UNDERGROUND POWER
—W—	WATER LINE
—G—	GAS LINE
—T—	TELEPHONE
—SD—	STORM DRAIN
—SS—	SANITARY SEWER
—100—	1' CONTOUR
—IPF/IRF—	IRON PIPE OR ROD FOUND
—N/F—	NOW OR FORMERLY
000/000	DEED BOOK / PAGE
L/S	LANDSCAPED AREA
CONC.	CONCRETE

- PLAN REFERENCES**
- "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR MERCY HOSPITAL DATED 3 FEB. 1982 REVISED THROUGH 15 MARCH 1982" BY H.I. & E.C. JORDAN, SURVEYORS.
 - "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR MERCY HOSPITAL DATED JUNE 17, 1981 REVISED OCT. 2, 1981" BY H.I. & E.C. JORDAN, SURVEYORS.
 - "STANDARD BOUNDARY & TOPOGRAPHIC SURVEY ON STATE STREET, PORTLAND, MAINE MADE FOR MERCY HOSPITAL DATED NOVEMBER 30, 1999 REV. 2 OCT. 04, 2012" BY OWEN HASKELL, INC.
 - "ALTA/ACSM LAND TITLE SURVEY, 102, 120 (AKA 144) & 148 STATE STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR MERCY HOSPITAL AND EASTERN MAINE HEALTHCARE SYSTEMS" FEBRUARY 27, 2013 LAST REVISION DATE: SEPT. 20, 2013 BY OWEN HASKELL, INC.

- GENERAL NOTES**
- PREMISES IS SHOWN AS TM 45-C-6 & 7 AND TM 45-D-1 ON THE CITY OF PORTLAND ASSESSORS MAPS.
 - BEARINGS ARE BASED ON MAGNETIC 1957. COORDINATES ARE BASED ON CITY DATUM UTILIZING THE MONUMENTS SHOWN.
 - THE LOCATIONS OF ALL UTILITIES SHOWN ON THE SURVEY ARE FROM VISIBLE SURFACE EVIDENCE ONLY.
 - ELEVATIONS ARE BASED ON CITY DATUM AS PER MONUMENT T104-45-11 AT CORNER OF CLARK AND SPRING STREETS, ELEVATION = 127.91 FEET.

OWNER OF RECORD
NEWHEIGHT REDFERN LLC
CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 36459, PAGE 218

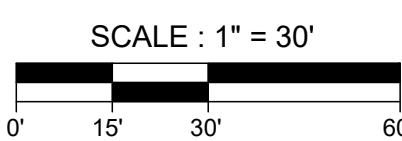
CERTIFICATE
OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

Randy R. Loubier
RANDY R. LOUBIER, PLS #2407
8/4/2020
DATE

STATE OF MAINE
PROFESSIONAL LAND SURVEYOR
RANDY R. LOUBIER
2407

Boundary & Topographic Survey
At
102 & 120 State Street, Portland, Maine
Made for
NewHeight Redfern, LLC
c/o Jonathan Culley
167 Newbury Street, #503 Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424
DRAWN BY: RS/JLW DATE: AUGUST 4, 2020 JOB NO. 2020-161 P
CHECKED BY: RRL SCALE: 1" = 30' DRWG. NO. 1



UTILITY NOTE
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

1. EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFF-SITE.
2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE COMPLIANCE WITH ALL DISPOSAL MATERIALS.
3. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL COMPLY WITH AND WILL BE REMOVED AT PROJECT COMPLETION. FINAL SIGNAGE WORDING AND PLACEMENT LOCATION TO BE ACCEPTED BY THE CITY.
6. SEDIMENT BARRIERS TO BE PLACED DIRECTLY ON THE FRONT AND SIDE PROPERTY LINES, DOWN GRADIENT OF THE PROPOSED PROJECT DRIVEWAY. SEDIMENT BARRIERS TO BE MAINTAINED AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY DEPICT THE PHYSICAL LOCATION.
7. CONTRACTOR SHALL PLACE CATCH BASIN INLET PROTECTION ON CATCH BASINS AND FIELDS INLETS DOWN-GRADIENT FROM STREET SIDE.
8. DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.
9. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING OFF-SITE STORAGE TO EMPLOYEES--ON-SITE PARKING WILL NOT BE PROVIDED OR GUARANTEED. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE PERMITS FROM THE CITY FOR CLOSING ANY ON-STREET PARKING SPACES DURING THE CONSTRUCTION PERIOD.
10. CONTRACTOR SHALL REMOVE ALL SNOW REMOVAL EQUIPMENT AND SUPPLIES AFTER EACH REGULAR SEASON.
11. REMOVAL OF UNDERGROUND FUEL TANKS TO BE IN ACCORDANCE WITH MAIN DEP CHAPTER 691 REGULATIONS.

1. CONTRACTOR TO INSTALL EROSION AND SEDIMENTATION CONTROLS AT THE ONSET OF CONSTRUCTION
2. INSTALL TEMPORARY CONSTRUCTION FENCE & CONSTRUCTION ENTRANCE
3. REMOVE ONSITE PAVEMENT, CONCRETE, AND INDICATED SITE FEATURES
4. REMOVE ONSITE STORM STRUCTURES
5. PROVIDE TEMPORARY GRADING TO DRAIN TOWARDS WINTER STREET



PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

A circular professional engineer seal for the State of Maine. The outer ring contains the text "STATE OF MAINE" at the top and "LICENSED PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The center of the seal contains the name "PETER F. HEIL" and the license number "15318".

C-03

1. ALL BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
4. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
6. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
7. UPON COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
8. THE CITY OF PORTLAND DEPT. OF PUBLIC WORKS, STATE STREET IS SCHEDULED TO BE PAVED IN 2022. UTILITY WORK, AND ANY NECESSARY CURB WORK WITHIN STATE STREET SHOULD BE COMPLETED IN 2021.

SPACE AND BULK STANDARDS			
ZONE: B-3	REQUIRED	91 WINTER STREET	73 WINTER STREET
MINIMUM LOT AREA	NONE	15,364 SF	17,167 SF
MIN LOT FRONTAGE	15'	151'	237'
MIN LOT WIDTH	NONE	76'	242'
MAX HEIGHT	85' *	45'	45'
STRUCTURE SETBACKS			
FRONT (MAX)	5'	7'	6'
SIDE (MIN)	NONE	5.35'	2.54'
REAR (MIN)	NONE	10.50'	10.50'
MAX IMPERVIOUS COVERAGE	100%	94%	92%
OFF STREET PARKING		SEE PARKING TABLE SUMMARY	
NET RESIDENTIAL DENSITY		52	41
* 45' MAX HEIGHT WITHIN 30' OF WINTER STREET RIGHT OF WAY.			

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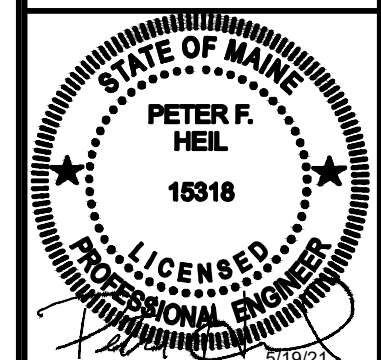
ST NAME/ SS: **WINTER STREET AFFORDABLE HOUSING PROJECTS**

OWNER OF RECORD:
COMMUNITY HOUSING OF MAINE & PORTLAND HOUSING DEVELOPMENT CORP.
E CITY CENTER, 4TH FLOOR & 14 BAXTER BOULEVARD, PORTLAND ME 04101

PROJECT NAME/
ADDRESS:

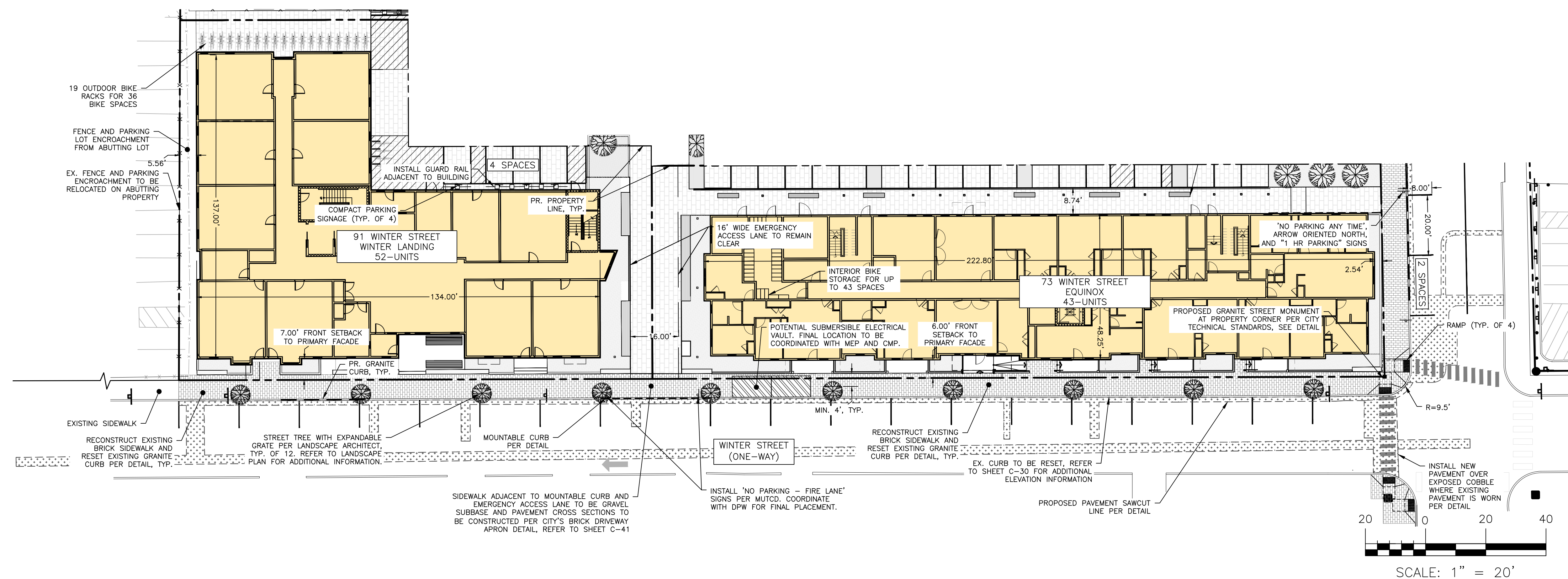
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE:	1140_CIVIL
JN:	1140
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	KRB
CHECKED BY:	WHS



DRAWING NO.

C-11

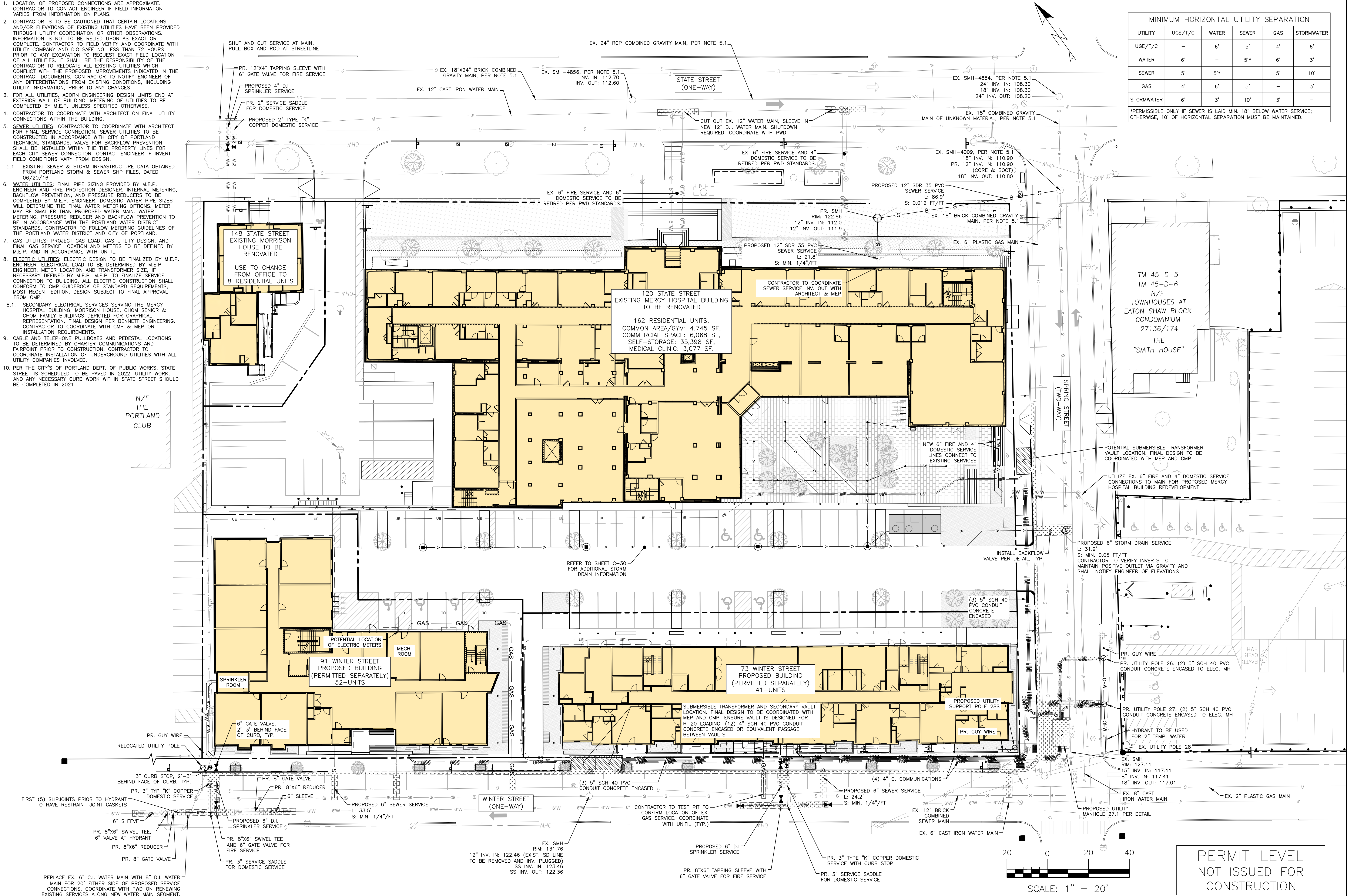


PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

GENERAL NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.
- 5.1. EXISTING SEWER & STORM INFRASTRUCTURE DATA OBTAINED FROM PORTLAND STORM & SEWER SHP FILES, DATED 06/20/16.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
7. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNTIL.
8. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
- 8.1. SECONDARY ELECTRICAL SERVICES SERVING THE MERCY HOSPITAL BUILDING, MORRISON HOUSE, CHOM SENIOR & CHOM FAMILY BUILDINGS DEPICTED FOR GRAPHICAL REPRESENTATION. FINAL DESIGN PER BENNETT ENGINEERING. CONTRACTOR TO COORDINATE WITH CMP & MEP ON INSTALLATION REQUIREMENTS.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.
10. PER THE CITY'S OF PORTLAND DEPT. OF PUBLIC WORKS, STATE STREET IS SCHEDULED TO BE PAVED IN 2022. UTILITY WORK, AND ANY NECESSARY CURB WORK WITHIN STATE STREET SHOULD BE COMPLETED IN 2021.

N/F
THE
PORTLAND
CLUB



MINIMUM HORIZONTAL UTILITY SEPARATION					
UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	-	6'	5'	4'	6'
WATER	6'	-	5*	6'	3'
SEWER	5'	5*	-	5'	10'
GAS	4'	6'	5'	-	3'
STORMWATER	6'	3'	10'	3'	-

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10" OF HORIZONTAL SEPARATION MUST BE MAINTAINED.

ISSUED FOR	BY
ABILITY TO SERVE	DATE
SITE PLAN APP.	PFH
CITY REVIEW	PFH
CHOM CITY REVIEW	PFH
PWD REVIEW	PFH
CMP REVIEW	PFH
COMMENT RESPONSE	PFH

UTILITY PLAN

PROJECT NAME/ ADDRESS: MERCY HOSPITAL REDEVELOPMENT
NEWHEIGHT REDFERN, LLC
217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101

CLIENT/OWNER OF RECORD: NEWHEIGHT REDFERN, LLC

DRAWING NO. C-20

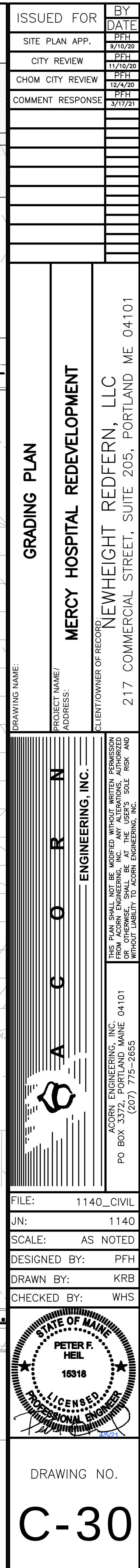
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JN: 1140
SCALE: AS NOTED
DESIGNED BY: PFH
DRAWN BY: KRB
CHECKED BY: WHS

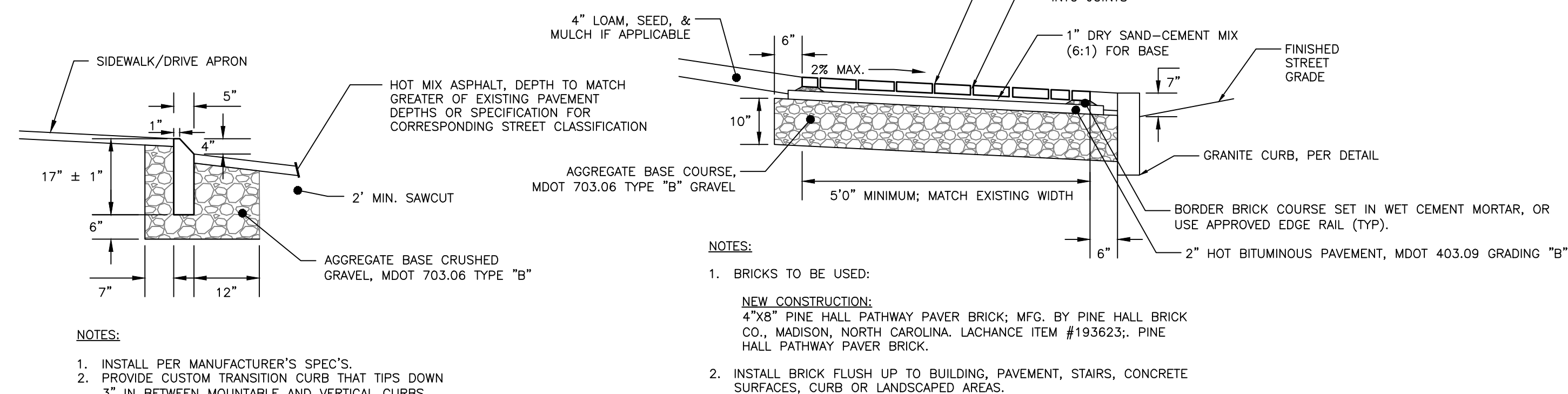
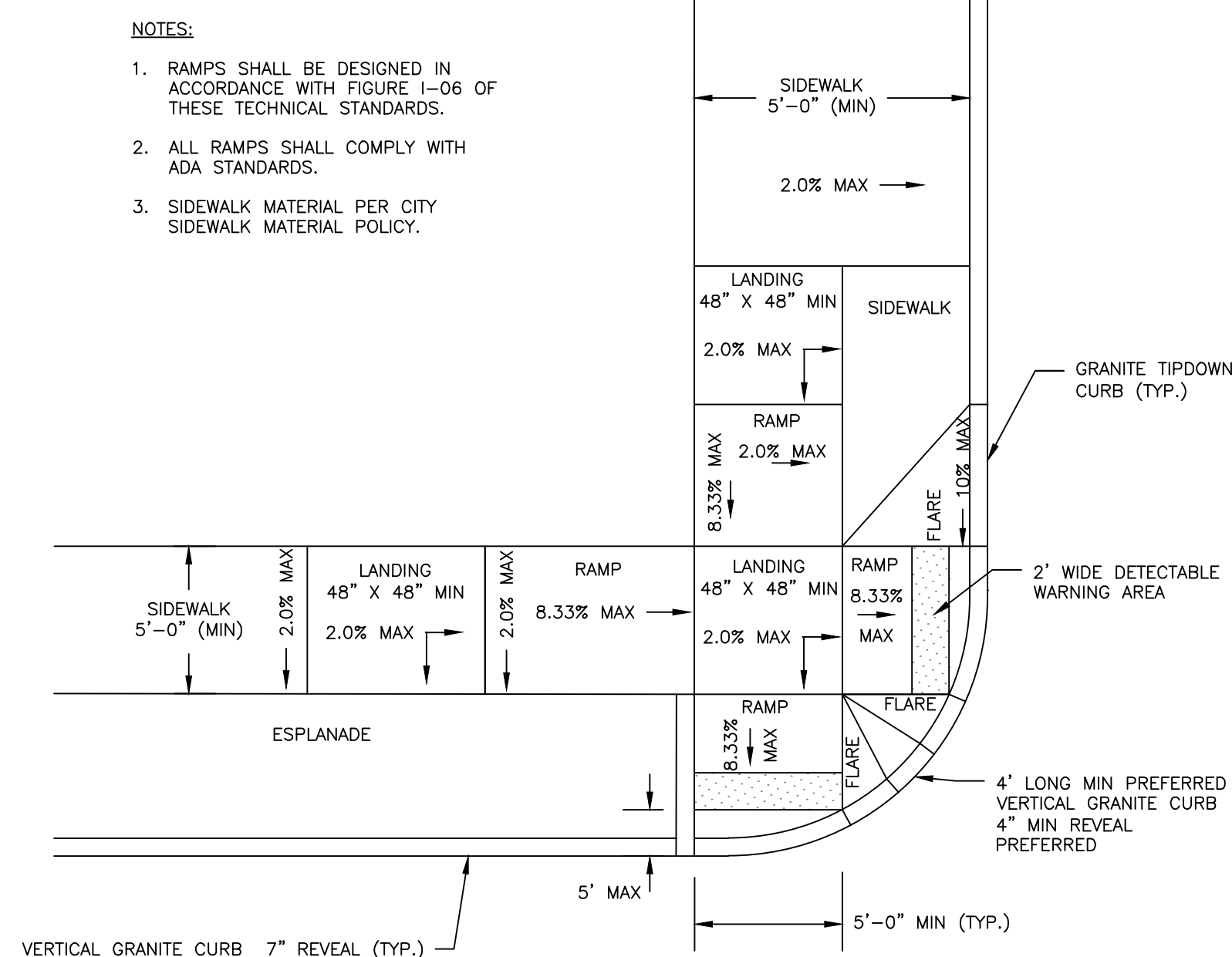
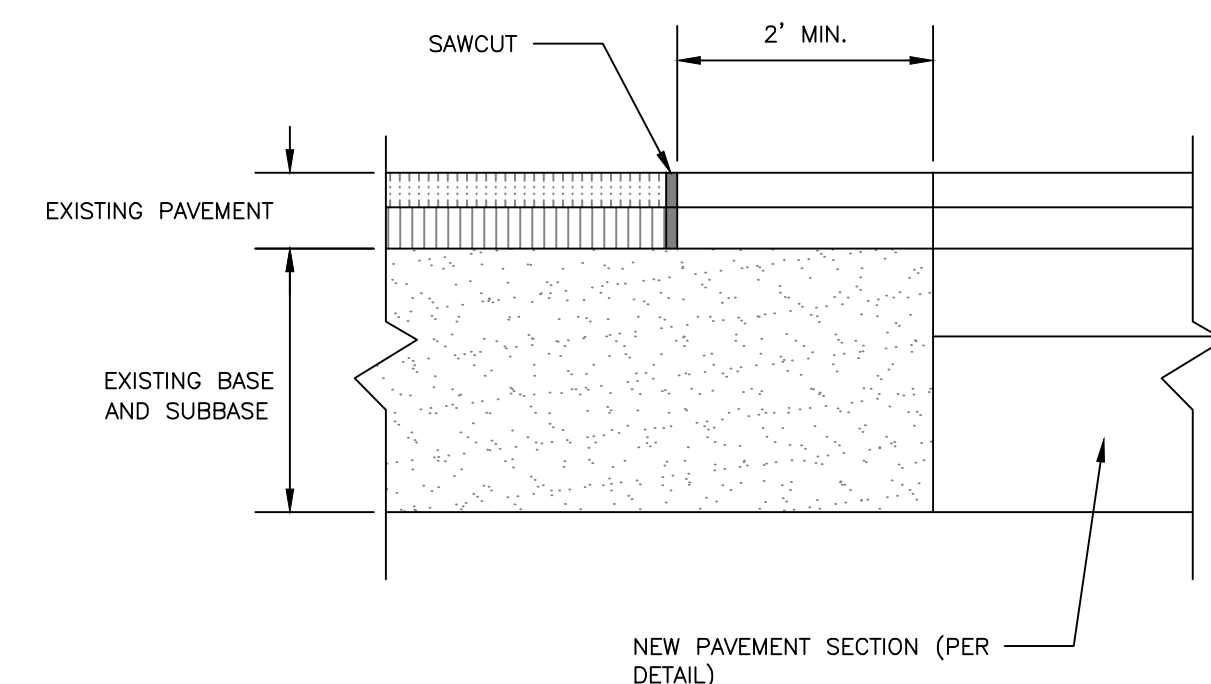
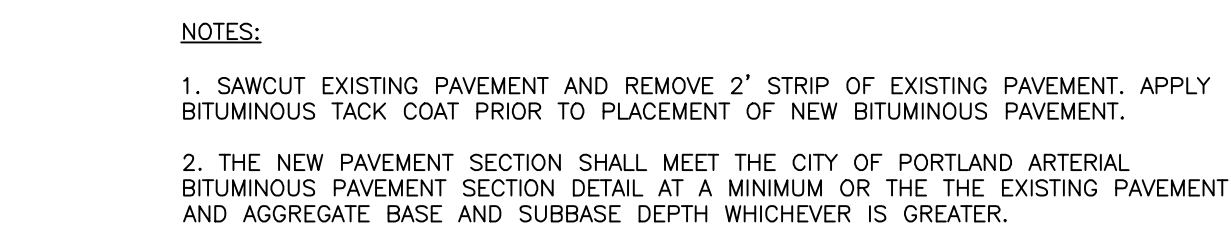
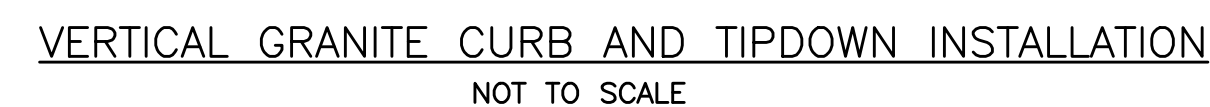
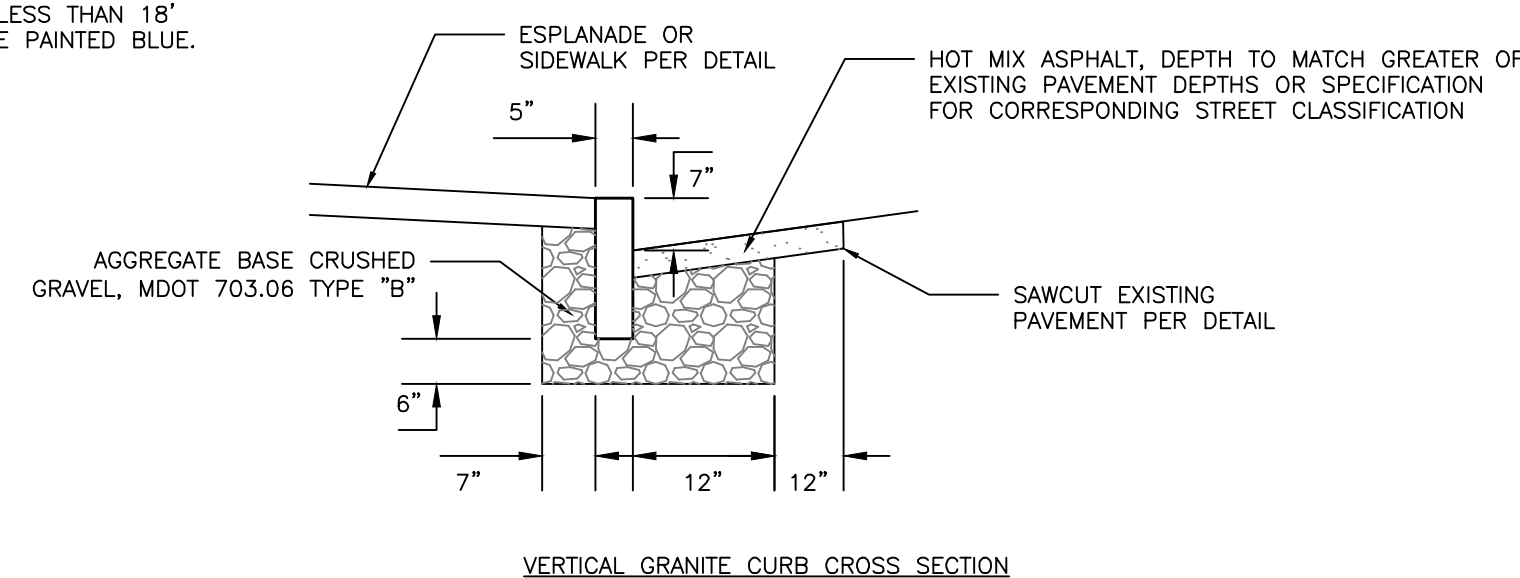
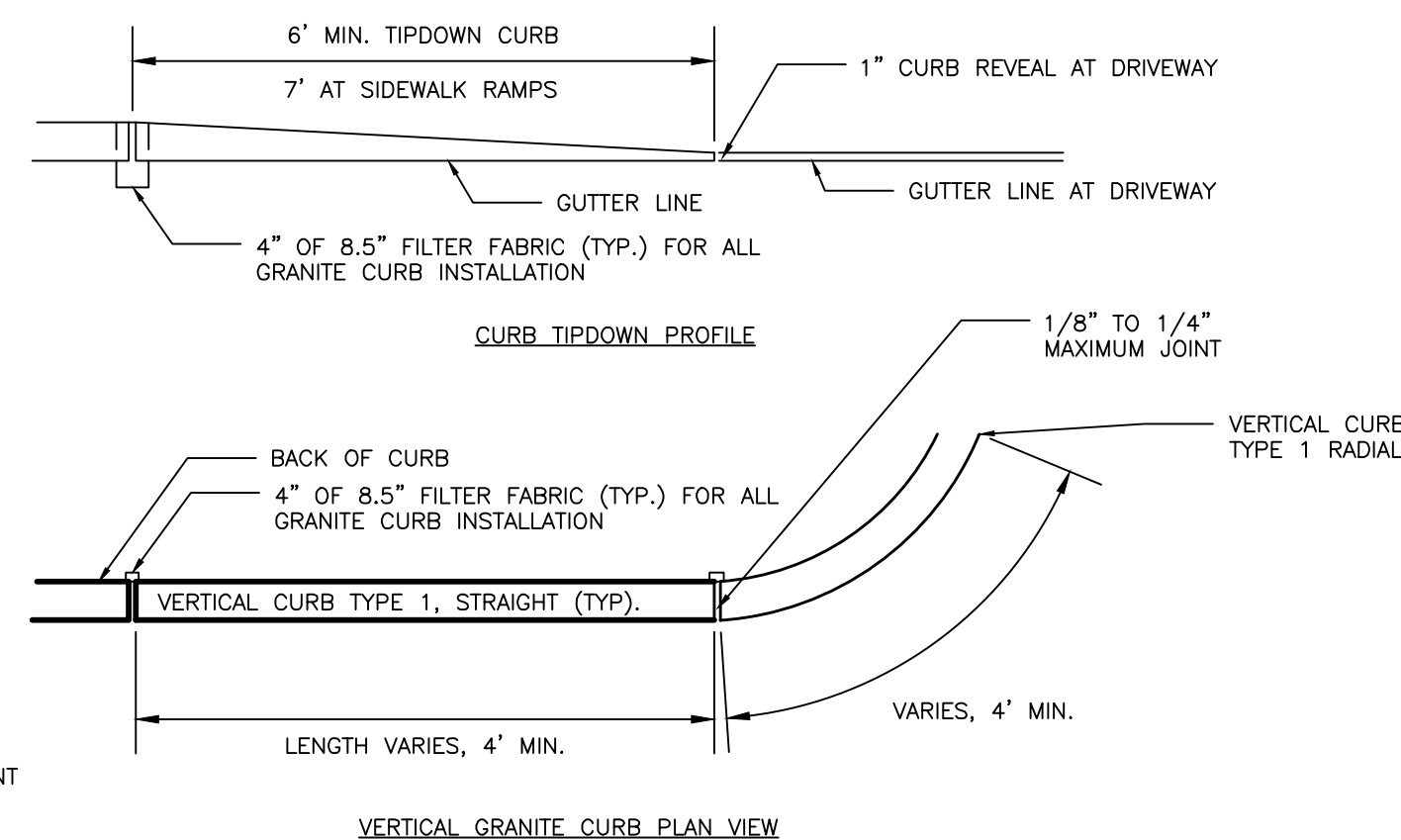
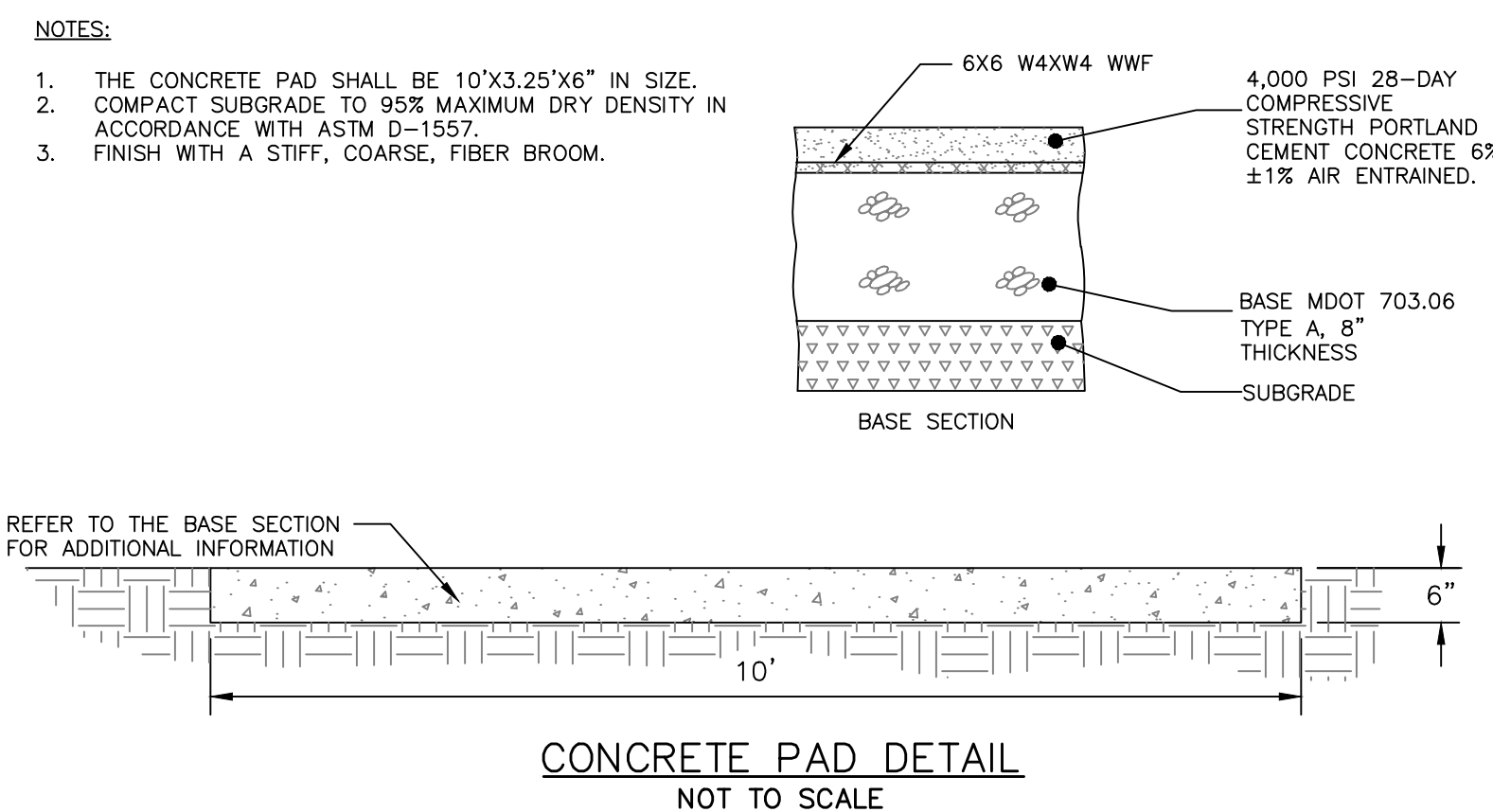
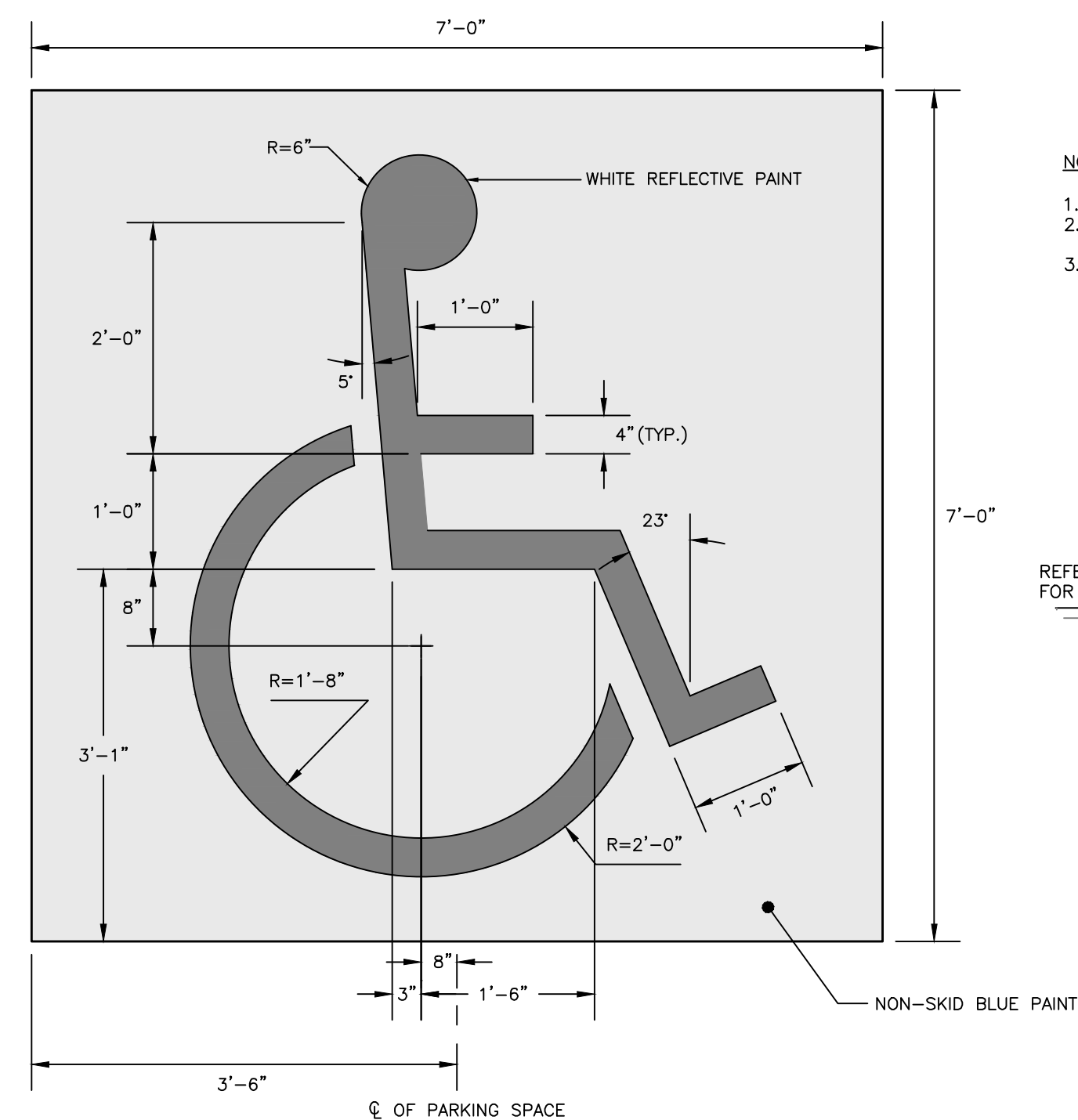
STATE OF MAINE
PETER F. HEIL
15318
LICENSED PROFESSIONAL ENGINEER

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

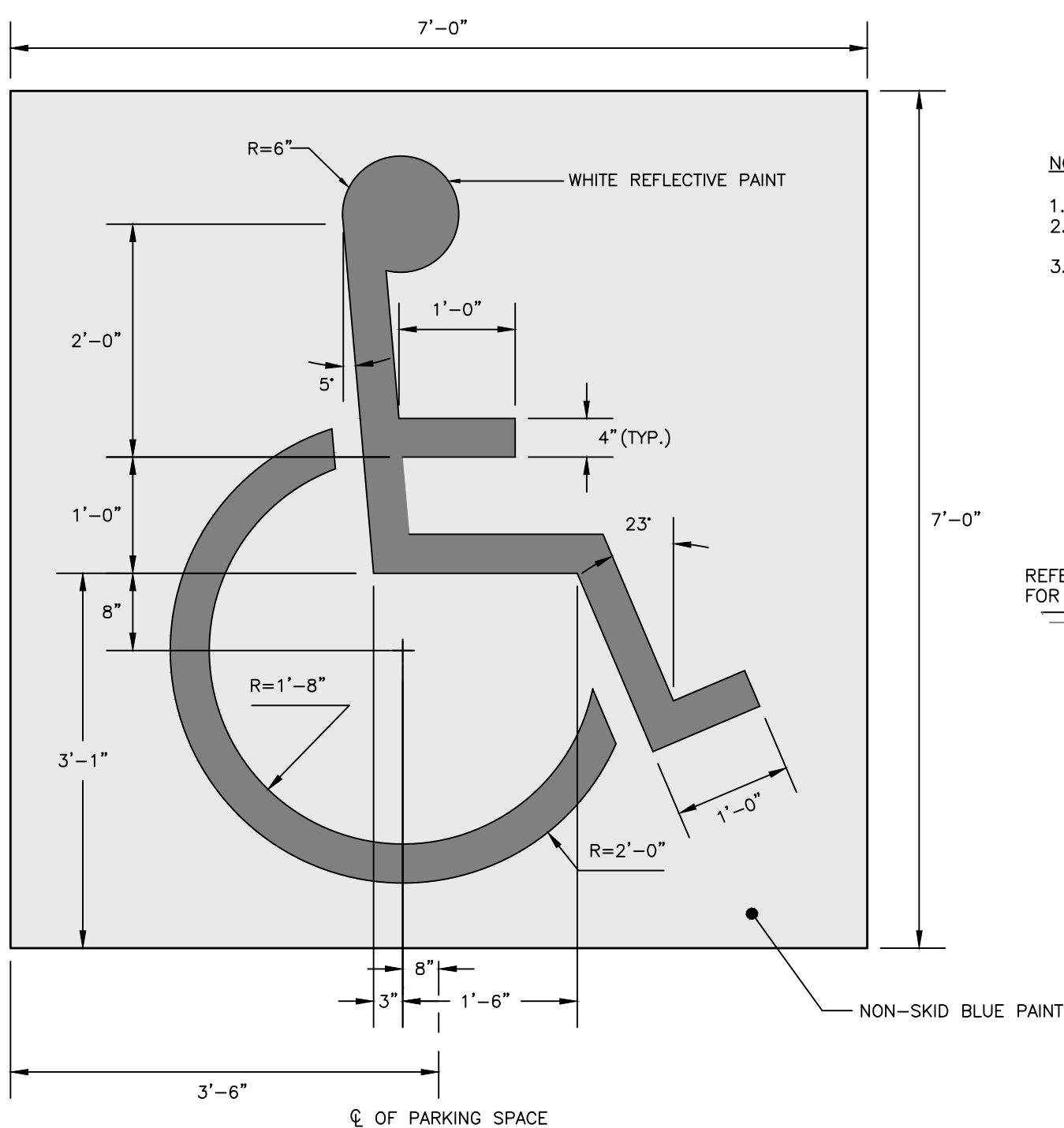
1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED DRAINAGE.
4. CATCH BASIN INLET PROTECTION TO BE INSTALLED WITHIN ANY STRUCTURES DOWNGRADIENT OF ACTIVE CONSTRUCTION.
5. SEDIMENTATION BARRIERS ARE TO BE INSTALLED DOWNGRADIENT OF ALL ACTIVE CONSTRUCTION WORK PER DETAIL. BARRIERS TO NOT EXTEND PAST PROPERTY LINES; BARRIERS SHOWN OFFSET FROM PROPERTY LINES ON PLANS FOR VISUAL CLARITY ONLY.
6. RESET SIDEWALK AS NEEDED TO MAINTAIN SMOOTH WALKING SURFACE PER CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.



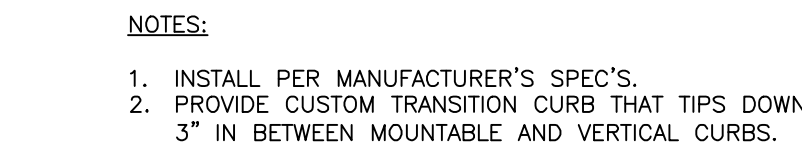
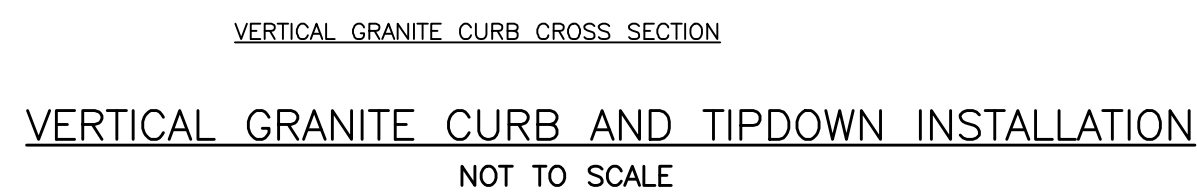
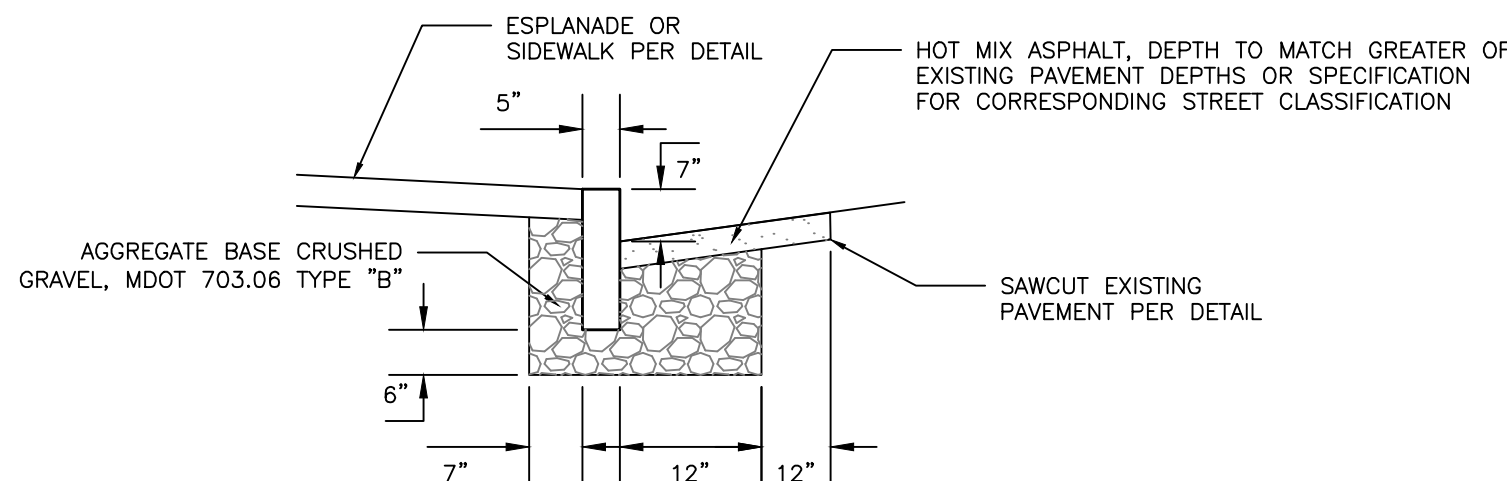
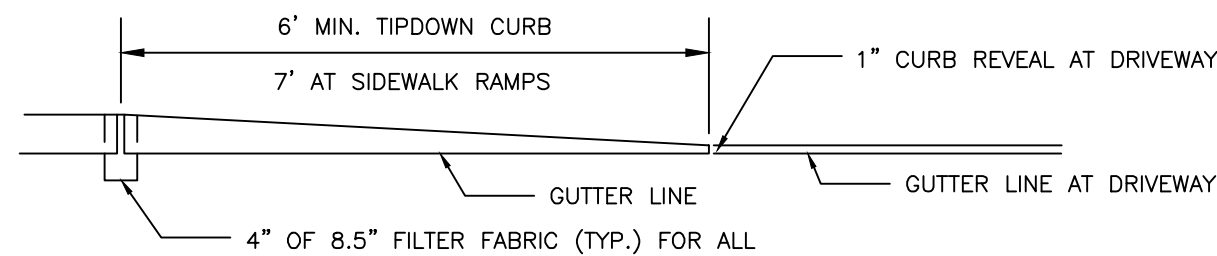


PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

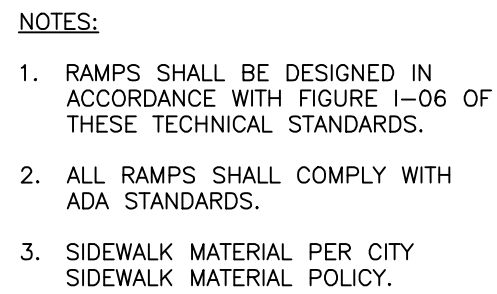
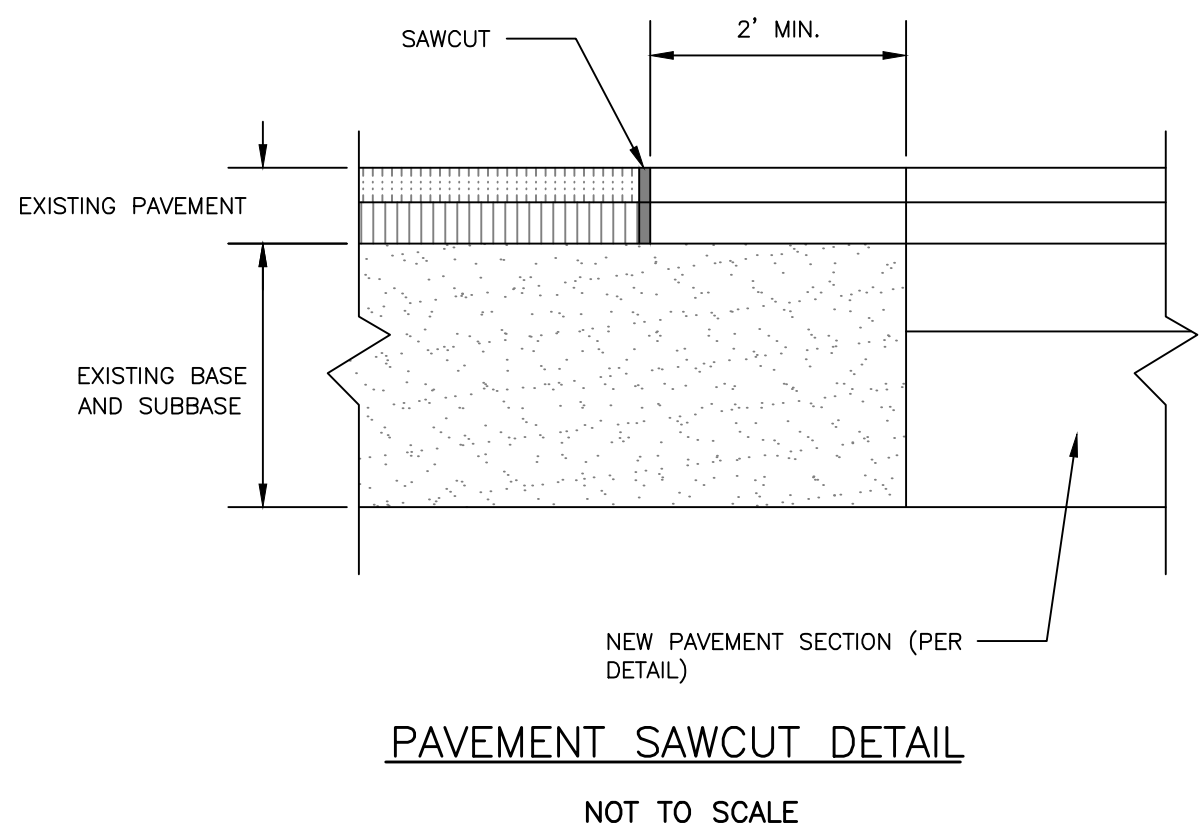
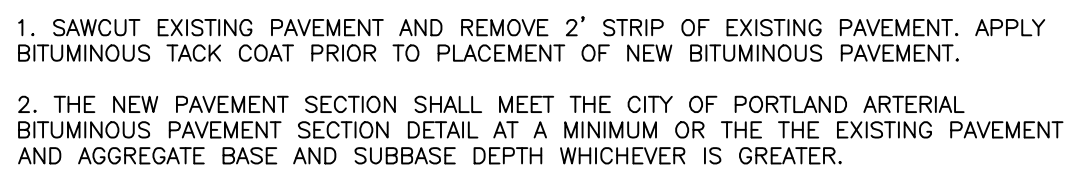
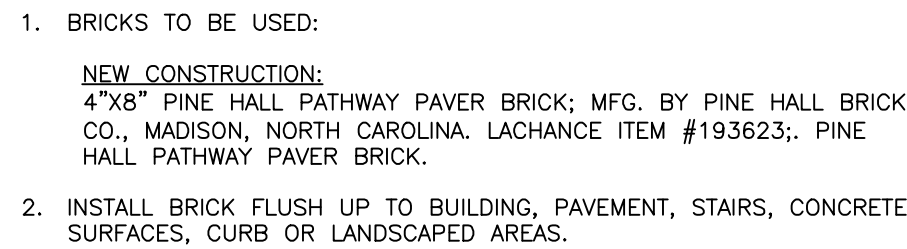
[illegible]



1. THE CONCRETE PAD SHALL BE 10'X3.25'X6" IN SIZE.
2. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY ACCORDANCE WITH ASTM D-1557.
3. FINISH WITH A STIFF, COARSE, FIBER BROOM.



1. INSTALL PER MANUFACTURER'S SPEC'S.
2. PROVIDE CUSTOM TRANSITION CURB THAT TIPS DOWN 3" IN BETWEEN MOUNTABLE AND VERTICAL CURBS.

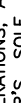


SITE DETAILS - 1

PROJECT NAME/ ADDRESS: **WINTER STREET AFFORDABLE HOUSING PROJECTS**

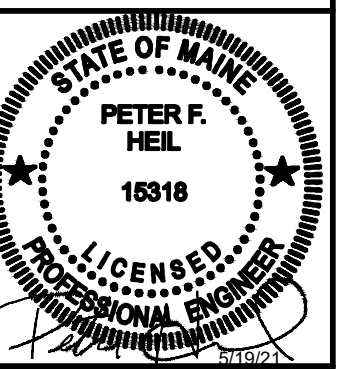
CLIENT/ OWNER/ CONTACT: **COMMUNITY HOUSING OF MAINE & PORTLAND HOUSING DEVELOPMENT CORP.**

ONE CITY CENTER, 4TH FLOOR & 14 BAXTER BOULEVARD, PORTLAND ME 04101


A C O R N
ENGINEERING, INC.

ACORN ENGINEERING, INC. 04101
 PO BOX 3572, PORTLAND MAINE
 (207) 775-2655

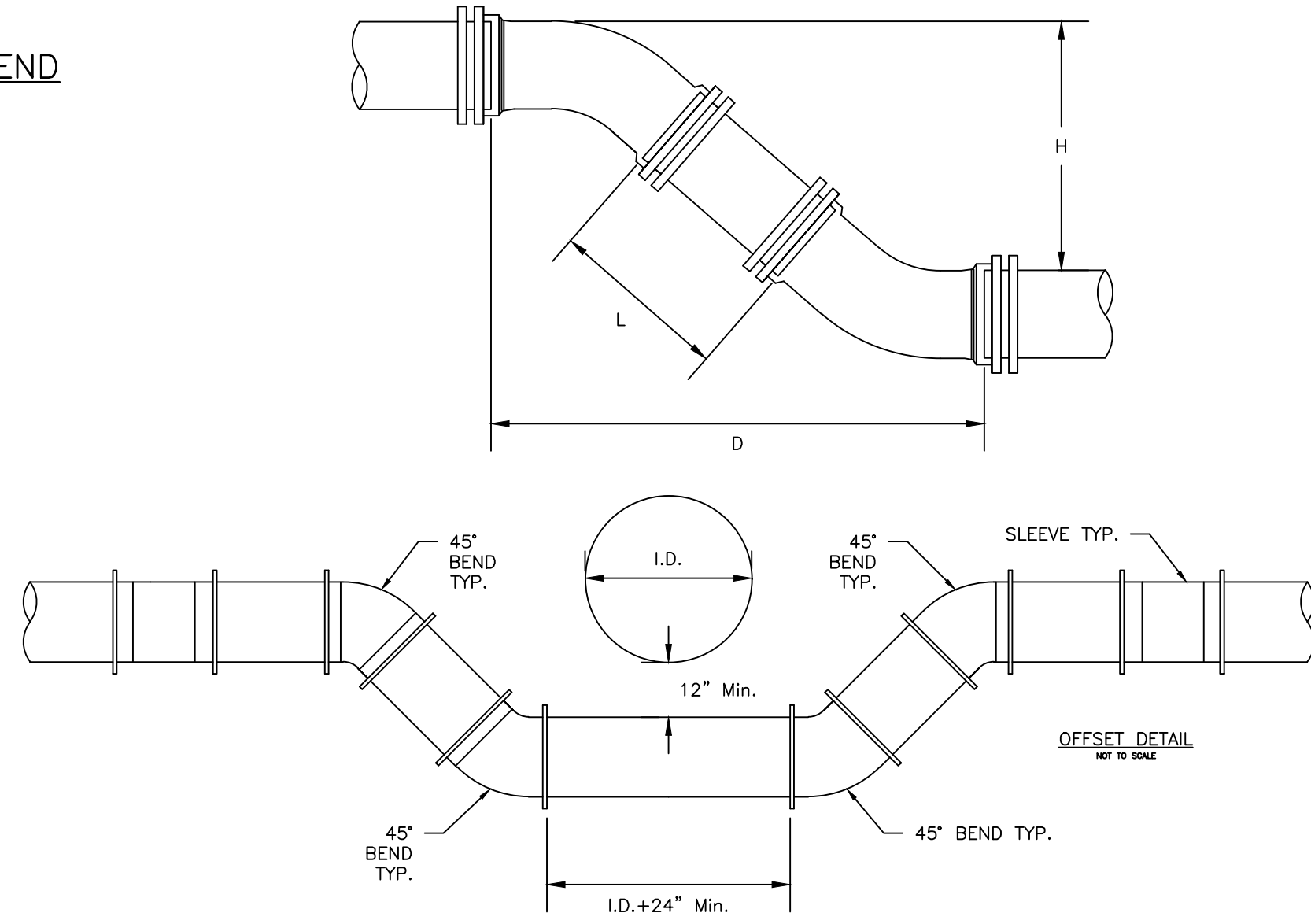
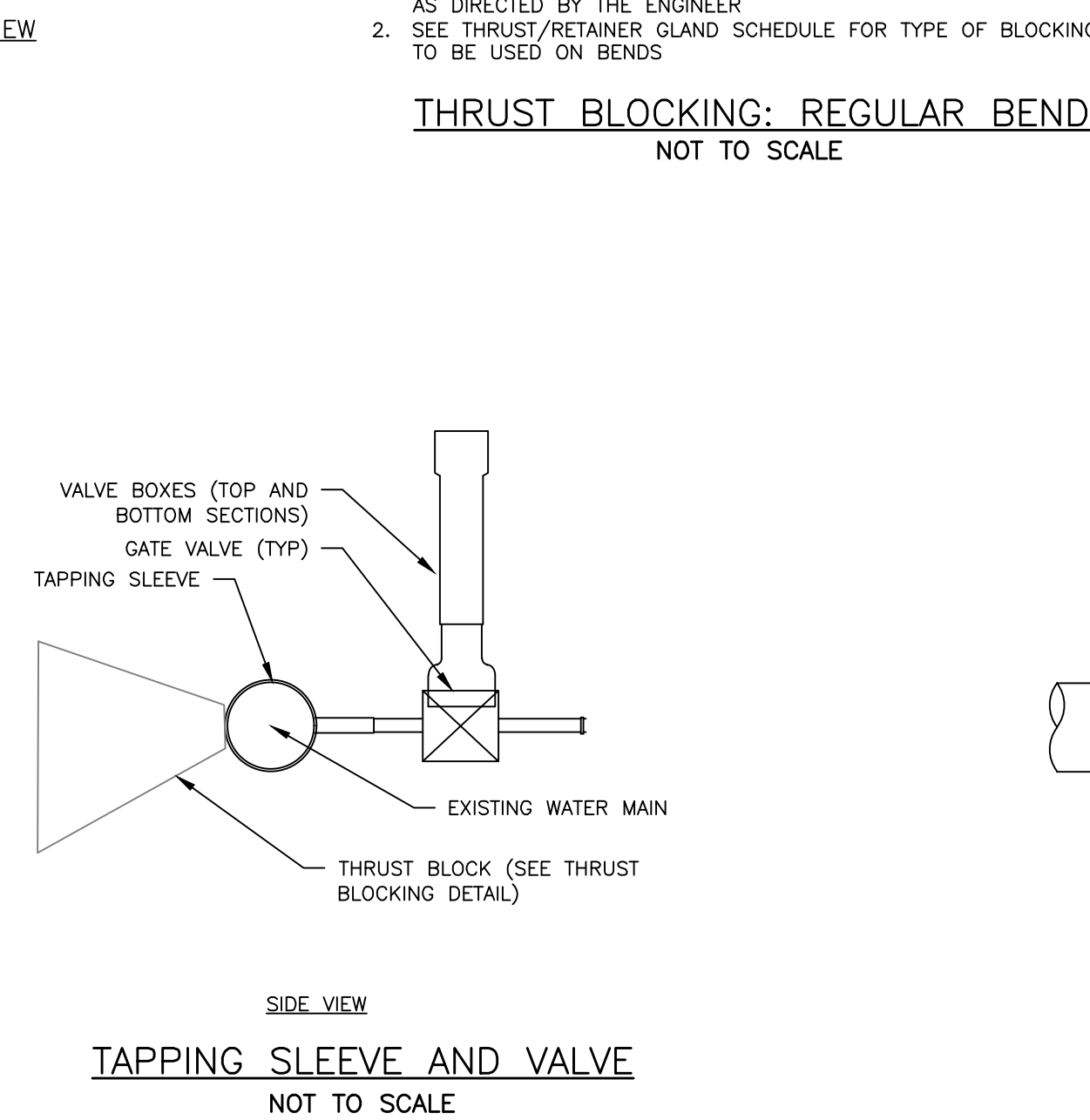
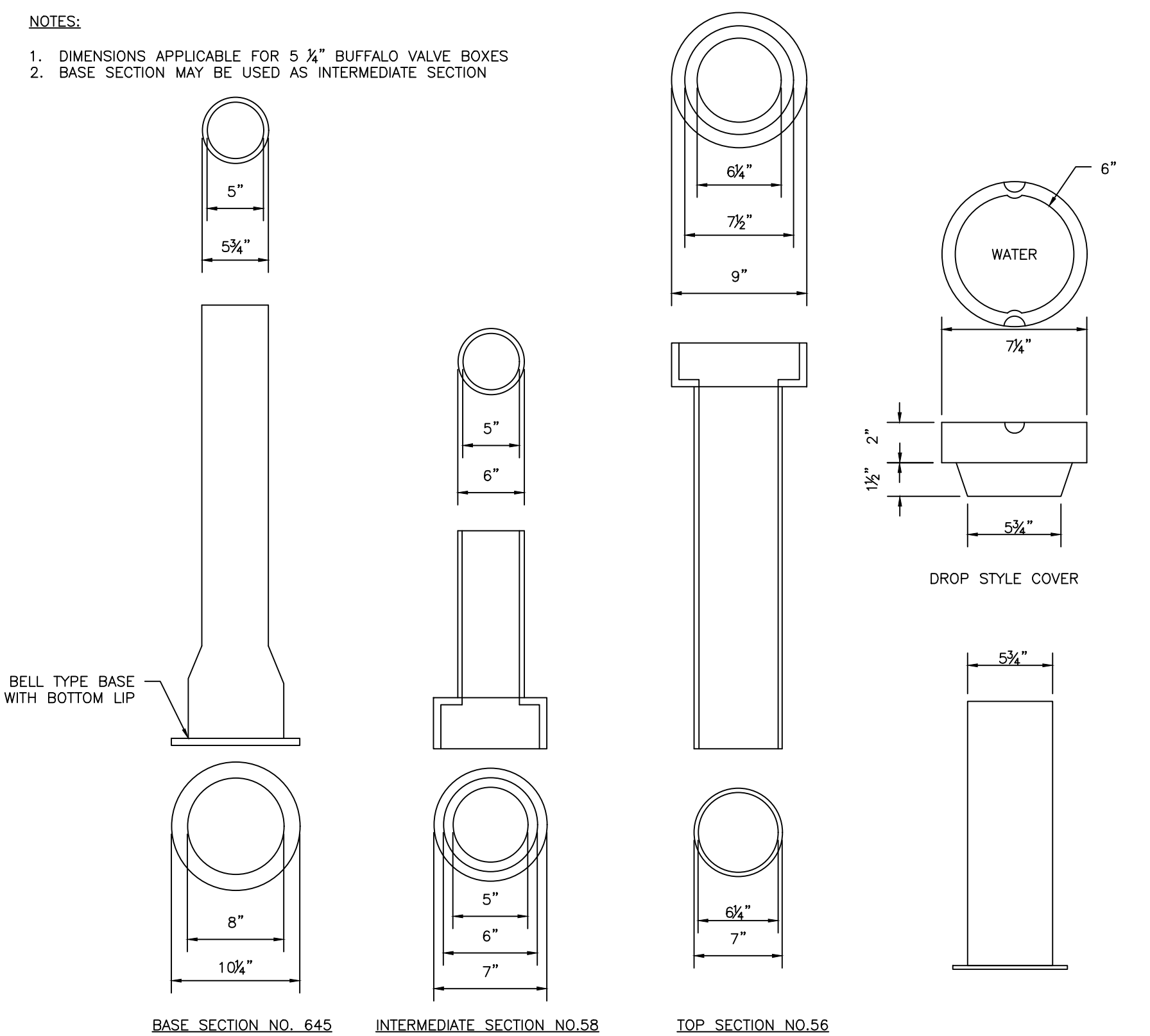
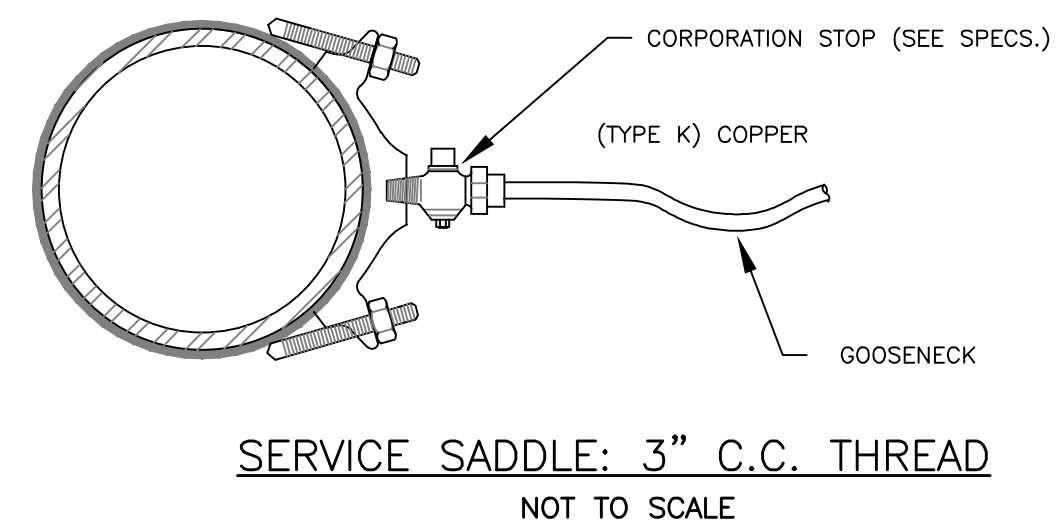
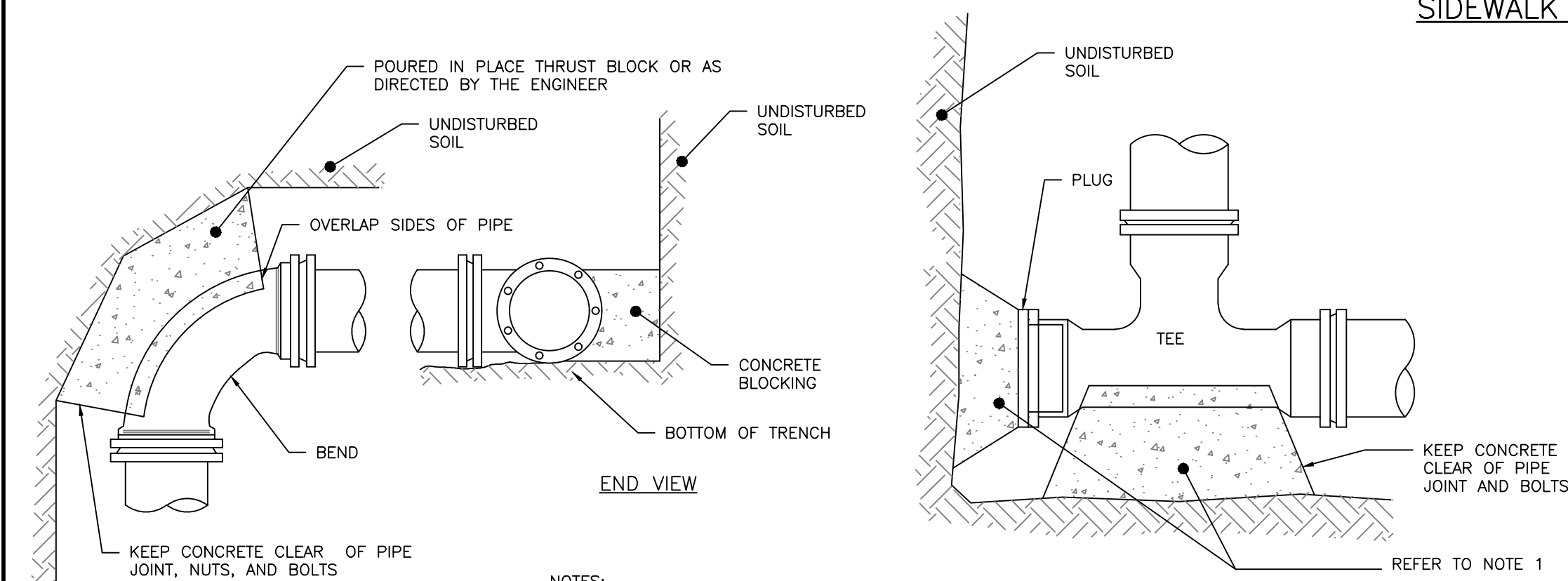
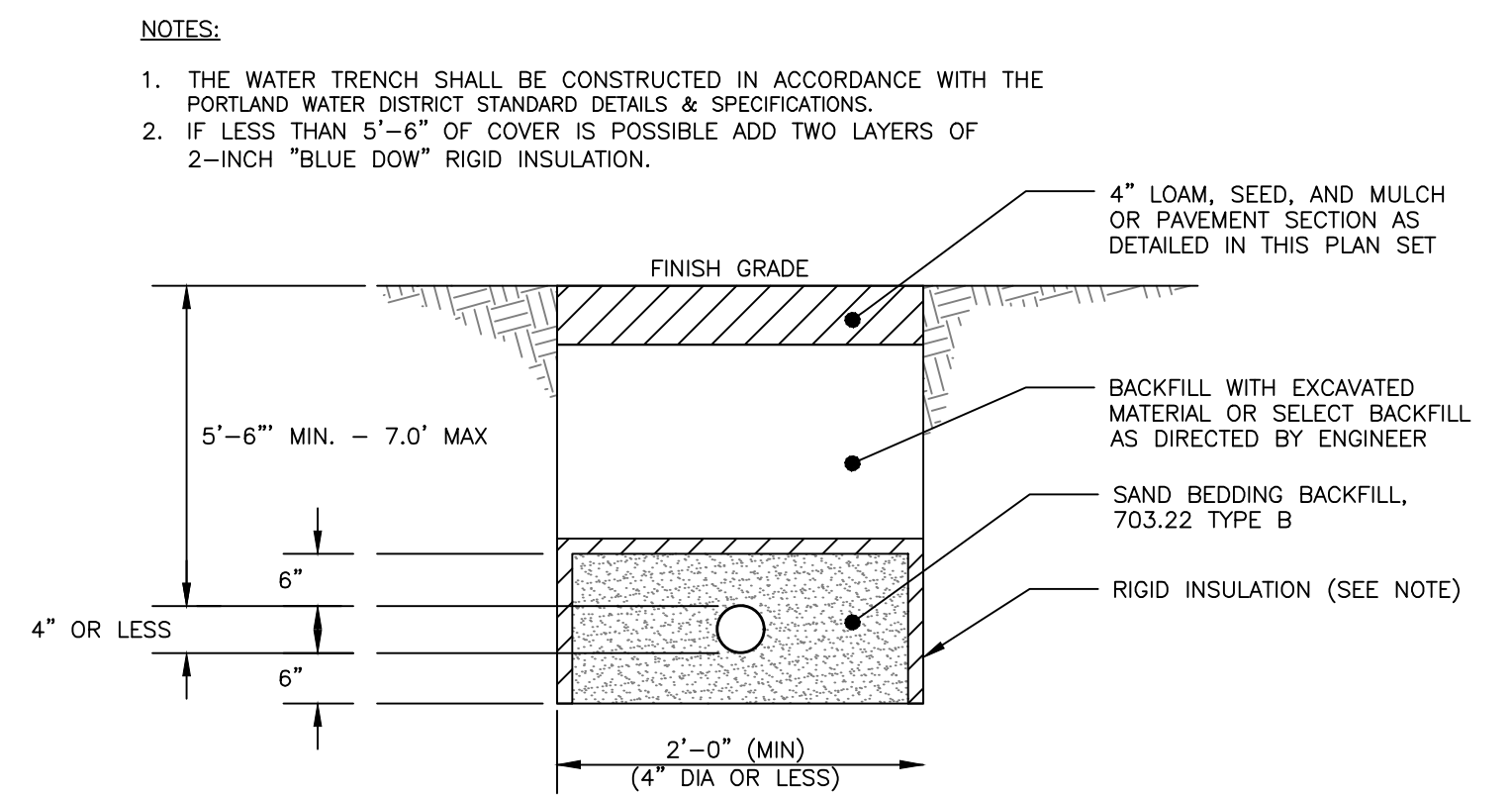
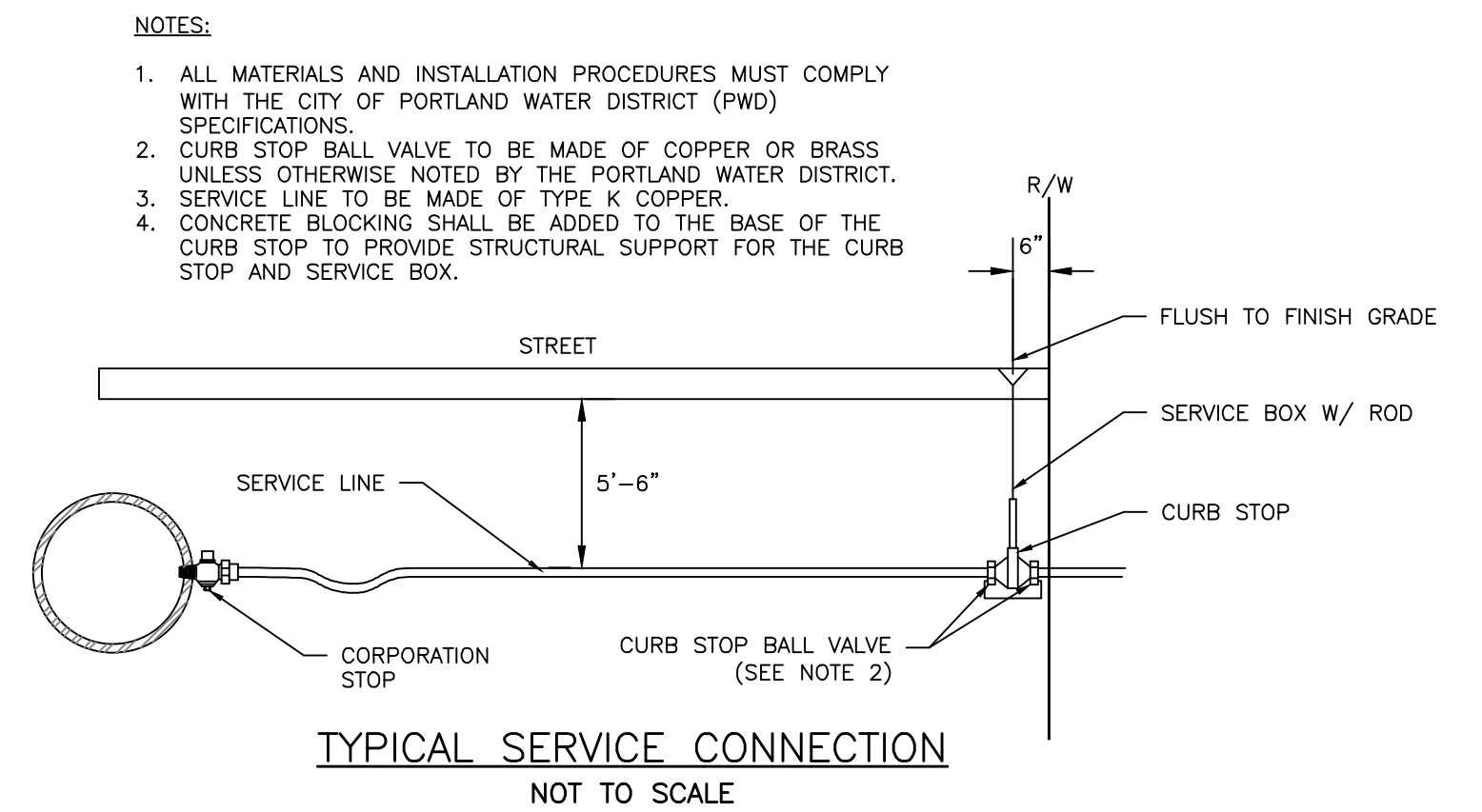
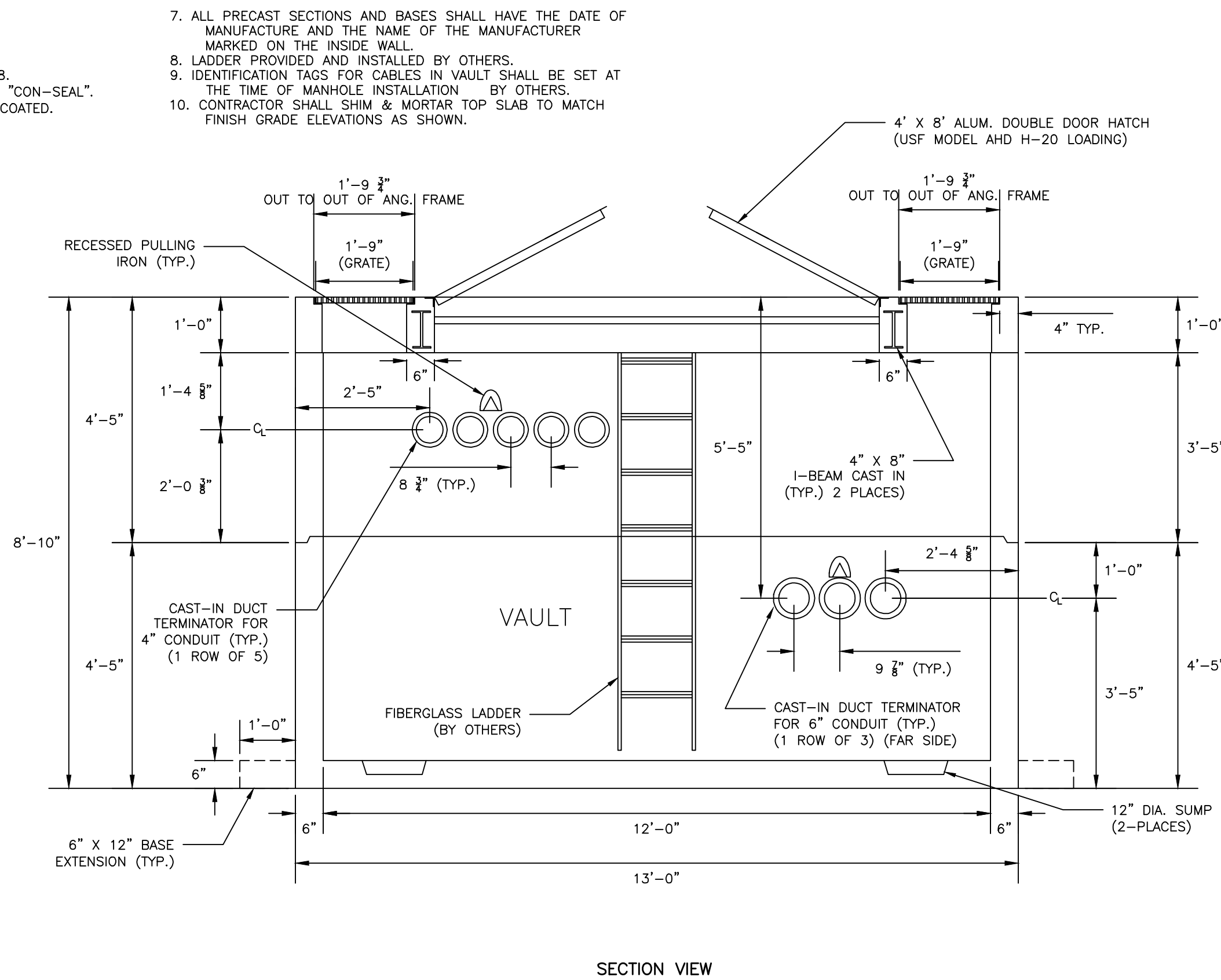
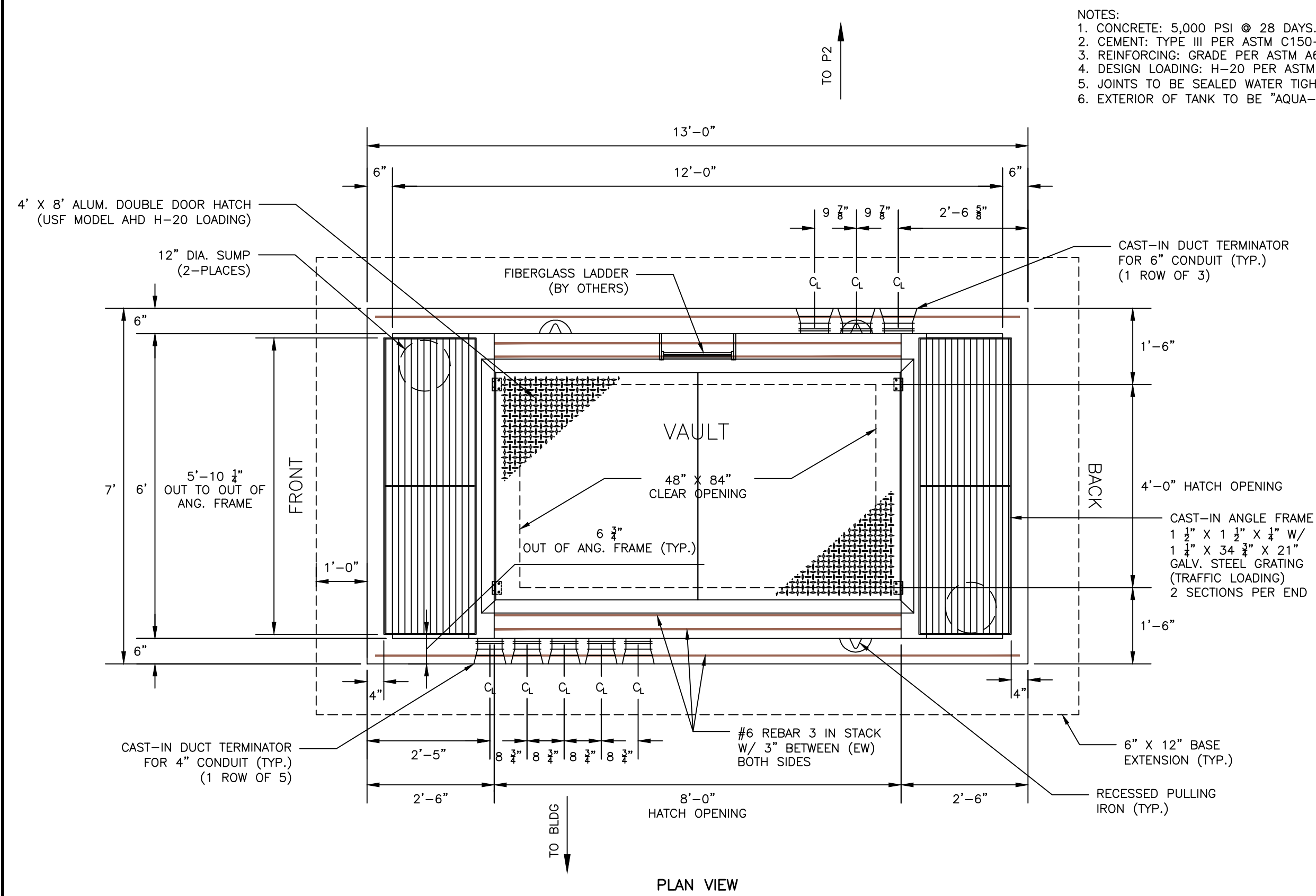
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IN:	1140
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	KRB
CHECKED BY:	WHS



