

PLANNING BOARD

Tuesday, July 25, 2023 at 4:30 PM
Room 24 (Basement Level) and Zoom



MEMBERS

Brandon Mazer, Chair
Justin Barker, Vice Chair
Marphaen Chann
Sean Murphy
David Silk
Austin Smith
Maggie Stanley

The Planning Board will hold a hybrid meeting in Room 24, Basement Level City Hall. The public may attend the meeting in person or Zoom pursuant to the Remote Meeting Policy adopted by the Planning Board. Prior to the meeting, please check the Agenda Center (<https://portlandme.portal.civicclerk.com>) to view memos and reports which will be posted by the end of the day on the Friday before the Planning Board meeting as well as start times for each item as placement on the agenda can change.

To submit written public comment on an agenda item, email planningboard@portlandmaine.gov. Submissions must be received by 12:00 pm the day before the Planning Board meeting to guarantee their inclusion in the agenda packet. All submissions must include the commenter's name and legal address. To help ensure your comment is submitted for the correct item, please include the name of the agenda item (see below).

REMOTE PARTICIPATION

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Please click the link below to join the webinar:

You are invited to a Zoom webinar.

When: Jul 25, 2023 04:30 PM Eastern Time (US and Canada)

Topic: Planning Board Workshop and Public Hearing 7/25/2023

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Webinar ID: 844 7192 9949

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AGENDA:

WORKSHOP - 4:30 PM

- i. Major Site Plan and Conditional Use; 89 Elm Street; 89 Elm Street, LLC, Applicant. The Planning Board will hold a hybrid workshop to consider Phase 1 of the Bayside Master Development Plan (MDP); a proposal to develop an eight-story mixed-use development with ground-level retail and 201 affordable dwelling units. The subject property totals 38,007 square feet, is zoned B-3 Downtown Business and R-6 Residential, and is located within the Downtown Entertainment Overlay Zone (DEOZ). A project and plan summary are available for viewing on the city's CSS Portal (<https://css.portlandmaine.gov/>) by referencing Plan Number PL-002403-2023.

PUBLIC HEARING - 6:00 PM

1. **ROLL CALL AND DECLARATION OF QUORUM**
2. **COMMUNICATION AND REPORTS**
3. **REPORT OF ATTENDANCE AT THE MEETING HELD ON JULY 11, 2023**

Workshop

58 Fore Street: Barker, Chann, Mazer, Murphy, Silk, and Stanley present. Smith absent.

Public Hearing

1190 Brighton Ave: Barker, Chann, Silk, and Stanley present. Smith absent. Mazer and Murphy recused.

172 Bishop Street: Barker, Murphy, Silk, and Stanley present. Chann and Smith absent, Mazer recused.

4. **REPORTS OF DECISIONS AT THE MEETING HELD ON JULY 11, 2023**

- i. Public Hearing Agenda Amendment. Silk motioned, and Stanley seconded a motion to change the order of the public hearing items due to a potential issue of quorum for 1190 Brighton Avenue. Vote 4-0, Smith, Mazer and Murphy absent.
- ii. Subdivision Amendment Application; 1190 Brighton Avenue; Dirigo Center Developers LLC and Waterstone Properties Group, Inc., Co-Applicants. Stanley motioned, and Silk seconded a motion to approve the subdivision amendment for 1190 Brighton Avenue. Vote 4-0, Smith absent, Mazer and Murphy recused
- iii. Major Site Plan and Site Location of Development Application; 172 Bishop Street; University of New England, Applicant. Stanley motioned, and Silk seconded a motion to waive Technical Manual Standard 12.3.2, to permit an increased foot candle measurement of 10 fc, as opposed to the 4fc maximum permitted for new surface parking areas. Vote 4-0, Chann and Smith absent, Mazer recused. Stanley motioned, and Murphy seconded a motion to waive Technical Manual Standard 12.3.5, to permit a correlated color temperature of 4,000K, as opposed to the required 3,000K. Vote 4-0, Chann and Smith absent, Mazer recused. Stanley motioned, and Silk seconded a motion to waive Technical Manual Standard 1.10.2 to reduce the minimum driveway aisle width from 24 feet to 22 feet. Vote 4-0, Chann and Smith absent, Mazer recused. Stanley motioned, and Murphy seconded a motion to approve the Major Site Plan and

Site Location of Development applications. Vote 4-0, Chann and Smith absent, Mazer recused.

5. NEW BUSINESS

- i. Major Site Plan and Conditional Use; 25 Casco Street (48 Brown Street); Developers Collaborative, LLC & Equality Community Limited Partnership, Co-Applicants. The Planning Board will hold a hybrid public hearing to consider a proposal to develop a new mixed-use building with retail space and 54 residential units at 25 Brown Street (formerly 48 Brown Street). The development triggers inclusionary zoning, with all workforce units being proposed on-site. The subject property totals 38,968 square feet, is zoned B-3 Downtown Business, is located within the Downtown Entertainment Overlay Zone (DEOZ), and is located within the Congress Street Historic District. A project and plan summary are available for viewing on the city's CSS Portal (<https://css.portlandmaine.gov/>) by referencing Plan Number PL-002468-2023.

To: Members of the Portland Planning Board
From: Zach Powell, Senior Planner
Date: July 21, 2023
Re: 89 Elm Street (Phase 1a of Bayside Master Development Plan)
Applicant: 89 Elm, LLC
Project ID: PL-002403-2023
Meeting Date: July 25, 2023



Figure 1: Aerial Perspective View from Cumberland Avenue looking southwest with rendered elevations of the proposed building.

I. INTRODUCTION

89 Elm, LLC has submitted a Major Site Plan application to facilitate the construction of a ±162,000 square foot mixed-use building with 201 dwelling units and 3 commercial retail units totaling ±6,000 square feet. The proposed site plan is identified as Phase 1a of the Bayside Master Development Plan (MDP) (PL-002315-2022), which received unanimous approval from the Planning Board on [June 13, 2023](#). As part of the review of the site plan application, a Traffic Movement Permit (TMP) is being reviewed concurrently for Phases 1-2 of the MDP.

This report will highlight certain aspects of the development that are intended to be the focus of this first Planning Board workshop. These areas of focus include:

- Building & site design;
- Vehicular, bicycle, and pedestrian access to the site;
- Streetscape improvements, and
- Traffic Movement Permit application for Phases 1-2 of the Bayside MDP

The Planning and Urban Development Department mailed 65 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the July 14th and 18th editions of the *Portland Press Herald*.

Applicant: Michael Barton, 89 Elm Street, LLC

Representing Agent: Danielle McGowan & Sam Lebel, Acorn Engineering

II. REQUIRED REVIEWS

Review	Applicable Standards
Major Site Plan Review	Section 14.6
B-3 Design Review Standards	Design Manual & June 10, 2023 Master Development Plan Design Memorandum (Attachment 1)
Traffic Movement Permit (TMP)	Technical Manual Section 1.1
Increased Setback Granted Under June 13, 2023 MDP Approval	Applicable Standard
Sec. 7.3 – Table 7-E: Mixed-Use Zone Dimensional Standards – to vary the front setbacks on Lancaster Street up to 22 feet.	Sec. 7.3 – The maximum permitted front setback from all street frontages in the B-3 zone is 5 feet.

III. PROJECT DATA

Existing Zoning	B-3 Downtown Business, R-6 Residential, Downtown Entertainment Overlay		
Existing Use	Off-Street Parking (Surface) (132 automobile spaces) (12 bicycle spaces)		
Proposed Use	Multi-family dwelling	156,000 SF (201 units)	
	Retail Space	6,000 SF (3 units)	
	Surface Parking	33 spaces	
Property Size	42,976 SF (0.98 acres)		
	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	0 SF	24,000 SF	+24,000 SF
Building Floor Area	0 SF	162,000 SF	+162,000 SF
Automobile Parking Spaces	132 spaces	33 spaces	-99 spaces
Bicycle Parking Spaces	12 spaces	81 spaces	+69 spaces
Curb Cuts	8 (1 blocked)	3	-5 curb cuts
Trees in Streetscape	6	24	+18

IV. EXISTING CONDITIONS

The project site occupies almost half of a city block at 0.98 acres in area. The site is bounded to the north by Cedar Street, to the South by Elm Street, to the East by Oxford Street, and the West by Lancaster Street. Historically, the Bayside neighborhood has included several residential, commercial, and industrial uses, as its location was convenient to downtown and the former freight yard west of Somerset Street.

While **Figure 2** shows a significant number of residential dwellings in the project area in 1914, the neighborhood experienced a reduction in its residential population in the mid-to-late 20th century and has seen a significant change in both uses and physical form. As a result, the majority of the area formerly occupied by residential development has been converted into off-street surface

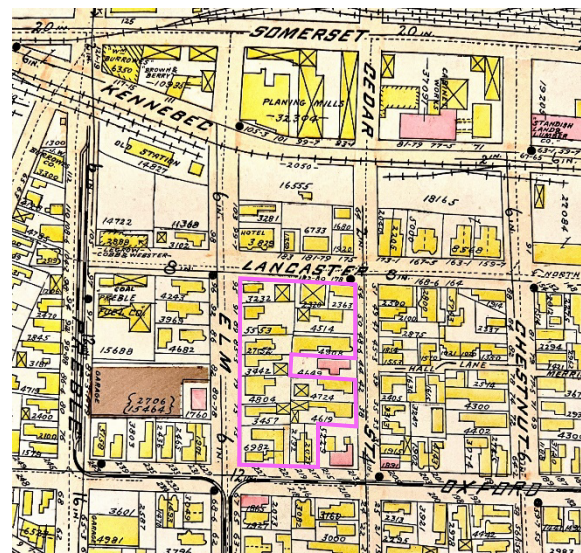


Figure 2: 1914 City Atlas with boundaries of project site shown in pink.

parking, while a number of residential structures outside of the project boundary remain along Cedar Street. Along with these changes, the rail-oriented industrial uses in the area led to soil contamination, which prompted brownfield remediation efforts by the City in the late 1990s and early 2000s. Today, the surrounding area includes a mixture of commercial, residential, and social services of varying scales.

The project site is proximate to public transit, with METRO PULSE at Elm Street (Downtown Transportation Center) located less than two blocks from the eastern boundary of the project site. METRO PULSE serves as a hub for Routes #2, #4, #5, #7, and the Husky Line begins and ends their routes. METRO bus route #8 currently runs along the southern boundary of the project site (Lancaster Street), with recommendations from [Transit Together](#) to re-route service outside the MDP boundary in the future.



Figure 3: Photo of the project site looking northeast at the intersection of Elm & Lancaster Street

Several City-owned open spaces can be found nearby that provide opportunities for active recreation (Kennedy Park) and passive recreation (Deering Oaks Park, Monument Square, and Stone Street Playground), as well as walking/biking trails (Bayside & Back Cove Trails).

V. BAYSIDE MASTER DEVELOPMENT PLAN

The submitted site plan application is Phase 1a of the Bayside Master Development Plan (MDP) (PL-002315-2022). The Bayside MDP consists of 8 phases and will include 804 total dwelling units and 28,200 square feet of commercial retail space.



Figure 4: Phasing Plan for the Bayside Master Development Plan (MDP)

Inclusionary Zoning

New residential projects totaling 10 or more residential units are subject to the City's Inclusionary Zoning (IZ) requirements, which requires that 25% of new units be workforce housing units, affordable to households earning 80% of the Area Median Income (AMI). However, §18.2.3.B. of the Land Use Code exempts certain residential projects receiving public financing or subsidy that stipulate affordability restrictions, such as an affordable housing TIF or use of the Low-Income Housing Tax Credit (LIHTC) program for example. As the project will be receiving funding from Maine Housing, the development at 89 Elm Street does not trigger inclusionary zoning requirements. This exemption effectively applies to projects that are already providing affordable housing that meets or exceeds the inclusionary zoning requirements.

As indicated during the Bayside MDP review, the applicant is seeking to satisfy the IZ requirements for each of the future market rate projects using the IZ off-site provisions, with the 201 affordable units proposed at 89 Elm Street being considered 'workforce units' for the 603 market rate units proposed as part of the overall MDP. The City's inclusionary zoning requirements allow the workforce units to be met on-site, off-site, or through contributions to the City's Jill C. Duson Housing Trust Fund, and each of the three modes to satisfy the requirements have been used since implementation. In the case of off-site workforce housing, the owner will be required to record a Workforce Housing Agreement in the chain of title for each property that outlines the terms of affordability.

Additionally, as part of fulfilling their intent to use units at 89 Elm Street to meet the workforce housing requirements at the time of site plan review for each future market project, the Applicant will have to:

- Identify which units in the 89 Elm Street building will be used to satisfy the workforce housing requirements
- Demonstrate how the units are comparable in quality and size to the market-rate units constructed in future phases
- Execute affordable housing agreements as part of the deeds for 89 Elm Street and each of the future sites.

Should the units at 89 Elm Street not be deemed to be comparable in quality or size, the Applicant would need to identify alternative units or renovate the units at 89 Elm Street to become comparable, provide the units on site of the market rate project under review, or pay a fee-in-lieu into the City's Jill C. Duson Housing Trust Fund.

As a 100% affordable housing project there is no conditional use application required, and no Board action required. When the first market rate housing application is brought before the Board as part of a future phase of the MDP, the Board will vote on whether the application is meeting the standards of sec. 18.2.3, Ensuring workforce housing.

VI. RIGHT, TITLE & INTEREST

The owner of the properties is 89 Elm, LLC, and has submitted deeds (**Attachment C**) as part of the Master Development Plan application that all three properties are under common ownership.

The submitted existing conditions survey (**P.3**) indicates the property has an existing utility easement with CMP and NET&T (**Attachment E**). Currently, the Applicant is in the process of investigating whether

relocation and/or burial of aboveground utilities can occur with CMP. The existing easement permits above-ground or buried utility lines.

Given the location of the building and proposed sidewalk being partially located on the project site, pedestrian access easements will need to be established as part of the site plan review.