DRAWING NO.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

C-40

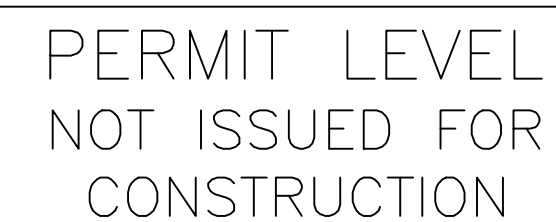


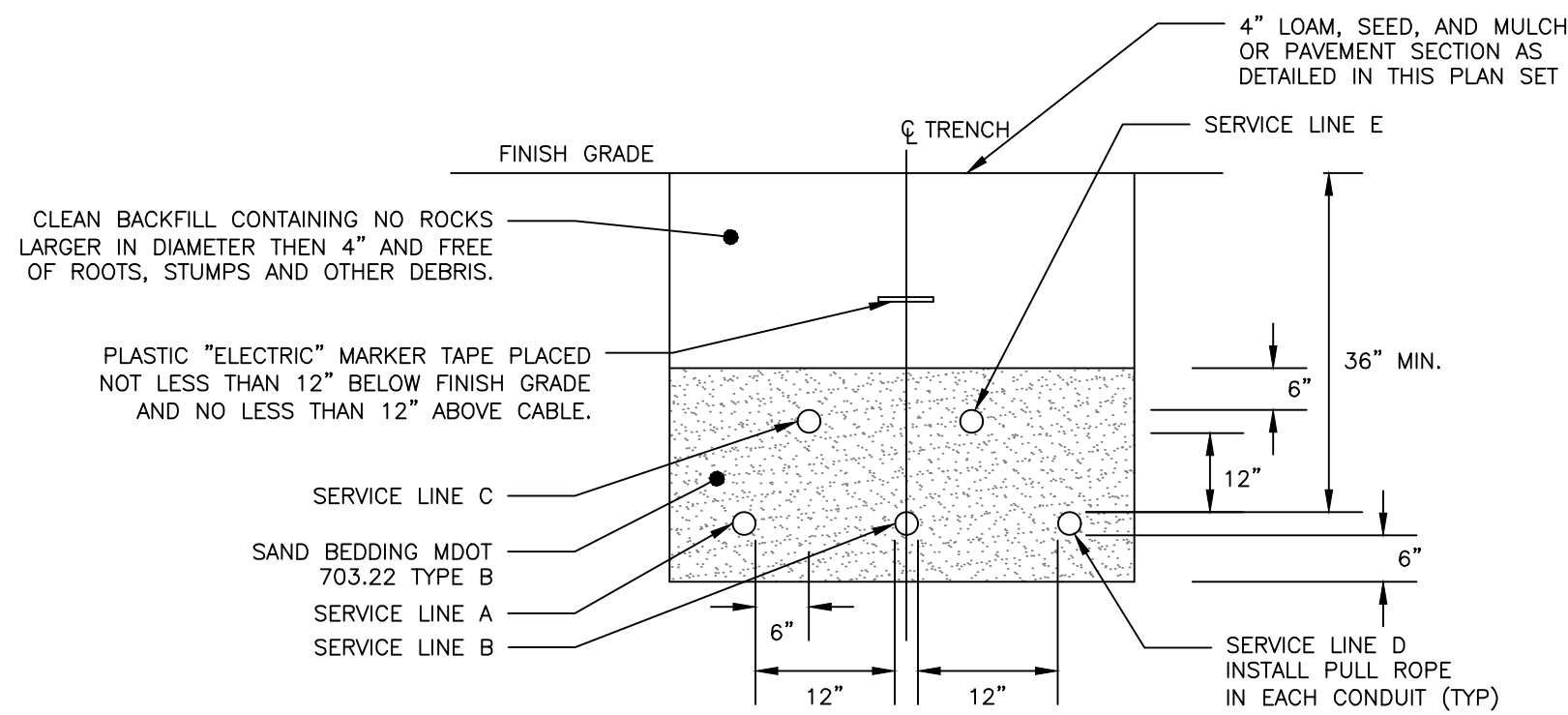
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H	D	L	D	D	D	D	D	L	
12	1' 6"-1/2"	0' 10"-1/2"	1' 7"-1/2"	0' 9"-1/2"	1' 11"-1/2"	0' 5"-1/2"			
13	1' 7"-1/2"	0' 11"-7/8"	1' 8"-1/2"	0' 10"-7/8"	2' 0"-1/2"	0' 6"-7/8"			
14	1' 8"-1/2"	1' 1"-5/16"	1' 9"-1/2"	1' 0"-5/8"	2' 1"-1/2"	0' 8"-5/16"			
15	1' 9"-1/2"	1' 2"-1/8"	1' 10"-1/2"	1' 1"-3/8"	2' 2"-1/2"	0' 10"-1/8"			
16	1' 10"-1/2"	1' 4"-1/8"	1' 11"-1/2"	1' 3"-1/8"	2' 3"-1/2"	0' 11"-1/8"			
17	1' 11"-1/2"	1' 5"-9/16"	2' 0"-1/2"	1' 4"-9/16"	2' 4"-1/2"	0' 1"-9/16"			
18	2' 0"-1/2"	1' 6"-15/16"	2' 1"-1/2"	1' 5"-15/16"	2' 5"-1/2"	1' 1"-15/16"			
19	2' 1"-1/2"	1' 7"-7/8"	2' 2"-1/2"	1' 7"-7/8"	2' 6"-1/2"	1' 2"-7/8"			
20	2' 2"-1/2"	1' 9"-13/16"	2' 3"-1/2"	1' 8"-13/16"	2' 7"-1/2"	1' 4"-13/16"			
21	2' 3"-1/2"	1' 11"-3/16"	2' 4"-1/2"	1' 10"-3/16"	2' 8"-1/2"	1' 5"-3/16"			
22	2' 4"-1/2"	2' 0"-5/8"	2' 5"-1/2"	1' 11"-5/8"	2' 9"-1/2"	1' 7"-5/8"			
23	2' 5"-1/2"	2' 1"-1/2"	2' 6"-1/2"	2' 0"-1/2"	2' 10"-1/2"	1' 8"-1/2"			
24	2' 6"-1/2"	2' 3"-7/16"	2' 7"-1/2"	2' 2"-7/16"	2' 11"-1/2"	1' 10"-7/16"			
25	2' 7"-1/2"	2' 4"-7/8"	2' 8"-1/2"	2' 3"-7/8"	3' 0"-1/2"	1' 11"-7/8"			
26	2' 8"-1/2"	2' 5"-3/4"	2' 9"-1/2"	2' 5"-1/4"	3' 1"-1/2"	1' 12"-1/4"			
27	2' 9"-1/2"	2' 6"-1/2"	2' 10"-1/2"	2' 6"-1/8"	3' 2"-1/2"	2' 2"-1/8"			
28	2' 10"-1/2"	2' 9"-1/8"	2' 11"-1/2"	2' 8"-1/8"	3' 3"-1/2"	2' 4"-1/8"			
29	2' 11"-1/2"	2' 10"-1/2"	3' 0"-1/2"	2' 9"-1/2"	3' 4"-1/2"	2' 5"-1/2"			
30	3' 0"-1/2"	2' 11"-5/8"	3' 1"-1/2"	2' 10"-15/16"	3' 5"-1/2"	2' 6"-15/16"			
31	3' 1"-1/2"	3' 1"-1/16"	3' 2"-1/2"	3' 0"-5/16"	3' 6"-1/2"	2' 8"-1/16"			
32	3' 2"-1/2"	3' 2"-3/4"	3' 3"-1/2"	3' 1"-3/4"	3' 7"-1/2"	2' 9"-3/4"			
33	3' 3"-1/2"	3' 4"-3/16"	3' 4"-1/2"	3' 3"-3/16"	3' 8"-1/2"	2' 11"-3/16"			
34	3' 4"-1/2"	3' 5"-9/16"	3' 5"-1/2"	3' 4"-9/16"	3' 9"-1/2"	3' 0"-1/16"			
35	3' 5"-1/2"	3' 6"-1/2"	3' 6"-1/2"	3' 6"	3' 10"-1/2"	3' 1"-1/2"			
36	3' 6"-1/2"	3' 8"-7/16"	3' 7"-1/2"	3' 7"-7/16"	3' 11"-1/2"	3' 3"-7/16"			
37	3' 7"-1/2"	3' 9"-13/16"	3' 8"-1/2"	3' 8"-13/16"	4' 0"-1/2"	3' 4"-13/16"			
38	3' 8"-1/2"	4' 0"-1/8"	3' 9"-1/2"	3' 9"-1/8"	4' 1"-1/2"	3' 5"-1/8"			
39	3' 9"-1/2"	4' 0"-11/16"	3' 10"-1/2"	3' 11"-11/16"	4' 2"-1/2"	3' 7"-11/16"			
40	3' 10"-1/2"	4' 2"-1/16"	3' 11"-1/2"	4' 1"-1/16"	4' 3"-1/2"	3' 9"-1/16"			
41	3' 11"-1/2"	4' 3"-1/2"	4' 0"-1/2"	4' 2"-1/2"	4' 4"-1/2"	3' 10"-1/2"			
42	4' 0"-1/2"	4' 4"-1/2"	4' 1"-1/2"	4' 3"-7/8"	4' 5"-1/2"	3' 11"-1/2"			
43	4' 1"-1/2"	4' 6"-5/16"	4' 2"-1/2"	4' 5"-5/16"	4' 6"-1/2"	4' 1"-5/16"			
44	4' 2"-1/2"	4' 7"-3/4"	4' 3"-1/2"	4' 6"-3/4"	4' 7"-1/2"	4' 2"-3/4"			
45	4' 3"-1/2"	4' 9"-1/4"	4' 4"-1/2"	4' 8"-1/8"	4' 8"-1/2"	4' 4"-1/8"			
46	4' 4"-1/2"	4' 10"-1/2"	4' 5"-1/2"	4' 9"-9/16"	4' 9"-1/2"	4' 5"-1/4"			
47	4' 5"-1/2"	4' 11"-15/16"	4' 6"-1/2"	4' 10"-15/16"	4' 10"-1/2"	4' 6"-15/16"			
48	4' 6"-1/2"	5' 1"-3/8"	4' 7"-1/2"	5' 0"-3/8"	4' 11"-1/2"	4' 8"-3/8"			
49	4' 7"-1/2"	5' 2"-13/16"	4' 8"-1/2"	5' 1"-13/16"	5' 0"-1/2"	4' 9"-13/16"			
50	4' 8"-1/2"	5' 3"-1/2"	4' 9"-1/2"	5' 2"-1/2"	5' 1"-1/2"	4' 10"-1/2"			
51	4' 9"-1/2"	5' 5"-5/8"	4' 10"-1/2"	5' 4"-5/8"	5' 2"-1/2"	5' 0"-5/8"			
52	4' 10"-1/2"	5' 7"-1/16"	4' 11"-1/2"	5' 6"-1/16"	5' 3"-1/2"	5' 2"-1/16"			
53	4' 11"-1/2"	5' 8"-7/16"	5' 0"-1/2"	5' 7"-7/16"	5' 4"-1/2"	5' 3"-7/16"			
54	5' 0"-1/2"	5' 10"-1/2"	5' 1"-1/2"	5' 9"-1/2"	5' 5"-1/2"	5' 4"-1/2"			
55	5' 1"-1/2"	5' 11"-5/16"	5' 2"-1/2"	5' 10"-5/16"	5' 6"-1/2"	5' 6"-5/16"			

DRAWING NAME:		UTILITY DETAILS - 2	
PROJECT NAME/ ADDRESS:		MERCY HOSPITAL REDEVELOPMENT	
CLIENT/OWNER OF RECORD:		NEWHEIGHT REDFERN, LLC	
		217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101	

FILE:	1140_CIVIL
JN:	1140
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	KRB
CHECKED BY:	WHS

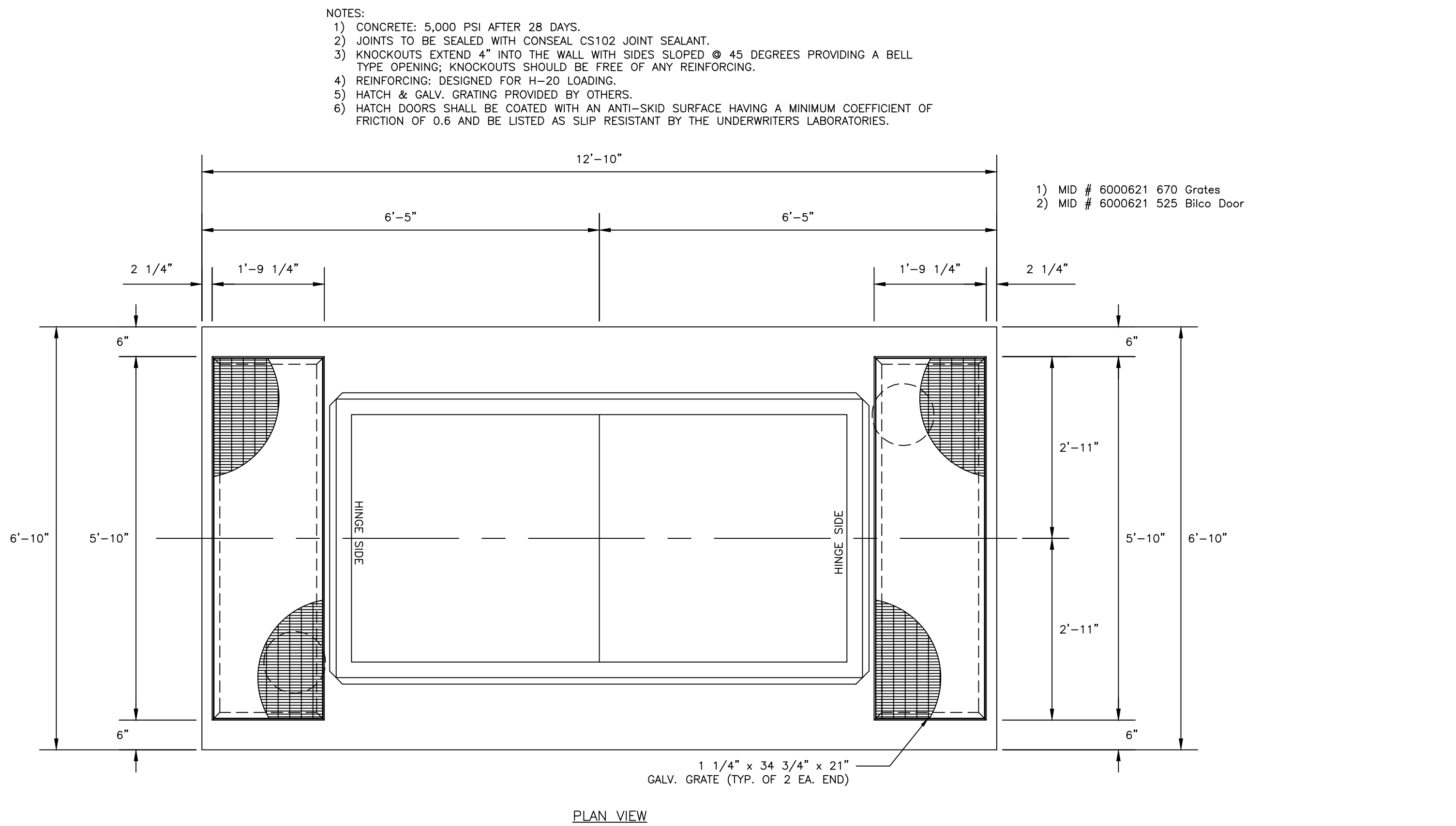
C-43



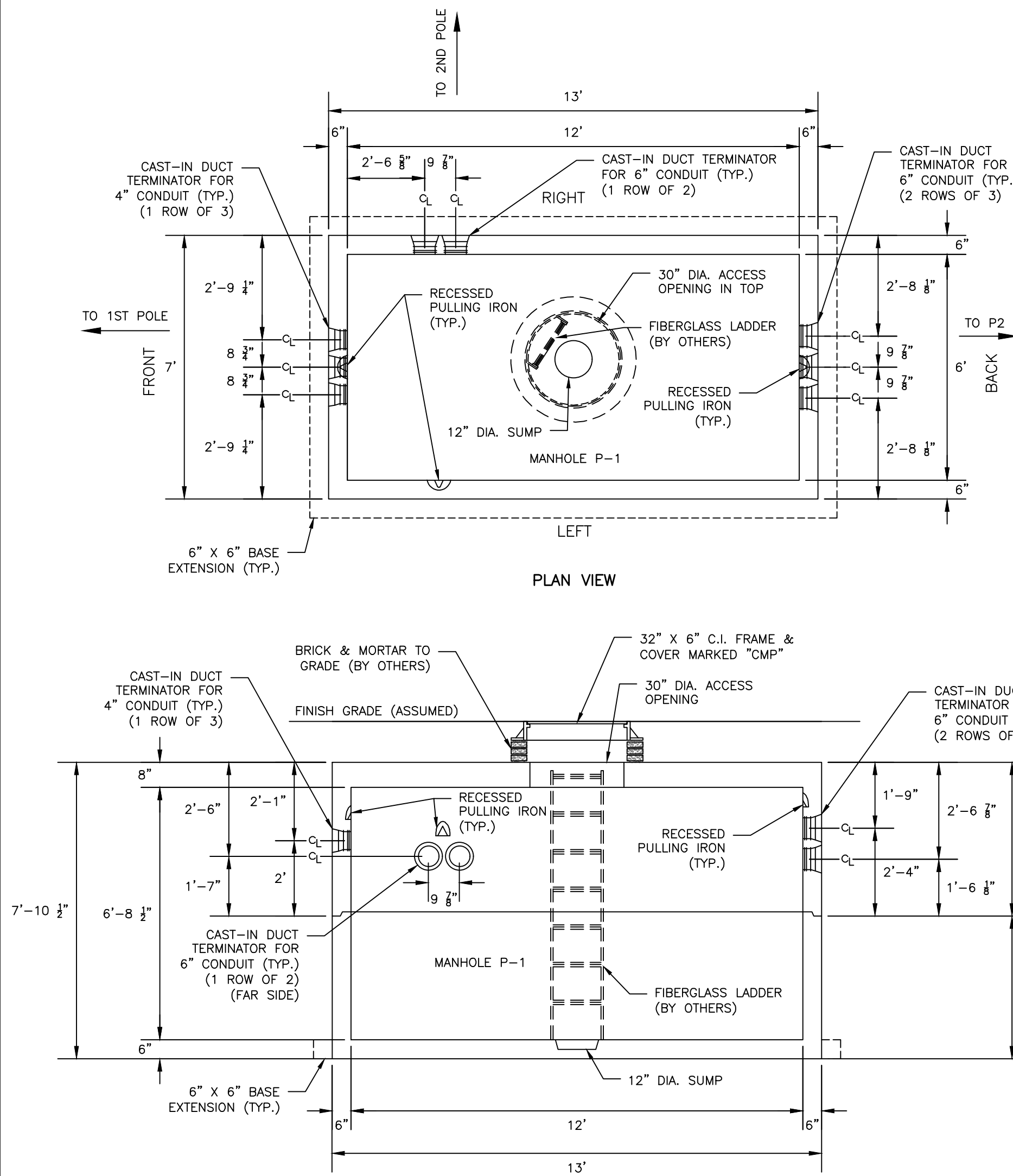


CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
C	2-4"	SCHEDULE 40 PVC	COMMUNICATION	-
D	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	SEE NOTE 1
E	2-4"	SCHEDULE 40 PVC	CABLE	-

- NOTES:**
1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
 2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.
 3. CONDUITS WITHIN CITY RIGHT-OF-WAY SHALL BE ENCASED IN CONCRETE.
 4. FINAL SIZE OF CONDUITS TO BE SPECIFIED BY MEP, ELECTRICIAN, OR DESIGN/BUILD ELECTRICAL CONTRACTOR.



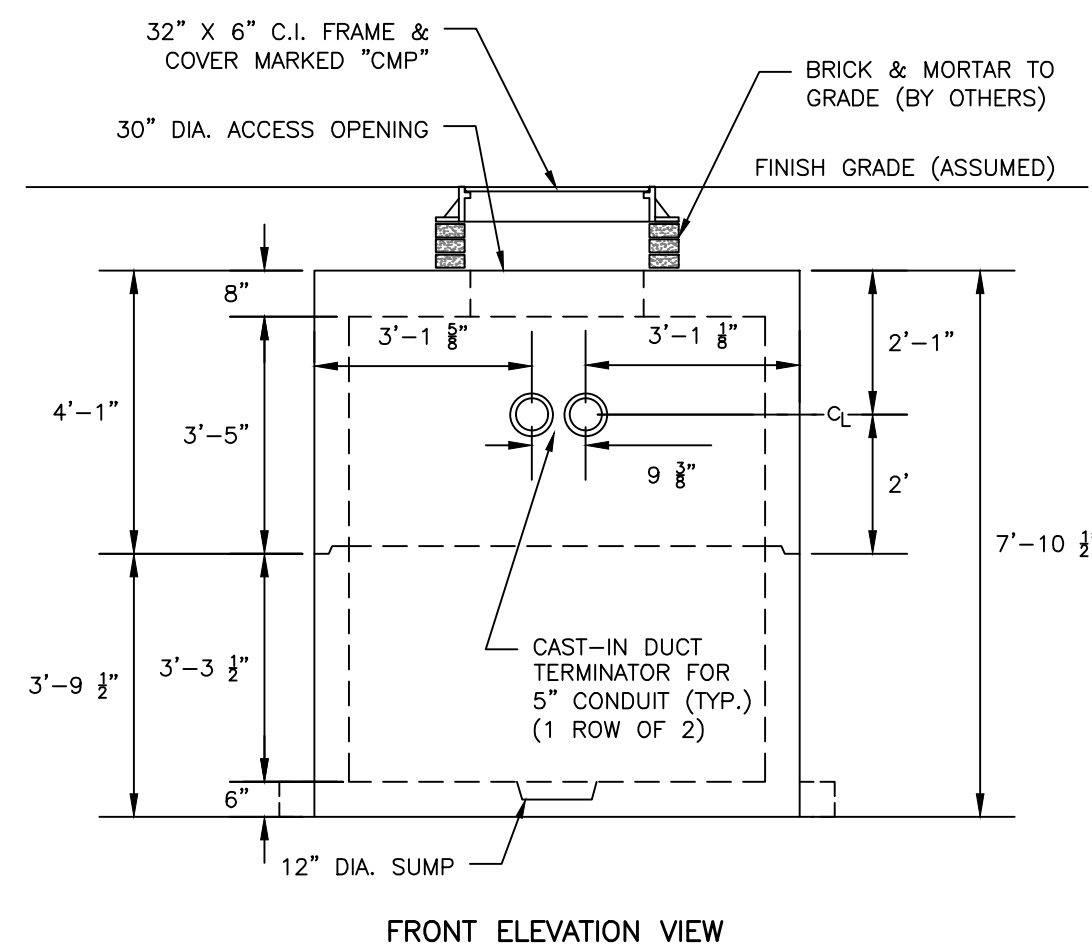
NOT TO SCALE



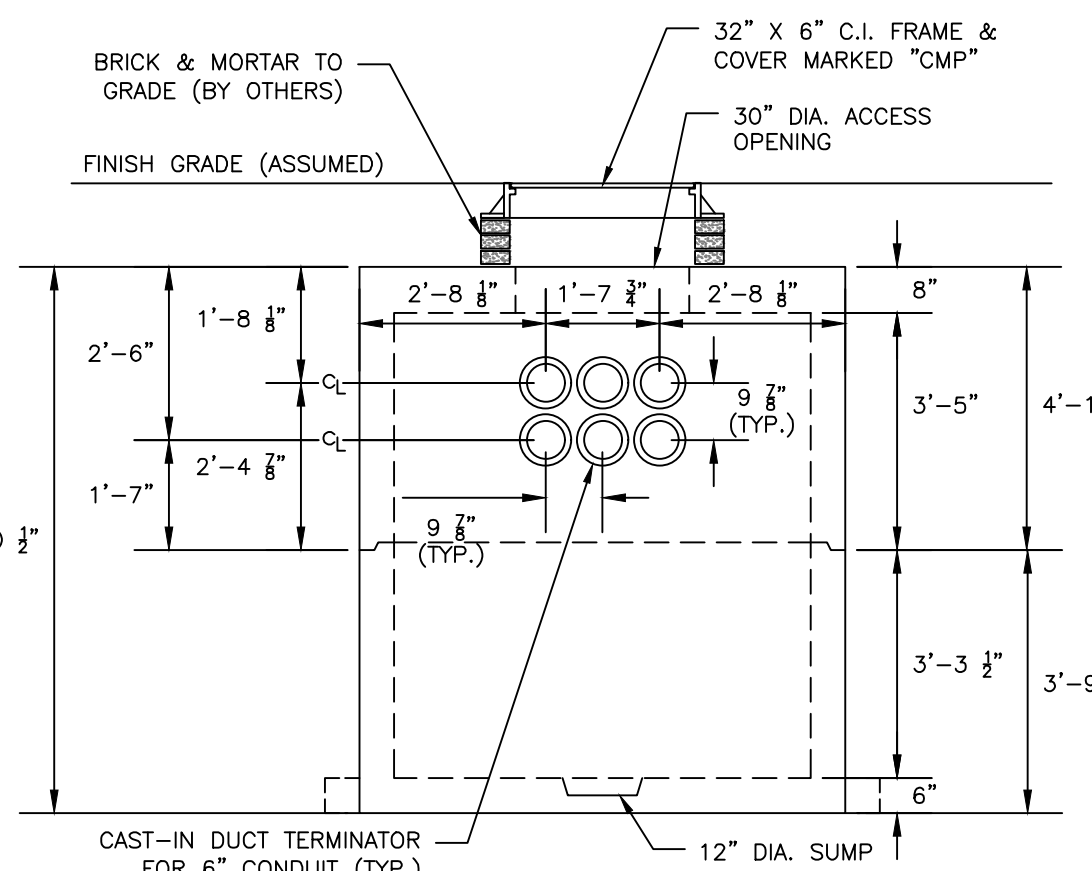
DESCRIPTION	WEIGHT	QUANTITY
3'-9 1/2" BASE	16,202 LBS	1
3'-11" TOP	18,892 LBS	1

SECTION VIEW

PRECAST CONCRETE 38Y MANHOLE DETAIL
NOT TO SCALE

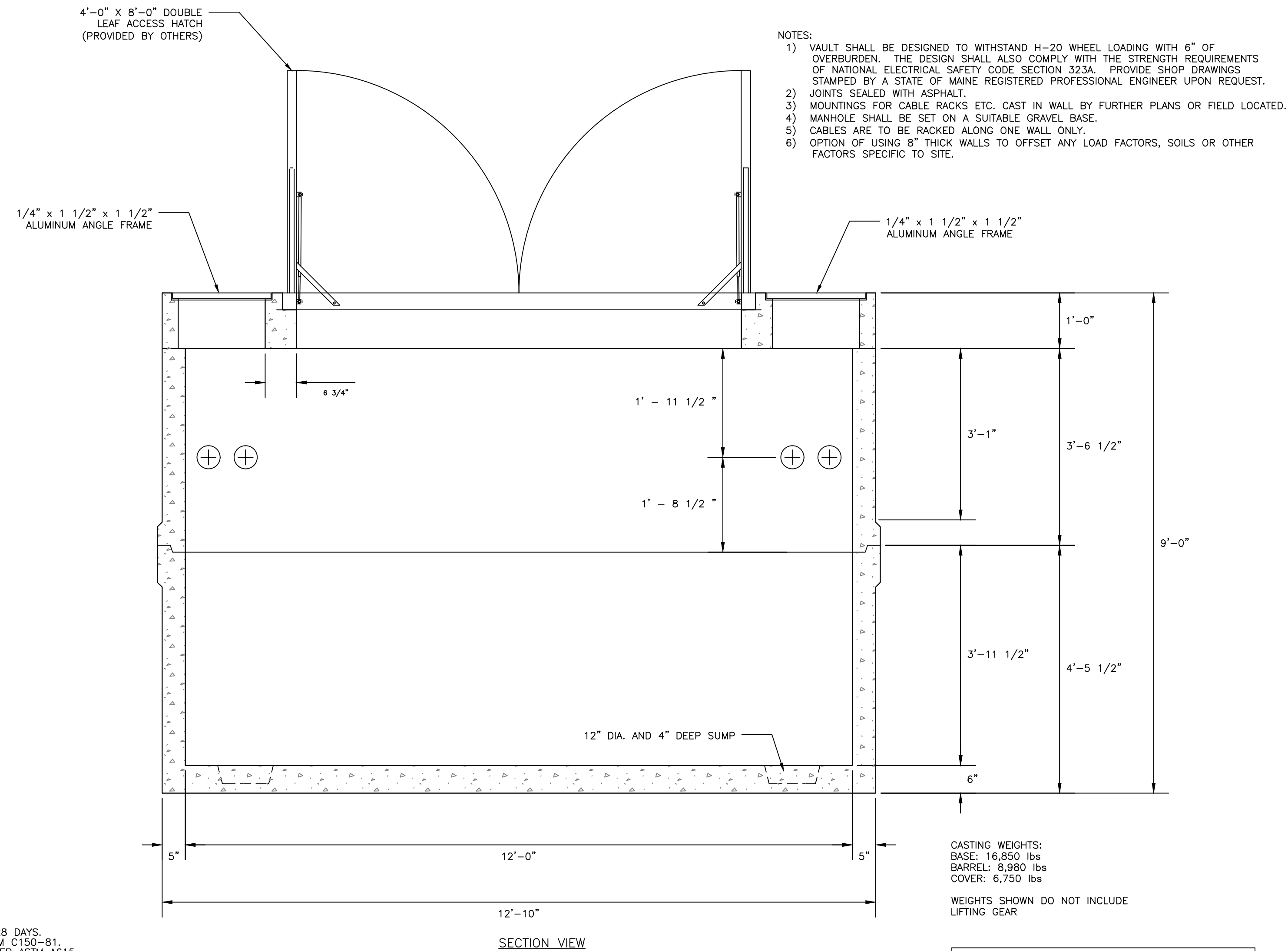


FRONT ELEVATION VIEW



BACK ELEVATION VIEW

- NOTES:
1. CONCRETE: 5000 PSI @ 28 DAYS.
 2. CEMENT: TYPE I, 1500-1800, 0150-81.
 3. REINFORCING: GRADE #6 PER ASTM A615.
 4. DESIGN LOADING: H=20 PER ASTM C-478.
 5. JOINTS TO BE SEALED WATER TIGHT WITH "CON-SEAL".
 6. EXTERIOR OF TANK TO BE "AQUA-SAFE" COATED.
 7. ALL PRECAST SECTIONS AND BASIN SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OF THE MANUFACTURER MARKED ON THE INSIDE WALL.
 8. LADDER PROVIDED AND INSTALLED BY OTHERS.
 9. IDENTIFICATION TAGS FOR CABLES IN MANHOLE SHALL BE ATTACHED AT THE TIME OF MANHOLE INSTALLATION BY OTHERS.



SECTION VIEW

SECONDARY CABLE VAULT DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
CHOM CITY REVIEW	DATE
COMMENT RESPONSE	PFH
	12/4/20
	PFH
	3/17/21

UTILITY DETAILS - 3

MERCY HOSPITAL REDEVELOPMENT

T/OWNER OF RECORD: NEWHEIGHT REDFERN, LLC

217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101

DRAWING NAME:

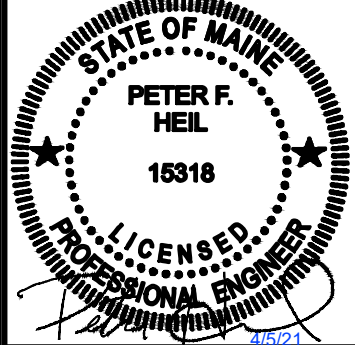
PROJECT NAME/
ADDRESS:

21 / 00

R N
ENGINEERING, INC.

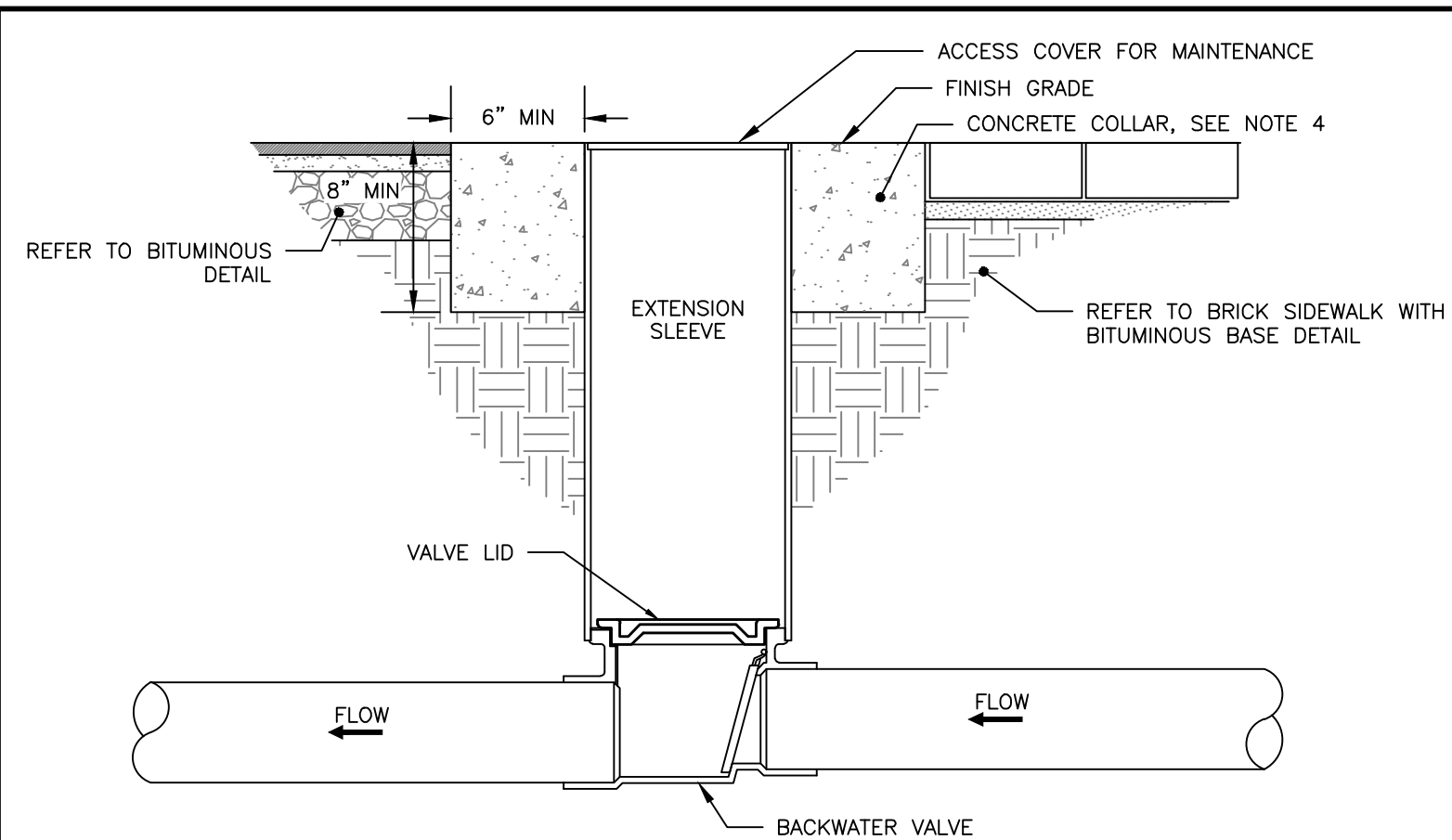
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE:	1140_CIVIL
JN:	1140
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	KRB
CHECKED BY:	WHS



DRAWING NO.

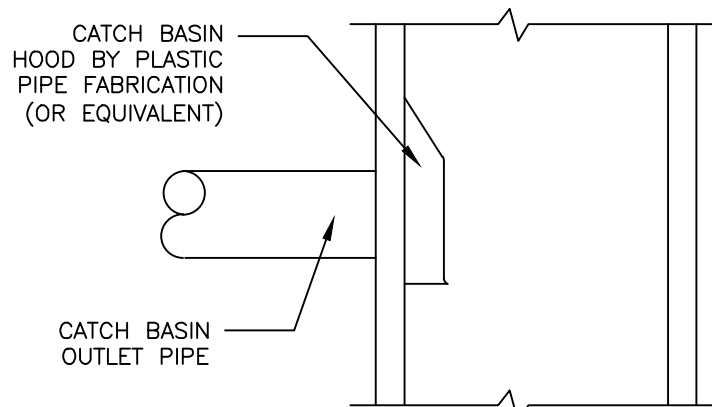
C-44



- NOTES:
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
 2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
 3. VALVE SHALL BE INSTALLED WITH A VALVE BOX AND COVER TO PROVIDE EASY ACCESS AND MAINTENANCE. VALVE COVER SHALL STATE "SEWER" ON LID FLUSH TO SURFACE. REFER TO VALVE & BOX COVER DETAIL FOR ADDITIONAL INFORMATION.
 4. CONCRETE COLLAR AT A MINIMUM 24-HOUR COMPRESSIVE STRENGTH OF 3,000 PSI.

BACKFLOW VALVE ASSEMBLY
NOT TO SCALE

- NOTES:
1. INSTALL CATCH BASIN HOODS IN ALL CATCH BASINS WITH A 12" OR 15" OUTLET PIPE.
 2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
 3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS.



CATCH BASIN HOOD DETAIL
NOT TO SCALE

SITE SPECIFIC DATA			
PROJECT NUMBER		12534	
PROJECT NAME		MERCY HOSPITAL	
PROJECT LOCATION		PORTLAND, ME	
STRUCTURE ID		MODULAR WETLAND	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		1.11	
TREATMENT HGL AVAILABLE (FT)			5.4
PEAK BYPASS REQUIRED (CFS)- IF APPLICABLE			5.9
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	122.05	PVC	12"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	116.00	PVC	12"
PRETREATMENT		BIOFILTRATION	DISCHARGE
RIM ELEVATION	129.00	129.00	129.00
SURFACE LOAD	H-20	H-20	H-20
FRAME/COVER	#30"	3 EA 30"x48"	#30"
WETLAND MEDIA VOLUME (CY)			16.16
ORIFICE SIZE (DIA. INCHES)			#2.99 EA
NOTES: PRELIMINARY, NOT FOR CONSTRUCTION			

INSTALLATION NOTES:

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
5. CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

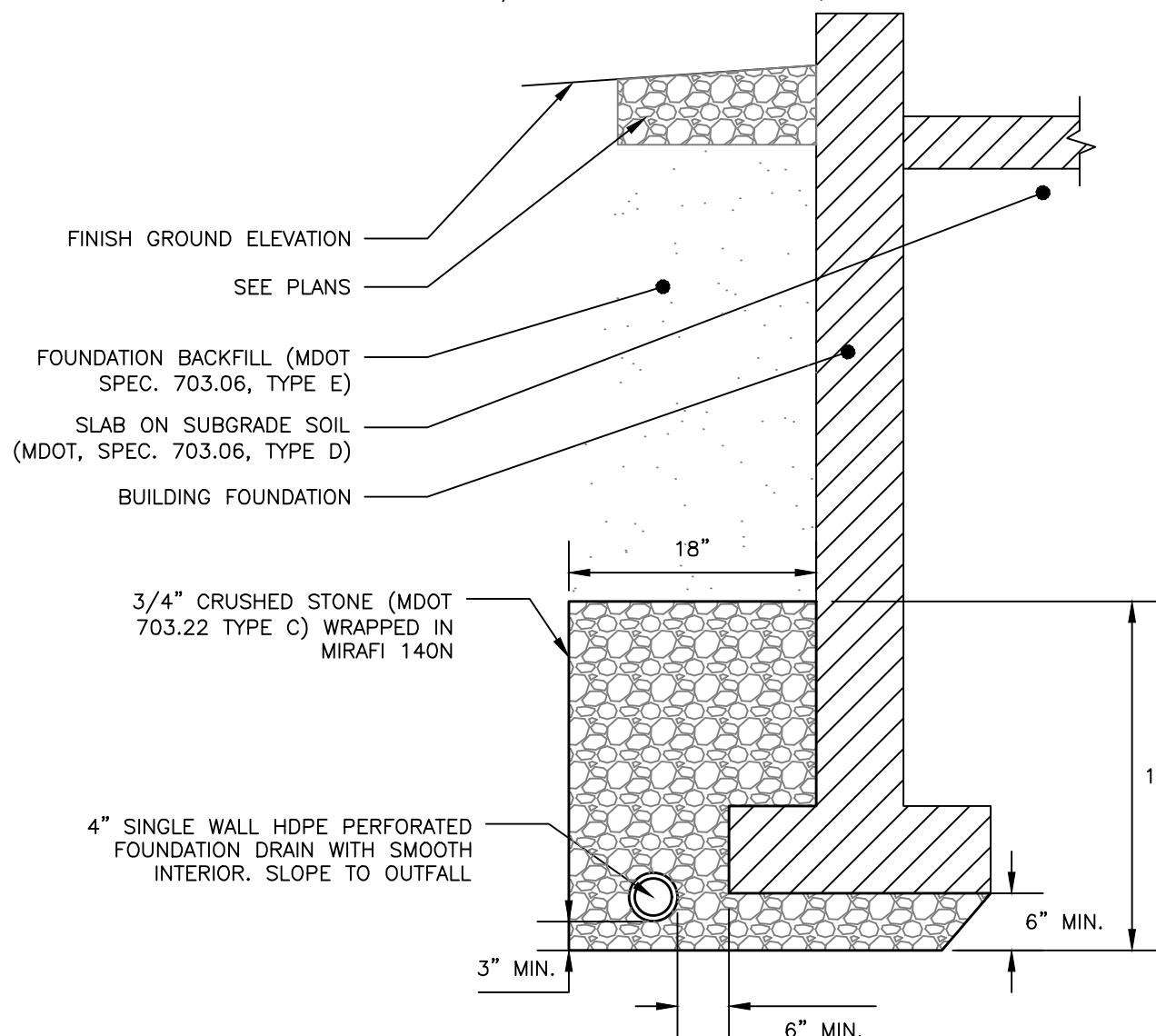
GENERAL NOTES:

1. PRODUCT MODEL MWS-L-8-24-12"-11"-V-UG MANUFACTURER BY BIO CLEAN ENVIRONMENTAL SERVICES, INC.
2. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

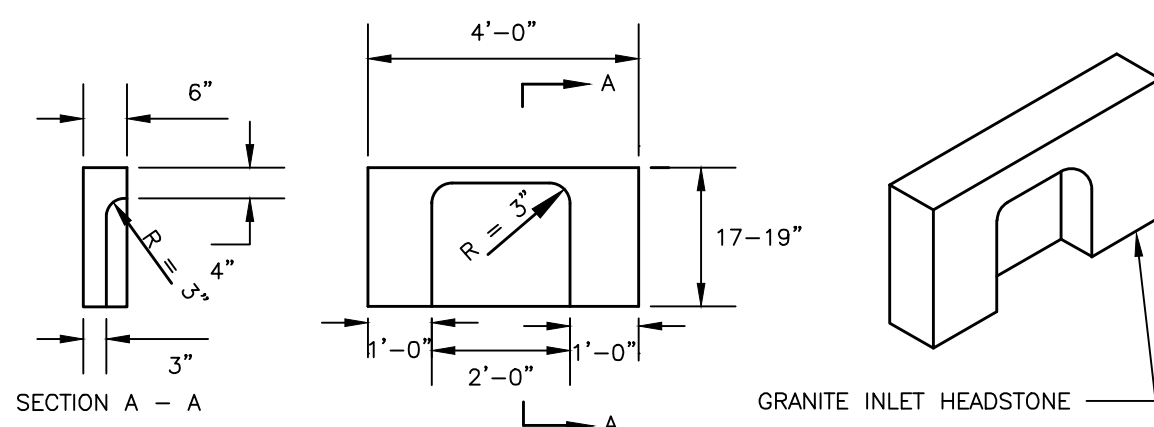
MODULAR WETLAND SYSTEM – LINEAR BIOFILTRATION SYSTEM
NOT TO SCALE

NOTES:

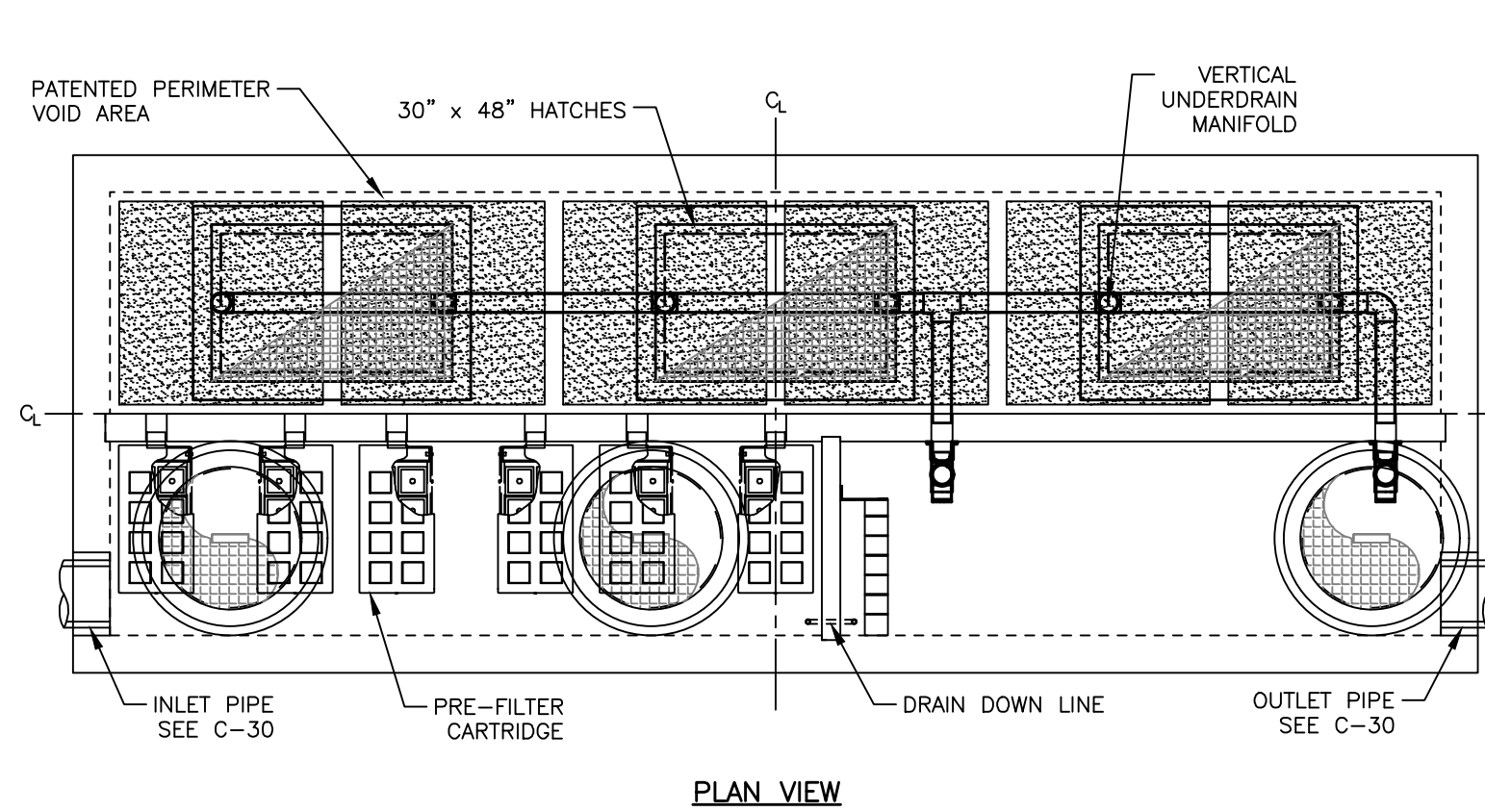
1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.
3. INSTALL STONE DRIP EDGE IN A LOCATIONS SUBJECT TO ROOF RUNOFF. WIDTH SHALL BE A MIN. 12" BEYOND THE PROJECTION OF THE ROOF EVE.
4. FOUNDATION WALL FOOTINGS SHALL BE CONSTRUCTED TO A MIN. DEPTH OF 4 FT BELOW ADJACENT FINISH GRADE. REFER TO STRUCTURAL ENGINEERS PLANS FOR ADDITIONAL INFORMATION AND MIN. REQUIREMENTS.
5. IF FOUNDATION DRAIN DAYLIGHTS, INSTALL DRAINAGE SOLUTIONS ANIMAL GUARD 4" EXTERNAL PVC OR CORRUGATED PLASTIC PIPE, OR INDUSTRY APPROVED EQUAL.



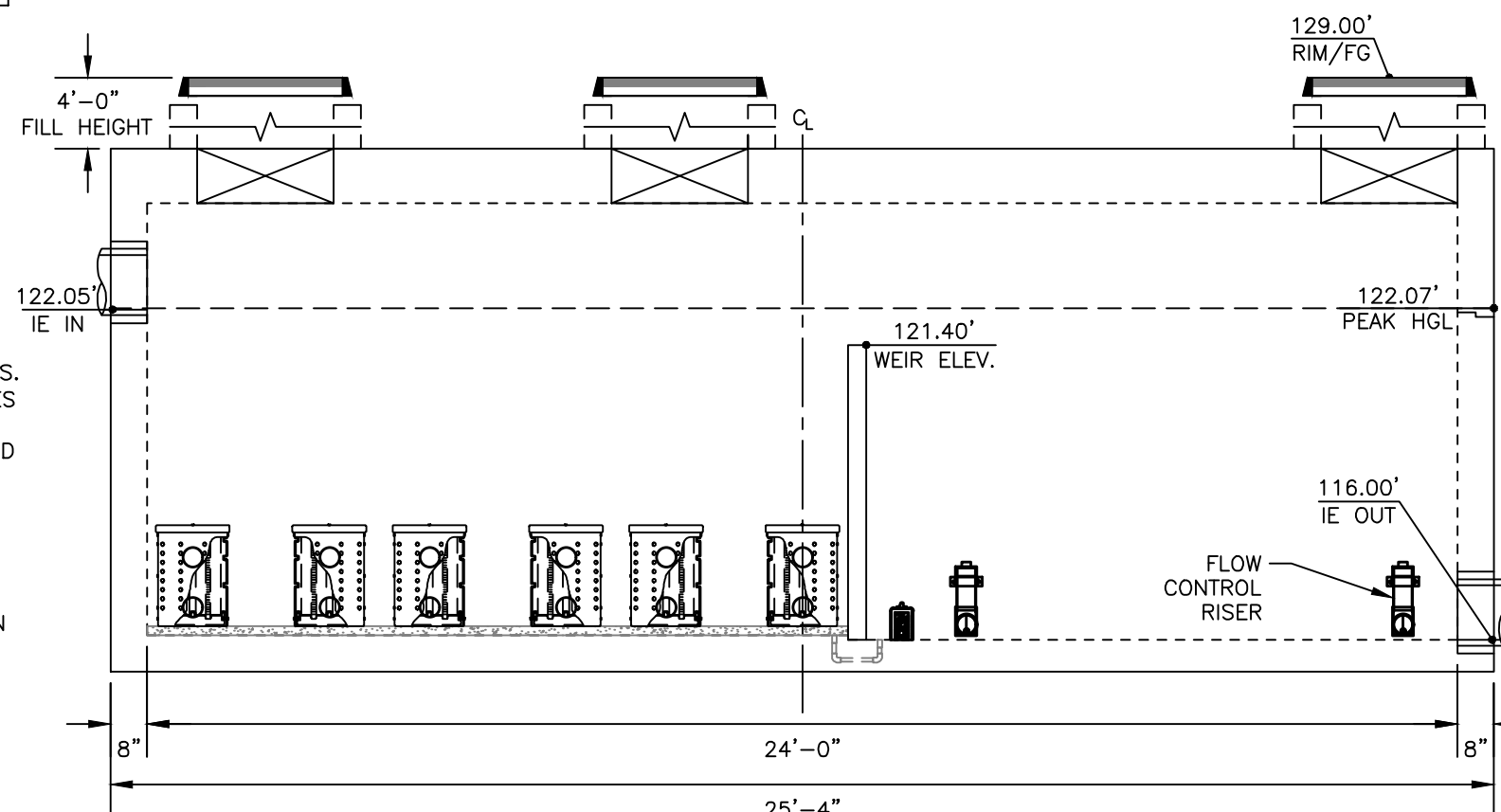
FOUNDATION DRAIN DETAIL
NOT TO SCALE



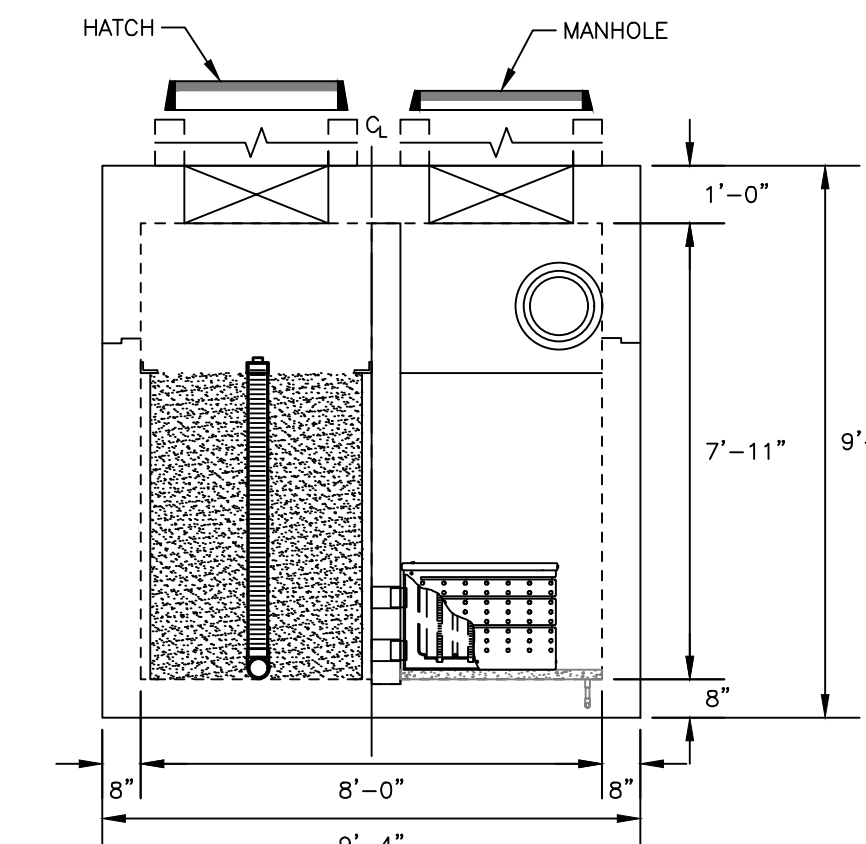
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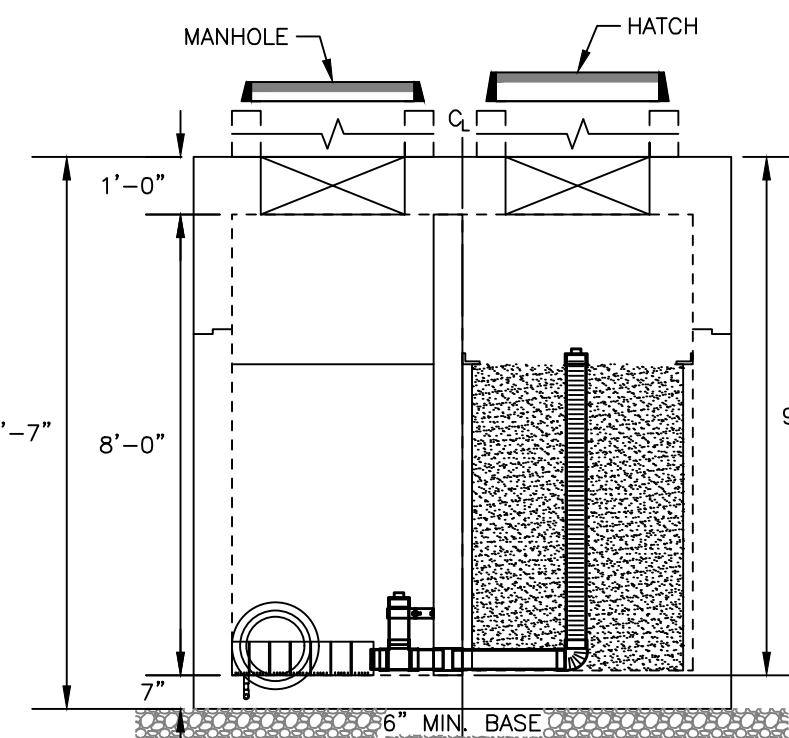
PLAN VIEW



ELEVATION VIEW



LEFT END VIEW

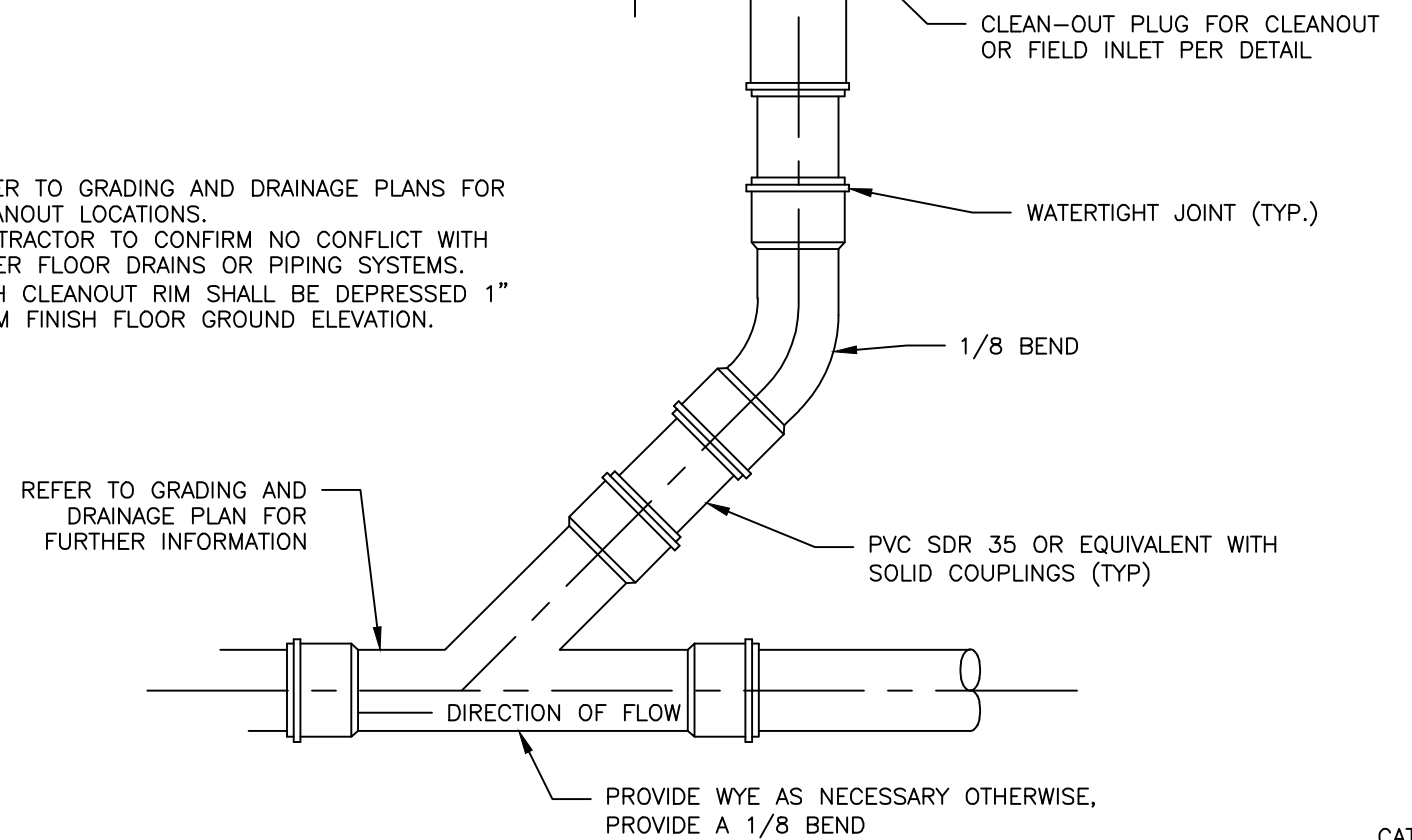


RIGHT END VIEW

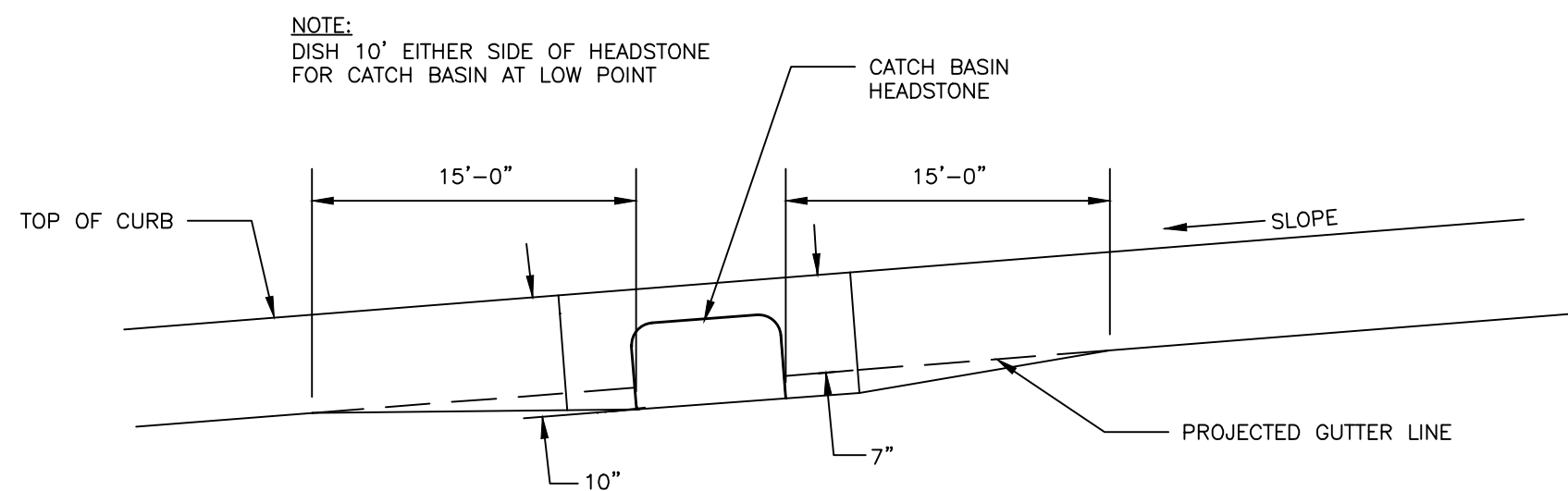
PRETREATMENT LOADING RATE (GPM/SF)	3.2
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

NOTES:

1. REFER TO GRADING AND DRAINAGE PLANS FOR CLEANOUT LOCATIONS.
2. CONTRACTOR TO CONFIRM NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
3. EACH CLEANOUT RIM SHALL BE DEPRESSED 1" FROM FINISH FLOOR GROUND ELEVATION.



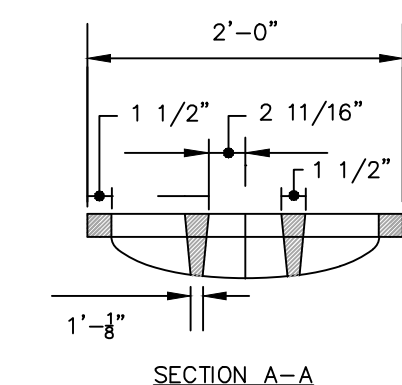
CONCRETE COLLAR FOR CLEANOUTS AND FLOOR DRAINS IN THE TRAVEL WAY
NOT TO SCALE



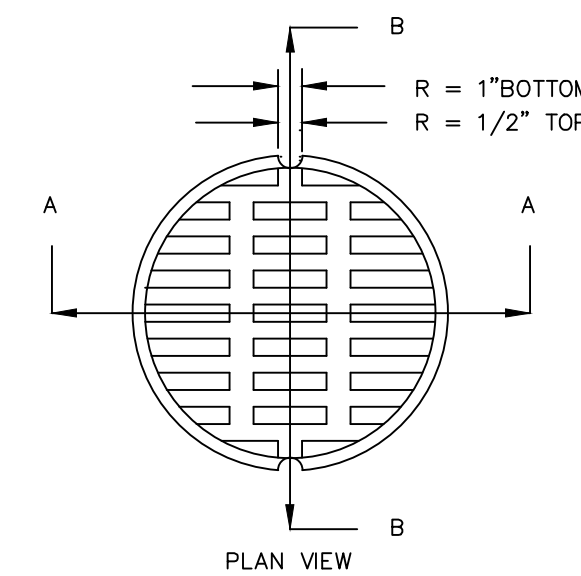
PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET
NOT TO SCALE

NOTES:

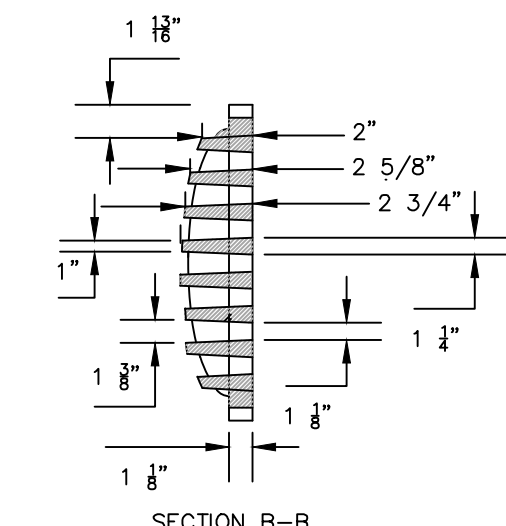
1. APPROVED CATCH BASIN FRAMES:
1.1. EAST JORDAN = 7375Z
1.2. NEENAH = R-3248
1.3. OR APPROVED EQUAL
2. APPROVED CATCH BASIN GRATES:
2.1. EAST JORDAN = 2440M
2.2. NEENAH = R-3248
2.3. OR APPROVED EQUAL
3. PROVIDE 24" SQUARE GRATE FOR CATCH BASINS ADJACENT TO CURB



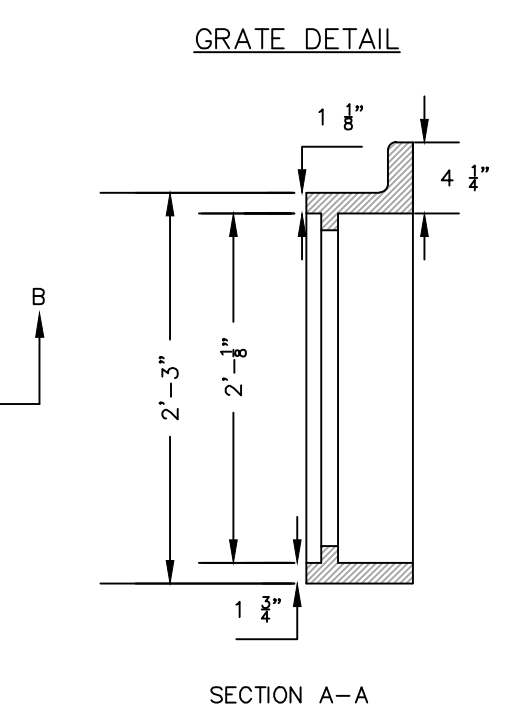
SECTION A-A



PLAN VIEW



SECTION B-B



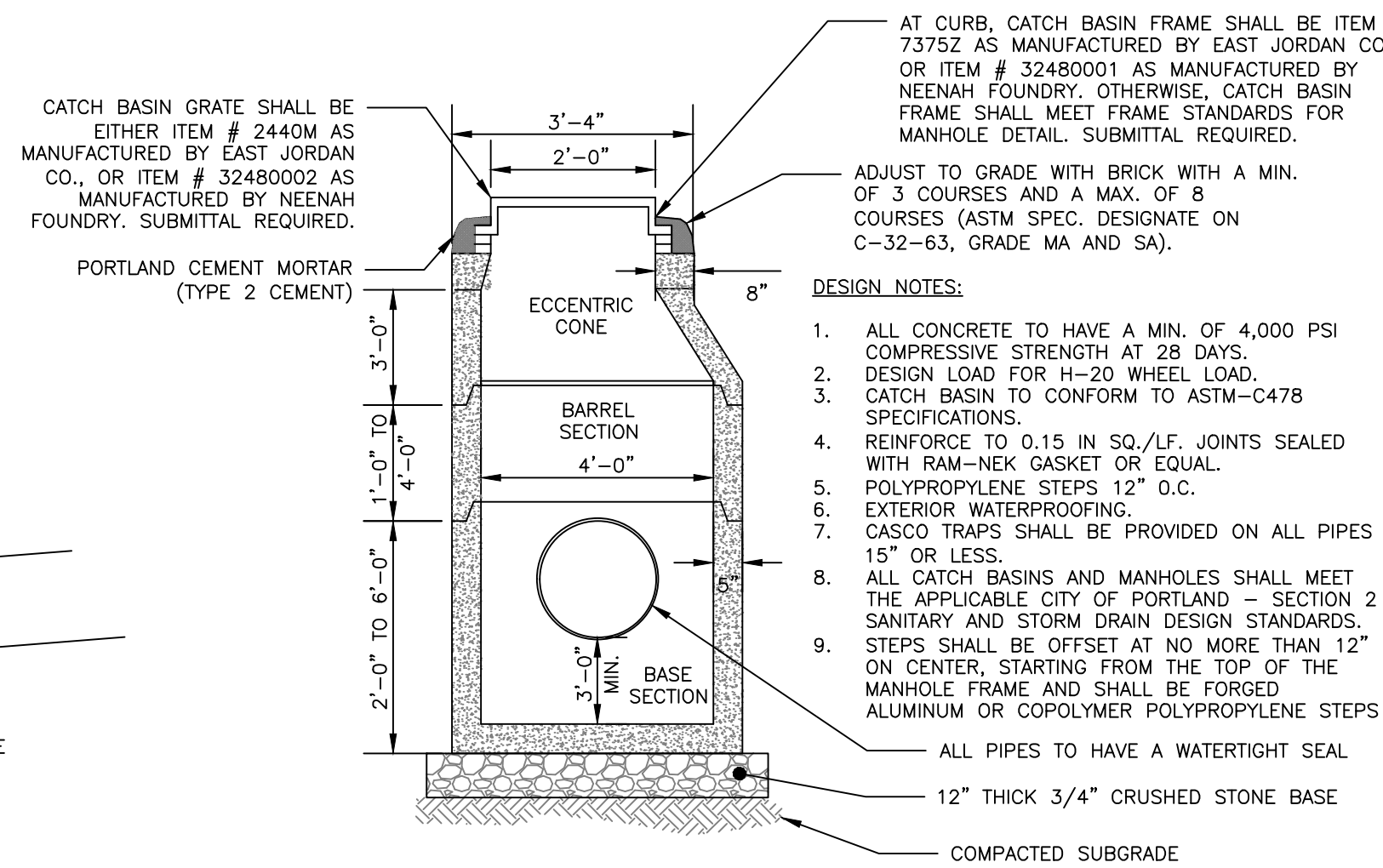
GRATE DETAIL

FRAME DETAIL

CATCH BASIN FRAME & GRATE
NOT TO SCALE

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLD AND SHALL HAVE ONE 3/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVAL EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DRSA OR APPROVED EQUAL.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP PER DETAIL.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS



4'-0\"/>

ISSUED FOR	BY
SITE PLAN APP.	PPH
CHOM CITY REVIEW	PPH
COMMENT RESPONSE	PPH

DRAINAGE DETAILS

MERCY HOSPITAL REDEVELOPMENT

NEWHEIGHT REDFERN, LLC

217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101

DRAWING NAME:

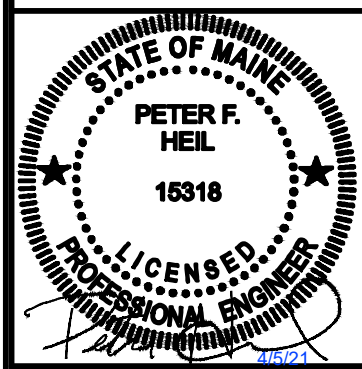
PROJECT NAME/

ADDRESS:

CLIENT/OWNER OF RECORD:

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

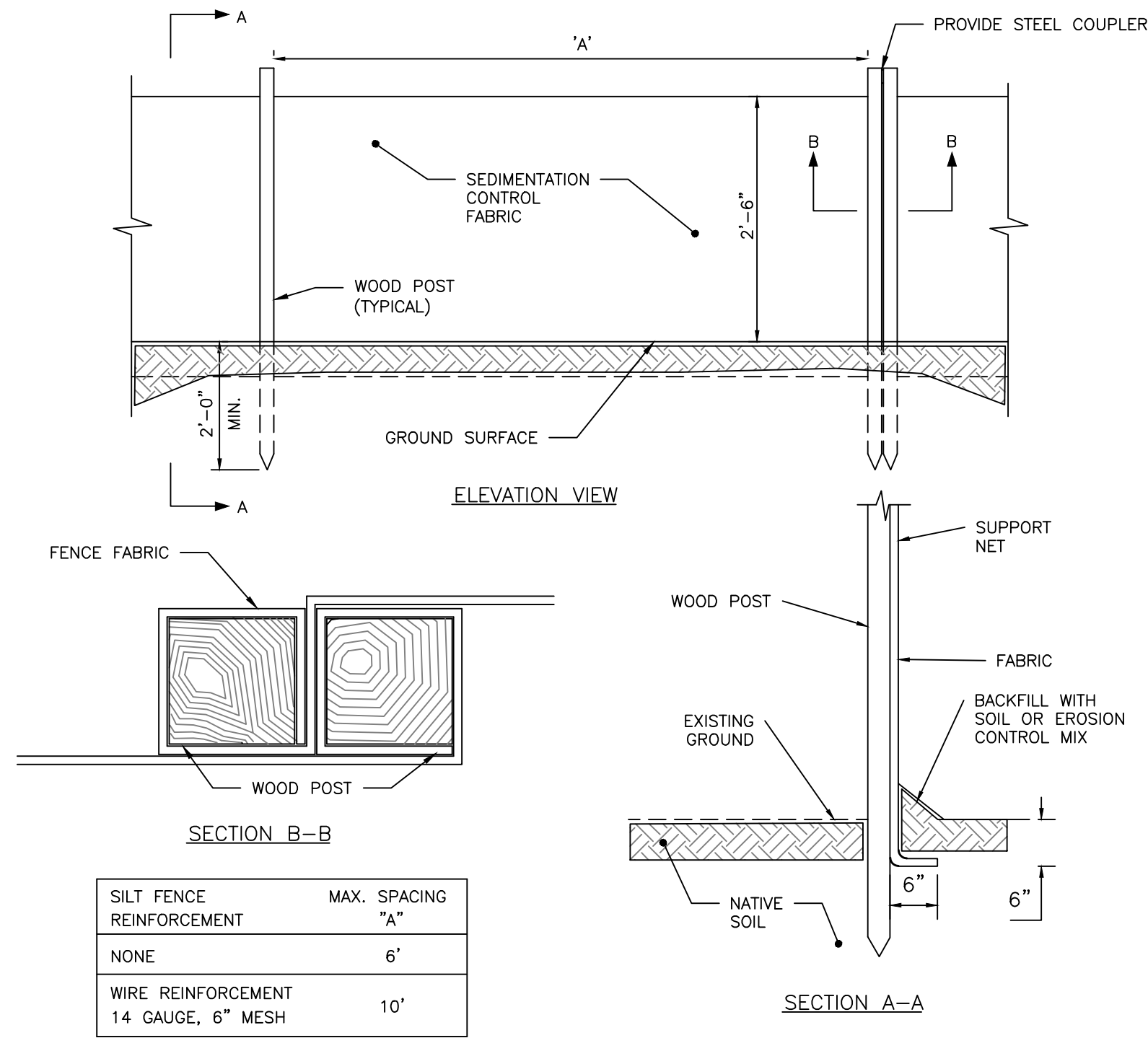
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DESIGNED BY: PPH
DRAWN BY: KRB
CHECKED BY: WHS



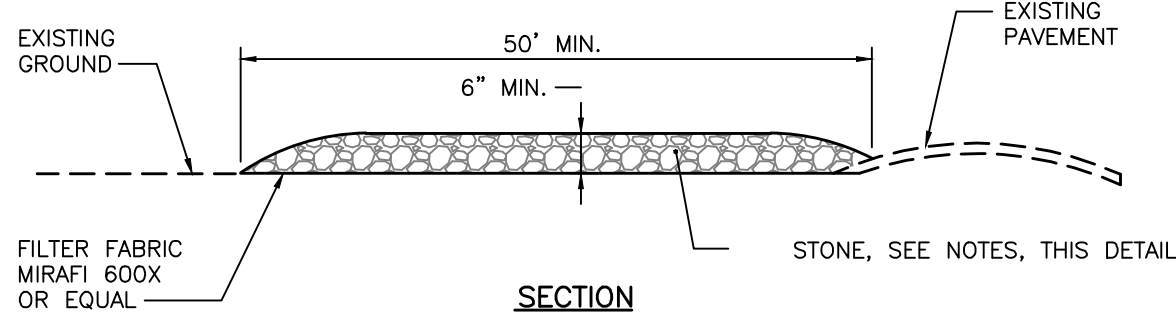
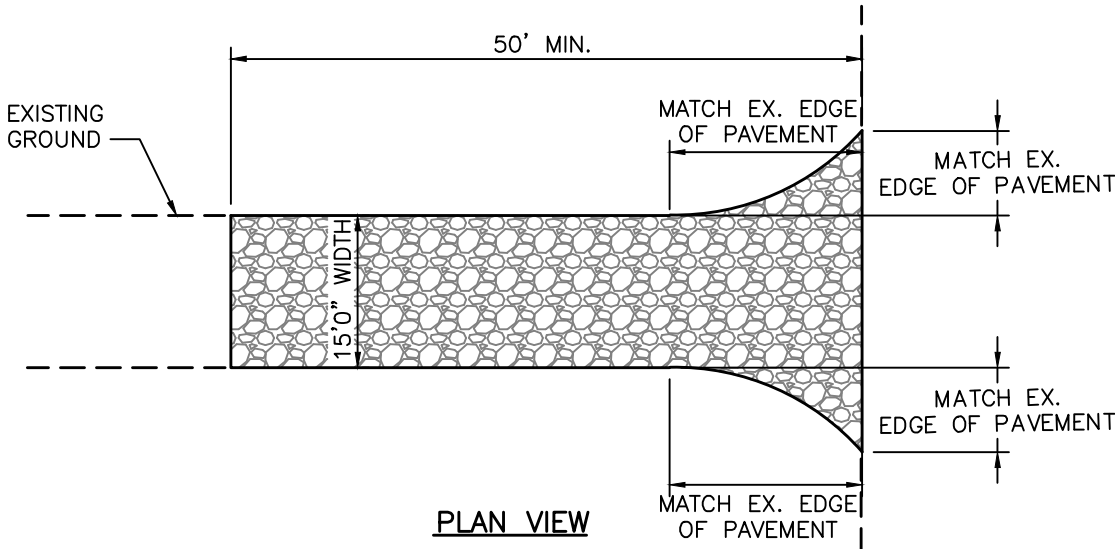
DRAWING NO.

C-45

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION



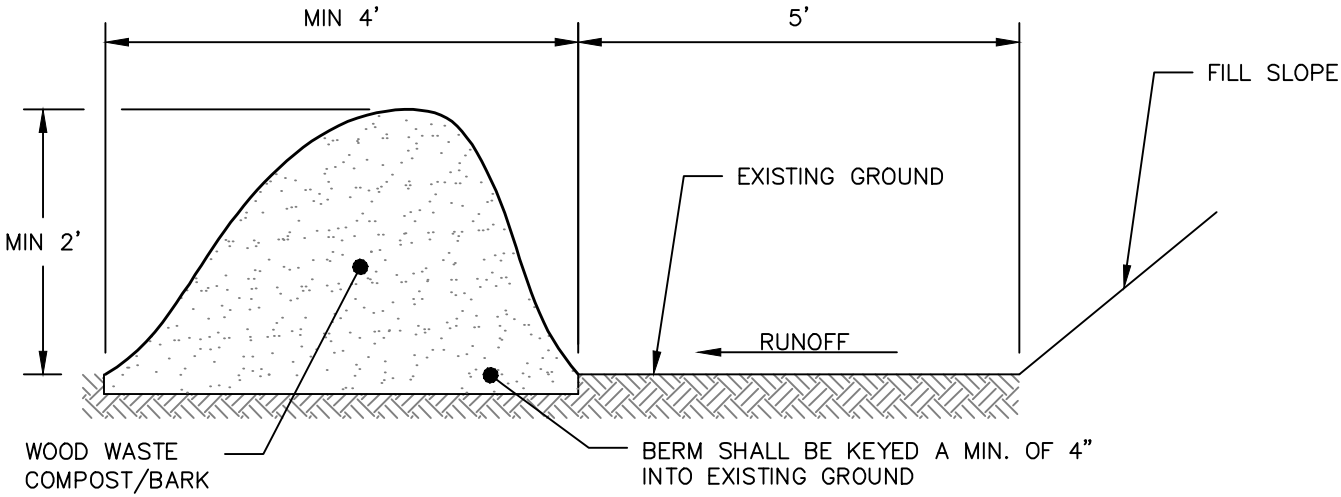
SILTATION FENCE DETAIL
NOT TO SCALE



- NOTES:
1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
 2. STONE SHALL BE 2"-3" COARSE AGGREGATE
 3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
 4. WHEN NECESSARY, ON-SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
 5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT-OF-WAY

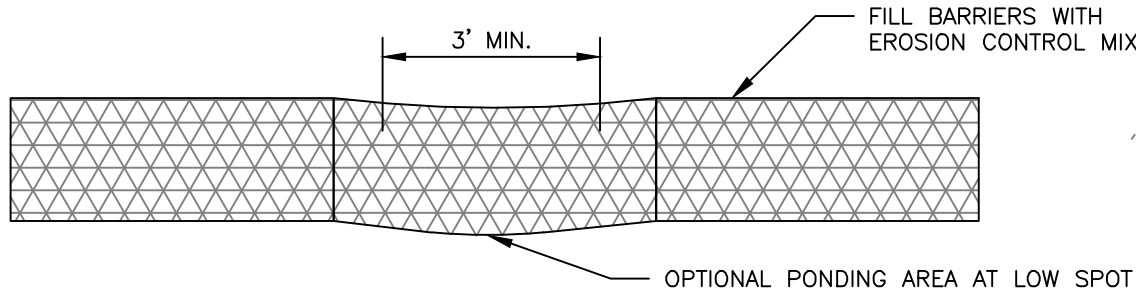
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

- NOTES:
1. THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS AND IN ACCORDANCE WITH THE MAINE DOT CHAPTER 700, SECTION 717.04(D):
 - 1.1. pH BETWEEN 5.0 - 8.0
 - 1.2. PARTICLE SIZE (BY WEIGHT):
 - 1.2.1. 100% PASSING A 150 MM (6 IN) SCREEN
 - 1.2.2. 75 TO 85% PASSING A 19 MM (0.75 IN) SCREEN
 - 1.3. SOLUBLE SALTS CONTENT < 4.0 MMHOS/CM
 - 1.4. ORGANIC MATTER 20 TO 100% , DRY WEIGHT BASIS
 2. THE BERM SHOULD BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR, WHEN NECESSARY THE BERM MAY BE PLACED PERPENDICULAR TO THE SLOPE ALONG THE PROPERTY LINE TO CONTAIN THE SEDIMENT PROVIDED A BERM IS LOCATED AT THE BASE OF THE SLOPE.
 3. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED OR 90% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED OFFSITE OR BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.

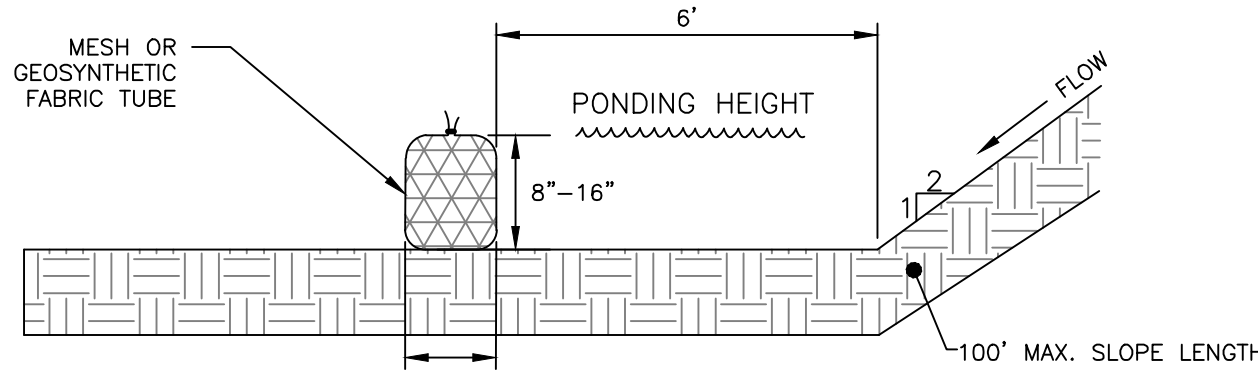


EROSION CONTROL MIX BERM DETAIL
NOT TO SCALE

- NOTES:
1. FULL CONTACT WITH THE GROUND IS CRITICAL TO PREVENT SHORT CIRCUITING UNDER THE TUBE - THE GROUND SURFACE SHOULD BE SMOOTH AND LEVEL. IN WOODED AREAS, PROTRUDING ROOTS AND DEBRIS MAY NEED TO BE REMOVED. IN GRASSED AREAS, THE GRASS NEEDS TO BE EITHER MOWED OR COMPRESSED DOWN.
 2. STAKING MAY BE NECESSARY ON STEEP SLOPES.
 3. UPON FINAL STABILIZATION, THE TUBE CAN BE CUT OPEN AND THE MATERIAL SPREAD OUT ONTO THE GROUND. THE MESH MATERIAL SHOULD BE REMOVE.
 4. LOOSE COMPOST MAY BE BACKFILLED ALONG THE UPSLOPE SIDE OF THE COMPOST FILTER SOCK, FILLING THE SEAM BETWEEN THE SOIL SURFACE AND THE DEVICE, IMPROVING FILTRATION AND SEDIMENT RETENTION.

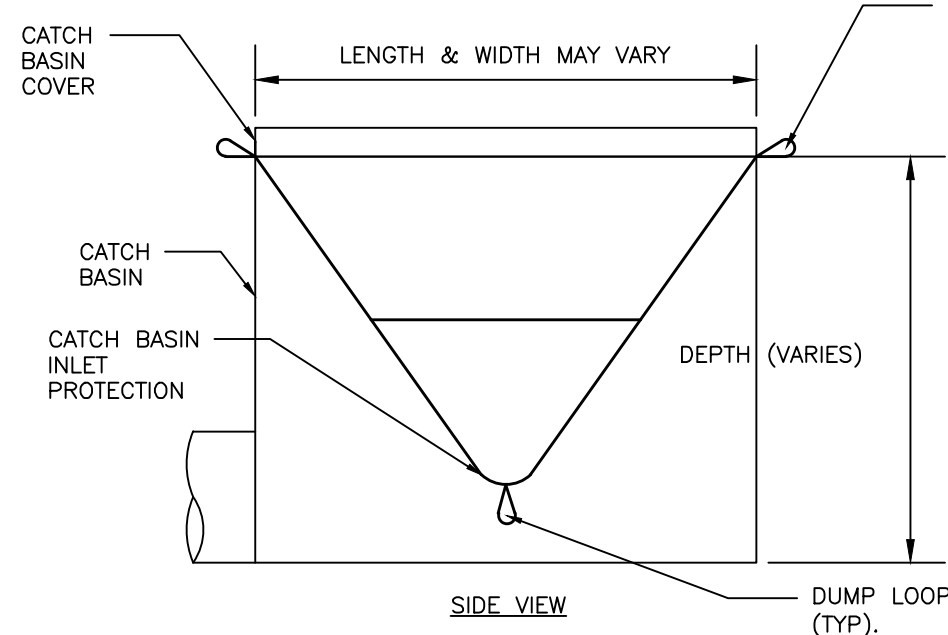


FRONT VIEW



SIDE VIEW

FILTER SOCK DETAIL
NOT TO SCALE



CATCH BASIN INLET PROTECTION
NOT TO SCALE

- NOTES:
1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
 2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
 3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

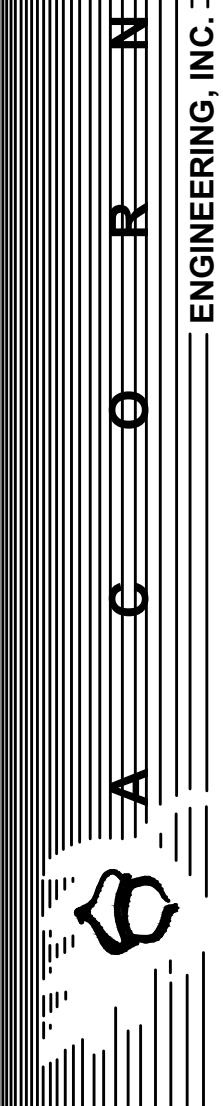
PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
PFH	DATE
SITE PLAN APP.	8/10/20
CHOM CITY REVIEW	PFH
COMMENT RESPONSE	12/4/20
	1/17/21

DRAWING NAME: EROSION & SEDIMENTATION CONTROL DETAILS

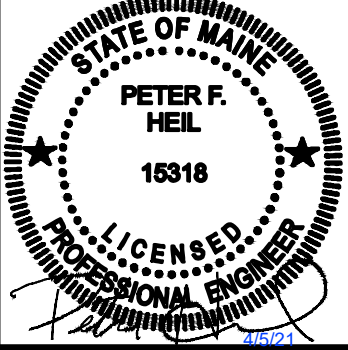
PROJECT NAME/ ADDRESS: MERCY HOSPITAL REDEVELOPMENT

CLIENT/OWNER OF RECORD: NEWHEIGHT REDFERN, LLC
217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101



ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED BY THE ENGINEER, SHALL BE INDICATED BY A REVISION TABLE AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1140_CIVIL
JN:	1140
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	KRB
CHECKED BY:	WHS



DRAWING NO.

C-47



FAMILY BUILDING



SENIOR BUILDING



FAMILY BUILDING



WOONERF / ALLEY CONCEPT

CONCEPT IMAGES
(PLANTING REPRESENTATIVE OF SCALE/MASSING, COLOR MAY VARY)

12.04.2020 LEVEL III SITE PLAN

SHEET INDEX
LANDSCAPE DRAWINGS

■	L0-00	COVER SHEET
■	L0-01	NOTES
■	L1-00	LAYOUT PLAN
■	L2-00	MATERIALS PLAN
■	L3-00	PLANTING PLAN
■	L4-00	DETAILS
■	L4-01	DETAILS
■	L4-02	DETAILS
■	L4-03	SITE FURNISHINGS

VICINITY MAP:



PROJECT LOCATION



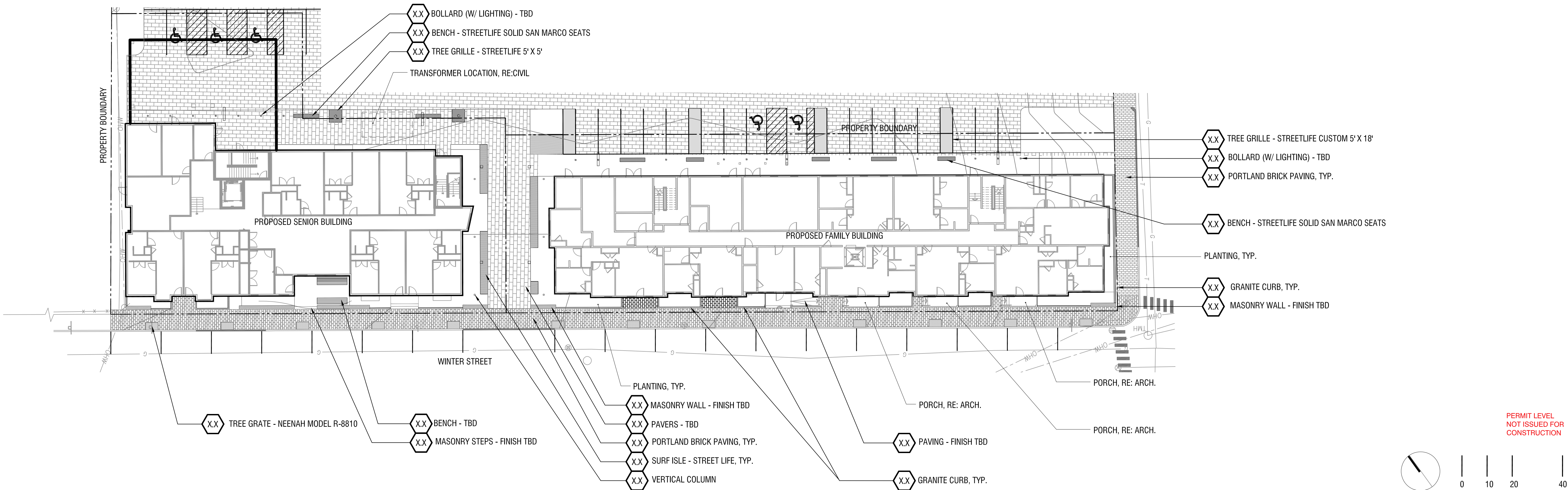
COMMUNITY HOUSING OF MAINE
SENIOR AND FAMILY BUILDINGS
WINTER STREET
PORTLAND, ME

COMMUNITY HOUSING OF MAINE

LEVEL III SITE PLAN
DECEMBER 4, 2020

MATERIALS PLAN

L 2-00



COMMUNITY HOUSING OF MAINE
SENIOR AND FAMILY BUILDINGS
WINTER STREET
PORTLAND, ME

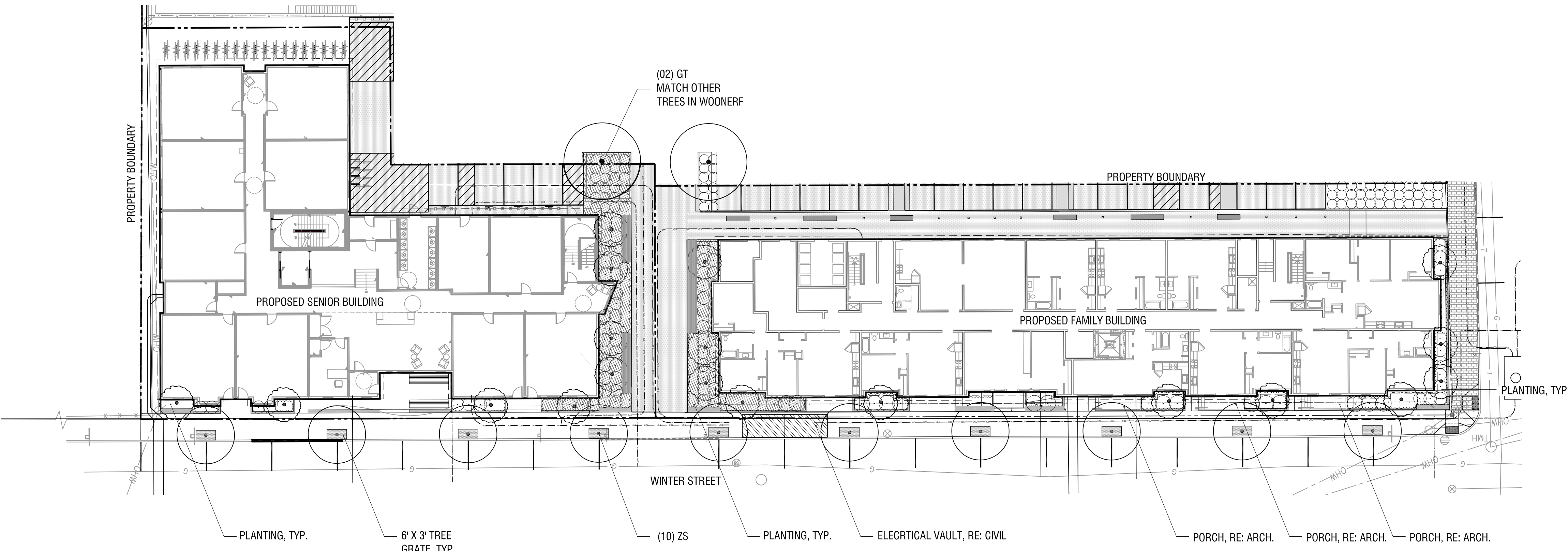
COMMUNITY HOUSING OF MAINE

LEVEL III SITE PLAN 05.25.2021
LEVEL III SITE PLAN 07.07.2021

LEVEL III SITE PLAN
DECEMBER 4, 2020

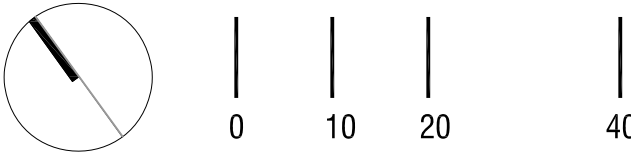
PLANTING PLAN

L 3-00



PLANTING LEGEND						
SYMBOL	ABBR.	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING
TREES-DECIDUOUS						
	ZS	ZELKOVA SERRATA 'GREEN VASE'	JAPANESE ZELKOVA	10	2.5" CAL.	PER PLAN
	GT	GLEDTISIA TRIACANTHOS 'SKYCOLE'	SKYLINE HONEYLOCUST	02	3" CAL.	PER PLAN
	AL	AMELANCHIER LAEVIS	AMELANCHIER LAEVIS	TBD	8'-10' HT B&B	PER PLAN
SHRUBS & WOODY GROUNDCOVER						
	CS	CORNUS SERICEA	REDTWIG DOGWOOD	TBD	#5	PER PLAN
	JHBR	JUNIPERUS HORIZONTALIS 'BAR HARBOR'	BAR HARBOR JUNIPER	TBD	#3	PER PLAN
	RA	RHUS AROMATICA 'GRO-LOW'	GROW-LOW SUMAC	TBD	#3	3.5' O.C.
	MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY SHRUBS	TBD	#5	PER PLAN
GRASSES / PERENNIALS						
	SH	SPOROBOLUS HETEROLEPSIS	PRAIRIE DROPSEED	TBD	#2	2' O.C.
	PV	PANICUM VIRGATUM	SWITCH GRASS	TBD	#2	2' O.C.

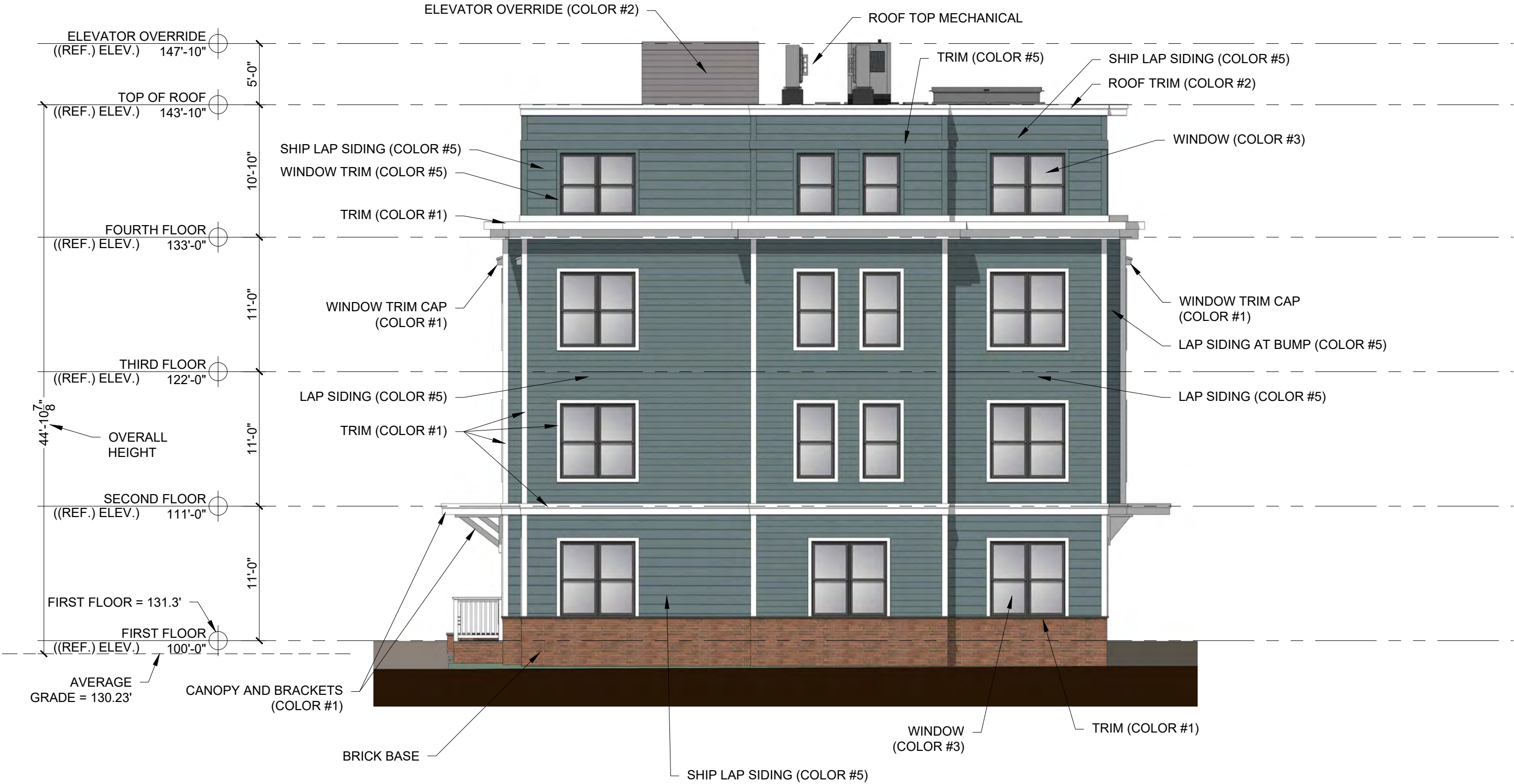
PERMIT LEVEL
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CONSTRUCTION





1 SOUTH ELEVATION
1/8" = 1'-0"

ITEM	INFORMATION	COLOR
TRIM - COLOR #1	PVC	WHITE
SHIPLAP SIDING - COLOR #2	FIBERCEMENT - ARTISAN SQUARE CHANNEL - 9" EXPOSURE - SMOOTH	PEARL GRAY
WINDOW - COLOR #3		BLACK
SHIPLAP SIDING - COLOR #4	FIBERCEMENT - ARTISAN SQUARE CHANNEL - 9" EXPOSURE - SMOOTH	EMBELLISHED CREAM
SHIPLAP SIDING - COLOR #5	FIBERCEMENT - ARTISAN SQUARE CHANNEL - 9" EXPOSURE - SMOOTH	BOOTHBAY BLUE
PARGE COAT - COLOR #6		MEDIUM GRAY
LAP SIDING - COLOR #2	FIBERCEMENT 6" EXPOSURE - SMOOTH FINISH	PEARL GRAY
LAP SIDING - COLOR #4	FIBERCEMENT 6" EXPOSURE - SMOOTH FINISH	EMBELLISHED CREAM
LAP SIDING - COLOR #5	FIBERCEMENT 6" EXPOSURE - SMOOTH FINISH	BOOTHBAY BLUE
MATERIALS NOTE: 1.) ALL DIS-SIMILAR METALS TO BE ISOLATED FROM ONE ANOTHER WITH ADHERED STRIPS OR SEALANTS TO PREVENT GALVANIC ACTION		



1 EAST ELEVATION
1/8" = 1'-0"

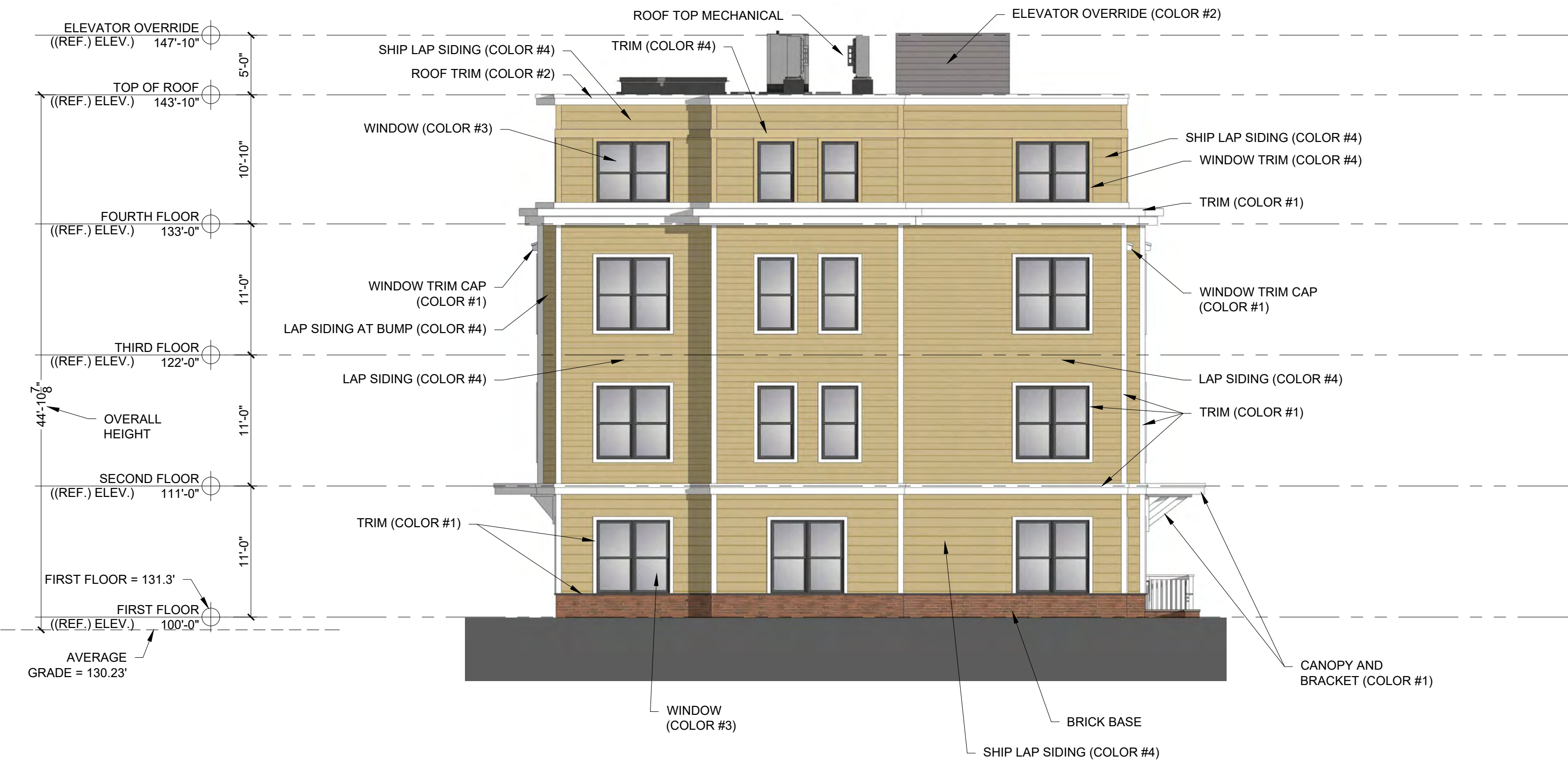


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1 NORTH ELEVATION
1/8" = 1'-0"

MATERIALS KEY		
ITEM	INFORMATION	COLOR
TRIM - COLOR #1	PVC	WHITE
SHIPLAP SIDING - COLOR #2	FIBERCEMENT - ARTISAN SQUARE CHANNEL - 9" EXPOSURE - SMOOTH	PEARL GRAY
WINDOW - COLOR #3		BLACK
SHIPLAP SIDING - COLOR #4	FIBERCEMENT - ARTISAN SQUARE CHANNEL - 9" EXPOSURE - SMOOTH	EMBELLISHED CREAM
SHIPLAP SIDING - COLOR #5	FIBERCEMENT - ARTISAN SQUARE CHANNEL - 9" EXPOSURE - SMOOTH	BOOTHBAY BLUE
PARGECOAT - COLOR #6		MEDIUM GRAY
LAP SIDING - COLOR #2	FIBERCEMENT 6" EXPOSURE - SMOOTH FINISH	PEARL GRAY
LAP SIDING - COLOR #4	FIBERCEMENT 6" EXPOSURE - SMOOTH FINISH	EMBELLISHED CREAM
LAP SIDING - COLOR #5	FIBERCEMENT 6" EXPOSURE - SMOOTH FINISH	BOOTHBAY BLUE
MATERIALS NOTE:		
1.) ALL DIS-SIMILAR METALS TO BE ISOLATED FROM ONE ANOTHER WITH ADHERED STRIPS OR SEALANTS TO PREVENT GALVANIC ACTION		



2 WEST ELEVATION
1/8" = 1'-0"



PROGRESS PRINT ONLY
Not for Construction

THE EQUINOX

WINTER STREET, PORTLAND, MAINE

JULY 07, 2021



PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

THE EQUINOX

WINTER STREET, PORTLAND, MAINE

JULY 07, 2021



PROGRESS PRINT ONLY
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RYAN SENATORE **ARCHITECTURE**

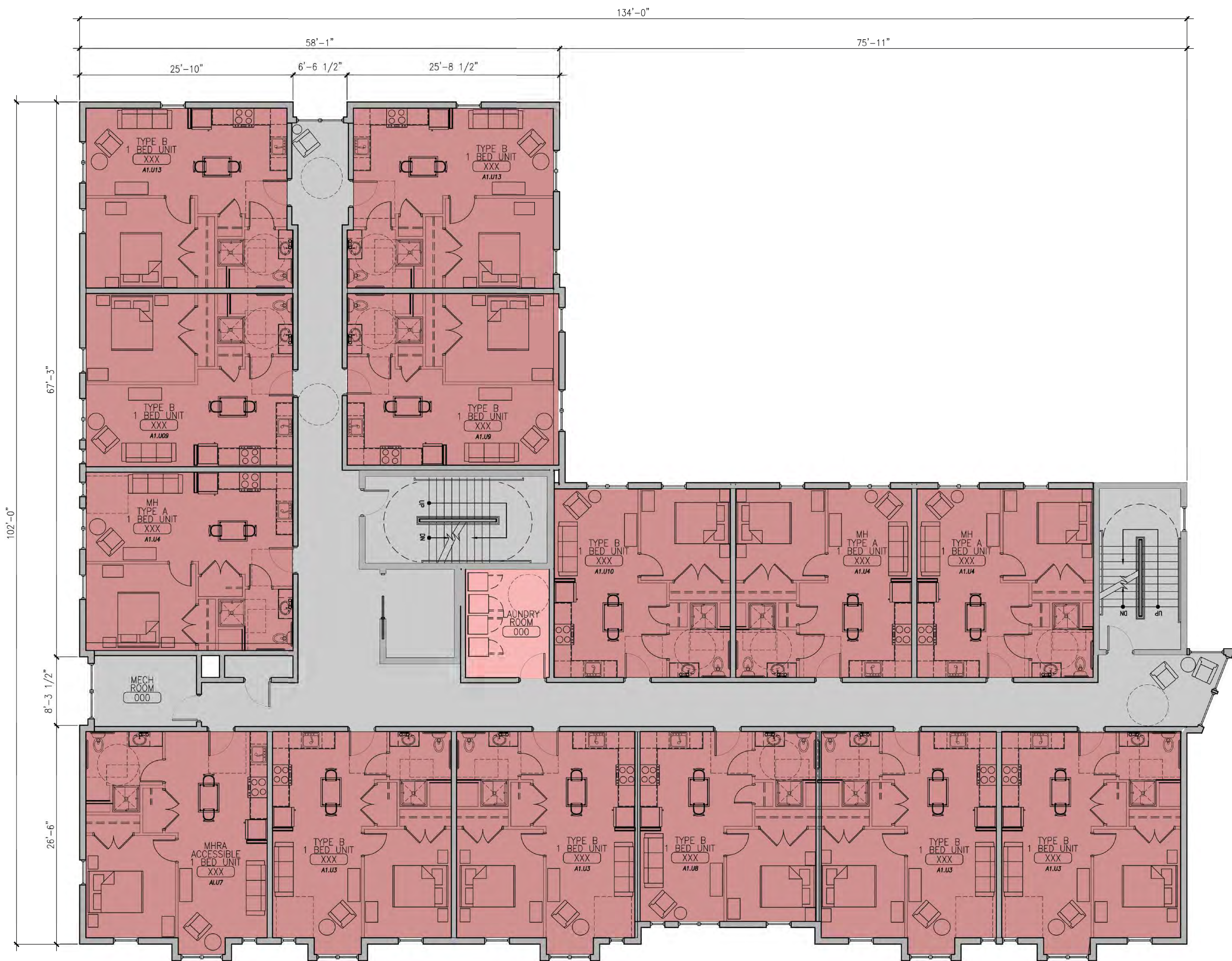
PROPOSED WINTER STREET SENIOR APARTMENTS

FIRST FLOOR PLAN



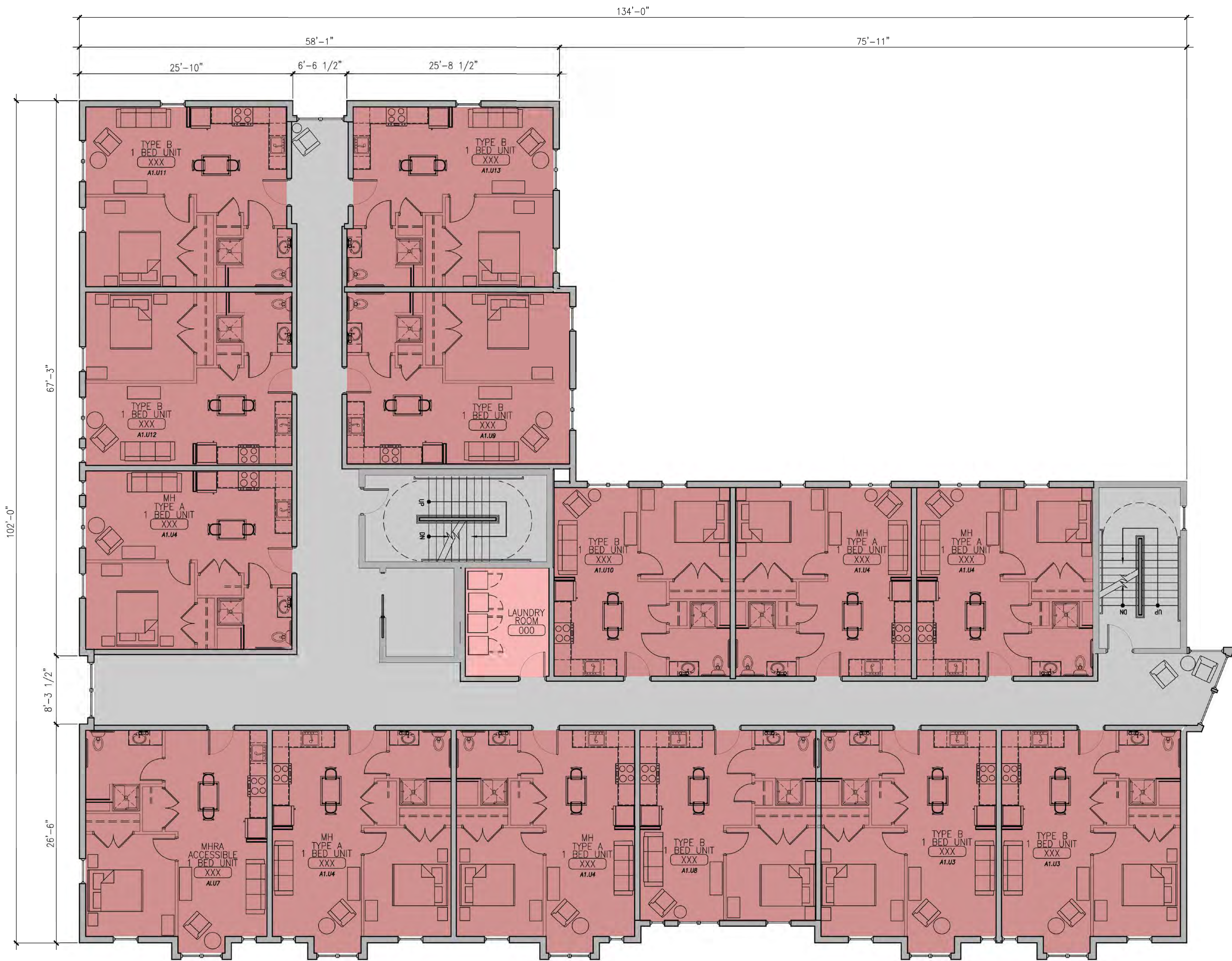
PROPOSED WINTER STREET SENIOR APARTMENTS

SECOND FLOOR PLAN



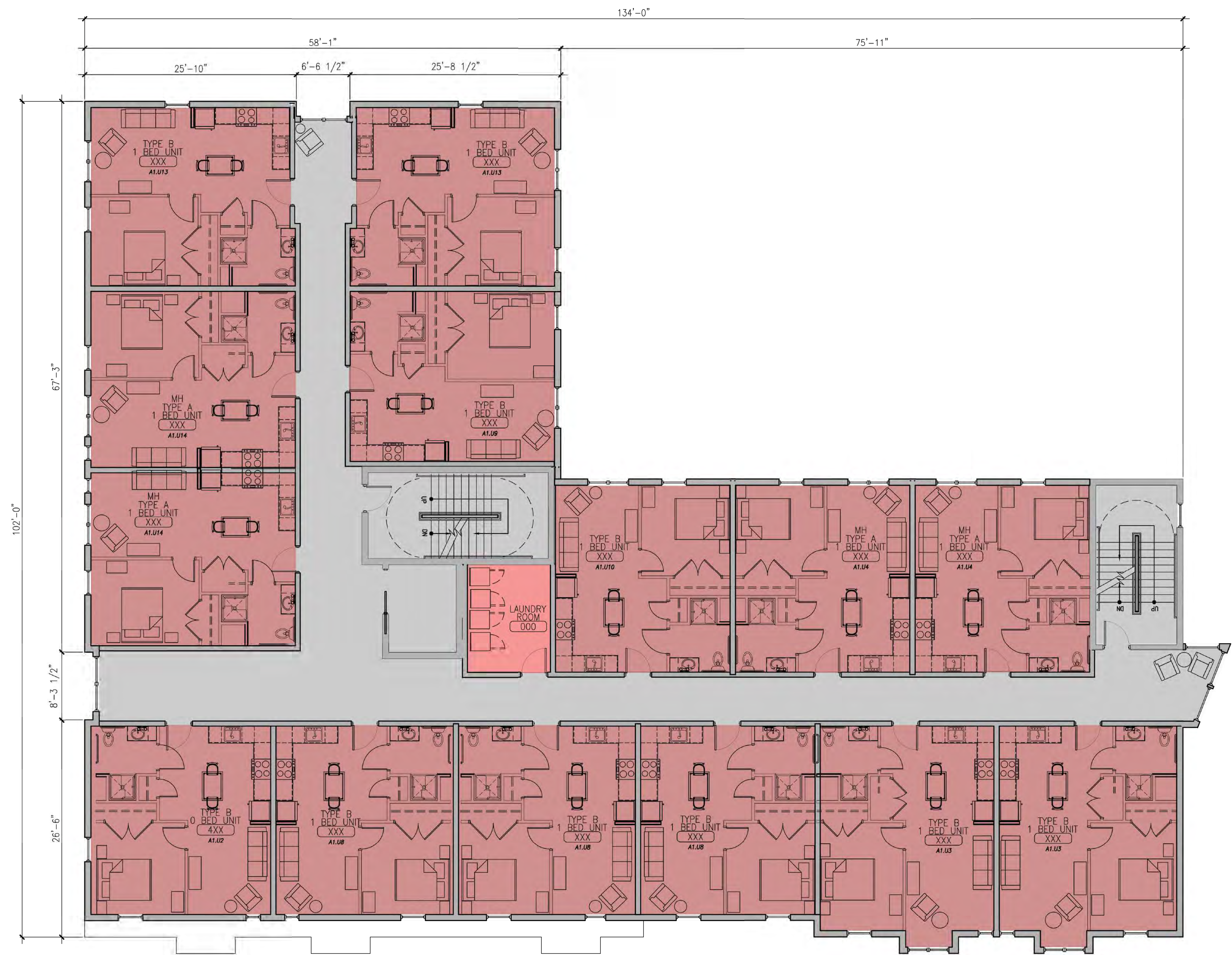
PROPOSED WINTER STREET SENIOR APARTMENTS

THIRD FLOOR PLAN



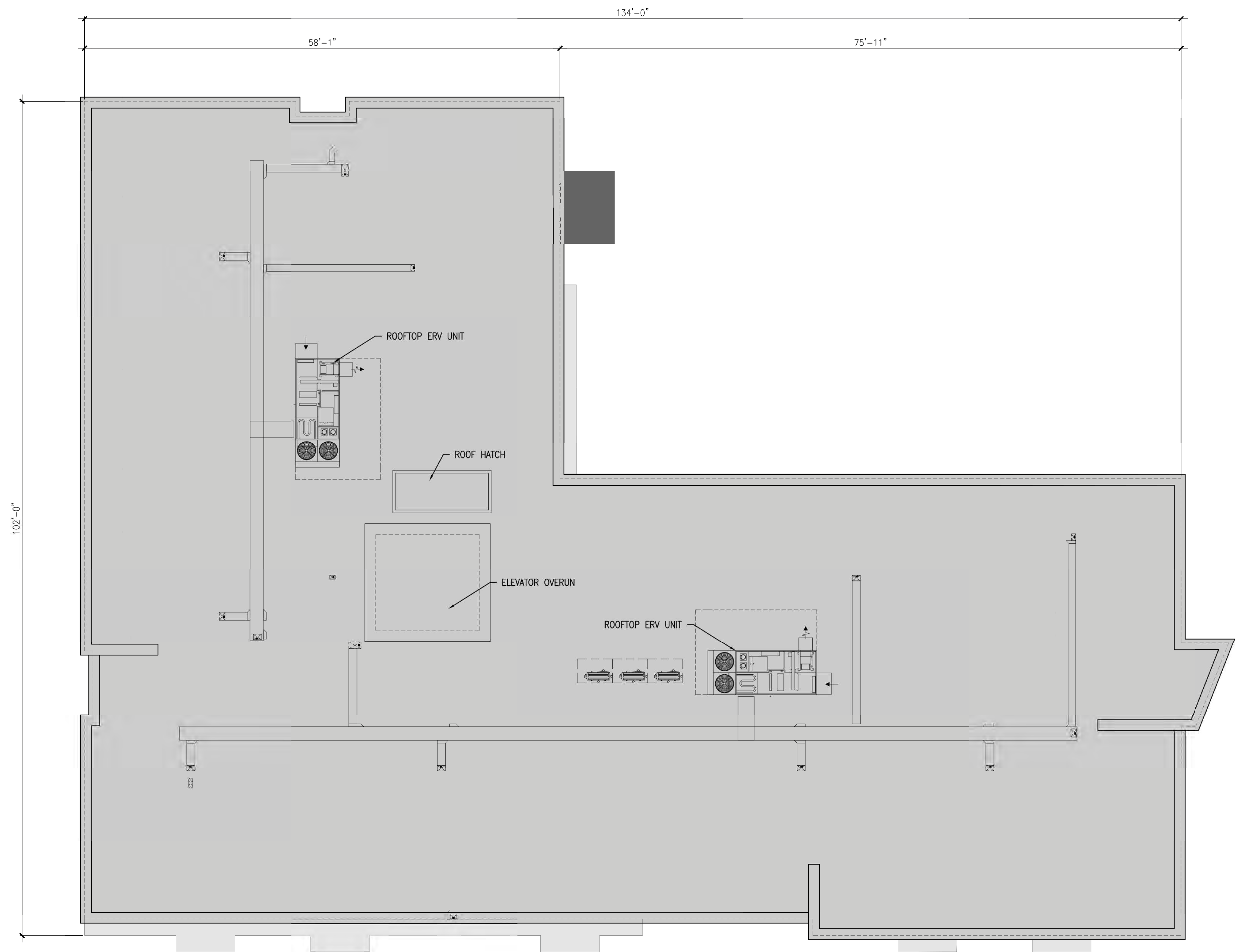
PROPOSED WINTER STREET SENIOR APARTMENTS

FORTH FLOOR PLAN



PROPOSED WINTER STREET SENIOR APARTMENTS

ROOF PLAN



PROPOSED WINTER STREET SENIOR APARTMENTS

ELEVATIONS



WINTER STREET ELEVATION



EXTERIOR FINISH MATERIAL LEGEND			
CODE	MATERIAL	COLOR AND FINISH	PATTERN LEGEND
A1	HARDIEPLANK LAP SIDING – 5/16" THICK, 5.25" WIDTH, 4" EXPOSURE, SMOOTH FINISH – FACTORY FINISHED	COLOR: RICH ESPRESSO	
A2	HARDIEPLANK LAP SIDING – 5/16" THICK, 5.25" WIDTH, 4" EXPOSURE, SMOOTH FINISH – FACTORY FINISHED	COLOR: GRAY SLATE	
B1	HARDIEPLANK LAP SIDING – 5/16" THICK, 9.25" WIDTH, 8" EXPOSURE, SMOOTH FINISH – FACTORY PRIMED AND FIELD PAINT	COLOR: RICH ESPRESSO	
B2	HARDIEPLANK LAP SIDING – 5/16" THICK, 9.25" WIDTH, 8" EXPOSURE, SMOOTH FINISH – FACTORY PRIMED AND FIELD PAINT	COLOR: GRAY SLATE	
C	HARDIEPANEL REVEAL PANEL SYSTEM – 5/16" THICK, 18"W X 8"H & 12"W X 8"H PANEL, SMOOTH FINISH. VERTICAL STAGGERED RUNNING BOND – FACTORY PRIMED AND FIELD PAINT.	FIELD COLOR: EVENING BLUE ACCENT FOR TEXTURE: BOOTHBAY BLUE	
D1	HARDIEPANEL VERTICAL SIDING – 5/16" THICK, 4"W X 4'H & 6"W X 4'H PANEL, SMOOTH FINISH. VERTICAL STAGGERED RUNNING BOND – FACTORY PRIMED AND FIELD PAINT.	FIELD COLOR: RICH ESPRESSO ACCENT FOR TEXTURE: AGED PEWTER	
D2	HARDIEPANEL VERTICAL SIDING – 5/16" THICK, 4"W X 4'H & 6"W X 4'H PANEL, SMOOTH FINISH. VERTICAL STAGGERED RUNNING BOND – FACTORY PRIMED AND FIELD PAINT.	FIELD COLOR: GRAY SLATE ACCENT FOR TEXTURE: NIGHT GRAY	

COURTYARD ELEVATION

PROPOSED WINTER STREET SENIOR APARTMENTS

ELEVATIONS



REAR ELEVATION



EXTERIOR FINISH MATERIAL LEGEND			
CODE	MATERIAL	COLOR AND FINISH	PATTERN LEGEND
A1	HARDIEPLANK LAP SIDING – 5/16" THICK, 5.25" WIDTH, 4" EXPOSURE, SMOOTH FINISH – FACTORY FINISHED	COLOR: RICH ESPRESSO	
A2	HARDIEPLANK LAP SIDING – 5/16" THICK, 5.25" WIDTH, 4" EXPOSURE, SMOOTH FINISH – FACTORY FINISHED	COLOR: GRAY SLATE	
B1	HARDIEPLANK LAP SIDING – 5/16" THICK, 9.25" WIDTH, 8" EXPOSURE, SMOOTH FINISH – FACTORY PRIMED AND FIELD PAINT	COLOR: RICH ESPRESSO	
B2	HARDIEPLANK LAP SIDING – 5/16" THICK, 9.25" WIDTH, 8" EXPOSURE, SMOOTH FINISH – FACTORY PRIMED AND FIELD PAINT	COLOR: GRAY SLATE	
C	HARDIEPANEL REVEAL PANEL SYSTEM – 5/16" THICK, 18"W X 8"H & 12"W X 8"H PANEL, SMOOTH FINISH, VERTICAL STAGGERED RUNNING BOND – FACTORY PRIMED AND FIELD PAINT.	FIELD COLOR: EVENING BLUE ACCENT FOR TEXTURE: BOOTHBAY BLUE	
D1	HARDIEPANEL VERTICAL SIDING – 5/16" THICK, 4"W X 4'H & 6"W X 4'H PANEL, SMOOTH FINISH, VERTICAL STAGGERED RUNNING BOND – FACTORY PRIMED AND FIELD PAINT.	FIELD COLOR: RICH ESPRESSO ACCENT FOR TEXTURE: AGED PEWTER	
D2	HARDIEPANEL VERTICAL SIDING – 5/16" THICK, 4"W X 4'H & 6"W X 4'H PANEL, SMOOTH FINISH, VERTICAL STAGGERED RUNNING BOND – FACTORY PRIMED AND FIELD PAINT.	FIELD COLOR: GRAY SLATE ACCENT FOR TEXTURE: NIGHT GRAY	

SIDE ELEVATION

PROPOSED WINTER STREET SENIOR APARTMENTS

ELEVATIONS



◆ HARDIEPANEL VERTICAL SIDING 4" & 6" WIDTHS
COLOR: GRAY SLATE
ACCENT: NIGHT GRAY



◆ HARDIEPANEL REVEAL PANEL SYSTEM 18" & 12" WIDTHS
COLOR: EVENING BLUE
ACCENT: BOOTHBAY BLUE



◆ HARDIEPANEL VERTICAL SIDING 4" & 6" WIDTHS
COLOR: RICH ESPRESSO
ACCENT: AGED PEWTER



VINYL DOUBLE HUNG WINDOWS
MFG: PELLA
COLOR: WHITE



◆ HARDIEPLANK LAP SIDING
COLOR: GRAY SLATE
4" EXPOSURE



◆ HARDIEPLANK LAP SIDING
COLOR: RICH ESPRESSO
4" EXPOSURE



◆ HARDIEPLANK LAP SIDING
COLOR: RICH ESPRESSO
7" EXPOSURE

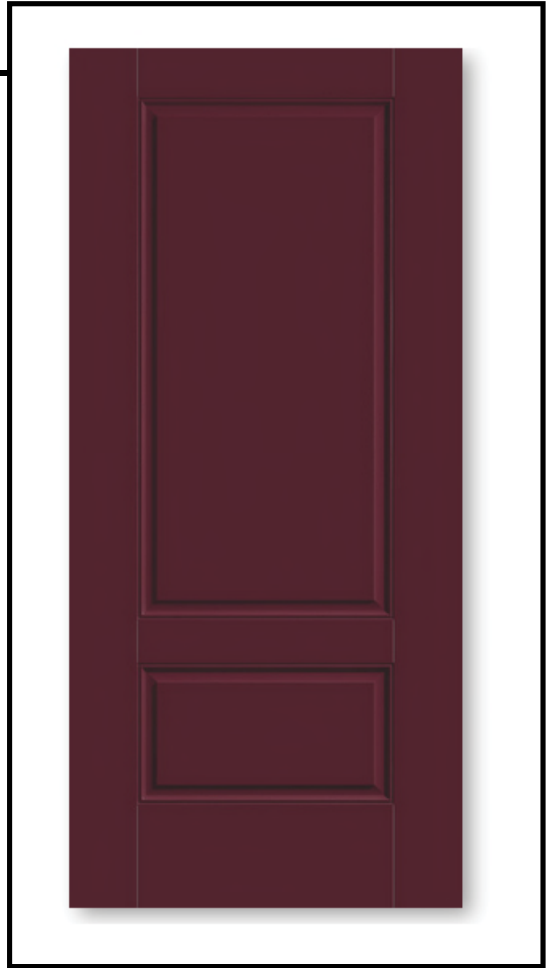
WINTER STREET ELEVATION



PERFORATED STEEL PANEL
1/2" DIA HOLES
PAINTED COPPER FINISH



FIBERGLASS IMPERVIA WINDOWS
MFG: PELLA
COLOR: CHARCOAL



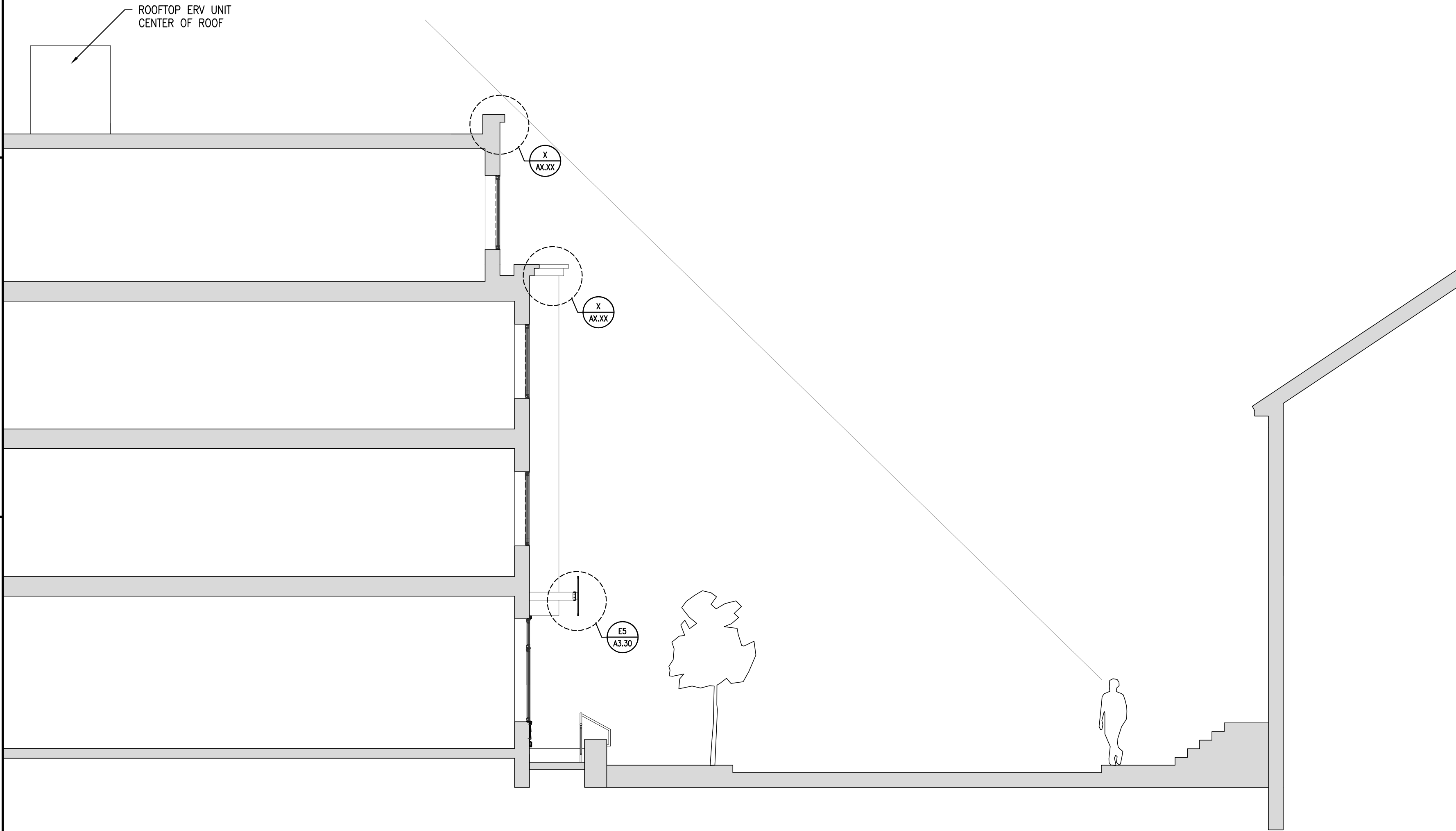
2 PANEL FIBERGLASS DOOR
MFG: THERMA-TRU SMOOTH-STAR S93
COLOR: CABERNET



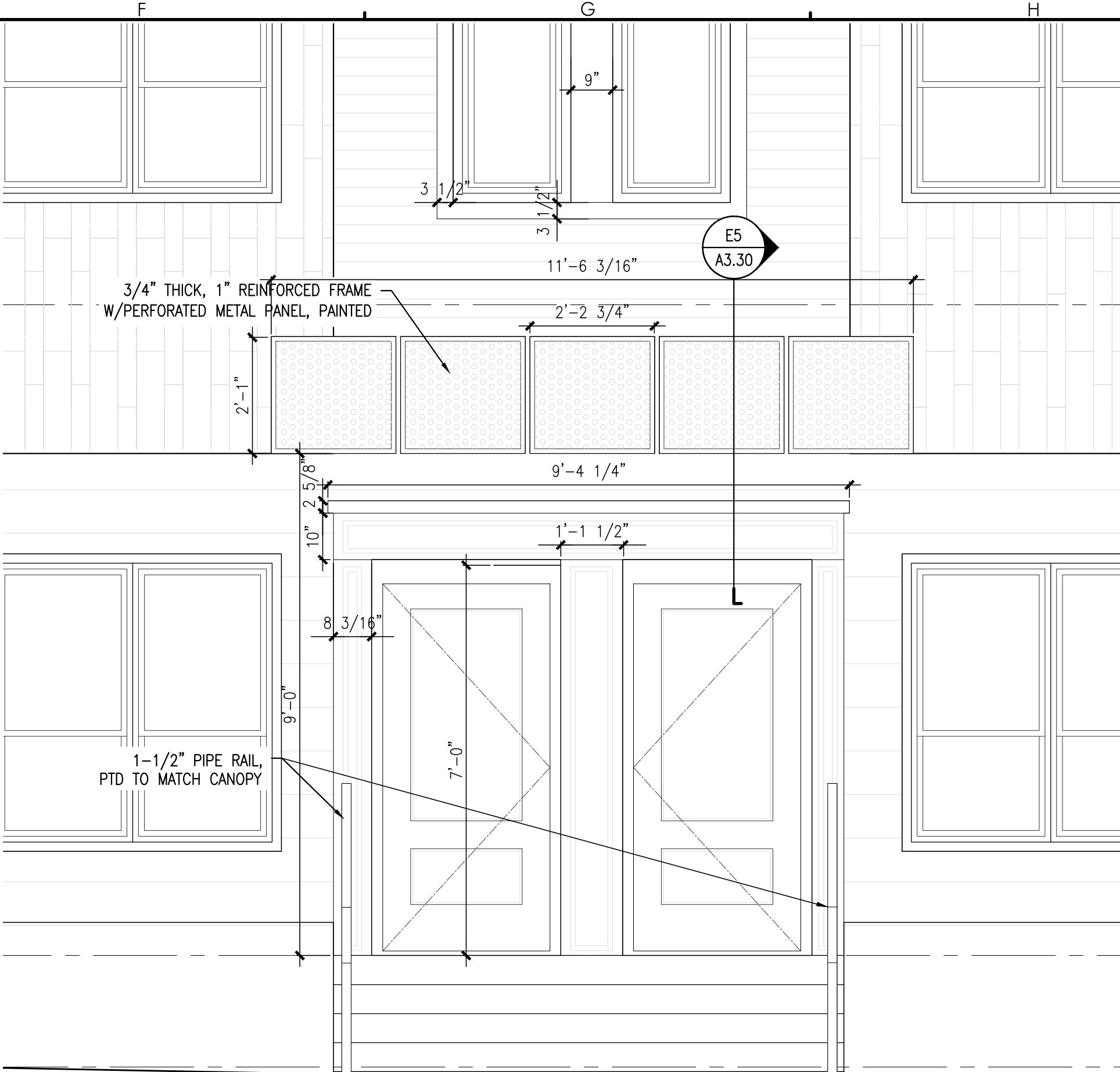
◆ HARDIEPLANK LAP SIDING
COLOR: GRAY SLATE
7" EXPOSURE



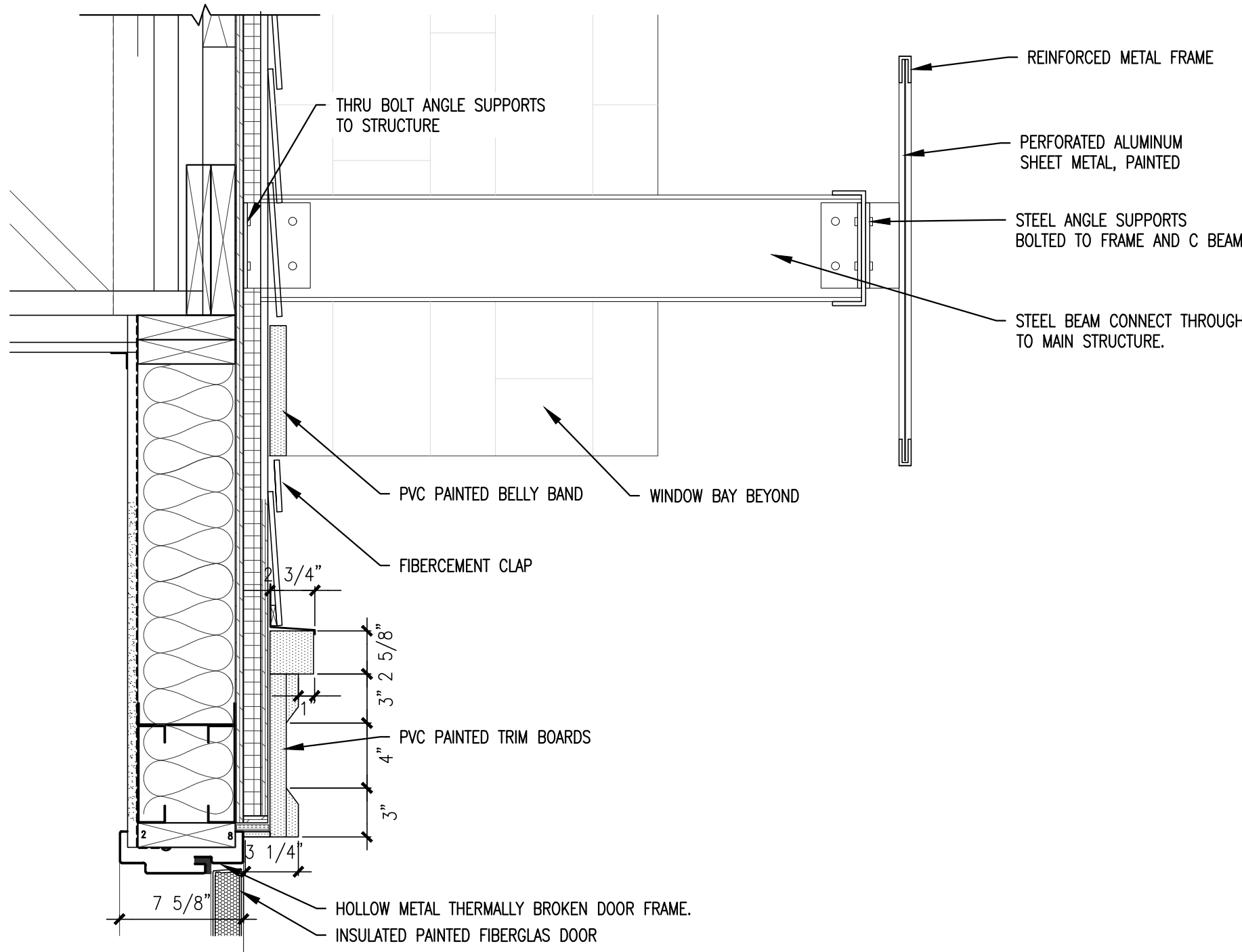
A3 RAILING ELEVATION - ENLARGED ENTRY ELEVATION
SCALE: $\frac{3}{8}" = 1'-0"$



A5 SECTION THROUGH STREET AT RAMP
SCALE: $\frac{3}{8}" = 1'-0"$



E5 ENLARGED UNIT ENTRY ELEVATION
SCALE: $\frac{1}{2}" = 1'-0"$



E5 DOOR HEAD AND CANOPY DETAIL AT UNIT ENTRY
SCALE: $1-1/2" = 1'-0"$

REVISIONS	DATE	DESCRIPTION

GENERAL NOTES:

- FOR INFORMATION REGARDING PROPOSED GROUND LEVEL LAYOUT, REFER TO SITE PLAN, SHEET C-10, MOST RECENT VERSION.
- FOR INFORMATION REGARDING PROPOSED UTILITIES, REFER TO THE UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
- FOR INFORMATION REGARDING PROPOSED GRADING AND STORMWATER, REFER TO THE GRADING PLAN, SHEET C-30, MOST RECENT VERSION.
- TOTAL SITE AREA FOR 120 STATE STREET INCLUDES 2.35 ACRES (102,343 S.F.). TOTAL SITE AREA FOR 148 STATE STREET INCLUDES 0.13 ACRES (5,651 S.F.).
- PROPOSED SITE AREAS FOR 120 STATE STREET, 148 STATE STREET, 73 WINTER STREET, AND 91 WINTER STREET ARE 1.60 ACRES (69,812 S.F.), 0.13 ACRES (5,651 S.F.), 0.39 ACRES (17,167 S.F.), AND 0.35 ACRES (15,364 S.F.), RESPECTIVELY.
- R.O.W. WIDTHS FOR STATE STREET, SPRING STREET, AND WINTER STREET ARE 99', 50', AND 40' WIDE, RESPECTIVELY, PER BOUNDARY SURVEY COMPLETED BY OWEN HASKELL, INC. DATED AUGUST 2020.
- SITE BOUNDARIES PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS PROVIDED BY OWEN HASKELL, INC. ON A PLAN ENTITLED BOUNDARY & TOPOGRAPHIC SURVEY AT 102 & 120 STATE STREET, PORTLAND, MAINE MADE FOR NEWHEIGHT REDFERN, LLC C/O JONATHAN CULLEY 167 NEWBURY STREET, #503 PORTLAND, MAINE DATED AUGUST 2020.
- AS OF 10/20/2020, THE SITE IS BOUNDED BY THE R-6 ZONE ON ALL SIDES PER CITY OF PORTLAND GIS ZONING MAP.
- LOCUS PARCELS ARE SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 45, BLOCK C, PARCELS 6 (148 STATE ST) AND 7 (120 STATE ST).
- LOCUS PARCELS DO NOT FALL IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 2300510013B, INDEX DATED 7/17/1986.
- THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO TWO HUNDRED AND SEVENTY-THREE (273) DWELLING UNITS ON THE EXISTING SUBJECT PROPERTIES.
- THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, RETAINING WALLS, AND SNOW REMOVAL.
- THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF CHAPTER 32 STORMWATER INCLUDING ARTICLE III, AT A MINIMUM. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF THE SUBMITTED STORMWATER MANAGEMENT PLAN AND THE APPROVED PLANS, AND MEET CITY STANDARDS AND STATE GUIDELINES.
- THE PROPOSED DEVELOPMENT MUST COMPLY TO THE FOLLOWING AS APPROVED BY THE CITY:
 - POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT: BOOK: _____ PAGE: _____

SURVEY NOTES:

- PREMISES IS SHOWN AS TM 45-C-6 (148 STATE ST) & 7 (120 STATE ST) ON THE CITY OF PORTLAND ASSESSORS MAPS.
- BEARINGS ARE BASED ON MAGNETIC 1957. COORDINATES ARE BASED ON CITY DATUM UTILIZING THE MONUMENTS SHOWN.
- THE LOCATIONS OF ALL UTILITIES SHOWN ON THE SURVEY ARE FROM VISIBLE SURFACE EVIDENCE ONLY.
- ELEVATIONS ARE BASED ON CITY DATUM AS PER MONUMENT T104-45-11 AT CORNER OF CLARK AND SPRING STREETS, ELEVATION = 127.91 FEET.
- PLAN REFERENCE NOTES:
 - "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR MERCY HOSPITAL DATED 3 FEB. 1982 REVISED THROUGH 15 MARCH 1982" BY H.I. & E.C. JORDAN, SURVEYORS.
 - "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR MERCY HOSPITAL DATED JUNE 17, 1981 REVISED OCT. 2, 1981" BY H.I. & E.C. JORDAN, SURVEYORS.
 - "STANDARD BOUNDARY & TOPOGRAPHIC SURVEY ON STATE STREET, PORTLAND, MAINE MADE FOR MERCY HOSPITAL DATED NOVEMBER 30, 1999 REV. 2 OCT. 04, 2012" BY OWEN HASKELL, INC.
 - "ALTA/ACSM LAND TITLE SURVEY, 102, 120 (AKA 144) & 148 STATE STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR MERCY HOSPITAL AND EASTERN MAINE HEALTHCARE SYSTEMS: FEBRUARY 27, 2013 LAST REVISION DATE: SEPT. 20, 2013 BY OWEN HASKELL, INC.
- UTILITY NOTE: THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATION THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

EASEMENTS:

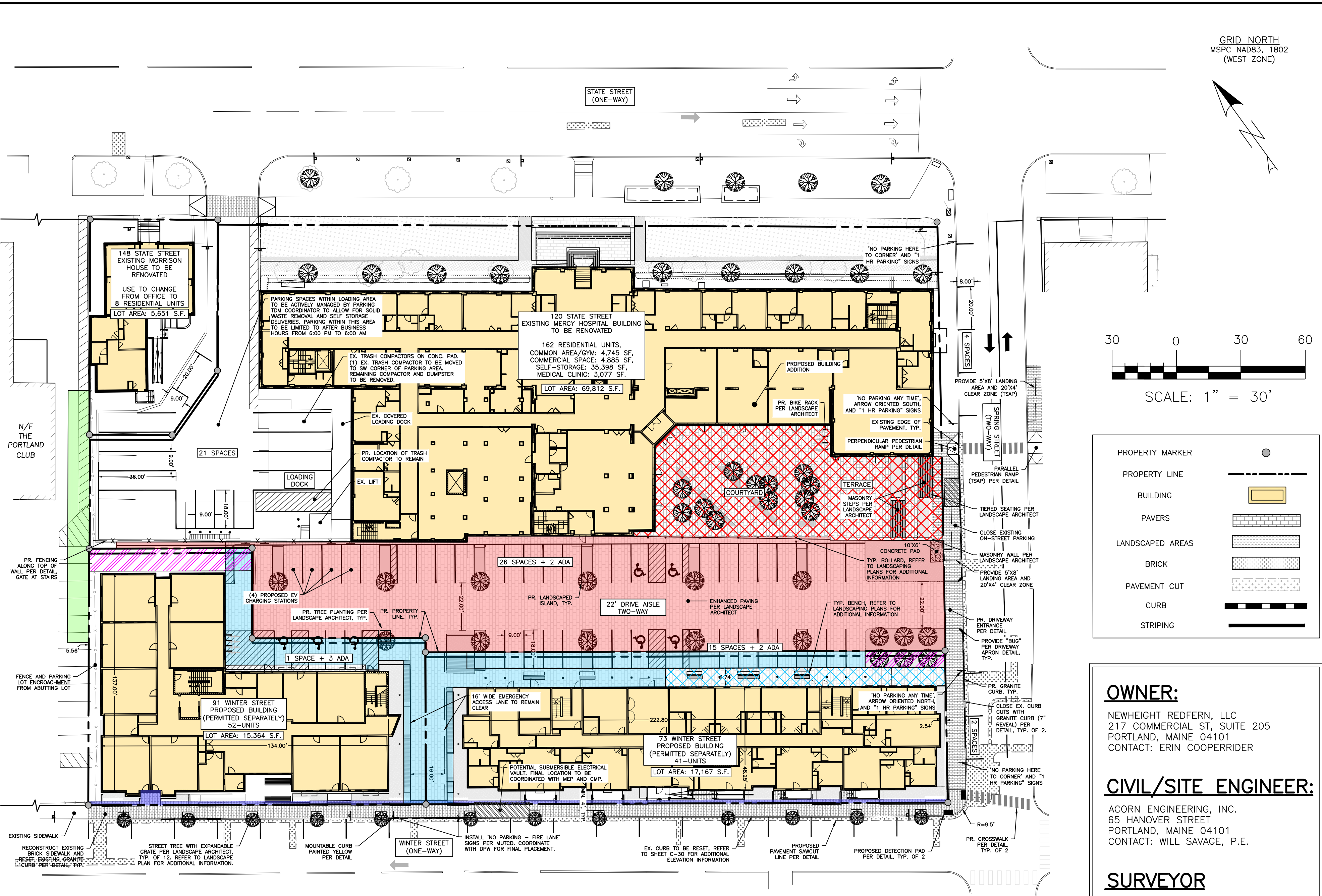
- EXISTING EASEMENTS:
- EASEMENT TO CENTRAL MAINE POWER COMPANY RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 16391, PAGE 232.
 - EASEMENT TO CENTRAL MAINE POWER COMPANY RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 28512, PAGE 45.
- PROPOSED EASEMENTS:
- ACCESS AND UTILITY EASEMENT FROM NEWHEIGHT REDFERN, LLC TO COMMUNITY HOUSING OF MAINE AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____
 - PEDESTRIAN EASEMENT FROM NEWHEIGHT REDFERN, LLC TO COMMUNITY HOUSING OF MAINE AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____
 - ACCESS AND UTILITY EASEMENT FROM COMMUNITY HOUSING OF MAINE TO NEWHEIGHT REDFERN, LLC AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____
 - PEDESTRIAN EASEMENT FROM COMMUNITY HOUSING OF MAINE TO NEWHEIGHT REDFERN, LLC AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____
 - MAINTENANCE EASEMENT FROM COMMUNITY HOUSING OF MAINE TO NEWHEIGHT REDFERN, LLC AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____
 - ACCESS AND UTILITY EASEMENT FROM THE PORTLAND CLUB TO NEWHEIGHT REDFERN, LLC AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____
 - MAINTENANCE EASEMENT FROM COMMUNITY HOUSING OF MAINE TO THE CITY OF PORTLAND AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS: BOOK: _____ PAGE: _____

CONDITIONS OF APPROVAL:

TBD

WAIVERS:

TBD



PARKING SUMMARY	
	# PARKING SPACES
EXISTING	59
STANDARD (9'X18')	63
ADA (8'X18')	7
NEW STREET PARKING (8'X20')	6
TOTAL PROPOSED SPACES	76

PROPOSED EASEMENT LEGEND

- CHOM ACCESS AND UTILITY EASEMENT
- CHOM PEDESTRIAN EASEMENT
- NRF ACCESS AND UTILITY EASEMENT (CHOM)
- NRF PEDESTRIAN EASEMENT
- NRF MAINTENANCE EASEMENT
- NRF ACCESS AND UTILITY EASEMENT (PORTLAND CLUB)
- CITY OF PORTLAND MAINTENANCE EASEMENT

SPACE AND BULK STANDARDS					
ZONE: B-3	REQUIRED	PROPOSED LOT A	PROPOSED LOT A-1	PROPOSED LOT A-2	148 STATE STREET (MORRISON HOUSE)
MINIMUM LOT AREA	NONE	69,812 SF	15,364 SF	17,167 SF	5,651 SF
MIN LOT FRONTAGE	15'	335'	151'	237'	59'
MIN LOT WIDTH	NONE	242'	76'	242'	59'
MAX HEIGHT	85' *	86'	53' *	45'	40'
STRUCTURE SETBACKS					
FRONT (MAX)	5'	21' (EXIST.)	5.00'	1.58'	11' (EXIST.)
SIDE (MIN)	NONE	1.99'	5.35'	2.54'	0' (EXIST.)
REAR (MIN)	NONE	56.96'	10.50'	10.50'	20' (EXIST.)
MAX IMPERVIOUS COVERAGE	100%	86%	94%	92%	89%
OFF STREET PARKING		SEE PARKING SUMMARY TABLE			
NET RESIDENTIAL DENSITY		167	58	41	8
* 45' MAX HEIGHT WITHIN 30' OF WINTER STREET RIGHT OF WAY. PROPOSED MAX HEIGHT OF BUILDING IN LOT A-1 IS 42' WITHIN 30' OF WINTER ST. R.O.W.					

THIS SURVEY CONFORMS TO THE CURRENT STANDARDS OF PRACTICE SET FORTH BY THE MAINE STATE BOARD OF LICENSURE FOR LAND SURVEYORS.

RANDY R. LOUBIER, MAINE P.L.S. #2407 DATE:



VICINITY MAP
NOT TO SCALE

GRID NORTH
MSPC NAD83, 1802
(WEST ZONE)

SCALE: 1" = 30'

- PROPERTY MARKER
- PROPERTY LINE
- BUILDING
- PAVERS
- LANDSCAPED AREAS
- BRICK
- PAVEMENT CUT
- CURB
- STRIPING

OWNER:

NEWHEIGHT REDFERN, LLC
217 COMMERCIAL ST, SUITE 205
PORTLAND, MAINE 04101
CONTACT: ERIN COOPERRIDER

CIVIL/SITE ENGINEER:

ACORN ENGINEERING, INC.
65 HANOVER STREET
PORTLAND, MAINE 04101
CONTACT: WILL SAVAGE, P.E.

SURVEYOR

OWEN HASKELL, INC.
390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE 04105
CONTACT: RANDY LOUBIER, P.L.S.

RECORDING INFORMATION
STATE OF MAINE, CUMBERLAND
COUNTY REGISTRY OF DEEDS

RECEIVED: _____

RECORDED IN _____

ATTEST: _____

REGISTRAR

APPROVED: PORTLAND PLANNING BOARD

CHAIRPERSON: _____ DATE: _____

ISSUED FOR
EASEMENT EXHIBIT
CHOM CITY REVIEW

SUBMISSION PLAT
120 & 148 STATE ST, 73 & 91 WINTER ST

MERCY HOSPITAL REDEVELOPMENT

NEWHEIGHT REDFERN, LLC
217 COMMERCIAL STREET, SUITE 205, PORTLAND ME 04101

DRAWING NAME:

PROJECT NAME:

ADDRESS:

CLIENT/OWNER OF RECORD:

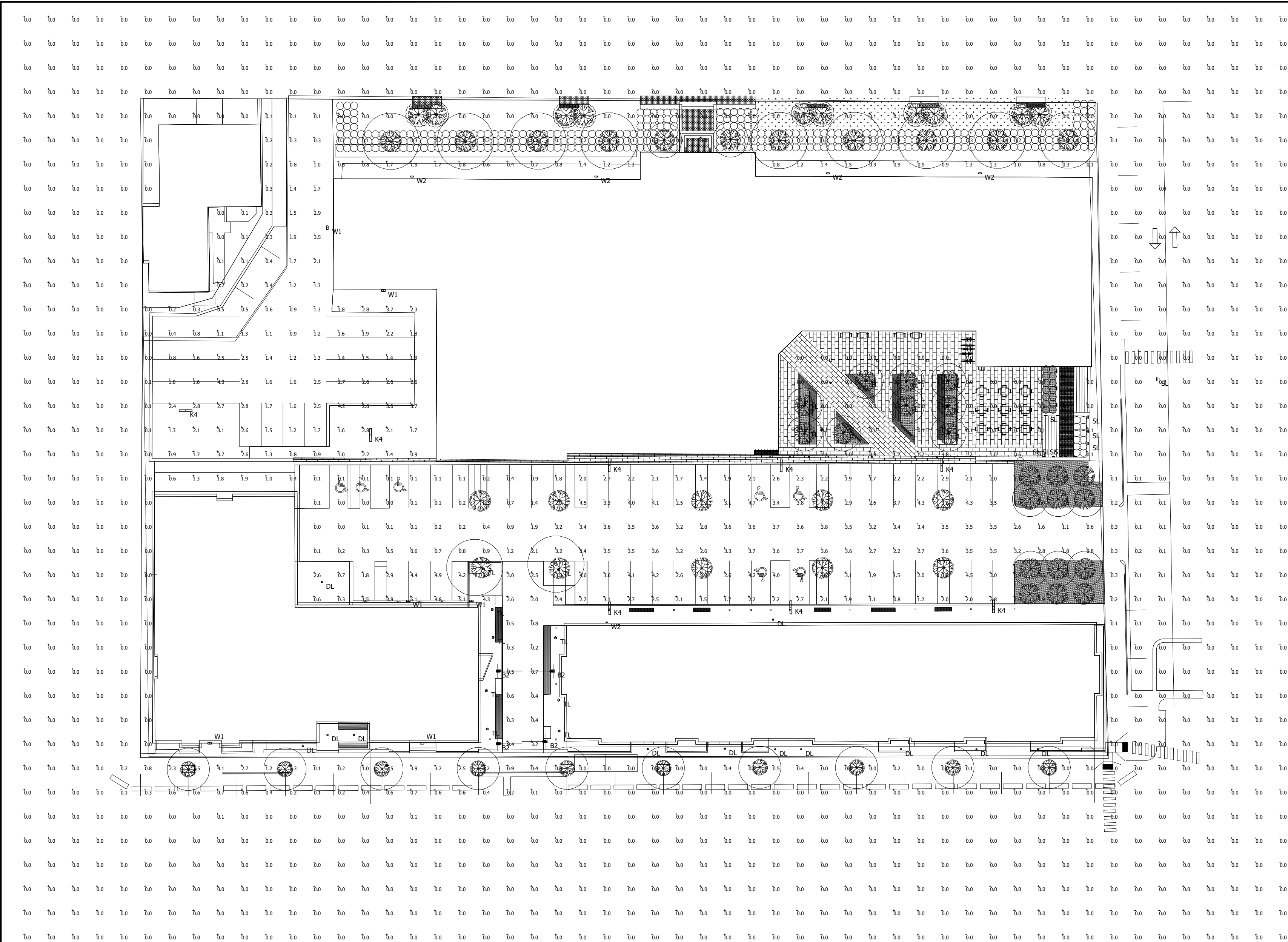
DATE

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE: 1140_CIVIL
JN: 1140
SCALE: AS NOTED
DESIGNED BY: PFH
DRAWN BY: KRB
CHECKED BY: WHS

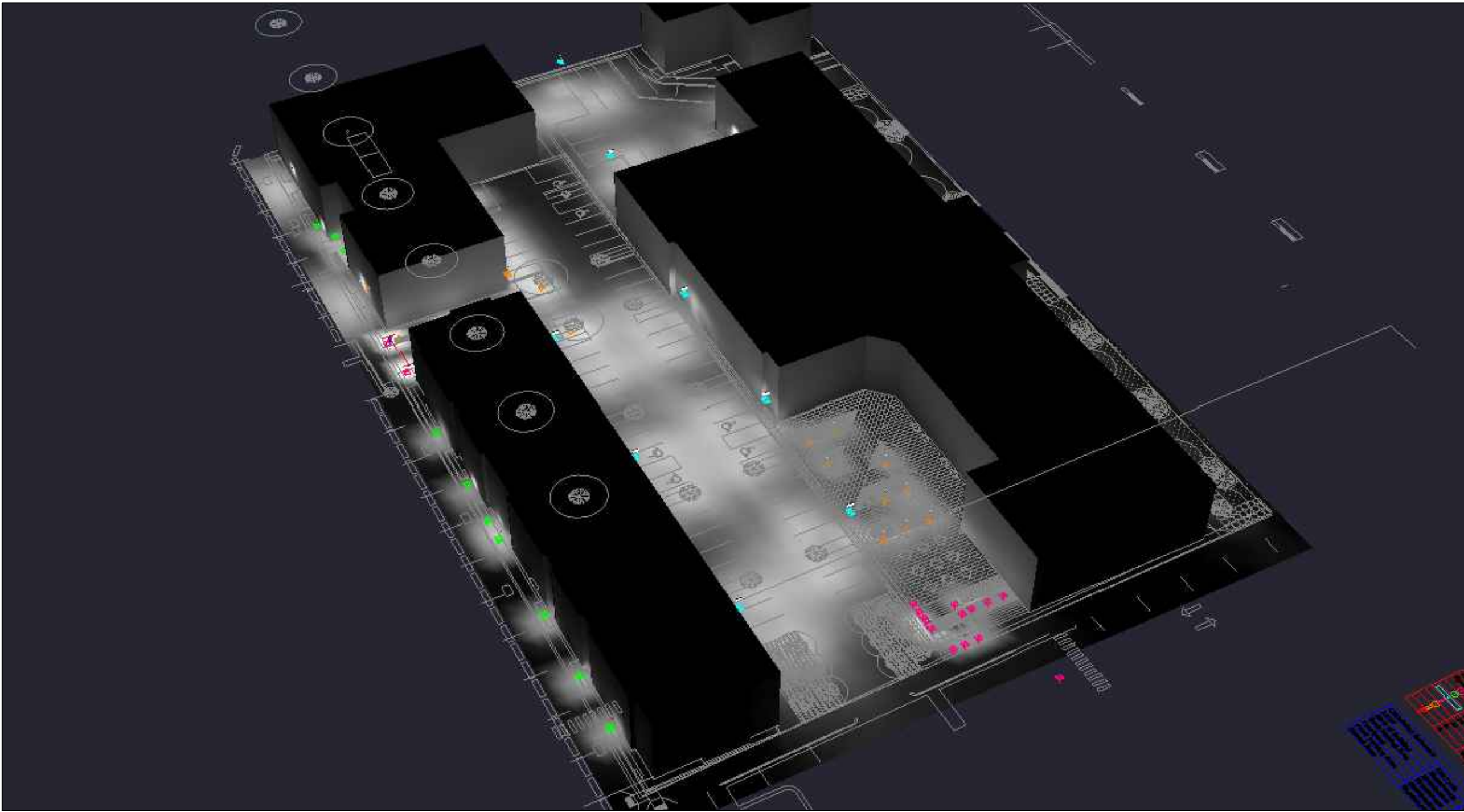
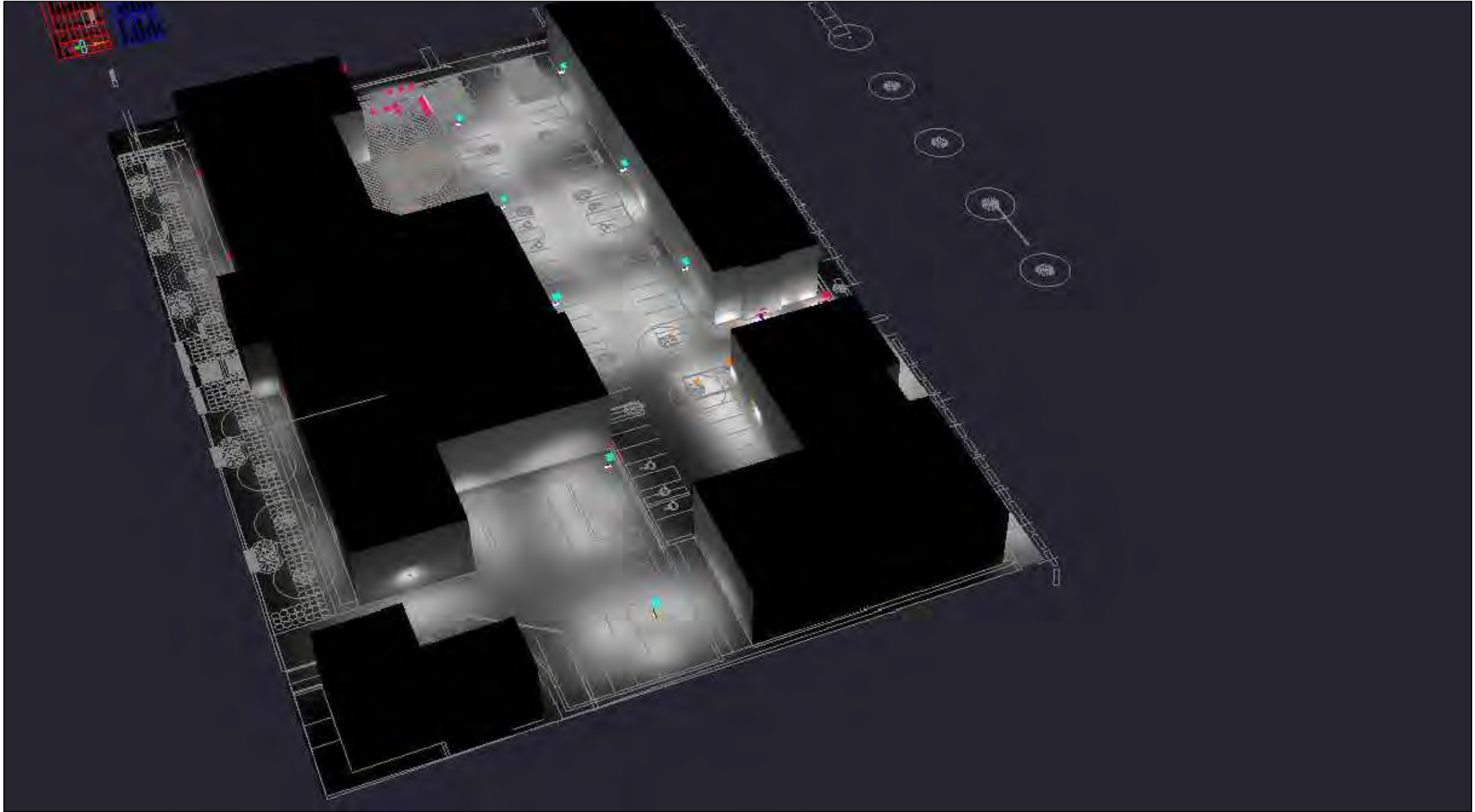
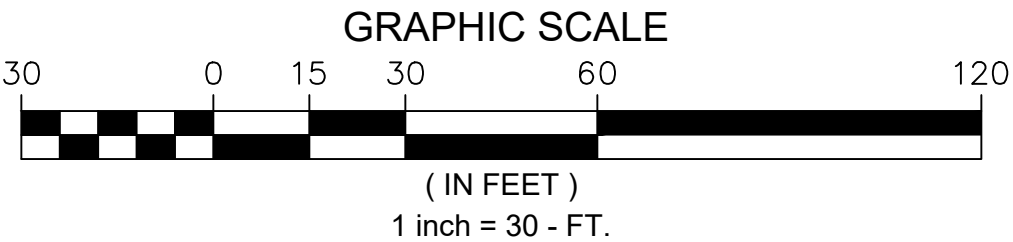
DRAWING NO.

PLAT



Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
+	4	B2	3' - 6" AFG	0.900	1679	20	SL1-18L3K
⊙	12	DL	8' - 0" AFG	0.900	664	8	LTR-4RD-H-SL06L-DM1_LTR-4RD-T-SL35K8WDS
-	8	K4	20' - 0" AFG	0.900	8516	90	K5X-T4-MO-9030
	14	SL	N/A	0.900	195	10.4	EL807_9L4K_KIT
⊙	18	TL	0' - 9" AFG	0.900	812	10.7	C24F3-9L4K
□	6	W1	12' - 0" AFG	0.900	3340	30	WDS-D-24L-30-3K7-3
□	5	W2	12' - 0" AFG	0.900	1272	17	LNC-7LU-3K-2

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Back of Building	Illuminance	Fc	0.36	1.7	0.0	N.A.	N.A.
Back Parking Area	Illuminance	Fc	1.73	4.3	0.1	17.30	43.00
Courtyard	Illuminance	Fc	0.31	4.8	0.0	N.A.	N.A.
Front Parking Area	Illuminance	Fc	2.02	4.7	0.0	N.A.	N.A.
Overall Area	Illuminance	Fc	0.42	6.1	0.0	N.A.	N.A.



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: MERCY PORTLAND, ME SITE PHOTOMETRIC PLAN				REVISED FROM DRAWING NUMBER(S):				 Hubbell Lighting, Inc. 701 MILLENNIUM BLVD. GREENVILLE, SC 29607		DN BY:		DATE:		CHK BY:	
				R1: 09/21/20		R5: 05/27/21				DHK		09/18/20		N/A	
				R2: 09/28/20		R6: 06/22/21				REV BY:		07/08/21		SCALE	
				R3: 11/24/20		R7: 07/08/21				DHK		AS NOTED			
				R4: 11/30/20						QUOTE:		N/A			
										DRAWING / DESIGN NO.					
										2026981R7					

From: **George Rheault** <george.rheault@gmail.com>

Date: Tue, Feb 23, 2021 at 9:49 AM

Subject: Public Comment 52 Hanover Street - Planning Equity - Mercy Hospital versus Tom Watson's Bayside Project

To: <planningboard@portlandmaine.gov>, Christine Grimando <cdg@portlandmaine.gov>, Kevin Kraft <kkraft@portlandmaine.gov>, James Rather <jrather@portlandmaine.gov>, James Dealaman <jdealaman@portlandmaine.gov>, jmy <jmy@portlandmaine.gov>, Caitlin Cameron <ccameron@portlandmaine.gov>
Cc: Kate Snyder <ksnyder@portlandmaine.gov>, April Fournier <afournier@portlandmaine.gov>, Nicholas Mavodones <nmm@portlandmaine.gov>, Pious Ali <pali@portlandmaine.gov>, Mark Dion <mdion@portlandmaine.gov>, Andrew Zarro <Azarro@portlandmaine.gov>, Tae Chong <tchong@portlandmaine.gov>, Spencer Thibodeau <sthibodeau@portlandmaine.gov>, Councilor Belinda Ray <bsr@portlandmaine.gov>

The City of Portland has a lot to answer for with respect to the radically different approaches it has taken in recent large-scale land-use matters.

I wish to submit the attached 2018 article for the Planning Board's review and absorption.

The article makes clear that when Jon Jennings's planning minions want to engage "early and often" with a neighborhood on a big project, they know how to do it.

The massive outstanding question is why NONE of this same approach was applied to the West Bayside neighborhood with respect to Tom Watson's proposed superblock apartment building planned for 52 Hanover Street. Mayor Snyder and Councilor Ray certainly know the answer to that question, but they do not plan to divulge any answers any time soon - absent public pressure.

This stark contrast is even more powerful with the spot zoning indulgences getting handed out for the Mercy Hospital site at last evening's City Council meeting.

Sadly we heard not a single peep from the "social justice" wing of the Council last evening about the equity shortcomings of the Mercy Hospital project (one block from a soon-to-be renovated elementary school in a high-opportunity area yet largely devoid of family housing opportunities).

Chilled into cowardly silence by the affluent elite consensus surrounding the sad NIMBY and developer compromises that are allowing the Mercy Hospital redevelopment to proceed, Ali, Fournier, Chong and Zarro showed their true commitment last evening to fair housing and the empty slogans of the "Equitable" bubble that remains inexplicably at the very top of our otherwise deeply reactionary Comprehensive Plan's "vision statement."

NB: It is also worth mentioning that Zarro spent another part of last evening tripping over himself to rationalize why he will soon restrict land-use further in Portland to protect affluent property-owners on Munjoy Hill, but was too shy and cowardly to ask why more was not being done to ensure equity on the Mercy Hospital parcels or why the intensive years-long "neighborhood outreach" there does not apply uniformly to all city land-use matters like the Riverton Homeless Services Shelter or the sale and redevelopment of the Bayside public works parcels.



Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Parking and Trees Mercy Hospital redevelopment plan ref: CHOM plan for Winter Street

jmy <jmy@portlandmaine.gov>

Thu, Feb 25, 2021 at 11:19 AM

To: "jmy@portlandmaine.gov" <jmy@portlandmaine.gov>

----- Forwarded message -----

From: Ginger Raspiller <mainelyearth@aol.com>

Date: Tuesday, February 23, 2021 at 8:38:15 AM UTC-5

Subject: Parking and Trees Mercy Hospital redevelopment plan ref: CHOM plan for Winter Street

To: planningboard@portlandmaine.gov <planningboard@portlandmaine.gov>, afournier@portlandmaine.gov <afournier@portlandmaine.gov>, azarro@portlandmaine.gov <azarro@portlandmaine.gov>, bsr@portlandmaine.gov <bsr@portlandmaine.gov>, council@portlandmaine.gov <council@portlandmaine.gov>, jpj@portlandmaine.gov <jpj@portlandmaine.gov>, ksnyder@portlandmaine.gov <ksnyder@portlandmaine.gov>, mdion@portlandmaine.gov <mdion@portlandmaine.gov>, nmm@portlandmaine.gov <nmm@portlandmaine.gov>, pali@portlandmaine.gov <pali@portlandmaine.gov>, sthibodeau@portlandmaine.gov <sthibodeau@portlandmaine.gov>, tchong@portlandmaine.gov <tchong@portlandmaine.gov>Cc: info@acorn-engineering.com <info@acorn-engineering.com>

All

CHOM has submitted their plan for 2 units of housing along Winter Street. I am happy to see more affordable housing in Portland. I continue to be concerned about the lack of parking for this project. Working folks in the affordable housing may need a car to get to and from work. This project will not give them the option for parking.

My second concern about the project is the lack of mature trees along the perimeter sidewalks. Portland is allowing developers to "build to the sidewalk" all over Portland. Commercial Street is now a brick wall that stretches for blocks without any trees. The West End is a residential neighborhood and should have tree-lined streets. What about climate change? What about shading units so they don't require as much cooling in the summer? Our condo is shaded by a large, mature tree which significantly reduces our summer cooling needs. Why not provide a strip of grass and some trees for the families that are going to live in these units and the pedestrians like me who will walk these streets?

Something more like this - just one block away on Winter Street:



I am including Acorn Engineering. I see in his profile that Mr. Savage enjoys the outdoors - perhaps he/we could try to keep a little more of the natural beauty of Maine - especially trees - in this project.

Ginger Raspiller

150 Spring Street #5

(20 year resident, avid walker and though 2 workers in the family, we only own one car and walk to as many destinations as possible)

Level III plan for Mercy Hospital campus: Winter Street housing for families and seniors

1 message

Ginger Raspiller <mainlyearth@aol.com>

Wed, Apr 28, 2021 at 4:15 PM

Reply-To: Ginger Raspiller <mainlyearth@aol.com>

To: "planningboard@portlandmaine.gov" <planningboard@portlandmaine.gov>, "ccameron@portlandmaine.gov" <ccameron@portlandmaine.gov>

I attended the workshop yesterday and very was disappointed with the street views for Winter Street.

Looking down that residential street from either direction - when you compare the existing homes to the new buildings ... the new buildings look like a wall. Mature trees could really make a positive difference and yet in spite of Jeff Tarling's warnings about using granite boxes to give trees a chance to survive the salt (and maybe even thrive), it appears we will be stuck with the flat grates that are "passable"? So are we considering these grates at the base of the trees as "sidewalks?" I would hate to be using a walker or wheelchair and have to navigate over the grates for lack of adequate sidewalk.

If you look just one block away at the new building that houses Rosemont and apartments, I'm afraid this is what Winter Street will look like:

The trees are certainly not thriving and if they survive, I can't image they will ever provide shade or the type of "softening" of the wall the landscape architects keep talking about.



As a resident in the area, the parking situation continues to concern me. The Mercy building has 175 units + retail + medical clinic.

Morrison house: 8 units

Senior housing: 55 units

Family housing: 40 units

Total units 273 and there are only 75 parking spaces. If Newheight leases 20 spaces to the senior and family housing (95 units), the Mercy building and Morrison house only have 55 parking spaces for their 183 units! What happened to the underground parking underneath the senior housing that was shown on earlier versions of the plan?

I am supportive of walking, biking and using public transportation, but I don't see how this is not going to lead to issues with parking in our neighborhood.

Ginger Raspiller
150 Spring Street Portland

Public Comment on 73 and 91 Spring Street (PL-001371-2020)

Elizabeth Parsons <ecparsons33@hotmail.com>

Wed, Jul 7, 2021 at 10:14 AM

To: "planningboard@portlandmaine.gov" <planningboard@portlandmaine.gov>

Cc: "ccameron@portlandmaine.gov" <ccameron@portlandmaine.gov>

Dear Members of the Planning Board:

Please accept these brief comments as indication of my warm support for the senior and multi-family housing slated to be constructed by CHOM and PHA. The applicants' interactions with neighborhood residents have been consistent, cordial, and respectful. They have also paid attention to the context in which these buildings will be erected and the results of their efforts are evident in the buildings' proposed designs.

Sincerely,
Elizabeth Parsons
44 Winter Street
Past President, West End Neighborhood Association

73/91 Winter Street DPW comments

Mike Tremblay <mtremblay@portlandmaine.gov>
To: Caitlin Cameron <ccameron@portlandmaine.gov>

Fri, Jul 2, 2021 at 1:17 PM

Caitlin,

Here are my initial comments for 73/91 Winter Street

- These comments do not discuss the parking area shared with adjacent developments. Some issues with this parking area have not been addressed as of this email.
- The vault shown in the Winter Street sidewalk must be set to a precise elevation consistent with the plans. Differences in the vault elevation can render the sidewalk noncompliant with ADA, and it is often too late to make changes without great expense by the time the issue is noticed. Special care should be taken when setting this vault.
- Some trenches may need to be repaired with a common trench (typically of trenches are 5 feet or less apart).
- The emergency egress should be signed as No Parking. Specialty curb (mountable/chamfered curb) should be considered. The section of the sidewalk through the emergency entrance should be constructed using driveway-standard base gravels and pavement.
- Tree grates aren't supported by PRF, and raised tree planters aren't supported by DPW. The applicant should consider porous rubber tree pits or another hybrid material.
- Both ramps on Winter Street should be upgraded to ADA compliance.

Mike Tremblay, P.E.
Senior Engineer
Engineering Division
Department of Public Works
City of Portland, ME
mtremblay@portlandmaine.gov
P. 207.874.8881 F. 207.874.8852



--

Mike Tremblay, P.E.
Senior Engineer
Engineering Division
Department of Public Works
City of Portland, ME
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CHOM/144 State Street Parking Review

om Errico <thomas.errico@tylin.com>
To: Caitlin Cameron <ccameron@portlandmaine.gov>
Cc: Michael Tremblay <mtremblay@portlandmaine.gov>

Tue, Jun 29, 2021 at 10:36 AM

Hi Caitlin – the proposed project is estimated to generate approximately 20 peak hour trips and thus would not be expected to have a significant traffic or safety impact to the adjacent roadway system.

If you have any questions, please contact me.

Thanks

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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Twitter | Facebook | LinkedIn | Instagram

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- The parking generation rate for the Mercy Hospital building residential units was based on market rate apartments in a dense multi-use urban location with a parking rate of 0.48 parking spaces per bedroom. This rate seems reasonable and for 159 bedrooms, 76 parking spaces are required.
- The parking generation rate of the Affordable Housing units in the Mercy Hospital building used a parking rate of 0.30 parking spaces per bedroom. This ITE rate seems reasonable and for 18 bedrooms, 5 parking spaces are required. **The applicant should provide an explanation on use of the independent variable bedrooms for this land use versus units utilized for the CHOM building.**
- The parking generation rate for the medical clinic facility used a parking rate of 3.89 parking spaces per 1,000 SF of space. This rate seems reasonable and for the 3,849 SF space, 15 spaces are required.
- The parking generation rate for the Variety Store used a parking rate of 1.13 parking spaces per 1,000 SF of space. This rate seems reasonable and for the 1,635 SF space, 2 spaces are required.
- The parking generation rate for the Self-Storage facility used a parking rate of 0.10 parking spaces per 1,000 SF of space. This rate seems reasonable and for the 41,209 SF space, 4 spaces are required.

- The parking generation rate for the Office space used a parking rate of 2.56 parking spaces per 1,000 SF of space. This rate seems reasonable and for the 787 SF space, 2 spaces are required.
 - The parking generation for the Coffee Shop assumed parking for 3 employees.
 - The parking generation for the Hair salon assumed parking for the owner or 1 space.
 - The CHOM Affordable Family Housing Units assumed a parking generation rate of 0.53 parking spaces per unit. This rate seems reasonable and for the 41 units, 22 spaces are required (**see above for understanding use of Units vs. Bedrooms**).
 - The CHOM Senior Housing Units assumed a parking generation rate of 0.31 parking spaces per unit. This rate was based on a blended rate considering ITE and local data. It does seem reasonable and for the 58 units, 18 spaces are required.
- Overall, the average parking demand for the project is estimated at 148 parking spaces. The applicant implemented adjustments to account for interaction between land uses and reduced parking demand by 10% according to methods contained in the report NCHRP 684 Internal Trip Capture Estimation Tool. **I continue to review the applicability of the reduction and request the applicant provide the supporting calculations for this project (the calculations in the Appendix do not represent the proposed development program).**
 - The applicant conducted a time-of-day parking demand analysis that reflects hourly parking demand estimates for the project land uses. I generally find the methodology to be reasonable with the following comments:
 - The analysis assumed the coffee shop parking demand ends at 2pm. Although not a big factor, it may make sense to assume a later closing time.
 - I continue to review the time-of-day distribution for the residential land uses. The ITE distribution is based on a single urban/suburban site and I want to investigate other data sources.
 - The analysis indicates that the highest parking demand is expected to be 83 parking spaces at 5pm and 8pm. **If the residential uses generate full demand at night (after 8pm and before 7am), the project will require 108 parking spaces (16 for Affordable Housing+20 for Affordable Family+68 for Market Apartments+4 spaces for Workforce Apartments). This would seem to be the highest demand time period.**
 - **Given that the project is assuming a shared parking environment for ALL land uses, a parking management plan for the site shall be prepared for review and approval.**

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
 Senior Associate
 Traffic Engineering Director
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Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
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Re: 144 State (91 and 73 Winter)

Jeff Tarling <jst@portlandmaine.gov>
 To: Caitlin Cameron <ccameron@portlandmaine.gov>
 Cc: Mike Tremblay <mtremblay@portlandmaine.gov>

Thu, Apr 15, 2021 at 5:06 PM

Hi Caitlin -

The tree type and spacing look good, we should discuss the best options for tree planting within the sidewalk. Ideally, Silva cel or structural soil along the project frontage and some type of raised granite tree planter to protect from deicing salt. ALL the current trees planted on this side of Winter Street has struggled due to over application of salt, thus we need to resolve this issue. The challenge to maintain ADA sidewalk width and room for trees, the Winter Street neighbors have been very active in supporting street trees. Would like to discuss with Mike on options.

Thanks

Jeff

Jeff Tarling
 City Arborist - City of Portland Maine
 Parks, Recreation & Facilities Department
 Forestry & Horticulture
 212 Canco Road - Suite A
 Portland, ME. 04103
 (207) 808-5400
 jst@portlandmaine.gov

On Tue, Apr 13, 2021 at 11:54 AM Caitlin Cameron <ccameron@portlandmaine.gov> wrote:
 PL-001371-2020

On Tue, Apr 13, 2021 at 9:07 AM Jeff Tarling <jst@portlandmaine.gov> wrote:
 Hi Caitlin -

What is the project number or name so I can check the plan.

Thanks

Jeff

Jeff Tarling
 City Arborist - City of Portland Maine
 Parks, Recreation & Facilities Department
 Forestry & Horticulture
 212 Canco Road - Suite A
 Portland, ME. 04103
 (207) 808-5400
 jst@portlandmaine.gov

On Tue, Apr 13, 2021 at 9:02 AM Caitlin Cameron <ccameron@portlandmaine.gov> wrote:
 Just a reminder that I need any additional/updated comments for the two Winter Street projects by end of today for the Planning Board workshop memo.

Thanks,

TDM Plan PL-1371-2020: 73 & 91 Winter Street Housing Projects

Bruce Hyman <bhyman@portlandmaine.gov>
To: Caitlin Cameron <ccameron@portlandmaine.gov>

Wed, Jun 30, 2021 at 3:06 PM

Good afternoon, Caitlin,

I have reviewed the Transportation Demand Management Plan (dated 5/28/21) for the 73 and 91 Winter Street Housing Projects and find that it meets the requirements for TDM Plans, with no further comments. The Plan is a requirement for projects that use the waiver from parking minimums (Table 19-B: Categorical Exclusions to Off-Street Parking Minimums).

The Plan describes the transportation context of the projects, sets solid parking and trip reduction targets, establishes a strong mode split goal for the residents, has a robust menu of TDM strategies and contains a good evaluation and monitoring program.

Please don't hesitate to contact me if you have any questions.

Bruce

--

Bruce Hyman
Transportation Program Manager

Department of Planning & Urban Development
389 Congress Street
Portland, Maine 04101
(207) 874-8717 phone

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<http://www.portlandmaine.gov/1363/Transportation-Division>
<http://www.portlandmaine.gov>

Yes! Transportation's Good Here



To: Caitlin Cameron, Urban Designer, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: June 30, 2021

Subject: 73 Winter Street

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Chapter 14, Section 18.2.3 of the Zoning Ordinance.

Section 18.2.3 B, Applicability, allows the exemption for projects using public financing requiring affordability restrictions, as defined by tax increment financing, U.S. Department of Housing and Urban Development funds such as HOME or CDBG, other federal, state or local housing program, or the Low-Income Housing Tax Credit program.

The development located at 73 Winter Street proposes the creation of 43 dwelling units of rental housing consisting of six (6) efficiency units, fifteen (15) one-bedroom units, thirteen (13) two-bedroom units, and nine (9) three-bedroom units. The applicant has elected to provide 43 units of low-income housing; twenty-six (26) are targeted towards households earning 50% AMI, and seventeen (17) are target towards households earning 60% AMI. During their July 19, 2021 meeting, the City Council will consider the approval of an Affordable Housing Tax Increment Financing agreement (AHTIF) to help finance this proposal. Additionally, the City Council will also consider the request by Community Housing of Maine (CHOM) for \$400,000 in HOME funding. This project is also seeking 9% Low Income Housing Tax Credit and tax-exempt debt with MaineHousing. Staff has determined this project meets the exemptions under Section 18.2.3 B.

Staff recommends the Board exempt this project under Section 18.2.3. B of the Code.

Sincerely,

Victoria Volent
Housing Program Manager

To: Caitlin Cameron, Urban Designer, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: June 30, 2021

Subject: 91 Winter Street

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Chapter 14, Section 18.2.3 of the Zoning Ordinance.