Additional easements are noted in **Attachment E** for utility and access from other properties to 89 Elm Street and a drainage easement granted to the adjacent parcel is to be created at the southeastern corner of Cedar & Lancaster Streets.

VII. FINANCIAL & TECHNICAL CAPACITY

The Applicant has submitted a letter of financial capacity from Gorham Savings Bank (**Attachment G**) and supplied supporting information related to the technical capacity of the Applicant team (**Attachment H**).

VIII. PROPOSED DEVELOPMENT

The applicant is proposing to construct an eight story, mixed-use building with 201 dwelling units and approximately 6,000 square feet of retail space, distributed between three separate commercial retail units. The site straddles the B-3 (Downtown Business) and R-6 (Residential) zones, and the building will have a height of approximately 76.5 feet in the B-3 zone and 55 feet in the R-6 zone. To facilitate the development of the site, the applicant is proposing to modify the lot lines for three existing parcels (50 Cedar Street and 73 & 89 Elm Street) into two parcels, as shown in **Figure 6**. The proposed building will be located at 89 Elm Street and the remaining lot would serve as surface parking (Address & CBL to be established).



Figure 5: Rendering of building looking north at the intersection of Elm & Oxford Streets

Based on the change in grade and proposed site design, all three of the surface parking areas on the new lot shown in yellow will have separate curb cuts.

As part of the MDP, the Applicant aims to have Lancaster Street serve as a node. To serve this design, an expanded pedestrian amenity area along Lancaster Street has been included that is intended to be utilized as seating under an arcade (Figure 6).



Figure 6: Proposed lot modifications using shading with current lot lines shown to the left and proposed lot lines on the right.

IX. ZONING ANALYSIS

The site is encompassed by the B-3 (Downtown Business), R-6 (Residential), and the Downtown Entertainment Overlay Zone. Relevant sections of the B-3 and R-6 purpose statements are included below: Relevant sections of the B-3, and R-6 purpose statements are included below:

- B-3:** ... 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; ...
- R-6:** To set aside areas on the peninsula for housing characterized primarily by multi-family dwellings at a high density providing a wide range of housing for differing types of households; to conserve the existing housing stock and residential character of neighborhoods by controlling the scale and

external impacts of professional offices and other nonresidential uses; and to encourage new housing development consistent with the compact lot development pattern typically found on the peninsula.

The zoning dimensional requirements for both zones are intentionally permissive in this urban area, with a prioritization of creating denser, taller buildings that reinforce a street wall. Prioritization of the first 35 feet of building height, ground-floor building elements/features, and stepbacks in the R-6 zone emphasize the prioritization of the pedestrian realm.

As submitted, the Major Site Plan is consistent with zoning, including the B-3 and R-6 zone purpose statements, uses, and dimensional standards. The height of the building is regulated by the Bayside Height Map Overlay, which states that the maximum permitted height for the B-3 & R-6 portions of the site is 55 feet. However, the Applicant is proposing that 100% of the units will be low-income units at 60% of the Area Median Income (AMI). Per §18.2.4.A. of the Land Use Code, qualifying affordable housing projects are eligible to take advantage of zoning dimensional bonuses related to both building height and setbacks. Within commercial zones, a new residential building comprised of greater than 75% low-income units (Units with rents affordable to households making $\leq 80\%$ AMI) is eligible for a 25-foot height bonus. The Bayside Height Overlay Map permits a base maximum height of 55 feet within the B-3 portion of this site. This height bonus would permit 25 feet of additional height, or a maximum height of 80 feet. The maximum proposed height for the building is 76.5 feet.

As part of the June 13, 2023 hearing for the Bayside Master Development Plan, the Planning Board endorsed an expanded front setback of the building along Lancaster Street to permit up to a 22-foot front setback. The applicant is proposing that the setback area include outdoor seating and pedestrian amenities.

Further discussion of compliance with the Bayside MDP design memorandum, B-3 design standards, and multiple-family design standards is provided in Section X of this report.



Figure 7: Rendering of proposed arcade along Lancaster Street at the intersection of Elm & Lancaster Streets

X. TRAFFIC MOVEMENT PERMIT

The Applicant has submitted a Traffic Movement Permit (TMP) application for Phases 1-2 of the MDP. On May 8, 2023, a scoping meeting was held with notes from this meeting included in **Attachment 5**. Overall, feedback from that meeting included:

- Submitting information on all driveways for structured and surface parking
- Updating trip assignment to account for use of local roads and trips towards Cumberland Avenue until MaineDOT thresholds are no longer met
- Revisiting mode share based upon looking at individual uses, traffic data from new counts, and the understanding that demographics in the study area may be skewing the ACS survey.
- Accounting for nearby schools (Portland High School and Baxter Academy) in the traffic counts.
- Submitting parking calculations
- Ensuring trip assignment should reflect other parking areas and not just the garage.
- Revising internal capture for retail during the PM peak hour.
- Including a bike/ pedestrian facility analysis within 1/4 mile of the site per MaineDOT regulations.
- Expanding the study area to the area shown in **Figure 8**.

The TMP application is still under review by Consulting Traffic Engineer Tom Errico and comments on the TMP will be provided at a subsequent workshop, including comments related to the proposed two-way conversion of Oxford Street.



Figure 8: Study Area for Traffic Movement Permit in yellow, with Phases 1-2 sites shown in green.

XI. DESIGN REVIEW

A design review was completed on May 25, 2023, conducted by Sean King, Urban Designer, Maya Balassa, Planner, and Zach Powell, Senior Planner. Key comments from the Design Review Memorandum (**Attachment 2**) are included below:

- Conform with the Bayside MDP street typologies that increase the number of streetscape amenities, such as benches or seating walls, & usable urban open spaces beyond retail business operating hours
- Increased articulation along the length of façade bays to recess the upper floors and better delineate vertical materials to reduce the building scale or incorporate bays that project out along Elm Street.
- Expanding the sidewalk width to a six-foot minimum and including a crosswalk at the intersection of Elm & Lancaster Street
- Removal of tree wells in front of building entrances
- The proposed roof-top element at Lancaster & Elm Street is not integrated into the overall building composition and could be redesigned to be better integrated into the overall building design, and screen roof-mounted mechanical equipment.
- Façade-mounted HVAC equipment does not respect the surrounding residential context and the equipment should either be relocated to the roof or utilize an integrated window system for each unit that is less visible.

The Applicant submitted additional & updated application materials that:

- Increased the number of provided pedestrian amenities within the streetscape to better align with the MDP
- Provides a minimum six-foot sidewalk width, and
- Relocated tree wells to avoid conflicts with building entrances
- Provided a landscape plan (**P.36-40**) for the site, with accompanying renderings (**P. 41-44**)

Upon a second review of application materials, the following additional comments were provided by Urban Designer Sean King (**Attachment 3**):

- Restated requests from the May 25, 2023 Design Memorandum for:
 - Increased articulation along the length of façade bays to recess the upper floors and better delineate vertical materials to reduce the building scale or incorporate bays that project out along Elm Street.
 - Relocation/screening of façade- & roof-mounted mechanical equipment
 - Increased opportunities for open space to meet Multiple-Family design standards through spaces such as balconies, landscaping, or enhanced streetscape elements.
- Proposed tree wells along Oxford Street should align with the City's Technical Manual
- A decorative light pole will need to be provided along Oxford Street
- Pedestrian seating fixtures should use honed finish pedestrian seating
- Gateway signage should transition from a monument sign to a building-mounted sign
- Roof-mounted mechanical equipment screening should explore options, such as
 - Building design solutions to extend the parapet wall at facades visible from the surrounding streets
 - Consolidation of mechanical equipment to the special architectural element at the corner of Lancaster & Elm Streets

- o Enclosing mechanical equipment with a screening element that is setback from the roofline

The Applicant has provided documentation of the impact of dividing the building into two structures (Attachment X). Planning staff have not reviewed the document at the writing of this report, but will be discussed at the July 25, 2023 workshop.

XII. STAFF REVIEW

A. Site Plan Review Standards Section 14.6

Section 14.6 of the City's Land Use Code establishes standards under which Site Plan applications must be reviewed. Per this section, Site Plans shall adhere to the following requirements:

Section 14.6.1. Transportation Standards

A. Impact on Surrounding Street Systems

As mentioned in Section VIII of this memo, the site plan is one of the phases included in the current Traffic Movement Permit (TMP) under review. As part of this process, the applicant will assess the projected impacts on the surrounding street network and identify whether substantial congestion is anticipated as a result of the development. Overall, the project aims to reinforce and increase the use of alternative modes of transportation, and decrease congestion on streets. As part of this review, additional study will occur to determine appropriate safety measures for increased pedestrian & cyclist activity in the area, with four crashes happening along the project frontages from 2019-2021 based on MaineDOT data.

B. Access and Circulation

As part of the MDP approval, Consulting Traffic Engineer Tom Errico requested updated information on the proposed removals, upgrades, and additions of curb cuts to confirm compliance with Technical Manual standards, including, but not limited to, §1.5 (Driveway Design). The proposed site plan would take eight existing curb cuts and reduce them to three. §1.5.1.A. of the Technical Manual limits the number of driveways for sites under common ownership to two (2) combined. As of the writing of this report, a waiver request has not been submitted for the three proposed driveways.

During the review of the MDP, concerns were expressed by residents along Cedar Street based on the street width and capacity for solid waste collection. The Applicant submitted auto-turning templates for a 25-foot truck (**Attachment U**) that demonstrated sufficient access. Consulting Engineer Tom Errico has requested additional information about the private solid waste collection, given that the submitted 25-foot truck is shorter than traditional solid waste collection vehicles. Access and circulation will continue to be reviewed as part of the site plan and TMP applications.

The Department of Public Works has requested additional, dimensioned plan sheets related to streetscape improvements in the public right-of-way to understand impacts to the curb line, potential conflicts between car doors and street trees, and the ability for bicycle facilities along Elm Street. Along with these streetscape changes, draft sidewalk easements and maintenance agreements have been requested since some of the proposed frontages would have required pedestrian facilities primarily on private property and to create a cohesive approach through the review of all site plans in the Bayside MDP.

C. Public Transit Access

Staff Comment: The site is located less than ¼ mile from an existing transit shelter at METRO Pulse and is not required to provide a transit shelter on-site.

D. Parking

Vehicular parking minimums are being established for the site plan through a traffic study, which will be provided at a later date during the review of this site plan. As discussed during the TMP and MDP applications, current parking agreements for the existing surface parking on-site would extend throughout the development of the MDP, with 52 spaces being currently leased by Baxter Academy at the 89 Elm Street property; an agreement that was formalized as part of the site plan approval (2017-022) for the Baxter Academy relocation in 2017. Consulting Traffic Engineer Tom Errico has also noted that the existing parking spaces likely do not meet all of the dimensional requirements (Driveway width: 20-24 feet; Aisle width: 20 feet; and parking stall size: 9X18 feet) of §1.10 of the Technical Manual and the submission of dimensioned plan sheets have been requested to demonstrate compliance. Non-compliant spaces and aisles would require a revision to the application or submission of waiver requests. As of the writing of this report, waiver requests have not been submitted for modifications to the parking standards of the Technical Manual.

The project is meeting the minimum bicycle parking requirements of 80.4 bicycle parking spaces (201 residential units *.4 = 80.4) with 81 spaces provided within the building. Additional spaces are proposed within the right-of-way, which will be reviewed by the Department of Public Works.

Signage for five combination 30-minute & commercial loading spaces (3 on Lancaster Street and 2 on Elm Street) have been identified in the site plan set. The Parking Division and the Department of Public Works have requested additional information along the remainder of the site's frontages to ensure sufficient parking turnover, with a recommendation to match existing signage as 1- or 2-hour spaces.

The site plan identifies new electrical conduits that are being provided to enable future EV charging stations.

E. Transportation Demand Management

Staff Comment: The TDM plan was reviewed on May 17, 2023 by the City's Transportation Program Manager Bruce Hyman, who provided the following comments:

- *The Plan provides a good overview of the TDM-related transportation Context for the proposed development. It has all the required sections prescribed for the TDM Plans in the Technical Manual. I have the following larger context comments for the applicant, and likely have some further ones as well:*
 - *The TDM Plan does not address/include the two retail spaces that are located on the Lancaster and Oxford Street frontages - at a minimum the employees of the retail uses should be included in surveying/reporting.*
 - *The guidelines for TDM Plans were amended in November 2022 - the current draft doesn't follow key changes including doing away with vehicle trip and parking reduction targets, replaced by a focus on establishing and monitoring or mode share for TDM sites. The data/information on vehicle trips and parking can be useful in establishing and monitoring mode share but reduction targets for them are not required. An updated reporting form is available on the TDM Resource webpage that integrates the Mode Share Target Table.*
 - *For residential properties, it can be most beneficial to consider all trip-making rather than*

just commute trips. More explanation regarding what types of trips the Mode Split Targets apply to would be helpful (just peak hours, all day, etc.). My understanding is the baseline targets suggested are based on Journey to Work Data which is focused exclusively on Work Trips.

- o *It would be beneficial to have more commitments in terms of the TDM strategies that will be implemented such as the real-time display of transit arrival and support/sponsorship of bike share (bike station sponsorship, memberships, trip vouchers/reimbursements, etc.).*

The Applicant submitted an updated TDM plan on June 19th. In the second review, TDM Manager Bruce Hyman found that the updated plan & revisions meet the TDM Plan requirements in the Technical Manual.

Section 14.6.2. Environmental Quality Standards

A. Preservation of Significant Natural Features

Staff Comment: As a surface parking lot within a densely developed urban context, there are no significant natural features located on the subject property.