Section 18.2.3 B, Applicability, allows the exemption for projects using public financing requiring affordability restrictions, as defined by tax increment financing, U.S. Department of Housing and Urban Development funds such as HOME or CDBG, other federal, state or local housing program, or the Low-Income Housing Tax Credit program.

The development located at 91 Winter Street proposes the creation of 52 dwelling units of rental housing consisting of fifty-two (52) one-bedroom units. The applicant has elected to provide 52 units of low-income housing; thirty-two (32) are targeted towards households earning 50% AMI, and twenty (20) are target towards households earning 60% AMI. During their July 19, 2021 meeting, the City Council will consider the approval of an Affordable Housing Tax Increment Financing agreement (AHTIF) to help finance this proposal. Additionally, the City Council will also consider the request by Community Housing of Maine (CHOM) for \$200,000 in federal and local housing program funding. This project is also seeking 9% Low Income Housing Tax Credit and tax-exempt debt with MaineHousing. Staff has determined this project meets the exemptions under Section 18.2.3 B.

Staff recommends the Board exempt this project under Section 18.2.3. B of the Code.

Sincerely,

Victoria Volent
Housing Program Manager

PLANNING BOARD REPORT PORTLAND, MAINE



33 Montreal Street
Level III Site Plan and Subdivision
37 Montreal Street LLC, Applicant
PL-000807-2019 CBL: 015 B022

Submitted to: Portland Planning Board
Public Hearing Date: July 13, 2021

Prepared by: Andrew Tufts, Planner
Date: July 9, 2021



Figure 1: Parcel outline - Source: CONNECTexplorer

I. INTRODUCTION

37 Montreal Street LLC., has submitted a Level III Site Plan and Subdivision application for the development of a four story, nine-unit residential building of 23,400 square feet in size at 33-37 Montreal Street. The subject property is a 10,804 square foot parcel located at the corner of Montreal Street and Willis Street. The subject property is zoned R-6 Residential, is within the Munjoy Hill Neighborhood Conservation Overlay District (MHNCO), and seeks to utilize the provisions within Sec. 14-140.5 of the legacy Land Use Code to allow for an additional ten feet of building height via the provision of a workforce housing unit onsite for projects located within the MHNCO.

The Planning Board held a public workshop for this application on September 24, 2019. At that meeting, the project was presented to the Board by the Planner, Urban Designer, and the applicant team, which was followed by Board questions. Public testimony was then provided, primarily focusing on issues of scale, massing, and neighborhood compatibility. Board deliberation concurred with staff's assessment that the neighborhood scale is transitory, which affords greater interpretation in the building's mass and form. The Board appreciated the efforts made to conceal the garage entrance while preserving first floor privacy. One area of concern was the building entrance along Willis Street. The Board requested that the applicant explore ways to humanize the space, which the applicant has since accomplished in their updated plans. Following the workshop, the project experienced a delay and period of dormancy while the applicant explored ways to incorporate the required workforce housing unit into the building in a manner that comports with the City's minimum square footage requirements for workforce units while meeting their development objectives.

As this project was filed and received its initial Planning Board workshop prior to the December 1, 2020 adoption of the current Land Use Code, it is subject to the previous code, and all code citations within this report have been made accordingly.

A total of 213 notices were sent to property owners within 500 feet of the site and a legal notice ran in the July 2nd & July 3rd 2021 editions of the *Portland Press Herald*.

Applicant: 37 Montreal Street LLC

Consultants:

- Richard Lo, AIA (Kaplan Thompson Architecture)
- Dustin Roma, P.E. (DM Roma Consulting Engineers)
- John Swan, Surveyor (Owen Haskell Inc)

II. REQUIRED REVIEWS

<i>Review</i>	<i>Applicable Standards</i>
Site Plan	<i>Section 14-526</i>
Subdivision	<i>Section 14-497</i>

III. PROJECT DATA

Existing Zoning	R-6 Residential & Munjoy Hill Conservation Overlay District
Existing Use	Three single family homes
Proposed Use	9-unit multi-family building
Bedroom Mix	8 three-bedroom units, 1 two-bedroom unit
Parcel Size	10,804 sf

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	2,240 sf	5,800 sf	+ 3,560 sf
Building Floor Area	3,775 sf	29,200 sf	+ 25,425 sf
Impervious Surface Area	4,724 sf	8,000 sf	+ 3,276 sf
Parking Spaces	4	13	+ 9
Bicycle Parking Spaces	0	5	+ 5



Figure 2: Existing axonometric perspective - Source: CONNECTexplorer

IV. BACKGROUND & EXISTING CONDITION

The development site is located on the northern corner of Montreal and Willis streets in Portland's Munjoy Hill neighborhood and is developed with three existing single-family homes. All of the existing buildings are currently vacant. The site is bordered by the MacArthur Gardens Apartment complex to the northeast, with single-family homes to the east, south, and west. Additionally, the 14-story Promenade East Condominiums Tower is located approximately 200 feet to the north, across Walnut Street, which neighbors the Island View Apartment complex. Both are large-scale residential developments. The sidewalks along both Montreal and Willis streets are in need of repair. There are three established street trees along Montreal and Willis streets; these include Sweet Gum, Honey Locust, and Sugar Maple varieties. A fourth street tree exists along Willis Street, but is in poor condition and should be replaced. The nearest open space is the Eastern Promenade, an approximately three-minute walk down Montreal Street. Fort Sumner Park is an

approximately four-minute walk to the southwest. There are two community gardens: the Casco Bay Community Garden, located to the northeast, and the North Street Community Garden to the west; both are an approximately five-minute walk from the development site. METRO Bus Route 1 has stops along North Street and the Eastern Promenade roughly two blocks west and one block north of the development site, respectively.

Owen Haskell, Inc. completed a boundary and topographic survey of the site in August of 2017. There were no existing or proposed easements identified.



Figure 3: Conceptual renderings - Source: Kaplan Thompson Architects

V. PROPOSED DEVELOPMENT

The proposed development is a four-story, nine-unit residential building approximately 23,400 square feet in size. To facilitate this development, three existing vacant single-family structures would be demolished. The new building would include a basement-level structured parking garage of approximately 5,800 square feet in size, and would contain 13 parking spaces, storage, mechanical rooms, trash room, and bike storage. The garage would be accessed via a new driveway off Montreal Street, located at the rear of the building. The proposed building would contain nine dwelling units with a total enclosed area of approximately 23,400 square feet. The ground floor is proposed to include one two-bedroom unit, two three-bedroom units, an entrance lobby, and package room. Floors two through four are each proposed to include two three-bedroom units. A series of terraces are proposed to address the grade change on site. A landscape plan illustrates the planting pallet to be incorporated with the terraces.

The proposed project seeks to take advantage of a 10-foot height bonus (from 35 feet up to 45 feet) pursuant to Land Use Code Section 14-140.5(c), *Munjoy Hill Neighborhood Conservation Overlay District*, which includes a provision for eligible projects of three units or more that include at least one “workforce housing unit for rent.” The unit intended to qualify as rental workforce housing is Unit 14, a two-bedroom unit.

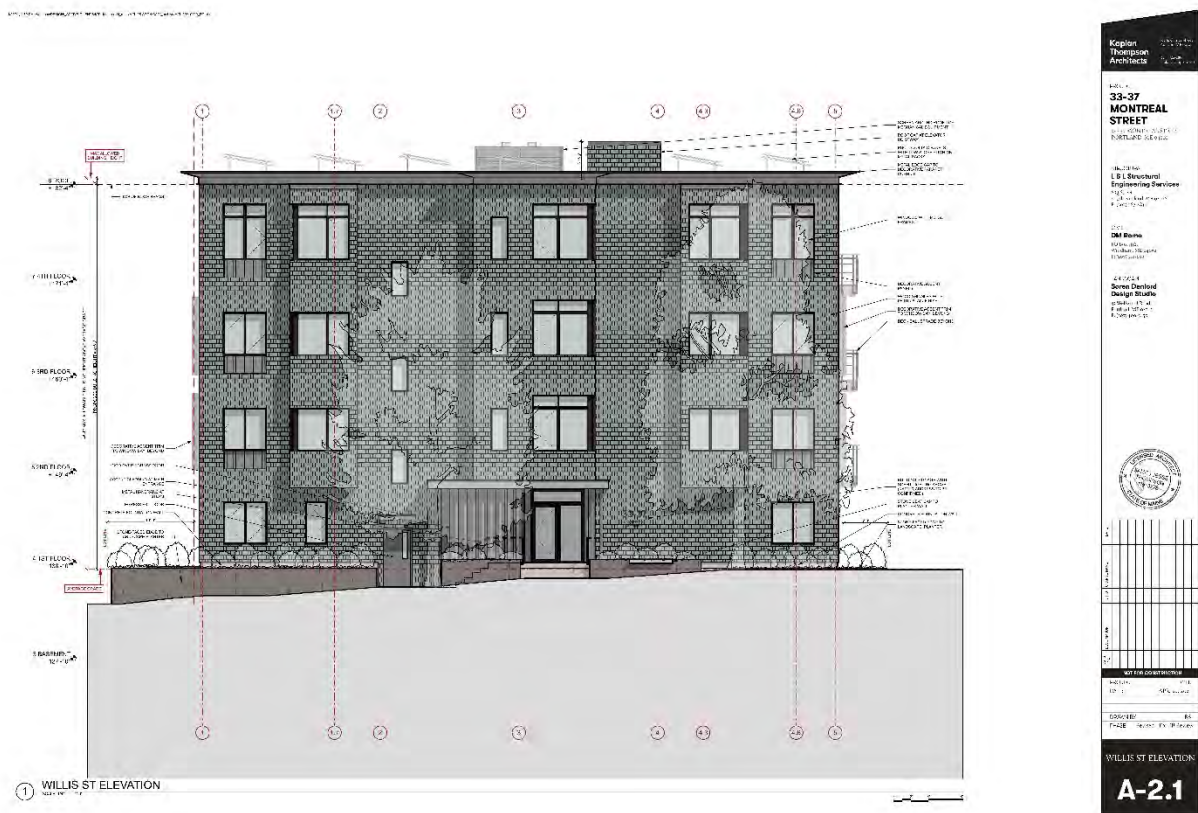


Figure 4: Proposed elevation - front of building – Source: Kaplan Thompson Architects

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

The owner of the property is 37 Montreal Street, LLC. The applicant has provided a copy of the warranty deed, recorded at the Cumberland County Registry of Deeds (Book 8708, Page 61), which demonstrates their right, title and interest in the property.

As evidence to demonstrate sufficient financial and technical capacity, the applicant has provided a letter from Camden National Bank indicating that between the applicant’s funds and bank financing, the applicant has sufficient financial capacity to complete the proposed project. Similarly, information has been provided on the development team demonstrating the capacity to design and construct the project.

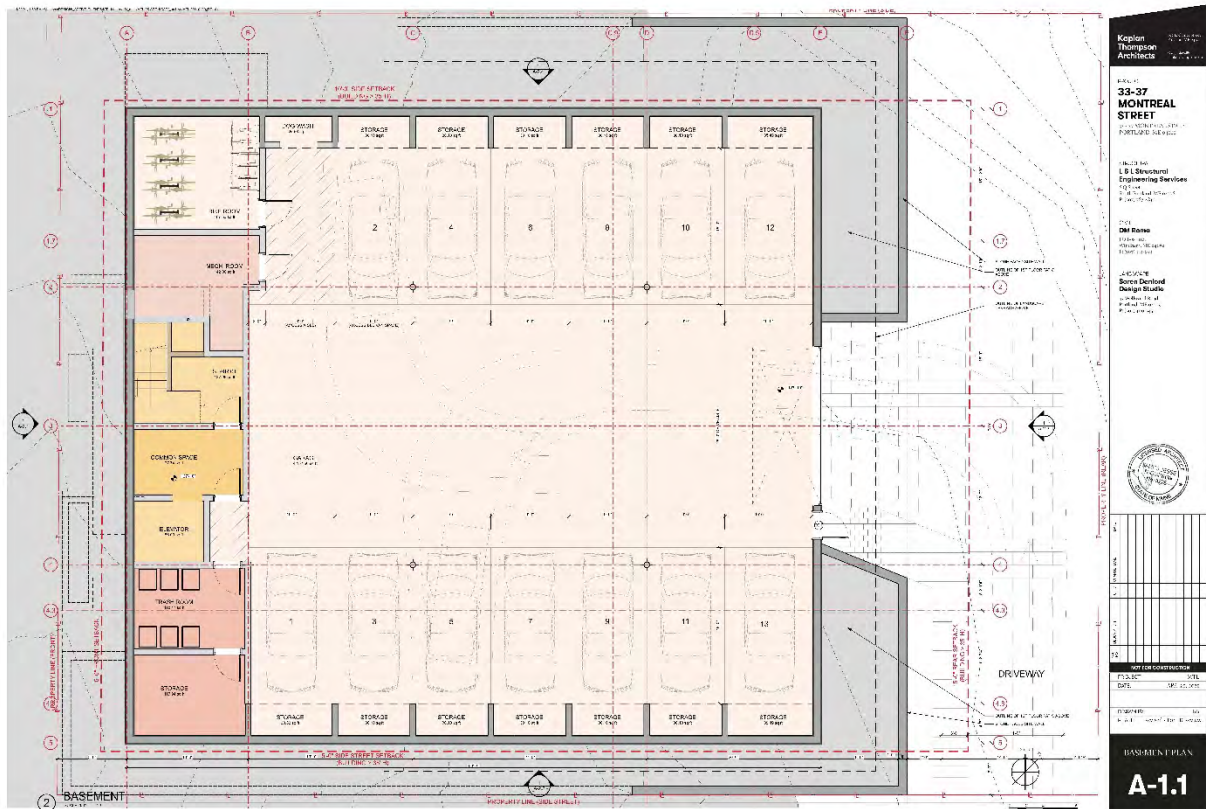


Figure 5: Plan - basement parking garage - Source: Kaplan Thompson Architects

VII. ZONING ANALYSIS

The property lies within the R-6 Residential zone and within the Munjoy Hill Neighborhood Conservation Overlay District. The following dimensional and parking requirements apply to the R-6 zone:

R-6 Summary of Dimensional and Parking Requirements Applied to 33 Montreal Street		
	Required	Proposed
Minimum Lot Size	2,000 sf	10,800 sf
Area Per Dwelling Unit	725 sf	1,200 sf
Minimum Street Frontage	20 ft	90 ft (Willis St)
Front Yard Minimum	5 ft	5 ft
Rear Yard Minimum	15 ft	30 ft
Yard Left Minimum	10 ft	10 ft
Side Street Setback	5 ft (>35 height)	5 ft/ 3 ft
Step Back	15 ft rear/ 10 ft side	>30 ft rear/ 10 ft side
Maximum Lot Coverage	60%	53%
Maximum Height ¹	45 ft above avg. grade	44.5 ft
Landscape Open Space	20%	26%
Off-Street Parking	1 space per unit	1.4 per unit

¹ Maximum height: 45 feet for developments of 3 units or more on lots over 2,000 sf. that include at least one workforce housing unit. Workforce units shall be no smaller than 50% of the average size of the other units in the development.

VIII. MUNJOY HILL NCOD & WORKFORCE HOUSING REQUIREMENTS

33-37 Montreal Street proposes the creation of nine residential units within the Munjoy Hill Neighborhood Conservation Overlay District. The height of the building will be greater than 35 feet. Subsequently, the project triggers Land Use Code Section 14-140.5 (c), *Maximum Height*, and is required to include one workforce housing unit for rent or sale. The workforce unit shall be no smaller than 50% of the average size of the other units in the development and shall be deed restricted for affordability for the longest term possible under state and federal law. For this project, a minimum workforce unit size of 854 square feet is needed to meet City standards. The applicant proposes to provide a 1,059sf two-bedroom unit within the building, Unit 14, as their deed-restricted workforce housing unit, meeting the workforce housing requirements. A memorandum from the Housing Program Manager with additional details has been included within the report attachments.



Figure 6: Proposed elevation - northeast (downhill) - Source: Kaplan Thompson Architects

IX. DEVELOPMENT REVIEW

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

The applicant has submitted a recording plat. The final plat will need to be revised to reflect any waivers and conditions of approval that relate to the subdivision plan. Any waivers granted must be recorded at the Registry of Deeds within two years of a Planning Board decision.

B. SUBDIVISION (Section 14-496)

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

1. Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)

The existing site is approximately 44% developed and slopes from the south side of the property (Willis Street) to the north side of the property (MacArthur Gardens Apartments). Stormwater runoff from the project site drains either to the northeast along the curblin in Montreal Street or to the north to the abutting property. The existing site contains approximately 4,724 square feet of impervious surface, with three separate roof lines. Redevelopment of the project site would result in an increase of approximately 3,276 square feet of impervious area and a total impervious surface of 8,000 square feet.

The stormwater management plan includes the construction of an underground storage and treatment system that consists of a Stormtech Chamber System designed to infiltrate the required water quality volume. The system has been designed to effectively collect, infiltrate and provide treatment of approximately 97% of the total new impervious area and approximately 88% of the total new developed area, exceeding the requirement as indicated in the General Standards of MDEP Chapter 500.

Lauren Swett, P.E. of Woodard and Curran Engineering, Third-Party Reviewer, has reviewed the erosion and sediment control plans and details, as well as the proposed stormwater inspection and maintenance measures, and found the updated plans to be in conformance with the Land Use Code.

2. Sufficient Water Available (Section 14-497 (a) 2 and 3)

An ability to serve letter from the Portland Water District has been received and provided.

3. Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)

The proposed development is not adding significant vehicular traffic to the streets surrounding the development site and a traffic analysis is not required.

4. Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)

The applicant is proposing to utilize the existing combined storm sewer main lines in both Montreal and Willis streets. If the services are to be combined, this should be done within the right of way. This will allow for future separation within the street. The applicant has designed these connections accordingly. The applicant has provided a Wastewater Capacity Authorization Letter.

5. Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or by the City, rare and irreplaceable natural areas, or any public rights for physical or visual access to the shoreline (Section 14-497(a)(8))

The site is not within or immediately proximate to an historic district. Development on the subject property, which is a previously-developed infill site within an urban neighborhood context located

upland from the water's edge, will not adversely affect any significant wildlife habitat, rare or irreplaceable natural areas, or any public access to the shoreline.

6. Comprehensive Plan (Section 14-497 (a) 9)

The proposed project supports a number of goals identified in *Portland's Plan 2030*, particularly in the Housing section. Those goals include the Plan's stated desire to increase the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents, to encourage contextually appropriate housing density proximate to neighborhood centers, concentrations of services and transit nodes and corridors, and to enable people who work in Portland to have the option to live in Portland. The Plan also highlights the importance of the City's growth in order to sustain our community, infrastructure, and economy, ensuring growth respects and seeks to preserve of our natural resources, and sensitivity to neighborhood context, which emphasizes the uniqueness of neighborhoods in the Vision Statement (pg. 6).

C. **SITE PLAN STANDARDS** (Section 14-526)

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

1. Transportation Standards

a. Impact on Surrounding Street Systems and Access and Circulation

ADA compliance is provided at all door locations. The parking will be accessed from Montreal Street by a driveway between the proposed building and the adjacent property. The residential lobby for the proposed building will be located at the ground level on the southern side and would be accessed from the Willis Street sidewalk.

Mike Tremblay P.E., DPW Senior Engineer, has provided the following comment:

- The curb ramp at the corner of Montreal and Willis Street along the project frontage must be reconstructed per ADA and City of Portland standards. The existing ramp is non-conforming as it does not have a sufficient level landing at the top of the ramp; there may be other deficiencies as well. It is not likely that this ramp will be able to be replaced in its current orientation and achieve compliance; a blended transition ramp (detail attached) or another design will likely be required. The ramp shall be reconstructed in brick per the City's sidewalk material policy.

b. Public Transit Access

All residential developments consisting of 20 or more dwelling units shall provide a transit shelter adjacent to or within the public right-of-way along its frontage. The proposed project provides nine dwelling units and therefore this standard is not applicable.

c. Parking

Per ordinance requirements in the R-6 zone, the proposed project is required to have a total of nine parking spaces. The applicant is proposing to include 13 internal parking spaces within the garage, thus meeting the requirement.

d. Bicycle Parking

Five bicycle parking spaces are proposed for the project, meeting the minimum requirement of four spaces.

e. Snow Storage

The project design and layout provides an area of approximately 300 square feet located adjacent to the proposed driveway near the northwesterly corner of the site. Snow storage will not conflict with pedestrian access or parking requirements. Snow melt runoff will be treated with the subsurface chamber system. Staff finds this standard to have been met.



Existing Street Trees

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

As there are no known significant natural features on the site, this standard does not apply.

b. Landscaping and Landscape Preservation

A landscaping plan was submitted as part of the application. The plan shows a variety of trees, shrubs, and perennials, all listed in the City of Portland Recommended Tree List.

There are three well established street trees along Montreal and Willis Streets. The applicant will work with the City Arborist to explore ways to mitigate the impact of utility connections and preserve these trees.

Based upon the City's street tree requirements, a total of nine trees are required. The applicant intends to preserve the existing three trees, plant a fourth and will contribute \$2,000 (\$400/tree x five trees) to the City's Street Tree Fund to address the five trees that will not be planted.

c. Water Quality, Storm Water Management and Erosion Control

The stormwater management plan includes the construction of an underground storage and treatment system that consists of a Stormtech Chamber System designed to infiltrate the required water quality volume. The system has been designed to effectively collect, infiltrate and provide treatment of approximately 97% of the total new impervious area and approximately 88% of the total new developed area, exceeding the requirement as indicated in the General Standards of MDEP Chapter 500.

Lauren Swett, Consulting Peer Reviewer, has reviewed the applicant's plans and project details, and comments are included in the attachments. Staff finds that the proposed stormwater management measures meet the applicable standards of the Land Use Code and Technical Manual.

3. Public Infrastructure and Community Safety Standards

a. Public Safety and Fire Prevention

Mike Thompson, former Division Chief of the Fire Prevention and Community Outreach Division, reviewed the submitted plans and found them to be acceptable, noting the following points (Attachment 1):

- *The correct address for this property shall be determined by the City E-911 Addressing Officer.*
- *The street address shall be marked at the main building entrance.*

b. Availability and Adequate Capacity of Public Utilities

The project will be served by Central Maine Power, the Portland Water District, and City Department of Public Works. Evidence of utility capacity has been provided by the applicant.

4. Site Design Standards

a. Snow and Ice Loading

The project design and layout provides an area of approximately 300 square feet located adjacent to the proposed driveway near the northwesterly corner of the site. Snow storage will not conflict with pedestrian access. Snow melt runoff will be treated with the subsurface chamber system. Staff finds this standard to have been met.

b. View Corridors

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

c. Historic Resources

The project site is within 100 feet of a historic district and therefore was previously subject to a historic preservation advisory review.

d. Exterior Lighting

The applicant has submitted a lighting and photometric plan which was reviewed by staff and found to be in conformance with the standards.

e. Noise and Vibration

The HVAC system will meet the applicable state and federal emissions requirements and will also be screened and directed away from abutters.

f. Signage and Wayfinding

All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code. Staff has reviewed the proposed signage and finds it to be in conformance with the standards.

g. Zoning Related Design Standards

A design review for the proposed new construction of a multi-family project at 33 Montreal Street was performed by Planning and Urban Development staff. Because the lot is greater than 10,000 sf in size, the project was reviewed against the *Multiple-Family* Standards (City of Portland Design Manual). The original design review found that a number of the principles and standards had not been met by the proposed design and that the applicant needed to amend the plans accordingly. A second round of design review comments were provided to the applicant following the submission of updated architectural drawings. The applicant responded to staff comments, and at this time, the project is found to conform generally to the relevant design guidelines. There are potential modifications suggested for consideration (listed below).

- **Bays:** Staff request more information about the accent material used on the bays – ideally, this material would have the same character and finish as the shingle but with a different texture, orientation and/or scale.
- **Balconies:** The balconies extend beyond the roofline and façade plane and exacerbate the scale on the downhill side of the building. Staff recommend that the balconies be pulled in closer to the building or aligned with the façade plane on the side façade to mitigate the scale impact of the building and create relationships similar to those found in context.
- **Planters/Terraces:** Staff request more information about the stone proposed for the planters/terraces.

In addition, the project was reviewed for compliance with the additional design standards for buildings located in the Munjoy Hill Conservation Overlay District Section 14-140.5.a(d)

and was found to meet the standards. Please see Attachment 3, Design Review, for the full urban design memorandum.

h. Construction Management Plan

The applicant has submitted a construction management plan which was reviewed by staff and found to meet the applicable standards.

X. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

The neighborhood meeting was held on Friday, September 13, 2019 from 5:30-6:45 pm at the East End Community School. Thirteen members of the public were in attendance along with Tim Wells, representing the applicant, and Jesse Thompson and Richard Lo from Kaplan Thompson Architects. The majority of comments received were in response to the proposed building's design, scale and neighborhood context. Staff received one written comment, which expressed concern over the building's proposed height.

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Department staff recommend that the Planning Board approve the proposed development at 33 Montreal Street.

XII. PROPOSED MOTIONS FOR THE BOARD TO CONSIDER

A. SUBDIVISION REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on July 13, 2021 for application # PL-000807-2019 relevant to the subdivision regulations, and the testimony presented at the Planning Board hearing, the Planning Board **[finds/does not find]** that the plan is in conformance with the subdivision standards of the Land Use Code subject to the following conditions of approval:

PRIOR TO THE SUBMISSION OF THE PLAT FOR PLANNING BOARD SIGNATURE

1. The subdivision plat shall be finalized to the satisfaction of the Planning Authority, Corporation Counsel and Department of Public Works and include clear descriptions of the number, location, type and size of all subdivided units, along with relevant notes and conditions.

PRIOR TO ISSUANCE OF A BUILDING PERMIT

2. The signed subdivision plat shall be recorded at the Cumberland County Registry of Deeds.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

3. Condominium documents shall be finalized to the satisfaction of the Planning Authority and Corporation Counsel before being recorded.

B. SITE PLAN REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on July 13, 2021, for application #PL-000807-2019, relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board **[finds/does not find]** that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following condition of approval:

PRIOR TO ISSUANCE OF A BUILDING PERMIT

1. A financial contribution totaling \$2,000, to be paid into the City's street tree fund, shall be provided for the required five street trees not provided on-site. The applicant may also choose to pursue a street tree alternative as listed in the City's site plan ordinance, Sec. 14-526.
2. The applicant and the City shall enter into an agreed-upon Affordable Housing Agreement outlining the details of affordability restrictions placed on the Workforce Unit.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

3. The Affordable Housing Agreement will be filed as a covenant to the property's deed with the Cumberland County Registry of Deeds.

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. 33 Montreal Street Review Comment Letter
2. Public Comment
3. Design Review
4. Housing Program Manager Memorandum
5. Revision List

APPLICANT'S SUBMITTALS

- A. Application Checklist
- B. Project Description
- C. Right, Title & Interest
- D. Financial & Technical Capacity
- E. Zoning Assessment
- F. Construction Management Plan
- G. Transportation
- H. Stormwater
- I. Utilities
- J. Solid Waste Disposal
- K. Public Infrastructure and Safety
- L. Design Review Site Design
- M. 15_Design Review_R-6 Design Principles
- N. Wastewater Capacity

PLANS

- Plan 1. Boundary Survey
- Plan 2. Design Review Context
- Plan 3. Architectural Drawings
- Plan 4. Architectural_A1.1_BasementPlan_20190828
- Plan 5. Existing Conditions & Demolition Plan

- Plan 6. Site Plan
- Plan 7. Subdivision Plan
- Plan 8. Grading & Utility Plan
- Plan 9. Details – 1
- Plan 10. Details – 2
- Plan 11. Details - 3
- Plan 12. Watershed Map – Existing Conditions
- Plan 13. Watershed Map – Developed Conditions
- Plan 14. Construction Management Plan
- Plan 15. Landscape Plan

CONSTRUCTION MANAGEMENT PLAN

The following is the Construction Management Plan (CMP) for the 37 Montreal Street Condominium project located at the NE corner of Montreal Street and Willis Streets. This new building will consist of 9 homes over 4 floors with 13 parking spaces of underground parking. The building site is a tight neighborhood space and will include the demolition of 3 existing structures located at 37 and 33 Montreal. McTigue Construction is using a phased approach to the construction management of this project:

Phase I – Demolition (September/October 2019)

Phase II – Excavation and placement of footings, street openings for utilities (October 2019)

Phase III – Placement of foundation and the completion of the building shell (OCT-NOV 2019)

Phase IV – Completion of interior, exterior cladding, roofing, mechanicals, etc. through final completion of project (14 months from the start of Phase II)

A. Construction Management Principles

All phases of the proposed CMP are designed to minimize impacts from the construction activities on the Munjoy Hill Neighborhood and the immediate neighbors such as noise, vibrations, ground movement, truck traffic, and other construction related factors. The following control measures will be implemented:

- a. **Access Control** - Construction Fencing will be used to control pedestrian access to the site. The temporary fence will remain in place for all phases of the construction process. Signage will be utilized to inform any workers and visitors of safety requirements and risks.
- b. **Traffic Control** –
 - i. At times neighborhood traffic will be impacted by lane closures for the placement of utilities, pouring of concrete, debris removal and delivery of construction supplies. Proper signage (and if necessary active traffic direction) will be provided for appropriate direction of traffic and to insure minimal disruption and proper safety maintained for pedestrians, bikers and vehicles. There is fairly minimal traffic on both of these streets.
 - ii. We anticipate the closure of one lane of Montreal Street for approximately 2 weeks for sewer, water, gas, electricity. Other trenching activities along Willis and Montreal Streets will have proper traffic control on an individual basis and none are projected to last more than a week.
 - iii. Construction activity requires enclosing the street parking spots located immediately in front of the project on Willis and Montreal Streets. This improves safety for pedestrians, drivers and their automobiles. Concrete pumping trucks and heavy equipment will be required for the first three phases of construction. Some of these parking spots can most likely be freed up after Phase III.

B. Development Review of Construction Management Plan

McTigue Construction submits this CMP, which outlines the safety measures and logistics planning being undertaken to protect the City and its' residents and workers during construction of this project for review and approval as part of the Level III Site Plan Process. Minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process.

C. Performance guarantees, inspection fees, preconstruction meeting, and permits

- a. **Street Opening and Street Occupancy Permits:**
 - i. A Street Opening permit will be required. The contractor will mark out for DigSafe and contact the city to schedule the work associated with the street opening for the utility work required to supply the new building.
 - ii. All street work will be performed in accordance with the city of Portland requirements for patching and repairing pavement.
 - iii. A Street Occupancy Permit will be required
- b. **Blasting: None Known to be Required**
- c. **Building Code:** McTigue Construction will employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from IBC 2009.

D. Construction Administration and Communication

- a. 24 Hour Contacts
 - o Site Supervisor: Robert McTigue 207-730-1083
 - o Project Manager: Tim Wells 207-807-3876
- b. Construction Signage posted on the site with Contact Information for Contractor will be posted on the site security fencing along with the safety information upon project start.
- c. Communication strategies
 - 1. McTigue Construction along with the Development team will be sending out correspondence to abutters prior to the start of construction to let them know what date we will be starting, time of day for work and what to expect during the construction process. We will also provide a number to call to report any complaints or concerns during construction.
 - 2. McTigue Construction will provide a communication board on our site fencing that will be updated from time to time to provide the neighborhood with a general sense of what will be happening on the site if it has anything to do with noise or major deliveries from construction vehicular traffic.
 - 3. All construction site signage is temporary and shall be removed at project completion.

E. Construction Schedule

- a. The contractor shall submit a schedule or time line for the construction project, including any Phasing, prior to construction. Construction is anticipated to start in October 2019.

- b. 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).
- c. Typical hours of operation for the job site will be 7:00am – 7:00pm. From time to time there will be off hours work to maintain schedule or due to items like utility work. This work is intended to be minimal throughout the project.
- c. 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.*”
- d. Material Deliveries: Material deliveries will be scheduled through McTigue Construction during the hours of construction. Trucks will be directed onsite through the security fencing.

F. Security & Public Safety

- a. 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. *See attached site security and staging plan for details.*
- b. 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.*
- c. Fire Safety Program. An overall construction of demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - o Good Housekeeping
 - o On-site security
 - o Installation of new fire protection systems as construction progresses
 - o Preservation of existing systems during demolition
 - o Organization and training of an on-site fire brigade
 - o Development of a pre-fire plan with the local fire department
 - o Rapid communication
 - o Consideration of special hazards resulting from previous occupancies
 - o Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
- d. 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.
- e. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

- a. 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.
- b. 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.
- c. 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 in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:
 - Construction speed signing may be used as needed to slow traffic
 - Traffic Control signs shall not be placed where they 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.

33-37 MONTREAL STREET – CONSTRUCTION MANAGEMENT PLAN – McTIGUE CONSTRUCTION

- 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.
- Maintain 16' clear in roadway between fencing or any barricades to permit the passage of fire trucks and other emergency vehicles.

H. Site Management and Controls- The Contractor shall be responsible for maintaining the site in a safe condition including the following:

- a. solid waste dumpster shall be located on site for the disposal of trash and debris.
- b. Montreal and Willis Street right of ways shall be swept regularly to control the tracking of mud to adjacent public streets
- c. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
- d. 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).
- e. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
- f. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
 - Snow/Ice removal to commence automatically from 1" of snow and up
 - Remove snow as needed within the work zone, including parking spaces & not to block any driveways or site lines with piles of snow
 - Clear all walks and ramps within the work zone
 - Sand and Salt as needed
 - Clear all basin or drainage to help snow melt
 - This is seven days a week

9. Erosion Control and Preservation of Trees

- a. McTigue Construction 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.
- b. McTigue Construction shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
- c. The storage of materials shall be identified and avoid being located under/near trees.

10. Construction Staging Area

33-37 MONTREAL STREET – CONSTRUCTION MANAGEMENT PLAN – McTIGUE CONSTRUCTION

- a. Please see Construction Site Plan for locations of the material staging areas, the location on onsite truck delivery holding areas, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters and open storage areas.
- b. **Delivery Truck Holding Areas On-Site:** 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 will be brought within the fence line and will make every attempt to avoid queueing on public streets. **Concrete pumping trucks will have to utilize street area to unload.**
- c. **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

- a. **Construction Parking:** Adequate parking for construction workers shall be provided on site. Construction workers shall abide by all posted on-street parking restrictions. The parking arrangements shall be included in the construction management plan.
- b. **Truck Routes and Volumes:** The Construction Management Plan shall address the designated truck routes and expected truck volumes.

L. Special Measures as Necessary – No special measures are deemed needed

CITY OF PORTLAND
Planning & Urban Development Department

33-37 MONTREAL ST
Aug. 12, 2019

LEVEL II and LEVEL III SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST

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

**** PLEASE FILL OUT AND UPLOAD SEPARATELY THE ZONING TABLE
AND WAIVER TABLE AS NOTED BELOW ****

1

GENERAL APPLICATION DOCUMENTS

Yes ☒	NA ☐	Project Description Cover Letter with detailed project description
Yes ☒	NA ☐	Completed Checklist – Level I: Site Alteration (this document)
Yes ☒	NA ☐	Right, Title and Interest Deeds, leases, or purchase and sales agreements
Yes ☐	NA ☒	Evidence of State or Federal Approvals Permits or letters of non-jurisdiction, if applicable
Yes ☒	NA ☐	Zoning Assessment Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes ☐	NA ☒	Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements
Yes ☐	NA ☒	Waiver Requests Written request for waiver describing request and reason Waiver Table
Yes ☒	NA ☐	Financial Capability Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes ☐	NA ☐	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

2	TRANSPORTATION	
Yes ☐	NA ☒	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 ☐	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 ☒	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 ☐	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 ☒	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 ☒	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 ☐	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 ☐	Snow Storage (14-526 (a) 4 d) Management plan for snow removal and locate snow storage areas on plan
Yes ☐	NA ☒	Traffic Demand Management (TDM) (14-526 (a) 5), if applicable Develop TDM with Trip Reduction Targets and Strategies

3	ENVIRONMENTAL AND LANDSCAPE FEATURES		
	Yes ☐	NA ☒	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 ☐	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 ☐	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 ☒	Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable Landscaped islands within parking areas (Technical Manual, Section 4)
	Yes ☒	NA ☐	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
4	ENVIRONMENTAL AND STORMWATER		
	Yes ☒	NA ☐	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

5	PUBLIC INFRASTRUCTURE AND SAFETY	
	Yes ☐ NA ☐	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 NA
	Yes ☒ NA ☐	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 ☐	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
6	SITE DESIGN	
	Yes ☒ NA ☐	Massing, Ventilations and Wind Impact (14-526 (d) 1) - NA • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable - NA • Bulk, location or height impacts on adjoining structures - Identify and locate HVAC equipment and venting away from public spaces and residential properties - NA • Identify screening and manufacturing specifications for noise, if applicable
	Yes ☐ NA ☒	Shadows (14-526 (d) 2), if applicable Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
	Yes ☒ NA ☐	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 ☒	View Corridors (14-526 (d) 4), if applicable Protection of designated view corridors (Portland Design Manual, Appen. 1)

Yes ☐	NA ☒	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 ☐	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 ☒	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 ☒	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 ☐	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
7 Construction Management Plan		
Yes ☒	NA ☐	Construction Management Plan Construction Management Document and Plan

**LEVEL II AND LEVEL III SITE PLAN
DRAWINGS CHECKLIST**

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

8

RECENT BOUNDARY SURVEY (stamped by Maine Licensed Surveyor)



Must be in compliance with Technical Manual, Section 13

9

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

10

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

11

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

12

EROSION CONTROL

- ☒ Must be in compliance with Technical Manual, Section 5

13

LANDSCAPE PLAN including:

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

14	RECORDING PLAT, if applicable
	☐ If Subdivision, must be in compliance with requirements of Section 14-496 (b)
15	ARCHITECTURAL PLANS AND RENDERINGS including:
	☒ Exterior building elevations, color renderings, illustrations of all sides
	☒ Location and dimensions of all existing and proposed HVAC and mechanical equipment, all proposed screening
	☒ Provide context drawings, if applicable (Design Manual, page 1)
	☒ Floor plans

August 12, 2019

Att. 2

33-37 MONTREAL STREET, PORTLAND

The following outlines how the proposed project has been designed to meet the applicable standards of the City of Portland associated with Level III: Residential Site Plan and Subdivision review.

GENERAL DOCUMENTS - PROJECT DESCRIPTION

The project site is located at the corner of Willis Street and Montreal Street, Munjoy Hill, on land that is combines the two existing lots at 33 and 37 Montreal Street.
(CBL 015 B015001 and CBL 015 B022001)

The new building will contain (9) nine residential apartments with a total enclosed area of approximately 23,400 square feet on four stories above grade. An underground basement parking garage of approximately 5,800 SF will contain 13 car parking spaces, owner's storage, mechanical rooms, trash room, and bike storage space. The building will contain a commercial elevator and be protected by a NFPA 13R sprinkler system.

The residential unit mix is expected to include the following unit mix:

- Ground floor: (1) 2 Bedroom unit, and (2) 3 Bedroom units,
plus Entry lobby, and Package Room.
- 2nd floor: (2) 3 Bedroom units
- 3rd floor: (2) 3 Bedroom units
- 4th floor: (2) 3 Bedroom units





SITE LOCATION MAP

37 MONTREAL STREET
PORTLAND, MAINE

FOR:
McTIGUE CONSTRUCTION
184 MOUNTAIN ROAD
FALMOUTH, MAINE 04105

SCALE: 1"=2,000'
DATE: 7-19-2019
JOB NUMBER: 18053

DM ROMA

CONSULTING ENGINEERS

P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

Return to:

Saint John's Valley, LLC
33 Montreal Street
Portland, ME 04101

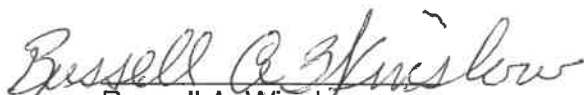
WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS: That I, **Russell A. Winslow**, of 33 Montreal Street, Portland, ME 04101, for consideration paid, grant to **Saint John's Valley, LLC**, of 8 Drew Road, South Portland, ME 04106, with WARRANTY COVENANTS:

SEE ATTACHED EXHIBIT A.

MEANING and INTENDING to describe and convey the same premises conveyed to the grantor herein by deed of Russell A. Winslow. Personal Representative of The Estate of Frances B, Winslow dated 9/13/2005 and recorded at Book 23150, Page 95 in the Cumberland County Registry of Deeds.

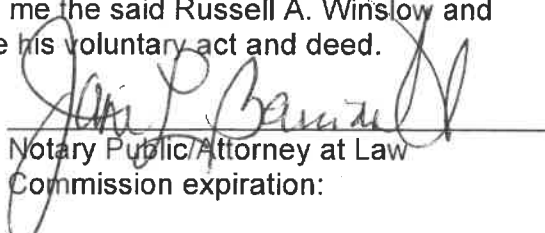
Executed this 7 day of October, 2016


Russell A. Winslow

State of Maine
County of Cumberland

10/7/2016

Then personally appeared before me the said Russell A. Winslow and acknowledged the foregoing to be his voluntary act and deed.


Notary Public/Attorney at Law
Commission expiration:

Jane Barriault Attorney at Law *Tcw*

EXHIBIT A

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

Beginning at a point in said northerly sideline of Montreal Street, distant eighty (80) feet northeasterly from the easterly side of Willis Street, and running northwesterly, parallel with said Willis Street, ninety (90) feet; thence northeasterly, parallel with said Montreal Street, forty (40) feet; thence southeasterly, parallel with the first line, ninety (90) feet to Montreal Street; thence southwesterly on Montreal Street, forty (40) feet to the starting point; being lot numbered fifty-four (54) on A. P. Marshall's Plan, recorded in the Cumberland County Registry of Deeds, Plan Book 1, Page 41.

Back 10/7/16
TLW

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS, That **Anne-Marie O'Rourke** of Portland, in the County of Cumberland, and State of Maine, for consideration paid, grant(s) to **Kevin James Carter**, whose mailing address is 7029 Denison Road, Summerfield, NC 27358, with **WARRANTY COVENANTS**, the real property situated in **Portland**, County of **Cumberland**, and **State of Maine**, more particularly described in Exhibit A attached hereto and incorporated herein by reference.

IN WITNESS WHEREOF, this instrument has been executed this 31st day of August, 2017.

Cynthia Chadwick Granger Anne-Marie O'Rourke
Witness to all Anne-Marie O'Rourke

State of Maine
County of Cumberland, ss.

August 31, 2017

Personally appeared before me the above named **Anne-Marie O'Rourke** and acknowledged the foregoing instrument to be her free act and deed.

Cynthia Chadwick Granger
Notary Public/Attorney at Law

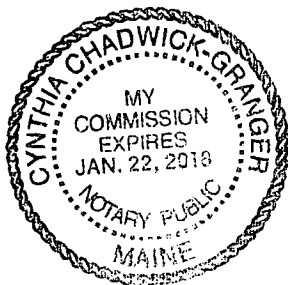


EXHIBIT A
(DEED)

A certain lot or parcel of land, situated in the City of Portland, County of Cumberland, and State of Maine, with the buildings and improvements thereon, and situated on the northerly corner of Montreal Street and Willis Street and bounded and described as follows:

Beginning at said corner formed by the northwesterly side of Montreal Street and the northeasterly side of Willis Street;

thence northeasterly by Montreal Street eighty (80) feet to a point and land now or formerly of Daniel K. Reed;

thence northwesterly by said Reed land ninety (90) feet and to lot numbered thirty-one (31) as shown on A. P. Marshall's Plan of Lots;

thence southwesterly by said lot numbered thirty-one (31) eighty (80) feet to Willis Street;

thence southeasterly by Willis Street ninety (90) feet to the point of beginning.

For title, reference may be had to a deed recorded in the Cumberland Registry of Deeds in Book 8708, Page 61. Mary C. O'Rourke deceased on September 21, 2012, leaving Anne-Marie O'Rourke as surviving joint tenant.

Received
Recorded Register of Deeds
Sep 01, 2017 10:56:24A
Cumberland County
Nancy A. Lane

MARK V. STASIUM
SENIOR VICE PRESIDENT
Direct Dial: 207.699.3392
mstasium@camdennational.com

July 22, 2019

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

Re: 37 Montreal Street LLC

Dear Planning Board Members:

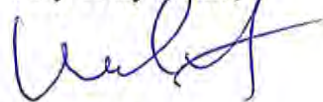
I am writing regarding the proposed residential building being proposed by 37 Montreal Street LLC located at Montreal and Willis Street in Portland.

I have known the principal member of the LLC for 20+ years and have financed a number of real estate investments for the individual. The principal member is an experienced developer and commercial real estate owner and manager and exhibits strong financial capacity. We provide financing for a number of the individual's properties, and all loan obligations and deposit accounts with Camden have been handled in a fully satisfactory manner.

We have reviewed the preliminary information for the proposed project, and based on our review, Camden is highly interested in providing financing for the project. Our interest remains subject to full credit underwriting by Camden's credit department, approval from Camden's senior loan officers, and receipt of all municipal permits by the developer.

Please do not hesitate to contact me if you have further questions.

Very Truly Yours,



Mark V. Stasium
Senior Vice President



THE PRIVATE BANK

300 N. Greene Street
Suite 600
D0134-065
Greensboro, NC 27401-2167

July 22, 2019

To Whom It May Concern:

I am writing this letter on behalf of 37 Montreal, LLC in reference to the upcoming development of 9 condominiums located on Montreal St in Portland, Maine.

Wells Fargo (WF) has an ongoing lending and wealth banking relationship with several of the principals in 37 Montreal, LLC. WF is currently the lender of the property located at 37 Montreal St. To date, the principals of 37 Montreal, LLC have proven to be a highly qualified, effective and professional team.

We are aware of the new development located at 33-37 Montreal St and would be pleased to entertain financing requests from 37 Montreal, LLC for this project and other projects in the future.

Should you have any questions, please feel free to contact me at (336) 378-4108.

Regards,

Ryan Newkirk

Portland, Maine



Yes. Life's good here.

Planning & Urban Development Department

33-37 MONTREAL ST
 Aug. 12, 2019

ZONING ANALYSIS Relevant Zone(s) R6
Munjoy Hill Neighborhood Conservation District Overlay

All Projects:

	Required	Proposed
Lot Size	2,000 sf min.	10,800 sf
Area Per Dwelling Unit	725 sf min.	1,200 sf
Minimum Street Frontage	20' min.	90' Willis St
Front Yard Minimum	5'-0"	5'-0"
Front Yard Maximum		
Rear Yard	15'-0" (>35' ht.)	>30'-0"
Yard Right		
Yard Left	10'-0" (>35' ht.)	10'-0"
Side Street Setback	5'-0" (>35' ht.)	5'-0" / 3'-0"
Step Back	15' rear / 10' side	>30' rear/10' side
Maximum Lot Coverage	60% max.	53%
Minimum Lot Coverage		
Maximum Height	45' above ave. gr.	44'-6"
Open Space	20% min.	26%
Maximum Impervious Area		
Pavement Setback		
Floor Area Ratio		
Off Street Parking Spaces	1 space per unit	1.4 per unit
Loading Bays		
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

	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)

	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):			

TRANSPORTATION

The following outlines how the proposed project at 33/37 Montreal Street has been designed to meet the applicable standards of the City of Portland associated with Level III: Residential Site Plan and Subdivision review.

Section 14-526 (a)(1) Transportation Analysis – Traffic Impact

The proposed project design and layout considered traffic impact and integrated provisions for traffic improvements through the design. The project site proposes to eliminate the existing curb cut for the driveway at 37 Montreal Street, and will utilize the existing curb cut with proposed driveway improvements at the same location of the existing curb cut for the driveway at 33 Montreal Street. The decision to abandon and eliminate the curb cut at 37 Montreal Street will effectively move the traffic egress and ingress for the site to the north approximately 108 linear feet north of the intersection at Willis Street & Montreal Street. Additionally, the curb cut in Willis Street, serving 37 Montreal Street will also be abandoned and sidewalk and curb will be installed in place.

The project design includes the improvements of a new 14-foot wide driveway, leading to underground parking areas. It is anticipated that the proposed driveway will provide adequate access to the site from Montreal Street and during peak traffic hours the project design should allow for traffic to exit from Montreal Street freely, as the proposed parking area and driveway will provide ample queuing such that Montreal Street will not be congested when vehicles try and enter the site. For vehicles leaving the site, the project layout and design will provide ample queuing on-site during peak traffic times with multiple vehicles trying to exit, and therefore should not impact traffic flow in Montreal Street. Additionally, with the proposed access to the site more than 100-ft from the intersection of Willis Street and Montreal Street, there will be less potential for conflicting turning movements with vehicles exiting the site and vehicles negotiating the four-way intersection.

Section 14-526 (a) (2) (c) – Sidewalks

The existing project site currently has existing sidewalk (brick with granite curbing) along the Willis Street and Montreal Street frontage. The existing sidewalk will be protected in place where possible and any disturbance due to improvements (driveways, site improvements, utility connections, etc.) will be conditioned to re-lay or re-construct the sidewalk in accordance with Section 14-498 and 14-499 of the City of Portland Code.

Additionally, on-site provisions for pedestrian access include extending sidewalk from Montreal Street at the proposed driveway location into the site and to the proposed lower level building entries and parking garage. Along Willis Street, the project proposes to construct the building

main entrance. Improvements along Willis Street include a main building entry stairway and integrated access ramp leading to the first level foyer, an entry/exit to the building's proposed stairwell, elimination of an existing curb cut, and construction of sidewalk to connect proposed improvements to existing sidewalk.

Section 14-526 (a) (4) (d) – Snow Storage

Snow storage for the project site appears adequate, and the project design and layout provide an area of approximately 300 sq. ft. located adjacent to the proposed driveway within the proposed flat yard area near the northwesterly corner of the site. The snow storage will not conflict with the project site access or pedestrian walkways. The snow storage area will be located of lawn/landscaped ground cover and will drain to the proposed catch basin, and will effectively treat any snow melt runoff with the subsurface chamber system (proposed StormTech SC-310 chamber system) prior to discharging from the site.

ENVIRONMENTAL AND STORMWATER

The following outlines how the proposed project at 33/37 Montreal Street has been designed to meet the applicable standards of the City of Portland associated with Level III: Residential Site Plan and Subdivision review.

Section 14-526 (b)(3) Water Quality, Stormwater Management and Erosion Control Standards

Watershed – The project site drains either to the northeast along the curblin in Montreal Street or to the north to the abutting property. To our knowledge this is a combined sewer and storm drain system. The project site is not tributary to an Urban Impaired Stream as defined by Maine DEP Chapter 502.

Sewage Disposal – The building will be connected to the public sewer in Montreal Street.

Soil Conditions – A Medium Intensity Soils Map is included as Attachment D. The soils are classified by the US Department of Agriculture Natural Resources Conservation Service as a Hinckley Loamy Sand, which has a Hydrologic Soil Rating of “A”. A geotechnical investigation was performed by Summit Geoengineering Services for the project site and is contained in Attachment C.

Flooding Standards - The project has been designed to incorporate a formal catch basin and storm drain collection system for stormwater management, which will flow into a Stormtech Chamber System and will retain the 1” storm event allowing the runoff to infiltrate into the ground slowly providing both stormwater treatment and quantity control. The flow generated by the larger storm events will spill over a concrete weir panel within the outlet control structure and will be conveyed in a relatively small storm drain, connecting into the existing sewer system which we believe is a combined system. The existing 10” sewer main should have the capacity to convey this flow due to the relatively steep slope and since it located at the beginning of the sewer main run.

An analysis was prepared to determine if there were any increases in overland peak rates of runoff onto abutting properties. There are two distinct locations of stormwater discharge from the property. Study Point 1 represents the discharge point at the north of the property. Study Point 2 is located along the gutter line of Montreal Street, just downstream of the projects proposed driveway location. As a result of the infiltration of the stormwater collection system and the overflow pipe of this system connecting into the combined sewer system, the peak rates of runoff have effectively been maintained or reduced from the pre-developed condition. The output data from the HydroCAD model has been included in Attachment A and the pre- and post-development watershed maps have been included in the design plan set.

Basic Standards – The plan set includes erosion control measures to be implemented temporarily during construction and permanently upon completion of the project. The erosion control plan was prepared based on the methodology outlined in the Maine Department of Environmental Protection publication titled “Maine Erosion and Sediment Control Best Management Practices Manual for Designers and Engineers” dated October 2016.

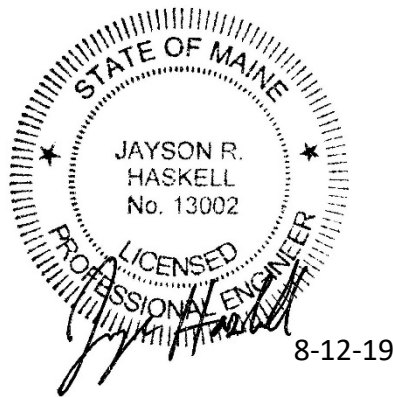
General Standards- The stormwater management plan includes the construction of an underground stormwater storage and treatment system that consists of a Stormtech Chamber System designed to infiltrate the required water quality volume. The system has been designed to effectively collect, infiltrate and provide treatment of approximately 97% of the total new impervious area and approximately 88% of the total new developed area, exceeding the requirement as indicated in the General Standards of MDEP Chapter 500. Calculations for the sizing of the stormwater components are included as Attachment B. Test pit analysis of the subsurface soils in the vicinity of the proposed Stormtech Chamber System is included as Attachment C. An Inspection, Maintenance and Housekeeping Plan has also been prepared for the project and has been included in this report as Attachment E.

Prepared by:

DM Roma Consulting Engineers

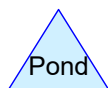
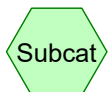
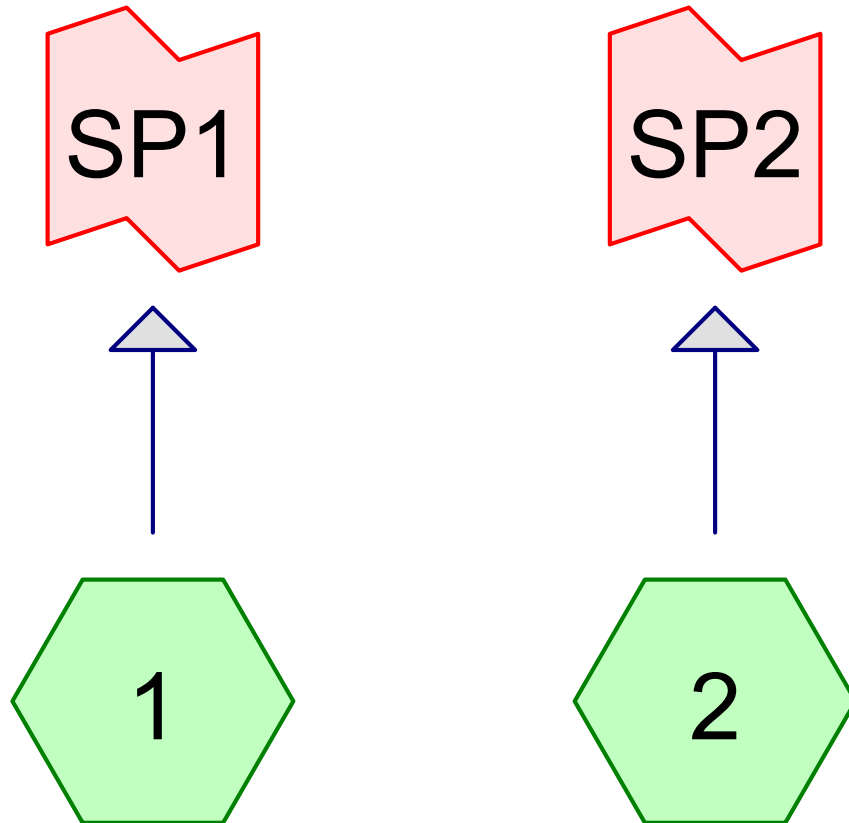


Jayson R. Haskell, P.E.
Southern Maine Regional Manager



ATTACHMENT A

HYDROCAD MODEL OUTPUT



Routing Diagram for 18053-PRE
Prepared by DM Roma Consulting Engineers, Printed 8/12/2019
HydroCAD® 10.00-20 s/n 09237 © 2017 HydroCAD Software Solutions LLC

18053-PRE*Type III 24-hr 25-Year Rainfall=5.80"*

Prepared by DM Roma Consulting Engineers

Printed 8/12/2019

HydroCAD® 10.00-20 s/n 09237 © 2017 HydroCAD Software Solutions LLC

Page 2

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

Subcatchment1:

Runoff Area=11,310 sf 49.04% Impervious Runoff Depth=2.47"
Flow Length=129' Tc=6.0 min CN=68 Runoff=0.73 cfs 2,326 cf

Subcatchment2:

Runoff Area=3,595 sf 92.16% Impervious Runoff Depth=4.99"
Flow Length=151' Tc=6.0 min CN=93 Runoff=0.44 cfs 1,494 cf

Link SP1:

Inflow=0.73 cfs 2,326 cf
Primary=0.73 cfs 2,326 cf

Link SP2:

Inflow=0.44 cfs 1,494 cf
Primary=0.44 cfs 1,494 cf

18053-PRE

Prepared by DM Roma Consulting Engineers

HydroCAD® 10.00-20 s/n 09237 © 2017 HydroCAD Software Solutions LLC

Type III 24-hr 25-Year Rainfall=5.80"

Printed 8/12/2019

Page 3

Summary for Subcatchment 1:

Runoff = 0.73 cfs @ 12.10 hrs, Volume= 2,326 cf, Depth= 2.47"

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
*	3,540	98	Ex. roofs,
*	366	98	Ex. paved roads & sidewalk
*	1,640	98	Ex. paved driveways
	5,764	39	>75% Grass cover, Good, HSG A
	11,310	68	Weighted Average
	5,764		50.96% Pervious Area
	5,546		49.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.1215	0.20		Sheet Flow, Seg A to Seg B Grass: Dense n= 0.240 P2= 3.10"
0.2	52	0.0991	5.07		Shallow Concentrated Flow, Seg B to Seg C Unpaved Kv= 16.1 fps
0.3	26	0.0068	1.67		Shallow Concentrated Flow, Seg C to Seg D Paved Kv= 20.3 fps
0.0	11	0.2052	7.29		Shallow Concentrated Flow, Seg D to Seg E Unpaved Kv= 16.1 fps
3.9	129	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2:

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 1,494 cf, Depth= 4.99"

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
*	0	98	Ex. roofs,
*	3,313	98	Ex. paved roads & sidewalk
*	0	98	Ex. paved driveways
	282	39	>75% Grass cover, Good, HSG A
	3,595	93	Weighted Average
	282		7.84% Pervious Area
	3,313		92.16% Impervious Area

18053-PRE

Type III 24-hr 25-Year Rainfall=5.80"

Prepared by DM Roma Consulting Engineers

Printed 8/12/2019

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Page 4

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	47	0.0731	1.96		Sheet Flow, Seg A to Seg B Smooth surfaces n= 0.011 P2= 3.10"
0.1	62	0.0896	13.28	45.66	Trap/Vee/Rect Channel Flow, Seg B to Seg C Bot.W=0.00' D=0.50' Z= 0.1 & 27.4 ' Top.W=13.75' n= 0.013 Asphalt, smooth
0.0	21	0.0950	13.97	68.79	Trap/Vee/Rect Channel Flow, Seg C to Seg D Bot.W=0.00' D=0.50' Z= 13.0 & 26.4 ' Top.W=19.70' n= 0.013 Asphalt, smooth
0.0	21	0.0892	13.24	43.86	Trap/Vee/Rect Channel Flow, Seg D to Seg E Bot.W=0.00' D=0.50' Z= 0.1 & 26.4 ' Top.W=13.25' n= 0.013 Asphalt, smooth
0.5	151	Total, Increased to minimum Tc = 6.0 min			

Summary for Link SP1:

Inflow Area = 11,310 sf, 49.04% Impervious, Inflow Depth = 2.47" for 25-Year event
 Inflow = 0.73 cfs @ 12.10 hrs, Volume= 2,326 cf
 Primary = 0.73 cfs @ 12.10 hrs, Volume= 2,326 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 3,595 sf, 92.16% Impervious, Inflow Depth = 4.99" for 25-Year event
 Inflow = 0.44 cfs @ 12.09 hrs, Volume= 1,494 cf
 Primary = 0.44 cfs @ 12.09 hrs, Volume= 1,494 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

18053-PRE*Type III 24-hr 2-Year Rainfall=3.10"*

Prepared by DM Roma Consulting Engineers

Printed 8/12/2019

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Page 1

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

Subcatchment1:

Runoff Area=11,310 sf 49.04% Impervious Runoff Depth=0.68"
Flow Length=129' Tc=6.0 min CN=68 Runoff=0.17 cfs 640 cf

Subcatchment2:

Runoff Area=3,595 sf 92.16% Impervious Runoff Depth=2.35"
Flow Length=151' Tc=6.0 min CN=93 Runoff=0.22 cfs 704 cf

Link SP1:

Inflow=0.17 cfs 640 cf
Primary=0.17 cfs 640 cf

Link SP2:

Inflow=0.22 cfs 704 cf
Primary=0.22 cfs 704 cf

18053-PRE*Type III 24-hr 10-Year Rainfall=4.60"*

Prepared by DM Roma Consulting Engineers

Printed 8/12/2019

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Page 2

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

Subcatchment1:

Runoff Area=11,310 sf 49.04% Impervious Runoff Depth=1.60"
Flow Length=129' Tc=6.0 min CN=68 Runoff=0.46 cfs 1,508 cf

Subcatchment2:

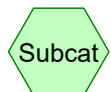
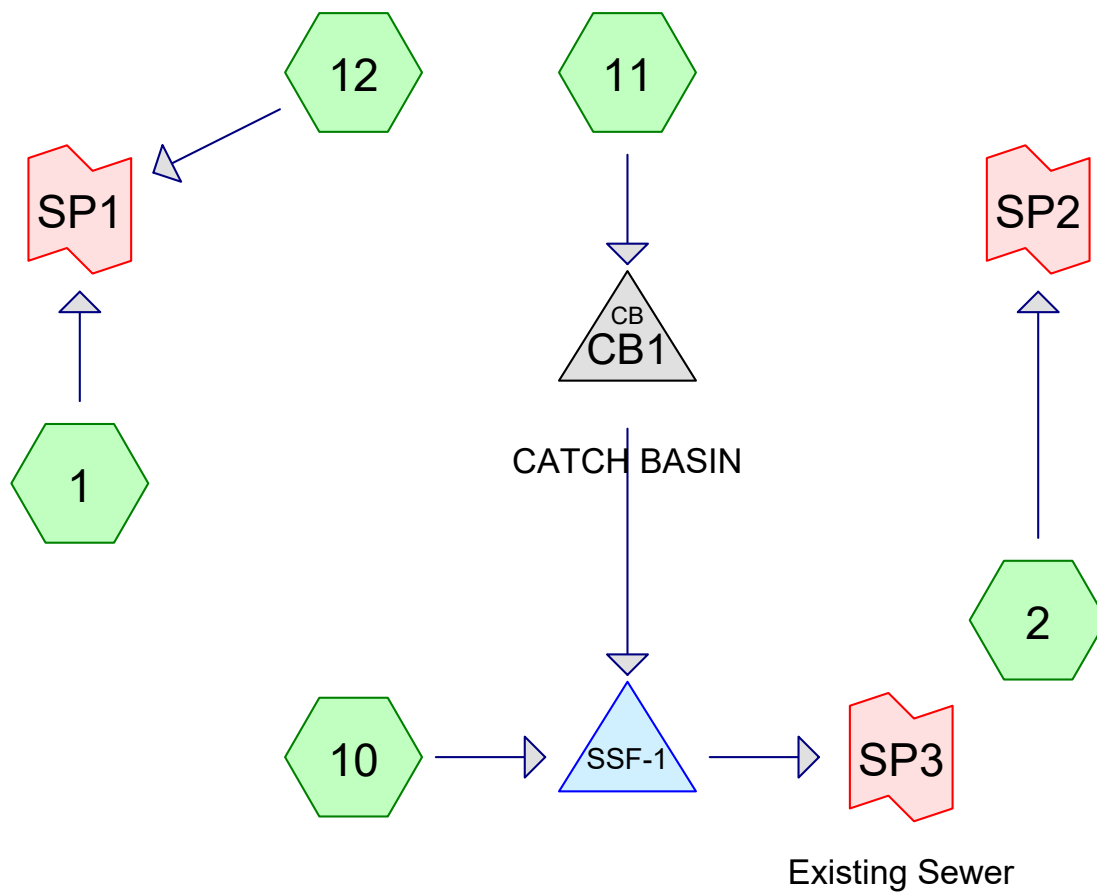
Runoff Area=3,595 sf 92.16% Impervious Runoff Depth=3.81"
Flow Length=151' Tc=6.0 min CN=93 Runoff=0.34 cfs 1,140 cf

Link SP1:

Inflow=0.46 cfs 1,508 cf
Primary=0.46 cfs 1,508 cf

Link SP2:

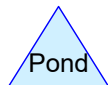
Inflow=0.34 cfs 1,140 cf
Primary=0.34 cfs 1,140 cf



Subcat



Reach



Pond



Link

Routing Diagram for 18053-POST

Prepared by DM Roma Consulting Engineers, Printed 8/12/2019
HydroCAD® 10.00-20 s/n 09237 © 2017 HydroCAD Software Solutions LLC

18053-POST*Type III 24-hr 25-Year Rainfall=5.80"*

Prepared by DM Roma Consulting Engineers

Printed 8/12/2019

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Page 2

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1:	Runoff Area=570 sf 56.32% Impervious Runoff Depth=2.83" Flow Length=83' Tc=6.0 min CN=72 Runoff=0.04 cfs 134 cf
Subcatchment 2:	Runoff Area=3,470 sf 95.48% Impervious Runoff Depth=5.21" Flow Length=151' Tc=6.0 min CN=95 Runoff=0.43 cfs 1,507 cf
Subcatchment 10:	Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=4.33" Flow Length=72' Tc=6.0 min CN=87 Runoff=0.89 cfs 2,889 cf
Subcatchment 11:	Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=3.80" Flow Length=45' Tc=6.0 min CN=82 Runoff=0.16 cfs 507 cf
Subcatchment 12:	Runoff Area=716 sf 5.31% Impervious Runoff Depth=0.55" Flow Length=23' Tc=6.0 min CN=42 Runoff=0.00 cfs 33 cf
Pond CB1: CATCH BASIN	Peak Elev=123.41' Inflow=0.16 cfs 507 cf 10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 ' Outflow=0.16 cfs 507 cf
Pond SSF-1:	Peak Elev=124.93' Storage=938 cf Inflow=1.05 cfs 3,396 cf Discarded=0.00 cfs 956 cf Primary=0.92 cfs 2,439 cf Outflow=0.92 cfs 3,396 cf
Link SP1:	Inflow=0.05 cfs 167 cf Primary=0.05 cfs 167 cf
Link SP2:	Inflow=0.43 cfs 1,507 cf Primary=0.43 cfs 1,507 cf
Link SP3: Existing Sewer	Inflow=0.92 cfs 2,439 cf Primary=0.92 cfs 2,439 cf

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Type III 24-hr 25-Year Rainfall=5.80"

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Summary for Subcatchment 1:

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 134 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 95	98	Existing Pavement
* 226	98	Proposed Concrete
* 179	39	Proposed Landscape A
* 70	39	Existing Landscape
570	72	Weighted Average
249		43.68% Pervious Area
321		56.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	15	0.0199	0.08		Sheet Flow, Seg A to Seg B Grass: Dense n= 0.240 P2= 3.10"
0.6	68	0.0516	1.83		Sheet Flow, Seg B to Seg C Smooth surfaces n= 0.011 P2= 3.10"
3.8	83	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2:

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 1,507 cf, Depth= 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 3,313	98	Existing Pavement
* 157	39	Proposed Landscape A
3,470	95	Weighted Average
157		4.52% Pervious Area
3,313		95.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	47	0.0731	1.96		Sheet Flow, Seg A to Seg B Smooth surfaces n= 0.011 P2= 3.10"
0.1	62	0.0896	13.28	45.66	Trap/Vee/Rect Channel Flow, Seg B to Seg C Bot.W=0.00' D=0.50' Z= 0.1 & 27.4 ' Top.W=13.75' n= 0.013 Asphalt, smooth
0.0	21	0.0950	13.97	68.79	Trap/Vee/Rect Channel Flow, Seg C to Seg D Bot.W=0.00' D=0.50' Z= 13.0 & 26.4 ' Top.W=19.70' n= 0.013 Asphalt, smooth
0.0	21	0.0892	13.24	43.86	Trap/Vee/Rect Channel Flow, Seg D to Seg E Bot.W=0.00' D=0.50' Z= 0.1 & 26.4 ' Top.W=13.25' n= 0.013 Asphalt, smooth

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Type III 24-hr 25-Year Rainfall=5.80"

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0.5 151 Total, Increased to minimum Tc = 6.0 min

Summary for Subcatchment 10:

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 2,889 cf, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,688	98	Proposed Rooftop
*	867	98	Proposed Concrete
*	1,460	39	Proposed Landscape A
	8,015	87	Weighted Average
	1,460		18.22% Pervious Area
	6,555		81.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0	7	0.0100	2.86	0.56	Pipe Channel, Seg A to Seg B 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013
0.1	36	0.0833	11.59	6.32	Pipe Channel, Seg B to Seg C 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	26	0.0170	5.24	2.86	Pipe Channel, Seg C to Seg D 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.0	3	0.0300	6.96	3.79	Pipe Channel, Seg D to Seg E 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.2	72	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11:

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 507 cf, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,033	98	Proposed Pavement
*	129	98	Proposed Concrete
*	436	39	Proposed Landscape A
	1,598	82	Weighted Average
	436		27.28% Pervious Area
	1,162		72.72% Impervious Area

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Type III 24-hr 25-Year Rainfall=5.80"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	5	0.0566	0.10		Sheet Flow, Seg A to Seg B Grass: Dense n= 0.240 P2= 3.10"
0.1	40	0.0600	4.97		Shallow Concentrated Flow, Seg B to Seg C Paved Kv= 20.3 fps
1.0	45	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 12:

Runoff = 0.00 cfs @ 12.29 hrs, Volume= 33 cf, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 678	39	Proposed Landscape A
* 38	98	Proposed Concrete
716	42	Weighted Average
678		94.69% Pervious Area
38		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	11	0.3300	0.33		Sheet Flow, Seg A to Seg B Grass: Short n= 0.150 P2= 3.10"
1.8	12	0.0200	0.11		Sheet Flow, Seg B to Seg C Grass: Short n= 0.150 P2= 3.10"
2.4	23	Total, Increased to minimum Tc = 6.0 min			

Summary for Pond CB1: CATCH BASIN

Inflow Area = 1,598 sf, 72.72% Impervious, Inflow Depth = 3.80" for 25-Year event
 Inflow = 0.16 cfs @ 12.09 hrs, Volume= 507 cf
 Outflow = 0.16 cfs @ 12.09 hrs, Volume= 507 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.16 cfs @ 12.09 hrs, Volume= 507 cf

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
 Peak Elev= 123.41' @ 12.09 hrs
 Flood Elev= 126.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.27'	10.0" Round Culvert X 2.00 L= 1.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 123.27' / 123.20' S= 0.0437 ' S= 0.0437 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.16 cfs @ 12.09 hrs HW=123.41' (Free Discharge)

↑1=Culvert (Inlet Controls 0.16 cfs @ 1.28 fps)

Summary for Pond SSF-1:

Inflow Area = 9,613 sf, 80.28% Impervious, Inflow Depth = 4.24" for 25-Year event
 Inflow = 1.05 cfs @ 12.09 hrs, Volume= 3,396 cf
 Outflow = 0.92 cfs @ 12.13 hrs, Volume= 3,396 cf, Atten= 12%, Lag= 2.5 min
 Discarded = 0.00 cfs @ 7.20 hrs, Volume= 956 cf
 Primary = 0.92 cfs @ 12.13 hrs, Volume= 2,439 cf

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 124.93' @ 12.13 hrs Surf.Area= 796 sf Storage= 938 cf

Plug-Flow detention time= 520.5 min calculated for 3,396 cf (100% of inflow)
 Center-of-Mass det. time= 520.2 min (1,318.2 - 798.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	122.65'	146 cf	4.83'W x 38.80'L x 2.33'H Field A 438 cf Overall - 74 cf Embedded = 364 cf x 40.0% Voids
#2A	123.15'	74 cf	ADS_StormTech SC-310 +Cap x 5 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#3B	122.65'	86 cf	2.83'W x 45.92'L x 2.33'H Field B 304 cf Overall - 88 cf Embedded = 215 cf x 40.0% Voids
#4B	123.15'	88 cf	ADS_StormTech SC-310 +Cap x 6 Inside #3 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#5C	122.65'	198 cf	4.83'W x 53.04'L x 2.33'H Field C 598 cf Overall - 103 cf Embedded = 495 cf x 40.0% Voids
#6C	123.15'	103 cf	ADS_StormTech SC-310 +Cap x 7 Inside #5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#7D	122.65'	172 cf	4.83'W x 45.92'L x 2.33'H Field D 518 cf Overall - 88 cf Embedded = 429 cf x 40.0% Voids
#8D	123.15'	88 cf	ADS_StormTech SC-310 +Cap x 6 Inside #7 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
		955 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	Discarded	122.65'	0.200 in/hr Exfiltration over Surface area
#2	Primary	122.23'	6.0" Round Culvert-6" OCS outlet L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.23' / 120.10' S= 0.0645 ' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	124.25'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 1.97 Width (feet) 0.50 0.50 4.00 4.00
#4	Device 3	122.73'	4.0" Vert. 4" Underdrain C= 0.600

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Type III 24-hr 25-Year Rainfall=5.80"

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#5 Device 3 123.27' **10.0" Vert. 10" Overflow Pipe From Chamber** C= 0.600**Discarded OutFlow** Max=0.00 cfs @ 7.20 hrs HW=122.69' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.90 cfs @ 12.13 hrs HW=124.92' (Free Discharge)↑ **2=Culvert-6" OCS outlet** (Passes 0.90 cfs of 1.17 cfs potential flow)↑ **3=Custom Weir/Orifice** (Weir Controls 0.90 cfs @ 2.68 fps)↑ **4=4" Underdrain** (Passes < 0.34 cfs potential flow)↑ **5=10" Overflow Pipe From Chamber** (Passes < 2.15 cfs potential flow)**Summary for Link SP1:**

Inflow Area = 1,286 sf, 27.92% Impervious, Inflow Depth = 1.56" for 25-Year event

Inflow = 0.05 cfs @ 12.10 hrs, Volume= 167 cf

Primary = 0.05 cfs @ 12.10 hrs, Volume= 167 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 3,470 sf, 95.48% Impervious, Inflow Depth = 5.21" for 25-Year event

Inflow = 0.43 cfs @ 12.09 hrs, Volume= 1,507 cf

Primary = 0.43 cfs @ 12.09 hrs, Volume= 1,507 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP3: Existing Sewer

Inflow Area = 9,613 sf, 80.28% Impervious, Inflow Depth = 3.05" for 25-Year event

Inflow = 0.92 cfs @ 12.13 hrs, Volume= 2,439 cf

Primary = 0.92 cfs @ 12.13 hrs, Volume= 2,439 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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Type III 24-hr 2-Year Rainfall=3.10"

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Page 1

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1:	Runoff Area=570 sf 56.32% Impervious Runoff Depth=0.87" Flow Length=83' Tc=6.0 min CN=72 Runoff=0.01 cfs 41 cf
Subcatchment 2:	Runoff Area=3,470 sf 95.48% Impervious Runoff Depth=2.55" Flow Length=151' Tc=6.0 min CN=95 Runoff=0.22 cfs 737 cf
Subcatchment 10:	Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=1.83" Flow Length=72' Tc=6.0 min CN=87 Runoff=0.39 cfs 1,220 cf
Subcatchment 11:	Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=1.46" Flow Length=45' Tc=6.0 min CN=82 Runoff=0.06 cfs 194 cf
Subcatchment 12:	Runoff Area=716 sf 5.31% Impervious Runoff Depth=0.01" Flow Length=23' Tc=6.0 min CN=42 Runoff=0.00 cfs 0 cf
Pond CB1: CATCH BASIN	Peak Elev=123.36' Inflow=0.06 cfs 194 cf 10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 ' / ' Outflow=0.06 cfs 194 cf
Pond SSF-1:	Peak Elev=124.35' Storage=751 cf Inflow=0.45 cfs 1,414 cf Discarded=0.00 cfs 919 cf Primary=0.05 cfs 496 cf Outflow=0.06 cfs 1,414 cf
Link SP1:	Inflow=0.01 cfs 42 cf Primary=0.01 cfs 42 cf
Link SP2:	Inflow=0.22 cfs 737 cf Primary=0.22 cfs 737 cf
Link SP3: Existing Sewer	Inflow=0.05 cfs 496 cf Primary=0.05 cfs 496 cf

18053-POST*Type III 24-hr 10-Year Rainfall=4.60"*

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Page 2

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1:	Runoff Area=570 sf 56.32% Impervious Runoff Depth=1.89" Flow Length=83' Tc=6.0 min CN=72 Runoff=0.03 cfs 90 cf
Subcatchment 2:	Runoff Area=3,470 sf 95.48% Impervious Runoff Depth=4.02" Flow Length=151' Tc=6.0 min CN=95 Runoff=0.34 cfs 1,163 cf
Subcatchment 10:	Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=3.19" Flow Length=72' Tc=6.0 min CN=87 Runoff=0.66 cfs 2,132 cf
Subcatchment 11:	Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=2.72" Flow Length=45' Tc=6.0 min CN=82 Runoff=0.11 cfs 363 cf
Subcatchment 12:	Runoff Area=716 sf 5.31% Impervious Runoff Depth=0.22" Flow Length=23' Tc=6.0 min CN=42 Runoff=0.00 cfs 13 cf
Pond CB1: CATCH BASIN	Peak Elev=123.39' Inflow=0.11 cfs 363 cf 10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 '/' Outflow=0.11 cfs 363 cf
Pond SSF-1:	Peak Elev=124.72' Storage=872 cf Inflow=0.78 cfs 2,495 cf Discarded=0.00 cfs 942 cf Primary=0.53 cfs 1,552 cf Outflow=0.54 cfs 2,494 cf
Link SP1:	Inflow=0.03 cfs 103 cf Primary=0.03 cfs 103 cf
Link SP2:	Inflow=0.34 cfs 1,163 cf Primary=0.34 cfs 1,163 cf
Link SP3: Existing Sewer	Inflow=0.53 cfs 1,552 cf Primary=0.53 cfs 1,552 cf

ATTACHMENT B

STORMWATER TREATMENT CALCULATIONS

Stormwater Treatment Table

33/37 Montreal Street

	Total Watershed Area (SF)	New Driveway and Road Impervious Area (SF)	New Landscaped Area (SF)	Existing/Offsite Impervious Area (SF)	Existing/Offsite Landscaped Area (SF)	Existing Undeveloped Area (SF)	Treatment Provided	New Impervious Area Treated In Treatment Device (SF)	New Landscaped Area Treated In Treatment Device (SF)	Treatment Device
WS-1	570	226	179	95	70	0	No	0	0	None
WS-10	8,015	6,555	1,460	0	0	0	Yes	6,555	1,460	Chamber Syst.
WS-11	1,598	1,162	436	0	0	0	Yes	1,162	436	Chamber Syst.
WS-12	716	38	678	0	0	0	No	0	0	None
WS-2	3,470	0	157	3,313	0	0	No	0	0	None
Total		7,981	2,910					7,717	1,896	

New Impervious Area = 7,981 sf
 Impervious Area Requiring Treatment (95%) = 7,582 sf
 Impervious Area Treatment Provided = 7,717 sf
 97% New Impervious Area Treated

New Developed Area = 10,891 sf
 Developed Area Requiring Treatment (80%) = 8,713 sf
 Developed Area Treatment Provided = 9,613 sf
 88% New Developed Area Treated

Subsurface Storage - 1

Tributary Impervious Area=	7,717 sf	(WS-10 & WS-11 Impervious Area)
Tributary Landscaped Area=	1,896 sf	(WS-10 & WS-11 Landscaped Area)

Water Quality Volume (WQV) Calculation

WQV (Required) = $1.0 \times \text{Impervious Area} + 0.4 \times \text{Landscaped Area}$

WQV (Required) = 706 cf

Chamber Size = SC-310

WQV (Provided)= 715 cf >Required

(See HydroCAD Stage Storage Calculation)

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Type III 24-hr 25-Year Rainfall=5.80"

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Stage-Area-Storage for Pond SSF-1:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
122.65	796	0	125.30	796	955
122.70	796	16	125.35	796	955
122.75	796	32	125.40	796	955
122.80	796	48	125.45	796	955
122.85	796	64	125.50	796	955
122.90	796	80	125.55	796	955
122.95	796	96	125.60	796	955
123.00	796	111	125.65	796	955
123.05	796	127	125.70	796	955
123.10	796	143	125.75	796	955
123.15	796	159	125.80	796	955
123.20	796	187	125.85	796	955
123.25	796	216	125.90	796	955
123.30	796	244	125.95	796	955
123.35	796	271	126.00	796	955
123.40	796	299	126.05	796	955
123.45	796	327	126.10	796	955
123.50	796	354	126.15	796	955
123.55	796	381	126.20	796	955
123.60	796	407			
123.65	796	434			
123.70	796	460			
123.75	796	485			
123.80	796	511			
123.85	796	536			
123.90	796	560			
123.95	796	584			
124.00	796	608			
124.05	796	631			
124.10	796	653			
124.15	796	675			
124.20	796	696			
124.25	796	715			
124.30	796	734			
124.35	796	752			
124.40	796	769			
124.45	796	785			
124.50	796	801			
124.55	796	817			
124.60	796	833			
124.65	796	849			
124.70	796	865			
124.75	796	881			
124.80	796	897			
124.85	796	913			
124.90	796	929			
124.95	796	945			
125.00	796	955			
125.05	796	955			
125.10	796	955			
125.15	796	955			
125.20	796	955			
125.25	796	955			

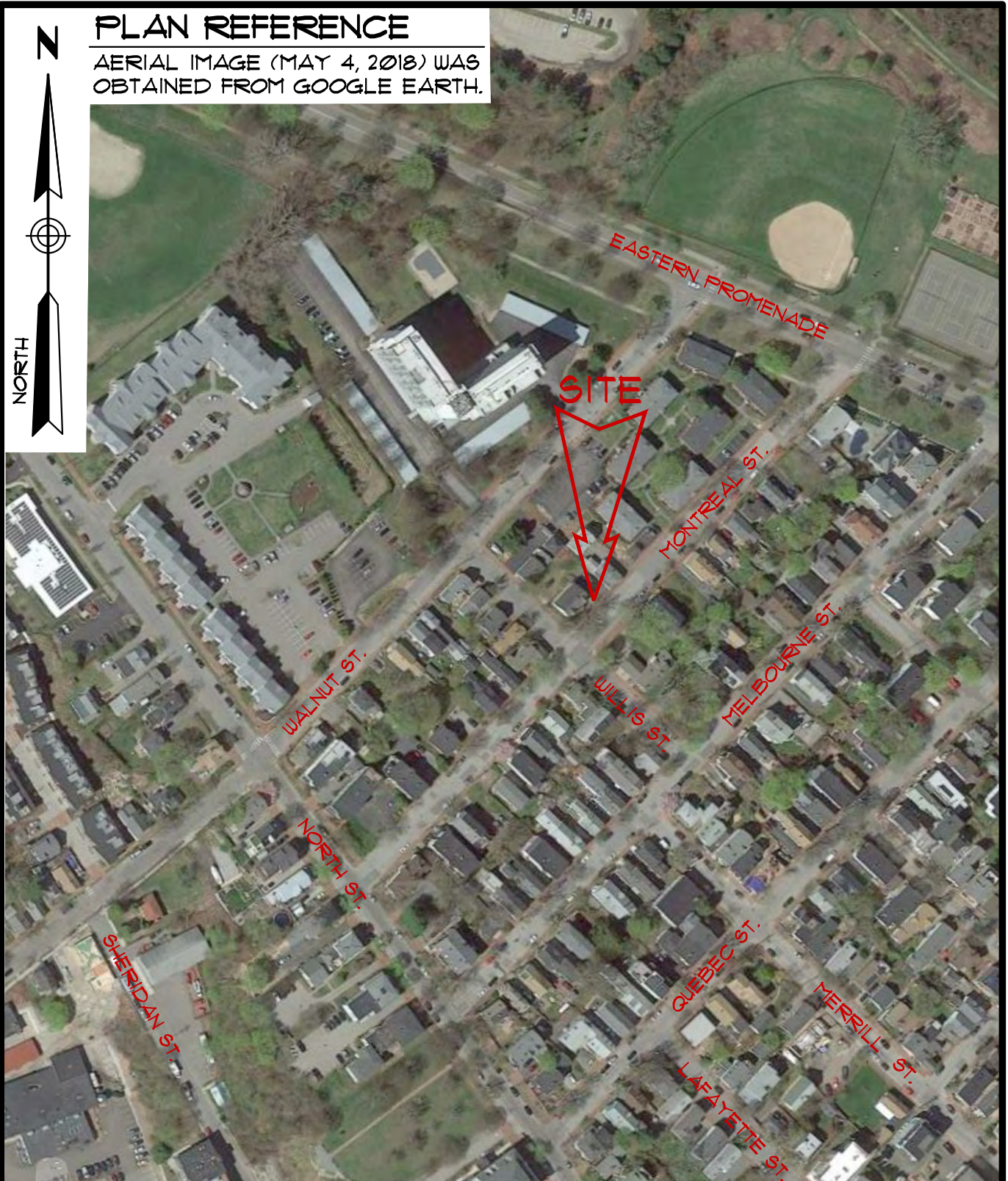
Water Quality Volume Required = 706 cf
 Provided Water Quality Volume = 715 cf

ATTACHMENT C

SOILS TEST PIT LOGS AND MAPS

PLAN REFERENCE

AERIAL IMAGE (MAY 4, 2018) WAS
OBTAINED FROM GOOGLE EARTH.

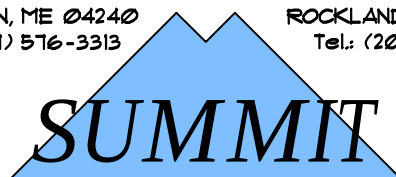


LOCATION MAP NEW RESIDENTIAL BUILDING

33 MONTREAL STREET - PORTLAND, MAINE
PREPARED FOR
TIM WELLS

145 LISBON ST. - SUITE 101
LEWISTON, ME 04240
Tel.: (207) 576-3313

173 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-1161



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DATE: 4-15-2019	DRAWN BY: KRF	CHECKED BY: ELS
JOB: 17164	SCALE: 1" = 200'	FILE: 17164 BOR

N

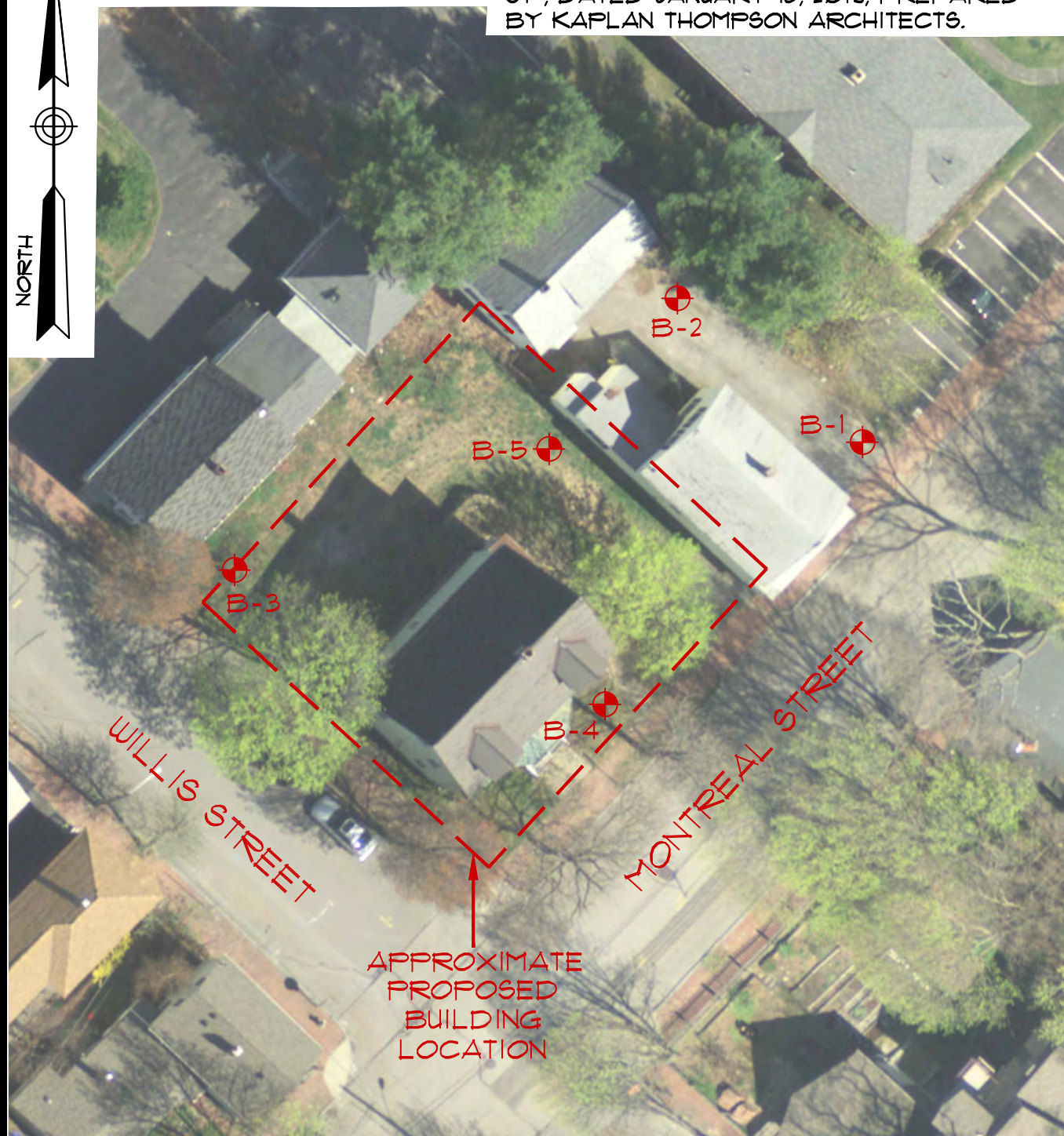
NORTH

LEGEND

⊕ B-1 SUMMIT TEST BORING
(APRIL 5, 2019)

PLAN REFERENCE

PROPOSED BUILDING LOCATION WAS TAKEN
FROM A PLAN SET ENTITLED "MONTREAL
ST", DATED JANUARY 15, 2019, PREPARED
BY KAPLAN THOMPSON ARCHITECTS.

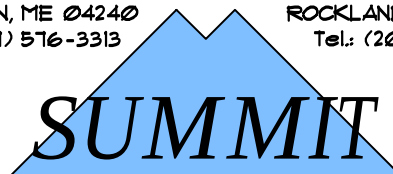


**EXPLORATION LOCATION PLAN
NEW RESIDENTIAL BUILDING**

33 MONTREAL STREET - PORTLAND, MAINE
PREPARED FOR
TIM WELLS

145 LISBON ST. - SUITE 101
LEWISTON, ME 04240
Tel.: (207) 576-3313

173 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-1161



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DATE: 4-15-2019	DRAWN BY: KRF	CHECKED BY: ELS
JOB: 17164	SCALE: 1" = 30'	FILE: 17164 BOR

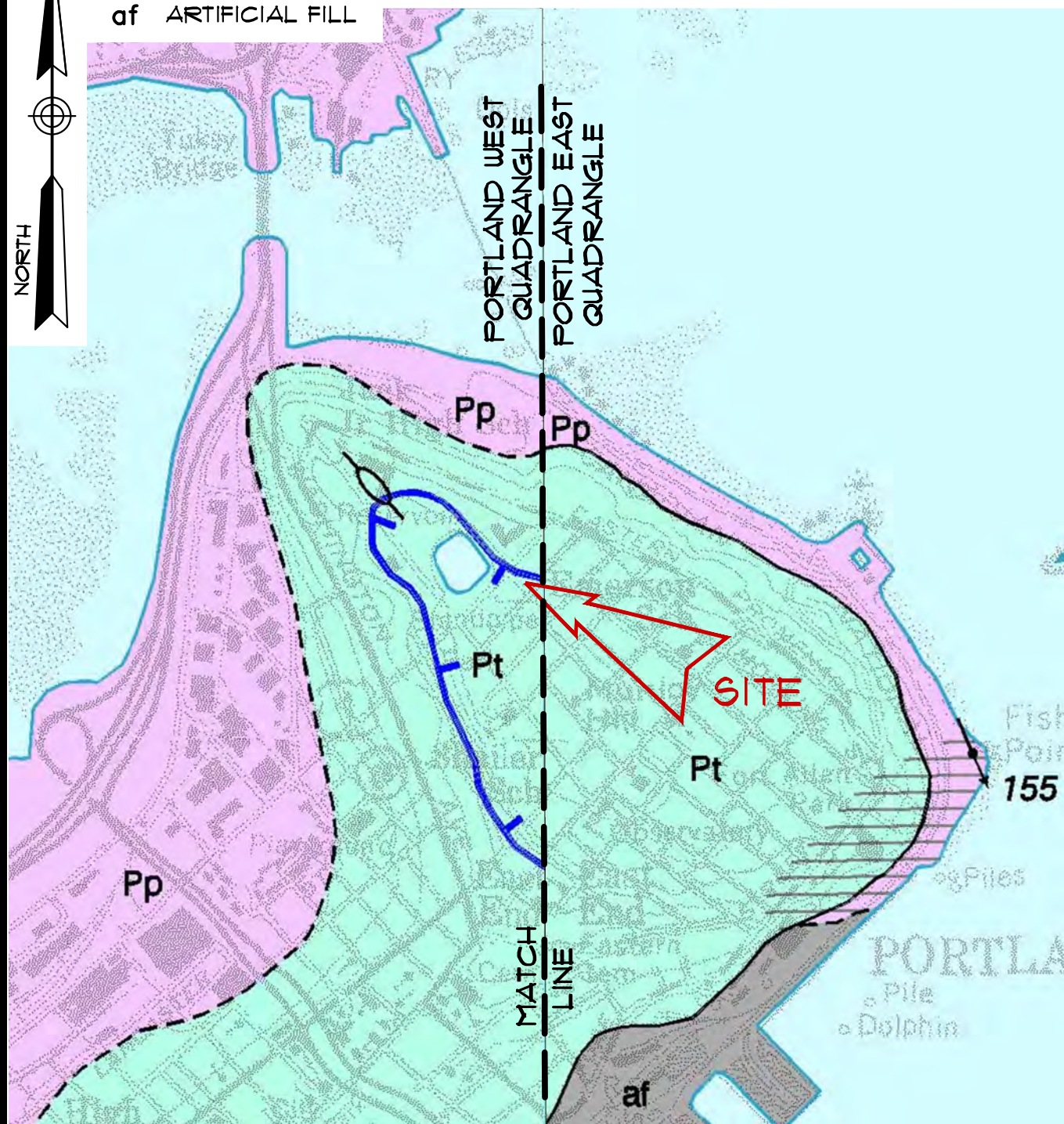
N

**LEGEND**

Pt TILL
 Pp PRESUMPTSCOT FORMATION
 af ARTIFICIAL FILL

PLAN REFERENCE

SURFICIAL GEOLOGY MAP, PORTLAND EAST
 & WEST QUADRANGLES, DATED 1999 & 2008,
 PREPARED BY MAINE GEOLOGICAL SURVEY.



**SURFICIAL GEOLOGY MAP
 NEW RESIDENTIAL BUILDING**

33 MONTREAL STREET - PORTLAND, MAINE

PREPARED FOR
TIM WELLS

145 LISBON ST. - SUITE 101
 LEWISTON, ME 04240
 Tel.: (207) 576-3313

173 PLEASANT STREET
 ROCKLAND, ME 04841
 Tel.: (207) 318-1161

SUMMIT

GEOENGINEERING SERVICES
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DATE: 4-15-2019	DRAWN BY: KRF	CHECKED BY: ELS
JOB: 17164	SCALE: 1" = 1000'	FILE: 17164 BOR

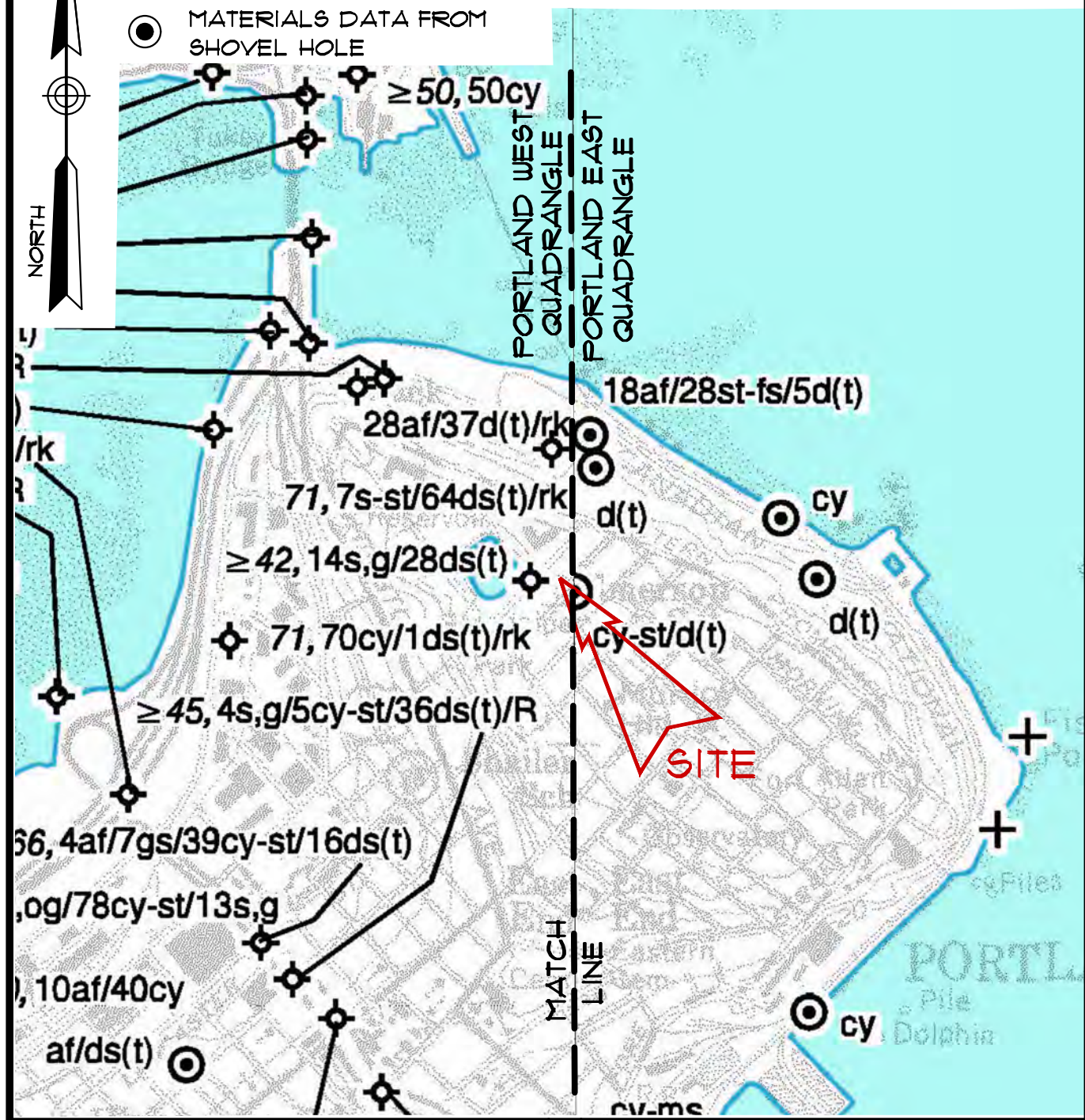


LEGEND

- ⊕ TEST BORING w/MATERIALS DATA
- ⊕ BEDROCK OUTCROP
- ⊙ MATERIALS DATA FROM SHOVEL HOLE

PLAN REFERENCE

BEDROCK MATERIALS, PORTLAND EAST & WEST QUADRANGLE, DATED 1999, PREPARED BY MAINE GEOLOGICAL SURVEY.

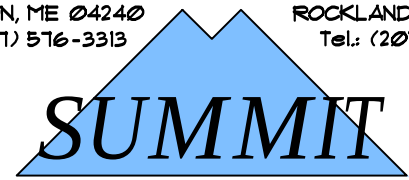


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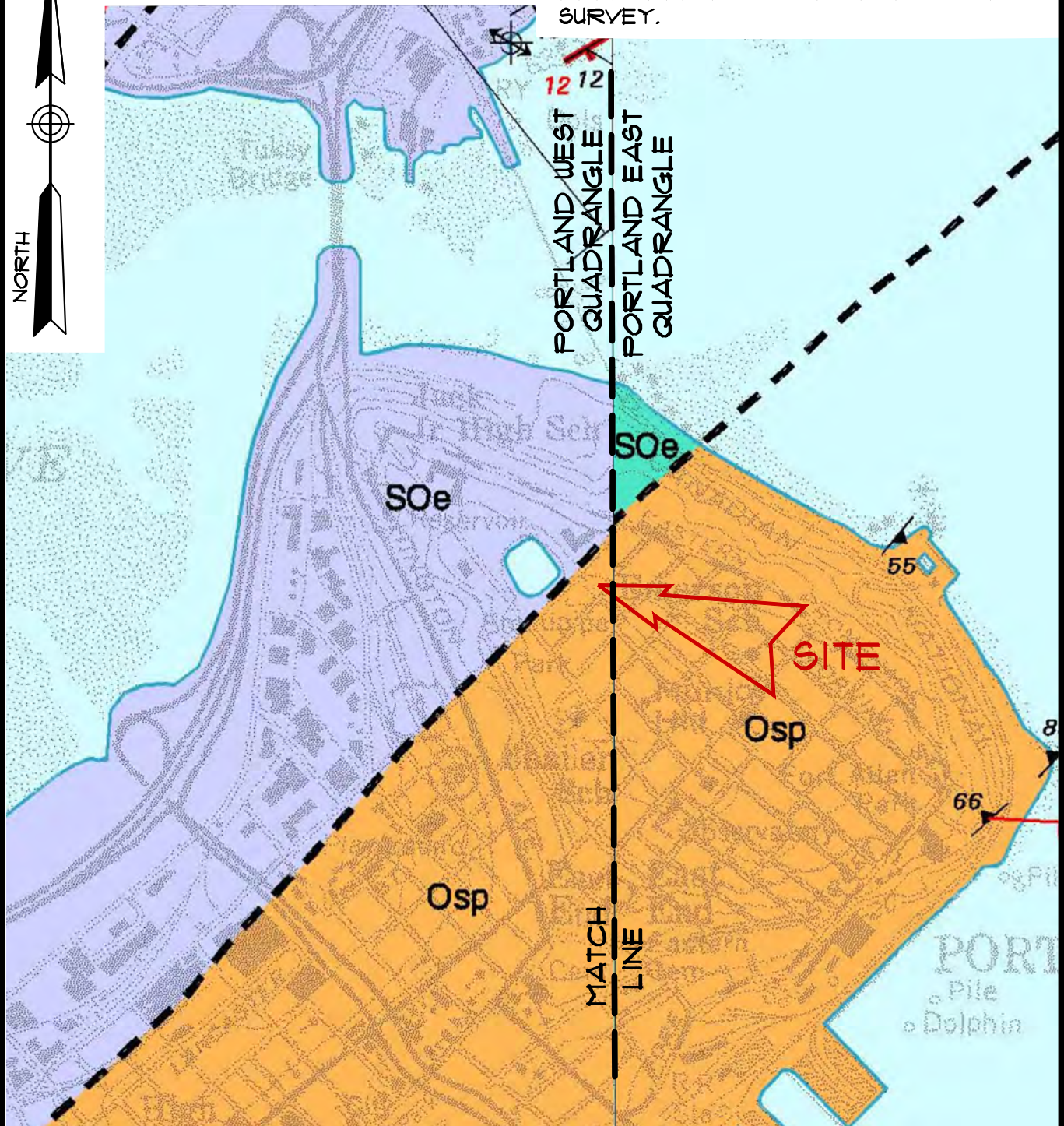
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JOB: 17164	SCALE: 1" = 1000'	FILE: 17164 BOR

LEGEND

Osp SPRING POINT FORMATION
Soe ELLIOT FORMATION

PLAN REFERENCE

BEDROCK GEOLOGY, PORTLAND EAST & WEST QUADRANGLE, DATED 2003, PREPARED BY MAINE GEOLOGICAL SURVEY.



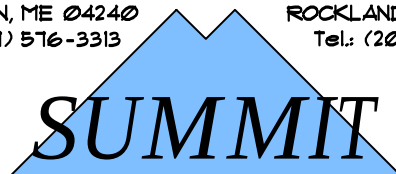
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JOB: 17164	SCALE: 1" = 1000'	FILE: 17164 BOR

EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

Drilling and Sampling Symbols:

S = Split Spoon Sample	Hyd = Hydraulic Advancement of Drilling Rods
UT = Thin Wall Shelby Tube	Push = Direct Push of Drilling Rods
SSA = Solid Stem Auger	WOH = Weight of Hammer
HSA = Hollow Stem Auger	WOR = Weight of Rod
RW = Rotary Wash	PI = Plasticity Index
SV = Lab Shear Vane (Torvane)	LL = Liquid Limit
PP = Pocket Penetrometer	MC = Natural Moisture Content
C = Rock Core Sample	USCS = Unified Soil Classification System
FV = Field Vane Shear Test	Su = Undrained Shear Strength
SP = Concrete Punch Sample	Su(r) = Remolded Shear Strength

Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.

Gradation Description and Terminology:

Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	Consistency	SPT N-value blows/ft	Relative Density
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		

						SOIL BORING LOG		Boring #: B-1	
Drilling Co: Summit Geoengineering Services, Inc.						Project: New Residential Building		Project #: 17164	
Driller: C. Coolidge, P.E.						Location: 33 Montreal Street		Sheet: 1 of 1	
Summit Staff: E. Stewart, P.E.						City, State: Portland, Maine		Chkd by: WMP	
Boring Elevation: Unknown						Reference: N/A			
Date started: 4/5/2019						Date Completed: 4/5/2019			
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS			Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			4/5/2019	NE	N/A	None observed
Method: 2 1/4-inch HSA			Hammer: 140 lb						
Hammer Style: Auto			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
1	S-1	24/12	0 - 2	3		Dark brown SILT, little Sand & organics, loose, damp, ML			TOPSOIL
				3		Dark brown to brown Gravelly SAND, little Silt, loose, damp, SP-SM			0.2' FILL
				3					
2				3					
3	S-2	24/8	2 - 4	2		Same as above, loose, damp, SP-SM			
4				2		Dark brown to mottled brown Clayey SILT, little Sand, Gravel, and organics, soft, damp, ML			2.5'+/- FORMER TOPSOIL
5				9					
6				6		Brown to olive brown and mottled Gravelly SAND, little Silt, compact, damp, SM to SP-SM			3'+/- MARINE NEARSHORE DEPOSIT
7	S-3	24/24	5 - 7	7		Same as above, compact, damp, SM to SP-SM			
8				17		(1" mottled sand seam at interface)			
9				10		Olive brown SILT, some Sand and Gravel, very stiff, damp, ML			6'+/- GLACIAL TILL
10				8					
11									
12	S-4	24/24	10 - 12	12		Olive brown SILT-CLAY, some Sand and Gravel, very stiff, damp, ML		PP > 9,000 psf	
13				13					
14				15					
15				15					
16	S-5	24/24	15 - 17	12		Gray SILT, some to little Sand, Gravel, and Clay, very stiff to hard, moist, ML		PP > 9,000 psf	
17				13					
18				16					
19				15					
20									
21	S-6	24/24	20 - 22	8		Gray SILT-CLAY, some to little Sand and Gravel, very stiff to hard, moist, ML-CL		PP = 8,000 psf	
22				13					
				16					
				21					
						End of Exploration at 22', No Refusal			22'

Granular Soils		Cohesive Soils		% Composition		NOTES:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487			
0-4	V. Loose	<2	V. soft			PP = Pocket Penetrometer, MC = Moisture Content S = Split spoon sample, LL = Liquid Limit, PI = Plasticity Index Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and > No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace			
11-30	Compact	5-8	Firm	5-15% Little			
31-50	Dense	9-15	Stiff	15-30% Some			
>50	V. Dense	16-30	V. Stiff	> 30% With			
		>30	Hard				

						SOIL BORING LOG		Boring #: B-2	
Drilling Co: Summit Geoengineering Services, Inc.						Project: New Residential Building		Project #: 17164	
Driller: C. Coolidge, P.E.						Location: 33 Montreal Street		Sheet: 1 of 1	
Summit Staff: E. Stewart, P.E.						City, State: Portland, Maine		Chkd by: WMP	
Boring Elevation: Unknown						Reference: N/A			
Date started: 4/5/2019						Date Completed: 4/5/2019			
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS			Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			4/5/2019	NE	N/A	None observed
Method: 2 1/4-inch HSA			Hammer: 140 lb						
Hammer Style: Auto			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
	S-1	24/10	0 - 2	1		1" Bituminous Pavement			PAVEMENT
1				2		Dark brown SAND, some Silt and Gravel, loose, damp, SM			0.1' FILL
				3					
2				5					
	S-2	24/10	2 - 4	2		Brown Gravelly SAND, little Silt, loose, damp, SM			
3				2					
				3					
4				2					
						Dark brown to mottled brown medium-fine SAND, some to little Silt and Gravel, trace organics at surface, loose, damp, SM			4'+/- MARINE NEARSHORE DEPOSIT
5									
	S-3	24/18	5 - 7	4					
6				3					
				2					
7				5		Light olive brown to tan fine SAND-SILT, little to trace Gravel, stiff, moist, SM-ML			6'+/- GLACIAL TILL
8									
9									
10									
	S-4	24/24	10 - 12	8		Olive brown SILT, some Sand, little Gravel and Clay, very stiff, damp, ML		PP > 9,000 psf	
11				9					
				11					
12				12					
13									
14									
15									
	S-5	24/8	15 - 17	6		Same as above, very stiff, damp to moist, ML (Pushed cobble, low recovery. Cobble fragments in spoon tip.)		PP > 9,000 psf	
16				11					
				15					
17				24					
18									
19									
20									
	S-6	24/24	20 - 22	12		Olive gray to gray SILT, some to little Sand, Gravel, and Clay, occasional cobbles, hard, moist, ML (3" cobble at 20.5')			
21				17					
				19					
22				20					
						End of Exploration at 22', No Refusal			22'
Granular Soils		Cohesive Soils		% Composition		NOTES: PP = Pocket Penetrometer, MC = Moisture Content S = Split spoon sample, LL = Liquid Limit, PI = Plasticity Index			Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487					
0-4	V. Loose	<2	V. soft			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace					
11-30	Compact	5-8	Firm	5-15% Little					
31-50	Dense	9-15	Stiff	15-30% Some					
>50	V. Dense	16-30	V. Stiff	> 30% With					
		>30	Hard						

						SOIL BORING LOG		Boring #: B-3	
Drilling Co: Summit Geoengineering Services, Inc.						Project: New Residential Building		Project #: 17164	
Driller: C. Coolidge, P.E.						Location: 33 Montreal Street		Sheet: 1 of 1	
Summit Staff: E. Stewart, P.E.						City, State: Portland, Maine		Chkd by: WMP	
Boring Elevation: Unknown						Reference: N/A			
Date started: 4/5/2019						Date Completed: 4/5/2019			
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS			Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			4/5/2019	NE	N/A	None observed
Method: 2 1/4-inch HSA			Hammer: 140 lb						
Hammer Style: Auto			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
1	S-1	24/12	0 - 2	1		Dark brown SILT, little Sand, rootlets, loose, damp, ML			PAVEMENT
				2		Light brown SAND, trace Silt, loose, damp, SP			0.1' FILL
				6		Brown SAND, some Silt, little Gravel, reclaim pavement, loose, damp, SM			
2				6					
3	S-2	24/6	2 - 4	3		Dark brown SILT, some organics, trace Sand, firm, moist, ML			2.5' FORMER TOPSOIL
4				4					
5									3.5'+/- GLACIAL TILL
6	S-3	24/24	5 - 7	12		Olive brown Sandy SILT, some Gravel, hard/dense, damp, ML		PP = 6,000 to 7,000 psf	
7				21		(Sandy lense/pocket at spoon tip)			
8				21					
9									
10									
11	S-4	24/24	10 - 12	10		Olive to olive brown SILT, some Sand and Gravel, little Clay, occasional cobbles, hard/dense, damp, ML		PP > 9,000 psf	
12				18					
13				20					
14				30					
15									
16	S-5	24/24	15 - 17	20		Olive gray SILT, some Sand and Gravel, little Clay, hard, damp, ML		PP > 9,000 psf	
17				24					
18				25					
19				41					
20						End of Exploration at 18', Auger Refusal in dense glacial till.			18'
21									
22									

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content S = Split spoon sample, LL = Liquid Limit, PI = Plasticity Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			

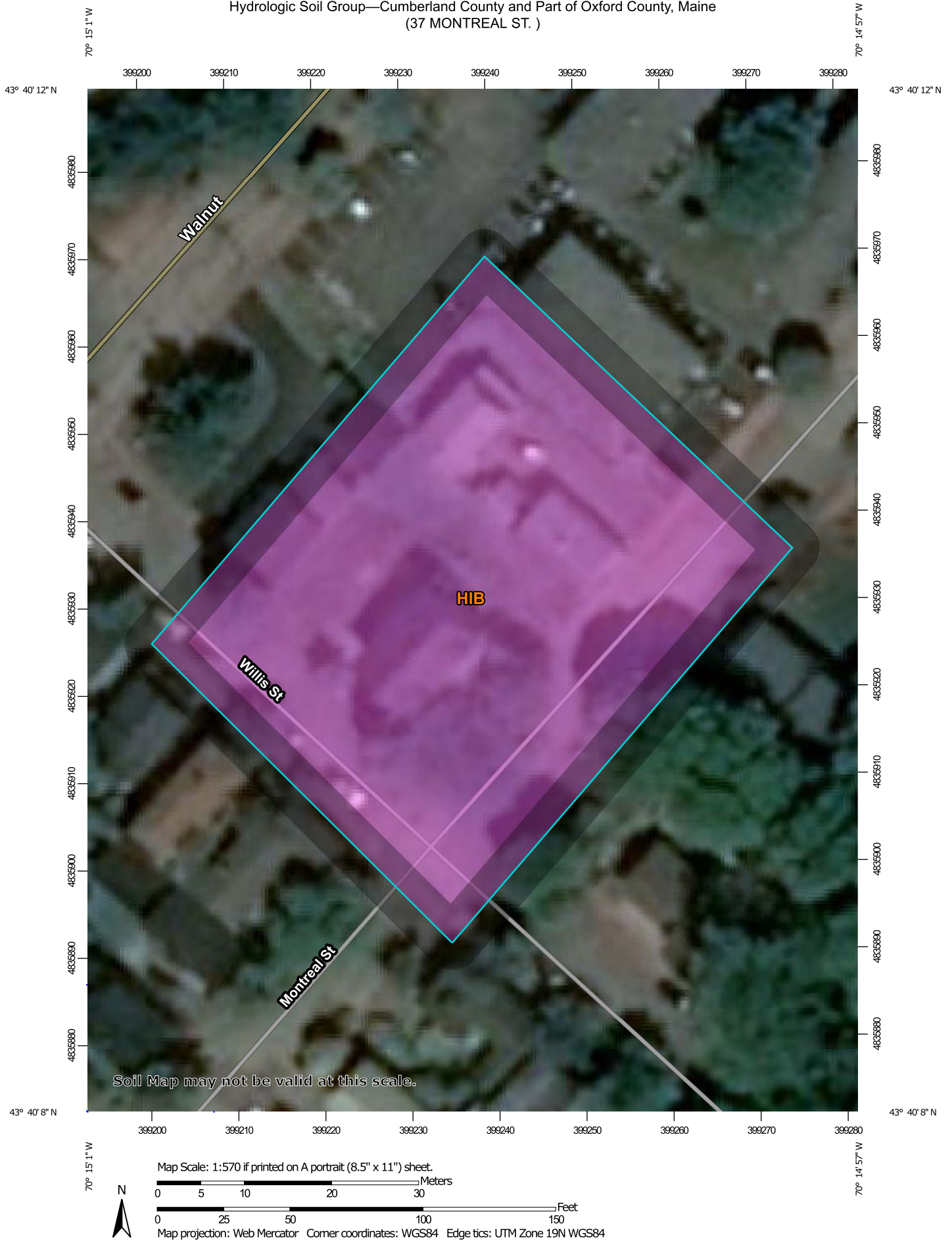
						SOIL BORING LOG		Boring #: B-4	
Drilling Co: Summit Geoengineering Services, Inc.						Project: New Residential Building		Project #: 17164	
Driller: C. Coolidge, P.E.						Location: 33 Montreal Street		Sheet: 1 of 1	
Summit Staff: E. Stewart, P.E.						City, State: Portland, Maine		Chkd by: WMP	
Boring Elevation: Unknown						Reference: N/A			
Date started: 4/5/2019						Date Completed: 4/5/2019			
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS			Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			4/5/2019	NE	N/A	None observed
Method: 2 1/4-inch HSA			Hammer: 140 lb						
Hammer Style: Auto			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
	S-1	24/18	0 - 2	2		Dark brown SILT, little Sand, rootlets, soft, damp, ML			TOPSOIL
1				6		Brown Silty SAND, some Gravel, trace reclaim, slate, and ash, loose, frozen to damp, SM			0.5'
				4					FILL
2				3					
	S-2	24/12	2 - 4	2		Same as above, trace brick, loose, damp, SM			
3				3					
				3		Brown fine SAND-SILT, trace Clay, loose, damp, SM-ML			3' +/-
4				5					
						Auger refusal on cobble or obstruction at 4.5', offset boring.			
5									
	S-3	24/24	5 - 7	5		Olive brown and mottled Sandy SILT, some Gravel, occasional Sandy lenses/pockets, very stiff, damp, ML (Cobble fragments in spoon tip; pushed cobble.)			5' +/-
6				9					GLACIAL TILL
				13					
7				25					
8									
9									
10									
	S-4	24/3	10 - 12	12		Olive brown Silty SAND to Sandy SILT, some Gravel, hard/dense, damp, SM to ML (Cobble in spoon tip; pushed cobble.)			
11				35					
				37					
12				32					
13									
14									
15									
	S-5	24/24	15 - 17	9		Olive brown to olive gray SILT, some Sand and Gravel, little Clay, hard, damp, ML		PP > 9,000 psf	
16				13					
				17					
17				22					
18									
19									
20									
	S-6	24/24	20 - 22	11		Gray SILT, some Sand and Gravel, little Clay, hard, damp, ML			
21				16					
				15					
22				21					
						End of Exploration at 22', No Refusal			22'
Granular Soils		Cohesive Soils		% Composition		NOTES: PP = Pocket Penetrometer, MC = Moisture Content S = Split spoon sample, LL = Liquid Limit, PI = Plasticity Index			Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487					Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
0-4	V. Loose	<2	V. soft	< 5% Trace		Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and > No 200, Silt/Clay = < No 200			
5-10	Loose	2-4	Soft	5-15% Little					
11-30	Compact	5-8	Firm	15-30% Some					
31-50	Dense	9-15	Stiff	> 30% With					
>50	V. Dense	16-30	V. Stiff						
		>30	Hard						

					SOIL BORING LOG		Boring #: B-5		
Drilling Co: Summit Geoengineering Services, Inc.					Project: New Residential Building		Project #: 17164		
Driller: C. Coolidge, P.E.					Location: 33 Montreal Street		Sheet: 1 of 1		
Summit Staff: E. Stewart, P.E.					City, State: Portland, Maine		Chkd by: WMP		
Boring Elevation: Unknown					Reference: N/A				
Date started: 4/5/2019					Date Completed: 4/5/2019				
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH				
Vehicle:	AMS	Length:	24" SS		Date	Depth	Elevation	Reference	
Model:	9500 VTR	Diameter:	2"OD/1.5"ID		4/5/2019	NE	N/A	None observed	
Method:	2 1/4-inch HSA	Hammer:	140 lb						
Hammer Style:	Auto	Method:	ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	
	S-1	24/12	0 - 2	3		Dark brown SILT, little Sand, rootlets, soft, damp, ML		TOPSOIL	
1				5		Brown SAND, some Gravel, little Silt, compact, SP-SM		0.5'	
				7		Dark brown SILT, little Sand, Gravel, and organics, firm/compact, damp, ML		FILL (Portions Reworked Native)	
2				4					
3									
4						Brown medium-fine SAND, little Silt, loose, damp, SP to SP-SM		3' +/-	
5									
6	S-2	24/24	5 - 7	6		Olive SILT, some Sand, little Gravel and Clay, very stiff, damp, ML		PP = 7,000 to 9,000 psf	
				9				5' +/-	
				13				GLACIAL TILL	
				18					
8									
9									
10									
11	S-3	24/24	10 - 12	10		Olive brown SILT, some Sand and Gravel, little Clay, occasional small cobbles, hard, damp, ML		PP > 9,000 psf	
				16					
				20					
12				24					
13						(Cobble at 12.5' +/-)			
14									
15									
16	S-4	24/24	15 - 17	15		Olive gray SILT, some Sand and Gravel, little Clay, hard, damp, ML		PP > 9,000 psf	
				19					
				20					
17				26					
18									
19									
20									
21	S-5	24/24	20 - 22	10		Gray SILT-CLAY, some Sand and Gravel, very stiff, damp to moist, ML		PP > 9,000 psf	
				11					
				13					
22				18					
						End of Exploration at 22', No Refusal		22'	
Granular Soils		Cohesive Soils		% Composition		NOTES: PP = Pocket Penetrometer, MC = Moisture Content S = Split spoon sample, LL = Liquid Limit, PI = Plasticity Index Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and > No 200, Silt/Clay = < No 200		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487				Dry: S = 0%	
0-4	V. Loose	<2	V. soft	< 5% Trace				Humid: S = 1 to 25%	
5-10	Loose	2-4	Soft	5-15% Little				Damp: S = 26 to 50%	
11-30	Compact	5-8	Firm	15-30% Some				Moist: S = 51 to 75%	
31-50	Dense	9-15	Stiff	> 30% With		Wet: S = 76 to 99%			
>50	V. Dense	16-30	V. Stiff			Saturated: S = 100%			
		>30	Hard						

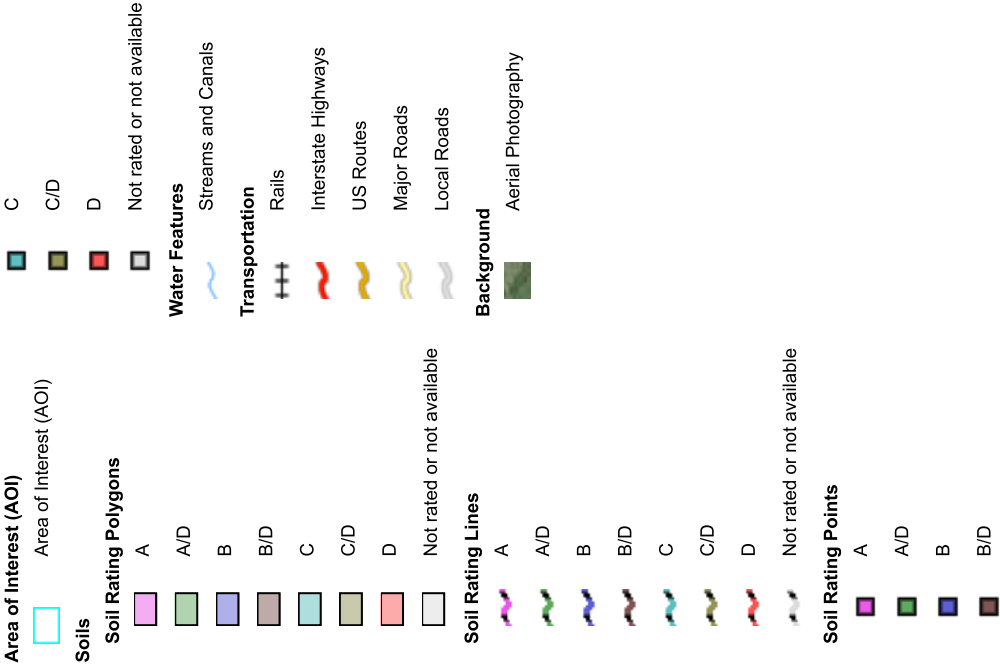
ATTACHMENT D

MEDIUM INTENSITY SOILS MAP

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine
(37 MONTREAL ST.)



MAP LEGEND



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 15, Sep 6, 2018

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
HIB	Hinckley loamy sand, 3 to 8 percent slopes	A	0.7	100.0%
Totals for Area of Interest			0.7	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

Component Percent Cutoff: None Specified

ATTACHMENT E

INSPECTION, MAINTENANCE AND HOUSEKEEPING PLAN



INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

33/37 MONTREAL STREET DEVELOPMENT PORTLAND, MAINE

Responsible Party

Owner: McTigue Construction
 184 Mountain Road
 Falmouth, Maine 04105

The owner is responsible for the maintenance of all stormwater management structures and related site components and the keeping of a maintenance log book with service records. Records of all inspections and maintenance work performed must be kept on file with the owner and retained for a minimum of five years. The maintenance log will be made available to the City upon request. At a minimum, the maintenance of stormwater management systems will be performed on the prescribed schedule.

The procedures outlined in this plan are provided as a general overview of the anticipated practices to be utilized on this site. In some instances, additional measures may be required due to unexpected conditions. *The Maine Erosion and Sedimentation Control BMP and Stormwater Management for Maine: Best Management Practices* Manuals published by the Maine Department of Environmental Protection (MDEP) should be referenced for additional information.

During Construction

- 1. Inspection and Corrective Action:** It is the contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. Inspection shall occur on all disturbed and impervious areas, erosion control measures, material 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 24 hours 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 the permit, shall conduct the inspections.
- 2. Maintenance:** Erosion controls shall be maintained in effective operating condition until areas are permanently stabilized. 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 BMPs need to be maintained or modified, additional

BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any rainfall event.

3. **Documentation:** A report 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 the major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle 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 City Staff, and a copy must be provided upon request. The owner shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

Housekeeping

1. **Spill prevention:** Controls must be used to prevent pollutants from construction and waste materials on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.
2. **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. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.
3. **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, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads

once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.

4. **Debris and other materials:** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.
5. **Excavation de-watering:** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, 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 removed from the ponded area, either through gravity or pumping, 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 by the Department.
6. **Authorized Non-stormwater discharges:** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
 - (a) Discharges from firefighting activity;
 - (b) Fire hydrant flushings;
 - (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
 - (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
 - (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
 - (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
 - (g) Uncontaminated air conditioning or compressor condensate;
 - (h) Uncontaminated groundwater or spring water;
 - (i) Foundation or footer drain-water where flows are not contaminated;
 - (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));
 - (k) Potable water sources including waterline flushings; and
 - (l) Landscape irrigation.
7. **Unauthorized non-stormwater discharges:** Approval from the City does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Section 6 above. Specifically, the City's approval does not authorize discharges of the following:

- (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
- (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
- (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
- (d) Toxic or hazardous substances from a spill or other release.

Post construction

- 1. Inspection and Corrective Action:** All measures must be maintained by the owner in effective operating condition. A qualified third-party inspector hired by the owner shall at least annually inspect the stormwater management facilities. This person should have knowledge of erosion and stormwater control including the standards and conditions of the site's approvals. The inspector shall be certified through the City to inspect the stormwater infrastructure. 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.
 - 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 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. Culverts:** Inspect culverts in the spring, 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; and to repair any erosion damage at the culvert's inlet and outlet.
 - C. Catch Basins/Outlet Control Structure:** 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 any 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. If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils (using oil-absorptive pads).
 - D. Subsurface Chamber System:** The manufacturer recommends that at a minimum the that an annual inspection is conducted. Initially the system shall be inspected every 6 months for the first year of operation. If inspection indicates that sediment has accumulated, a measurement to determine the depth of sediment shall be performed. When an average depth of 3 inches is exceeded then clean-out shall be performed. The system should drain within 48 hours following a one-inch storm and if a larger storm fills the system to overflow, it shall drain within 72 hours.

- E. Regular Maintenance:** Clear accumulations of winter sand along roadway once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along pavement shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.
- F. 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 City staff 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. Attached is a sample log.

Re-certification

In order to receive Stormwater Credit toward the City of Portland Stormwater Service Charge, the owner must submit an annual inspection report by June 30 of each year in accordance with Chapter 32, Article III and Chapter 24, Article V of the City of Portland's Code of Ordinances. A qualified 3rd party post-construction inspector must conduct an inspection of the stormwater control system, including all BMPs and associated features, and complete Form 4. If the credit holder does not submit a completed annual inspection report by June 30, or submits a failing inspection report, credits will be suspended.

Duration of Maintenance

Perform maintenance as described.

STORMWATER MAINTENANCE LOG

33/37 MONTREAL STREET DEVELOPMENT PORTLAND, MAINE

The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the City upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Vegetated Areas	Inspect slopes and embankments early in Spring.			
Culverts	Inspect semiannually and after major rainfall.			
	Repair erosion at inlet or outlet of pipe.			
	Repair displaced riprap.			
	Clean accumulated sediment in culverts when >20% full.			
Catch Basins and Outlet Structure	Inspect to ensure that structure is properly draining.			
	Remove accumulated sediment semiannually.			
	Inspect grates/inlets and remove debris as needed.			
StormTech SC-310 Chambers	Inspect every six months and after major rain events to ensure that pond drains within 60 hours			
	Inspect annually for erosion or sediment accumulation and repair as needed.			
Regular Maintenance	Clear accumulation of winter sand in paved areas annually.			

33-37 MONTREAL STREET, PORTLAND

UTILITIES – Ability to Serve letters are currently in process. From current services available in the area the project team does not foresee any issues with the service of any utilities.

OVERVIEW The proposed project will involve installation of new utility services to the building. All new utility services will be provided from the franchise utilities available within Montreal, Willis and Walnut Streets. The proposed locations of the new utility services are shown on the Utility Plan (Sheet C-5.0).

WATER SUPPLY The proposed project will receive its water supply from the Portland Water District's (PWD) public water supply system. Separate fire and domestic services will be installed to the building from PWD's existing main in Montreal Street. The Development team is submitting an ability to serve request to PWD on August 7, 2019. A response from PWD will not be received at the time of submission, but will be provided when it is received.

Total Project Water Usage The total average daily water demand for the proposed project is estimated to be 2,360 gallons per day, based on design flows published in the State of Maine Subsurface Wastewater Disposal Rules.

1 x 2 Bedroom Residential Units at 180 gpd/unit = 180 gpd

8 x 3 Bedroom Residential Units at 270 gpd/unit = 2,160 gpd

WASTEWATER DISPOSAL The proposed project will be connected to the Portland Water District's and City of Portland's wastewater collection and conveyance systems. The City of Portland Wastewater Capacity Application will be completed by August 9, 2019 and forwarded to Mr. Brad Roland.

The overall project is anticipated to generate an average daily flow of approximately 2,360 gpd. Based on the existing sewer system in the area, there appears to be adequate capacity to handle these projected flow amounts.

ELECTRICITY SUPPLY CMP currently maintains overhead and underground utilities in the area including 3 phase power along Walnut Street that currently serves Promenade Towers.

SOLID WASTE

OVERVIEW The project will generate solid waste both during construction and on an on-going basis after construction is complete. Estimates of solid waste generation, recycling rates, and procedures for the transport and disposal of solid waste that will be generated by the operation of the proposed development are provided below.

The following amount of solid waste associated with the construction and operation of the development have been estimated:

- 147 cubic yards of construction debris related to the new building construction activities (excluding volume of recycled materials).
- 306 pounds per week of solid waste will be generated by the operation of the development. Assuming that 50% of the waste is recycled, it is estimated that the project will generate 7.95 tons of recyclable waste and 7.95 tons of nonrecyclable waste per year.

SOLID WASTE GENERATED DURING THE BUILDING CONSTRUCTION

Approximately 147 cubic yards of construction debris is expected to be generated during construction. Assuming that 80% of construction debris is recycled, construction of the project will generate approximately 83 c.y. of non-recyclable waste.

The waste stream will be transported and disposed of at the following locations:

Hazardous Materials: WMI Crossroads Facility in Norridgewock, Maine

Mixed Construction Material: Riverside Recycling Facility in Portland, Maine; WMI Crossroads Facility in Norridgewock, Maine or Juniper Ridge in Old Town, Maine (Contractor option)

Separated Wood Construction Debris: KTI Biofuels in Lewiston, Maine

Separated Metal/Ferrous Material: One Steel Recycling Inc. in Arundel or Oakland, Maine

The collection, transfer, disposal, and payment of all fees for solid wastes shall be the responsibility of the Contractor, with all waste transferred by a licensed non-hazardous waste transporter.

SOLID WASTE GENERATED FROM THE OPERATION OF THE DEVELOPMENT

Approximately 306 pounds of solid waste and recyclable material is expected to be generated every week by the residents of the project. The operational solid waste and recyclable material will be collected by the City of Portland in accordance with Chapter 12 of the City Code.

ATTACHMENTS Attachment 12-A – Computations of Types and Volumes of Solid Wastes for Construction Project.

ATTACHMENT

SOLID WASTES COMPUTATIONS AND DISPOSAL

A. NEW BUILDING CONSTRUCTION:

Basis of Estimate: 10 c.y./1,500 s.f. of finished space

Area: Approximately 22,000 square feet of finished space

Solid Waste: Approximately 147 c.y.

Other Wastes Associated with Other Site Construction: Cardboard from packaging etc.: Limited Quantity

Total: 147 c.y. before recycling

Net: 30 c.y. if 80% of the material is recycled

Disposition: Assume 10 percent is concrete and brick which can be sent to the approved aggregate recycling facilities operated by Shaw Bros. or R.J. Grondin and Sons for processing into recycled aggregate.

Assume 70 percent is wood or metal which can be transported to KTI Biofuels in Lewiston (for wood) or One Steel Recycling in Oakland, Maine for metals.

Approximately 30 cubic yards of mixed construction debris that will be hauled to the Riverside Recycling Facility in Portland, WMI Crossroads facility in Norridgewock, Maine or the Juniper Ridge Facility in Old Town, Maine.

The contractor should provide dumpsters designated by material type and identify recycling methods and disposal sites prior to construction. All haulers must have a current non-hazardous waste haul license.

B. OPERATIONAL SOLID WASTE:

RESIDENTIAL USE: Basis of Estimate: 17 pounds/wk per individual. Estimate of 2 individuals per residential unit. From Table 14-1 of the CEQR Technical Manual from January 2014 Edition; Source: New York City Department of Sanitation.

Number of individuals: 18

Solid Waste: Approximately 306 pounds/week



PUBLIC INFRASTRUCTURE AND SAFETY

The following outlines how the proposed project at 33/37 Montreal Street has been designed to meet the applicable standards of the City of Portland associated with Level III: Residential Site Plan and Subdivision review.

Section 14-526 (c) 2 – Public Safety and Fire Prevention

The project design and building architecture will provide view corridors along Montreal Street, Willis Street, between the proposed building and the existing residential building at 23 Willis Street, and along the northerly property limits looking through the site to the northwest (towards Walnut Street).

Site access will be limited to the proposed entry/exit doorways on Willis Street and the proposed driveway and parking garage. Site will be improved with landscaped terraces along Montreal Street, which are intended to serve as community areas for the residents and guests which will have access from the existing sidewalk. Along the westerly side of the building, residents and guests will have access to a built-up hardscape patio and additional landscaped terraces that will be accessed from the inside of the building.

The site design layout and landscaping will provide a visual break from the public ROW and the exclusive/community elements of the proposed project. Exclusive use areas will likely be established and will likely provide an opportunity for residents to customize their exclusive use areas, and promote a sense of ownership.

Emergency access to the site will be provided by the existing road frontage along Willis Street and Montreal, as well as via the proposed driveway. The 14-ft wide driveway may not be capable of providing access to larger emergency apparatus but the proposed driveway design (vertical and horizontal) should be adequate to most service level emergency apparatus and vehicles.

Existing facilities such as fire hydrants and water supply also are adequate, with the nearest existing fire hydrant located at the southwesterly corner of the intersection at Willis Street and Montreal.

Section 14-526 (c) (3) – Availability and Adequacy of Public Utilities (Technical Manual, Sections 2 & 9)

The project site location and existing public utility facilities, are available; with existing combined storm sewer main lines (2 separate) in both Montreal Street and Willis Street in the direct vicinity of the project site. Water mains are also located in both Montreal Street and Willis Street and the project will coordinate with the Portland Water District to ensure that the project will be

provided adequate domestic potable water service as well as any fire safety water services. Additionally, underground gas, and overhead electric/telephone/data services are available, and the project will provide new service connections for water, sewer, gas, and overhead electric/telephone/data services.

The project design does not utilize a connection to the existing storm drain system and the existing facilities (in consideration with the proposed storm water facilities on-site) appear adequate based on hydrologic/hydraulic modeling of the project site.

The project proposes less than 20 units and therefore no trash and recycling storage or dumpster areas are proposed. However, the proposed project site has several opportunities to include trash storage areas for the residents either within the proposed underground parking area on adjacent to the proposed driveway within a screened, secure dumpster enclosure.

August 12, 2019

Att. 13

33-37 MONTREAL STREET, PORTLAND

The following outlines how the proposed project has been designed to meet the applicable standards of the City of Portland associated with Level III: Residential Site Plan and Subdivision review.

SITE DESIGN

Massing, Ventilation and Wind Impact - Section 14-526 (d) (1):

The bulk, location and height of the proposed building will comply with the minimum allowable setbacks and maximum allowable building height for the zone.

The proposed building will be > 10' away from the nearest existing adjacent structure (23 Willis Street), and > 50' away from the next nearest existing adjacent structure (MacArthur Gardens, on Montreal Street).

The proposed structure is not expected to cause a reduction in ventilation to abutting structures or unsafe wind conditions for users of the site or adjacent public spaces.

Exterior HVAC mechanical equipment will be located on the roof within a screened enclosure, as shown on the Roof Plan. The enclosure will be in the center of the roof to maximize the distance from adjacent properties and minimize the visibility from adjacent properties and public spaces.

The base of the equipment will be supported and raised up above the low-slope roof membrane on racks to minimize performance disruption & maintenance issues caused by winter conditions. A screened enclosure will be provided around the roof-top HVAC equipment, with adequate space around the equipment to allow for air movement.

A decorative parapet/cornice around the perimeter of the building will provide further visual screening from footpath level.

HVAC venting on the exterior of the proposed building will direct exhaust away from public spaces and adjacent residential properties.

Snow and Ice – Section 14-526 (d) (4):

The proposed building has a low slope roof, with internal roof drains. The outer perimeter edge of the roof includes a decorative parapet/cornice to direct snow and ice away from the adjacent properties and public ways.



Zone Related Design Standards – Section 14-526 (d) (5):

A previous version of the project was reviewed by the Historic Preservation Board, as part of the Alternative Design Review process under the Munjoy Hill Neighborhood Conservation Overlay District. That project design received approval from the Board, in December 2018, after a number of public hearings and related design revisions.

While the current project proposal is significantly smaller and less complex than the previous version (ie smaller foot print/lot coverage/overall square foot area, with fewer residential units), the following notes describe how the project addresses the relevant design standards in the MHNCO District.

Roof Forms and Active Living Space - Section 14-140.5 (d) 1:

The proposed building has a low-pitch “flat roof”, as is permitted for buildings with more than 3 units.

The first floor contains active living space with windows comprising 50.0% of the overall façade, and satisfies the minimum requirement for this standard. This active living space does not include common circulation (ie. elevator, entry foyer, or stairs), or storage space within the residential units (eg closets).

R6 Design Principles and Standards:

Refer to separate attachment: R6 Design Standards.

33-37 Montreal Street Apartments

R6 Design Principles and Standards

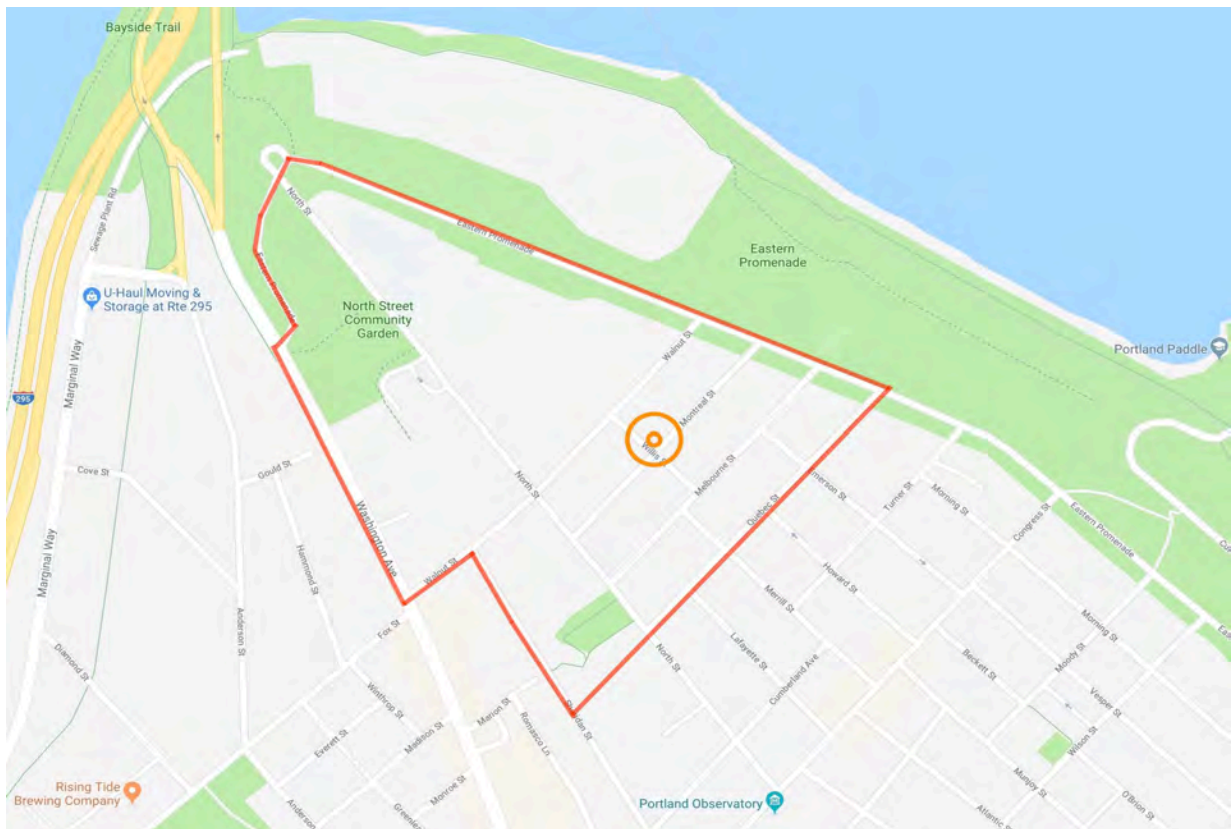
New Residential construction within the R6 zone are to relate to the predominant character of the neighborhood. Projects are reviewed for consistency with the R6 Infill Development Design Principles and Standards, which apply to the front façade, and those portions of the building that are readily visible from a public way.

The Review Authority may approve a design not meeting one or more of the individual standards provided that all the conditions listed below are met:

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

The following notes describe how the proposed building meets these criteria:

Neighborhood context - Two Block Radius Diagram



Principle A - Overall Context

The proposed multifamily residence at Montreal and Willis Streets is uniquely situated in one of the most architecturally and use diverse area on Munjoy Hill. Within a two block radius are three-family homes, single family residences, three major housing developments (including high-rise condos), numerous four story apartment buildings, a senior housing facility, the East End School and community garden, a ball field, parking lot, and the Portland Water District Treatment Facility. In order to understand how a building can act like a stitch between such different areas, while also reflecting the unique culture and architectural character of Munjoy Hill, we have considered the immediate community as well as other residential buildings located in similarly transitional areas in our analysis.

Standard A-1 Scale + Form

Within a two block radius of the site is a wide variety of housing scale including single-family, three-family, and larger-scale housing developments (like the MacArthur Gardens Apartments adjacent to the proposed building and which occupy the other half of the block, and the nearby 14-story Promenade Towers).

The proposed building is a 9-apartment residence at the corner of Willis and Montreal Streets, which will provide an alternative housing option for Munjoy Hill families, within a more intimate mid-scale community model.

The scale of the project is within that of other similarly-sized multifamily buildings within a two block radius such as:

80 North Street	9 Homes	
58 North Street	22 homes	Shailer School affordable housing
101 North Street	5 Homes	
158 North Street	60 units	Bayview Heights affordable senior housing
63 Emerson Street	5 Homes	
135 Sheridan Street	20 homes	

In addition the Munjoy Hill district includes other properties such as:

49 Morning Street	8 homes	
55 Morning Street	8 homes	
63 Morning Street	8 homes	
119 Morning Street	30 units	
13 Emerson Street	22 homes	Munjoy Commons affordable housing

The form of the proposed building has vertically proportioned massing, a simple roof form, vertical windows with local symmetry, a three-bay front facade composition, and simple material palette. This character is similar to the existing “three-decker” multi-family buildings within the two block radius context area (and the “four-deckers” in the wider Munjoy Hill District).

The building has shingled exterior walls capped by a low-pitch “flat roof” with a continuous parapet/cornice at the outer perimeter edges. Exposed concrete foundation walls provide a visual base to the building. Exterior space is provided to all units, with patios to the 3 units on the first floor, and decks at the rear of the building for the other 6 upper floor units.

Standard A-2 Composition of Principal Facades

Willis Street

The primary composition has an overall symmetrical appearance balanced with minor asymmetrical features. The main entrance to the building is prominently located in the center of the façade, using a traditional composition in the neighborhood context. A short flight of steps leads directly from the sidewalk and a ramp provides an ADA accessible route that meets the natural slope of grade. Projecting bay windows emphasize Willis Street as the front face of the building, with Montreal Street as the side-street elevation.

Montreal Street

Elements of the Willis Street facade are repeated as the building turns the corner and extends down Montreal Street. The repeated window rhythm and relative simplicity of the façade identifies it as the secondary face of the building. Exterior decks are located at the rear of the building, similar to the arrangement of the familiar three and four decker multifamily buildings in the district.

Standard A-3 Relationship to the Street

The Willis Street façade is set back enough to provide easy and direct access to the building via either a short flight of steps or a simple ramp arrangement. The steps follow a common arrangement for main entry paths in the neighborhood, being directly aligned between the sidewalk and the entry door. The steps rise approximately 12” in total, enough elevation rise to indicate a clear property threshold, while also being low enough to offer a welcoming entrance to the street.

The first floor has active living spaces with windows from living and bedroom spaces facing both Willis and Montreal streets.

The landscape design includes planted areas around all sides of the building. Street lot lines are defined by stone-faced site walls, with a simple arrangement of terraces in the intermediate space between the sidewalk and the building. The face of the intermediate terraces has a slatted wood lattice treatment that combines with the planted areas to form a continuous landscaped zone between the building and the property boundary.

Principle B - Massing

Standard B-1 Massing

The proposed building massing reflects the traditional character of the neighborhood and takes it's cues from the traditional multi-family buildings in the context area.

The narrow end of the building is clearly expressed as the front face, on Willis Street, using a three-bay composition. A central bay provides overhead weather protection above a slightly recessed main entrance. All three bays extend from second floor level up to roof level and are vertically proportioned.

Exterior decks are located at the rear of the building and occupy an "eroded" corner of the building in a vertical arrangement, in common of the familiar multi-decker typology.

Standard B-2 Roof Forms

The building has a low pitch "flat" roof capped by a decorative parapet/cornice that follows the perimeter of the building, similar to other flat-roofed multi-family buildings in the context area.

Standard B-3 Main Roofs and Subsidiary Roofs

The building has a clear main roof form, without subsidiary roofs.

Standard B-4 Roof Pitch

NA

Standard B-5 Façade Articulation

The Standard requires the front façade and other portions of the building that are readily visible from the public way to use at least two architectural elements from a list provided. The proposed building employs more than two of the listed features including:

- 1) Balconies
- 2) Recessed entries
- 3) Covered porches
- 4) Bay windows

Standard B-6 Garages

Access to the basement garage is provided via a driveway off Montreal Street to a garage door and a pass door discretely located away from the street facade. The garage door is set back more than 30' from the street lot line, is recessed between flanking site walls, and is turned 90 degrees so it does not directly face a public way.

Principle C – Orientation to the street

Standard C-1 Entrances

The main entrance to the building is clearly articulated in the center of the principal façade and faces the street directly. Architectural features such as a covered and recessed entry, plus accent cladding material, are used to highlight the entry point and provide a welcoming and protected transition area between the exterior public realm and the interior private space.

Standard C-2 Visual Privacy

Building occupants are offered a sense of privacy by elevating the first floor at least 24" above the sidewalk elevation, and elevating the first floor window sills at least 48" above the sidewalk grade (the only exception to this is at the corner of Willis and Montreal streets where the first floor is 12" above the sidewalk and one window is 36" above the sidewalk due to the local slope of grade).

A planted buffer zone fills the intermediate space between the building and the sidewalk. A stone-faced landscape wall on the street lot line provides a clear definition of public space close to the building.

Standard C-3 Transition Spaces

Transition spaces are articulated between the sidewalk and the front door through use of architectural and landscaping elements.

Architectural features include a short flight of steps and a ramp, each with approximately 12" total rise to the front door.

Landscaping features include planted areas alongside the steps and ramp. In addition a low wall along the Willis Street lot line defines the edge of the entry ramp and offers an informal seating opportunity for a neighborly conversations.

Principle D - Proportion and Scale

Standard D-1 Windows

All windows are rectangular and vertically proportioned, to reflect the scale and aesthetics of the surrounding neighborhood homes. The majority of windows along both facades are proportionate to commonly used vertically oriented windows, typically measuring approximately 2'-8" wide x 5'-0" high.

Standard D-2 Fenestration

The fenestration in general has a similar proportion to the overall building massing as other neighborhood buildings.

Consistent with the R6 Design Standards, the total area of fenestration of each street-facing facades along Montreal and Willis Streets is greater than 12% of the relevant total facade area.

Standard D-3 Porches

The horizontal extent of the covered entry porch on Willis Street is approximately 20% of the overall façade width.

All balconies have a depth of at least 6', and an area of at least 48 square feet.

Principle E - Balance

Standard E-1 Window and Door Height

The majority of doors and windows on all facades have a head height with a common horizontal datum line, including all primary window and doors.

Standard E-2 Window and Door Alignment

The majority of windows and doors are stacked with centerlines in vertical alignment.

Standard E-3 Symmetricality

Primary windows are composed with vertical symmetry around a discernable local centerline within each façade. The dominant window type is a pair of vertically orientated symmetrical window sashes, arranged symmetrically about a common centerline.

Principle F - Articulation

Standard F-1 Articulation

Primary surface articulation is provided with projecting bay windows on the Willis Street façade, and recessed exterior balconies on the Montreal Street façade. Secondary articulation and shadow lines are provided by the decorative parapet/cornice, and changes in material texture at accent panels.

Standard F-2 Window Types

The building uses consistent window types throughout with a minimum of variation. There are two window types:

- 1) Rectangular operable casement sashes.
- 2) Rectangular fixed sashes.

The dominant window arrangement is a symmetrical pair of vertically proportioned operable casement sashes, with a number of casement sashes arranged in groups of three on the water facing north-east façade. A relatively small number of fixed transom sashes are used on the top floor and the central bay above the main entrance. The egress stair also has a number of fixed sashes.

Standard F-3 Visual Cohesion

The material choices help to further define the primary masses of the structure:

- 1) Wood shingles for the predominant material.
- 2) Accent cladding at the main entrance.
- 3) Accent spandrel panels below some of the windows as part of the overall articulation of the building facades.

Standard F-4 Delineation between Floors

Floors are articulated primarily through fenestration patterns and balconies.

Standard F-5 Porches, etc.

Exterior spaces and balconies are incorporated in to the overall design and building massing. Balustrade railings are provide articulation and add shadow lines to the façade.

Standard F-6 Main Entries

The main entry is emphasized by the arrangement of steps, the composition of projecting window bays and recessed entry alcove, plus some local material articulation.

Standard F-8 Articulation

Architectural articulation features include:

- 1) Projecting bays with an offset depth of approximately 2'-0"
- 2) Recessed balconies with a typical offset depth of approximately 8'-0"
- 3) A decorative parapet/cornice with a projecting depth of between 1'-6" and 2'-0".

Principle G Materials

Standard G-1 Materials

Materials for the exterior walls are similar to those found in the context area of the neighborhood.

The proposed building includes:

- 1) Concrete foundation wall.
- 2) Wood shingles with a paint color.
- 3) Aluminum clad windows with a charcoal grey color.

Standard G-2 Material and Façade Design

The selection of façade materials is consistent with the façade design, with concrete for the foundation wall and visually lighter wood shingle cladding for the upper stories.

Standard G-3 Chimneys

N/A

Standard G-4 Window Types

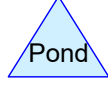
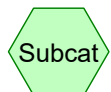
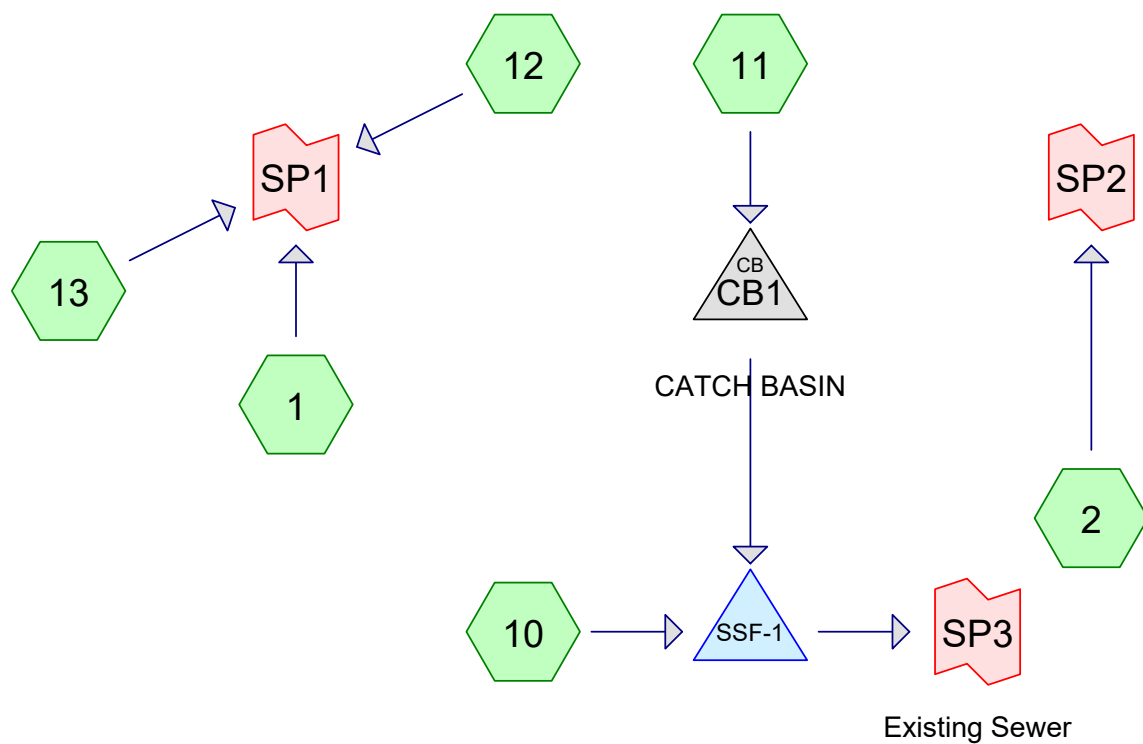
The building uses consistent window types throughout with a minimum of variation. There are two window types:

- 1) Rectangular operable casement sashes.
- 2) Rectangular fixed sashes.

Window detailing will be consistent throughout.

Standard G-5 Patios and Plazas

The first floor patios will be constructed of masonry unit pavers.



Routing Diagram for 18053-POST
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18053-POST

Type III 24-hr 25-Year Rainfall=5.80"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1:	Runoff Area=570 sf 56.32% Impervious Runoff Depth=2.83" Flow Length=83' Tc=6.0 min CN=72 Runoff=0.04 cfs 134 cf
Subcatchment 2:	Runoff Area=3,470 sf 95.48% Impervious Runoff Depth=5.21" Flow Length=151' Tc=6.0 min CN=95 Runoff=0.43 cfs 1,507 cf
Subcatchment 10:	Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=4.33" Flow Length=72' Tc=6.0 min CN=87 Runoff=0.89 cfs 2,889 cf
Subcatchment 11:	Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=3.80" Flow Length=45' Tc=6.0 min CN=82 Runoff=0.16 cfs 507 cf
Subcatchment 12:	Runoff Area=716 sf 5.31% Impervious Runoff Depth=0.55" Flow Length=23' Tc=6.0 min CN=42 Runoff=0.00 cfs 33 cf
Subcatchment 13:	Runoff Area=536 sf 92.91% Impervious Runoff Depth=5.10" Tc=6.0 min CN=94 Runoff=0.07 cfs 228 cf
Pond CB1: CATCH BASIN	Peak Elev=123.41' Inflow=0.16 cfs 507 cf 10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 ' Outflow=0.16 cfs 507 cf
Pond SSF-1:	Peak Elev=124.93' Storage=938 cf Inflow=1.05 cfs 3,396 cf Discarded=0.00 cfs 956 cf Primary=0.92 cfs 2,439 cf Outflow=0.92 cfs 3,396 cf
Link SP1:	Inflow=0.11 cfs 395 cf Primary=0.11 cfs 395 cf
Link SP2:	Inflow=0.43 cfs 1,507 cf Primary=0.43 cfs 1,507 cf
Link SP3: Existing Sewer	Inflow=0.92 cfs 2,439 cf Primary=0.92 cfs 2,439 cf

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Type III 24-hr 25-Year Rainfall=5.80"

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Summary for Subcatchment 1:

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 134 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 95	98	Existing Pavement
* 226	98	Proposed Concrete
* 179	39	Proposed Landscape A
* 70	39	Existing Landscape
570	72	Weighted Average
249		43.68% Pervious Area
321		56.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	15	0.0199	0.08		Sheet Flow, Seg A to Seg B Grass: Dense n= 0.240 P2= 3.10"
0.6	68	0.0516	1.83		Sheet Flow, Seg B to Seg C Smooth surfaces n= 0.011 P2= 3.10"
3.8	83	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2:

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 1,507 cf, Depth= 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 3,313	98	Existing Pavement
* 157	39	Proposed Landscape A
3,470	95	Weighted Average
157		4.52% Pervious Area
3,313		95.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	47	0.0731	1.96		Sheet Flow, Seg A to Seg B Smooth surfaces n= 0.011 P2= 3.10"
0.1	62	0.0896	13.28	45.66	Trap/Vee/Rect Channel Flow, Seg B to Seg C Bot.W=0.00' D=0.50' Z= 0.1 & 27.4 ' Top.W=13.75' n= 0.013 Asphalt, smooth
0.0	21	0.0950	13.97	68.79	Trap/Vee/Rect Channel Flow, Seg C to Seg D Bot.W=0.00' D=0.50' Z= 13.0 & 26.4 ' Top.W=19.70' n= 0.013 Asphalt, smooth
0.0	21	0.0892	13.24	43.86	Trap/Vee/Rect Channel Flow, Seg D to Seg E Bot.W=0.00' D=0.50' Z= 0.1 & 26.4 ' Top.W=13.25' n= 0.013 Asphalt, smooth

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Type III 24-hr 25-Year Rainfall=5.80"

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0.5 151 Total, Increased to minimum Tc = 6.0 min

Summary for Subcatchment 10:

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 2,889 cf, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,688	98	Proposed Rooftop
*	867	98	Proposed Concrete
*	1,460	39	Proposed Landscape A
	8,015	87	Weighted Average
	1,460		18.22% Pervious Area
	6,555		81.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0	7	0.0100	2.86	0.56	Pipe Channel, Seg A to Seg B 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013
0.1	36	0.0833	11.59	6.32	Pipe Channel, Seg B to Seg C 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	26	0.0170	5.24	2.86	Pipe Channel, Seg C to Seg D 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.0	3	0.0300	6.96	3.79	Pipe Channel, Seg D to Seg E 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.2	72	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11:

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 507 cf, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,033	98	Proposed Pavement
*	129	98	Proposed Concrete
*	436	39	Proposed Landscape A
	1,598	82	Weighted Average
	436		27.28% Pervious Area
	1,162		72.72% Impervious Area

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Type III 24-hr 25-Year Rainfall=5.80"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	5	0.0566	0.10		Sheet Flow, Seg A to Seg B Grass: Dense n= 0.240 P2= 3.10"
0.1	40	0.0600	4.97		Shallow Concentrated Flow, Seg B to Seg C Paved Kv= 20.3 fps
1.0	45	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 12:

Runoff = 0.00 cfs @ 12.29 hrs, Volume= 33 cf, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 678	39	Proposed Landscape A
* 38	98	Proposed Concrete
716	42	Weighted Average
678		94.69% Pervious Area
38		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	11	0.3300	0.33		Sheet Flow, Seg A to Seg B Grass: Short n= 0.150 P2= 3.10"
1.8	12	0.0200	0.11		Sheet Flow, Seg B to Seg C Grass: Short n= 0.150 P2= 3.10"
2.4	23	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 13:

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 228 cf, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 498	98	Existing Building
38	39	>75% Grass cover, Good, HSG A
536	94	Weighted Average
38		7.09% Pervious Area
498		92.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Pond CB1: CATCH BASIN

Inflow Area = 1,598 sf, 72.72% Impervious, Inflow Depth = 3.80" for 25-Year event
 Inflow = 0.16 cfs @ 12.09 hrs, Volume= 507 cf
 Outflow = 0.16 cfs @ 12.09 hrs, Volume= 507 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.16 cfs @ 12.09 hrs, Volume= 507 cf

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
 Peak Elev= 123.41' @ 12.09 hrs
 Flood Elev= 126.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.27'	10.0" Round Culvert X 2.00 L= 1.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 123.27' / 123.20' S= 0.0437 ' S= 0.0437 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.16 cfs @ 12.09 hrs HW=123.41' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.16 cfs @ 1.28 fps)

Summary for Pond SSF-1:

Inflow Area = 9,613 sf, 80.28% Impervious, Inflow Depth = 4.24" for 25-Year event
 Inflow = 1.05 cfs @ 12.09 hrs, Volume= 3,396 cf
 Outflow = 0.92 cfs @ 12.13 hrs, Volume= 3,396 cf, Atten= 12%, Lag= 2.5 min
 Discarded = 0.00 cfs @ 7.20 hrs, Volume= 956 cf
 Primary = 0.92 cfs @ 12.13 hrs, Volume= 2,439 cf

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 124.93' @ 12.13 hrs Surf.Area= 796 sf Storage= 938 cf

Plug-Flow detention time= 520.5 min calculated for 3,396 cf (100% of inflow)
 Center-of-Mass det. time= 520.2 min (1,318.2 - 798.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	122.65'	146 cf	4.83'W x 38.80'L x 2.33'H Field A 438 cf Overall - 74 cf Embedded = 364 cf x 40.0% Voids
#2A	123.15'	74 cf	ADS_StormTech SC-310 +Cap x 5 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#3B	122.65'	86 cf	2.83'W x 45.92'L x 2.33'H Field B 304 cf Overall - 88 cf Embedded = 215 cf x 40.0% Voids
#4B	123.15'	88 cf	ADS_StormTech SC-310 +Cap x 6 Inside #3 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#5C	122.65'	198 cf	4.83'W x 53.04'L x 2.33'H Field C 598 cf Overall - 103 cf Embedded = 495 cf x 40.0% Voids
#6C	123.15'	103 cf	ADS_StormTech SC-310 +Cap x 7 Inside #5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#7D	122.65'	172 cf	4.83'W x 45.92'L x 2.33'H Field D 518 cf Overall - 88 cf Embedded = 429 cf x 40.0% Voids

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Type III 24-hr 25-Year Rainfall=5.80"

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#8D	123.15'	88 cf	ADS_StormTech SC-310 +Cap x 6 Inside #7
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			955 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	Discarded	122.65'	0.200 in/hr Exfiltration over Surface area
#2	Primary	122.23'	6.0" Round Culvert-6" OCS outlet L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.23' / 120.10' S= 0.0645 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	124.25'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 1.97 Width (feet) 0.50 0.50 4.00 4.00
#4	Device 3	122.73'	4.0" Vert. 4" Underdrain C= 0.600
#5	Device 3	123.27'	10.0" Vert. 10" Overflow Pipe From Chamber C= 0.600

Discarded OutFlow Max=0.00 cfs @ 7.20 hrs HW=122.69' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.90 cfs @ 12.13 hrs HW=124.92' (Free Discharge)↑ **2=Culvert-6" OCS outlet** (Passes 0.90 cfs of 1.17 cfs potential flow)↑ **3=Custom Weir/Orifice** (Weir Controls 0.90 cfs @ 2.68 fps)↑ **4=4" Underdrain** (Passes < 0.34 cfs potential flow)↑ **5=10" Overflow Pipe From Chamber** (Passes < 2.15 cfs potential flow)**Summary for Link SP1:**

Inflow Area =	1,822 sf, 47.04% Impervious, Inflow Depth = 2.60" for 25-Year event
Inflow =	0.11 cfs @ 12.09 hrs, Volume= 395 cf
Primary =	0.11 cfs @ 12.09 hrs, Volume= 395 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area =	3,470 sf, 95.48% Impervious, Inflow Depth = 5.21" for 25-Year event
Inflow =	0.43 cfs @ 12.09 hrs, Volume= 1,507 cf
Primary =	0.43 cfs @ 12.09 hrs, Volume= 1,507 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP3: Existing Sewer

Inflow Area = 9,613 sf, 80.28% Impervious, Inflow Depth = 3.05" for 25-Year event
Inflow = 0.92 cfs @ 12.13 hrs, Volume= 2,439 cf
Primary = 0.92 cfs @ 12.13 hrs, Volume= 2,439 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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Type III 24-hr 2-Year Rainfall=3.10"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1:	Runoff Area=570 sf 56.32% Impervious Runoff Depth=0.87" Flow Length=83' Tc=6.0 min CN=72 Runoff=0.01 cfs 41 cf
Subcatchment 2:	Runoff Area=3,470 sf 95.48% Impervious Runoff Depth=2.55" Flow Length=151' Tc=6.0 min CN=95 Runoff=0.22 cfs 737 cf
Subcatchment 10:	Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=1.83" Flow Length=72' Tc=6.0 min CN=87 Runoff=0.39 cfs 1,220 cf
Subcatchment 11:	Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=1.46" Flow Length=45' Tc=6.0 min CN=82 Runoff=0.06 cfs 194 cf
Subcatchment 12:	Runoff Area=716 sf 5.31% Impervious Runoff Depth=0.01" Flow Length=23' Tc=6.0 min CN=42 Runoff=0.00 cfs 0 cf
Subcatchment 13:	Runoff Area=536 sf 92.91% Impervious Runoff Depth=2.45" Tc=6.0 min CN=94 Runoff=0.03 cfs 109 cf
Pond CB1: CATCH BASIN	Peak Elev=123.36' Inflow=0.06 cfs 194 cf 10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 '/' Outflow=0.06 cfs 194 cf
Pond SSF-1:	Peak Elev=124.35' Storage=751 cf Inflow=0.45 cfs 1,414 cf Discarded=0.00 cfs 919 cf Primary=0.05 cfs 496 cf Outflow=0.06 cfs 1,414 cf
Link SP1:	Inflow=0.05 cfs 151 cf Primary=0.05 cfs 151 cf
Link SP2:	Inflow=0.22 cfs 737 cf Primary=0.22 cfs 737 cf
Link SP3: Existing Sewer	Inflow=0.05 cfs 496 cf Primary=0.05 cfs 496 cf

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Type III 24-hr 10-Year Rainfall=4.60"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1:	Runoff Area=570 sf 56.32% Impervious Runoff Depth=1.89" Flow Length=83' Tc=6.0 min CN=72 Runoff=0.03 cfs 90 cf
Subcatchment 2:	Runoff Area=3,470 sf 95.48% Impervious Runoff Depth=4.02" Flow Length=151' Tc=6.0 min CN=95 Runoff=0.34 cfs 1,163 cf
Subcatchment 10:	Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=3.19" Flow Length=72' Tc=6.0 min CN=87 Runoff=0.66 cfs 2,132 cf
Subcatchment 11:	Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=2.72" Flow Length=45' Tc=6.0 min CN=82 Runoff=0.11 cfs 363 cf
Subcatchment 12:	Runoff Area=716 sf 5.31% Impervious Runoff Depth=0.22" Flow Length=23' Tc=6.0 min CN=42 Runoff=0.00 cfs 13 cf
Subcatchment 13:	Runoff Area=536 sf 92.91% Impervious Runoff Depth=3.91" Tc=6.0 min CN=94 Runoff=0.05 cfs 175 cf
Pond CB1: CATCH BASIN	Peak Elev=123.39' Inflow=0.11 cfs 363 cf 10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 ' Outflow=0.11 cfs 363 cf
Pond SSF-1:	Peak Elev=124.72' Storage=872 cf Inflow=0.78 cfs 2,495 cf Discarded=0.00 cfs 942 cf Primary=0.53 cfs 1,552 cf Outflow=0.54 cfs 2,494 cf
Link SP1:	Inflow=0.08 cfs 278 cf Primary=0.08 cfs 278 cf
Link SP2:	Inflow=0.34 cfs 1,163 cf Primary=0.34 cfs 1,163 cf
Link SP3: Existing Sewer	Inflow=0.53 cfs 1,552 cf Primary=0.53 cfs 1,552 cf

Subsurface Storage - 1

Tributary Impervious Area=	7,717 sf	(WS-10 & WS-11 Impervious Area)
Tributary Landscaped Area=	1,896 sf	(WS-10 & WS-11 Landscaped Area)

Water Quality Volume (WQV) Calculation

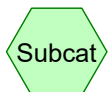
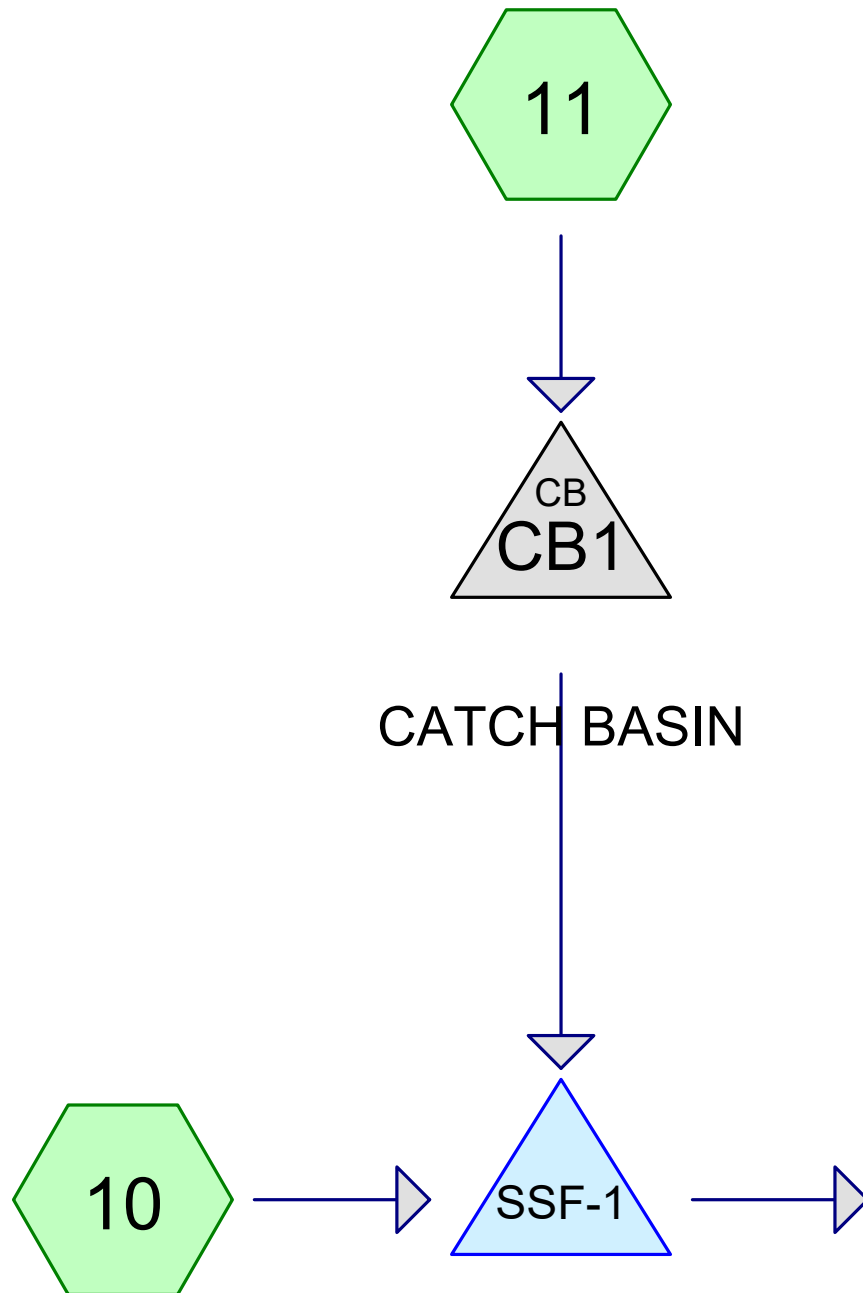
WQV (Required) = $1.0 \times \text{Impervious Area} + 0.4 \times \text{Landscaped Area}$

WQV (Required) = 706 cf

Chamber Size = SC-310

WQV (Provided)= 715 cf >Required

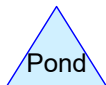
(See HydroCAD Stage Storage Calculation)



Subcat



Reach



Pond



Link

Routing Diagram for 18053-POST

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18053-POST*Type III 24-hr Custom Rainfall=2.05"*

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Page 2

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10:

Runoff Area=8,015 sf 81.78% Impervious Runoff Depth=0.94"
Flow Length=72' Tc=6.0 min CN=87 Runoff=0.20 cfs 631 cf

Subcatchment 11:

Runoff Area=1,598 sf 72.72% Impervious Runoff Depth=0.68"
Flow Length=45' Tc=6.0 min CN=82 Runoff=0.03 cfs 91 cf

Pond CB1: CATCH BASIN

Peak Elev=123.33' Inflow=0.03 cfs 91 cf
10.0" Round Culvert x 2.00 n=0.013 L=1.6' S=0.0437 '/' Outflow=0.03 cfs 91 cf

Pond SSF-1:

Peak Elev=123.87' Storage=544 cf Inflow=0.23 cfs 722 cf
Discarded=0.00 cfs 722 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 722 cf

18053-POST

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Type III 24-hr Custom Rainfall=2.05"

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Summary for Subcatchment 10:

Runoff = 0.20 cfs @ 12.10 hrs, Volume= 631 cf, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr Custom Rainfall=2.05"

	Area (sf)	CN	Description
*	5,688	98	Proposed Rooftop
*	867	98	Proposed Concrete
*	1,460	39	Proposed Landscape A
	8,015	87	Weighted Average
	1,460		18.22% Pervious Area
	6,555		81.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0	7	0.0100	2.86	0.56	Pipe Channel, Seg A to Seg B 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013
0.1	36	0.0833	11.59	6.32	Pipe Channel, Seg B to Seg C 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	26	0.0170	5.24	2.86	Pipe Channel, Seg C to Seg D 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.0	3	0.0300	6.96	3.79	Pipe Channel, Seg D to Seg E 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.2	72	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11:

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 91 cf, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr Custom Rainfall=2.05"

	Area (sf)	CN	Description
*	1,033	98	Proposed Pavement
*	129	98	Proposed Concrete
*	436	39	Proposed Landscape A
	1,598	82	Weighted Average
	436		27.28% Pervious Area
	1,162		72.72% Impervious Area

18053-POST

Type III 24-hr Custom Rainfall=2.05"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	5	0.0566	0.10		Sheet Flow, Seg A to Seg B Grass: Dense n= 0.240 P2= 3.10"
0.1	40	0.0600	4.97		Shallow Concentrated Flow, Seg B to Seg C Paved Kv= 20.3 fps
1.0	45	Total, Increased to minimum Tc = 6.0 min			

Summary for Pond CB1: CATCH BASIN

Inflow Area = 1,598 sf, 72.72% Impervious, Inflow Depth = 0.68" for Custom event
 Inflow = 0.03 cfs @ 12.10 hrs, Volume= 91 cf
 Outflow = 0.03 cfs @ 12.10 hrs, Volume= 91 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.10 hrs, Volume= 91 cf

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Peak Elev= 123.33' @ 12.10 hrs

Flood Elev= 126.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.27'	10.0" Round Culvert X 2.00 L= 1.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 123.27' / 123.20' S= 0.0437 ' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.03 cfs @ 12.10 hrs HW=123.33' (Free Discharge)←**1=Culvert** (Inlet Controls 0.03 cfs @ 0.81 fps)**Summary for Pond SSF-1:**

Inflow Area = 9,613 sf, 80.28% Impervious, Inflow Depth = 0.90" for Custom event
 Inflow = 0.23 cfs @ 12.10 hrs, Volume= 722 cf **Required Water Quality Volume+/-**
 Outflow = 0.00 cfs @ 11.20 hrs, Volume= 722 cf, Atten= 98%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 11.20 hrs, Volume= 722 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf **No flow in primary 6" outlet pipe
All being infiltrated/discarded.**

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 123.87' @ 22.24 hrs Surf.Area= 796 sf Storage= 544 cf

Plug-Flow detention time= 1,422.1 min calculated for 722 cf (100% of inflow)

Center-of-Mass det. time= 1,421.8 min (2,263.7 - 841.9)

18053-POST

Type III 24-hr Custom Rainfall=2.05"

Prepared by DM Roma Consulting Engineers

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Volume	Invert	Avail.Storage	Storage Description
#1A	122.65'	146 cf	4.83'W x 38.80'L x 2.33'H Field A 438 cf Overall - 74 cf Embedded = 364 cf x 40.0% Voids
#2A	123.15'	74 cf	ADS_StormTech SC-310 +Cap x 5 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#3B	122.65'	86 cf	2.83'W x 45.92'L x 2.33'H Field B 304 cf Overall - 88 cf Embedded = 215 cf x 40.0% Voids
#4B	123.15'	88 cf	ADS_StormTech SC-310 +Cap x 6 Inside #3 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#5C	122.65'	198 cf	4.83'W x 53.04'L x 2.33'H Field C 598 cf Overall - 103 cf Embedded = 495 cf x 40.0% Voids
#6C	123.15'	103 cf	ADS_StormTech SC-310 +Cap x 7 Inside #5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
#7D	122.65'	172 cf	4.83'W x 45.92'L x 2.33'H Field D 518 cf Overall - 88 cf Embedded = 429 cf x 40.0% Voids
#8D	123.15'	88 cf	ADS_StormTech SC-310 +Cap x 6 Inside #7 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
		955 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	Discarded	122.65'	0.200 in/hr Exfiltration over Surface area
#2	Primary	122.23'	6.0" Round Culvert-6" OCS outlet L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.23' / 120.10' S= 0.0645 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	124.25'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 1.97 Width (feet) 0.50 0.50 4.00 4.00
#4	Device 3	122.73'	4.0" Vert. 4" Underdrain C= 0.600
#5	Device 3	123.27'	10.0" Vert. 10" Overflow Pipe From Chamber C= 0.600

Discarded OutFlow Max=0.00 cfs @ 11.20 hrs HW=122.69' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=122.65' (Free Discharge)↑ **2=Culvert-6" OCS outlet** (Passes 0.00 cfs of 0.31 cfs potential flow)↑ **3=Custom Weir/Orifice** (Controls 0.00 cfs)↑ **4=4" Underdrain** (Controls 0.00 cfs)↑ **5=10" Overflow Pipe From Chamber** (Controls 0.00 cfs)

18053-POST

Prepared by DM Roma Consulting Engineers

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Type III 24-hr Custom Rainfall=2.05"

Printed 10/10/2019

Stage-Area-Storage for Pond SSF-1:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
122.65	796	0	125.30	796	955
122.70	796	16	125.35	796	955
122.75	796	32	125.40	796	955
122.80	796	48	125.45	796	955
122.85	796	64	125.50	796	955
122.90	796	80	125.55	796	955
122.95	796	96	125.60	796	955
123.00	796	111	125.65	796	955
123.05	796	127	125.70	796	955
123.10	796	143	125.75	796	955
123.15	796	159	125.80	796	955
123.20	796	187	125.85	796	955
123.25	796	216	125.90	796	955
123.30	796	244	125.95	796	955
123.35	796	271	126.00	796	955
123.40	796	299	126.05	796	955
123.45	796	327	126.10	796	955
123.50	796	354	126.15	796	955
123.55	796	381	126.20	796	955
123.60	796	407			
123.65	796	434			
123.70	796	460			
123.75	796	485			
123.80	796	511			
123.85	796	536			
123.90	796	560			
123.95	796	584			
124.00	796	608			
124.05	796	631			
124.10	796	653			
124.15	796	675			
124.20	796	696			
124.25	796	715			
124.30	796	734			
124.35	796	752			
124.40	796	769			
124.45	796	785			
124.50	796	801			
124.55	796	817			
124.60	796	833			
124.65	796	849			
124.70	796	865			
124.75	796	881			
124.80	796	897			
124.85	796	913			
124.90	796	929			
124.95	796	945			
125.00	796	955			
125.05	796	955			
125.10	796	955			
125.15	796	955			
125.20	796	955			
125.25	796	955			

Top of Weir Elev.=124.25
Water Quality Volume Req.=706 cf
Water Quality Volume Prov.=715 cf



August 14, 2019

Jayson Haskell, P.E.
DM ROMA
P.O. Box 1116
Windham, ME 04062

Re: 33 Montreal Street, PO
Ability to Serve with PWD Water

Dear Mr. Haskell:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on November 3, 2017. Based on the information provided per plans last revised August 12, 2019, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 2-inch domestic service with a 1.5-inch meter may be installed from the water main in Montreal Street. The service should enter through the properties frontage on Montreal Street at least 10-feet from any side property lines. An approved backflow prevention device must be installed on the service line directly after the meter prior to service activation. 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.
- A new 6-inch fire service may be installed from the water main in Montreal Street. The service should enter through the properties frontage on Montreal Street at least 10-feet from any side property lines. An approved backflow prevention device must be installed on the service line directly after the service enters the building prior to service activation.
- The existing buildings area currently served with a 3/4-inch domestic water services. These services must be terminated by shutting the corporation valve and cutting the pipe from the water main.
- 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 currently has two existing water services. Two 3/4-inch diameter copper domestic service lines provide water service to the site. Please refer to the “Conditions of Service” section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main in Montreal Street and a public fire hydrant located approximately 100 feet from the site. The most recent static pressure reading was 45 psi on August 5, 2019.

Public Fire Protection

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

Domestic Water Needs

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

Private Fire Protection Water Needs

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

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

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

Sincerely,
Portland Water District



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

Jayson Haskell

From: Jayson Haskell <jayson@dmroma.com>
Sent: Friday, October 11, 2019 2:34 PM
To: 'Bradley Roland'
Cc: 'Dustin Roma'
Subject: Wastewater Capacity Application - 33-37 Montreal Street
Attachments: Wastewater Capacity Application - 37 Montreal Street.pdf; C2.0 -Grading and Utility Plan.pdf

Brad,

We are working with 37 Montreal, LLC on a proposed multi-unit residential structure at 33-37 Montreal Street in Portland. The proposed four-story 9-unit residential building will contain (3) 2 bedroom units and (6) 3 bedroom units. We are proposing to retire the existing sewer services on the property and install a new sewer service in Montreal Street as shown on the attached plan.

We are currently in the process of obtaining the Level III Site Plan approval from the Planning Department and wanted to coordinate with you on the ability of the sewer system in the area to accept the proposed flows indicated in the application. If you have any questions or require additional information please don't hesitate to contact us.