B. Landscape Preservation

Staff Comment: As a condition of the Master Development Plan, all proposed street tree removals are subject to final



Figure 9: Photo of pin oak tree looking south along Oxford Street.

review and approval during site plan reviews. City reviewers have requested additional information on the proposed removal of an existing street tree near the intersection of Elm & Oxford Streets. The Applicant submitted an assessment as part of **Attachment A1**, that provides the DBH (21") for the oak tree and reasoning for the removal, which is primarily supported by the encroachment on the existing sidewalk and the claim that the tree would not survive excavation efforts as part of the construction of the building. Upon review of the proposed removal, the Forestry Division provided the following comments:

The pin oak removal has some potential to be controversial for the neighborhood and would likely benefit from a more personalized update and coordination with neighborhood members. Forestry would strongly encourage pin oaks to be incorporated into street tree design ("Jefferson" cultivar), particularly as a replacement for Carpinus Caroliniana species (shown as "hornbeam" species in the plant schedule).

Forestry continues to review the proposed removal and will provide additional comments in a subsequent comment letter.

C. Site Landscaping and Buffers

Staff Comment: The northern portion of the site is subject to zoning setbacks as it is located in the R-6 zone and are required to provide a minimum of one shade tree or six plantings per 30 linear feet. The site has 352 feet of frontage within the R-6 zone and is required to provide 12 trees or 72 plantings. The proposed site

plan includes one existing tree, seven new trees, and 32 plantings, which exceeds the minimum required number of landscaping.

As part of the reconfiguration of the surface parking areas, additional screening will need to be installed to provide sufficient buffers between the parking areas and required setbacks/adjacent residential uses. A total of 33 parking spaces are located on the project site, with a requirement of 14 trees or 7 trees and 7 shrubs. As proposed 5 trees and six shrubs are located within landscaped areas immediately adjacent to the parking areas, which leaves an additional two trees and one shrub to be planted to meet the parking landscaping requirements.

The site is required to provide 201 street trees for the proposed multi-family requirement (1 street tree per dwelling unit), with the planting of 20 street trees proposed. Staff has requested confirmation of how the remaining 181 trees will be provided, either through alternative mechanisms or a fee in-lieu. As part of comments in **Attachment 6**, the Forestry Division has provided recommendations to improve the viability and maintenance of proposed trees and plantings, as well as the proposed silva cell systems that will provide street trees with increased soil volumes.

D. Water Quality, Stormwater Management, and Erosion Control

Staff Comment: Please refer to the review of §14.6.3.c. of the Land Use Code on the following page.

Section 14.6.3. Public Infrastructure and Community Safety Standards

A. Consistency with City Master Plans

Staff Comment: The submitted plan is consistent with City Council-approved master plans by:

- Increasing on-site stormwater detention to minimize flow rates to the Back Cove South Sewershed (**CSO Abatement Study, 1993**).
- Proposing the construction of dense housing proximate to Downtown and upgraded pedestrian facilities to promote walkability and connections to open space (**Peninsula Transit Plan, 2009**).
- Providing infill development within a transit-oriented location with pedestrian-oriented streets to make walking more inviting, and connection to bus routes, bike networks, and other mobility options easier to access to other parts of the city. Providing residential density as well as employment and job density that can support and drive transit ridership as well as walk-to-work opportunities (**One Climate Future, 2021**).

B. Public Safety and Fire Prevention

Staff Comment: The Applicant submitted **Attachment L**, which details the compliance of the design with the Technical Manual and Fire Department standards. As part of the letter, the Applicant noted that they are in the process of working with the Department of Public Works to establish an address for the new lot.

As currently submitted, the site plan does not include lighting along the pedestrian path on the northeastern side of the building, which provides access to the trash enclosure and surface parking area. While light trespass onto the neighboring residential property and adjacent new units is a consideration, Planning Staff encourage improvements such as lighted bollards or ground-mounted lighting to minimize impacts to abutters and light this space.

C. Public Utilities

Staff Comment: As part of the MDP, the Applicant worked with the Department of Public Works to establish increased on-site detention requirements for each site plan approval in order to add additional connections into the City's sewer infrastructure. Under this agreement, detained volumes would need to equal or exceed 1" inch of rainfall over the entire redeveloped area of the site, as well as the projected average 24-hour daily sanitary sewer flow for each development proposal.

The application was reviewed by the Department of Public Works and Consulting Stormwater Engineer Lauren Swett. Comments primarily focused on:

- Receiving additional information about the proposed offsite storm drain extension on Lancaster Street
- Provision of an erosion & sediment control plan, as well as backflow preventers
- Additional information on the design of the StormFilter and R-Tank sub-surface stormwater system
- Documenting utility installations and associated pavement repairs

An erosion & sediment control plan and backflow preventers were included in updated application materials, with references that other requested materials are still in the process of development and would be supplied further along in the review. Updated application materials were reviewed by the Department of Public Works and Lauren Swett who provided the following responses:

- *It is recommended that the proposed catch basin where the untreated flow enters the R-Tank have a 3' sump pump and be equipped with a trash guard type device to limit the migration of debris into the storage system.*
- *The Department of Public Works recommends the submission and approval of a plan and profile sheet for the proposed offsite storm drain extension on Lancaster Street be added as a condition of approval.*

The Applicant is proposing to provide exterior on-site trash & recycling storage outside of the northeastern portion of the building, with trash chutes internal to the building. City staff provided comments requesting information on the screening for the waste enclosure, recommended restrictions on the hours of collection given the proximity of existing and proposed residential units, as well as a recommendation to relocate access points for dumpsters to eliminate the need to travel around the exterior of the building to dispose of trash. The Applicant has submitted detail drawings for the dumpster enclosure (**P.9a**) and included restrictions on the hours of solid waste collection between 11:00 PM and 6:00 AM in **Attachment 11**.

Section 14.6.4. Site Design Standards

A. Massing, Ventilation, and Wind Impact

Staff Comment: Based on the proposed setbacks and massing, the proposed building will not impact the health or safety of abutting structures or result in unsafe wind conditions for occupants & visitors to the site. The proposed design of the building and continuation of the adjacent parcel for surface parking would continue to allow the neighboring residential properties to continue their use without diminution. As shown in **Figure 10**, the submitted renderings do not demonstrate how exhaust would be directed from adjacent residential properties from wall-mounted HVAC units or what screening techniques would be utilized for the

wall-mounted and roof-mounted mechanical equipment. The Applicant has stated in their response letter that screening methods are currently being explored.

B. Shadows

Staff Comment: A shadow study was submitted and reviewed under the Master Development Plan approval. Based on the location of the resulting shadows, the proposed structure would not result in negative impacts on adjacent open spaces, including the area of 163 Lancaster Street proposed to be converted into a public open space in Phase 5b of the MDP.



Figure 10: Rendering of interior portion of site with building-mounted and roof-mounted mechanical equipment

C. Snow and Ice Loading

Staff Comment: Snow storage for the site is proposed to be located on the northwestern side of the building and be collocated with a proposed bench seating area. Comments from City Staff raised questions about ensuring clearance for the adjacent pedestrian egress from the rear of the building, protection of the transformer, and the integrity of the stormwater sub-surface detention tank. The Applicant has revised the location of bollards around the transformer to ensure protection and responded that the sub-surface detention tank can accommodate H-20 loading (16,000 pounds of weight). While there is curbing separating the snow storage area from the pedestrian egress, confirmation is still requested on how egress will not be interrupted, along with understanding how the use as an open space for the site will be protected during inclement weather.

D. View Corridors

Staff Comment: Not applicable, since the site is not located along a view corridor.

E. Historic Resources

Staff Comment: The proposed development is not located within a locally designated historic district, or within 100 feet of a locally designated historic district or landmark. While the site is not within or proximate to locally designated historic districts, the site is adjacent to two structures predating the Great Fire of 1866 and has the potential of having buried portions of former structures located within or adjacent to the site. Buried portions of colonial and post-colonial period structures or built features located on the Portland Peninsula predating the Great Fire of 1866 are identified as local archaeological resources to be protected under §14.6.4.E.3. of the Land Use Code.

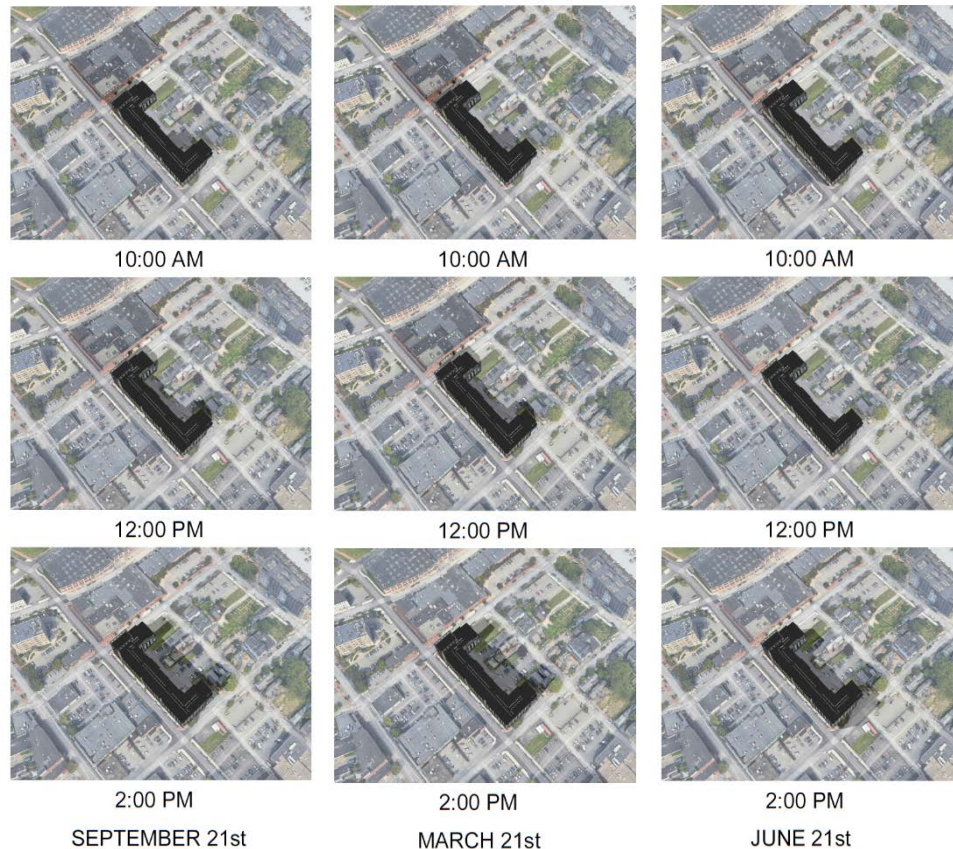


Figure 11: Shadow Study from Master Development Plan application, demonstrating that proposed shadows will not encroach onto any publicly accessible open space.

Given this potential, the following note was incorporated as Demolition Note #5 in **P.2a**:

Upon a finding of archaeological resources on the site, consultation with the City of Portland's Historic Preservation Program and the Maine Historic Preservation Commission is required to determine appropriate next steps.

F. Exterior Lighting

Staff Comment: The Applicant submitted a photometric plan on June 19, 2023 and it was reviewed by Planning staff, with comments provided as part of **Attachment 6**. Overall, updates to the photometric plan are required to reduce light trespass onto 44 Cedar Street, decreased maximum illumination throughout the site, and the installation of street lights along Cedar & Oxford Streets. Planning Staff are currently waiting for a response from the Applicant team to these comments.

G. Noise and Vibration

Staff Comment: Currently, the proposed mechanical equipment for the site would be located on the roof as well as the northern facades of the building, which are the closest location to abutting residential properties. Given the location of the façade-mounted HVAC units clash with the residential character of the surrounding area, Planning Staff have recommended the relocation of units or the use of building integrated units. Based on the response letter submitted by the Applicant team, the Applicant team is investigating alternative configurations.

Given the location of the proposed solid waste storage along the northern façade of the building and proximity to adjacent residential properties, City Staff requested that collection of solid waste not take place between 11:00 PM and 6:00 AM, which the Applicant has incorporated as part of the updated application materials (P.9a).

H. Signage and Wayfinding

Staff Comment: In accordance with the design memorandum for the Bayside Master Development Plan, the Applicant is required to submit a wayfinding and signage program specific to each site plan, with final approval on the location and design of signage to be determined by the Department of Public Works and the Zoning Administrator. As of the writing of this report, a program has not been submitted for the site plan application.



Figure 12: Gateway element at the corner of Elm & Oxford Street

As shown in **Figure 12**, some illustrative signage has been included as part of the landscape plan renderings for a monument sign in the City right-of-way, as well as blade signs along Lancaster Street for the two retail units.

Initial comments from Planning Staff recommended signage indicating the location of interior bicycle parking since it is not visible from the right-of-way. In response, the Applicant has proposed two bicycle racks at the intersection of Elm &

Lancaster Streets, identifying a potential location for bike share racks mid-block along Lancaster Street, and splitting the bicycle storage between both residential building entrances. Both of the proposed locations would require review and approval from the Department of Public Works.

I. Design Standards

Staff Comment: Please refer to the comments in Section X of this report.

XIII. NEIGHBORHOOD MEETING & PUBLIC COMMENT

As of the writing of this report, one written public comment has been received which expressed disapproval for the proposed plan to use the units at 89 Elm Street to meet the Inclusionary Zoning (IZ) requirements for site plans under the Bayside MDP. The Applicant held a Neighborhood Meeting on May 16, 2023 and 25 members of the public attended (**Attachment V**). Questions raised at the Neighborhood Meeting addressed the following topics:

- On- and off-street parking
- Changes in traffic circulation & volumes on Cedar & Oxford Streets
- Anticipated retail uses, and
- Affordability of units and use of units for IZ requirements of the Bayside MDP.

XIV. NEXT STEPS

- Address Board and Staff Comments, Including Comments Related to the Associated TMP
- Schedule a Subsequent Planning Board meeting.