Jay

Jayson R. Haskell, P.E.

Southern Maine Regional Manager

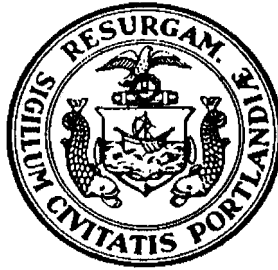


<u>Mailing Address:</u>	<u>Office Location:</u>
P.O. Box 1116	2 Main Street, Suite 18-128
Windham, ME 04062	Biddeford, ME 04005

Phone: (207) 229-3295

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: October 11, 2019

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

Site Address: 33-37 Montreal Street

Chart Block Lot Number: Map 15, Block B, Parcels 15 & 22

Proposed Use: 9 Unit Residential

Previous Use: 5 Unit Residential

Existing Sanitary Flows: 1,530 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

10 inch cement and vitrified clay pipe
in Montreal Street

Site Category
Commercial (see part 4 below)
Industrial (complete part 5 below)
Governmental
Residential
Other (specify)

X

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

2. Please, Submit Contact Information.

City Planner's Name: Andrew Tufts Phone: -----

Owner/Developer Name: 37 Montreal, LLC

Owner/Developer Address: 33 Montreal Street, Portland, ME 04101

Phone: ----- Fax: ----- E-mail: -----

Engineering Consultant Name: Dustin Roma, DM Roma Consulting Engineers

Engineering Consultant Address: PO Box 1116, Windham, ME 04062

Phone: 310 - 0506 Fax: ----- E-mail: DUSTIN@DMROMA.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: 2,160 GPD

Peaking Factor/ Peak Times: Peak flow expected to occur between 6 AM and 8 AM

Specify the source of design guidelines: (i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records,
Other (specify) State of Maine Subsurface Wastewater Disposal Rules, Table 4A

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: _____ 0 _____ GPD

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

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

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.

3 units @ 2 bedrooms = 3 x 180 gpd = 540 gpd

6 units @ 3 bedrooms = 6 x 270 gpd = 1,620 gpd

Total Wastewater Design Flow = 540 gpd + 1,620 gpd = 2,160 gpd



October 11, 2019

Andrew Tufts, Planner
City of Portland
389 Congress Street
Portland, ME 04101

**Re: City of Portland Level III Site Plan – Response to Review Comments
33-37 Montreal Street Multi Family Development
37 Montreal Street, LLC, Applicant**

Dear Andrew:

On behalf of our client 37 Montreal Street, LLC, we have prepared the enclosed revised plans and documents based on City staff review comments related to the multi-family housing project at 33-37 Montreal Street in Portland. The following outlines how the comments have been addressed.

Planning Department

Comment 1: The file sizes of the uploaded plans are too large and need to be compressed. Staff are unable to efficiently review based on file size.

Response 1: In future submissions, our team will make every attempt possible with reducing the file size of our uploaded plans.

Engineering Department

Comment 1: The sidewalks on Willis and Montreal streets are in poor condition. All sidewalks should be reconstructed along the frontage of the site, as should the curb ramp at the corner of Montreal and Willis streets.

Response 1: The sidewalks on the revised civil design plans indicate that the existing sidewalks are to be removed and replaced as part of the project. The curb ramp at the corner of Montreal and Willis Streets will also be replaced as requested.

Comment 2: Tipdowns are not needed with 2' radius pieces at driveways.

Response 2: The tipdowns at the proposed driveway entrance have been removed.

Comment 3: *Brick driveways should be reconstructed with bricks running widthwise, matching the adjacent sidewalk. Border courses are allowed. See attached detail. Note that bricks are shown in the incorrect orientation on the subdivision plat.*

Response 3: The brick orientation on the civil design plans has been updated to reflect this requirement.

Comment 4: *The curb ramp at the corner of Montreal and Willis Street along the project frontage must be reconstructed per ADA and City of Portland standards. The existing ramp is non-conforming as it does not have a sufficient level landing at the top of the ramp; there may be other deficiencies as well. It is not likely that this ramp will be able to be replaced in its current orientation and achieve compliance; a blended transition ramp (detail attached) or another design will likely be required. The ramp shall be reconstructed in brick per the City's sidewalk material policy.*

Response 4: A design for the reconstruction of this curb ramp has been proposed in the design plan set, including a grading detail on Sheet C3.2.

Comment 5: *The proposed driveway, is located adjacent to an existing driveway. Section 1.7.1 of the Technical Manual requires a 20-foot driveway separation. Due to the nonconforming nature of the adjacent driveway/parking area, DPW will consider supporting a waiver for driveway separation.*

Response 5: The proposed design is utilizing the existing curb cut and based on the orientation of the building will need to be maintained for access to the subsurface garage. We will require a waiver of this standard.

Comment 6: *The parking layout is acceptable; however, no handicap parking spaces are provided. Fair Housing Act requires accessible spaces for multi-family residential uses with elevators. For a parking area with <25 spaces, one 8'x18' space with an 8'x18' adjacent clear area is required. This space should be located as close to the elevator as possible.*

Response 6: The Basement Plan (A-1.1) has been revised to include the required access aisle.

Comment 7: *An underground electric connection is encouraged.*

Response 7: The previously proposed overhead utility services have now been relocated underground in Willis Street.

Comment 8: *The proposed overhead utility connection is required to be underground.*

Response 8: The previously proposed overhead utility services have now been relocated underground in Willis Street.

Comment 9: *The stormdrain and sewer from the site are proposed to be combined together on the property. If the services are to be combined, this should be done within the right-of-way. This will allow for future separation within the street.*

Response 9: The stormdrain and sewer lateral connection has been relocated into the public right of way as suggested.

Comment 10: Drawn CM plans are required, and must be reviewed and approved before construction. The construction management plan document is not sufficient on its own.
Response 10: Once the project receives final approval, the Construction Management plans will be revised based on the final design and submitted to the Engineering Department for review and approval prior to the start of construction.

Fire Department

Comment 1: The correct address for this property shall be determined by the City E-911 Addressing Officer.

Response 1: The project team will take note of the correct address once it has been confirmed by the City E-911 Addressing.

Comment 2: The street address shall be marked at the main building entrance.

Response 2: The Architectural drawings include provisions for marking the street address at the main entrance on Willis Street.

Third Party Engineering Review

Comment 1: The plans should show the location of the stabilized construction entrance.

Response 1: A note has been added to the Grading and Utility Plan indicating the location of the proposed construction entrance which references the construction detail for the stabilized construction entrance in the Detail Sheets.

Comment 2: Typically, to meet the General Standards using a subsurface chamber system, additional treatment measures are required. For example, a filter sand layer could be installed beneath the subsurface chambers. When a treatment measure is added, the Applicant should provide information from the chamber manufacturer to verify that the system is adequately designed per the manufacturer's requirements.

Response 2: The proposed chamber system is designed to infiltrate the required water quality volume generated by the tributary watersheds. An infiltration device typically does not require an additional filter layer.

Comment 3: We suggest that the applicant review the methodology for modeling the subsurface filter. No flow is indicated to be discarded as infiltration. As the system is modeled, the only discharge out of the subsurface system is over the weir.

Response 3: In the HydroCAD output provided with the submission does appear that there is no discarded or infiltrated flow from the treatment device. This is due to the lower infiltration rate of the existing soils on the property. To demonstrate that the required water quality volume is infiltrated prior to overtopping the weir in the outlet control structure a separate model was prepared. The water quality storm event rate of rainfall was set to replicate the storm that generates the required water quality volume calculated in the sizing calculations. Based on the output of this model, it indicated that the volume is stored and infiltrates over a period of time.

Comment 4: It is noted that the pre-development model considers a slightly larger total area than the post-development model. The applicant should clarify; however, this likely will not have a significant impact on the final results.

Response 4: There was an omission of a portion of the abutting building along the northwestern property boundary. This area was included in the pre-development but not in the post-development model. This area has been added to the model as watershed 13 which is tributary to Study Point SP-1. The results still indicate a decrease in peak flow rates at this study point for all design storm events. The revised post development HydroCAD output has been included with this submission.

Comment 5: The Applicant has indicated that utility ability to serve letters pending.

Response 5: We have received the ability to serve letter from the Portland Water District and have submitted the application to the Public Services Department for their review of the sewer flows. Both the letter and the application have been included with this submission.

Comment 6: Pavement repair is proposed at the location of the existing sewer service connection to the main. It is assumed that this sewer service will be abandoned, but additional information should be provided.

Response 6: The existing sewer service is proposed to be abandoned in place. Information on this can be found on the Existing Condition and Demolition Plan.

Comment 7: The stormdrain and sewer from the site are proposed to be combined together on the property. If the services are to be combined, this should be done within the right-of-way. This will allow for future separation within the street.

Response 7: The stormdrain and sewer lateral connection has been relocated into the public right of way as suggested.

Comment 8: A driveway paving repair detail has been provided. Separate details for roadway repair, sidewalk repair, and driveway apron should be provided in accordance with details in the City's Technical Manual.

Response 8: Details for roadway repair, brick driveway apron and brick sidewalk installation have been added to the Details Sheets.

Comment 9: It is noted that on the construction management plan drawings, a dumpster is proposed on a steeply sloped area at the northern corner of the site. This should be reviewed, and if the area needs to be leveled for placement of the dumpster, there may be impacts onto the adjacent property.

Response 9: Temporary grading will provide a suitable flat area for the dumpster. Final grading will take place after the dumpster is removed.

Comment 10: A proposed foundation drain is shown discharging directly onto an adjacent property, with no surface improvements proposed to mitigate impacts of flow that may come from this pipe. While flows from a foundation drain are generally low, consideration of the

impact of discharge onto the abutter should be made. The Applicant should also consider whether flow directly out of the retaining wall may impact the wall itself.

Response 10: The applicant is working with the abutter to allow for the discharge of the foundation drain onto their property and to construct a riprap settling basin to avoid erosion. A finalized design will be submitted prior to final approval based on these discussions.

Comment 11: *The need for a field inlet at the northern corner of the site should be considered. It appears based on the grading that the corner of the site will drain towards the retaining wall, but the wall will extend above grade by over a foot, preventing the surface flow of water over the wall.*

Response 11: A field inlet has been added to the Grading and Utility Plan as suggested.

Comment 12: *A serviceberry tree is proposed on the northern corner of the site over the end of the proposed subsurface chambers and overlapping the area identified on the plans as snow storage.*

Response 12: The serviceberry tree has been relocated away from the subsurface chamber system. Included with this submission is an updated Landscape Plan for review.

Comment 13: *The landscape plan does not match the site plan relative to driveway shape and materials. Please clarify the propose intent.*

Response 13: The civil drawings have been revised to reflect the site layout indicated on the Landscaping Plan.

Please find the enclosed revised plans and stormwater calculations for your review. If you have any questions, comments or require any further information, please don't hesitate to contact us.

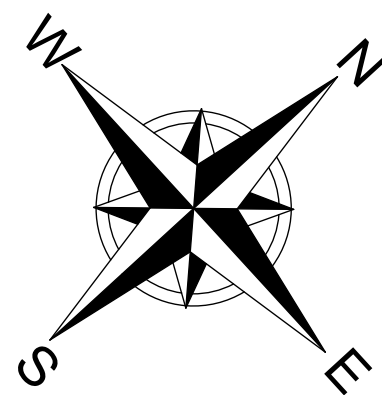
Sincerely,

DM Roma Consulting Engineers

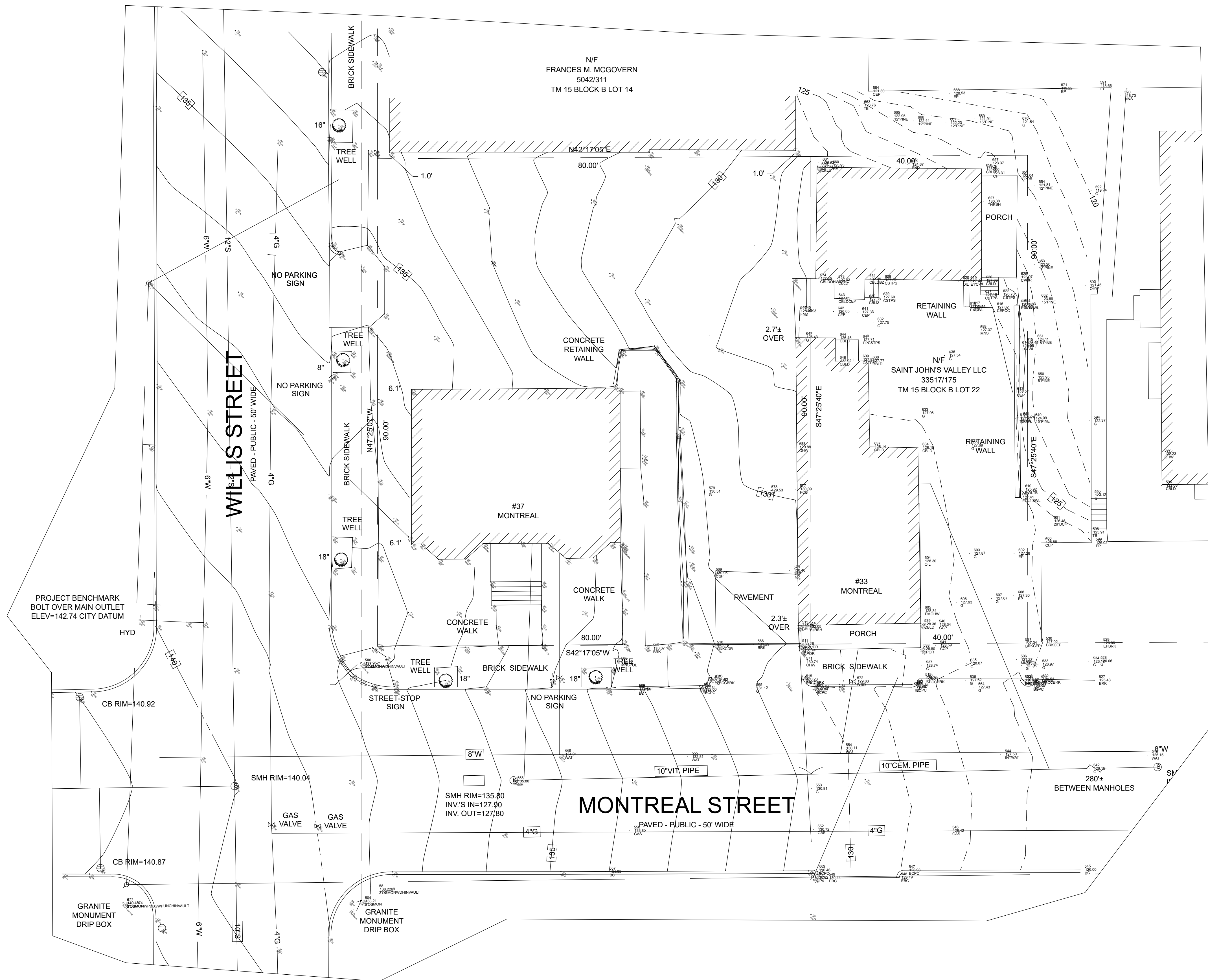
Jayson R. Haskell, P.E.
Southern Maine Regional Manager

Cc: Tim Wells, Applicant

Enc. Revised Post Development HydroCAD Output
Subsurface Chamber System Sizing Calculations
Portland Water District Ability to Serve Letter
Correspondence for Wastewater Capacity Letter



GRID NORTH
MAINE STATE PLANE
NAD 83, 1802 - MAINE
WEST



UTILITY NOTES:

PORTLAND WATER DISTRICT SKETCH OF 33 AND 37 MONTREAL STREET DATED FEBRUARY 20, 2018. 6 INCH CAST IRON WATER LINE (1913) IN WILLIS STREET AND 8 INCH CAST IRON WATER LINE (1913) IN MONTREAL STREET. 37 MONTREAL STREET HAS A 3/4 INCH COPPER WATER SERVICE LINE (1930) AND 33 MONTREAL STREET HAS A 3/4 INCH COPPER WATER SERVICE LINE (1941).

CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS SEWER TIE CARD FOR 37 MONTREAL STREET AND 31 MONTREAL STREET, 1882 CITY MAP SHEET 15 DEPICTS SEWER LINES IN MONTREAL STREET AS 10" VIT. AND 10" CEM. AS SHOWN. REFERENCE IS MADE TO PLANS ENTITLED "CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS MONTREAL STREET SEWER AS-BUILT DATED 7-75" AND "CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS WILLIS STREET AS-BUILT" WHICH DEPICTS THE LOCATION OF THE SEWER LINE AND GAS LINE AS SHOWN HEREON.

THERE NO CATCH BASINS OBSERVED IN MONTREAL STREET AT THE TIME OF THE FIELD SURVEY EXCEPT THE TWO SHOWN ON THE OTHER SIDE OF WILLIS STREET.

GAS SERVICE IS PROVIDED BY UTILIT. THE

PLAN REFERENCES:

- (1) A.P. MARSHALL'S PLAN OF LOTS DATED MAY 20, 1856 AND RECORDED IN PLAN BOOK 1 PAGE 41 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
- (2) BOUNDARY AND TOPOGRAPHIC SURVEY AT 33 MONTREAL STREET PORTLAND, MAINE MADE FOR TIMOTHY WELLS DATED MAY 22, 2017 BY OWEN HASKELL, INC.

SURVEY NOTES:

- (1) THE OWNERS OF RECORD ARE KEVIN JAMES CARTER AS DESCRIBED IN A DEED RECORDED IN BOOK 34283 PAGE 95 AND SAINT JOHN'S VALLEY LLC AS DESCRIBED IN A DEED RECORDED IN BOOK 33517 PAGE 175 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

CERTIFICATION:

I CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

WILLIAM C. SHIPPEN P.L.S. 2118

(2) THE PARCELS ARE SHOWN AS LOTS 15 AND 22 BLOCK B

ON THE CITY OF PORTLAND'S ASSESSOR'S MAP 15.
Page 901

BOUNDARY SURVEY 37 MONTREAL STREET PORTLAND, MAINE

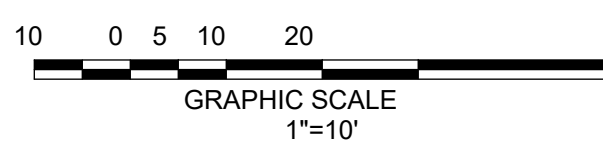
FOR: **MCTIGUE CONSTRUCTION**
184 MOUNTAIN ROAD
FALMOUTH, MAINE 04105
(CLIENT)

SURVEY BY: **SURVEY, INC.**
P.O. BOX 210
WINDHAM, ME 04062
(207) 892-2556
INFO@SURVEYINCORPORATED.COM

DWN: WCS
DATE: AUGUST 2017

JOB NO. 17111

CHK: BDK





1 NEIGHBORHOOD CONTEXT - 1 BLOCK
SCALE: 1" = 20'

Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-1888
kaplanthompson.com

PROJECT

MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION

PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

NEIGHBORHOOD
CONTEXT

A-0.1



1 NEIGHBORHOOD CONTEXT - 3 BLOCKS

SCALE: 1" = 50'

0 20' 50' 100'

Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-1888
kaplanthompson.com

PROJECT
MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION	
PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

NEIGHBORHOOD
CONTEXT

A-0.2



101 North Street
MONTREAL STREET ADJACENT West



MacArthur Gardens 13-27
MONTREAL STREET ADJACENT East



89 North Street
MONTREAL STREET FACING West



9 Willis Street
MONTREAL STREET FACING East



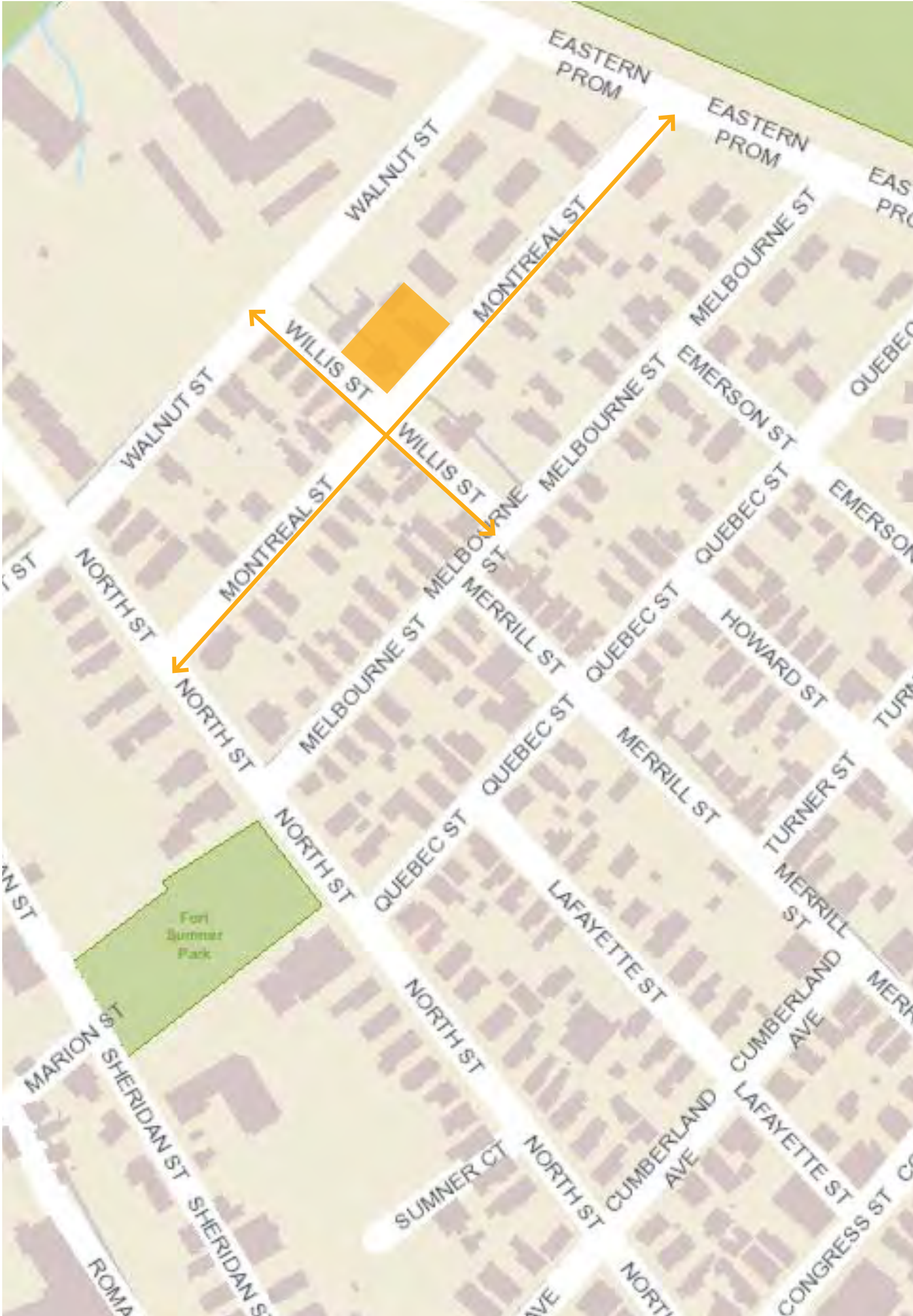
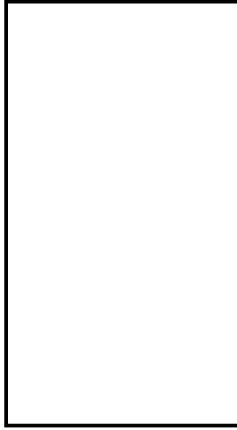
294 East Promenade



Promenade Towers 340 East Promenade
WILLIS STREET ADJACENT



51 Melbourne Street
WILLIS STREET FACING



SITE LOCATION

Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-1888
kaplanthompson.com

PROJECT
MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION

PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

NEIGHBORHOOD
CONTEXT -
STREETSCAPE

A-0.3



97 Sheridan Street
ROOF FORM PRECEDENTS

71 Quebec Street

59 Lafayette Street

128 Sheridan Street



118 Congress Street

98 Congress Street

119 Morning Street

16 Emerson Street

16 Cleeve Street

135 Sheridan Street



49 Morning Street

63 Emerson Street

80 North Street

58 North Street

55 Morning Street

63 Morning Street



70 Morning Street
SCALE PRECEDENTS

34 Lafayette Street

101 North Street



PROJECT
MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION	
PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

NEIGHBORHOOD
CONTEXT -
PRECEDENTS

A-0.4



Owner: Bartley A. Connolly
Address: 33-37 Montreal Street, East End - Munjoy Hill, Portland, Maine
Use: Dwelling - Single family
Local Code: Block 15B Lot 15 Book 51 Page 1
MMN item number: 63893



1 37 MONTREAL STREET - 1924 TAX PHOTO & JULY 2018 PHOTOS

**Kaplan
Thompson
Architects**

102 Exchange Street
Portland, ME 04101
(207) 842-3888
kaplanthompson.com

PROJECT
MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION	
PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

EXISTING BUILDING
37 MONTREAL ST.

A-0.5



1 33 MONTREAL STREET - FEBRUARY 2018



2 33 MONTREAL STREET - 1924 TAX PHOTO



3 33 MONTREAL STREET - 1924 TAX PHOTO

Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-3888
kaplanthompson.com

PROJECT

MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION

PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

EXISTING BUILDING
33 MONTREAL ST.

A-0.6



Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-1888
kaplanthompson.com

PROJECT
MONTREAL ST

Montreal St
Portland, ME 04101

NOT FOR CONSTRUCTION	
PROJECT	MTL
DATE	08/06/2018
REVISED 1	
REVISED 2	
DRAWN BY	JT - RL - BB
PHASE	ALTERNATIVE DESIGN REVIEW

AERIAL VIEW

A-9.5



TWO BLOCK RADIUS



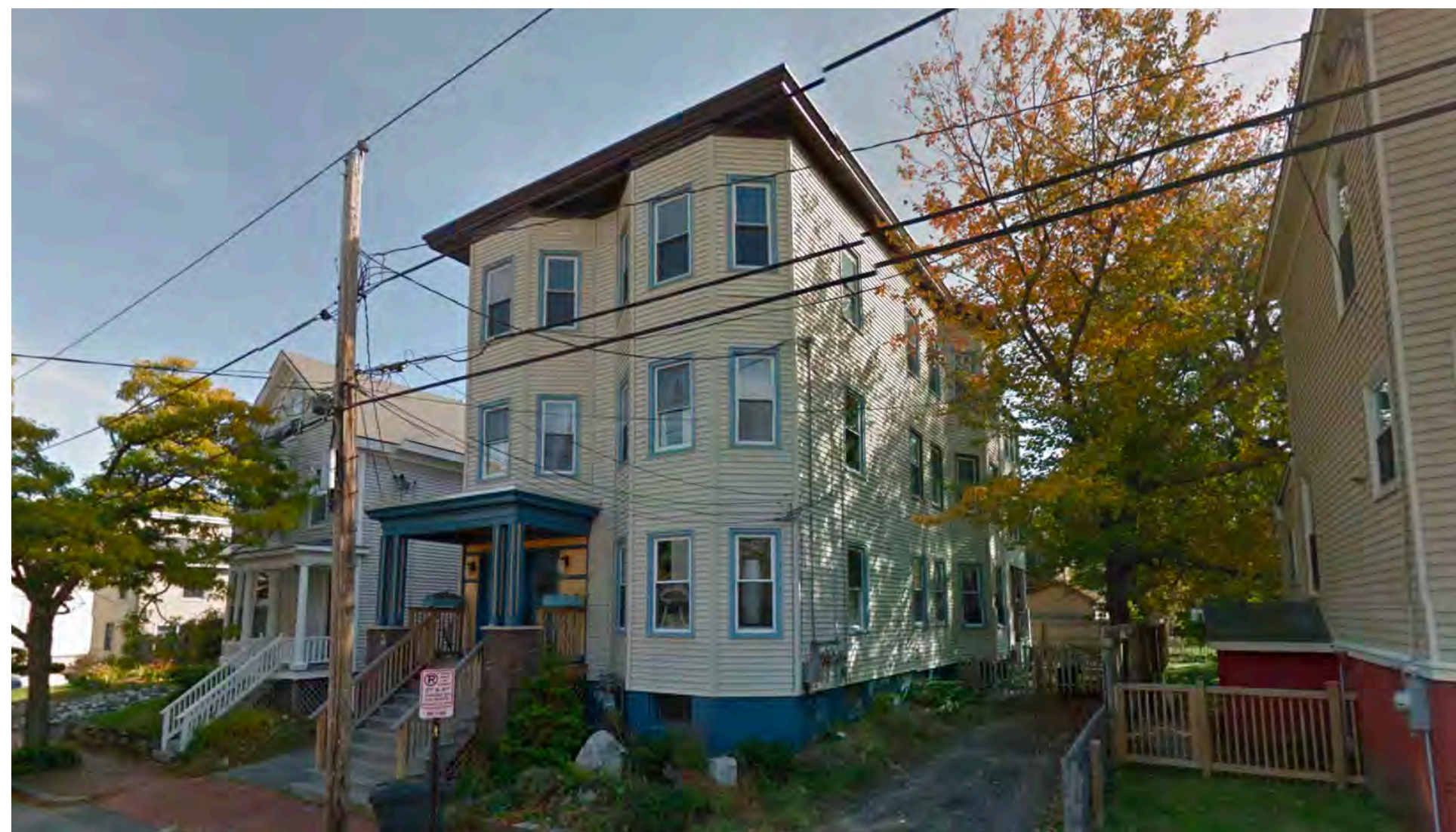
① TURNER STREET #19 & #17



② CORNER OF MONTREAL & WILLIS STREETS



③ MACARTHUR GARDENS & PROMENADE TOWERS



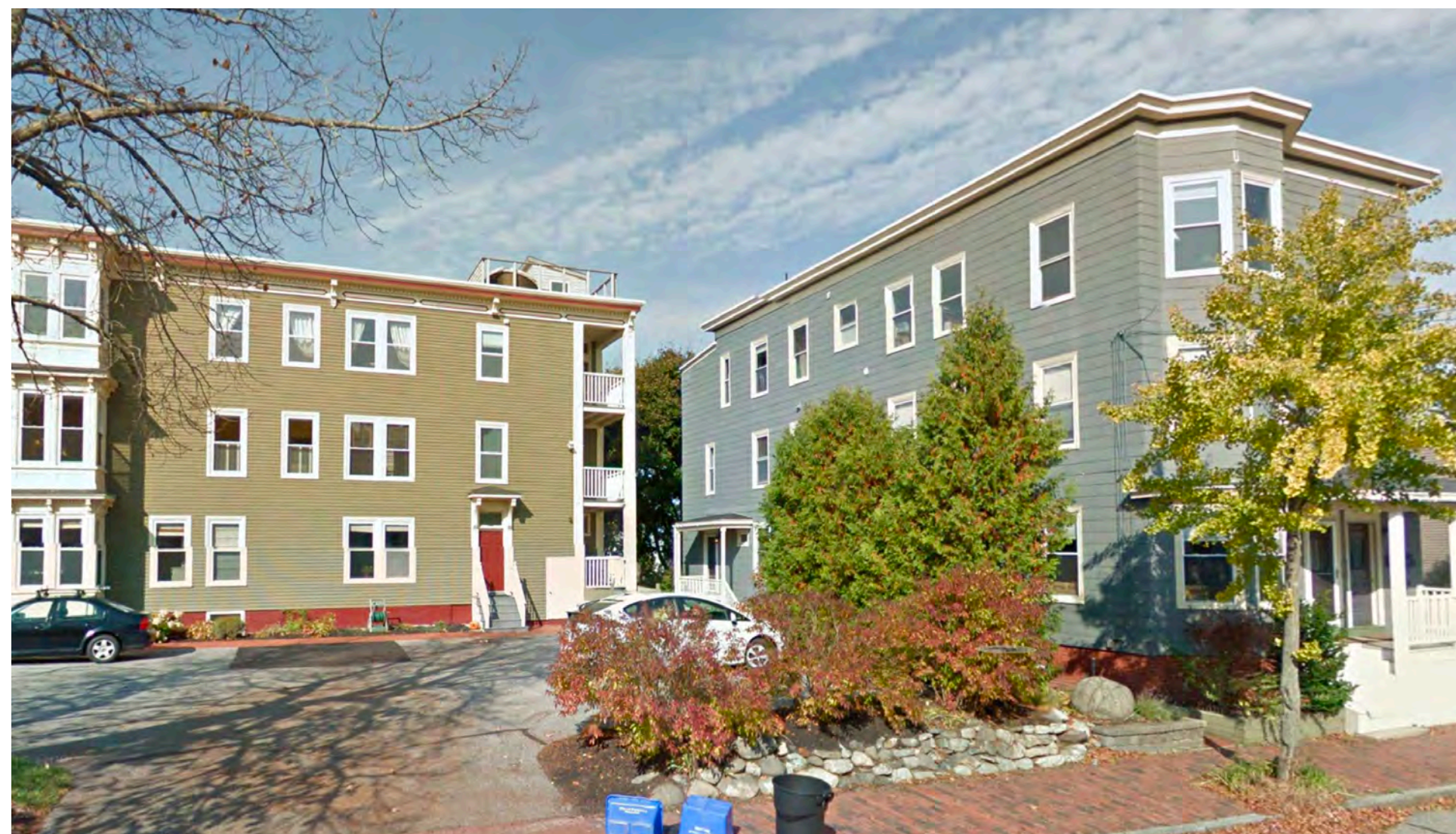
④ MONTREAL STREET #64



⑤ MONTREAL STREET #52 & #49



⑥ EMERSON STREET #60 & # 68



⑦ NORTH STREET #101 & MONTREAL STREET #61



⑧ WALNUT STREET #151 ISLAND VIEW APARTMENTS



⑨ ISLAND VIEW APARTMENTS



① MONTREAL STREET VIEW DOWNHILL



② MONTREAL STREET VIEW UPHILL

EXISTING CONTEXT: MONTREAL

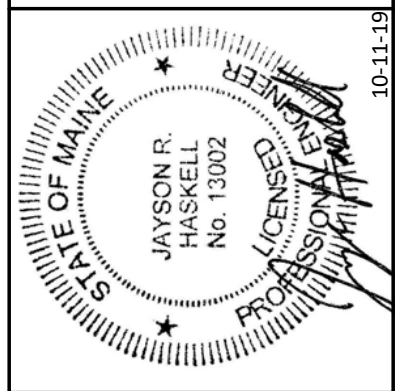
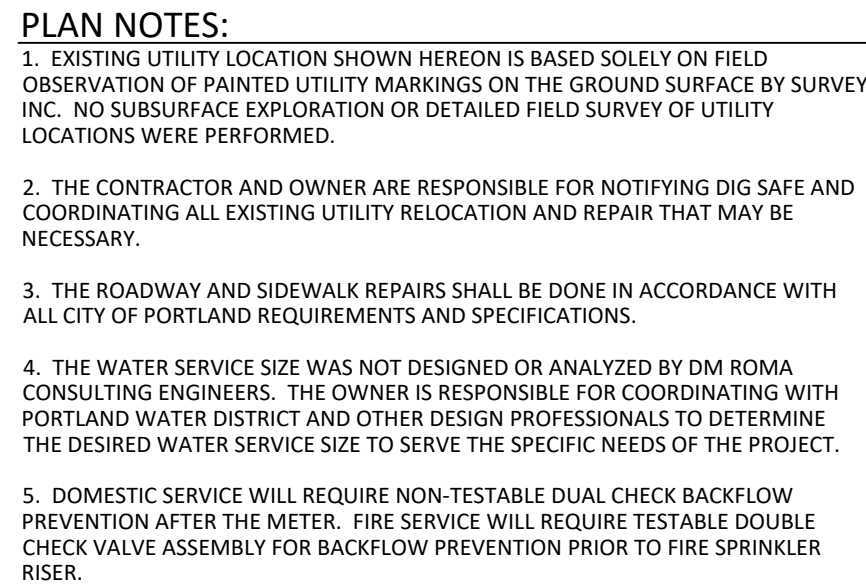


1 WALNUT STREET PERSPECTIVE



2 MONTREAL STREET PERSPECTIVE UPHILL

EXISTING CONTEXT: WALNUT & MONTREAL ST



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

[illegible]

GRADING AND UTILITY PLAN

37 MONTREAL STREET
PORTLAND, MAINE

FOR APPLICANT: 37 MON-

18053

OB NUMBER: _____

10-11-2019

DATE: _____

C2.0

EROSION AND SEDIMENTATION CONTROL NOTES:

EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY.

IN ORDER TO EFFECTIVELY PREVENT AND CONTROL EROSION RELATED TO SOIL DISTURBANCE, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) SHALL BE EMPLOYED:

1. POLLUTION PREVENTION

MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION, MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY DOWNSTREAM CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE WITHIN 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 7 DAYS.

2. TEMPORARY SOIL STABILIZATION BMPs

TEMPORARY MULCHING SHALL BE APPLIED IMMEDIATELY TO ANY AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. ANY DISTURBED SOIL WITHIN 75' OF A STREAM, WATER BODY OR WETLAND MUST RECEIVE TEMPORARY MULCH WITHIN 48 HOURS FOLLOWING DISTURBANCE AND BEFORE ANY STORM EVENT. ALL OTHER AREAS SHALL RECEIVE TEMPORARY MULCH WITHIN 7 DAYS OF DISTURBANCE. AREAS WHICH CANNOT BE SEEDED DURING THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION. THE FOLLOWING ARE ACCEPTABLE TEMPORARY MULCHING METHODS:

HAY OR STRAW MULCHES NEED TO BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SQ FT OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75-90% OF THE GROUND SURFACE. HAY OR STRAW CAN BE DRIVEN INTO THE GROUND WITH TRACKED EQUIPMENT IF SLOPES ARE LESS THAN 3%, OR CAN BE ANCHORED WITH JUTE, WOOD FIBER OR PLASTIC NETTING ON STEEPER SLOPES.

EROSION CONTROL MIX BERM MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR PRODUCTS ARE NOT ACCEPTABLE. EROSION CONTROL MIX CAN BE USED AS A STAND-ALONE REINFORCEMENT ON SLOPES OF 2 HORIZONTAL TO 1 VERTICAL OR LESS AND DRAINING IN SHEET FLOW. IT CAN BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND, AND MUST PROVIDE 100% SOIL COVERAGE.

EROSION CONTROL MIX SHALL MEET THE FOLLOWING SPECIFICATIONS:
-ORGANIC MATTER CONTENT SHALL BE BETWEEN 80-100%, DRY WEIGHT BASIS.
-PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A #10 IN. SCREEN AND BETWEEN 70-85% PASSING 0.75 IN. SCREEN
-ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
-LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX

WHEN USED AS MULCH, THE THICKNESS OF THE EROSION CONTROL MIX IS BASED UPON THE FOLLOWING:

LENGTH OF SLOPE	3:1 SLOPE OR LESS	BETWEEN 2:1 AND 3:1 SLOPE
LESS THAN 20 FT	2.0 IN.	4.0 IN.
BETWEEN 20 - 60 FT	3.0 IN.	5.0 IN.
BETWEEN 60 - 100 FT	4.0 IN.	6.0 IN.

CHEMICAL MULCHES AND SOIL BINDERS MAY BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES AND METHODS.

EROSION CONTROL BLANKETS AND MATS SHALL BE USED ON SLOPES STEEPER THAN 3:1 AND IN THE BOTTOM OF GRASSED WATERWAYS, OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE MAT SHALL BE INSTALLED WITH FIRM CONTINUOUS CONTACT WITH THE SOIL AND STAPLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. EROSION CONTROL MATS AND MULCH ANCHORING MUST BE INSPECTED AFTER RAINFALL EVENTS FOR DISLOCATION OR FAILURE, AND REPAIRED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, AND REPAIR AS NEEDED.

TEMPORARY VEGETATION SHALL BE ESTABLISHED ON SOILS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS. IF TEMPORARY VEGETATION CANNOT BE ESTABLISHED PRIOR TO OCTOBER 15, TEMPORARY MULCH SHALL BE APPLIED THROUGH THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDED, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P20S-K20) OR EQUIVALENT AND LIMESTONE AT A RATE OF 3 TONS PER ACRE. IF NECESSARY, LOOSEN SOIL TO A DEPTH OF 2 INCHES IN AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION ACTIVITIES. GRASS SEED SHALL BE SELECTED BASED UPON THE TIME OF YEAR THE PLANTING WILL TAKE PLACE AS SUMMARIZED IN THE FOLLOWING TABLE:

SEED	LB. PER ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	112	8/15 - 10/1
OATS	80	4/1 - 7/1 8/15 - 9/15
ANNUAL RYEGRASS	40	4/1 - 7/1

TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED TO MAINTAIN AT LEAST 95% VEGETATIVE COVER OF SOIL SURFACE. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES SHALL BE USED IN THE INTERIM SUCH AS TEMPORARY MULCH, FILTER BARRIERS, ETC.

3. SEDIMENT BARRIER BMPs

PRIOR TO CONSTRUCTION TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS INCLUDE ANY OF THE FOLLOWING:

FILTER BARRIER FENCE, ALSO CALLED SILT FENCE, SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURIAL.

STRAY/HAY BALES SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS IN A SINGLE ROW WITH THE ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED TO A DEPTH OF AT LEAST 4 INCHES, AND THE BALES SHALL BE SECURED WITH AT LEAST TWO WOODEN STAKES OR STEEL REBAR PER BALE. STAKES SHALL BE DRIVEN IN A DIRECTION TO PUSH THE BALES TOGETHER. GAPS BETWEEN BALES SHALL BE CHINKED WITH HAY.

EROSION CONTROL MIX BERMS ARE LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE A MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AT THE BASE IF UPHILL SLOPES ARE LESS THAN 5%, STEEPER SLOPES OR SLOPES GREATER THAN 20 FEET LONG MAY REQUIRE A LARGER WIDTH BERM. EROSION CONTROL MIX BERMS AT THE BASE OF A LONG OR STEEP SLOPE MAY ALSO REQUIRE A FILTER FENCE TO BE INSTALLED ON THE DOWNHILL SIDE OF THE BERM TO PROVIDE ADDITIONAL STABILIZATION AGAINST HIGH WIND-OR FLOWS. EROSION CONTROL MIX BERM IS NOT INTENDED TO BE INSTALLED AT THE BOTTOM OF SLOPES 8% OR STEEPER OR WITH FLOWING WATER.

CONTINUOUS CONTAINED BERMS, WHICH ARE ALSO REFERRED TO AS A FILTER SOCK, PROVIDES ADDITIONAL STABILITY TO AN EROSION CONTROL MIX BERM AND SHOULD BE USED IN FROZEN GROUND CONDITIONS OR IN AREAS THAT RECEIVE CONCENTRATED FLOW.

SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADEMENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED RUNNING ONTO THE STOCKPILE. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT AND REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

4. TEMPORARY CHECK DAMS

STONE CHECK DAMS SHALL BE INSTALLED IN SWALES OR DRAINAGE DITCHES TO REDUCE STORMWATER VELOCITIES AS SHOWN ON THE PLANS. STONE CHECK DAMS ARE NOT EFFECTIVE IN REMOVING SEDIMENT AND SHOULD BE USED IN CONJUNCTION WITH SEDIMENT BARRIERS IDENTIFIED ABOVE. TEMPORARY CHECK DAMS MAY BE LEFT IN PLACE PERMANENTLY IN MOST CASES. CHECK DAMS SHOULD BE NO HIGHER THAN 24 INCHES, AND THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTSIDE EDGES. CHECK DAMS SHOULD BE SPACED SUCH THAT THE CREST OF THE DOWNSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM CHECK DAM. CHECK DAMS IN A DRAINAGE DITCH OR WATERWAY SHOULD BE INSTALLED PRIOR TO DIRECTING RUNOFF TO THEM.

5. STORM DRAIN INLET PROTECTION

STORM DRAIN INLETS THAT ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED SHALL BE PROTECTED WITH A FILTER UNTIL THE DRAINAGE AREA IS EITHER PAVED OR STABILIZED WITH 95% VEGETATIVE GROWTH. THE FOLLOWING ARE ACCEPTABLE BMPs ASSOCIATED WITH STORM DRAIN INLET PROTECTION:

HAY BALE OR SILT FENCE INLET STRUCTURE CONSISTS OF HAY BALES OR SILT FENCE CONFIGURED AROUND A CATCH BASIN INLET FRAME AND INSTALLED ACCORDING TO THE METHODS OUTLINED ABOVE. THIS METHOD IS SUITABLE FOR OPEN PIPE (CULVERT) INLETS, FIELD INLETS OR ROAD INLETS THAT HAVE NOT YET BEEN PAVED.

MANUFACTURED SEDIMENT FILTERS ARE THE PREFERRED METHOD FOR PROTECTING CATCH BASIN INLETS IN PAVED OR GRAVEL ROADWAYS. THE FILTERS TYPICALLY CONSIST OF A FABRIC OR OTHER PERVIOUS MATERIAL THAT IS PLACED ABOVE OR BELOW THE GRATE THAT TRAPS SEDIMENT ON THE SURFACE AND ALLOWS WATER TO FLOW THROUGH THE GRATE. CONSIDERATIONS SUCH AS WEATHER CONDITIONS, SLOPES, TRIBUTARY WATERSHED AREA, AND EXPECTED SEDIMENT ACCUMULATION SHOULD BE FACTORED INTO MAKING A DECISION ON ANY PARTICULAR PRODUCT, AND THE MANUFACTURER'S RECOMMENDATIONS ON INSTALLATION AND MAINTENANCE SHALL BE STRICTLY ADHERED TO.

6. STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO REDUCE THE TRACKING OF SEDIMENT ONTO ROADWAYS, A STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED AT ALL POINTS OF EGRESS WHERE VEHICLES MAY TRAVEL FROM THE PROJECT SITE TO A PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 5 FEET INTO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, AND THE CONTRACTOR SHALL SWEEP PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MUD-TRACKING. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED. IF TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OCCURS THE CONTRACTOR SHALL BE RESPONSIBLE FOR SWEEPING THE AFFECTED AREAS IMMEDIATELY, AND THEREAFTER WEEKLY AT A MINIMUM AND PRIOR TO ANY SIGNIFICANT RAINFALL EVENT.

7. DUST CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST ON THE PROJECT SITE AND ON ADJACENT ROADWAYS. EXPOSED SOIL SURFACES SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST. GRAVEL SURFACES SHALL EITHER BE TREATED WITH AN APPLICATION OF CALCIUM CHLORIDE OR COVERED WITH CRUSHED STONE IF DUST CONTROL BECOMES DIFFICULT WITH NORMAL WATER APPLICATIONS.

8. LAND GRADING AND SLOPE PREPARATION

GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE NEXT PHASE. ANY EXPOSED AREA THAT WILL NOT BE FINISH GRADED WITHIN 14 DAYS SHALL BE TREATED WITH MULCH OR PLANTED WITH TEMPORARY VEGETATION. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT INCREASE SLOPES OR OTHER GRADED AREAS. CUT AND FILL SLOPES SHALL BE TO BE STABILIZED WITH GRASS SHALL NOT BE STEEPER THAN 3:1. CUT AND FILL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS OR MATS. CUT AND FILL SLOPES STEEPER THAN 2:1 SHALL BE STABILIZED WITH RIP RAP OR AN APPROVED EQUIVALENT. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SURFACE SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS. FILL MATERIAL SHALL BE FREE OF STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR SHOWN ON A REPAIRED FOUNDATION. STEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

9. TOPSOIL

IF POSSIBLE, TOPSOIL SHALL BE STOCKPILED ON THE PROJECT SITE AND REUSED. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM), AND SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS AND NOXIOUS WEEDS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENEED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUE COMPACTION IS TO BE AVOIDED.

10. PERMANENT SOIL STABILIZATION

IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE, IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

SEEDED AREAS: TO PREPARE THE SEEDED, APPLY 10-20-20 FERTILIZER AT A RATE OF 800 POUNDS PER ACRE AND GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE. WORK THE FERTILIZER AND LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 4 INCHES AND REMOVE ANY STONES, ROOTS OR OTHER VISIBLE DEBRIS. SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. REFER TO THE USDA SOIL CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS. FOR SEEDED AREAS TO BE PERMANENTLY STABILIZED, 90% OF THE DISTURBED SOIL SHALL BE COVERED WITH MAINTAINING HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

SOD STRIPS SHALL BE LAID AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT LOWEST ELEVATION. JOINTS SHALL BE STAGGERED, AND ALL STRIPS SHALL BE ROLLED OR TAMPED INTO PLACE. ON SLOPES, SOD SHALL BE ANCHORED WITH STAPLES, WIRE OR PINS. IRRIGATE SODDED AREA IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROOTS OF THE SOD MUST BE COMPLETELY BOUND INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

PERMANENT MULCH IS A LONG TERM COVER THAT PROVIDES A GOOD BUFFER AROUND DISTURBED AREAS. THE EROSION CONTROL MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE SHREDDED BARK, WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE. THE EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH.

RRAPRIP STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNEVEN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. THE DEPTH OF STONE SHALL BE A MINIMUM OF 2.2 TIMES THE MAXIMUM STONE DIAMETER. A GRAVEL OR GEOTEXTILE FILTER OR GRATE OR GREET SHALL BE PLACED BETWEEN THE RIPRAP AND UNDERLYING SOIL SURFACE. GRAVEL FILTER BLANKETS OR MOOT TYPE-C UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIPRAP SLOPES SHALL BE TOED INTO THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABLE BASE OF RIPRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRADED RIPRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE BANKS, OR DOWNCUTTING OF THE CHANNEL.

11. STORMWATER CHANNELS

EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DISTURBED BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

12. INSPECTION & MAINTENANCE

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ALL CONSTRUCTION OPERATIONS COMPLY WITH THE INSPECTION AND MAINTENANCE PROCEDURES FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO THOSE INCLUDED IN THIS PLAN SET, THE "INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN", AND THE "MAINE EROSION AND SEDIMENTATION CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS".

INSPECTION SHALL OCCUR ON ALL DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIAL STORAGE AREAS, AND CONSTRUCTION VEHICLE ENTRANCE(S) AND OR EXITS(S). THESE AREAS SHALL BE INSPECTED AT LEAST ONCE PER WEEK, AS WELL AS 24 HOURS BEFORE AND AFTER A STORM EVENT, AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. INSPECTIONS ARE TO BE CONDUCTED BY A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING STANDARDS AND CONDITIONS IN THE PERMIT.

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

WINTER EROSION AND SEDIMENTATION CONTROL NOTES:

THE WINTER CONSTRUCTION PERIOD TYPICALLY BEGINS IN EARLY NOVEMBER AND ENDS IN MID APRIL. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE BE EXPOSED AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENuded UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOADED, SEEDED AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.

1. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 75 FEET FROM ANY REGULATED NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR OTHER PERMANENTLY STABILIZED MEASURES. IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS, IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

2. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

3. MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENuded UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCHES THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE EITHER MULCH OR ANCHORED AND THE AREA IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 15TH, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4. SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE FOR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STACKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED WITHIN 100 FEET FROM ANY REGULATED NATURAL RESOURCE.

5. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOOMED, FINE GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF DORMANT SEEDING IS USED, ALL DISTURBED AREAS SHALL RECEIVE 4 INCHES OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS PER 1,000 S.F.. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75%) IN THE SPRING SHALL BE REVEGETATED.

6. OVER-WINTER STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED BY NOVEMBER 1. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A GRASS-LINED DITCH OR CHANNEL IS STABILIZED BY SEPTEMBER 1, THEN EITHER A SOD LINING SHALL BE INSTALLED PRIOR TO OCTOBER 1 OR THE DITCH MUST BE LINED WITH STONE RIPRAP BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE PRIOR TO NOVEMBER 1.

7. OVER-WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE IS TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS BY OCTOBER 1, SOD BY NOVEMBER 1, EROSION CONTROL MIX BY NOVEMBER 1 OR STONE RIPRAP BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

8. OVER-WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN THE AREA SHALL BE STABILIZED WITH TEMPORARY VEGETATION AND MULCHING BY OCTOBER 1, SOD BY OCTOBER 1, OR MULCH BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

INSPECTION & MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ALL CONSTRUCTION OPERATIONS COMPLY WITH THE INSPECTION AND MAINTENANCE PROCEDURES FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO THOSE INCLUDED IN THIS PLAN SET, THE "INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN", AND THE "MAINE EROSION AND SEDIMENTATION CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS".

2. INSPECTION SHALL OCCUR ON ALL DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIAL STORAGE AREAS, AND CONSTRUCTION VEHICLE ENTRANCE(S) AND OR EXITS(S). THESE AREAS SHALL BE INSPECTED AT LEAST ONCE PER WEEK, AS WELL AS 24 HOURS BEFORE AND AFTER A STORM EVENT, AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. INSPECTIONS ARE TO BE CONDUCTED BY A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING STANDARDS AND CONDITIONS IN THE PERMIT.

3. MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

HOUSEKEEPING NOTES

1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

2. 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. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

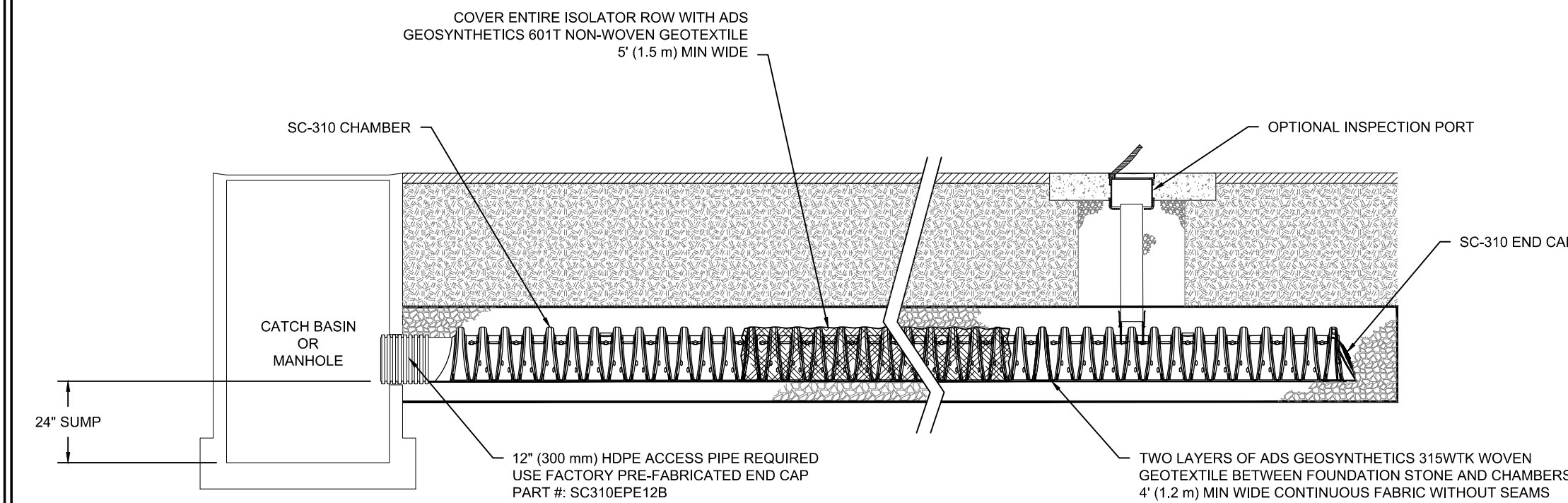
3. FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SEE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT TRAFFIC EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD BE STOPPED DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

4. DEBRIS AND OTHER MATERIALS: MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

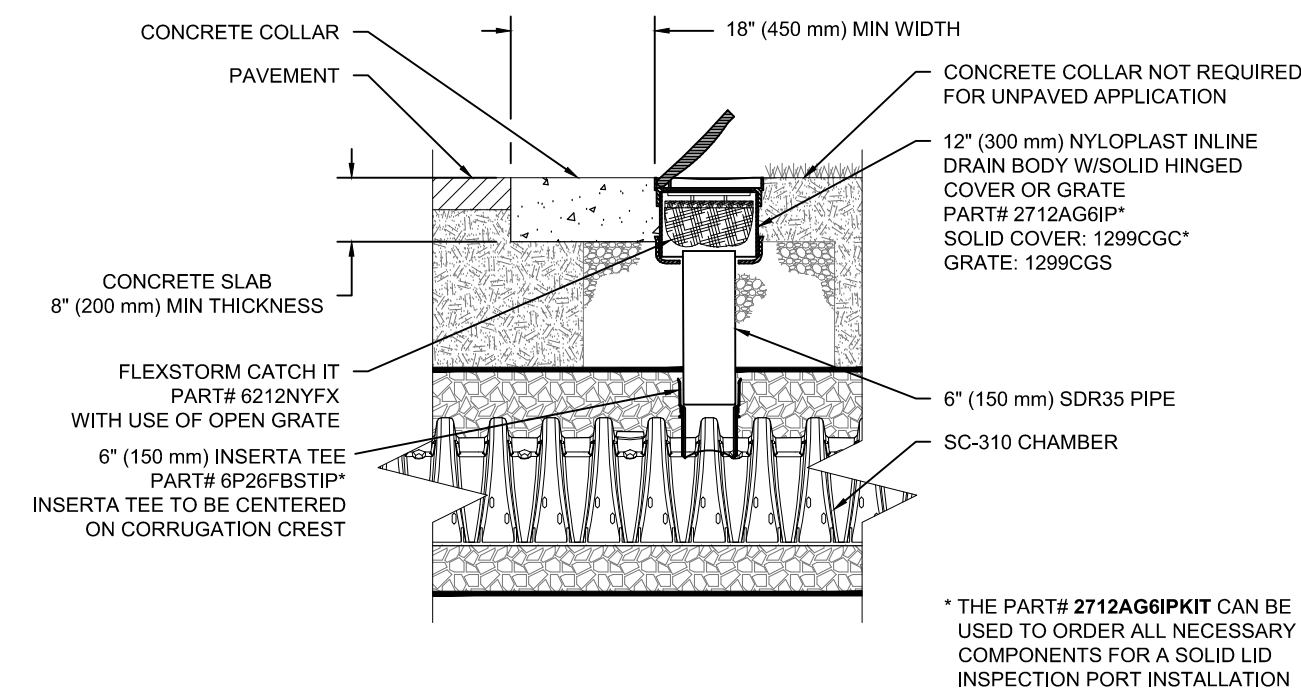
5. EXCAVATION DE-WATERING: EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODDED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERED BASIN OR SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. AUTHORIZED NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES, WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

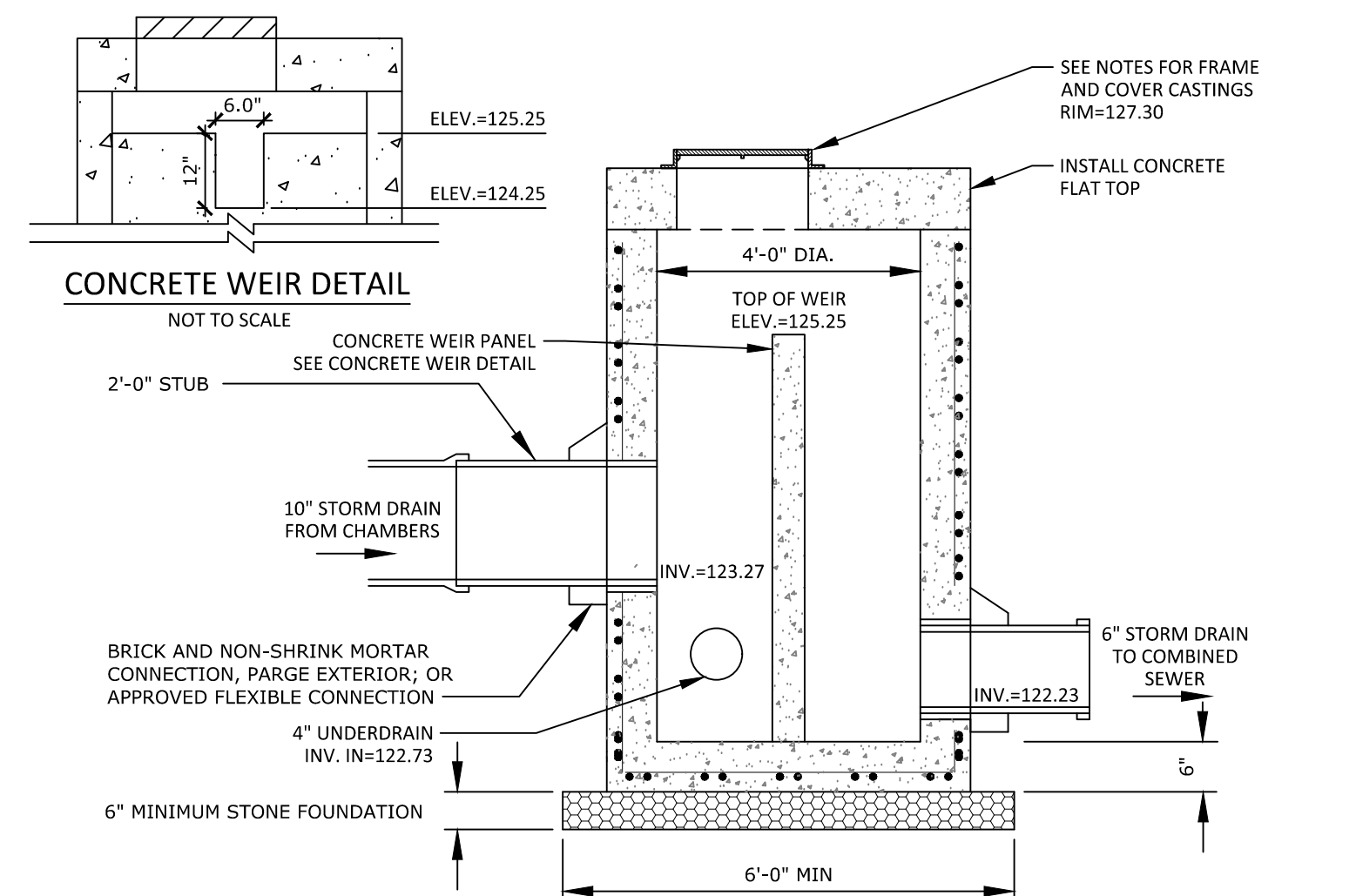
- (a) DISCHARGES FROM FIREFIGHTING ACTIVITY;
- (b) FIRE HYDRANT FLUSHINGS;
- (c) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
- (d



SC-310 ISOLATOR ROW SECTION
NOT TO SCALE



SC-310 6" INSPECTION PORT DETAIL
NOT TO SCALE



- NOTES:**
1. LARGER DIAMETER STRUCTURES MAY BE REQUIRED DUE TO SIZE OR GEOMETRY OF PIPE CONNECTIONS AT MANHOLE. WALL THICKNESS TO INCREASE BY 1" FOR EACH 1'-0" DIA. INCREASE. PROVIDE SHOP DRAWINGS.
 2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
 3. CAST IRON SOLID COVER AND FRAME SHALL BE EQUAL TO NEENAH FOUNDARY PRODUCT NO. R-1556-A - MANHOLE FRAME, SOLID LID - HEAVY DUTY OR EQUAL. SUBMIT CATALOG SHEETS TO ENGINEER FOR APPROVAL.

OUTLET CONTROL STRUCTURE DETAIL
NOT TO SCALE

MANUFACTURER'S GENERAL NOTES

1. STORMTECH REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICES REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18" [457 mm] NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96" [2438 mm] INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24" [610 mm], MAXIMUM COVER IS 96" [2438 mm].
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT WWW.STORMTECH.COM

STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-310 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS TESTED USING ASTM STANDARDS.
3. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
6. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - a. A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2922 MUST BE USED AS A PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
7. CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
8. ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
9. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

MAINTENANCE NOTES:

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS
 - A.1. REMOVE/OPEN LID ON NYLOPLAST DRAINAGE STRUCTURE OR 24"x24" F-BASIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

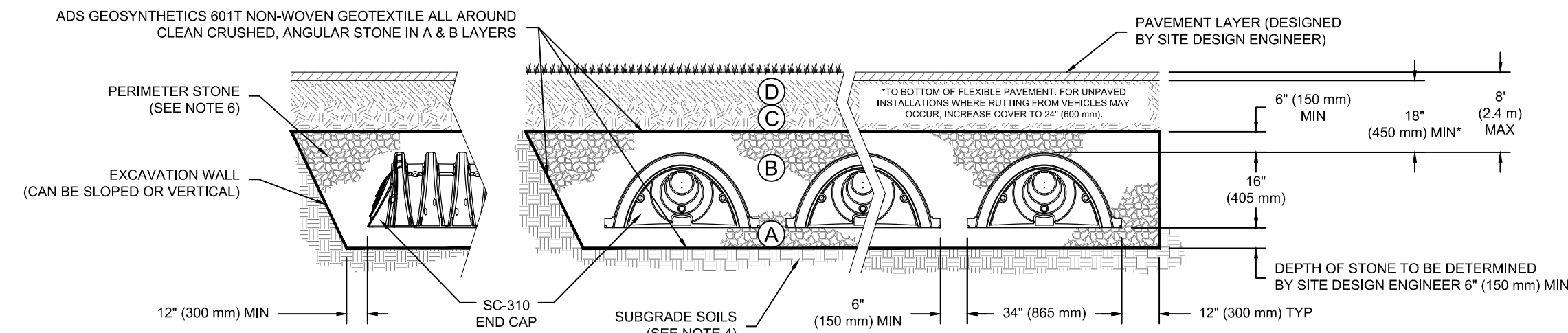
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 98% PROCTOR DENSITY FOR WELL-GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

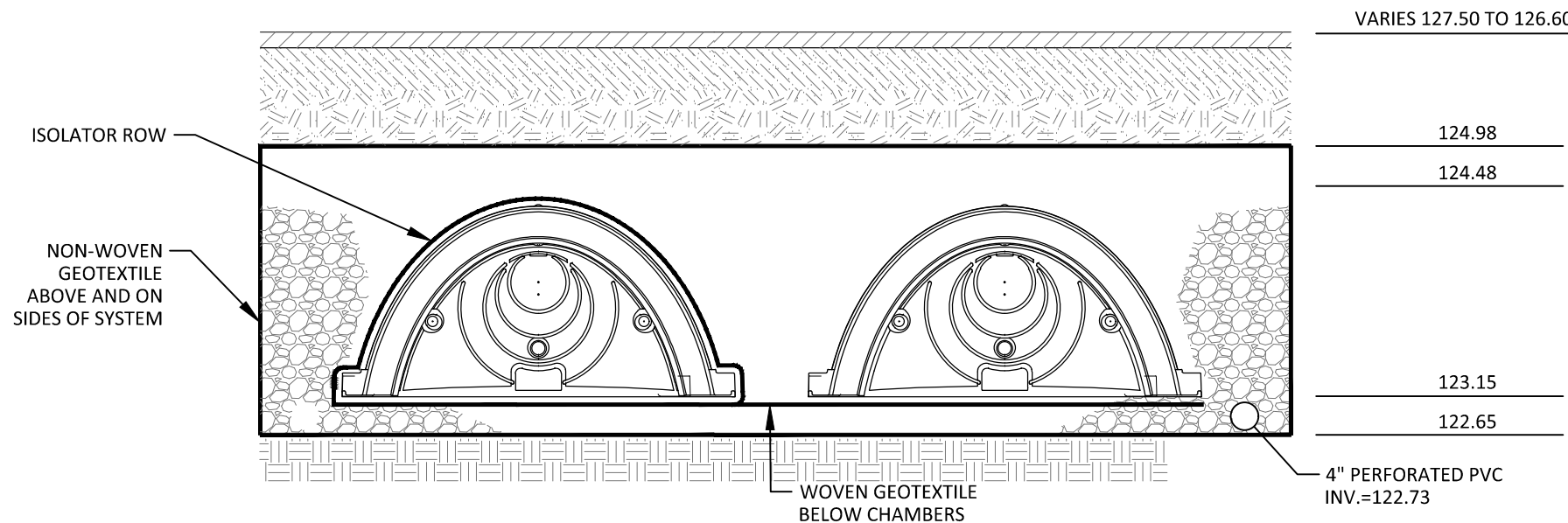
- PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE"
 2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

STORMTECH SC-310 CROSS SECTION
NOT TO SCALE



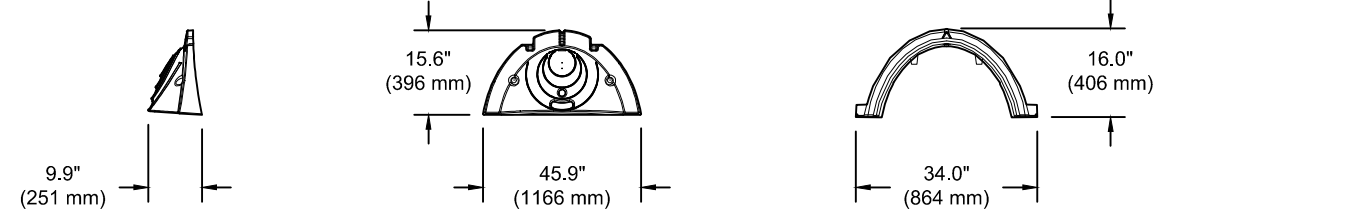
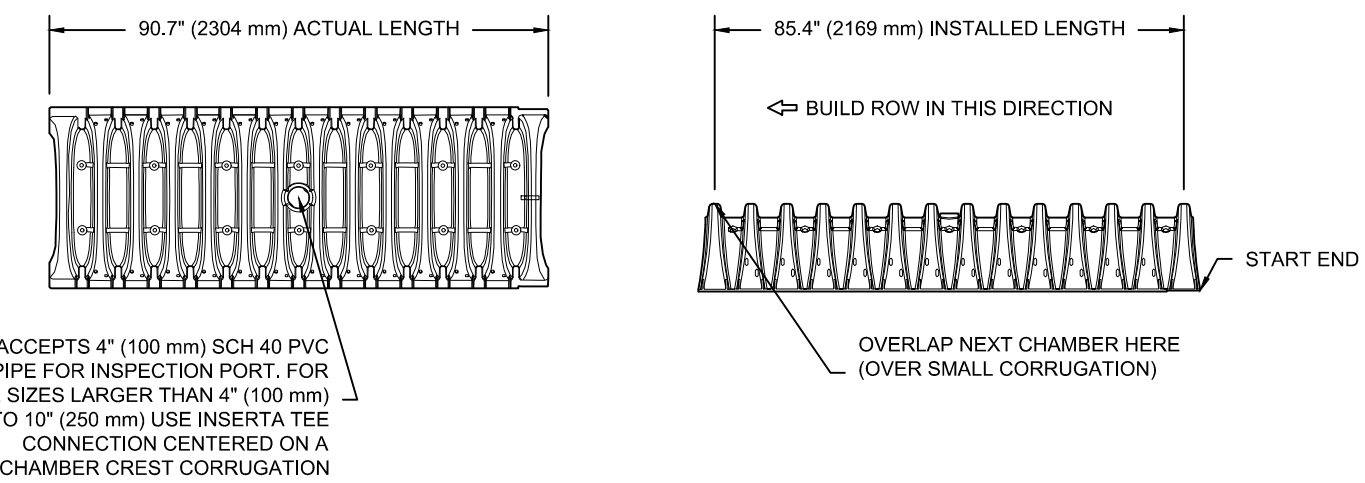
DURING CONSTRUCTION INSPECTION NOTES:

1. CONSTRUCTION OVERSIGHT: THE CHAMBER SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION. INSPECTION DURING AND AFTER CONSTRUCTION AND UNTIL THE SITE IS STABILIZED MUST BE PERFORMED BY THE MANUFACTURER'S REPRESENTATIVE.

POST CONSTRUCTION INSPECTION NOTES:

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

SUBSURFACE CHAMBER SYSTEM - SECTION DETAIL
NOT TO SCALE



NOMINAL CHAMBER SPECIFICATIONS	SIZE (W X H X INSTALLED LENGTH)	CHAMBER STORAGE	MINIMUM INSTALLED STORAGE*	WEIGHT
34.0" X 16.0" X 85.4"	14.7 CUBIC FEET	31.0 CUBIC FEET	38.0 lbs.	(864 mm X 406 mm X 2169 mm)
14.7 CUBIC FEET	(0.42 m³)	(0.86 m³)	(16.8 kg)	

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS

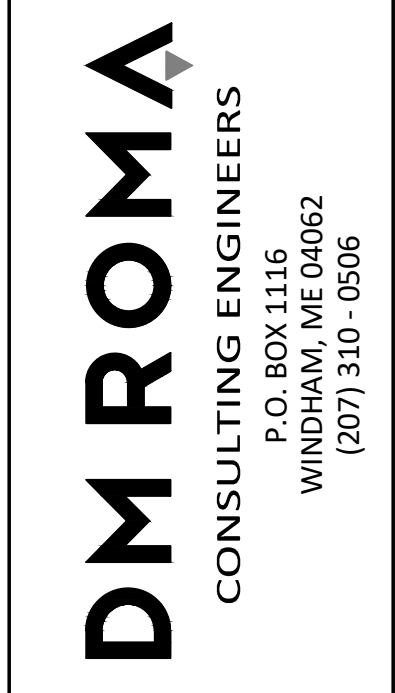
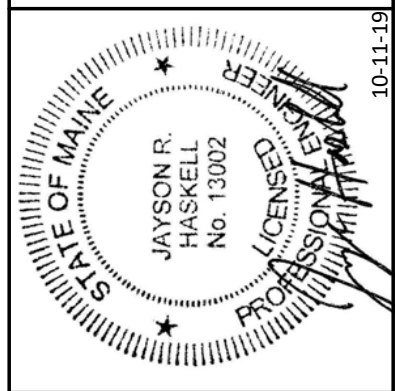
PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC	6" (150 mm)	---	---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.9" (99 mm)	---
SC310EPE08B / SC310EPE08BPC	8" (200 mm)	---	---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC	10" (250 mm)	---	---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

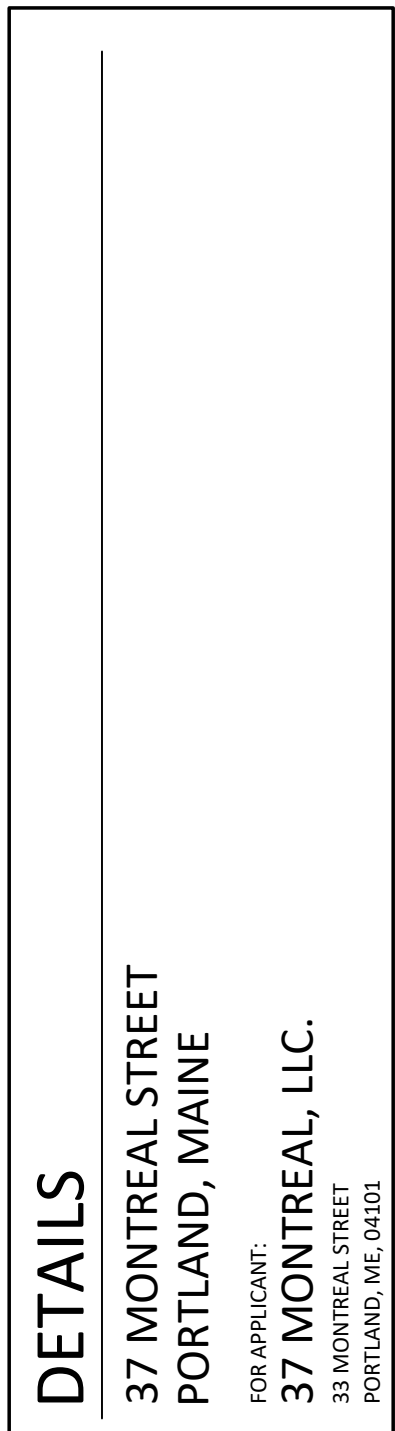
* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

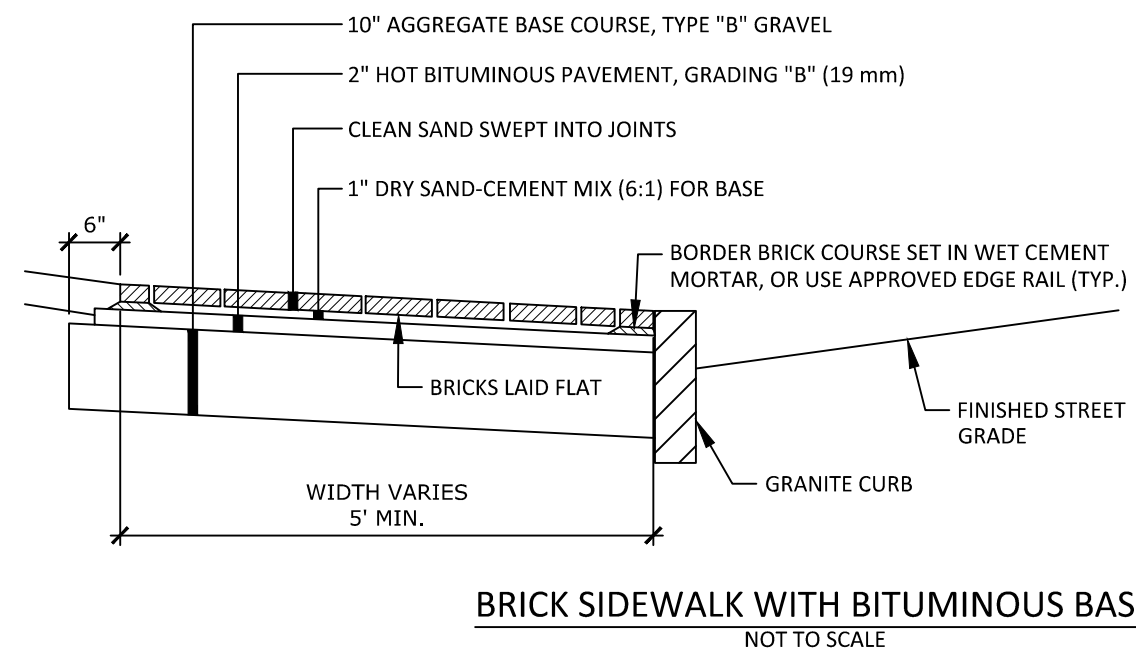
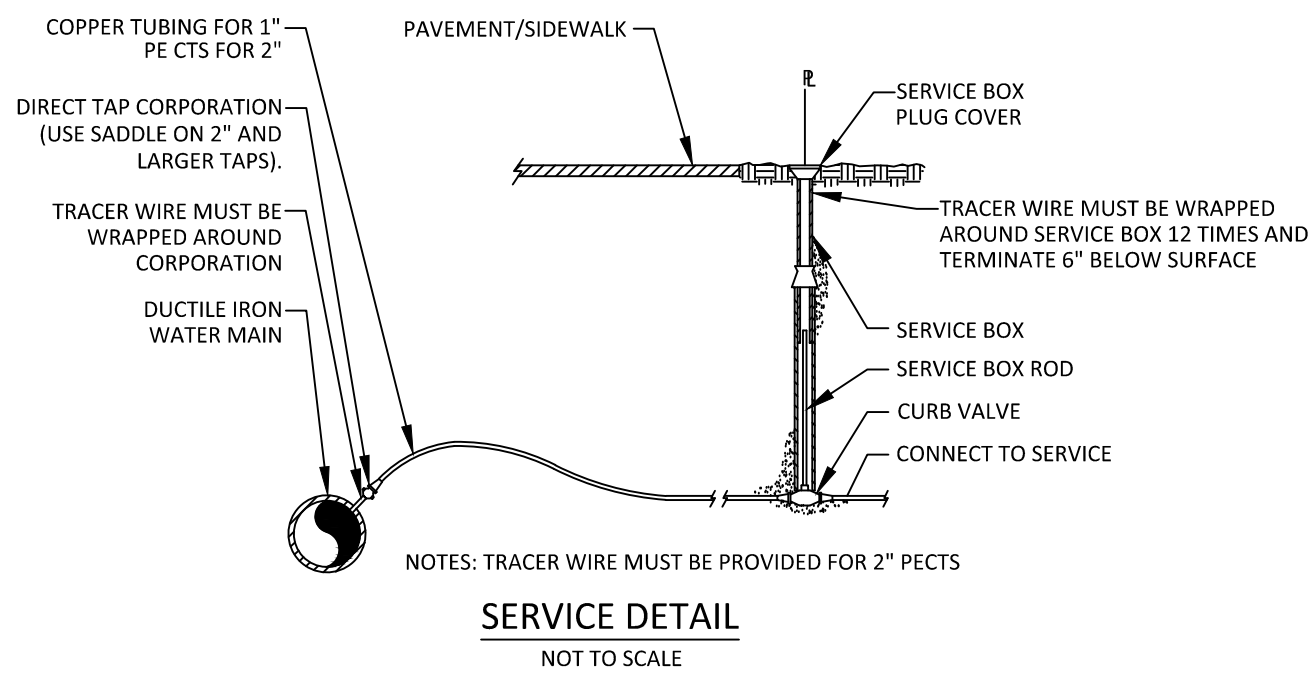
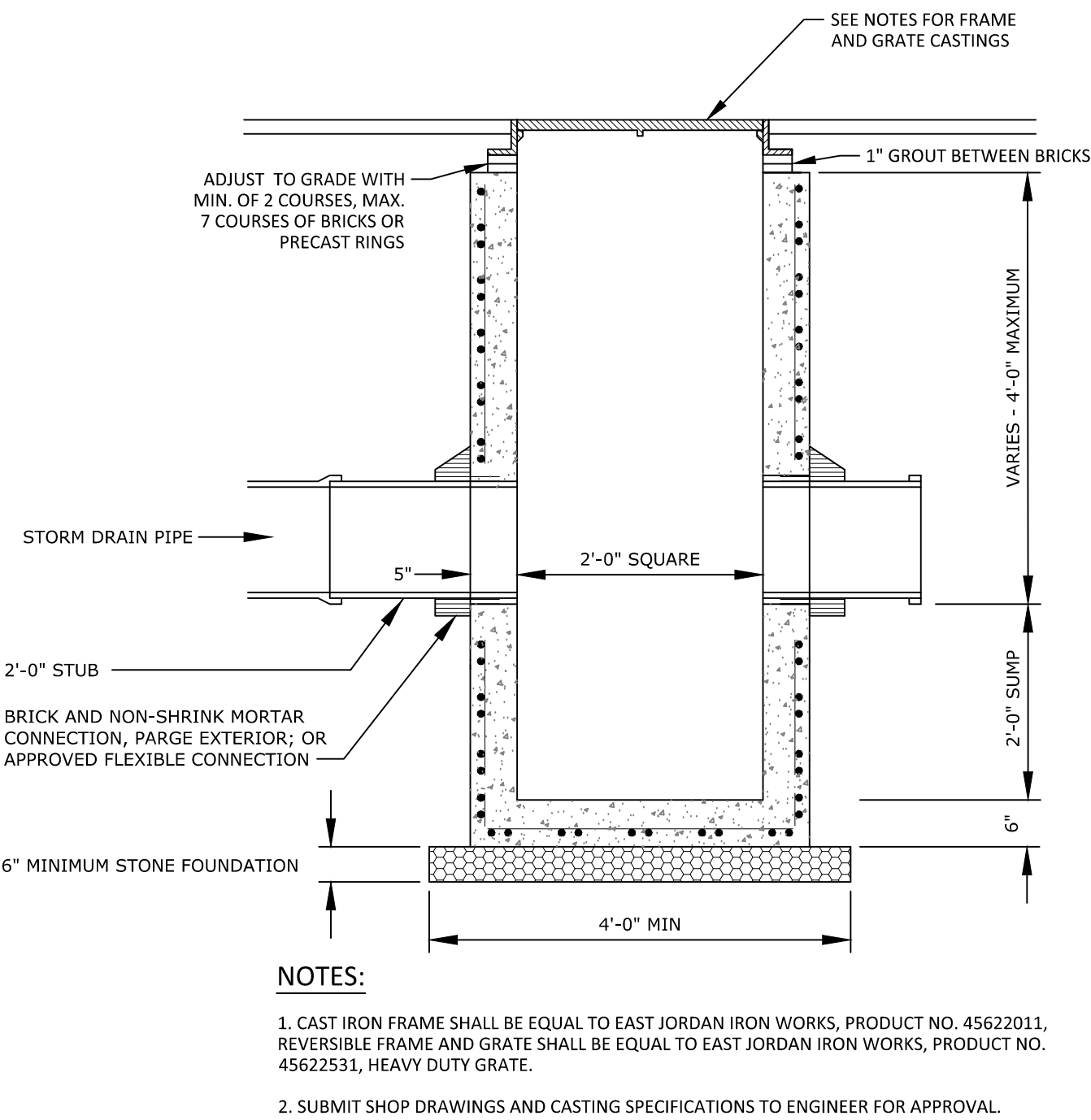
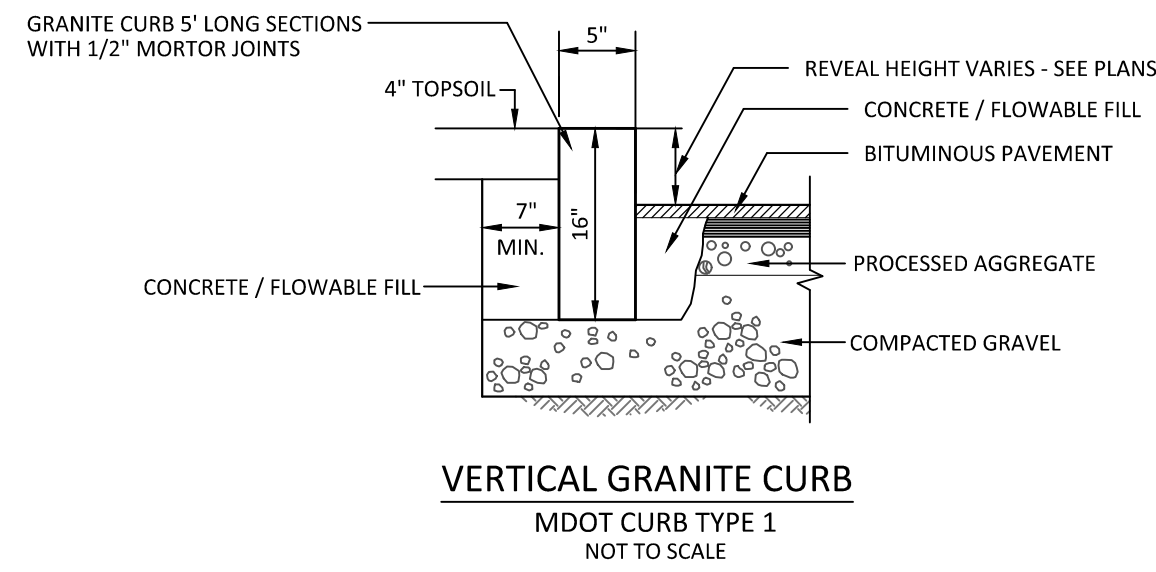
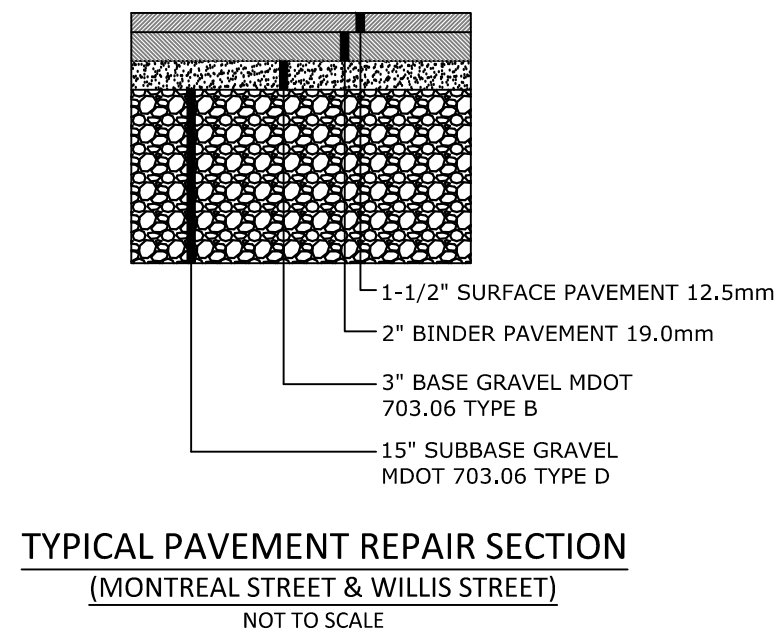
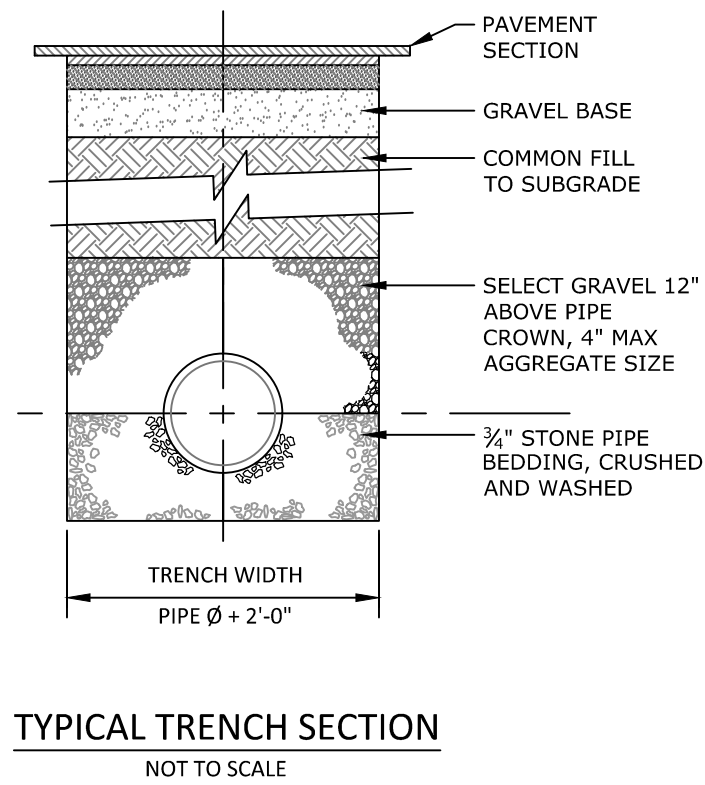
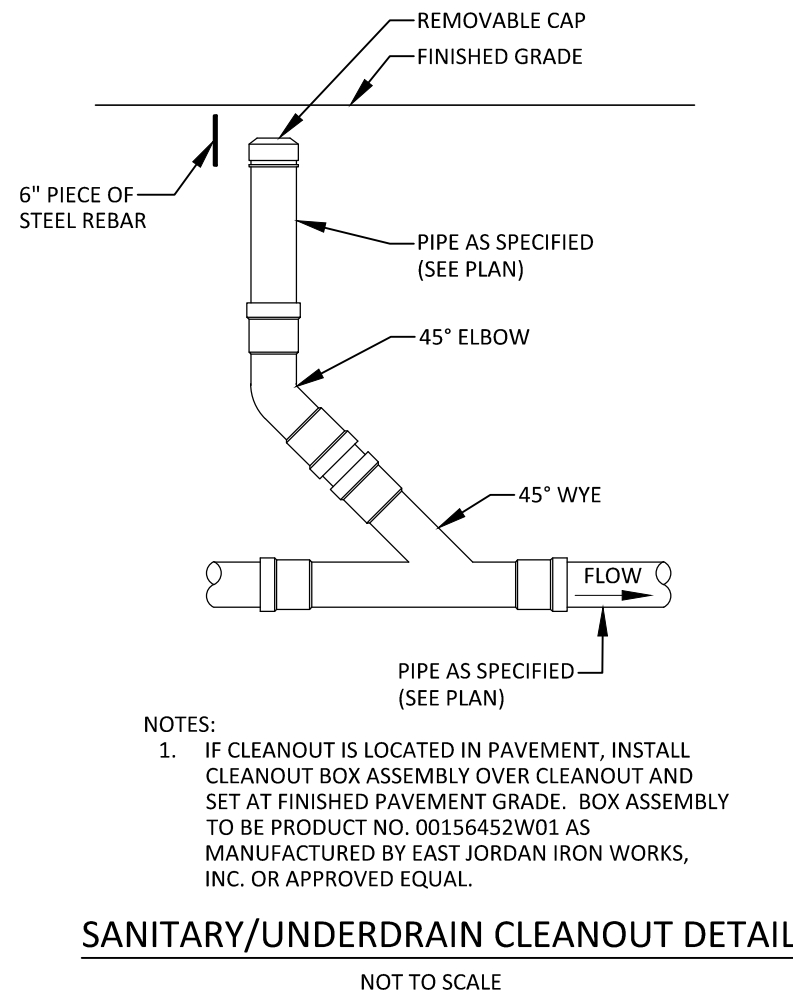
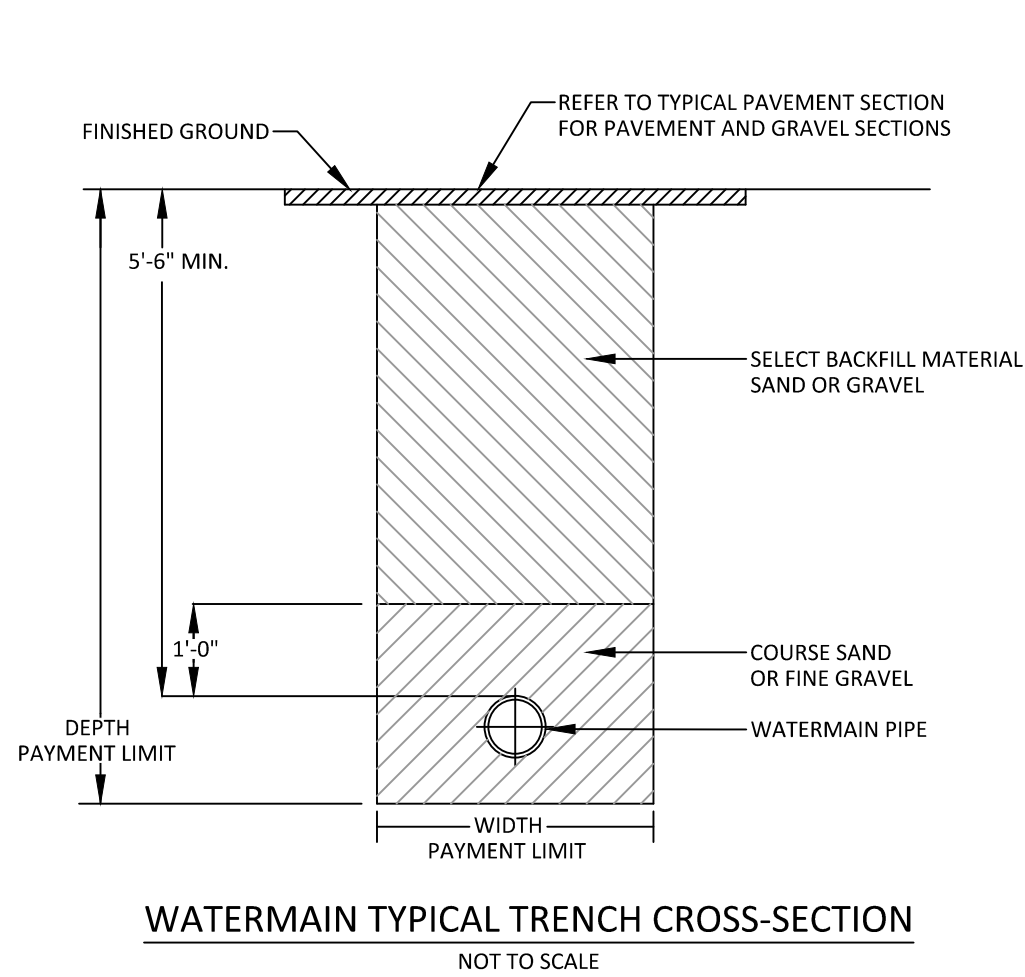
STORMTECH SC-310 TECHNICAL SPECIFICATION
NOT TO SCALE