XV. ATTACHMENTS

Staff Attachments

1. Bayside MDP Design Review Memorandum (June 10, 2023)
2. City Staff Design Review Memorandum (May 25, 2023)
3. City Staff Design Review Memorandum (June 26, 2023)
4. City Staff Comment Letter (May 17, 2023)
5. Traffic Movement Permit Scoping Meeting Notes (May 8, 2023)
6. City Staff Comment Letter (July 20, 2023)

Applicant's Documents

- A. Cover Letter
- A1. Response Letter 2023-06-19
- A2. Response Letter (Design) 2023-06-19
- B. Major Site Plan Checklist
- C. Right, Title, and Interest
- D. Zoning Analysis Table
- D1. Zoning Analysis Table 2023-06-19
- E. Easements
- F. Waiver Table
- G. Financial Capacity
- H. Technical Capacity
- I. Conformity with Land Use Ordinance
- I1. Conformity with Land Use Ordinance 2023-06-19
- J. Stormwater Management Report
- K. Erosion & Sedimentation Control
- L. Fire Department Letter
- M. Wastewater Capacity
- N. Lighting
- N1. Lighting 2023-06-19
- O. Architectural Design Narrative
- P. Utilities
- Q. Construction Management Plan
- Q1. Construction Management Plan 2023-06-19
- R. Solid Waste Disposal
- S. Parking Analysis
- T. TDM
- T1. TDM 2023-06-19
- U. Turning Template
- V. Neighborhood Meeting Minutes
- W. TMP Application
- W1. TMP Application – Additional Mode Share Data Memorandum
- X. Applicant Assessment of Splitting Building Into Two Structures

Plans

- P1. Cover Sheet & Legend
- P1a. Cover Sheet & Legend 2023-06-19
- P2. General Notes
- P2a. General Notes 2023-06-19
- P3. Topographic Survey
- P3a. Topographic Survey
- P4. Construction Management Plan
- P4a. Construction Management Plan 2023-06-19
- P5. Site Plan
- P5a. Site Plan 2023-06-19
- P6. Utility Plan
- P6a. Utility Plan 2023-06-19
- P7. Grading and Drainage Plan
- P7a. Grading and Drainage Plan 2023-06-19
- P8. Site Details-1
- P8a. Site Details-1 2023-06-19
- P9. Site Details-2
- P9a. Site Details-2 2023-06-19
- P10. Utility Details-1
- P10a. Utility Details-1 2023-06-19
- P11. Utility Details-2
- P11a. Utility Details-2 2023-06-19
- P12. Drainage Details-1
- P12a. Drainage Details-1 2023-06-19
- P13. Drainage Details-2
- P13a. Drainage Details-2 2023-06-19
- P14. Drainage Details-3
- P14a. Drainage Details-3 2023-06-19
- P15. Erosion Control Notes and Details
- P15a. Erosion Control Notes and Details 2023-06-19
- P16. Silva Cell Details 2023-06-19
- P17. Floor Plan – Floor 1
- P17a. Floor Plan – Floor 1 2023-06-19
- P18. Floor Plan – Floor 2
- P18a. Floor Plan – Floor 2 2023-06-19
- P19. Floor Plan – Floor 3
- P19a. Floor Plan – Floor 3 2023-06-19
- P20. Floor Plan – Floor 4
- P20a. Floor Plan – Floor 4 2023-06-19
- P21. Floor Plan – Floor 5
- P21a. Floor Plan – Floor 5 2023-06-19
- P22. Floor Plan – Floor 6
- P22a. Floor Plan – Floor 6 2023-06-19
- P23. Floor Plan – Floor 7
- P23a. Floor Plan – Floor 7 2023-06-19
- P24. Floor Plan – Floor 8

- P24a. Floor Plan – Floor 8 2023-06-19
- P25. Floor Plan – Roof
- P26. Elevations – South
- P26a. Elevations – South 2023-06-19
- P27. Elevation – North
- P27a. Elevation – North 2023-06-19
- P28. Elevation – East & West
- P28a. Elevation – East & West 2023-06-19
- P29. Sections
- P30. Rendering -1
- P31. Rendering -2
- P32. Rendering – 3
- P33. Rendering – 4
- P34. Rendering – 5
- P35. Rendering – 6
- P36. Landscape Material & Layout Plan
- P37. Landscape Planting Plan
- P38. Landscape Details -1
- P39. Landscape Details -2
- P40. Landscape Details -3
- P41. Landscape Rendering - 1
- P42. Landscape Rendering – 2
- P43. Landscape Rendering – 3
- P44. Landscape Rendering - 4

Public Comment

PC1: Kristina Minister

Design Review

Planning and Urban Development Department



Subject: 196 Lancaster Street – Master Development Plan
Zone: B3, B7 & R-6
Date of Review: Thursday, June 8, 2023
Reviewer(s): Sean King (Urban Designer), Zachary Powell (Senior Planner), Kevin Kraft (Deputy Director)
Project ID: PL-002315-2022

I. INTRODUCTION

The proposed Master Development Plan (MDP) is subject to the *Master Development Plan Standards of Review, Land Use Code Section 14.7.5*. Portions of the proposed MDP (315 Cumberland Avenue) are also within 100 feet of a historic district (Congress Street Historic District) and therefore will require an advisory review by historic preservation staff.

The proposed MDP is only reviewed according to the Master Development Plan criteria. In future Site Plan design reviews, the projects will be subject to the following guidelines in the City of Portland Design Manual:

- *B-3 Downtown Business Zone, Appendix 1;*
- *B-7 Bayside Mixed-Use Urban District Zone, Appendix 4;*
- *Two-family, special needs independent living units, multiple-family, lodging houses, bed and breakfasts and emergency shelters;*

II. DESIGN REVIEW COMMENTS:

Based on the resubmitted materials to date, staff have the following comments.

A. *Creation of a cohesive identity.*

A master development plan shall be designed to create a cohesive identity through building scale, massing, and articulation;

Staff comment: The proposed MDP is a collection of existing properties of various dimensions within the West Bayside neighborhood. Multiple zoning districts comprise the development area and the existing pattern of development contains large building footprints facing the street with multiple surface parking lots that the applicant proposes for infill development. In addition, smaller-scale residential buildings ranging between two- to three stories are concentrated along Cedar and Oxford streets.

The Bayside Height Overlay Map defines allowable building heights to indicate several blocks that require transitional heights to the surrounding residential neighborhood. The preservation of several existing structures shall inform the proposed infill development with transitions in building height, massing and articulation. At the perimeter of the MDP properties are residential buildings of lower heights to the east and west, and larger floor area buildings to the north.

The applicant has resubmitted plans and renderings to illustrate the proposed scale, massing and articulation of the master development plan that staff finds generally creates a cohesive identity. Staff finds the identity of street typologies as a critical unifying characteristic of the master development plan. As part of future site plan applications the Applicant should include effective building scale transitions through building stepbacks that respect existing building datum levels and that respond to the street typologies along Lancaster Street and Chestnut Street, contextual proportions of building elements and consistency of fenestration patterns that are compatible with the adjacent neighborhood. Buildings should also consider design techniques such as incorporating bays and projections to break up building facades.

In addition, Elm Street and Chestnut Street as neighborhood connector streets will be expected to engage gateway intersections to provide pedestrian-oriented ground floors with articulated building entries, canopies and special features.

Rooftop appurtenances, mechanical equipment and façade mounted utilities shall be integrated within the building design and/or screened to minimize views from adjacent properties.

Use of quality exterior material and architectural detailing at pedestrian scale;

Staff comment: The applicant has resubmitted plans and renderings to illustrate exterior materials with architectural detailing at a pedestrian scale. Staff finds the relationship of exterior materials to street typologies creates a stronger cohesive identity within the Bayside MDP.

The proposed buildings within the MDP shall be designed for pedestrian scale with active uses fronting the street that support the neighborhood and shall select exterior materials that are cohesive throughout each building in future Site Plan applications and reviews. Quality exterior materials shall include appropriate scale, articulation, transition, durability, visual interest and placement.

Buildings shall articulate architectural elements at the street and mid-block pedestrian connections to provide architectural detailing that demonstrates the perceived use of the building. These aspects will be reviewed with special attention to the ground floors and areas most visible to pedestrians. In Site Plan review the details should be reviewed to provide depth, articulation, visual interest, and quality transitions.

Consistency of design and materials for streetscape and pedestrian amenities;

Staff comment: The applicant has provided conceptual streetscape guidelines that include surface materials, trees and landscaping, lighting and pedestrian amenities in the furnishing zone that correspond to each street typology that staff finds to unify the master development plan. The Applicant has identified the following streets and pedestrian passages to promote connectivity, traffic calming, on-street parking, and amenities for pedestrians:

- o Shared Street (Lancaster Street between Preble Street & Elm Street) – Lower traffic demand and encourage appropriate traffic calming measures through enhanced crosswalks and signage. The Applicant has proposed eight foot sidewalk widths, a four foot

furnishing zone for street trees, landscaping, street lighting, articulated surface paving and seating.

- o Neighborhood Main / Commercial Corridor A (Lancaster Street) – The Applicant has proposed a unified material palette to include eight foot sidewalk widths, street trees and landscaping, street lighting, surface paving, enhanced crosswalks, signage and street furnishings.
- o Commercial Corridor B (Preble Street, Oxford Street & Cumberland Avenue) – The Applicant has proposed consistent streetscape materials to include six foot sidewalk widths, street trees and landscaping, street lighting and pedestrian amenities.
- o Neighborhood Connector (Elm Street, Kennebec Street, & Cumberland Avenue) – The Applicant has proposed consistent streetscape materials to include six foot sidewalk widths, street trees and landscaping, street lighting and pedestrian amenities. **Staff requires the applicant to update the Street Typologies diagram from the *Public Realm Design - L Series Exhibits* to include the eastern side of Kennebec Street in the MDP boundaries as a Neighborhood Connector.**
- o Mid-block Pedestrian Connections & Visual Connections through Buildings – The Applicant has proposed for mid-block permeability to allow for comfortable pedestrian passage and provide breaks in building lengths that exceed two-hundred feet.

The Applicant shall submit a wayfinding and signage program specific to each site plan review submission, as the master development plan does not imply approval of individual building designs and public realm improvements within the right of way.

Furthermore, the Applicant shall continue to coordinate with the City’s Parks Department on proposed improvements to ensure changes align with the ongoing Portland Tree Canopy Project in the Bayside neighborhood.

Framing of outdoor open space and linkages;

Staff comment: The proposed MDP indicates a quarter-mile radius from Elm Street and Lancaster Street for proximity to existing open spaces, including Deering Oaks, Monument Square, and the Bayside Trail, with smaller neighborhood open spaces and pocket parks less dispersed within the West Bayside neighborhood.

The applicant has resubmitted the Open Space Typologies diagram from the *Public Realm Design - L Series Exhibits* to illustrate the allocation of proposed open space within the Bayside MDP. Staff finds the major publicly accessible open space, linear parklet and expanded public sidewalk as linkages to existing open spaces outside the MDP boundaries to be appropriate.

A clear conveyance of the function and significance of various buildings, entrances, and features;

Staff comment: Existing buildings within the proposed MDP range in use from multi-family, office, retail, social and health services, education facilities and structured parking. The architectural character of existing buildings demonstrates street frontages at the public right of way with ground-level windows and pedestrian-scaled entrances. Existing services and surface parking are typically located towards the rear of properties, although several surface parking lots along frontages create voids that diminish the street wall. Primary entrances shall front the major streets and significant corner intersections shall demonstrate a clear architectural character.

The applicant has resubmitted plans and renderings to illustrate building function, use and entrances as primary building entry, parking entry, retail entry and existing building entry that staff finds provides clear conveyance as indicated in the Retail & Outdoor Dining Opportunities diagram from the *Public Realm Design - L Series Exhibits*.

And to generally comply with design and development standards of the zone in which it is located.

Staff Comment: In addition to the MDP review standards, the application will be reviewed for general compliance with design standards of the zone in which it is located including, B-3 Downtown Business Zone, Appendix 1; B-7 Bayside Mixed-Use Urban District Zone, Appendix 4; and Two-family, special needs independent living units, multiple-family, lodging houses, bed and breakfasts and emergency shelters. Future Site Plan applications, projects will be reviewed against relevant standards.

Staff has identified key design standards from each applicable zone that shall relate to the Master Development Plan to be applied during future Site Plan applications and reviews:

- B-3 Downtown Urban Design Guidelines – Relationship to Pedestrian Environment
 - Elm Street and Chestnut Street as neighborhood connector streets shall engage gateway intersections to provide pedestrian-oriented ground floors with articulated building entries, canopies and special features.B-3 Downtown Urban Design Guidelines – Relationship to Pedestrian Environment
- B-7 Mixed-Use Urban District Zone Design Principles and Standards – Standard E-2 Height
 - Lancaster Street shall include building stepbacks of fifteen feet above five stories when located at the street build to line or to provide a front setback of fifteen feet to include activation at the ground floor such as linear plaza, retail and building entries.

Design Review Planning and Urban Development Department



Subject: 89 Elm Street – Major Site Plan Review
Zone: B3
Date of Review: May 25, 2023
Design Review
Reviewer(s): Sean King (Urban Designer), Zach Powell (Senior Planner), Maya Balassa (Planner)
Project ID: PL-002403-2023

I. INTRODUCTION

The proposed major site plan application for 89 Elm Street is subject to the *Master Development Plan Standards of Review*, *Land Use Code Section 14.7.5* and design standards of the *City of Portland Design Manual*, *Land Use Code Section 14.6.4.I* to include:

- *B-3 Downtown Business Zone, Appendix 1;*
- *Two-family, special needs independent living units, multiple-family, lodging houses, bed and breakfasts and emergency shelters;*

The built context of the surrounding area contains a variety of building types, architectural styles and mix of uses that vary in height and proximity to the street typically found throughout Portland's Bayside neighborhood. Several zoning districts encapsulate the proposed development area and the existing pattern of development contains large building footprints facing the street with multiple surface parking lots.

II. DESIGN REVIEW COMMENTS: red text denotes standards not met and require resubmission.

Master development plan (MDP) design standards, land use ordinance section 14.7.5 is currently under review.

A. *Creation of a cohesive identity.*

A master development plan shall be designed to create a cohesive identity through building scale, massing, and articulation; - Met

Staff comment: The proposed development includes a new multi-family building at 89 Elm Street consistent with the approved MDP for building scale, massing and articulation. The proposed building is oriented to the street along three facades with massing variation through reductions in building heights toward the residential zone.

Use of quality exterior material and architectural detailing at pedestrian scale; - Met

Staff comment: The proposed exterior materials utilize brick with texture at the ground floor with storefront windows at the proposed retail use. Additional exterior materials include corrugated metal and metal panel siding separated horizontally with a pronounced belt course and vertically with recession on the façade plane.

Consistency of design and materials for streetscape and pedestrian amenities; - Not Met

Staff comment: The proposed development includes streetscape and pedestrian amenities through tree wells, lighting and concrete sidewalks. *Staff finds the proposed streetscape amenities shall correspond more closely with the MDP currently in review that align with specific street typologies.*

Framing of outdoor open space and linkages; - Not Met

Staff comment: Staff identifies linkages to existing open spaces in the surrounding neighborhood to contribute to the outdoor open space of the proposed development. *Staff recommends additional streetscape amenities to allow for pedestrian comfort. Examples may include paving distinction at building entries, fixed seating, street trees and additional planting on private property.*

A clear conveyance of the function and significance of various buildings, entrances, and features; - Met

Staff comment: The proposed building design conveys a clear function of building uses with distinction of retail through storefront windows, entrances and material articulation at a pedestrian scale from the residential function that is identified through window fenestration pattern, distinct entrances and organization of exterior materials.

And to generally comply with design and development standards of the zone in which it is located.

Staff comment: See B-3 design standards below.

The project at 89 Elm Street shall meet the following standards based on the B-3 Downtown Business Zone design standards in the City of Portland Design Manual, *Land Use Code Section 14.6.4.1 Design standards.*

I. Relationship to pedestrian environment

- A. *Distinguish the lower 35 feet of building facades: The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment. Factors to be considered include the design, placement, character and quality of the following – Not Met*

Staff comment: The exterior design along the street facing facades include a clear distinction in materiality with recessed portions that reinforce building entrances. *Staff finds the length of façade bays and pattern of windows to be compromised by the existing Elm Street slope and recommends further articulation to enhance the pedestrian environment (e.g. punched windows at the lower floors that extend to ground plane to allow for recessed planting areas or trellis system for vines).*

1. *Storefronts and building facades, including such factors as relationship to adjacent or nearby structures or open space, pedestrian character, materials and detailing, transparency (having a visible transmittance (VT) of .7 or higher) and contemporary design. – Not Met*

Staff comment: Storefront windows identify the retail use and building entrances to activate the street. **The applicant shall indicate that a VT of .7 or higher is met at the first 35 feet of the building façade.**

2. *Building entrances, including such factors as compatibility with the building's façade, prominence along the street, access to the street, and accessibility for physically handicapped or for those with special needs.* - **Met**

Staff comment: Building entrances are compatible and recessed from the primary building facades and articulated with glass panels, canopy and accessible stoops.

3. *Blank facades; and* - **Met**

Staff comment: Blank facades are minimized through variation in exterior materials and fenestration pattern throughout each street facing facade.

4. *Special features, such as selective use of such features as building arcades and skywalks or elevated walkways.* - **Met**

Staff comment: A proposed building arcade with brick structural supports and storefront windows along Lancaster Street creates a special feature at the corner of Elm and Lancaster Street.

B. *Pedestrian Activities District (PAD)*

Staff comment: Not applicable. The site is not located within the PAD or PAD encouragement area overlay district.

C. *Sidewalk areas and open space: The design of publicly accessible sidewalk areas and open space shall complement the general pattern of the downtown pedestrian environment, conform to special City of Portland streetscape programs described in the Technical Manual, and enhance the attractiveness, comfort, security, and usability of the pedestrian environment. Factors to be considered include the design, placement, character, durability, and quality of the following:*

1. *Sidewalk, crosswalk, and street paving materials;* - **Not Met**

Staff comment: Sidewalk areas in the proposed development include concrete surfaces, pole lighting, and tree wells. **Staff recommends adequate pedestrian passage of six-foot minimum based on applicant's proposal to activate the streetscape. In addition, staff recommends a crosswalk across Lancaster Street at the corner of Elm and Lancaster Street.**

2. *Landscaping, planters, irrigation, and tree guards and grates;* - **Not Met**

Staff comment: Tree wells are proposed, with the **applicant to provide a landscape plan with tree, plant material and irrigation for staff review. In addition, staff recommends removal of tree wells in front of building entrances to eliminate narrowing of sidewalk.**

3. *Lighting;* - **Met**

Staff comment: The proposed development indicates light locations within the right of way and specifies a municipal light fixture as Peninsula Medium street (Figure X-7B) per Technical Manual, section 10 standards.

- D. *Pedestrian amenities such as benches and other seating, trash receptacles, kiosks, bus shelters, artwork, directional and informational signage, fountains, and other special features; and - Met*

Staff comment: The proposed development has not included any pedestrian amenities as indicated in this design standard. Staff recommends the location of pedestrian amenities such as benches and other seating, trash receptacles and other special features be concentrated around building entrances and to enhance the streetscape experience.

- E. *Sidewalk vendors and sidewalk cafes.*

Staff comment: The proposed development includes opportunities for sidewalk cafes along Lancaster Street.

- F. *Urban open spaces.*

Staff comment: The proposed development would create a publicly accessible urban open space along Lancaster Street through setback beyond the street build-to line. Staff finds the provision for varied, high quality, creatively designed and comfortable amenities are not met and recommends additional streetscape elements that highlight entrances with a surface material change and fixed outdoor seating that is usable beyond retail business operating hours.

II. *Relationship to existing development*

- A. *Integrate with, respect and enhance: Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the downtown, surrounding building environment and streetscape, as described and illustrated in the Downtown Urban Design Guidelines (Appendix 1). Factors to be considered include the relationship to the following existing patterns:*

1. *Street walls and building setbacks;*

Staff comment: The proposed development creates a defined street wall and minimizes building setbacks to allow for pedestrian passage or public open space. Staff finds the front setback along Lancaster Street to activate the corner with street-level plaza and building atrium for outdoor seating is appropriate.

2. *Open space;*

Staff comment: The proposed development does not detract from existing open space and allows for pedestrian connection along sidewalks to access existing open spaces beyond the property's boundaries.

3. *Building form, scale and massing;*

Staff comment: The Bayside neighborhood is composed of a mixture of building typologies, heights, organization of blocks and street-level experience. Building form, scale and massing adjacent to the proposed development responds generally to parcel lot division and use; smaller lots are residential in scale while larger lots include either surface parking or large building footprints of moderate height.

The proposed development would infill existing surface parking with a large building footprint that would span the Elm Street frontage from Lancaster Street to Oxford Street. Existing street grades slope upward from Lancaster Street toward Oxford Street. The proposed development would step floors and heights towards Oxford Street and reduce heights towards adjacent residential buildings along Cedar Street that staff finds to be appropriate for massing variation. Additional massing variation include articulation of lower floors of a brick base with a belt course to delineate upper floors, recessed portions of the façade at building entrances and other planes of the exterior wall.

Staff recommends additional variation of the façade plane to recess the upper floors and vertical material delineation, at the charcoal metal panel, to reduce the building's scale.

4. *Façade proportion and composition;*

Staff comment: The proposed building design has a clearly identifiable three-part composition with appropriate articulation to define the building's base of a pedestrian scale, organization of fenestration pattern at the building's middle and change of material at the building's top. Staff finds the punched windows along the street facing facades to be appropriate and recommends further window recession at the lower floors where residential units are proposed to allow for additional privacy, plant screening at foundation walls and further articulate a pedestrian-scaled massing.

The proposed building includes a signature building roof-top element at the Lancaster and Elm Street intersection that staff finds is not integrated into the overall building's composition. Staff recommends a stepback of the signature building roof-top element to clearly define the parapet wall at the upper floor. Furthermore, applicant to clarify if this element is a rooftop appurtenance, which would allow for a consolidation of rooftop mechanical equipment and visual screening where voids are currently proposed. Staff finds the location of façade mounted HVAC equipment to not respect the surrounding residential context and recommends either relocation to roof or an integrated window system for each unit that is less visible.

5. *Pedestrian circulation and building entrances;*

Staff comment: Pedestrian circulation is maintained along the sidewalks with building entrances accessible at the street. Frequent building entrances are proposed along each of the building's façades for residents that are recessed with a pronounced canopy that is integrated into the building. Building entrances for retail use are deeply recessed and create street-level opportunities for outdoor seating that staff finds is appropriate.

6. *Parking,*

Staff comment: In general, any surface parking associated with the proposed development is located at the rear of the property.

7. *Areas within the downtown*

Staff comment: The proposed development would engage with the character of downtown by reinforcing the street wall, street facing building entrances, municipal light fixtures and street trees at a regular interval.

B. Standards for increasing setback beyond street build-to line: A proposed development may exceed maximum setbacks:

Staff comment: The proposed development increases setbacks beyond the street build-to line with exceptions to this pattern demonstrated as follow:

1. Open space and amenity: Lancaster Street would activate the setback beyond the street build-to line for outdoor eating space with supportive ground level retail and building entrance. In addition, Elm Street would accommodate for the addition of street trees, tree wells and sidewalk widths for appropriate pedestrian circulation.
2. Prevailing character and continuity: The placement of the building as an infill development does not substantially detract from the prevailing street wall character.
3. Support for existing open space: The development does not detract from existing publicly accessible open space with the majority of existing open space located several blocks from the property.
4. Quality and orientation: The location on the corner of Lancaster Street and Elm Street afford the highest solar exposure at the west elevation of the building.

III. Roof-top appurtenances

All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building,

Staff comment: The building design does not screen the proposed mechanical equipment located on the roof. Staff recommends the applicant explore:

- Building design solutions to extend the parapet wall at facades visible from the surround streets,
- Consolidation of mechanical equipment to the special architectural element at the corner of Lancaster and Elm Street, and
- Enclosing mechanical equipment with a screening element setback from the roofline.

IV. Shadow impact on open space

The location, massing and orientation of portions of buildings in excess of 65 feet in height shall be such that substantial shadow impacts on public plazas, parks, and other publicly accessible open space are avoided.

Staff comment: Not applicable. The proposed development is not adjacent to any existing publicly accessible open spaces.

V. Wind impacts

The location, massing, orientation and architectural design of a new building or a building addition shall be such that no significant adverse wind impacts are created.

Staff comment: Staff finds the combination of building setbacks, recessed building planes and other architectural elements, such as canopies and atriums assist to reduce wind impacts.

VI. Setback from existing structures

The location and design of proposed structures shall not create a detrimental impact on the structural integrity or safety of adjacent structures or the safety of occupants thereof.

Staff comment: Not applicable. The proposed development would not be constructed at the property line and would not burden adjacent properties.

VII. Building tops

Buildings or structures which exceed one hundred fifty feet in height shall be designed so as to provide a distinctive top to the building which visually conveys a sense of interest and vertical termination to the building.

Staff comment: Not applicable. The proposed development does not exceed one hundred fifty feet.

VIII. View corridors, visual landmarks and gateways

The placement and massing of proposed development shall not substantially obstruct public views to landmarks and natural features from those locations identified on the View Corridor Protection Plan.

Staff comment: Not applicable. The proposed development is not within a view corridor, visual landmark or gateway location.

IX. Signage / Awnings / Canopies

Staff comment: Staff finds the design, placement, location and number of signs to be appropriate for the residential building entrances and retail uses as mounted to the building elements at a pedestrian scale.

MULTIPLE-FAMILY STANDARDS. Multiple-family shall meet the following standards:

1. *The exterior design of the proposed structure, shall be designed to complement and enhance the nearest residential neighborhood.*

Staff comment: The proposed development is located in the B-3 Downtown Business zone and is adjacent to the B-7 Bayside neighborhood with comparable mid-rise residential buildings that include the Schlotterbeck and Foss building and 75 Chestnut Street building. The proposed multi-family building includes architectural elements that enhance a residential character through the façade material of brick and horizontal siding and window pattern.

2. *The proposed development shall respect the existing relationship of buildings to public streets.*

Staff comment: The proposed development is located within close proximity to the street and includes streetscape elements for pedestrian with building entrances facing the street.

3. *Open space on the site for all multiple-family development shall be integrated into the development site.*

Staff comment: The proposed development includes open space within the building setbacks areas that encourage active street usage. **Staff finds the amount of open space to be limited based on the amount of residential units, and recommends the applicant integrate additional open space such as balconies for residents, landscaping or enhanced streetscape elements.**

4. *The design of proposed dwellings shall provide ample windows to enhance opportunities for sunlight and air in each dwelling in principle living areas and shall also provide sufficient storage areas.*

Staff comment: Staff finds the proposed multi-family overall provides ample windows and sufficient interior storage for each residential unit.

5. *The scale and surface area of parking and driveways and paved areas are arranged and landscape to properly screen vehicles from adjacent properties and streets.*

Staff comment: Not applicable. Existing surface parking to remain.

6. *Multiple-family dwellings shall not be converted to lodging houses unless all units in building have been vacant for at least one (1) year.*

Staff comment: Not applicable

Design Review

Planning and Urban Development Department



Subject: 89 Elm Street – Major Site Plan Review
Zone: B3
Date of Review: June 26, 2023
Design Review
Reviewer(s): Sean King (Urban Designer), Zach Powell (Senior Planner), Maya Balassa (Planner)
Project ID: PL-002403-2023

I. INTRODUCTION

The proposed major site plan application for 89 Elm Street is subject to the *Master Development Plan Standards of Review*, *Land Use Code Section 14.7.5*, and design standards of the *City of Portland Design Manual*, *Land Use Code Section 14.6.4.I* to include:

- *B-3 Downtown Business Zone, Appendix 1;*
- *Two-family, special needs independent living units, multiple-family, lodging houses, bed and breakfasts, and emergency shelters;*

The built context of the surrounding area contains a variety of building types, architectural styles, and a mix of uses that vary in height and proximity to the street typically found throughout Portland's Bayside neighborhood. Several zoning districts encapsulate the proposed development area and the existing pattern of development contains large building footprints facing the street with multiple surface parking lots.