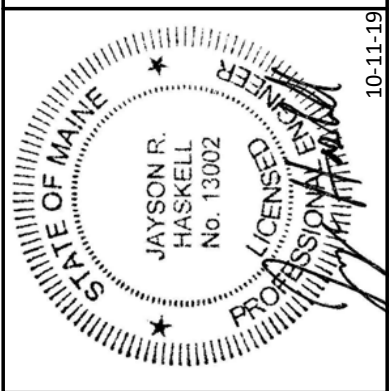
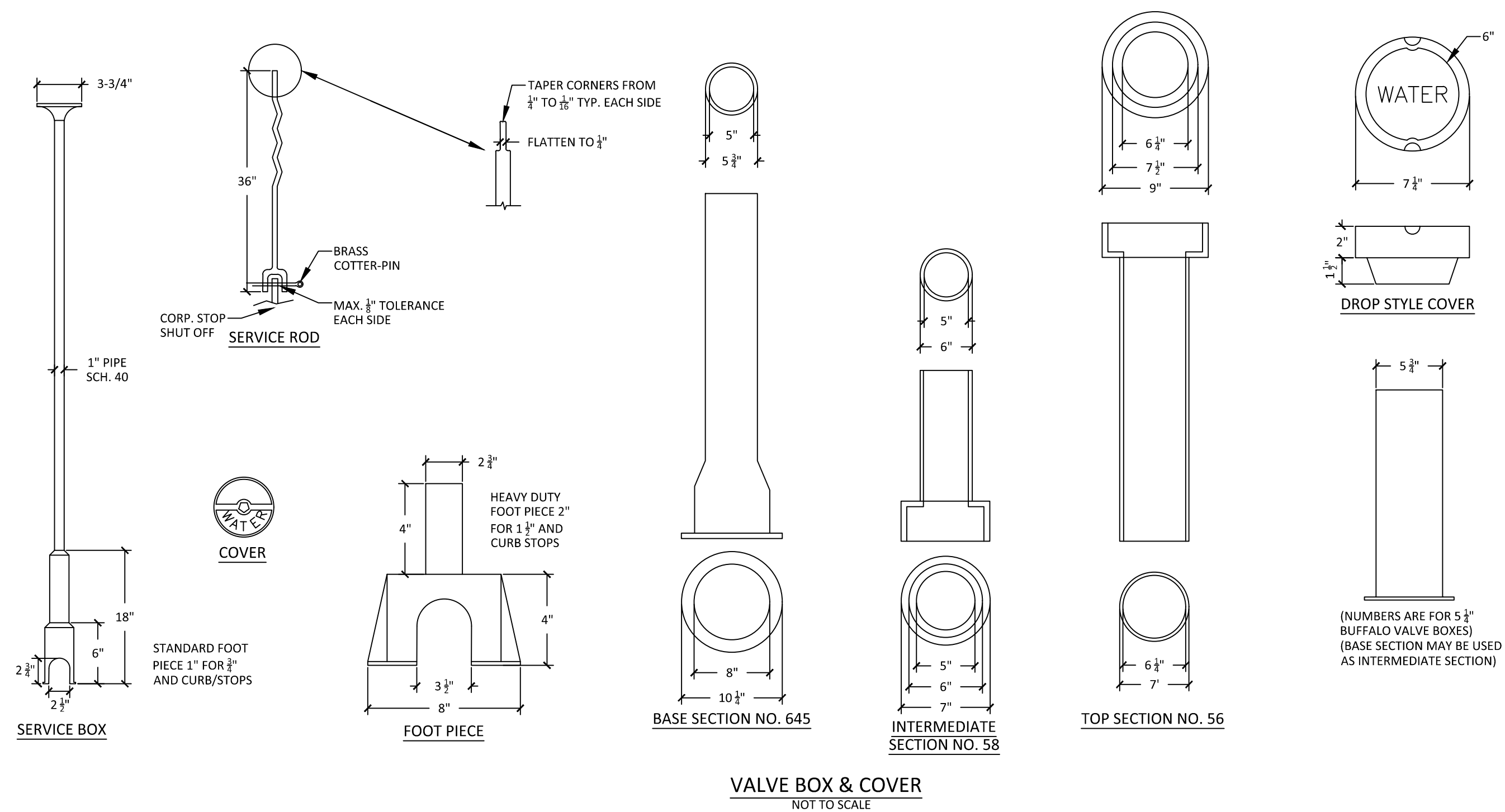
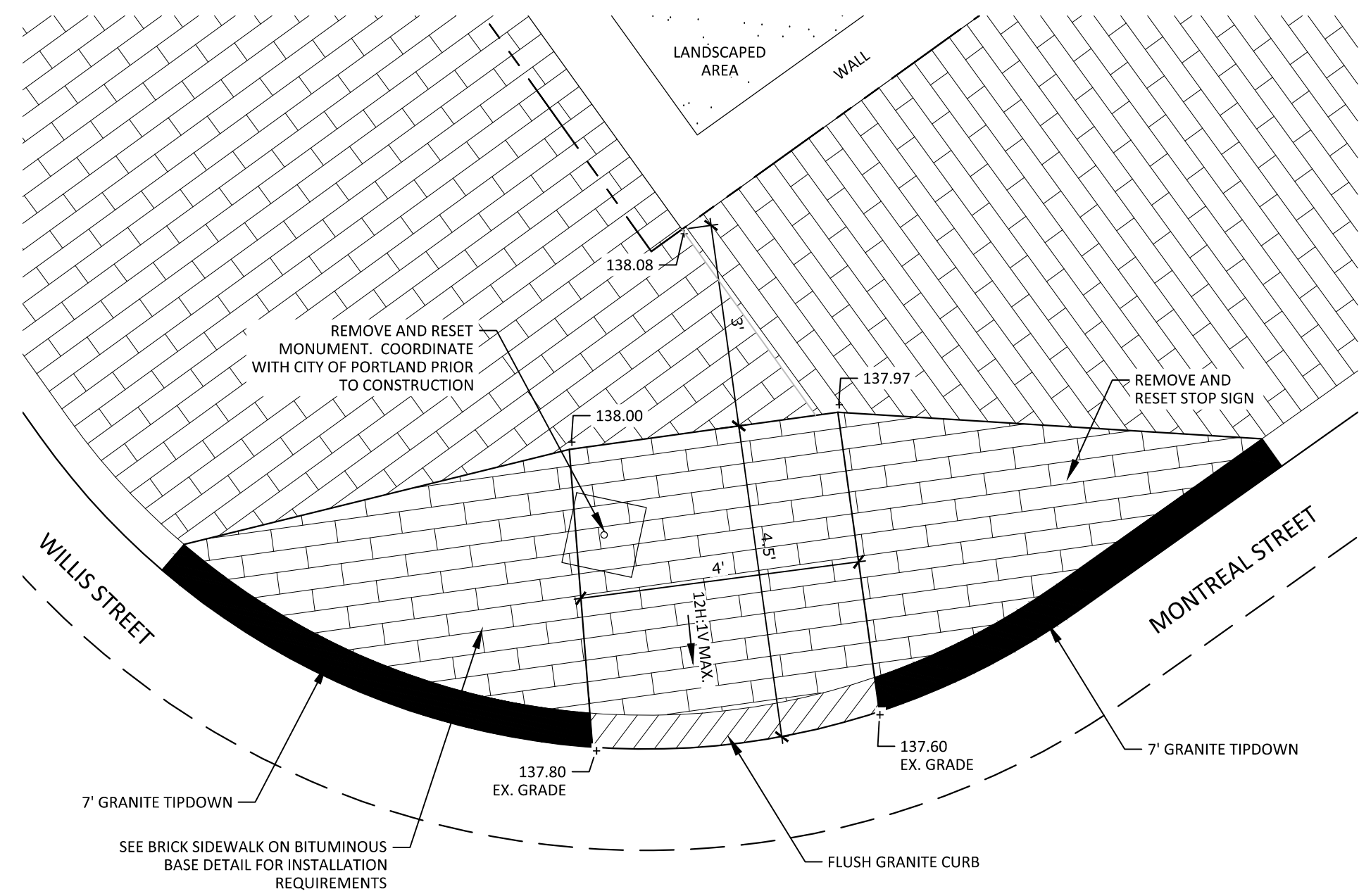
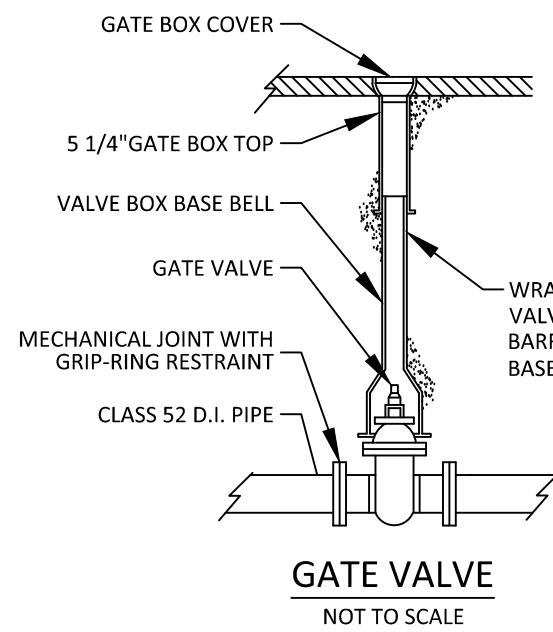
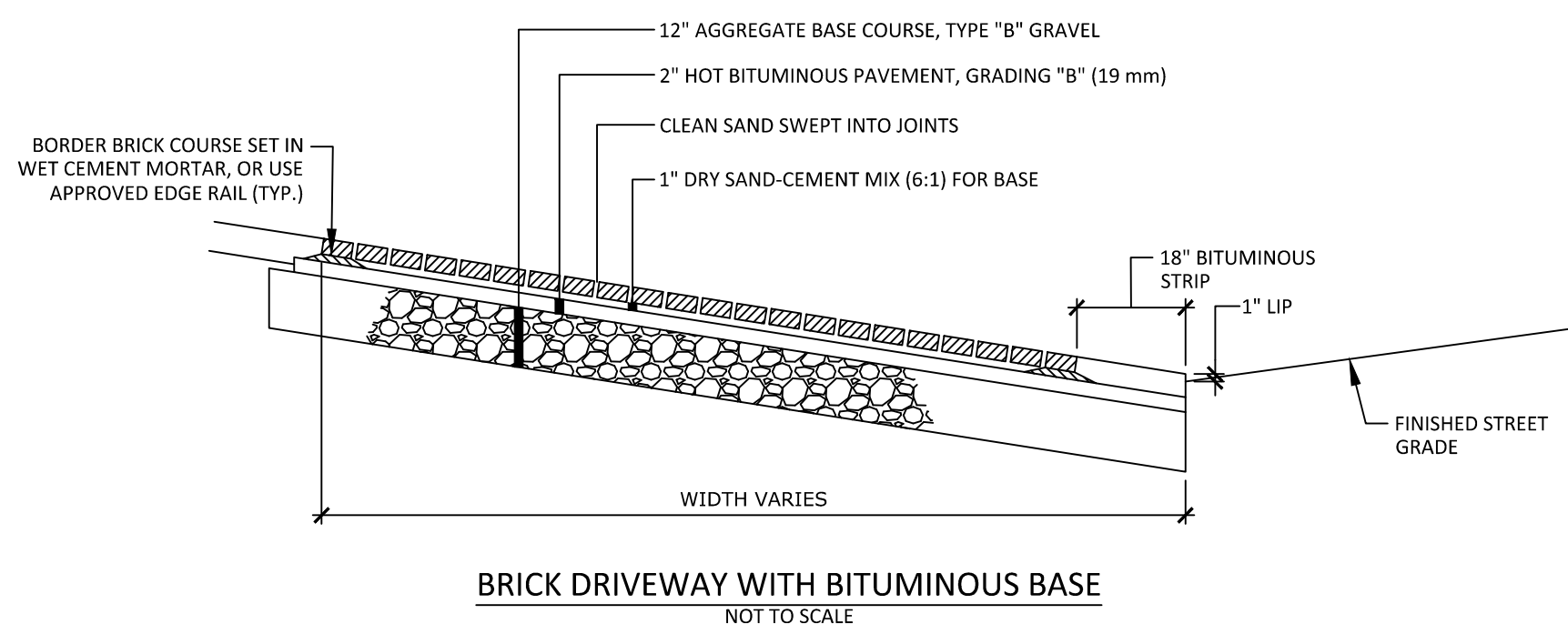
REV	DATE	BY	DESCRIPTION
A	8-22-19	DMR	ISSUED FOR PERMITTING
B	10-11-19	DMR	REVISED PER CITY REVIEW



18053
JOB NUMBER:
AS NOTED
SCALE:
10-11-2019
DATE:
--
C3.1



BRICKS TO BE USED:
NEW CONSTRUCTION:
4"x8" PINE HALL PATHWAY PAVER BRICK, MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM# 193623, PINE HALL PATHWAY PAVER BRICK.
REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER, SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK", ITEM NUMBER VB88.

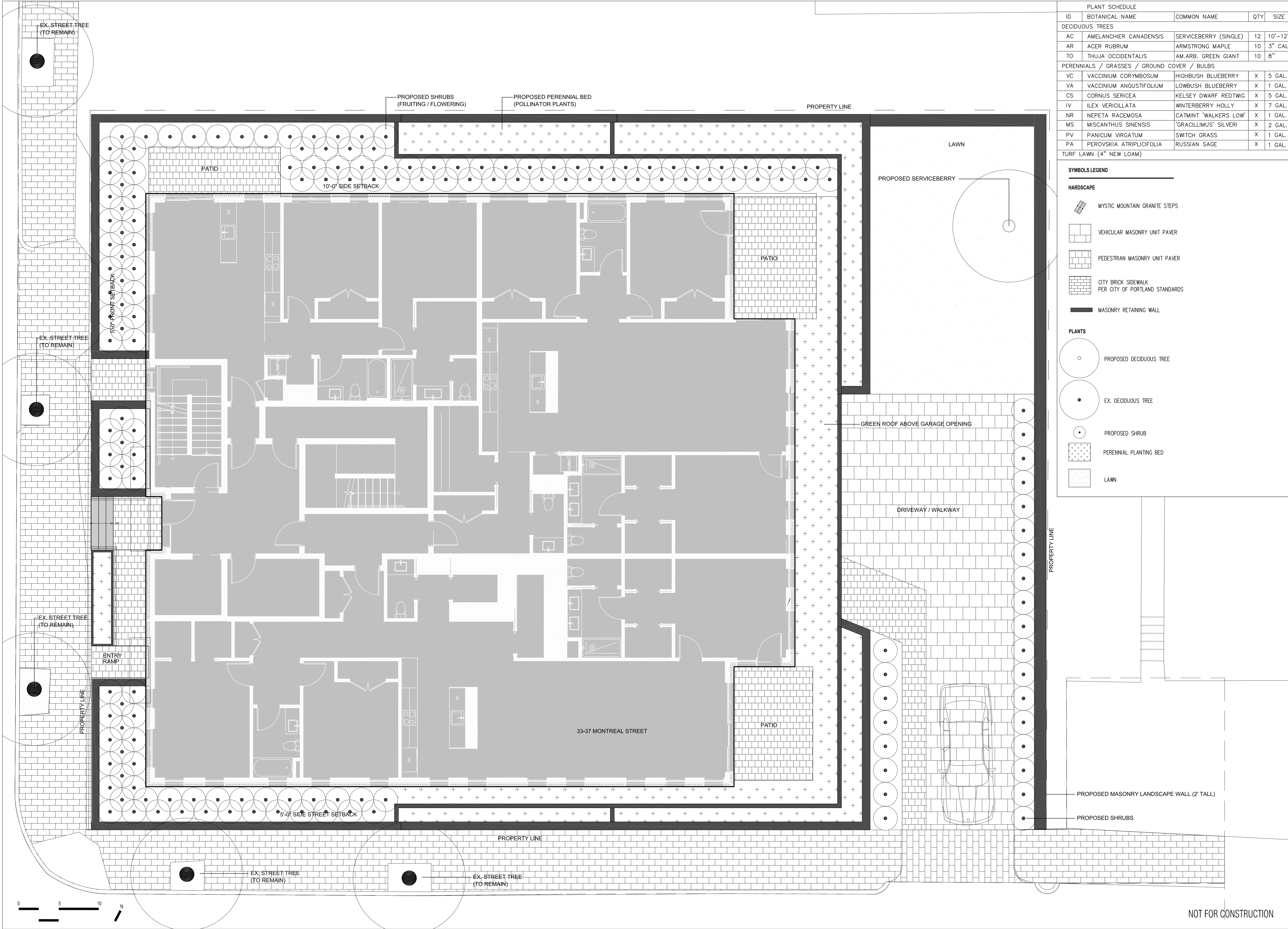


DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

REV	DATE	BY	DESCRIPTION
A	8-22-19	DMR	ISSUED FOR PERMITTING
B	10-11-19	DMR	REVISED PER CITY REVIEW

DETAILS
37 MONTREAL STREET
PORTLAND, MAINE
FOR APPLICANT:
37 MONTREAL, LLC.
33 MONTREAL STREET
PORTLAND, ME 04101

18053
JOB NUMBER:
AS NOTED
SCALE:
10-11-2019
DATE:
--
C3.2



PLANT SCHEDULE				
ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
DECIDUOUS TREES				
AC	AMELANCHIER CANADENSIS	SERVICEBERRY (SINGLE)	12	10'-12'
AR	ACER RUBRUM	ARMSTRONG MAPLE	10	3" CAL
TO	THUJA OCCIDENTALIS	AM.ARB. GREEN GIANT	10	8"
PERENNIALS / GRASSES / GROUND COVER / BULBS				
VC	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	X	5 GAL.
VA	VACCINIUM ANGUSTIFOLIUM	LOWBUSH BLUEBERRY	X	1 GAL.
CS	CORNUS SERICEA	KELSEY DWARF REDTWIG	X	5 GAL.
IV	ILEX VERICILLATA	WINTERBERRY HOLLY	X	7 GAL.
NR	NEPETA RACEMOSA	CATMINT 'WALKERS LOW'	X	1 GAL.
MS	MISCANTHUS SINENSIS	'GRACILLIMUS' SILVERI	X	2 GAL.
PV	PANICUM VIRGATUM	SWITCH GRASS	X	1 GAL.
PA	PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	X	1 GAL.
TURF LAWN (4" NEW LOAM)				

SYMBOLS LEGEND

HARDSCAPE

- MYSTIC MOUNTAIN GRANITE STEPS
- VEHICULAR MASONRY UNIT PAVER
- PEDESTRIAN MASONRY UNIT PAVER
- CITY BRICK SIDEWALK
PER CITY OF PORTLAND STANDARDS
- MASONRY RETAINING WALL

PLANTS

- PROPOSED DECIDUOUS TREE
- EX. DECIDUOUS TREE
- PROPOSED SHRUB
- PERENNIAL PLANTING BED
- LAWN

Soren deNiord Design Studio
43 Wellwood Road
Portland, ME
04103
T: 207-400-2450
E: soren@sorendenliord.com

33-37 MONTREAL STREET

MUNJOY HILL
PORTLAND, MAINE

PLANNING BOARD REVIEW

No: Revision / Submission Date:

SEPTEMBER 20, 2019

revisions:
date: AUGUST 07, 2019
scale: As Noted
drawn: XX
checked: XX

L1.0

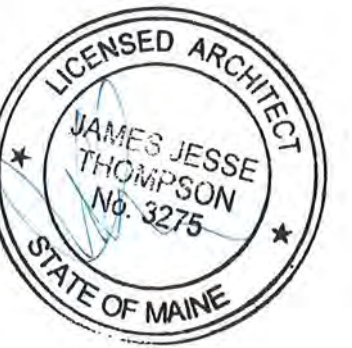
LANDSCAPE PLAN

PROJECT
**33-37
MONTREAL
STREET**
33 - 37 MONTREAL STREET
PORTLAND, ME 04101

STRUCTURAL
L & L Structural
Engineering Services
6 Q Street
South Portland, ME 04106
P: (207) 767-4830

CIVIL
DM Roma
PO Box 1116,
Windham, ME 04062
P: (207) 310-050

LANDSCAPE
Soren Deniord
Design Studio
43 Wellwood Road
Portland, ME 04103
P: (207) 400-2450

[illegible]

NOT FOR CONSTRUCTION

PROJECT:	MTL
DATE:	APR. 20. 2021

DRAWN BY:	BB
PHASE:	Revised - For PB Review

BASEMENT PLAN

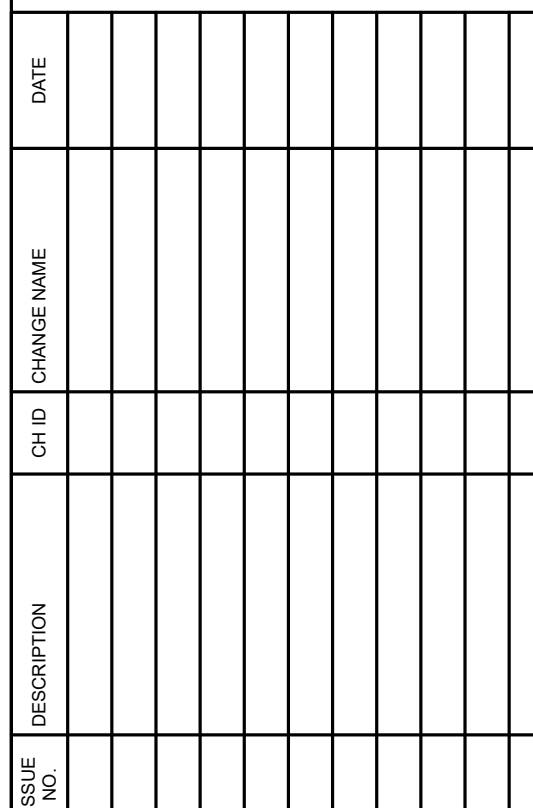
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33 - 37 MONTREAL STREET
PORTLAND, ME 04101

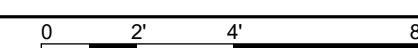
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11



FIRST FLOOR PLAN

A-1.2



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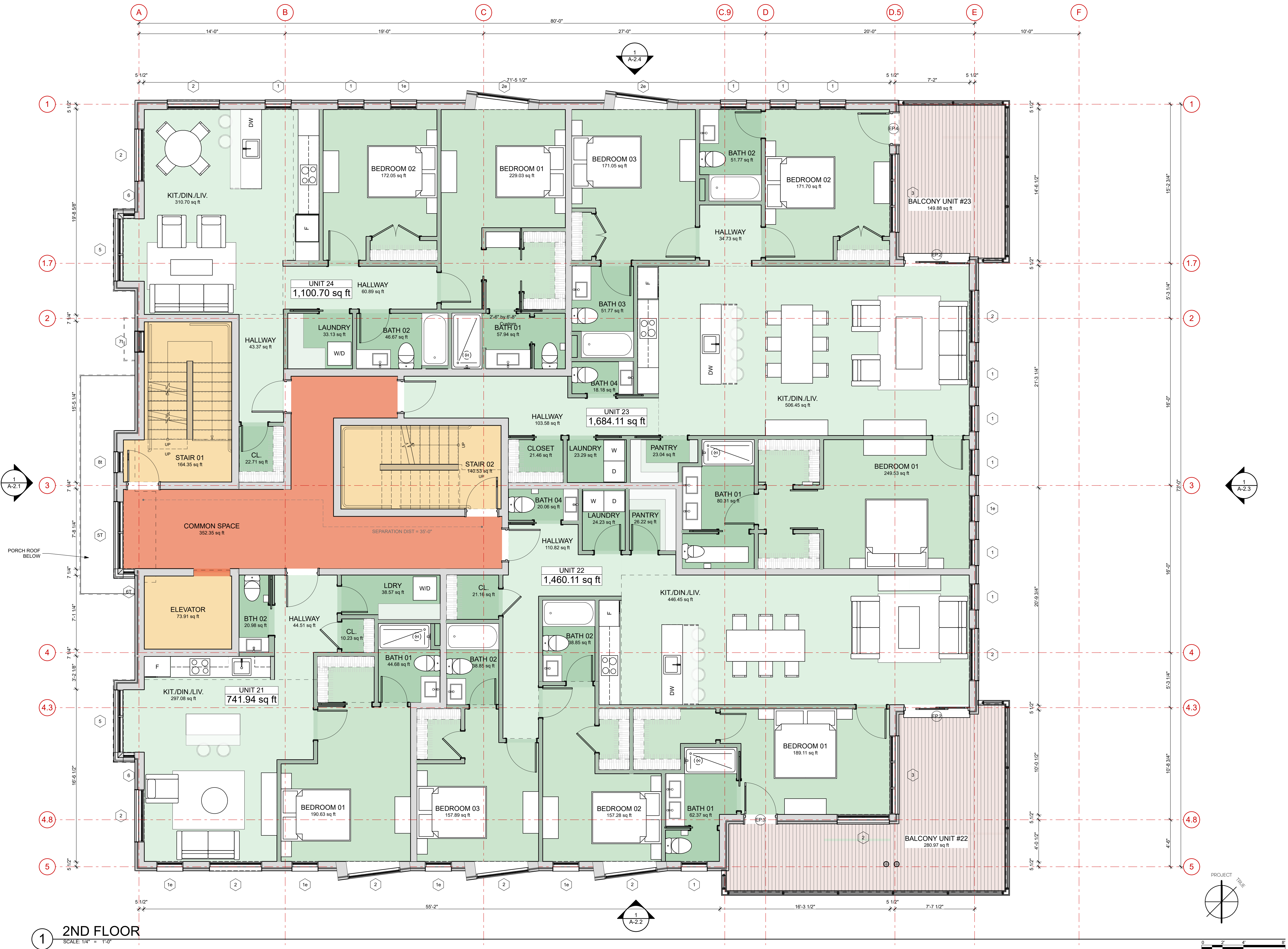
LANDSCAPE
**Soren Deniord
Design Studio**
43 Wellwood Road
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P: (207) 400-2450

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PROJECT:	MTL
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SECOND FLOOR PLAN

A-1.3



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MONTREAL
STREET**

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THIRD FLOOR PLAN

A-1.4



PROJECT
**33-37
MONTREAL
STREET**
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PORTLAND, ME 04101

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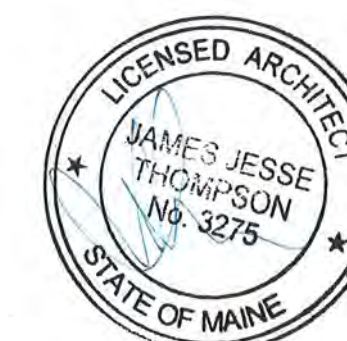
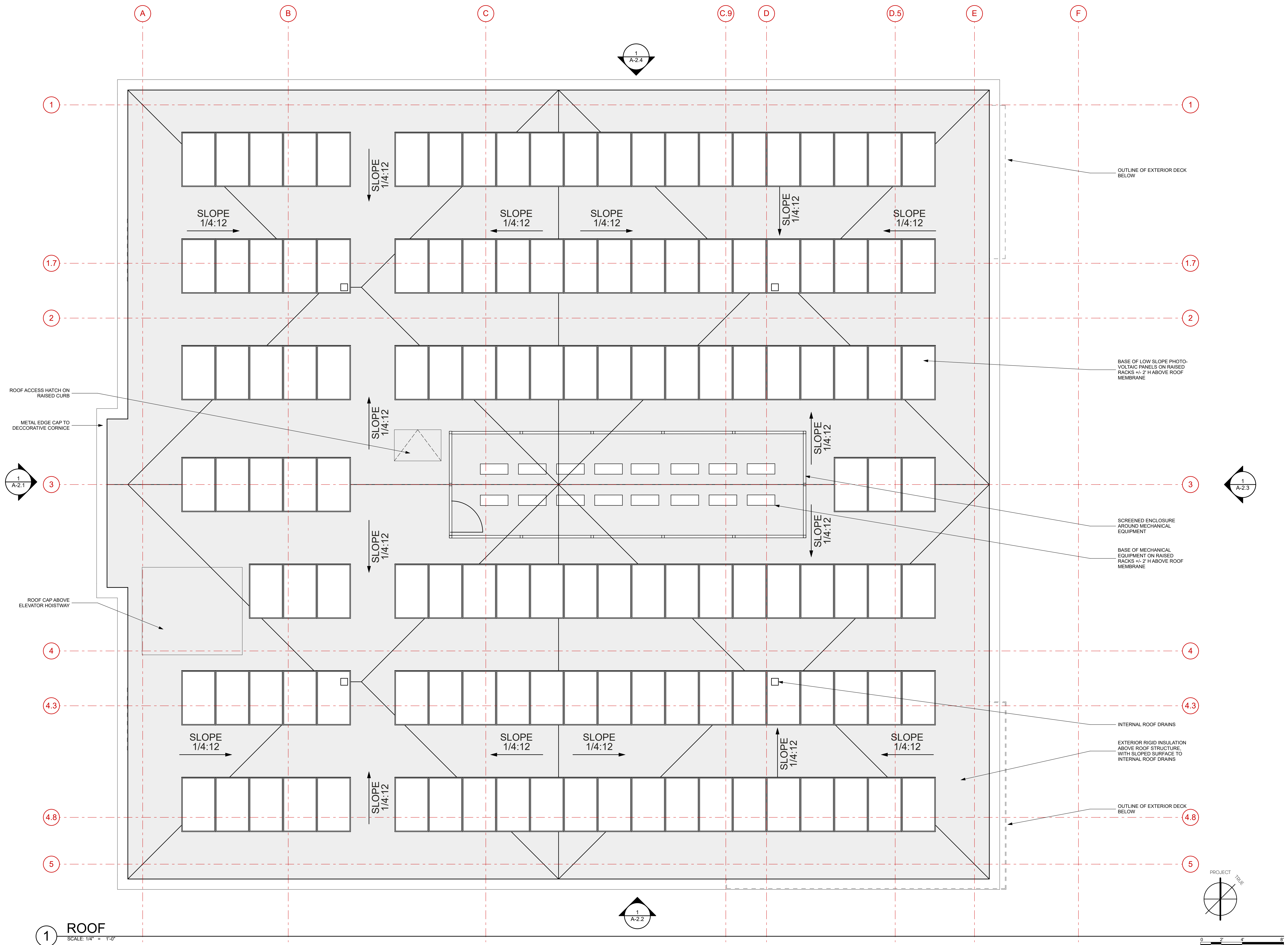
PROJECT:	MTL
DATE:	APR. 20. 2021

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FOURTH FLOOR PLAN

A-1.5



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ROOF PLAN

A-1.6

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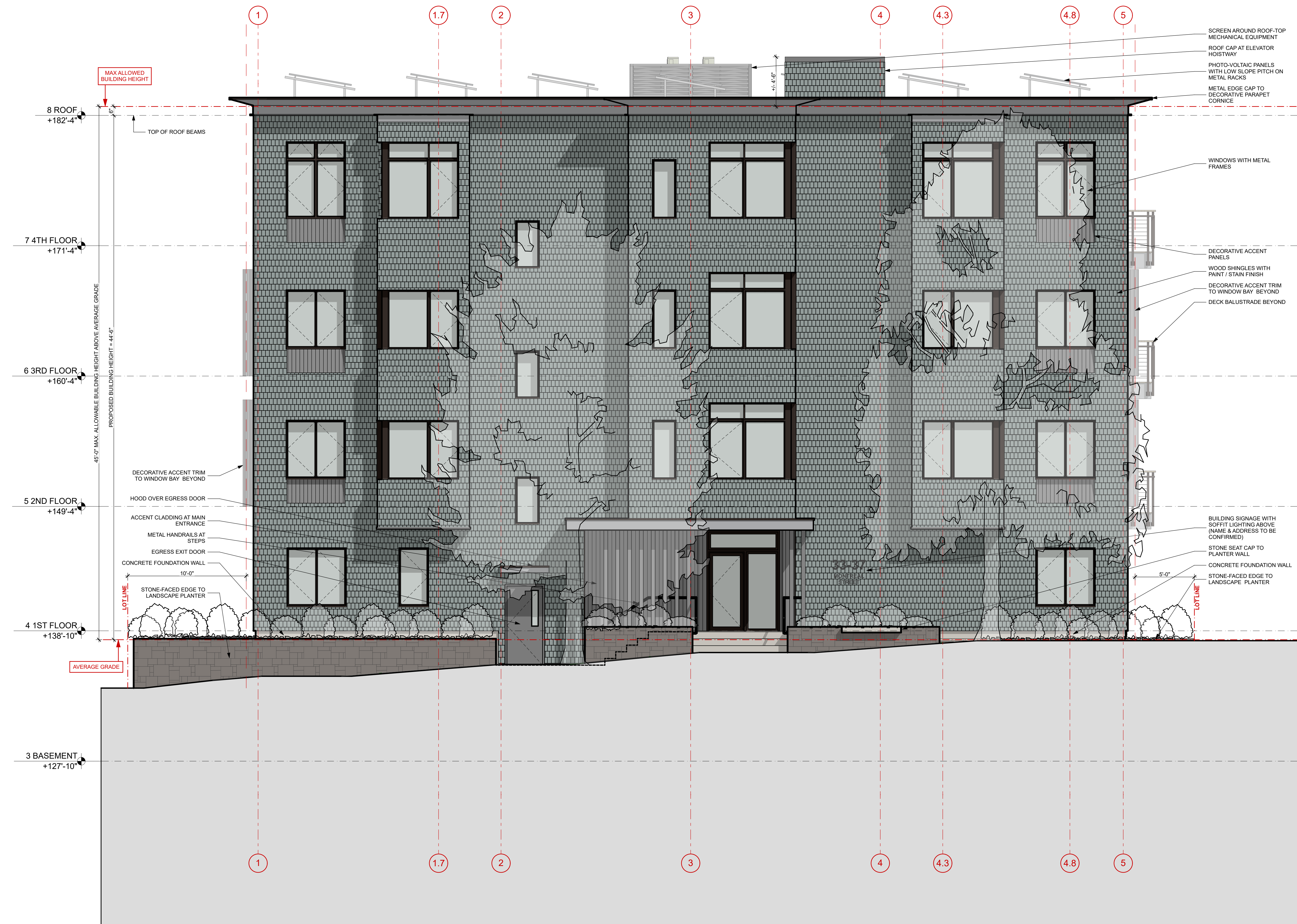
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Windham, ME 04062
P: (207) 310-050

A circular professional seal for a licensed architect. The outer ring contains the text "LICENSED ARCHITECT" at the top and "STATE OF MAINE" at the bottom, separated by two five-pointed stars. The center of the seal contains the name "JAMES JESSE THOMPSON" and the license number "No. 3275". A blue ink signature, which appears to be "J. J. Thompson", is written across the center of the seal, overlapping the name and number.

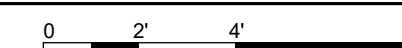
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WILLIS ST ELEVATION

A-2.1



1 WILLIS ST ELEVATION
SCALE: 1/4" = 1'-0"



PROJECT
33-37
MONTREAL
STREET
33 - 37 MONTREAL STREET
PORTLAND, ME 04101

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LANDSCAPE
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Design Studio**
43 Wellwood Road
Portland, ME 04103
P: (207) 400-2450

[illegible]

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PROJECT:	MTL
DATE:	APR. 20. 2021

DRAWN BY:	BB
PHASE:	Revised - For PB Review

MONTREAL ST
ELEVATION

A-2.2



PROJECT
**33-37
MONTREAL
STREET**
33 - 37 MONTREAL STREET
PORTLAND, ME 04101

**L & L Structural
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66 Q Street
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Soren Deniord
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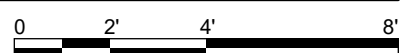
NOT FOR CONSTRUCTION

PROJECT:	MTL
DATE:	APR. 20. 2021

DRAWN BY: BB
PHASE: Revised - For PB Review

NORTH-EAST
ELEVATION

A-2.3





1 NORTH-WEST ELEVATION (WALNUT STREET)
SCALE: 1/4" = 1'-0"



1 VIEW FROM WILLIS ST



2 VIEW FROM WILLIS & MONTREAL



3 VIEW FROM MONTREAL ST



4 VIEW OF SOUTH-EAST CORNER

Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-2888
kaplanthompson.com

PROJECT

**33-37
MONTREAL
STREET**

33 - 37 MONTREAL STREET
PORTLAND, ME 04101

STRUCTURAL

**L & L Structural
Engineering Services**

6 Q Street
South Portland, ME 04106
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LANDSCAPE

Soren Deniord

Design Studio
43 Wellwood Road
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P: (207) 400-2450

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NOT FOR CONSTRUCTION

PROJECT:	MTL
DATE:	APR. 20, 2021

DRAWN BY:	BB
PHASE:	Revised - For PB Review

PERSPECTIVES

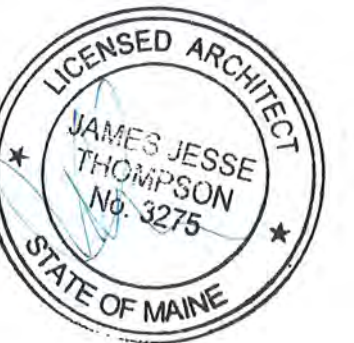
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PROJECT
33-37
MONTREAL
STREET
33 - 37 MONTREAL STREET
PORTLAND, ME 04101

STRUCTURAL
TBA

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DM Roma
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Windham, ME 04062
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LANDSCAPE
**Soren Deniord
Design Studio**
43 Wellwood Road
Portland, ME 04103
P: (207) 400-2450

[illegible]

NOT FOR CONSTRUCTION

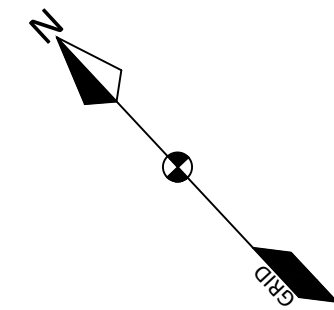
PROJECT:	MTL
DATE:	AUGUST 28, 2019

DRAWN BY:	BB
PHASE:	DD For Review

BASEMENT PLAN

A-1.1





1. THE OWNERS OF RECORD ARE KEVIN JAMES CARTER AS DESCRIBED IN A DEED RECORDED IN BOOK 34283 PAGE 95 AND SAINT JOHN'S VALLEY LLC AS DESCRIBED IN A DEED RECORDED IN BOOK 33517 PAGE 175 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
2. TOTAL AREA OF THE PARCELS IS APPROXIMATELY 0.25+ ACRES.
3. PARCEL TAX MAP REFERENCE: CITY OF PORTLAND ASSESSORS MAP 15, BLOCK B, PARCELS 15 AND 22.
4. PLAN REFERENCES:
 - A) "BOUNDARY SURVEY 37 MONTREAL STREET" PREPARED FOR MCTIGUE CONSTRUCTION, PREPARED BY SURVEY INC., DATED AUGUST 2017.
5. HORIZONTAL DATUM: MAINE STATE PLANE, WEST ZONE, NAD83, U.S. FEET.
6. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
7. BOUNDARY SHOWN HEREON IS BASED ON PLAN REFERENCE A.
8. TOPOGRAPHIC CONTOURS SHOWN HEREON ARE BASED ON PLAN REFERENCE A.
9. THE PROPERTY IS LOCATED IN THE R-6 ZONING DISTRICT AS WELL AS THE MUNJOY HILL NEIGHBORHOOD CONSERVATION OVERLAY DISTRICT.

1. EXISTING UTILITY LOCATION SHOWN HEREON IS BASED SOLELY ON FIELD OBSERVATION OF PAINTED UTILITY MARKINGS ON THE GROUND SURFACE BY SURVEY, INC. NO SUBSURFACE EXPLORATION OR DETAILED FIELD SURVEY OF UTILITY LOCATIONS WERE PERFORMED.

2. THE CONTRACTOR AND OWNER ARE RESPONSIBLE FOR NOTIFYING DIG SAFE AND COORDINATING ALL EXISTING UTILITY RELOCATION AND REPAIR THAT MAY BE NECESSARY.

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 11116
WINDHAM, ME 04062
(207) 310 - 0506

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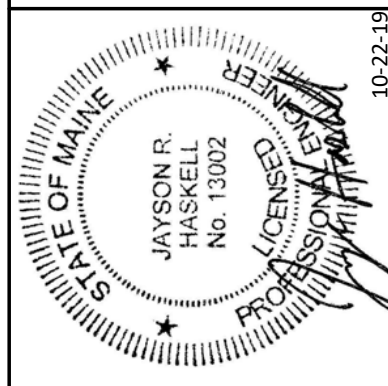
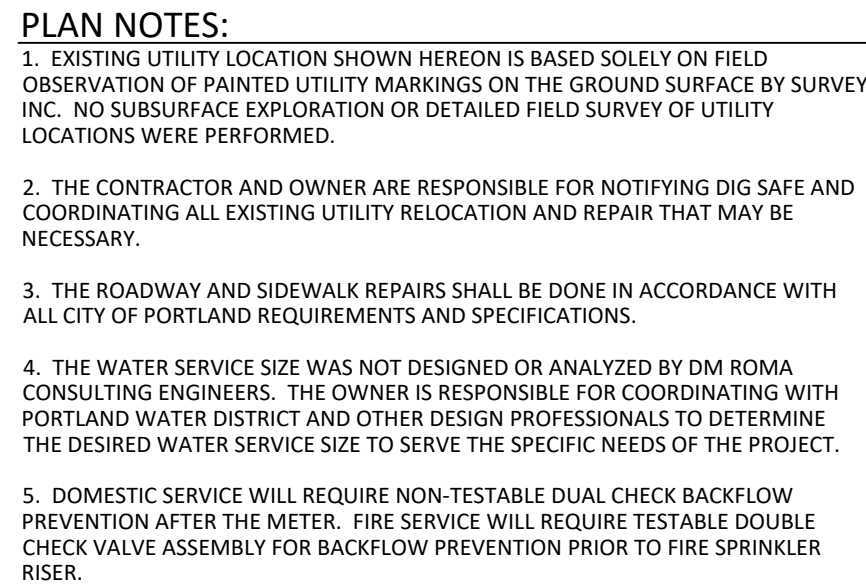
EXISTING CONDITIONS & DEMOLITION PLAN

37 MONTREAL STREET
PORTLAND, MAINE

FOR APPLICANT:
McTIGUE CONSTRUCTION
134 MOUNTAIN ROAD
PORTLAND, ME 04106

18053
JOB NUMBER:
1" = 10'
SCALE:
8-12-2019
DATE:
--
C0.0

EXISTING		PROPOSED
---	---	PROPERTY LINE/R.O.W.
---	---	ABUTTER PROPERTY LINE
		SETBACK
----	----	EASEMENT LINE
	□	GRANITE MONUMENT
	○	IRON PIN/DRILL HOLE
=====		BUILDING
		EDGE OF PAVEMENT/CURB
---200'---	---201'---	CONTOUR LINE
	▤	CATCHBASIN
	⊙	SEWER MANHOLE
---	S---	SANITARY SEWER PIPE
---	W---	WATER MAIN
	⌵	WATER VALVE
	⦿	HYDRANT
	⚡	UTILITY POLE
	☆	LIGHT POLE
---	OHU---	OVERHEAD UTILITIES
---	G---	GAS MAIN
	⌵	GAS VALVE
		PAVEMENT REMOVAL



DM ROMA
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REV	DATE	BY	DESCRIPTION
A	8-12-19	DMR	ISSUED FOR PERMITTING
B	10-11-19	DMR	REVISED PER CITY REVIEW
C	10-22-19	DMR	REVISED PER CITY REVIEW

GRADING AND UTILITY PLAN

37 MONTREAL STREET
PORTLAND, MAINE

FOR APPLICANT:
37 MON-

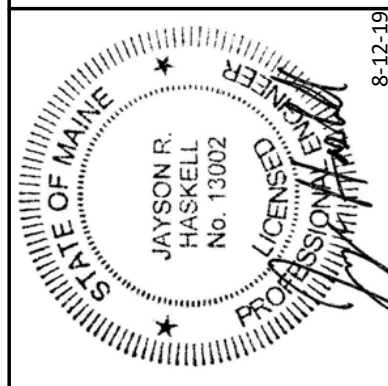
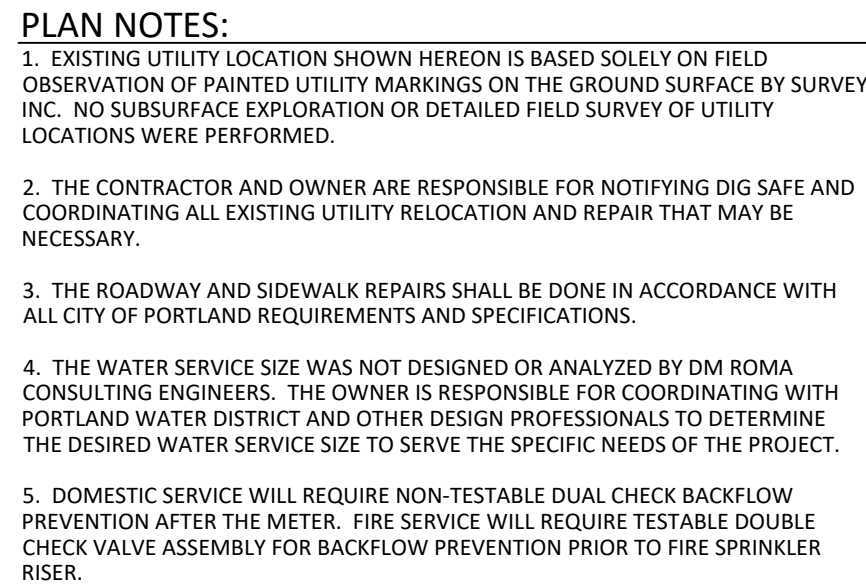
18053

JOB NUMBER: _____

10-22-2019

DATE:

C2.0



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

REV	DATE	BY	DESCRIPTION
A	8-12-19	DMR	ISSUED FOR PERMITTING

GRADING AND UTILITY PLAN

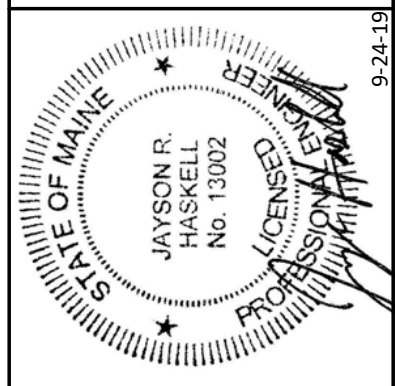
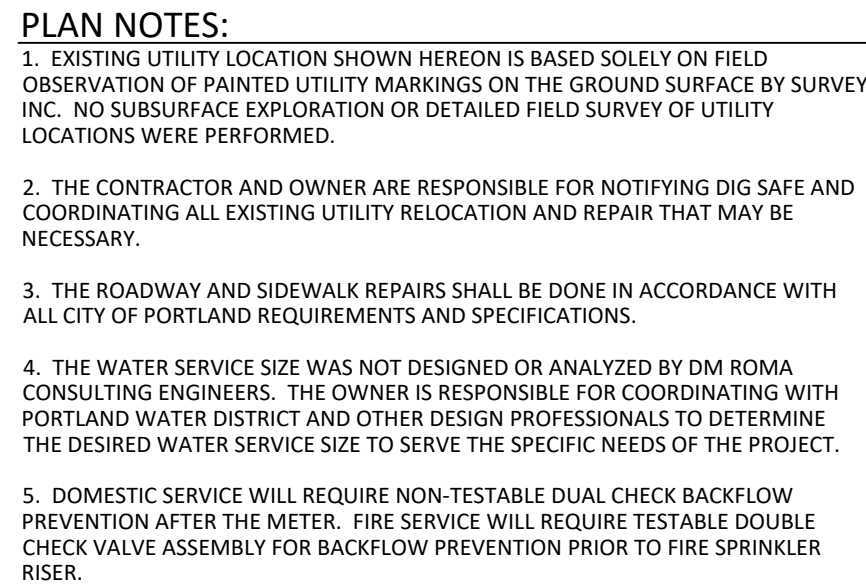
37 MONTREAL STREET
PORTLAND, MAINE

FOR APPLICANT:
McTIGUE CONSTRUCTION
184 MOUNTAIN ROAD
FALMOUTH, ME, 04105

18053
JOB NUMBER:
1" = 10'
SCALE:

8-12-2019
DATE:

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C2.0



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 11116
WINDHAM, ME 04062
(207) 310 - 0506

[illegible]

GRADING AND UTILITY PLAN

37 MONTREAL STREET
PORTLAND, MAINE

FOR APPLICANT:
MCTIGUE CONSTRUCTION
184 MOUNTAIN ROAD
FALMOUTH, ME, 04105

18053

JOB NUMBER: _____

$$1'' = 10'$$

SCALE:

0 24 204

DATE: 9-24-201

— —

EROSION AND SEDIMENTATION CONTROL NOTES:

EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY.

IN ORDER TO EFFECTIVELY PREVENT AND CONTROL EROSION RELATED TO SOIL DISTURBANCE, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) SHALL BE EMPLOYED:

1. POLLUTION PREVENTION

MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION, MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE WITHIN 30 FEET OF ANY 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 7 DAYS.

2. TEMPORARY SOIL STABILIZATION BMPs

TEMPORARY MULCHING SHALL BE APPLIED IMMEDIATELY TO ANY AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. ANY DISTURBED SOIL WITHIN 75' OF A STREAM, WATER BODY OR WETLAND MUST RECEIVE TEMPORARY MULCH WITHIN 48 HOURS FOLLOWING DISTURBANCE AND BEFORE ANY STORM EVENT. ALL OTHER AREAS SHALL RECEIVE TEMPORARY MULCH WITHIN 7 DAYS OF DISTURBANCE. AREAS WHICH CANNOT BE SEEDED DURING THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION. THE FOLLOWING ARE ACCEPTABLE TEMPORARY MULCHING METHODS:

HAY OR STRAW MULCHES NEED TO BE AIR DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SQ FT OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75-90% OF THE GROUND SURFACE. HAY OR STRAW CAN BE DRIVEN INTO THE GROUND WITH TRACKED EQUIPMENT IF SLOPES ARE LESS THAN 3%, OR CAN BE ANCHORED WITH JUTE, WOOD FIBER OR PLASTIC NETTING ON STEEPER SLOPES.

EROSION CONTROL MIX BERM MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREPPED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSSED WOOD PRODUCTS ARE NOT ACCEPTABLE. EROSION CONTROL MIX CAN BE USED AS A STAND-ALONE REINFORCEMENT ON SLOPES OF 2 HORIZONTAL TO 1 VERTICAL OR LESS AND DRAINING IN SHEET FLOW. IT CAN BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND, AND MUST PROVIDE 100% SOIL COVERAGE.

EROSION CONTROL MIX SHALL MEET THE FOLLOWING SPECIFICATIONS:
-ORGANIC MATTER CONTENT SHALL BE BETWEEN 80-100%, DRY WEIGHT BASIS.
-PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A #10 IN. SCREEN AND BETWEEN 70-85% PASSING 0.75 IN. SCREEN
-ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
-LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX

WHEN USED AS MULCH, THE THICKNESS OF THE EROSION CONTROL MIX IS BASED UPON THE FOLLOWING:

LENGTH OF SLOPE	3:1 SLOPE OR LESS	BETWEEN 2:1 AND 3:1 SLOPE
LESS THAN 20 FT	2.0 IN.	4.0 IN.
BETWEEN 20 - 60 FT	3.0 IN.	5.0 IN.
BETWEEN 60 - 100 FT	4.0 IN.	6.0 IN.

CHEMICAL MULCHES AND SOIL BINDERS MAY BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES AND METHODS.

EROSION CONTROL BLANKETS AND MATS SHALL BE USED ON SLOPES STEEPER THAN 3:1 AND IN THE BOTTOM OF GRASSED WATERWAYS, OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE MAT SHALL BE INSTALLED WITH FIRM CONTINUOUS CONTACT WITH THE SOIL AND STAPLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. EROSION CONTROL MATS AND MULCH ANCHORING MUST BE INSPECTED AFTER RAINFALL EVENTS FOR DISLOCATION OR FAILURE, AND REPAIRED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, AND REPAIR AS NEEDED.

TEMPORARY VEGETATION SHALL BE ESTABLISHED ON SOILS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS. IF TEMPORARY VEGETATION CANNOT BE ESTABLISHED PRIOR TO OCTOBER 15, TEMPORARY MULCH SHALL BE APPLIED THROUGH THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDED, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P20-K20) OR EQUIVALENT AND LIMESTONE AT A RATE OF 2 TONS PER ACRE. IF NEEDED, A DEPTH OF 2 INCHES IN AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION ACTIVITIES. GRASS SEED SHALL BE SELECTED BASED UPON THE TIME OF YEAR THE PLANTING WILL TAKE PLACE AS SUMMARIZED IN THE FOLLOWING TABLE:

SEED	LB. PER ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	112	8/15 - 10/1
OATS	80	4/1 - 7/1 8/15 - 9/15
ANNUAL RYEGRASS	40	4/1 - 7/1

TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED TO MAINTAIN AT LEAST 95% VEGETATIVE COVER OF SOIL SURFACE. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES SHALL BE USED IN THE INTERIM SUCH AS TEMPORARY MULCH, FILTER BARRIERS, ETC.

3. SEDIMENT BARRIER BMPs

PRIOR TO CONSTRUCTION TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS INCLUDE ANY OF THE FOLLOWING:

FILTER BARRIER FENCE, ALSO CALLED SILT FENCE, SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURIAL.

STRAY/HAY BALES SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS IN A SINGLE ROW WITH THE ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED TO A DEPTH OF AT LEAST 4 INCHES, AND THE BALES SHALL BE SECURED WITH AT LEAST TWO WOODEN STAKES OR STEEL REBAR PER BALE. STAKES SHALL BE DRIVEN IN A DIRECTION TO PUSH THE BALES TOGETHER. GAPS BETWEEN BALES SHALL BE CHINKED WITH HAY.

EROSION CONTROL MIX BERMS ARE LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE A MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AT THE BASE IF UPHILL SLOPES ARE LESS THAN 3%, STEEPER SLOPES OR SLOPES GREATER THAN 30 FEET LONG MAY REQUIRE A LARGER WIDTH BERM. EROSION CONTROL MIX BERMS AT THE BASE OF A LONG OR STEEP SLOPE MAY ALSO REQUIRE A FILTER FENCE TO BE INSTALLED ON THE DOWNHILL SIDE OF THE BERM TO PROVIDE ADDITIONAL STABILIZATION AGAINST HIGH RUNOFF FLOWS. EROSION CONTROL MIX BERM IS NOT INTENDED TO BE INSTALLED AT THE BOTTOM OF SLOPES 8% OR STEEPER OR WITH FLOWING WATER.

CONTINUOUS CONTAINED BERMS, WHICH ARE ALSO REFERRED TO AS A FILTER SOCK, PROVIDES ADDITIONAL STABILITY TO AN EROSION CONTROL MIX BERM AND SHOULD BE USED IN FROZEN GROUND CONDITIONS OR IN AREAS THAT RECEIVE CONCENTRATED FLOW.

SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADEMENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED RUNNING ONTO THE STOCKPILE. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT AND REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

4. TEMPORARY CHECK DAMS

STONE CHECK DAMS SHALL BE INSTALLED IN SWALES OR DRAINAGE DITCHES TO REDUCE STORMWATER VELOCITIES AS SHOWN ON THE PLANS. STONE CHECK DAMS ARE NOT EFFECTIVE IN REMOVING SEDIMENT AND SHOULD BE USED IN CONJUNCTION WITH SEDIMENT BARRIERS IDENTIFIED ABOVE. TEMPORARY CHECK DAMS MAY BE LEFT IN PLACE PERMANENTLY IN MOST CASES. CHECK DAMS SHOULD BE NO HIGHER THAN 24 INCHES, AND THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTSIDE EDGES. CHECK DAMS SHOULD BE SPACED SUCH THAT THE CREST OF THE DOWNSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM CHECK DAM. CHECK DAMS IN A DRAINAGE DITCH OR WATERWAY SHOULD BE INSTALLED PRIOR TO DIRECTING RUNOFF TO THEM.

5. STORM DRAIN INLET PROTECTION

STORM DRAIN INLETS THAT ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED SHALL BE PROTECTED WITH A FILTER UNTIL THE DRAINAGE AREA IS EITHER PAVED OR STABILIZED WITH 95% VEGETATIVE GROWTH. THE FOLLOWING ARE ACCEPTABLE BMPs ASSOCIATED WITH STORM DRAIN INLET PROTECTION:

HAY BALE OR SILT FENCE INLET STRUCTURE CONSISTS OF HAY BALES OR SILT FENCE CONFIGURED AROUND A CATCH BASIN INLET FRAME AND INSTALLED ACCORDING TO THE METHODS OUTLINED ABOVE. THIS METHOD IS SUITABLE FOR OPEN PIPE (CULVERT) INLETS, FIELD INLETS OR ROAD INLETS THAT HAVE NOT YET BEEN PAVED.

MANUFACTURED SEDIMENT FILTERS ARE THE PREFERRED METHOD FOR PROTECTING CATCH BASIN INLETS IN PAVED OR GRAVEL ROADWAYS. THE FILTERS TYPICALLY CONSIST OF A FABRIC OR OTHER PERVIOUS MATERIAL THAT IS PLACED ABOVE OR BELOW THE GRADE THAT TRAPS SEDIMENT ON THE SURFACE AND PREVENTS WATER TO FLOW THROUGH THE GRADE. CONSIDERATIONS FOR SLOPE, SOIL TYPE, FLOW CONDITIONS, SLOPES, TRIBUTARY WATERSHED AREA AND EXPECTED SEDIMENT ACCUMULATION SHOULD BE FACTORED INTO MAKING A DECISION ON ANY PARTICULAR PRODUCT, AND THE MANUFACTURER'S RECOMMENDATIONS ON INSTALLATION AND MAINTENANCE SHALL BE STRICTLY ADHERED TO.

6. STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO REDUCE THE TRACKING OF SEDIMENT ONTO ROADWAYS, A STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED AT ALL POINTS OF EGRESS WHERE VEHICLES MAY TRAVEL FROM THE PROJECT SITE TO A PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 7 FEET INTO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, AND THE CONTRACTOR SHALL SWEEP PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MUD-TRACKING. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED. IF TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OCCURS THE CONTRACTOR SHALL BE RESPONSIBLE FOR SWEEPING THE AFFECTED AREAS IMMEDIATELY, AND THEREAFTER WEEKLY AT A MINIMUM AND PRIOR TO ANY SIGNIFICANT RAINFALL EVENT.

7. DUST CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST ON THE PROJECT SITE AND ON ADJACENT ROADWAYS. EXPOSED SOIL SURFACES SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST. GRAVEL SURFACES SHALL EITHER BE TREATED WITH AN APPLICATION OF CALCIUM CHLORIDE OR COVERED WITH CRUSHED STONE IF DUST CONTROL BECOMES DIFFICULT WITH NORMAL WATER APPLICATIONS.

8. LAND GRADING AND SLOPE PREPARATION

GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE NEXT PHASE. ANY EXPOSED AREA THAT WILL NOT BE FINISH GRADED WITHIN 14 DAYS SHALL BE TREATED WITH MULCH OR PLANTED WITH TEMPORARY VEGETATION. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS. CUT AND FILL SLOPES SHALL NOT EXCEED 1.5:1. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASS SHALL NOT BE STEEPER THAN 3:1. CUT AND FILL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS OR MATS. CUT AND FILL SLOPES STEEPER THAN 2:1 SHALL BE STABILIZED WITH RIP RAP OR AN APPROVED EQUIVALENT. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SURFACE SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS. FILL MATERIAL SHALL BE FREE OF STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STABILIZATION. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

9. TOPSOIL

IF POSSIBLE, TOPSOIL SHALL BE STOCKPILED ON THE PROJECT SITE AND REUSED. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM), AND SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS AND NOXIOUS WEEDS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENEED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUE COMPACTION IS TO BE AVOIDED.

10. PERMANENT SOIL STABILIZATION

IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

SEEDED AREAS: TO PREPARE THE SEEDED, APPLY 10-20-20 FERTILIZER AT A RATE OF 800 POUNDS PER ACRE AND GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE. WORK THE FERTILIZER AND LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 4 INCHES AND REMOVE ANY STONES, ROOTS OR OTHER VISIBLE DEBRIS. SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. REFER TO THE USDA SOIL CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS. FOR SEEDED AREAS TO BE PERMANENTLY STABILIZED, 90% OF THE DISTURBED SOIL SHALL BE COVERED WITH MATURE HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

SOD STRIPS SHALL BE LAID AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT LOWEST ELEVATION. JOINTS SHALL BE STAGGERED, AND ALL STRIPS SHALL BE ROLLED OR TAMPED INTO PLACE. ON SLOPES, SOD SHALL BE ANCHORED WITH STAPLES, WIRE OR PINS. IRRIGATE SODDED AREA IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROOTS OF THE SOD MUST BE COMPLETELY BOUND INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

PERMANENT MULCH IS A LONG TERM COVER THAT PROVIDES A GOOD BUFFER AROUND DISTURBED AREAS. THE EROSION CONTROL MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE SHREPPED BARK, STUMP GRINDINGS OR COMPOSTED BARK. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE. THE EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH.

RRIPRAP STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNEVEN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. THE DEPTH OF STONE SHALL BE A MINIMUM OF 2.2 TIMES THE MAXIMUM STONE DIAMETER. A GRAVEL OR GRASS FILTER OR GEOTEXTILE FILTER BARRIER SHALL BE PLACED BETWEEN THE RIPRAP AND UNDERLYING SOIL SURFACE. RIPRAP SHALL BE PLACED TO MEET TYPE C UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BARRIERS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIPRAP SLOPES SHALL BE TOED INTO THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABLE BASE OF RIPRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRADED RIPRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE BANKS, OR DOWNCUTTING OF THE CHANNEL.

11. STORMWATER CHANNELS

EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BARRIERS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL. PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

12. INSPECTION & MAINTENANCE

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ALL CONSTRUCTION OPERATIONS COMPLY WITH THE INSPECTION AND MAINTENANCE PROCEDURES FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO THOSE INCLUDED IN THIS PLAN SET, THE "INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN", AND THE "MAINE EROSION AND SEDIMENTATION CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS".

INSPECTION SHALL OCCUR ON ALL DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIAL STORAGE AREAS, AND CONSTRUCTION VEHICLE ENTRANCE(S) AND OR EXITS(S). THESE AREAS SHALL BE INSPECTED AT LEAST ONCE PER WEEK, AS WELL AS 24 HOURS BEFORE AND AFTER A STORM EVENT, AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. INSPECTIONS ARE TO BE CONDUCTED BY A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING STANDARDS AND CONDITIONS IN THE PERMIT.

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

WINTER EROSION AND SEDIMENTATION CONTROL NOTES:

THE WINTER CONSTRUCTION PERIOD TYPICALLY BEGINS IN EARLY NOVEMBER AND ENDS IN MID APRIL. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENIED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOADED, SEEDED AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.

1. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 75 FEET FROM ANY REGULATED NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH AN EROSION CONTROL COVER. DURING WINTER CONSTRUCTION, A DOUBLE ROW OF SEDIMENT BARRIERS (FOR EXAMPLE, SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY REGULATED NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE REGULATED NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

2. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

3. MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCHES THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN EXPOSED TO EITHER MULCH OR SILT FENCE OR ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 15TH, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4. SOIL STOCKPILING

STACKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE FOR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STACKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED WITHIN 100 FEET FROM ANY REGULATED NATURAL RESOURCE.

5. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOOMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF DORMANT SEEDING IS USED, ALL DISTURBED AREAS SHALL RECEIVE 4 INCHES OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS PER 1,000 S.F.. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75%) IN THE SPRING SHALL BE REVEGETATED.

6. OVER-WINTER STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED BY NOVEMBER 1. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A GRASS-LINED DITCH OR CHANNEL IS STABILIZED BY SEPTEMBER 1, THEN EITHER A SOD LINING SHALL BE INSTALLED PRIOR TO OCTOBER 1 OR THE DITCH MUST BE LINED WITH STONE RIPRAP BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE PRIOR TO NOVEMBER 1.

7. OVER-WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL BE STABILIZED WITH TEMPORARY VEGETATION UNTIL THE EROSION CONTROL MATS BY OCTOBER 1, SOD BY OCTOBER 1, EROSION CONTROL MIX BY NOVEMBER 1 OR STONE RIPRAP BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

8. OVER-WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN THE AREA SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION BY OCTOBER 1, SOD BY OCTOBER 1, OR MULCH BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

INSPECTION & MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ALL CONSTRUCTION OPERATIONS COMPLY WITH THE INSPECTION AND MAINTENANCE PROCEDURES FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO THOSE INCLUDED IN THIS PLAN SET, THE "INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN", AND THE "MAINE EROSION AND SEDIMENTATION CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS".

2. INSPECTION SHALL OCCUR ON ALL DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIAL STORAGE AREAS, AND CONSTRUCTION VEHICLE ENTRANCE(S) AND OR EXITS(S). THESE AREAS SHALL BE INSPECTED AT LEAST ONCE PER WEEK, AS WELL AS 24 HOURS BEFORE AND AFTER A STORM EVENT, AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. INSPECTIONS ARE TO BE CONDUCTED BY A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING STANDARDS AND CONDITIONS IN THE PERMIT.

3. MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

HOUSEKEEPING NOTES

1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

2. GROUNDWATER PROTECTION: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MUST 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. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

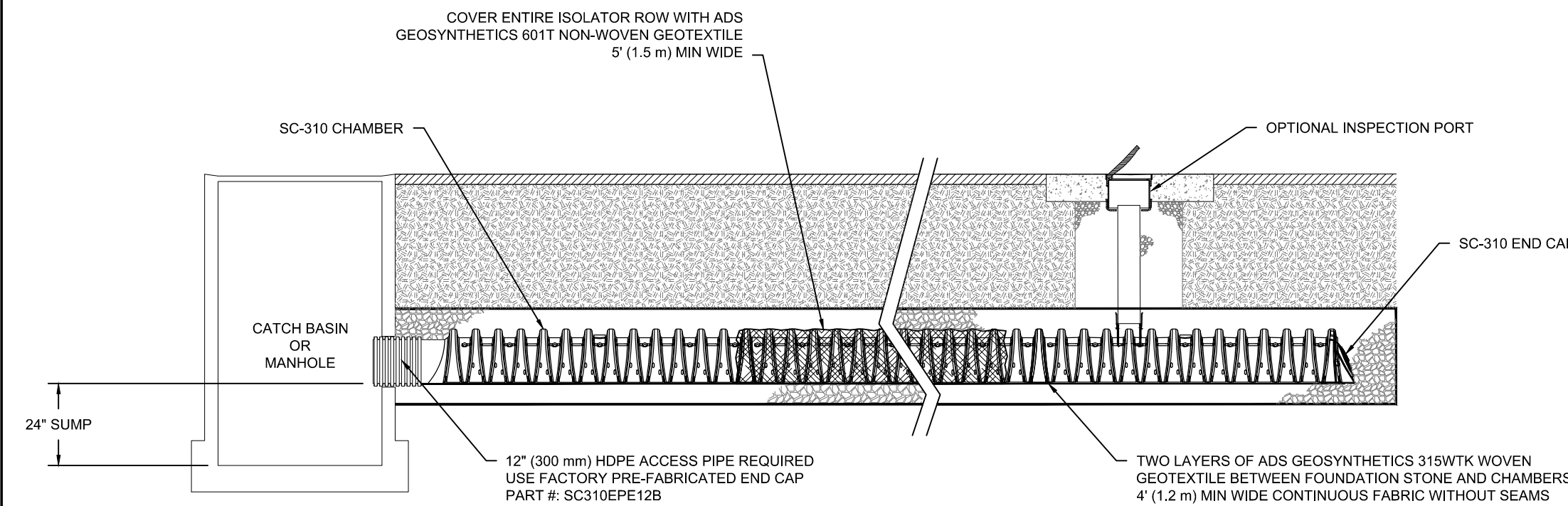
3. FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SEE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD BE SHUT DOWN UNLESS ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

4. DEBRIS AND OTHER MATERIALS: MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

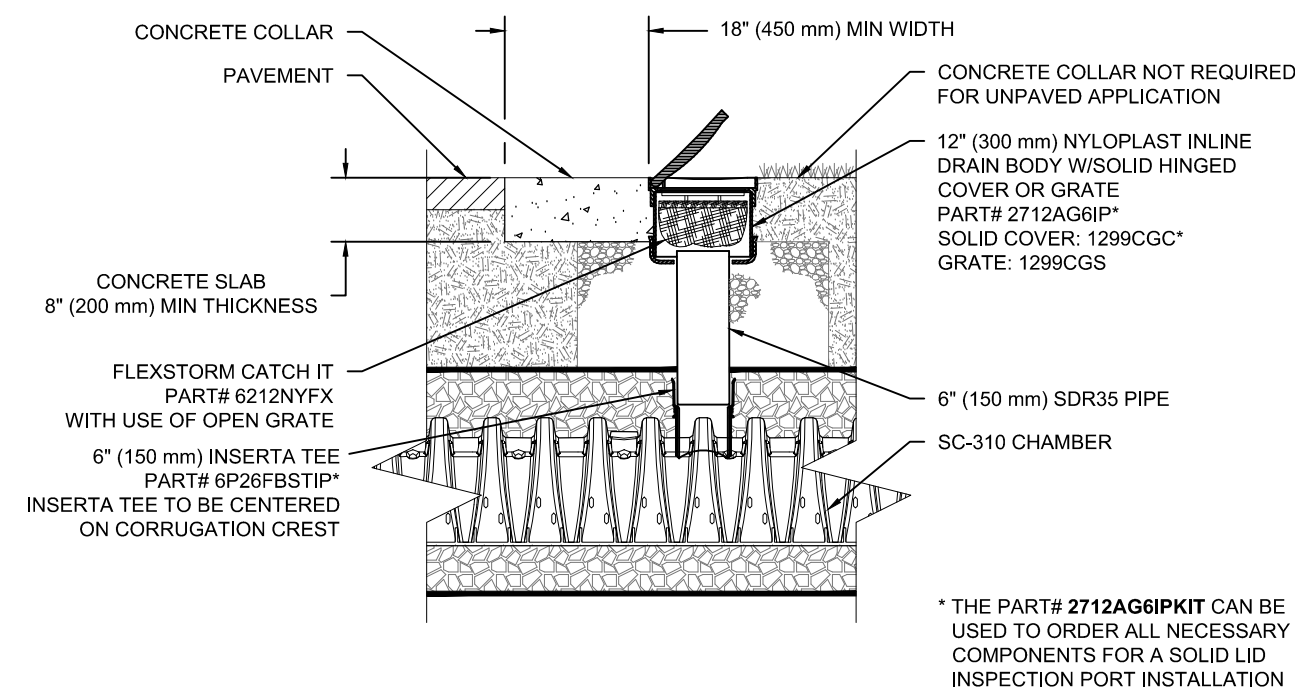
5. EXCAVATION DE-WATERING: EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODDED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERED SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. AUTHORIZED NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES, WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

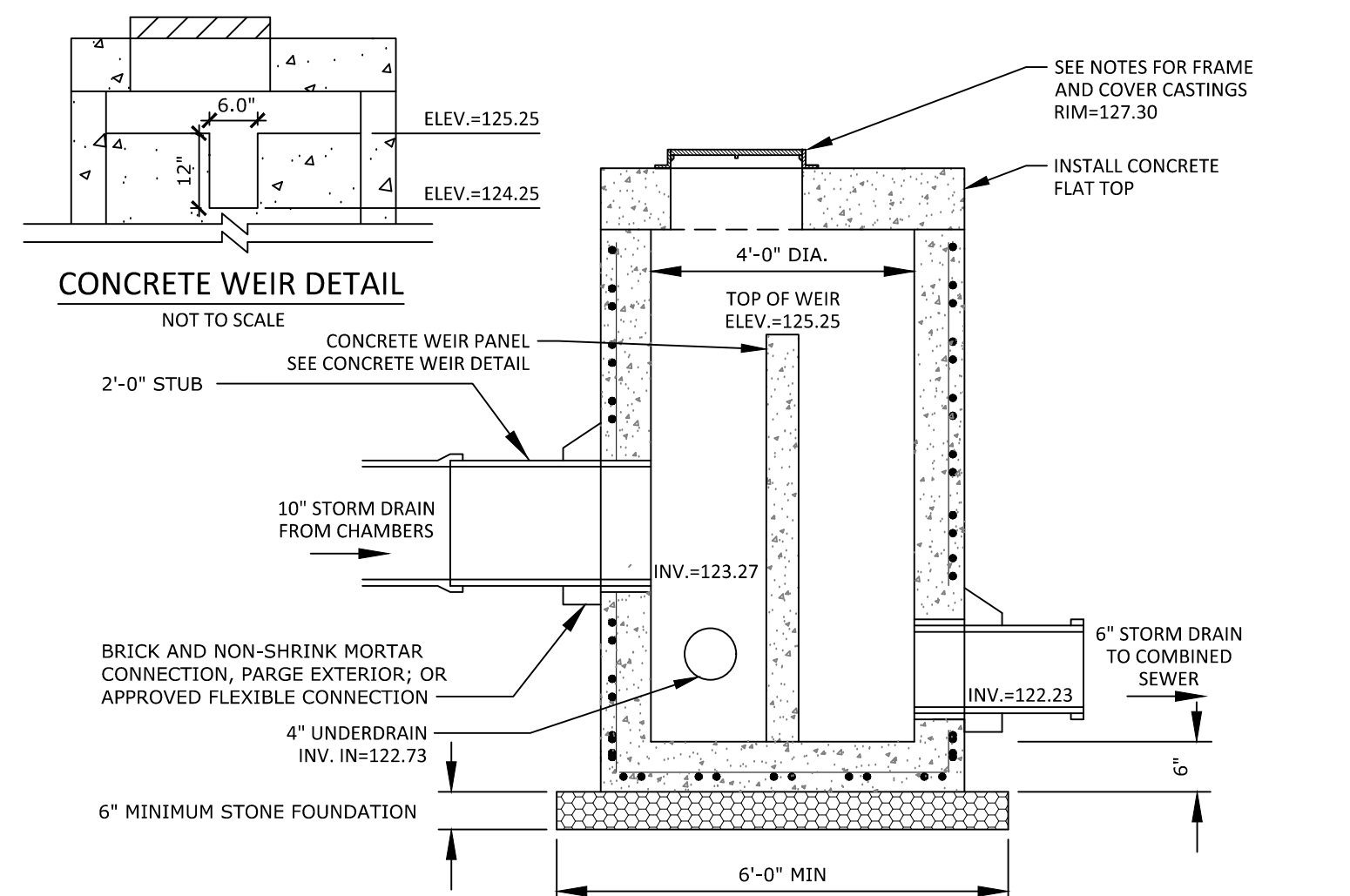
- (a) DISCHARGES FROM FIREFIGHTING ACTIVITY;
- (b) FIRE HYDRANT FLUSHINGS;
- (c) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
- (d) DUST CONTROL RUNOFF IN AN ORDINARY WEATHER PERMIT CONDITIONS AND APPENDIX (C)(3);
- (e) ROUTINE EXTERNAL BUILDING WASHDOWN,



SC-310 ISOLATOR ROW SECTION
NOT TO SCALE



SC-310 6" INSPECTION PORT DETAIL
NOT TO SCALE



- NOTES:
- LARGER DIAMETER STRUCTURES MAY BE REQUIRED DUE TO SIZE OR GEOMETRY OF PIPE CONNECTIONS AT MANHOLE. WALL THICKNESS TO INCREASE BY 1" FOR EACH 1'-0" DIA. INCREASE. PROVIDE SHOP DRAWINGS.
 - DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
 - CAST IRON SOLID COVER AND FRAME SHALL BE EQUAL TO NEENAH FOUNDARY PRODUCT NO. R-1556-A - MANHOLE FRAME, SOLID LID - HEAVY DUTY OR EQUAL. SUBMIT CATALOG SHEETS TO ENGINEER FOR APPROVAL.

OUTLET CONTROL STRUCTURE DETAIL
NOT TO SCALE

MANUFACTURER'S GENERAL NOTES

- STORMTECH REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
- OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICES REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
- STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18" [457 mm] NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96" [2438 mm] INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24" [610 mm], MAXIMUM COVER IS 96" [2438 mm].
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
- AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
- STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
- BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
- THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
- THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
- STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT WWW.STORMTECH.COM

STORMWATER CHAMBER SPECIFICATIONS

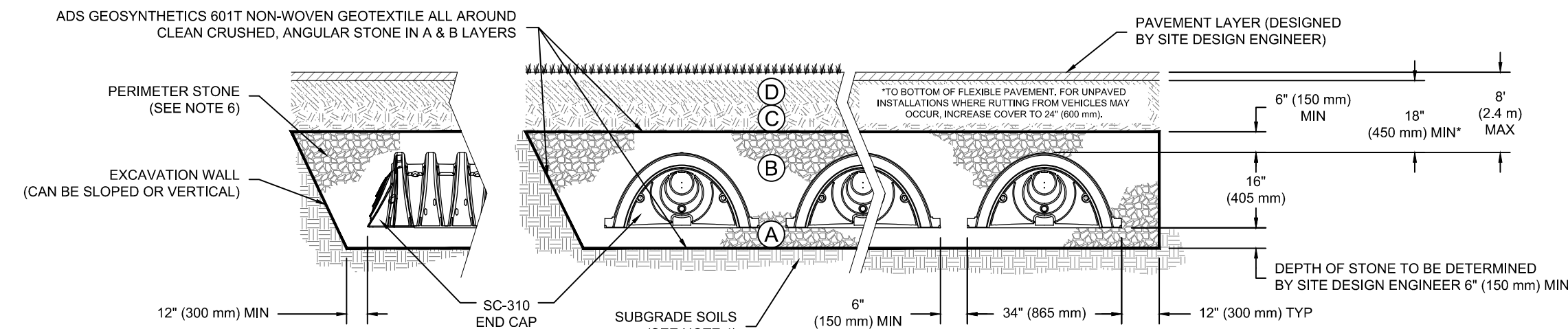
- CHAMBERS SHALL BE STORMTECH SC-310 OR APPROVED EQUAL.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS TESTED USING ASTM STANDARDS.
- CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
- ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2922 MUST BE USED AS A PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
- CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
- THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

MAINTENANCE NOTES:

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- INSPECTION PORTS
 - REMOVE/OPEN LID ON NYLOPLAST DRAINAGE STRUCTURE OR 24"x24" F-BASIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 98% PROCTOR DENSITY FOR WELL-GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

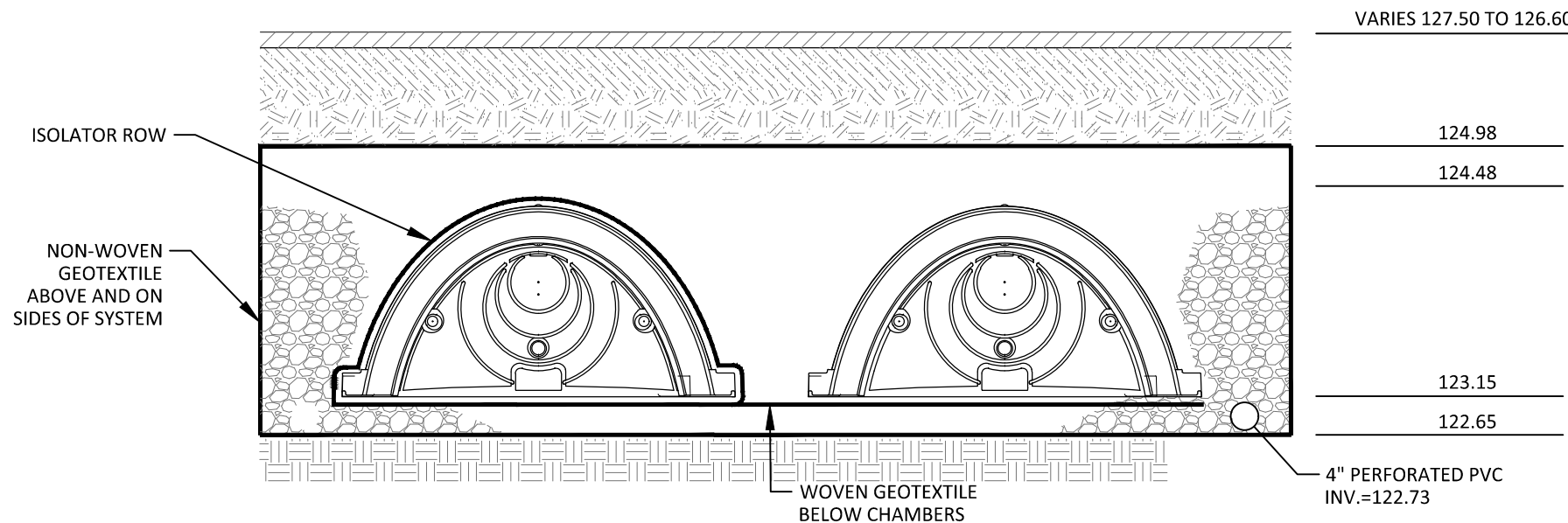
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE"
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

- SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

STORMTECH SC-310 CROSS SECTION
NOT TO SCALE



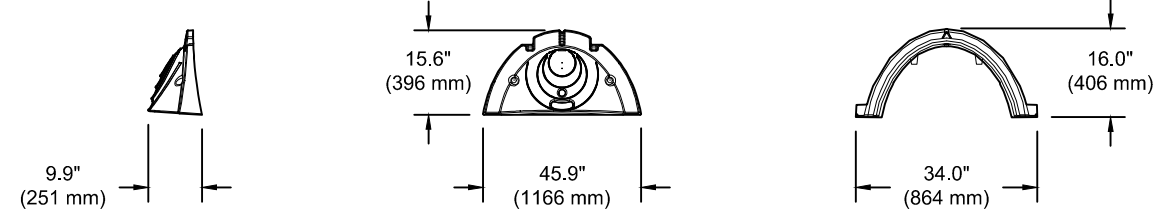
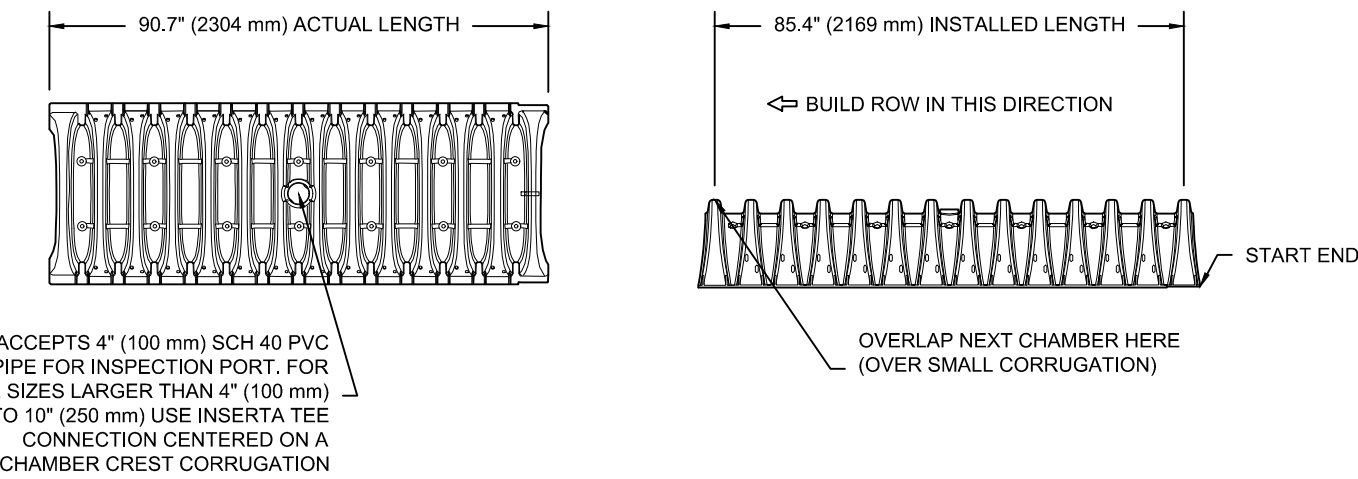
DURING CONSTRUCTION INSPECTION NOTES:

- CONSTRUCTION OVERSIGHT: THE CHAMBER SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION. INSPECTION DURING AND AFTER CONSTRUCTION AND UNTIL THE SITE IS STABILIZED MUST BE PERFORMED BY THE MANUFACTURER'S REPRESENTATIVE.