II. DESIGN REVIEW COMMENTS: red text denotes standards not met and require resubmission.

Master development plan (MDP) design standards, land use ordinance section 14.7.5 is currently under review.

A. *Creation of a cohesive identity.*

A master development plan shall be designed to create a cohesive identity through building scale, massing, and articulation; - Met

Staff comment: The proposed development includes a new multi-family building at 89 Elm Street consistent with the approved MDP for building scale, massing, and articulation. The proposed building is oriented to the street along three facades with massing variation through reductions in building heights toward the residential zone.

Use of quality exterior material and architectural detailing at pedestrian scale; - Met

Staff comment: The proposed exterior materials utilize brick with texture at the ground floor with storefront windows for the proposed retail use. Additional exterior materials include corrugated metal and metal panel siding separated horizontally with a pronounced belt course and vertically with recession on the façade plane.

Consistency of design and materials for streetscape and pedestrian amenities; - Met

Staff comment: The resubmitted plans for the proposed development include streetscape and pedestrian amenities within a furnishing zone with street trees in tree wells, lighting, and brick pavement that respond to the approved master development plan (MDP). A minimum six-foot concrete sidewalk is proposed throughout by way of a public access easement onto private property.

Framing of outdoor open space and linkages; - Met

Staff comment: Staff identifies linkages to existing open spaces in the surrounding neighborhood to contribute to the outdoor open space of the proposed development. The resubmitted plans for the proposed development include an expanded furnishing zone with pedestrian amenities and an accessible concrete sidewalk to connect to adjacent outdoor open spaces.

A clear conveyance of the function and significance of various buildings, entrances, and features; - Met

Staff comment: The proposed building design conveys a clear function of building uses with the distinction of retail through storefront windows, entrances, and material articulation at a pedestrian scale from the residential function that is identified through window fenestration pattern, distinct entrances, and organization of exterior materials.

And to generally comply with design and development standards of the zone in which it is located.

Staff comment: See B-3 design standards below.

The project at 89 Elm Street shall meet the following standards based on the B-3 Downtown Business Zone design standards in the City of Portland Design Manual, ***Land Use Code Section 14.6.4.1 Design standards.***

I. Relationship to pedestrian environment

- A. *Distinguish the lower 35 feet of building facades: The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment. Factors to be considered include the design, placement, character and quality of the following – Not Met*

Staff comment: The exterior design along the street-facing facades include a clear distinction in materiality with recessed portions that reinforce building entrances. *Staff finds the length of façade bays and pattern of windows to be compromised by the existing Elm Street slope and recommends further articulation to enhance the pedestrian environment (e.g. punched windows at the lower floors that extend to the ground plane to allow for recessed planting areas or trellis system for vines).*

1. Storefronts and building facades, including such factors as relationship to adjacent or nearby structures or open space, pedestrian character, materials and detailing, transparency (having a visible transmittance (VT) of .7 or higher) and contemporary design. – **Met**

Staff comment: Storefront windows identify the retail use and building entrances to activate the street. The applicant has indicated a VT of .7 or higher on the storefront window throughout the proposed development.

2. Building entrances, including such factors as compatibility with the building's façade, prominence along the street, access to the street, and accessibility for physically handicapped or for those with special needs. - **Met**

Staff comment: Building entrances are compatible and recessed from the primary building facades and articulated with glass panels, canopy, and accessible stoops.

3. Blank facades; and - **Met**

Staff comment: Blank facades are minimized through variation in exterior materials and fenestration patterns throughout each street-facing facade.

4. Special features, such as selective use of such features as building arcades and skywalks or elevated walkways. - **Met**

Staff comment: A proposed building arcade with brick structural supports and storefront windows along Lancaster Street creates a special feature at the corner of Elm and Lancaster Street.

B. *Pedestrian Activities District (PAD)*

Staff comment: Not applicable. The site is not located within the PAD or PAD encouragement area overlay district.

C. *Sidewalk areas and open space: The design of publicly accessible sidewalk areas and open space shall complement the general pattern of the downtown pedestrian environment, conform to special City of Portland streetscape programs described in the Technical Manual, and enhance the attractiveness, comfort, security, and usability of the pedestrian environment. Factors to be considered include the design, placement, character, durability, and quality of the following:*

1. Sidewalk, crosswalk, and street paving materials; – **Met**

Staff comment: Concrete sidewalks in the proposed development include a minimum of a six-foot walkway for adequate pedestrian passage. The resubmitted plans include a crosswalk across Lancaster Street at the corner of Elm and Lancaster Street that staff finds appropriate.

2. Landscaping, planters, irrigation, and tree guards and grates; – **Not Met**

Staff comment: Street trees and tree wells are proposed within a furnishing zone, **Staff finds the proposed corten raised planter detail at Oxford Street is not appropriate within the City's right-of-**

way due to maintenance concerns, Staff recommends a typical tree well detail per technical manual, section 4.

3. Lighting; - **Not Met**

Staff comment: The proposed development indicates light locations within the right of way and specifies a municipal light fixture as Peninsula Medium street (Figure X-7B) per Technical Manual, section 10 standards. However, the Applicant shall add a decorative light pole and fixture along the building frontage on Oxford Street.

- D. *Pedestrian amenities such as benches and other seating, trash receptacles, kiosks, bus shelters, artwork, directional and informational signage, fountains, and other special features; and – **Not Met***

Staff comment: The resubmitted plans for the proposed development include pedestrian amenities for bench seating, trash receptacles, and signage, staff finds the proposed wood seat top insert (detail 08 tree well type 3 / L3) Elm & Lancaster Street is not appropriate within the City's right-of-way due to maintenance concerns. Staff recommends a honed finish for comfortable seating. In addition, Staff finds the gateway sign at Elm and Oxford Street is restricted within the public right-of-way per LUC 20.6.1, staff recommends a building-mounted sign as the gateway sign.

- E. *Sidewalk vendors and sidewalk cafes.*

Staff comment: The proposed development includes opportunities for sidewalk cafes along Lancaster Street.

- F. *Urban open spaces.*

Staff comment: The proposed development would create a publicly accessible urban open space along Lancaster Street through setbacks beyond the street build-to line and appropriate streetscape amenities to provide street trees, seating, and furnishings.

II. *Relationship to existing development*

- A. *Integrate with, respect and enhance: Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the downtown, surrounding building environment and streetscape, as described and illustrated in the Downtown Urban Design Guidelines (Appendix 1). Factors to be considered include the relationship to the following existing patterns:*

1. *Street walls and building setbacks;*

Staff comment: The proposed development creates a defined street wall and minimizes building setbacks to allow for pedestrian passage or public open space. Staff finds the front setback along Lancaster Street to activate the corner with a street-level plaza and building atrium for outdoor seating is appropriate.

2. Open space;

Staff comment: The proposed development does not detract from existing open space and allows for pedestrian connection along sidewalks to access existing open spaces beyond the property's boundaries.

3. Building form, scale and massing;

Staff comment: The Bayside neighborhood is composed of a mixture of building typologies, heights, organization of blocks, and street-level experience. Building form, scale, and massing adjacent to the proposed development responds generally to parcel lot division and use; smaller lots are residential in scale while larger lots include either surface parking or large building footprints of moderate height.

The proposed development would infill existing surface parking with a large building footprint that would span the Elm Street frontage from Lancaster Street to Oxford Street. Existing street grades slope upward from Lancaster Street toward Oxford Street. The proposed development would step floors and heights towards Oxford Street and reduce heights towards adjacent residential buildings along Cedar Street that staff finds to be appropriate for massing variation. Additional massing variation include articulation of lower floors of a brick base with a belt course to delineate upper floors, recessed portions of the façade at building entrances, and other planes of the exterior wall.

4. Façade proportion and composition;

Staff comment: The proposed building design has a clearly identifiable three-part composition with appropriate articulation to define the building's base of a pedestrian scale, organization of the fenestration pattern at the building's middle, and change of material at the building's top. Staff finds the punched windows along the street-facing facades to be appropriate and *recommends further window recession at the lower floors where residential units are proposed to allow for additional privacy, plant screening at foundation walls, and further articulate a pedestrian-scaled massing.*

The proposed building includes a signature building roof-top element at the Lancaster and Elm Street intersection that staff finds is not integrated into the overall building's composition. Staff recommends a setback of the signature building roof-top element to clearly define the parapet wall at the upper floor. Furthermore, applicant to clarify if this element is a rooftop appurtenance, which would allow for a consolidation of rooftop mechanical equipment and visual screening where voids are currently proposed. Staff finds the location of façade mounted HVAC equipment to not respect the surrounding residential context and recommends either relocation to roof or an integrated window system for each unit that is less visible.

5. Pedestrian circulation and building entrances;

Staff comment: Pedestrian circulation is maintained along the sidewalks with building entrances accessible at the street. Frequent building entrances are proposed along each of the building's façades for residents that are recessed with a pronounced canopy that is integrated into the

building. Building entrances for retail use are deeply recessed and create street-level opportunities for outdoor seating that staff finds is appropriate.

6. *Parking,*

Staff comment: In general, any surface parking associated with the proposed development is located at the rear of the property.

7. *Areas within the downtown*

Staff comment: The proposed development would engage with the character of downtown by reinforcing the street wall, street-facing building entrances, municipal light fixtures, and street trees at a regular interval.

B. *Standards for increasing setback beyond street build-to line: A proposed development may exceed maximum setbacks:*

Staff comment: The proposed development increases setbacks beyond the street build-to line with exceptions to this pattern demonstrated as follows:

1. Open space and amenity: Lancaster Street would activate the setback beyond the street build-to line for outdoor eating space with supportive ground-level retail and building entrances. In addition, Elm Street would accommodate the addition of street trees, tree wells, and sidewalk widths for appropriate pedestrian circulation.
2. Prevailing character and continuity: The placement of the building as an infill development does not substantially detract from the prevailing street wall character.
3. Support for existing open space: The development does not detract from existing publicly accessible open space with the majority of existing open space located several blocks from the property.
4. Quality and orientation: The location on the corner of Lancaster Street and Elm Street affords the highest solar exposure at the west elevation of the building.

III. *Roof-top appurtenances*

All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building,

Staff comment: *The building design does not screen the proposed mechanical equipment located on the roof. Staff recommends the applicant explore:*

- *Building design solutions to extend the parapet wall at facades visible from the surrounding streets,*
- *Consolidation of mechanical equipment to the special architectural element at the corner of Lancaster and Elm Street, and*
- *Enclosing mechanical equipment with a screening element setback from the roofline.*

IV. Shadow impact on open space

The location, massing and orientation of portions of buildings in excess of 65 feet in height shall be such that substantial shadow impacts on public plazas, parks, and other publicly accessible open space are avoided.

Staff comment: Not applicable. The proposed development is not adjacent to any existing publicly accessible open spaces.

V. Wind impacts

The location, massing, orientation and architectural design of a new building or a building addition shall be such that no significant adverse wind impacts are created.

Staff comment: Staff finds the combination of building setbacks, recessed building planes, and other architectural elements, such as canopies and atriums assist to reduce wind impacts.

VI. Setback from existing structures

The location and design of proposed structures shall not create a detrimental impact on the structural integrity or safety of adjacent structures or the safety of occupants thereof.

Staff comment: Not applicable. The proposed development would not be constructed at the property line and would not burden adjacent properties.

VII. Building tops

Buildings or structures which exceed one hundred fifty feet in height shall be designed so as to provide a distinctive top to the building which visually conveys a sense of interest and vertical termination to the building.

Staff comment: Not applicable. The proposed development does not exceed one hundred fifty feet.

VIII. View corridors, visual landmarks and gateways

The placement and massing of proposed development shall not substantially obstruct public views to landmarks and natural features from those locations identified on the View Corridor Protection Plan.

Staff comment: Not applicable. The proposed development is not within a view corridor, visual landmark or gateway location.

IX. Signage / Awnings / Canopies

Staff comment: Staff finds the design, placement, location and number of signs to be appropriate for the residential building entrances and retail uses as mounted to the building elements at a pedestrian scale.

MULTIPLE-FAMILY STANDARDS. Multiple-family shall meet the following standards:

1. *The exterior design of the proposed structure, shall be designed to complement and enhance the nearest residential neighborhood.*

Staff comment: The proposed development is located in the B-3 Downtown Business zone and is adjacent to the B-7 Bayside neighborhood with comparable mid-rise residential buildings that include the Schlotterbeck and Foss building and 75 Chestnut Street building. The proposed multi-family building includes architectural elements that enhance a residential character through the façade material of brick and horizontal siding and window pattern.

2. *The proposed development shall respect the existing relationship of buildings to public streets.*

Staff comment: The proposed development is located within close proximity to the street and includes streetscape elements for pedestrians with building entrances facing the street.

3. *Open space on the site for all multiple-family development shall be integrated into the development site.*

Staff comment: The proposed development includes open space within the building setback areas that encourage active street usage. *Staff finds the amount of open space to be limited based on the number of residential units, and recommends the applicant integrate additional open space such as balconies for residents, landscaping, or enhanced streetscape elements.*

4. *The design of proposed dwellings shall provide ample windows to enhance opportunities for sunlight and air in each dwelling in principal living areas and shall also provide sufficient storage areas.*

Staff comment: Staff finds the proposed multi-family overall provides ample windows and sufficient interior storage for each residential unit.

5. *The scale and surface area of parking and driveways and paved areas are arranged and landscaped to properly screen vehicles from adjacent properties and streets.*

Staff comment: Not applicable. Existing surface parking to remain.

6. *Multiple-family dwellings shall not be converted to lodging houses unless all units in building have been vacant for at least one (1) year.*

Staff comment: Not applicable



Consulting Traffic Engineer

- This project is a phase within the Bayside Master Plan, which is currently under review for a Traffic Movement Permit. A traffic study will be prepared in association with the TMP. The applicant should confirm that this project does not meet the threshold for a TMP as an individual project.
- The site plan is maintaining a driveway on Lancaster Street west of Cedar Street. The plan shall include a layout of the parking lot. The applicant shall confirm that this driveway meets city corner clearance requirements.
- The plan shall include improvements to the curb cut for the southerly parking lot located on Cedar Street.
- Dimensions shall be provided for the existing parking lots off Cedar Street including driveway width, aisle width, and parking stall size.
- The applicant shall provide turning template graphics for movements into and out of the Cedar Street parking lots for the design vehicle. A turning template graphic shall be provided for on-site truck movements.
- The project will be providing three driveways and therefore the applicant shall provide supporting documentation on a waiver from city standards of §1.5.1.A. of the Technical Manual.
- The applicant shall provide documentation that the current surface parking spaces are not associated with an existing project site plan approval. Also, the applicant shall provide information on how the site parking lots will be managed.
- Pedestrian access easements will be required along the project frontage in some areas.

Fire

At this time, Planning staff has not received comments from the Fire Department for this application. While no comments have been received, this does not result in a de facto approval from the Fire Department. Contact Captain Jason Grant (jgrant@portlandmaine.gov) to confirm if any additional modifications need to be made to meet the City's Fire Code.

Forestry

Comments included below previously provided in May 3rd comment letter for Bayside MDP.

Site Plan

- For street trees at intersection locations with bump out or widened sidewalk conditions, consider creating a larger planting bed for street trees at those locations, keeping in mind safe sight triangles/lines, generous circulation and room for ramps / tip downs and street utilities / furnishings, and building egress points.
- At the intersection of Oxford and Elm, by the corner building entrance and at retail entrance location, and

at Elm side entry: Street tree locations appear to be close to entrances and might create conflict with circulation. Ensure that any circumstances with trunks, low branching etc. do not block entry ways or unreasonably alter signage / preserve a degree of effective recognition of retail space from the outdoor environment.

- In the parking area and around building foundations, ensure native landscaping selections in planting areas adhere to Technical Manual requirements in Chapter 4, and provide screening from headlights and other off-site lighting or visual intrusion into lower building units, particularly in adjacent parking areas.

Grading Plan

- Provide additional information on the intended use of the stairwell on the east (back) side of building along central access drive? If this stair well is providing informal access for residents, between the parking lot and internal units, consider landing grade and cross slope in relation to drive slope. Allow for egress from building to connect with a striped pedestrian route along drive to upper and lower lot areas if sidewalk or more formal walk material is infeasible.
- Ensure compliance with the standards of Chapter 4, Section 4.5.2 of the Technical Manual for screening along parking lot edges with abutting neighbors is followed. Please also ensure consideration is given to views from building into parking lots or adjacent properties. Please show proposed plantings / landscape screening for the lower parking area, particularly along the walk edge and along the shared property lines with 44 Cedar Street.
- Confirm whether the lower parking area will be connected with the drive aisle / loading dock corridor. Callout references detail inset, but corresponding inset is not shown on the plan. Please clarify circulation intent here.
- The landscape / site condition at upslope entry of delivery / drive aisle appears incomplete / obscured. Please show the condition of this area, and if it is a landscaped area, show screening and buffer design in compliance with Sections 4.5.5 and 4.5.2 of Chapter 4 of the Technical Manual.
- Please share the condition of the site along service ramp and back of abutting residential property along east side of parking lot connector drive.

Roof Plan

- If the applicant seeks additional open space for new building residents, consider utilization of proposed flat roof space for open space within required technical, code and COP planning requirements.

Parking

- While off-street parking is exempted through the transit proximate development and uses exemption, consideration is recommended for restrictions from new buildings utilizing resident on-street parking stickers.

Planning

General Comments

- The proposed lot to the north of 89 Elm Street proposes site modifications that facilitate the development and infrastructure of 89 Elm Street. Application documents shall be updated to incorporate the entirety of the proposed modifications on this lot into the site plan set and provide an anticipated address.
- Update the site plan set to submit a landscaping sheet and photometric plan.
- Update the architectural drawings and site plan set to match the proposed window and door openings.
- Comments related to the design of the building and site will be provided under a future cover in a Design Memorandum.

Land Use Code Comments

- §14.6.1.B.1: Overall, the design provides a number of access points for pedestrians throughout the building. Enhancing pedestrian connections in the northern portion of the building to prevent automobile-pedestrian conflicts should be considered through continuous pedestrian facilities and pavement markings. Relocation of the dumpsters may support these functions and provide easier access for residents who use assistive devices, such as wheelchairs.
- §14.6.1.B.2.: References to turning analyses were provided in the *Conformity with Land Use Ordinance* document, but were not provided. Submit copies of the turning analyses for further review by City staff.
- §14.6.1.B.3.: Include proposed modifications to curb cuts and sidewalk on Cedar Street & Lancaster Street for the new lot to the north of Cedar Street in the site plan set.
- §14.6.1.D.2.a.: Indicate the location of proposed signage to comply with §1.12.4. of the Technical Manual. Staff recommends publicly accessible bicycle parking, given that there is currently accessible bicycle parking at the site and no bicycle parking is required for retail uses.
- §14.6.1.D.3.b.: Snow storage is proposed on the northwestern portion of the site, but does not clarify how encroachments onto pedestrian walkways will be avoided. Update the site plan set to demonstrate how snow storage will not result in encroachment on the walkway.
- §14.6.2.B.: Confirm the DBH of the existing tree in the City right-of-way at the northwestern corner of Oxford & Elm Streets. In the application documents, the tree is proposed to be removed. Provide a narrative demonstrating why the tree cannot remain during construction activities. Further review by Forestry staff will be required.
- §14.6.2.C.2.: Update architectural drawings to demonstrate how the proposed development is screening roof-mounted utility structures. Additional comments related to roof-top appurtenance screening can be

found in the design memorandum for this project.

- §14.6.2.C.4.: Update the submitted *Conformity with Land Use Ordinance* document to identify how many street trees are proposed to be planted. For street trees not able to be planted to meet requirements, document how the remaining required number of street trees will be provided through alternative mechanisms, with any new plantings labeled as an alternative mechanism in the landscaping plan sheet.
- §14.6.3.B.: Staff awaits updated project materials (e.g., landscaping plan, photometric plan) to confirm compliance with §14.6.3.B. in relationship to pedestrian facilities along the surface parking area and pedestrian connections mid-block along Lancaster and Oxford Streets.
- §14.6.3.C.2.: Provide a more comprehensive narrative on the estimated cost, with documented sources, of relocating all electrical service (including utility poles) underground and any barriers to revising existing overhead facilities.
- §14.6.3.C.5.: Submit a detail drawing for the proposed trash enclosure, identifying the materials used for the enclosure.
- §14.6.3.C.5.: Update the submitted *Conformity with Land Use Ordinance* document to state the anticipated collection times. City staff recommends that collection should not occur between the hours of 11:00 PM and 6:00 AM.
- §14.6.4.E.3.: The project site has the possibility of including buried portions of colonial and post-colonial period structures or built features predating the Great Fire. Update the General Notes Sheet of the Site Plan Set, under Demolition Notes, to include the following note:

5. Upon a finding of archaeological resources on the site, consultation with the City of Portland's Historic Preservation Program and the Maine Historic Preservation Commission is required to determine appropriate next steps.
- §14.6.4.G.: City staff encourages the Applicant to consider opportunities to relocate façade-mounted mechanical equipment to the roof or to integrate equipment into the design of the building (see Ephoca units used for 200 Federal Street) to minimize impacts to abutting residential properties.

Public Works

Transportation

- Improvements in the ROW shall be dimensions on the plan view sheets. For example ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as when a width changes.
- Adjust the proposed sidewalk and planters to provide a 6-foot minimum clearance width between the planters and the buildings.
- The applicant shall update the plans to label or provide spot grades and slopes for the proposed sidewalks, accessible ramps, and driveways at grade breaks.
- The applicant shall provide spot-grade information at all proposed entrances.
- The applicant shall show existing trees on the plans and provide clarification on the location and

preservation of existing trees along project frontages. The applicant shall Contact City Arborist to determine if trees shall be kept or replaced and design the sidewalk improvements accordingly.

- The proposed planter conflicts with the parking. The applicant shall consider other options such as sloped curb tree wells (SLOPED TYPE "C" GRANITE TREE WELL IN SIDEWALK WITH NO ESPLANADE Figure IV-4C), installing an esplanade, or minimized planter curb reveal to allow for the doors to open.
- Proposed Tree Wells shall not be placed in front of entrances. Revise the plans to remove this conflict.

Water Resources

- The applicant should provide a plan and profile design sheet for the proposed offsite storm drain extension on Lancaster Street for DPW review and approval.
- The storm drain extension in Lancaster Street should be sized to accommodate a 25-year, 24-hour storm event. It is acceptable to only analyze the watershed area draining to this new storm drain extension and size the new pipes based on a simple Manning's equation full flow analysis. The City would like to add watershed area on Elm Street and Cedar Street from Oxford to Lancaster as part of this sizing analysis.
- It would be advisable for the applicant to set up a meeting with DPW Water Resources to discuss the proposed storm drain extension design in greater detail to clear up any questions the applicant might have about what will be required.
- The applicant has provided adequate stormwater storage detention volume requested by DPW as part of the overall sewer/storm capacity analysis for the project. DPW is supportive of the comments provided by the third-party stormwater review engineer which should be addressed by the applicant. The only question is if the overflow weir could be raised any higher to maximize storage volume?
- The proposed sanitary sewer configurations and connection location to the sewer in Elm Street is acceptable. Backflow preventers should be provided in accordance with Section 2 of the Technical Manual.
- Submit an erosion and sediment control sheet as part of the plan set.

TDM Program Manager

- The Plan provides a good overview of the TDM-related transportation Context for the proposed development. It has all the required sections prescribed for the TDM Plans in the Technical Manual.
- I have the following larger context comments for the applicant, and likely have some further ones as well:
 - The TDM Plan does not address/include the two retail spaces that are located on the Lancaster and Oxford Street frontages - at a minimum the employees of the retail uses should be included in surveying/reporting.
 - The guidelines for TDM Plans were amended in November 2022 - the current draft doesn't follow key changes including doing away with vehicle trip and parking reduction targets, replaced by a focus on establishing and monitoring or mode share for TDM sites. The data/information on vehicle trips and parking can be useful in establishing and monitoring mode share but reduction targets for them are not required. An updated reporting form is available on the TDM Resource webpage that integrates the Mode Share Target Table.

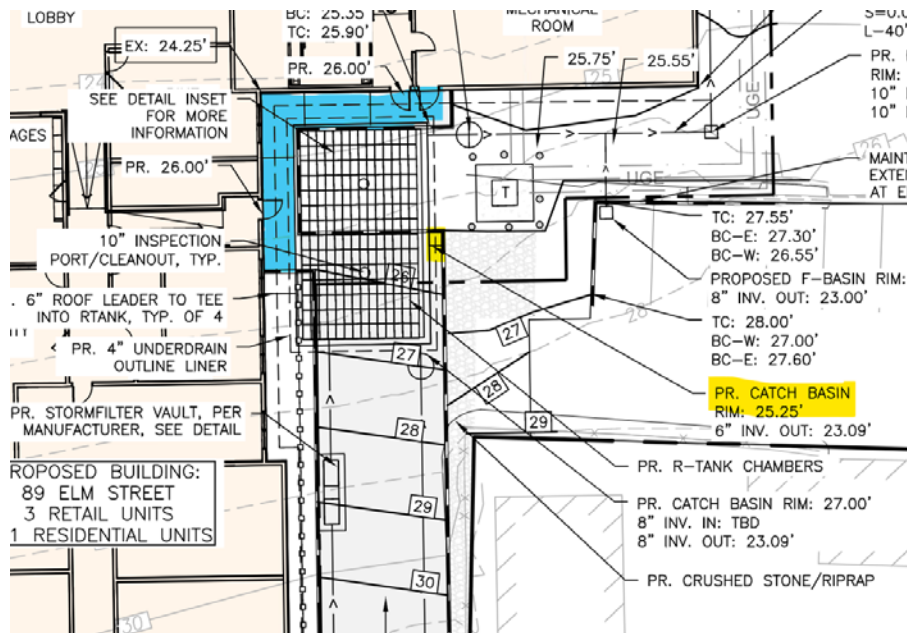
- For residential properties, it can be most beneficial to consider all trip-making rather than just commute trips. More explanation regarding what types of trips the Mode Split Targets apply to would be helpful (just peak hours, all day, etc.). My understanding is the baseline targets suggested are based on Journey to Work Data which is focused exclusively on Work Trips.
- It would be beneficial to have more commitments in terms of the TDM strategies that will be implemented such as the real-time display of transit arrival and support/sponsorship of bike share (bike station sponsorship, memberships, trip vouchers/reimbursements, etc.).