POST CONSTRUCTION INSPECTION NOTES:

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

SUBSURFACE CHAMBER SYSTEM - SECTION DETAIL
NOT TO SCALE

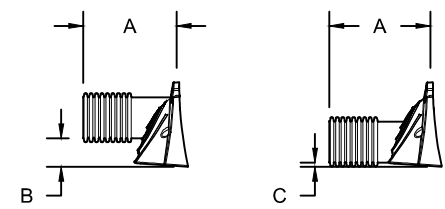


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)
CHAMBER STORAGE
MINIMUM INSTALLED STORAGE*
WEIGHT

34.0' X 16.0' X 85.4' (864 mm X 406 mm X 2169 mm)
14.7 CUBIC FEET (0.42 m³)
31.0 CUBIC FEET (0.86 m³)
38.0 lbs. (16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS



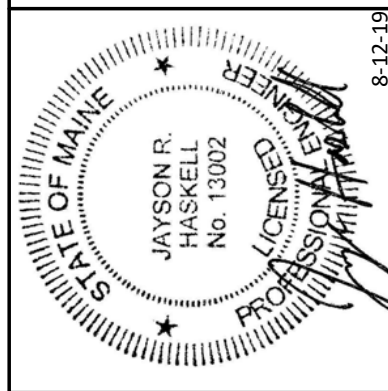
PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC	6" (150 mm)	---	---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.9" (99 mm)	---
SC310EPE08B / SC310EPE08BPC	8" (200 mm)	---	---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC	10" (250 mm)	---	---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

STORMTECH SC-310 TECHNICAL SPECIFICATION
NOT TO SCALE

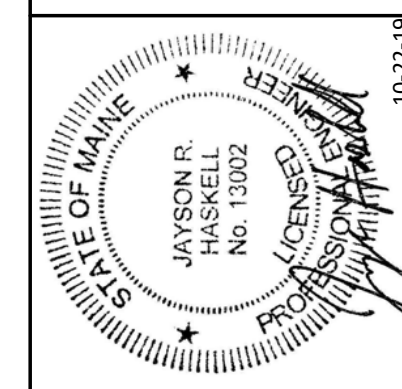
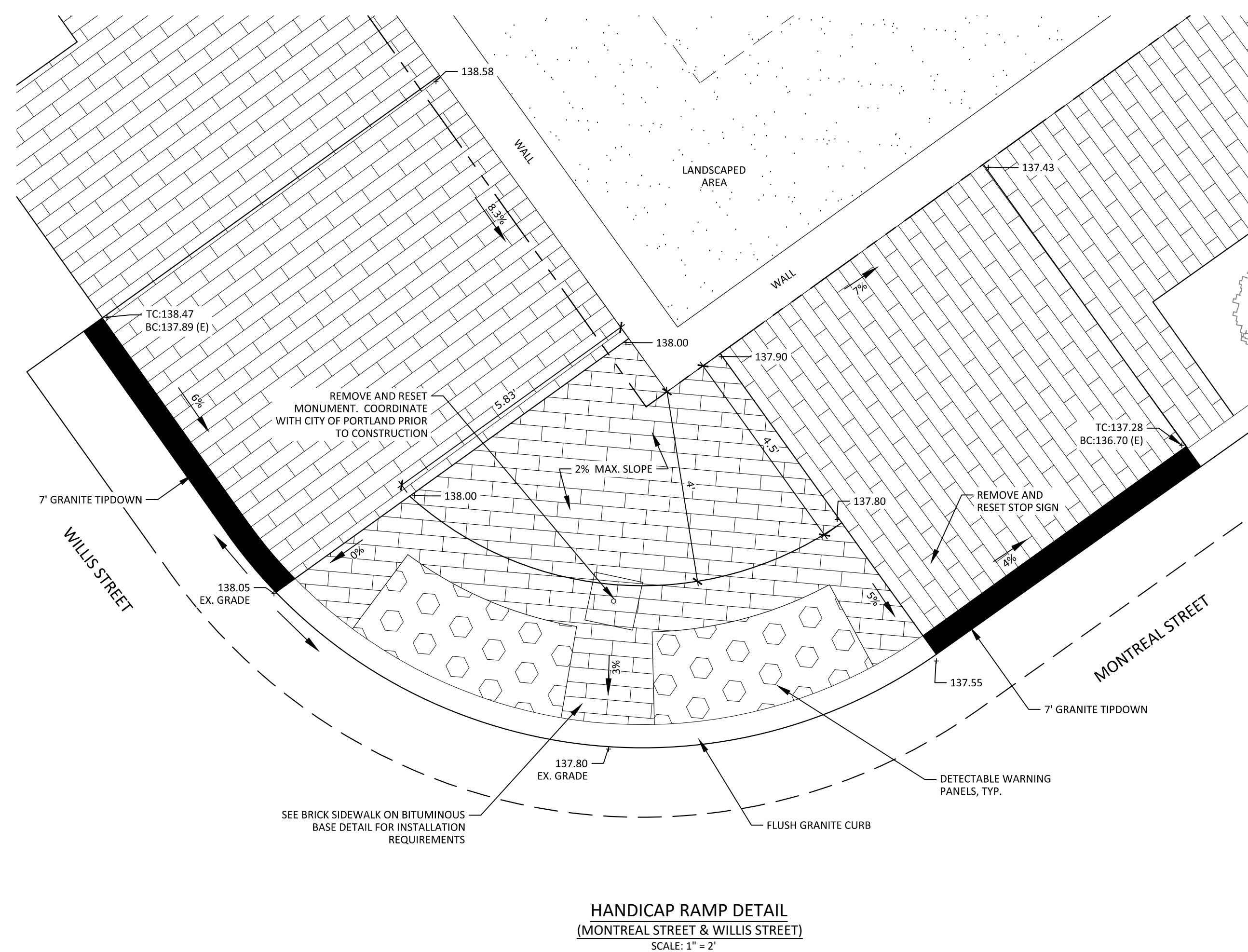
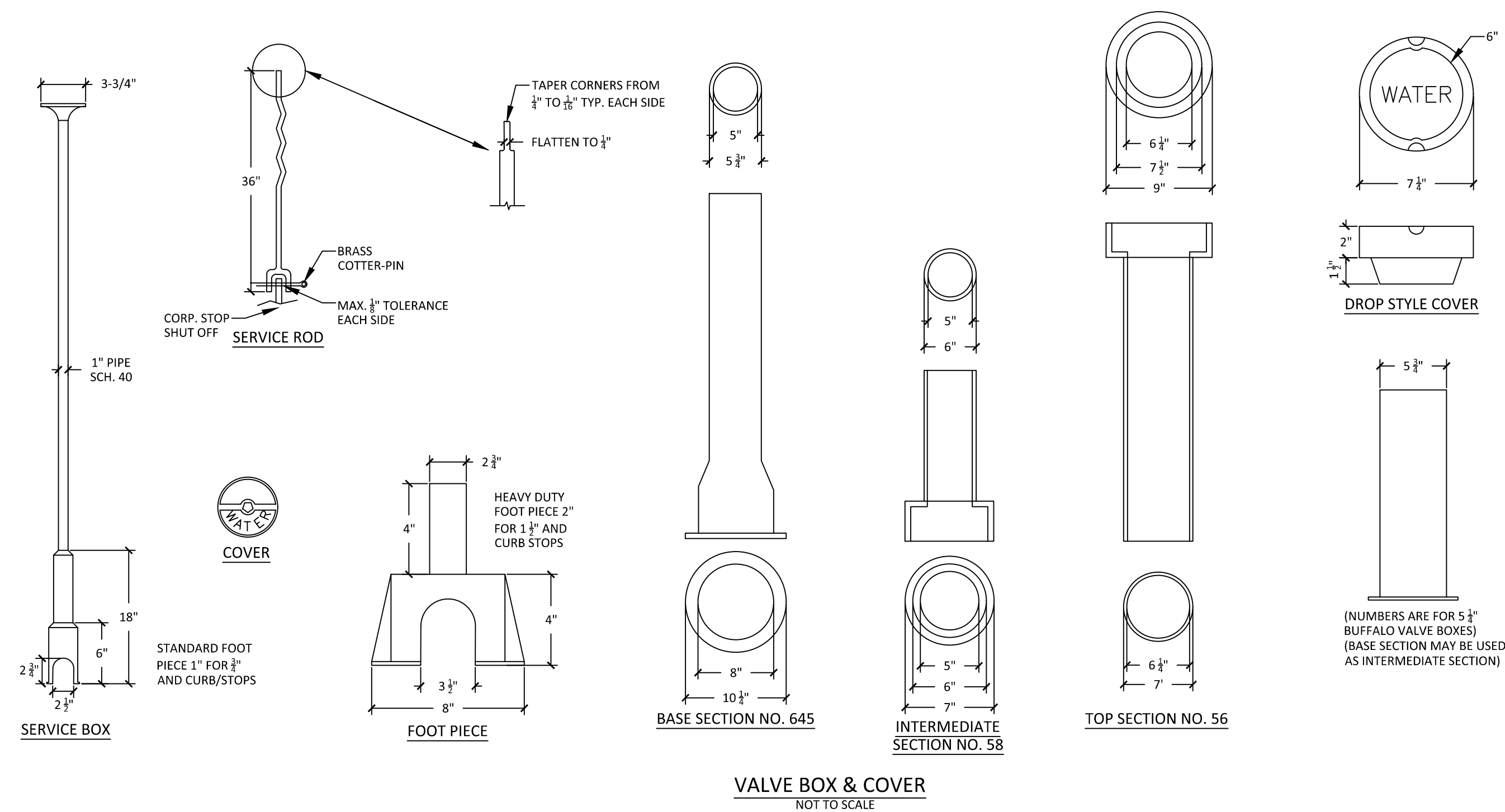
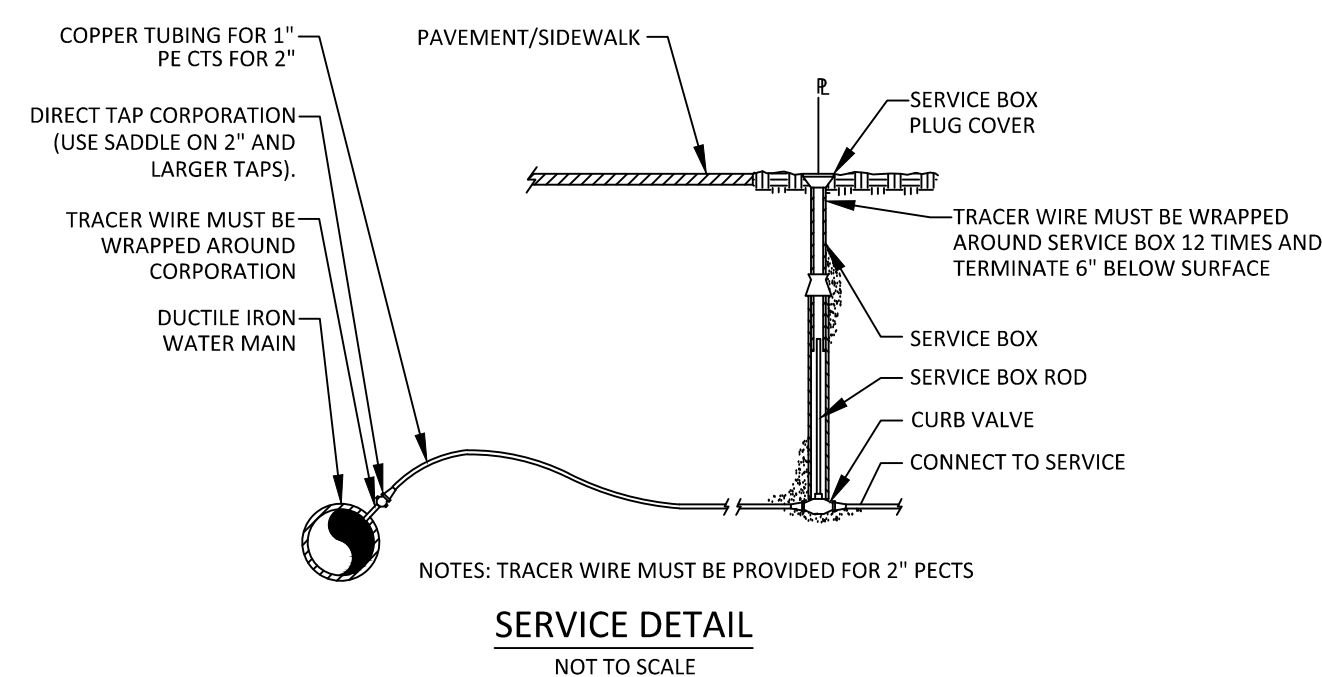
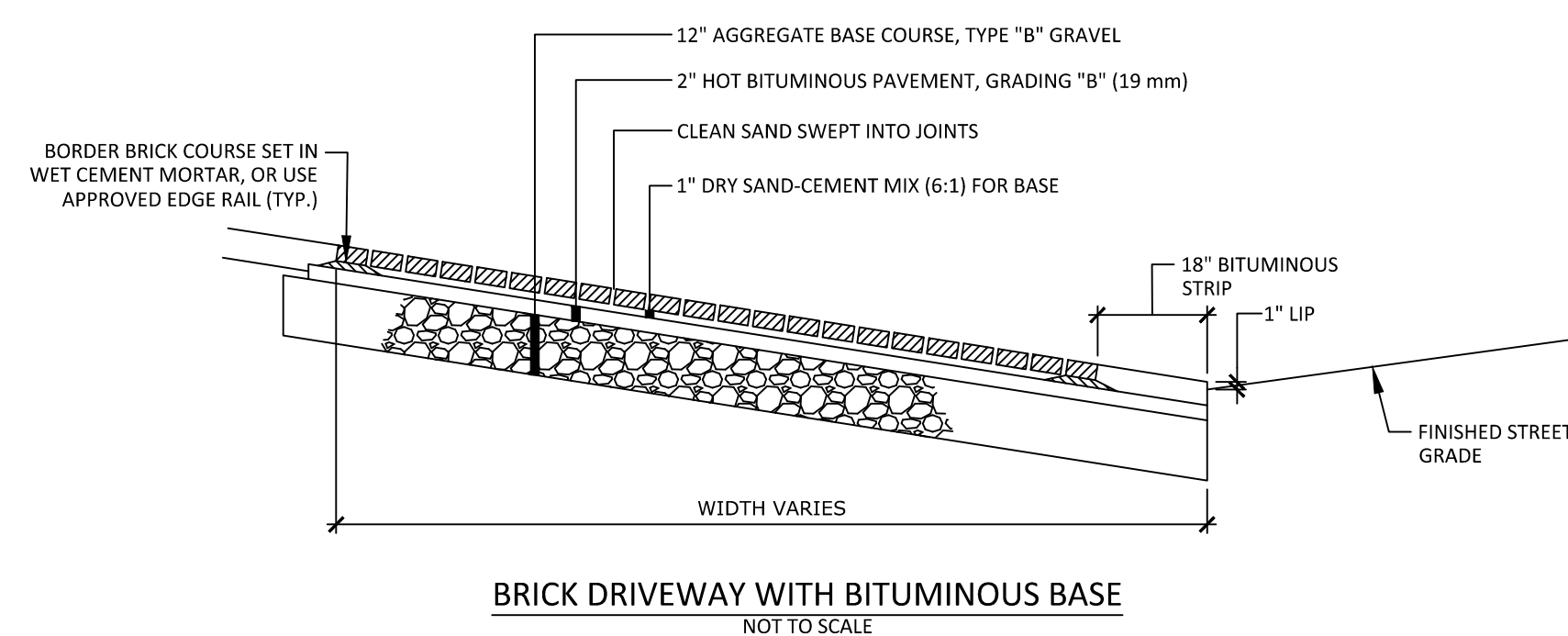
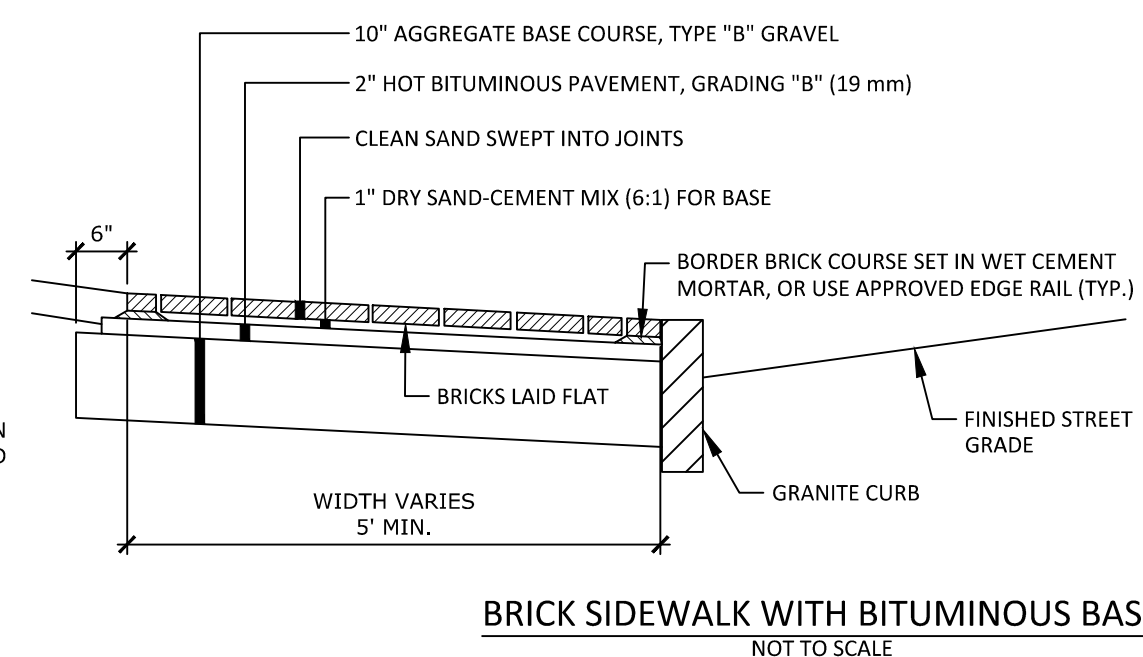
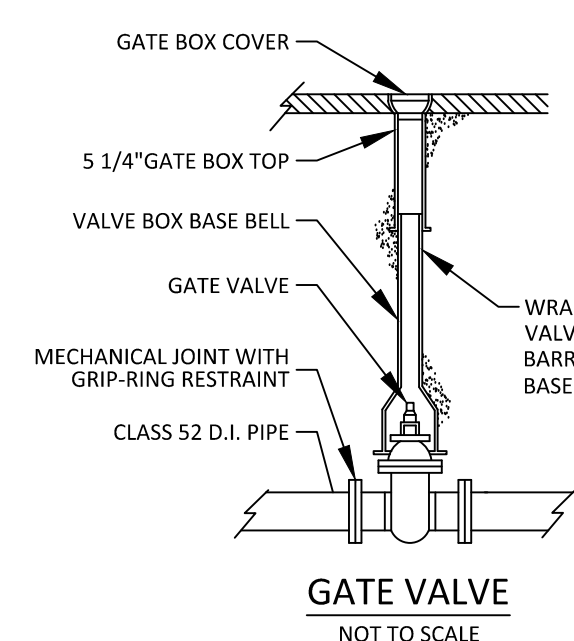
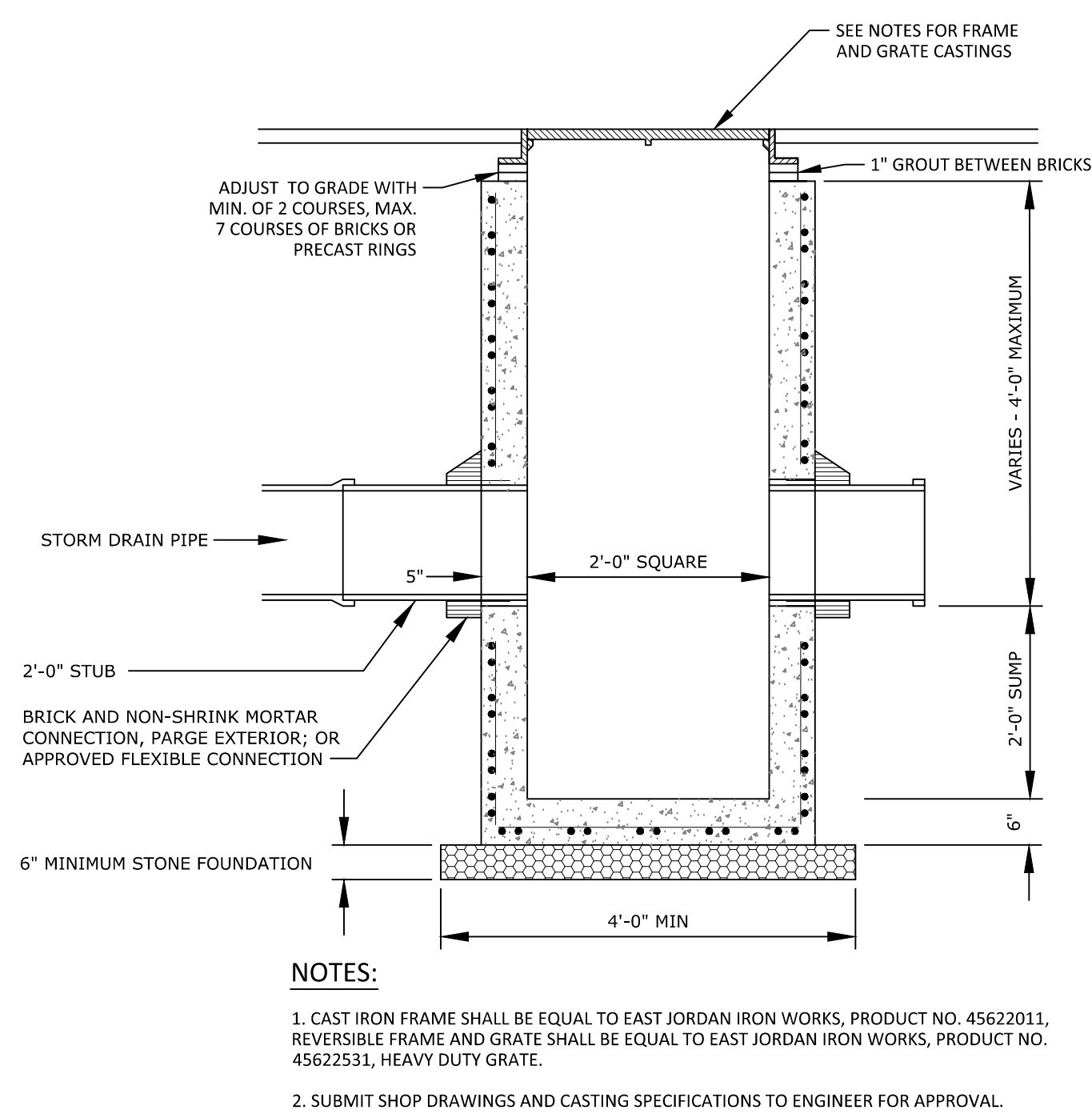
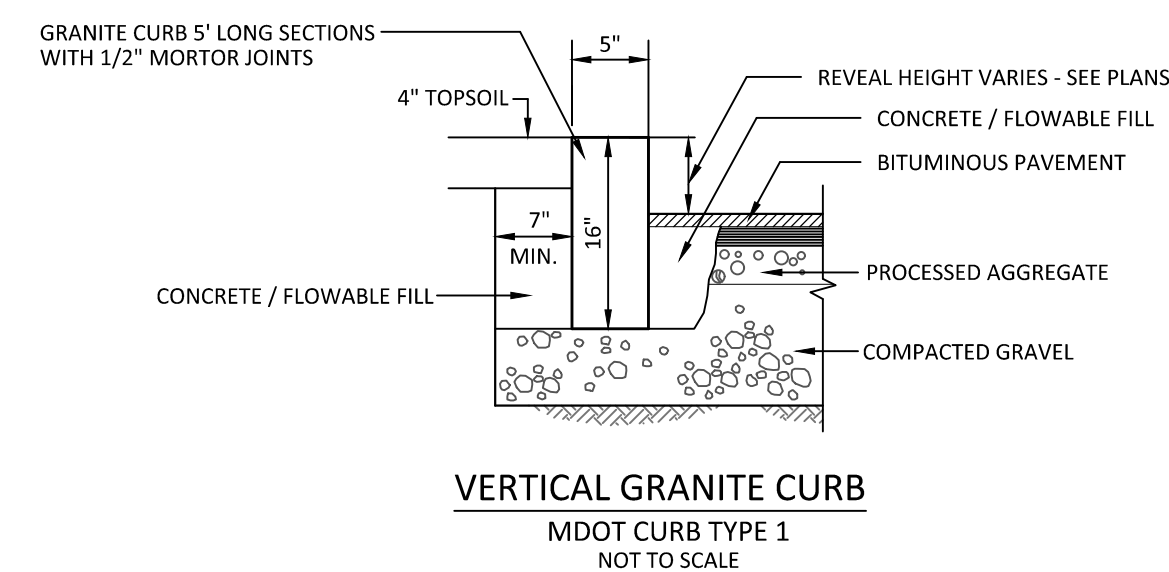
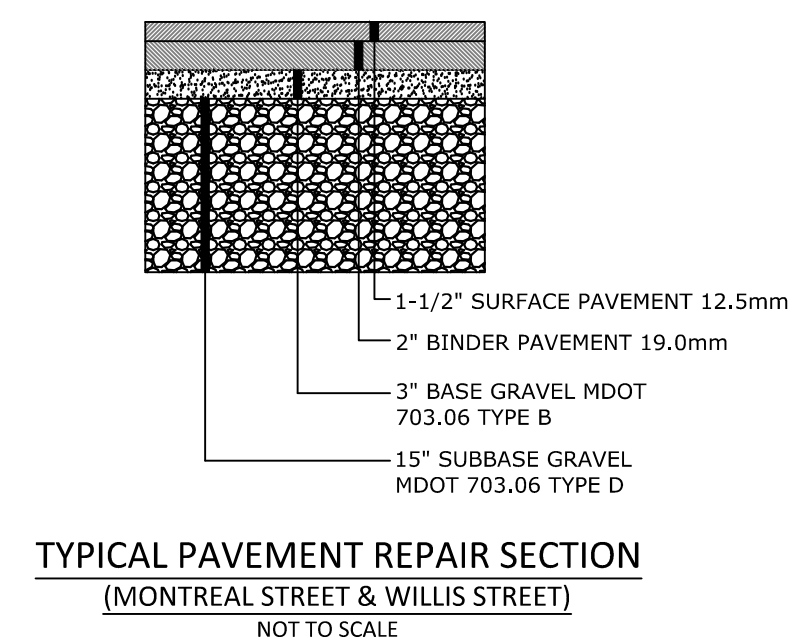
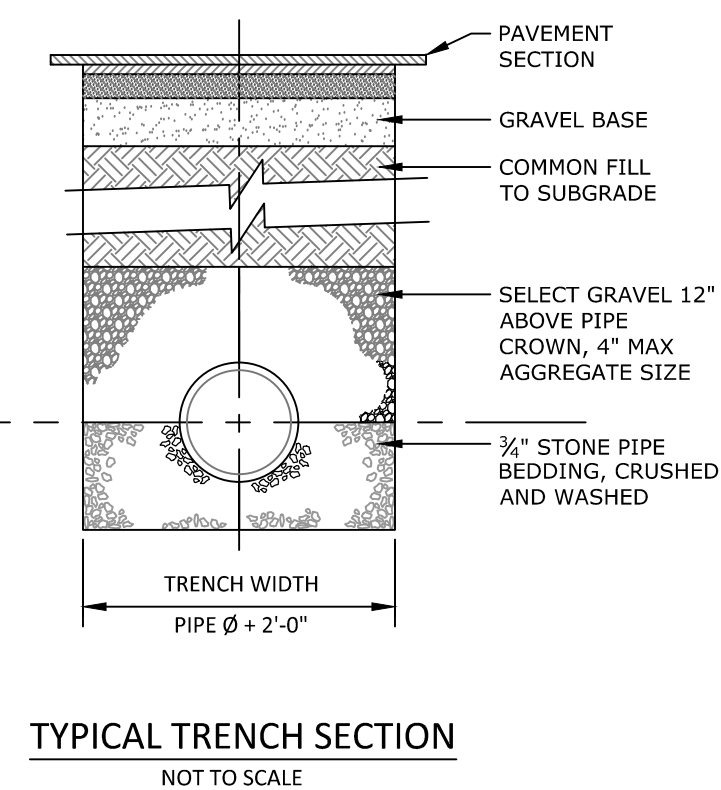
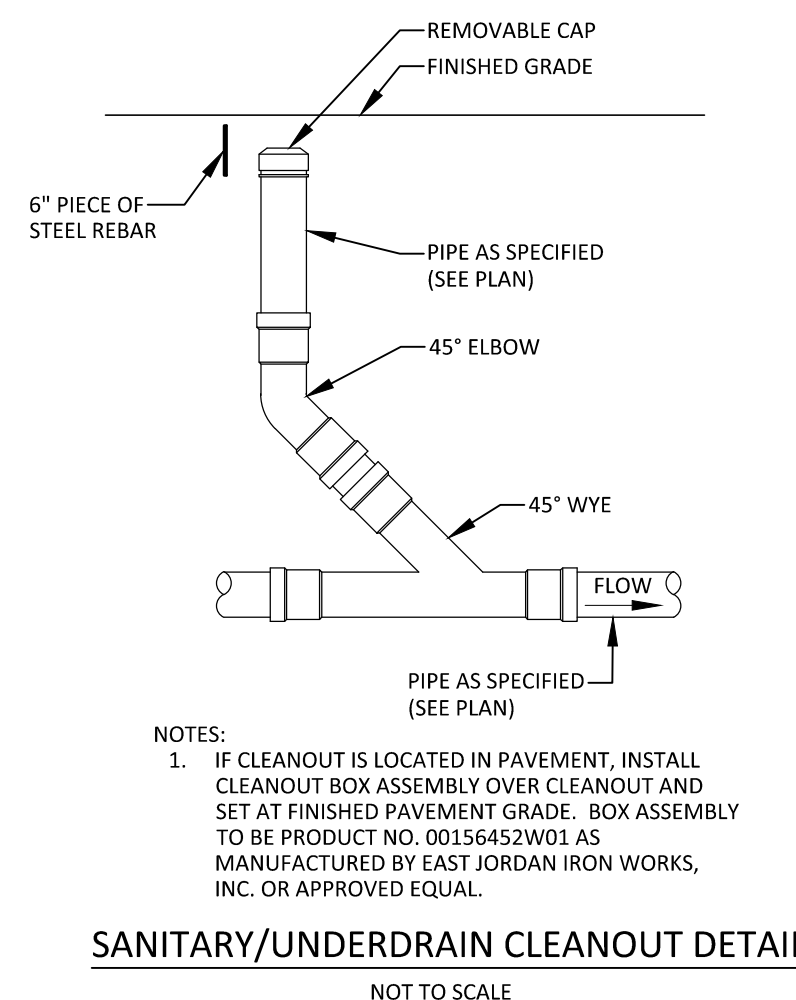
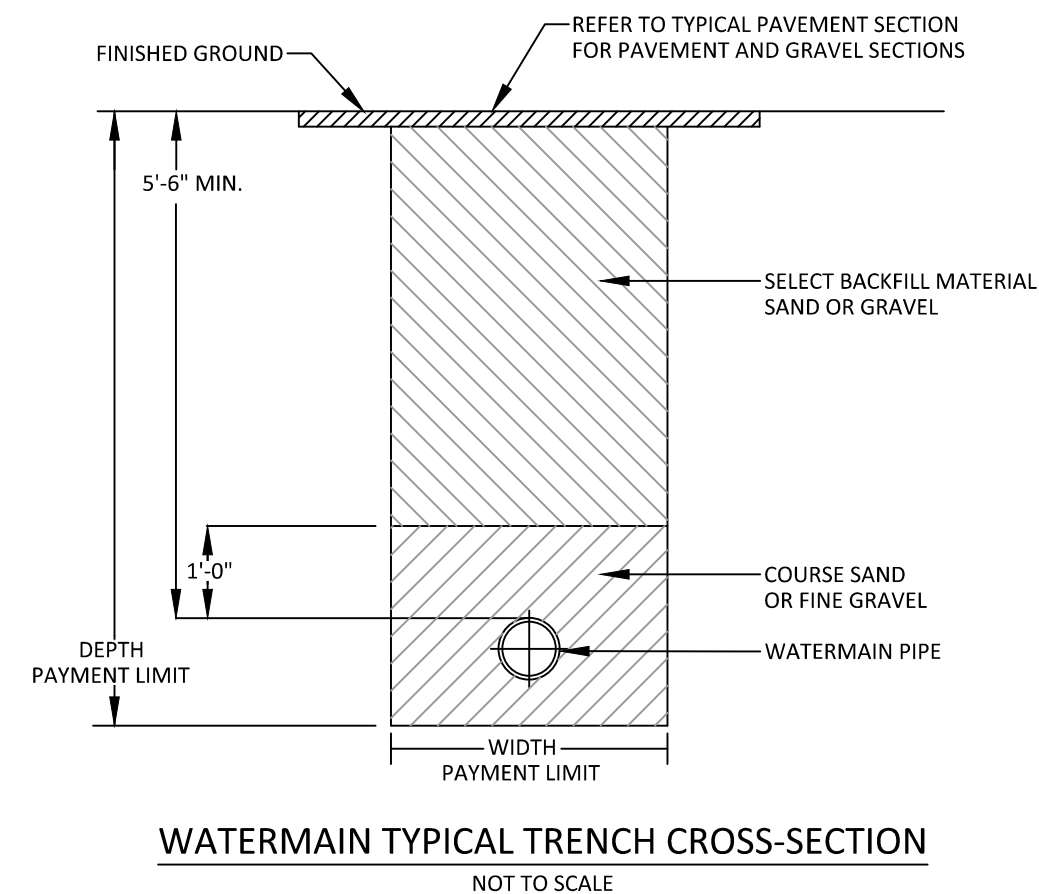


DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	8-22-19	DMK	ISSUED FOR PERMITTING

DETAILS
37 MONTREAL STREET
PORTLAND, MAINE
FOR APPLICANT:
McTIGUE CONSTRUCTION
388 MOUNTAIN ROAD
PORTLAND, ME, 04106

18053 JOB NUMBER:
AS NOTED SCALE:
8-12-2019 DATE:
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C3.1



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAWK, ME 04062
(207) 310 - 0506

REV	DATE	BY	DESCRIPTION
A	8-12-19	DMR	ISSUED FOR PERMITTING
B	10-11-19	DMR	REVISED PER CITY REVIEW
C	10-22-19	DMR	REVISED PER CITY REVIEW

DETAILS

37 MONTREAL STREET
PORTLAND, MAINE

PORTLAND, MAINE
FOR APPLICANT:
37 MONTREAL, LLC.

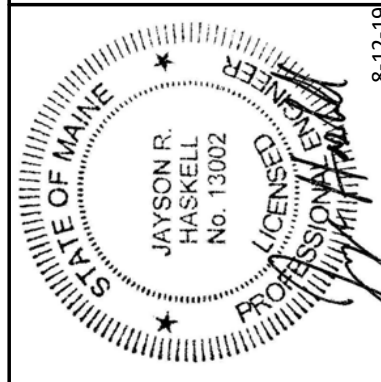
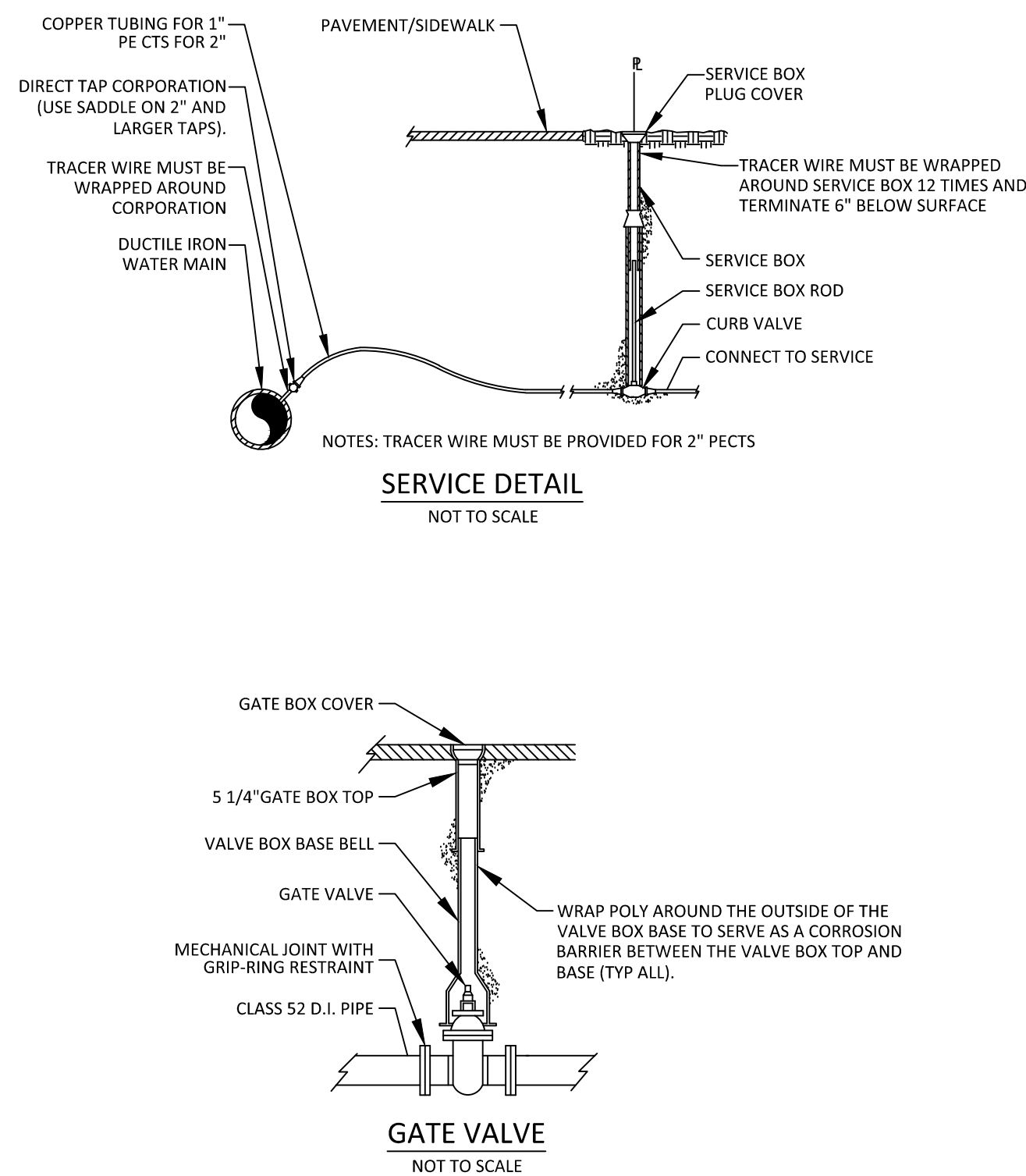
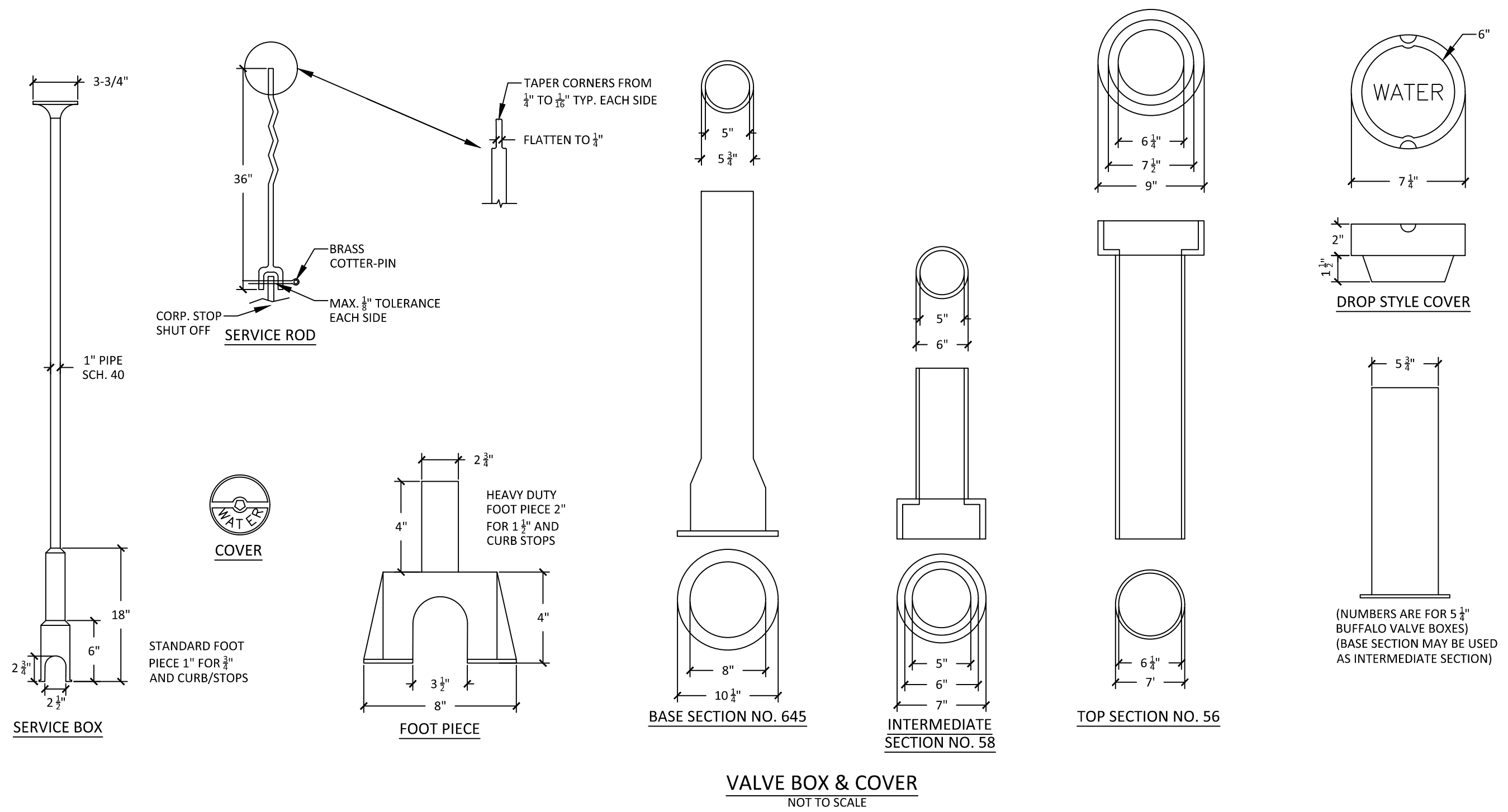
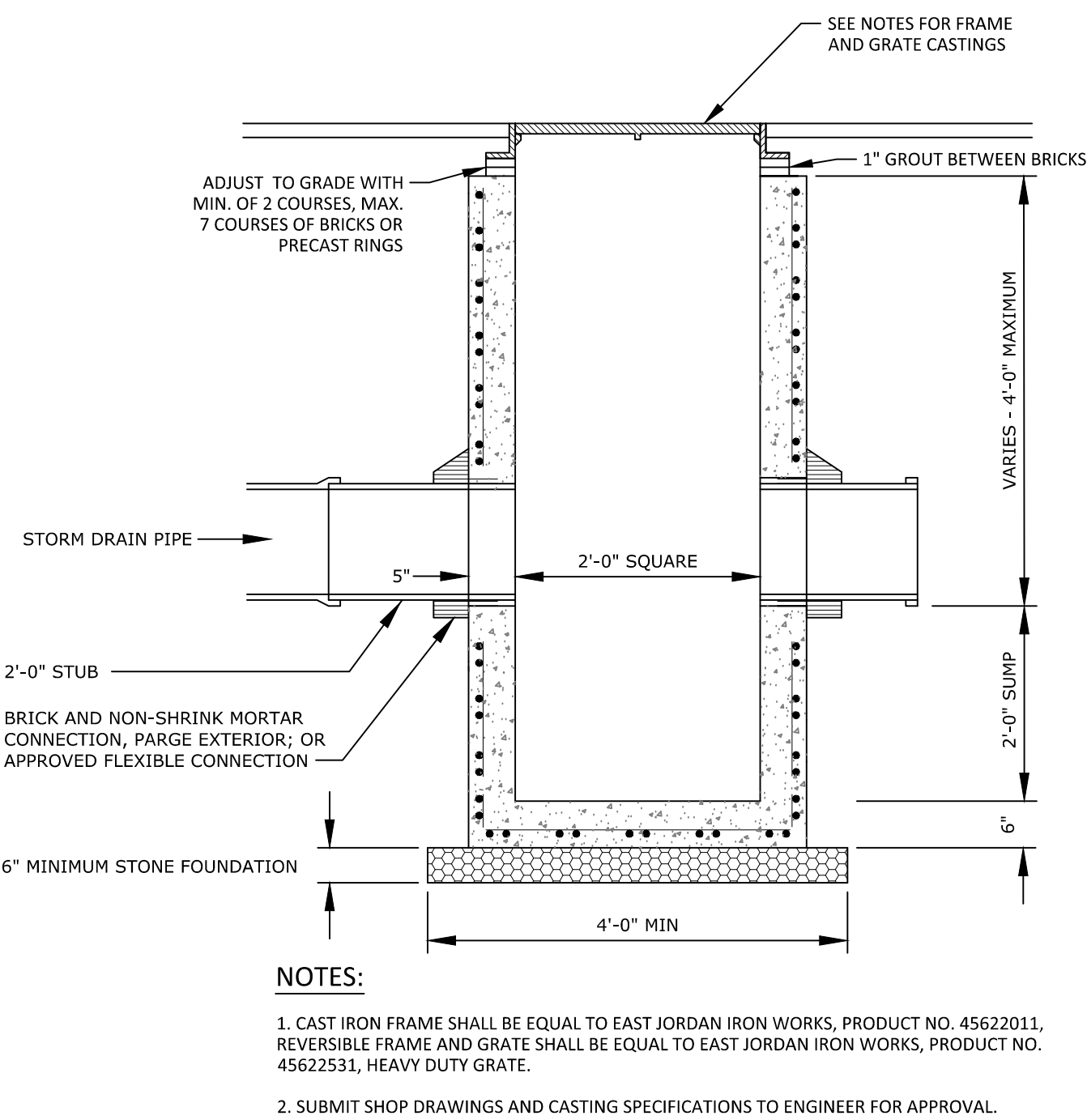
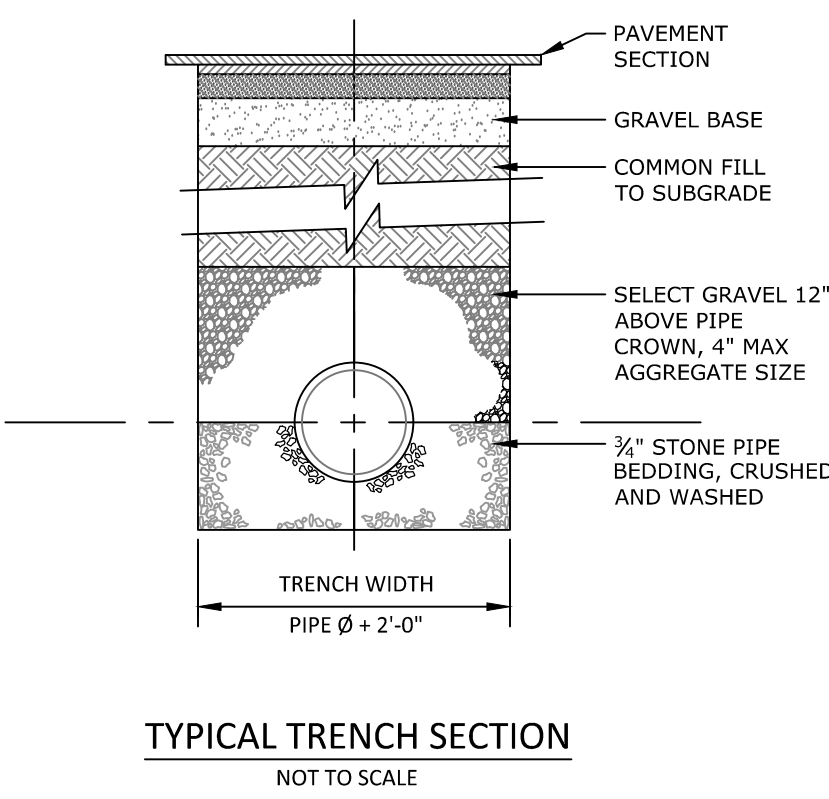
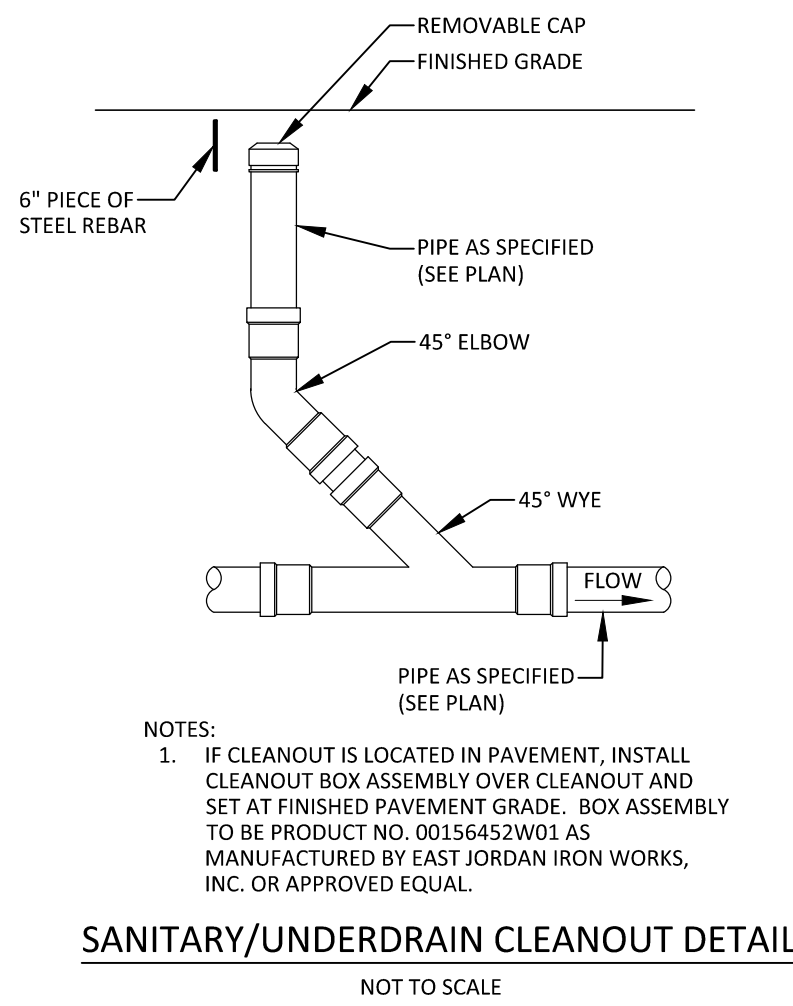
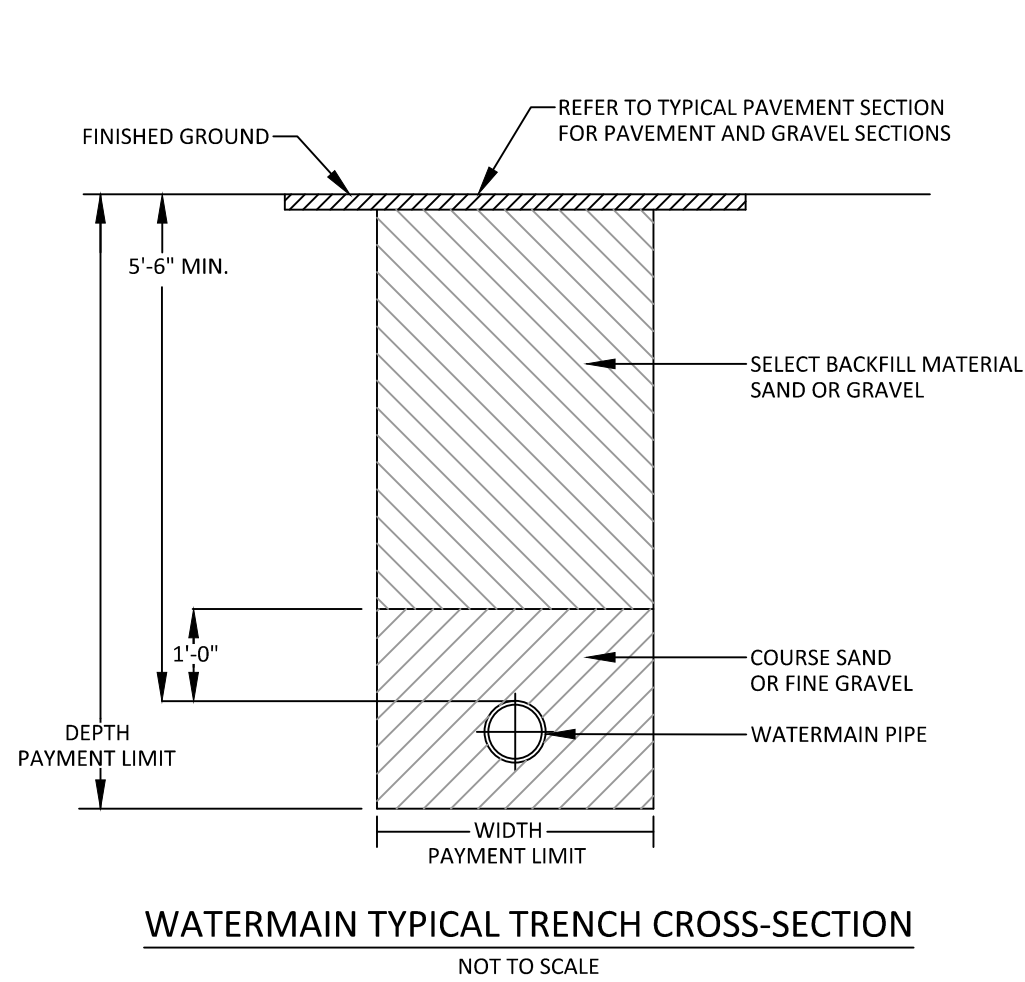
18053
JOB NUMBER:

AS NOTED
SCALE:

10-22-2019
DATE:

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WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	8-22-19	DMR	ISSUED FOR PERMITTING

DETAILS

37 MONTREAL STREET
PORTLAND, MAINE

FOR APPLICANT:
McTIGUE CONSTRUCTION
284 MOUNTAIN ROAD
FAIRBURY, ME, 04003

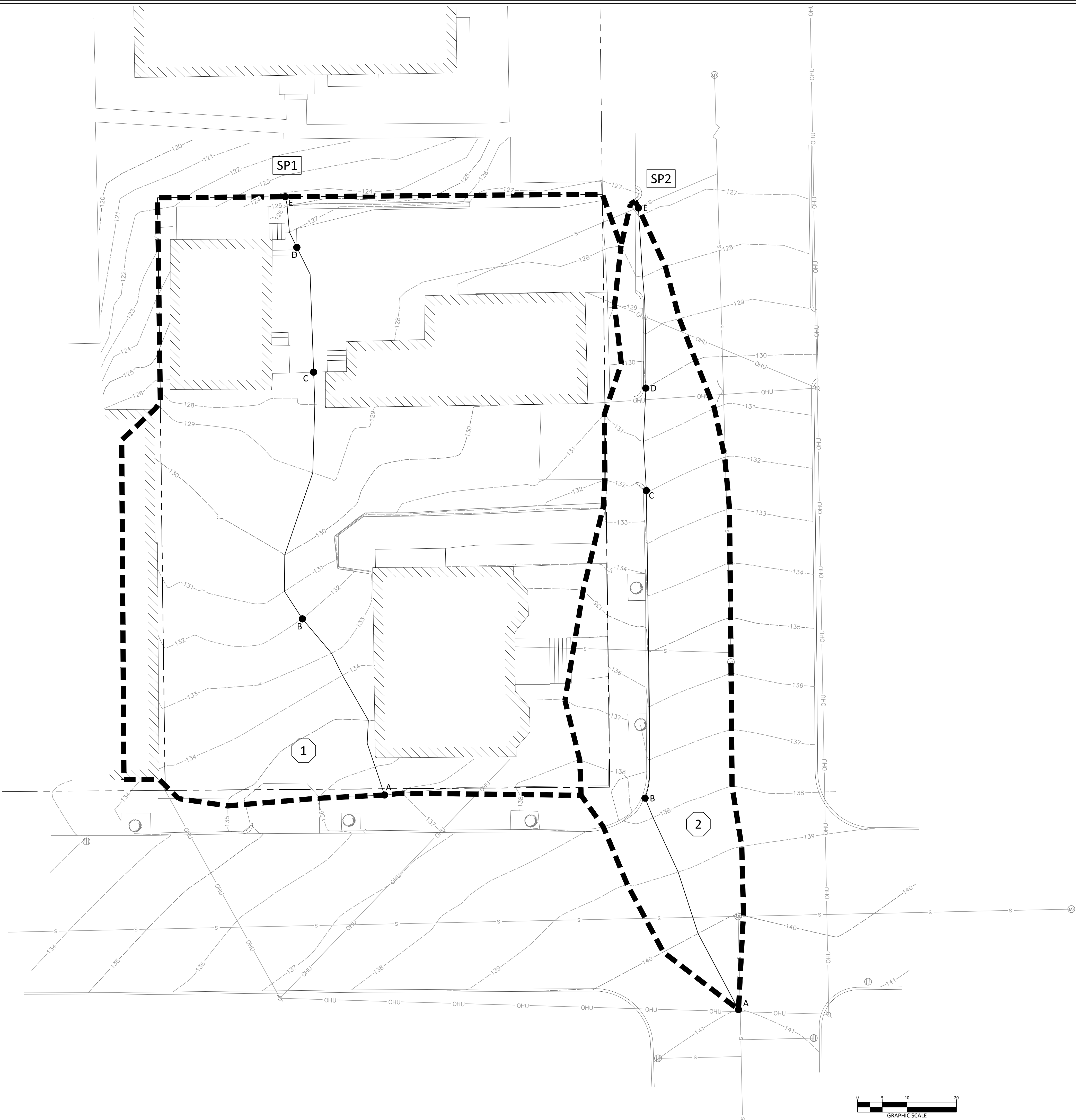
18053
JOB NUMBER:

AS NOTED
SCALE:

8-12-2019
DATE:

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C3.2



LEGEND

- WATERSHED NO.
- REACH/STUDY POINT
- POND
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

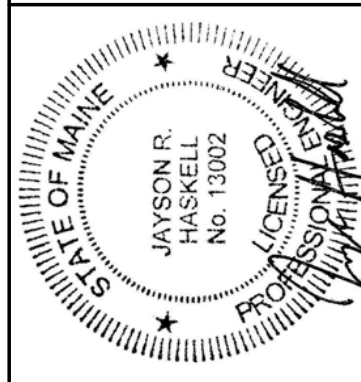
LEGEND

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WATERSHED MAP - EXISTING CONDITION

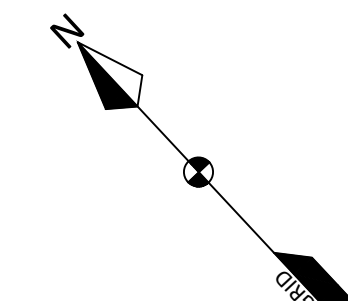
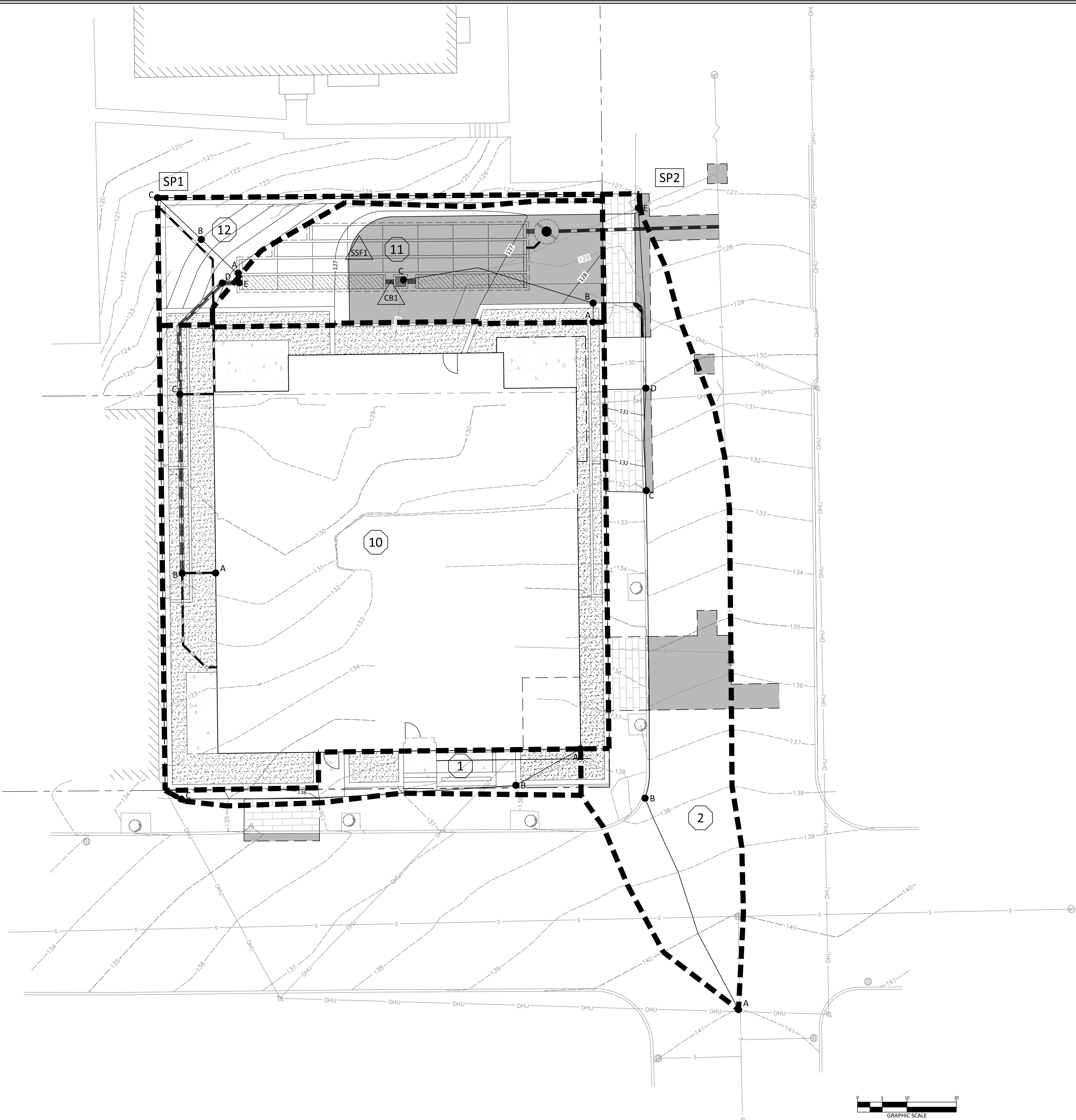
37 MONTREAL STREET
PORTLAND, MAINE
FOR APPLICANT:
MCTIGUE CONSTRUCTION
284 MOUNTAIN ROAD
PORTLAND, ME, 04105

18053
JOB NUMBER:
1" = 10'
SCALE:
8-12-2019
DATE:
C4.0



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

REV	DATE	BY	DESCRIPTION
A	8-22-19	DMK	ISSUED FOR PERMITTING

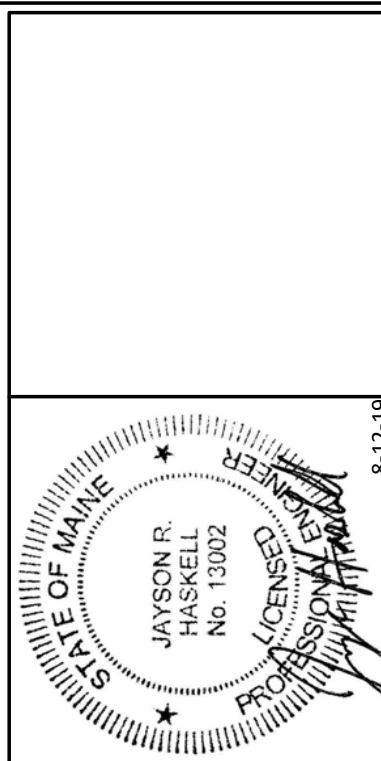


LEGEND

- WATERSHED NO.
- REACH/STUDY POINT
- POND
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

LEGEND

- | EXISTING | PROPOSED |
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DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	8-22-19	DMK	ISSUED FOR PERMITTING

WATERSHED MAP - DEVELOPED CONDITION
37 MONTREAL STREET
PORTLAND, MAINE
FOR APPLICANT:
MCTIGUE CONSTRUCTION
284 MOUNTAIN ROAD
PARMOUTH, ME, 04055

18053
JOB NUMBER:
1" = 10'
SCALE:
8-12-2019
DATE:
C4.1

STATE OF MAINE

JAYSON R. HASKELL
No. 13002

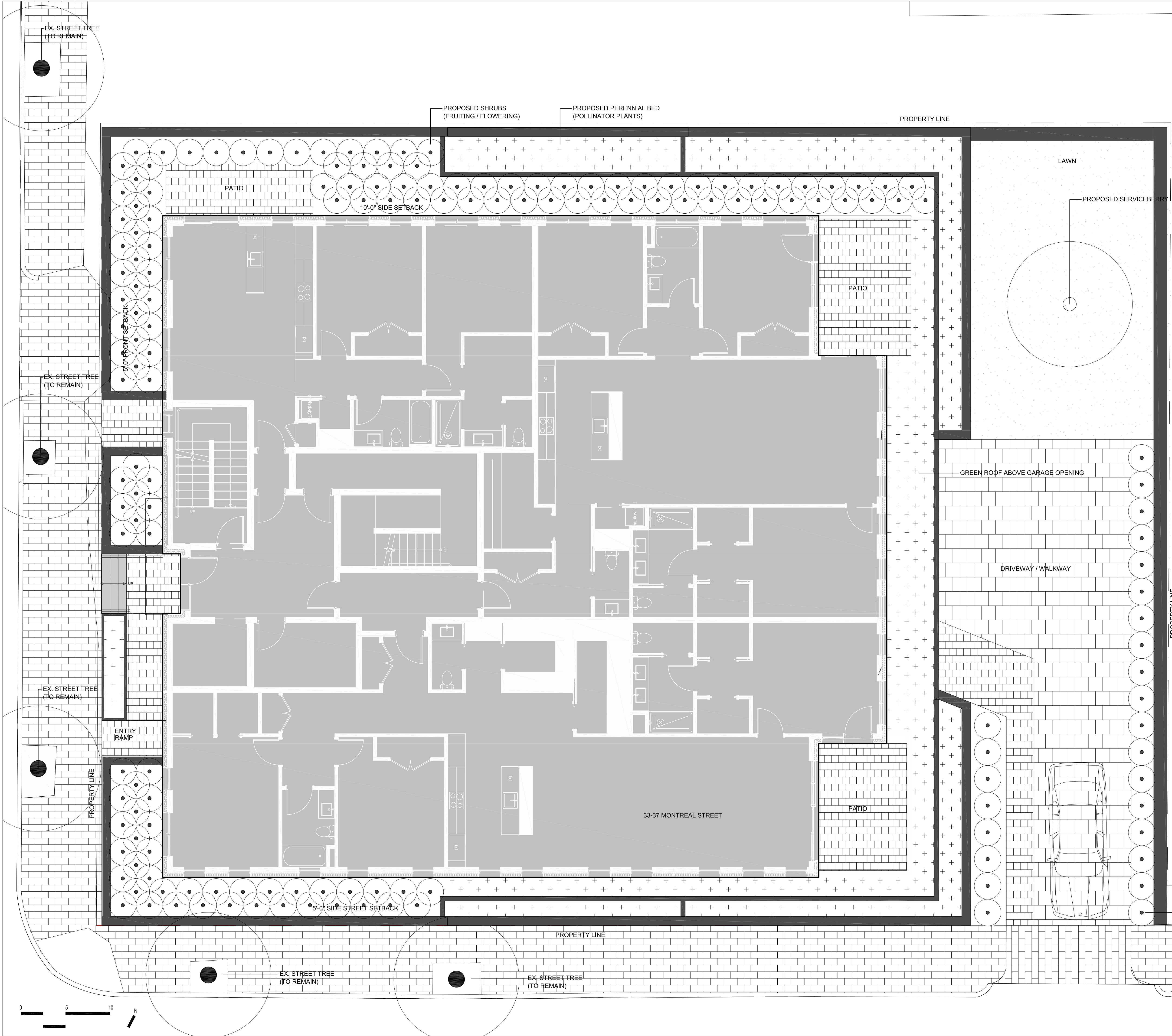
PROFESSIONAL ENGINEER

8-12-19

[illegible]

18053 JOB NUMBER:
1" = 10' SCALE:
8-12-2019 DATE:
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C2.0

CONSTRUCTION MANAGEMENT PLAN



PLANT SCHEDULE				
ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
DECIDUOUS TREES				
AC	AMELANCHIER CANADENSIS	SERVICEBERRY (SINGLE)	12	10'-12'
AR	ACER RUBRUM	ARMSTRONG MAPLE	10	3" CAL
TO	THUJA OCCIDENTALIS	AM.ARB. GREEN GIANT	10	8"
PERENNIALS / GRASSES / GROUND COVER / BULBS				
VC	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	X	5 GAL.
VA	VACCINIUM ANGUSTIFOLIUM	LOWBUSH BLUEBERRY	X	1 GAL.
CS	CORNUS SERICEA	KELSEY DWARF REDTWIG	X	5 GAL.
IV	ILEX VERICILLATA	WINTERBERRY HOLLY	X	7 GAL.
NR	NEPETA RACEMOSA	CATMINT 'WALKERS LOW'	X	1 GAL.
MS	MISCANTHUS SINENSIS	'GRACILLIMUS' SILVERI	X	2 GAL.
PV	PANICUM VIRGATUM	SWITCH GRASS	X	1 GAL.
PA	PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	X	1 GAL.
TURF LAWN (4" NEW LOAM)				
SYMBOLS LEGEND				
HARDSCAPE				
MYSTIC MOUNTAIN GRANITE STEPS				
VEHICULAR MASONRY UNIT PAVER				
PEDESTRIAN MASONRY UNIT PAVER				
CITY BRICK SIDEWALK PER CITY OF PORTLAND STANDARDS				
MASONRY RETAINING WALL				
PLANTS				
PROPOSED DECIDUOUS TREE				
EX. DECIDUOUS TREE				
PROPOSED SHRUB				
PERENNIAL PLANTING BED				
LAWN				

sd
ds

Soren deNiord Design Studio
43 Wellwood Road
Portland, ME
04103
T: 207-400-2450
E: soren@sorendenliord.com

33-37 MONTREAL STREET
MUNJOY HILL
PORTLAND, MAINE

PLANNING BOARD REVIEW
No: Revision / Submission Date:

▲
▲
▲
▲

revisions:
date: AUGUST 07, 2019
scale: As Noted
drawn: XX
checked: XX

L1.0

LANDSCAPE PLAN

NOT FOR CONSTRUCTION

Page 946

PROJECT
33-37
MONTREAL
STREET
33 - 37 MONTREAL STREET
PORTLAND, ME 04101

STRUCTURAL
L & L Structural
Engineering Services
6 Q Street
South Portland, ME 04106
P: (207) 767-4830

CIVIL
DM Roma
PO Box 1116,
Windham, ME 04062
P: (207) 310-050

LANDSCAPE
**Soren Deniord
Design Studio**
43 Wellwood Road
Portland, ME 04103
P: (207) 400-2450

[illegible]

NOT FOR CONSTRUCTION

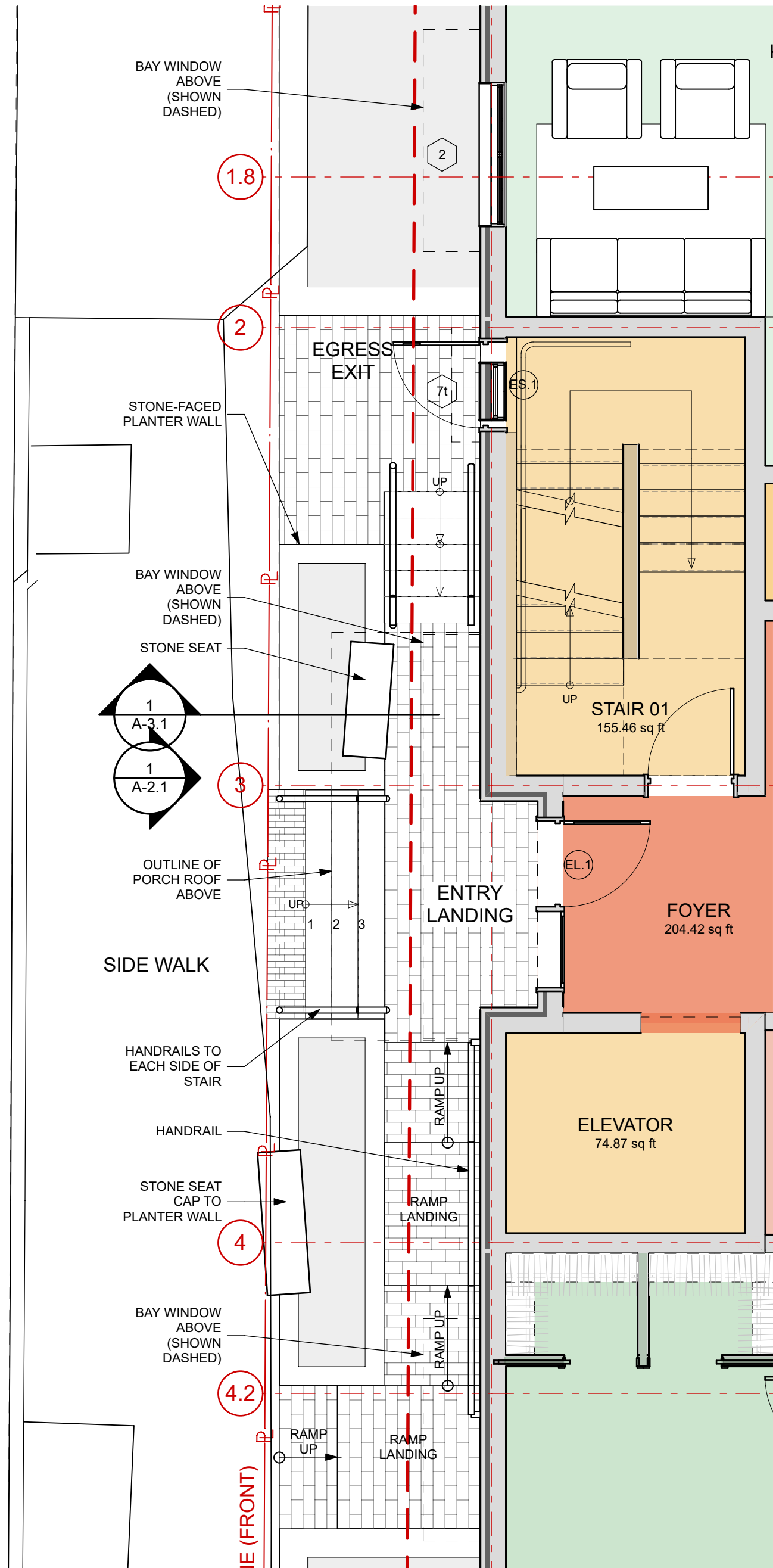
PROJECT:	MTL
DATE:	SEPTEMBER 30, 2019

DRAWN BY:	BB
PHASE:	DD For Review

BASEMENT PLAN

A-1.1





MTL - MAIN ENTRY OPTION

OCTOBER 01, 2019

33-37 Montral Street - Planning Board Meeting 7/13

0 views

[Skip to first unread message](#)

Subscribe



Peter Murray - GWI

unread,

Jul 8, 2021, 9:34:25 AM (yesterday)

to planni...@portlandmaine.gov, Peter L. Murray, Andrew Tufts, Barbara Vestal, Carol Connor, Wayne Valzania

Dear Planning Board -

Attached please find my written comments concerning the project scheduled for a public hearing on July 13, 2021. The proposed project makes a travesty of height regulation in the R-6 zone and should not be approved based on the plans submitted.

Can you please send me the link for the virtual meeting so that I can participate?

Thank you for considering these matters.

Sincerely,

PLM

104 North Street
Portland, Me 04101

July 8, 2021

Portland Planning Board
City Hall
Portland, ME 04101

Re: 33-37 Montreal Street – Level 3 Site Plan Proceedings

Dear Chair and Members of the Portland Planning Board:

This is in anticipation of your July 13 Public Hearing on the above project. The undersigned, who lives approximately one block away from the project site, has participated both through written submissions and oral presentations at prior Workshops and other proceedings with respect to this project. For the reasons set forth below, it is submitted that the project is not in compliance with the requirements of R-6 Zone and the Conservation Overlay on Munjoy Hill and is also not in compliance with the applicable Design Standards and the Site Plan Application and should not be approved.

The concerns set forth herein were brought up at the September 24, 2019 Workshop on this project. The relatively minor and cosmetic changes represented by the current revised submissions do not effectively meet these objections or the other objections raised by concerned residents at prior proceedings.

1. The Height of the Proposed Project Exceeds the Maximum Height Permitted by the Portland Zoning Ordinance.

The R-6 Zone and the Munjoy Hill Overlay require that any structure built in the Zone have a “height” of no more than 45 feet. (In the Munjoy Hill Overlay Zone the 45-foot height is available only to structures having at least two dwelling units, of which one must be a “workforce” housing unit – otherwise the maximum height is 35 feet). The Project is proposed to have one “workforce” unit and therefore claims the 45-foot height limitation.

The question raised by this proposal is, “From where the 45-foot height is to be measured?” The version of the Portland Zoning Ordinance in effect at the time the Site Plan Application was filed (and which therefore governs this Application) contains no specific mention of how or from where a building’s height is to be determined. As of that time the practice of the Portland Code Enforcement Officer was to measure a building’s height from the average land grade at the four corners of the structure (or at a number of

points along its perimeter at the developer's option). On the Portland islands, it was understood that the measurement was to be made from the grade levels that existed before the site had been disturbed by development activity. On the mainland, apparently measurements could be made from the grade of the site as improved by the project. This practice permitted mainland developers to fill or adjust site grades to some degree before determining the average grade from which their structures would be measured.¹

The project is proposed to be sited on a sloping site with existing land grades at the four corners of the proposed structure as follows:²

Northern Corner:	124.0'
Eastern Corner:	128.5'
Southern Corner:	137.9'
Western Corner:	134.0'

The average of the existing grades at the corners of the proposed condo block is 131 feet above datum. Based on the existing grades on the ground, the structure should extend no higher than 176.1 feet above datum.

The developer, however, claims a new artificial "average grade" around the entire building by heaping a fringe of earth around the entire structure and retaining it with retaining walls creating flower and landscaping boxes to a height of 138 feet above datum on all sides of the structure. This new "average grade" is above the existing natural grade at all four corners of the building. The increase ranges from less than a foot at the southern corner, to 4 feet at the western corner, to 9 ½ feet at the eastern corner and to 14 feet at the northern corner. The developer proposes to show its neighbor to the northwest a new artificial retaining wall extending from 4 to 14 feet above the grade of his immediately adjacent land. The new landscaping or flowerboxes would extend from 2 - 9.5 feet above the sidewalk on Montreal Street. It should be noted that the dirt in the flowerboxes is no part of the support of the building, but is a narrow strip added outside the foundation after construction in order to claim a fictitious grade that is totally out of synch with the land contours in the surrounding neighborhood. In fact, the "average grade" flowerboxes would be installed above the door to the garage and some 12 feet above the real ground in that area. All of this is shown rather clearly in the elevations most recently filed by the Applicant.

¹ This practice was codified in the Phase 1 Recode of the Portland Zoning Ordinance adopted by the City Council on November 9, 2020. The Phase 1 Recode was intended to reorganize and rationalize the structure of the ordinance without making substantive changes, which were reserved to Phase 2. The question of how grade should be determined for project height purposes is on the agenda for debate in the currently pending Phase 2 proceedings. One proposal is that throughout the City, building height should be measured from pre-construction grade as it is on the islands and in other municipalities such as Bangor and Boston.

² See measurements and contour lines on "Grading and Utility Plan" dated 9/24/19 as filed by the Applicant.

By measuring from this fake “average grade” the developer proposes to build to a height of 183 feet above datum, or nearly 7 feet above what the real grade would give it.

While the recent practice of the Portland Code Enforcement Officer to measure from post-construction grades may permit developers some modest filling and grade alterations, this is an egregious abuse of the practice to permit the developer to add, in effect, an additional story to its project thus increasing and compounding its overweening dissonance with the surrounding neighborhood as discussed below.

While the apparent current practice of measuring from post-construction grade is vague and inexact, it certainly does not permit something like this, where the developer seeks to take unfair advantage of this ambiguity to make a mockery of height restriction in the R-6 and the Munjoy Hill Overlay.

2. The Overall Size and Bulk of the Proposed 9-Condominium Block Does Not Comply With the Design Standards in the Context of its Surroundings.

The Montreal-Willis Street neighborhood is a relatively intact Munjoy Hill residential neighborhood consisting of 19th century wood frame 1 and 2 family houses on small lots. This building stock bespeaks the Hill’s history as a working- and middle-class residential quarter in 19th century Portland. Most of the houses are 1½ - 2½ stories in height.

The proposed project would combine two lots to make one large lot on which the developers propose to erect a 4½ story condominium block with 9 upscale dwelling units over a parking deck that would cover most of the combined lots. This structure would dwarf all of the nearby buildings and dominate the entire Montreal-Willis area. It would destroy the harmonious rhythm of the buildings on the streets.

The Level 3 Site Plan Application should be rejected because the building does not comply with the basic Design Standards requiring the height, size and mass of a new building relate positively to the surrounding building stock. This building is simply too big, too long, too institutional to fit on the corner where it is sited.

The proposed site is the northern corner of the intersection of Willis and Montreal Streets. On the other corners are 1) on the southern corner, a 1½ story small 19th century mansard cottage, recently restored to approximate its original appearance; 2) on the western corner a small 1½ story 19th century house recently improved with a long dormer in the ell; 3) on the eastern corner, a 2½ story 19th century frame house similar in size and type to the house that had stood on the proposed project site near the northern corner of the intersection, but which the developer recently demolished. There is no way that this full four story 9-unit condo block with parking underneath can reasonably resonate with housing stock of this kind.

The problem is exacerbated because the developer is not proposing to build on a single Munjoy Hill lot, which would by its small size tend to keep the project in relative

proportion with the buildings on the neighboring small lots. Here the developer has combined two existing lots to make a large lot, which will physically accommodate a much larger structure than either of its constituent parts. This physically permits a building of much greater scale than any of its surrounding structures.

Promenade East, cited by the developer as a comparable structure, is not a part of this neighborhood, but is off on a campus of its own where formerly the Munjoy Hill Reservoir was located. The buildings on Montreal and Willis do not in any way relate to this distant structure.

It is time to say “No.” The existing R-6 zone, even with the Munjoy Hill Overlay, affords developers great dimensional latitude in permitting buildings extending up to 45 feet above a real average grade. However multi-unit residential buildings must also comply the Design Standards, which require that new construction “be compatible with the predominant character defining architectural features of the neighborhood.” In some areas of the Hill a building of this height can “fit in” and resonate positively with the surrounding housing stock. Not on the corner of Montreal and Willis. In this part of the neighborhood the Design Standards require that new construction adhere more closely to the relative size and scale of the existing residential structures on all sides.

If this block is permitted to be built it will be one of those buildings of which people will say for years to come, “How did they let that be built!”

It is submitted that the application must be denied.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter L. Murray". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Peter L. Murray

Planning and Urban Development Department

Planning Division



Subject: Multi-family Design Review – 33 Montreal Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Tuesday, May 18, 2021

A design review for the proposed new construction of a multi-family project at 33 Montreal Street was performed by Caitlin Cameron, Urban Designer, Andrew Tufts, Planner, and Deb Andrews, Historic Preservation Program Manager. The project, because the lot is over 10,000 sf, was reviewed against the *Multiple-Family Standards* (City of Portland Design Manual).

The design review authority is with the Planning Board as part of the Level III Site Plan process with an advisory Historic Preservation review (within 100' of a historic district).

Design Review takes into consideration:

- Compatibility with surrounding buildings and general character of the established neighborhood
- Building type and use
- Unique characteristics of the site

The proposal is on a transitional site between a more recent context of Promenade Towers and MacArthur Gardens – two large/mid-scale apartment complexes –compared with the predominant, traditional fabric found a block away.

The predominant, character-defining elements of residential architecture in the neighborhood context include vertical proportion massing, simple roof forms, vertical windows with local symmetry, two or three-bay façade composition, and simple material palettes – predominantly clapboard with masonry foundation.

Design Review Comments (*red text denotes principles or standards that are not met, request for more information or questions*):

Please provide the following information:

- Neighborhood context plan that shows the footprint of this building compared with those in the surrounding blocks
- Renderings showing the building in context with adjacent buildings
- Material samples or examples

Multiple-Family Design Standards

- 1) *The exterior design . . . shall be designed to complement and enhance the nearest residential neighborhood. The design of exterior facades shall provide positive visual interest by incorporating appropriate architectural elements.*

The project exemplifies a single design expression in its massing, form, material application, and fenestration and articulation elements.

The overall massing and form of the building is a simple box with flat roof consistent with the simple forms and massing found in neighborhood multi-family buildings. The building has a clear primary and secondary façade – also a predominant characteristic of corner buildings in this context. Scale and visual interest are created through contemporary versions of bays and balconies and articulation elements such as a strong cornice line, window panel details, and balcony railings. These design elements are consistent with and complement the nearest residential neighborhood by referencing common patterns and elements while remaining a contemporary expression.

The roof form is a simple, consistent flat roof – typical of multi-family buildings and not complex. The rooftop appurtenances are centralized, set back from the roof edge and screened. The grade and location of the site is such that views to the roof are unlikely from the street or long views.

The project uses a simple material palette of shingle and panel applied consistently throughout the building creating a simple, cohesive design. This is typical of the context and staff agree this contributes to complementing and enhancing the neighborhood. The fine grain of the material is appropriate for a residential building and is compatible with the materials in this context. **Staff request more information about the accent material used on the bays – ideally, this material would have the same character and finish as the shingle but with a different texture, orientation and/or scale.**

Staff would also like more information about the stone proposed for the planters/terraces.

The façades generally relate to the context through the regular pattern/rhythm of windows; the window types are limited and placed in a regular rhythm consistent with the traditional residential buildings. The window patterns also help to distinguish the front and side facades; as the project turns the corner, the façade composition is appropriately treated as a more secondary façade. The introduction of bays on the front and side add massing variation, articulation, and scale in a way that is appropriate for residential character in this context and that creates balance in the facades.

The entrance should have an approachable, residential character. The entryway is oriented to the street and was revised to provide emphasis as well as a transitional porch-like space. The steps from the sidewalk creates a relationship of the entrance to the sidewalk similar to a residential stoop or porch. The canopy was revised to be more substantial than the bay window overhang and posts add to a residential porch character.

Stacked balconies typically are aligned with the façade plane. **The balconies extend beyond the roofline and façade plane and exacerbate the scale on the downhill side of the building.** Staff recommend that the balconies be pulled in closer to the building or aligned with the façade plane on the side façade to mitigate the scale impact of the building and create relationships similar to those found in the context. This is also important to not conflict with the angled bays now located on the side elevations. The Planning Board and public also commented on the looming aspect of the side/rear of the building which is exacerbated by the over-extended porches.

- 2) *The proposed development shall respect the existing relationship of buildings to public streets. New development shall be integrated with the existing city fabric and streetscape including building placement, landscaping, lawn areas, porch and entrance areas, fencing, and other streetscape elements.*

The building placement is consistent with residential structures in the neighborhood – placed near the street with a small setback with planted edge. The garage is set back from the street and accessible from a side drive minimizing the impacts of parking on the streetscape.

The building's primary frontage is oriented to Willis Street with Montreal Street treated as a clearly secondary façade. It is typical for the secondary façade to be the longer façade, on the sloping street, and without access points.

The landscape buffer between the building and the sidewalk is appropriate to provide privacy and transition between the public and private realms. The grade change on Montreal Street is challenging and steps/ramp with a retaining wall and planter areas.

The building interface was modified on Willis to create a more approachable and residential character to the relationship between the building and sidewalk. The configuration of planters, steps, and ramp help provide a sense of privacy and transition without feeling institutional.

- 3) *Open Space*

Open space is provided primarily through balcony and terrace spaces for each unit.

- 4) *Ample light and air*

Adequately met

- 5) *Parking shall be arranged and landscaped to properly screen vehicles from adjacent properties and streets.*

Parking for this project is structured below the building and accessed by a side driveway. This driveway is visually screened from the neighboring property with a retaining wall.

- 6) *Multi-family dwellings shall not be converted to lodging houses.*

Not applicable

To: Andrew Tufts, Planner, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: July 9, 2021

Subject: 33 Montreal Street– Munjoy Hill Neighborhood Conservation Overlay District

Section 8.7

Section 8.7 Munjoy Hill Neighborhood Conservation Overlay District- height bonus, requires developments of three or more units on lots over 2000 sf, with a building height of greater than 35' to a maximum of 45' in height, include at least one workforce housing unit for rent or for sale. The Workforce unit shall be no smaller than 50% of the average size of the other units in the development and only be sold or rented to a household at or below the applicable income levels. The workforce unit shall be deed restricted for affordability for the longest term possible under state and federal law.

The development at 33 Montreal Street proposes the creation of a building that triggers the maximum height requirement within the Munjoy Hill Neighborhood Conservation Overlay District. Based on the requirements outlined in Section 8.7 the Applicant is required to create a housing unit that is no smaller than 50% of the average size of the other units (or 853.96 sf). The Applicant has elected to provide Unit 14, a two-bedroom unit that is 1059.27 sf. As such, the project has met the minimum requirements set forth in Section 8.7.

Staff Recommendation

Staff recommends, should the Board Approve the Munjoy Hill Neighborhood Conservation Overlay District height density bonus, the Board require the Applicant and the City to enter into an Affordable Housing Agreement (AHA) for unit 14 located at 33 Montreal Street before a Building Permit may be issued.

The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the workforce unit and will be filed as a covenant to the 33 Montreal Street property deed with the Cumberland County Registry of Deeds before a certificate of occupancy may be issued.

Sincerely,

Victoria Volent
Housing Program Manager



Andrew Tufts <atufts@portlandmaine.gov>

Montreal Street

Richard Lo <richard@kaplanthompson.com>
 To: Andrew Tufts <atufts@portlandmaine.gov>
 Cc: Timothy Wells <Tim.wells@sjvproperties.com>

Tue, May 11, 2021 at 9:54 AM

Hi Andrew,

I am available for a call today before 3 pm, tomorrow after 1 pm, or Thursday between 1 pm & 3pm. Tim Wells may wish to join the call also.

We can use this zoom link:

<https://us02web.zoom.us/j/8481135256>

Meeting ID: 848 113 5256

One tap mobile +16465588656,,8481135256# US (New York)

FYI: The revised plans, elevations, & perspectives recently uploaded to the City e-plan portal (Architectural Drawings v3) include the following changes to the drawings previously provided to the City:

Willis St elevation:

- Posts added to the entry porch & the canopy has been widened - to define the entry porch better.
- Steps added between the entry porch & the exit door from the egress stair - to integrate the egress door with an entry path.
- Fascia color of the entry canopy is shown light gray, to be consistent with other fascias on the building.
- The left & right window bays now have a trim band at the top - to coordinate them better with the building cornice band.
- Building signage placement changed, to be better located within the facade composition.
- The termination of the entry step handrails Willis Street sidewalk has been simplified & improved.

Elevations in general:

- Projecting window bays added to the long side elevations - to give the elevations a stronger base-middle-top composition.
- Stepped composition of the bays relates to the composition of stepped site walls,
- Wedge shape of the bays relates to the recessed decorative panel below the typical double windows & directs views towards the eastern prom.
- Window spacing on each elevation tweaked by a few inches left or right in places - to improve elevation composition & consistency.
- Glazed transoms added to the exterior doors of the 4th floor decks - to improve elevation composition & consistency.
- Some windows on the lower 2 floors changed from double to single sashes - to improve elevation composition & consistency.
- Fascia color of the exterior decks has changed from dark bronze to light gray, to give the decks a visually lighter appearance.
- Paired columns shown at the decks facing Montreal Street (vs only one previously) - to visually connect better to the new Willis Street entry porch.
- Deck balustrades shown fixed to the deck fascia, rather than the deck flooring, to add small scale details & shadow lines to the facades.
- Exterior deck baluster post spacings adjusted.

Floor plans:

- Layout of basement service rooms adjusted (Mechanical Room moved to suit expected location of electric service entry point).

Regards,

- Richard

Richard Lo

ASSOCIATE

Kaplan Thompson Architects

102 Exchange Street, Portland, ME 04101

office: (207) 842-2888 x206

direct: (207) 536-4676

kaplanthompson.com

[Quoted text hidden]

37-33 Montreal Street

Neighborhood Meeting Comments

These are the comments collected at the Neighborhood Meeting to discuss the 37-33 Montreal Street Residences. The meeting was held Friday, September 13th at 5:30-6:45 PM at the East End Community School. Thirteen (13) neighbors attended along with Tim Wells, representing the development team, Jesse Thompson and Richard Lo from Kaplan Thompson Architects.

Kirsten Platt- “I don’t find it unpleasant looking. It will dwarf other houses. Portland has been late to the game in figuring out how we want to develop.”

Vana Carmona – “Good that it is smaller but it is still too large and tall to fit into neighborhood”

Peter Murray – “I am very happy with my house designed by the same architects. I know they are capable of good design but they need to work more on this. Design is improved in one sense and worse in another. The last design made an effort to fit in contextually with the separate entrance townhomes along Willis Street. Looks like a prison with an unbroken façade and uninteresting window rhythm along Montreal Street. Windows are too small. Neighboring houses are being restored all around and this is too big. Level III site plan and design standards requires it to meet the context surrounding it in 2 blocks.”

Jean McManamy – “Unlike many of my neighbors, I like modern buildings. I really like the metallic siding on the project on Lafayette Street (Marquis) and I like jumble of styles that add excitement to a neighborhood. But this project is institutional looking and lacks excitement. I don’t want another box but a really nice, different building like you find in Sweden or France. Why can’t you add more definition to the façade along Montreal Street, make the windows bigger and more interesting, put some curves into the building or a glass elevator shaft on the outside of the building. I am also concerned about where trucks will be parking and dust control during demolition to reduce the effects of lead paint, etc. into the air.

Doris Healey – I agree with Mr. Murray. This building has no charm and doesn’t belong in this neighborhood.

Ann Deutsch – “No matter how much you do it is still mass and volume”

Carol Conner - “ You have done gorgeous houses but I really hate this building. It looks institutional. At least there is more space between it and McArthur Gardens.”

Peg Hillman – “I like the front better than the side along Montreal Street. The Montreal Street side needs more relief.. You can’t leave it as one big surface. It is ugly. Adding a bay or two or some side balconies would do a great deal for the beauty of the building. It is just too flat and looks like an old mill building. Windows could be larger. Look too small. The side towards the E. Prom has some visual interest. I like the old version better with the entrance along Montreal and separate entrances along Willis Street.

Jean McManamy – “Balconies along the side where people could grow plants would be nice.”

Peg Hillman – “I like the wrap around balconies. They add character to the building.”

Vana Carmono – “If you walk your dog 6 days a week you would see that the Montreal Street side doesn’t work.”

37-33 Montreal Street

Neighborhood Meeting Comments

Ann Landsberg – “Looks like a cheap industrial building. Can’t you add curved lines? How about making the balconies with curves. How do you break up all the straight lines?”

Patricia Ryan – “ How do you incorporate more design elements that reference the neighborhood?”

Tim Baehr – “Why do architects design buildings that a kid could draw and that look like they were made with lego blocks?”

Jean McManamy – “These look like low income housing. I want people to come and want to live there. That says, “welcome”. People who will live there year round. It just doesn’t have that “Come Live Here” look.”

Ann Landsberg –“ Could you add different color courses of shingles? What can you do to the roof edge to add more interest?”

Vana Carmona – “ Landscaping goes in last and will be the first thing that the HOA will cut out of the budget and then the side gardens will be dirt and gravel.”

Ann Landsberg – “I like Peter’s house. Why can’t you add a steep pitched roof?”