Consulting Stormwater Engineer

- The project is required to comply with MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 requirements for stormwater management. In addition, the Applicant has received a number of comments from the City of Portland as part of the ongoing Master Development Plan review with regards to the specific requirements for stormwater management and flow control that have defined their approach for this project. The project will be reducing impervious surface, and as such the stormwater design is driven primarily by the requirements set forward by the City specific to this site. The Applicant is proposing to install a StormFilter system that has been sized adequately for the area draining to it, and an R-tank stormwater storage system that has been sized to adequately manage stormwater flow from the site. I have the following comments for consideration on the proposed system:
 - The Applicant should provide confirmation from the system manufacturers for the proposed design of the StormFilter and R-Tank systems.
 - The R-tank system as proposed as a number of inlet pipes from roof leaders. The Applicant should confirm the depths of these inlets relative to the anticipated water depths in the system to ensure that there are no un-desired back-flow situations.
 - The Applicant has provided a stormwater maintenance plan, and will ultimately need to provide the maintenance agreement.
- I generally understand and agree with the stormwater and grading approach on the site, but I would recommend that the Applicant evaluate the area located northeast of the building for access, use, and cover over the buried features per the following comments:
 - The transformer is located in this area, and appears to be accessed from the west based on bollard placement and adjacent site conditions. It should be confirmed that the typical open area next to the transformer can be used for snow storage.
 - There doesn't appear to be a large amount of cover over the top of the Stormfilter vault and the R-tank system. The Applicant should confirm that as proposed, cover is adequate to protect these systems from heavier snow removal equipment, and from the snow storage itself over the R-tank. It also appears that in the event that the transformer needs to be removed or replaced, that would likely be done by placing equipment on the R-tanks, so adequate cover for protection in the event that is required should be considered.
 - The plans reflect a fairly steep slope for the paved way located to the east of the building, leading

back to the snow storage. The Applicant should confirm that this is acceptable for the snow equipment and for any equipment that may need to access to service the transformer.

- o There is a series of curbs installed in the area around the R-tanks, and I generally understand the approach, to protect doorways from stormwater flow/snowmelt in this area. I would suggest a few more spot grades in that area and there may also be a need for further drain structures within the narrow walkway along the building to direct stormwater back out of the curbed area, away from doors and into the drainage system. I highlighted the area in blue below. There's not a lot of direct stormwater here, but there could be flow from snow melt. They've also called out a catch basin that I've highlighted in yellow, and it's not clear to me how that connects into the R-Tank or the piping around it.



- The plans should reflect the proposed pavement repair within the roadways for the proposed stormwater and utility installations.
- The utility plan includes a note that the contractor is to relocate existing utility pole and overhead lines or provide underground services to existing buildings. The extent of those changes and impacts on the roadway should be represented.
- The project has reached out to utilities requesting confirmation of ability to serve, and has noted responses will be provided when received.

Zoning

- Buildings in the B-3 zone need to be within 5' of the street. 89 Elm Street is not currently meeting this and a waiver request has not been submitted at this time.

1B. Existing and Proposed Site Uses

Type of development:

<u>USE</u>	<u>SIZE</u>
See application	

1C. Site and Vicinity Boundaries

Yes, Boundary or title survey signed and sealed by a professional land surveyor.
Yes, Vicinity map provided.

1D. Proposed Uses in the Vicinity of Proposed Development

Other approved development(s): **The applicant should add 52 Hanover, 75 Chestnut Street (remaining unoccupied), and Federal Street.**
Background growth will be applied for other city and regional growth.

1E. Trip Generation

Summary tables for each land use code:

ITE (LUC)	Weekday	AM Peak	PM Peak	Saturday Peak
See Application				

It was asked that the peak hour of the generator be used to create the worst-case volume network. After consultation with MaineDOT after the meeting the methods used in the Application are acceptable.

It was also requested that the coffee trip rates be reevaluated and to consider Bayside locations. The applicant to coordinate with the city on a site to count.

Trip rates obtained from other sources:

Number of locations where driveway counts taken: _____
Dates & time periods when driveway counts taken: _____
Locations where driveway counts where taken: _____
OTHER: _____

1F. Trip Distribution

____ Stick diagram for each major intersection on either side of the development driveway(s)?
____ ITE trip generation handbook
____ Actual survey done? Location? _____
____ Other. Explain. _____

Comments: _____

1G. Trip Assignment

_____ Stick diagram for each major intersection on either side of the development driveway(s)?

Percent primary trips 100%

Percent passer-by trips _____

Percent diverted trips _____

Basis for using above-listed percentages:

_____ Existing traffic patterns of adjacent street

_____ Zip code survey

_____ Gravity model

_____ Other. Explain. _____

Comments: Requested revisions to account for the likely use of local roads and trips toward Cumberland. The trips should be traced to the intersections where the MaineDOT threshold is no longer met.

Section 2 - Traffic Crashes

_____ Year(s) of MDOT crash records for study area

_____ Number of high crash locations

_____ Collision diagrams provided.

Mitigation provided for each high crash location: _____

Other traffic problems: _____

Comments: Requested that the limits of crash data be from I295 to the north, Cumberland to south, Franklin to east and Forest to west. A review will be required at Marginal/Elm, although it is not a High Crash Location.

Section 3 - Development Entrances and Exits

3A. Entrance and Exit Locations

_____ Distance to nearest intersecting road or town line (to the nearest hundredth of a mile)

_____ Number, width and surface of each proposed entrance/exit

3B. Plan View of Each Intersection Created

Names of intersecting road _____

Posted speed limits _____

Entrance/Exit Sight Distance:

Left

Right

3C. Entrance/Exit Design

- ☐ Lighting
- ☐ Driveway spacing and corner clearance (Access Management)
- ☐ Adequate sight distance for vehicles exiting development
- ☐ Entrance grade (see fact sheet)
- ☐ Entrance/exit widths less than 42 feet (12.8 meters)
- ☐ Left turn lane
- ☐ Right turn lane
- ☐ Signal warranted
- ☐ Lane encroachment
- ☐ Separation islands (see fact sheet)
- ☐ Drainage study using 50 year storm for culverts and to connect to MDOT system
- ☐ Capacity Analysis
- ☐ Queuing Analysis
- ☐ Study to be submitted to MDOT Division Engineer

Comments: It was requested that information be provided for all driveways, not just the garage. Driveway will be reviewed for truck movements.

Section 4 - Title, Right or Interest

- ☒ Title, right or interest in project site
- ☒ Title, right or interest in entrance/exits
- ☒ Title, right or interest in drainage easement affecting MDOT

Section 5 - Public or Private Rights-of-Way

- ☒ Location and width or proposed streets, easements and other public or private rights-of-way
- ☒ No signs, structures or pavement connected to the entrance

Section 6 - Schedule

Project schedule: 2026

Further study items required (\$500.00 additional fee):

Section 7 - Full Traffic Study

KEY COMMENTS

- **The applicant will revisit the mode share based upon looking at individual uses, traffic data from new counts, and the understanding that demographics in the study area may be skewing the ACS survey.**
- **Accounting for nearby schools (Portland High School and Baxter Academy) in the traffic counts.**
- **Parking calculations to be provided.**
- **Trip assignment should reflect other parking areas and not just the garage.**
- **Internal capture seems acceptable, except for the Retail portion during the PM peak hour.**
- **A bike/ pedestrian facility analysis is required within ¼ mile of the site per MaineDOT regulations.**
- **The study area is likely to include the following. This list is pending updated information.**
 - **Marginal Way/Elm**
 - **Marginal Way/Forest (and maybe Forest/High due to proximity)**
 - **Cumberland/Preble**
 - **Cumberland/Elm**
 - **Portland/Preble**
 - **Forest/Preble (and maybe Park/High and Park/State due to proximity)**
 - **Oxford Street intersections due to Two-Way conversion**
 - **Garage entrances**



Consulting Traffic Engineer

- According to information contained in the applicant's Traffic Movement Permit application, the proposed project will generate traffic levels that would require a Traffic Movement Permit. Accordingly, I would suggest a condition of approval be included that notes occupancy of the project cannot occur until the Traffic Movement Permit is issued and all required mitigation of that permit is implemented as defined.
- **Outstanding Comment:** The applicant has not provided a layout of the parking lot on Lancaster Street west of Cedar Street, nor confirmed whether it meets the City corner clearance requirements. Submit a layout that meets City dimensional requirements, along with defining the improvements at the Lancaster Street driveway (e.g., radii, sidewalk section between the driveway and Cedar Street). Lastly, I would suggest some form of buffer/separation be provided between the parking spaces and sidewalk on Lancaster Street.
- **Outstanding Comment:** The applicant shall submit a dimensioned plan sheet of the two parking lots on Cedar Street to document driveway width, aisle width and parking stall size. The layout shall meet City dimensional requirements and/or documentation on waiver requests shall accompany the plan sheet.
- The applicant has provided turning template graphics and those graphics indicate reasonable access can be provided. However, it is unclear whether the design vehicle used is representative of trucks that will service the site. The applicant shall provide documentation that the design vehicle used is appropriate.
- **Outstanding Comment:** The project will be providing three driveways and therefore the applicant shall provide supporting documentation on a waiver from city standards of §1.5.1.A. of the Technical Manual.
- It is likely that the traffic study associated with the Traffic Movement Permit will include an evaluation of converting Oxford Street from one-way to two-way traffic flow. The applicant should confirm the proposed northerly curb line would be compatible with a two-way conversion.

Fire

At this time, Planning staff has not received comments from the Fire Department for this application. While no comments have been received, this does not result in a de facto approval from the Fire Department. Contact Captain Jason Grant (jgrant@portlandmaine.gov) to confirm if any additional modifications need to be made to meet the City's Fire Code.

Forestry

General comment:

We appreciate the applicant's revisions to date, particularly including further information on silva cells and on site stormwater management elements proposed.

Specific comments:

Silva Cell Details Sheet

Silva Cell System - Note V - Underdrain with first flush capacity to wash salts and other surface water pollutants should be included in proposed systems subject to salts and deicing materials.

Tree Grate at Silva Cells -Include additional information on root barrier material along specified edges to protect

adjacent infrastructure and guide root growth as appropriate.

Tree Grate at Silva Cells and Silva Cell System - Note S - All street tree systems without an open bed design and curbing or edge guard should have openings provided around tree trunk and root flare that are 4' in diameter. Openings should have root ball planted up to base of grate, consider a cobble or gravel infill material up to root flare if soils within opening need to be flush with adjacent grate edge.

Landscape Materials and Layout Plan

Silva Cell & Paver Detailing - Please clarify if the silva cell system will extend under a portion of proposed unit pavers along street tree plantings areas. Applicant is strongly encouraged to utilize silva cells in this way as to capture permeable paver potential and expand soil volumes for street tree plantings. Street tree wells or other tree planting areas should provide a minimum volume of 600 cubic feet of soil material per tree.

Preferred volumes are as follows:

- Large Trees: 1,500 cubic feet of soil within a 27 foot radius (the radius includes tree well planting area and any adjacent subsoil zones that could support / reasonably accommodate rooting growth).
- Medium Trees: 1,000 cubic feet of soil within a 22 foot radius.
- Small Trees: 600 cubic feet of soil within a 16 foot radius.

Where soil volumes within the maximum allowable radii for adjacent trees overlap, up to 25% of the required soil volume per tree may be shared.

For trees that are designed to have a covered soil volume which connects to an open area (for example behind the sidewalk), the open area can be considered as part of the required soil volume.

For existing trees to remain, the root structure of existing tree shall be protected to the extent feasible and provided with additional soil volumes to meet the above requirements.

Soil Volume Calculation shall be calculated as:

- Area of Open Soil x Depth of Soil) plus (Area of Covered Soil x Depth of Soil)
- All soil types are calculated at full volume.
- There may be multiple soil volume areas included in the calculation depending on design

The applicant is encouraged to find opportunities to create continuous/connected, unified soil volumes along linear blocks of street tree plantings where possible, or individual tree planting conditions that support a mature and healthy street tree. Street tree and street tree support infrastructure shall provide consideration and accommodation for:

1. Sufficient soil volume
2. Trunk flare and adequate space / capacity for trunk and trunk flare growth over time
3. Water into soil (very important part of success)
4. Water out of soil
5. Sufficient room for canopy growth of tree
6. Specifications to ensure quality of nursery stock.

Landscape Planting Plan

(3) LL tree planting call out. - "LL" tree code not listed on planting schedule.

"PQ" call out. - Please describe planting area conditions for proposed Virginia creeper plantings and clarify how planting will be contained. For trellis - provide additional section / elevation and detailing information for trellis and planting condition with relationship to building.

Plant schedule - Liquidambar styraciflua - Most cultivars of sweetgum eventually produce seed pods, which are round form and treacherous along walkways. Recommend alternate fastidget species at proposed location. All walkways should be clear of any species that typically produce seeds or fruits that would track inside buildings (staining from various fruits) or when trod upon do not compress and would form a walking hazard (sweet gum seed pods, buckeye or chestnut seeds, etc...)

Plant schedule - RA Rhus aromatica - Grow low sumac habit and form are not conducive to spaces adjacent to walkways or high profile areas. Consider alternate species "aronia melanocarpa".

Plant schedule "XS" xanthorizza simplissima - Ensure yellowroot and other spreading plants that may undesirably overtake planting areas are edged or otherwise contained adequately to prevent maintenance issues and impacts to adjacent planting areas. Hay-scented fern, Virginia creeper, and possibly Virginia sweetspire can be aggressive in growing habits and should be adequately contained where risk of intrusion or escapement is possible.

L2 - Plant Schedule - Consider pin oak (Quercus palustris) where overhead clearance is appropriate and if soils are not alkaline.

L2 - Plant Schedule – Forestry would strong recommend the "Jefferson" cultivar of elm species because of a stronger central leader growth habit and less problematic crown growth pattern. Other elm species tend to have overcrowded leader formation and co-dominant leader growth.

Plant Schedule - "CC" tree species – A small tree species along walk edge raises some concerns about inadequate and inconsistent street tree canopy at maturity Consider larger canopy species, such as pin oak species suggested above, for better reduction of urban heat island effect and more uniform canopy cover with Ulmus species, or a medium tree species. If applicant insists on smaller species, please provide rationale. Carpinus species typically are slower growing and less drought tolerant than proposed site location will accommodate. Prunus sargentnii, gleditisa or other medium sized tree species could be more appropriate.

Pin Oak Removal – The pin oak removal has some potential to be controversial for the neighborhood and would likely benefit from a more personalized update and coordination with neighborhood members. Forestry would strongly encourage pin oaks to be incorporated into street tree design, particularly as a replacement for Carpinus Caroliniana species (shown as "hornbeam" species in plant schedule). Forestry is still reviewing the removal of the pin oak tree and will provide additional comments in a future correspondence.

Landscape Materials Plans

Pavers & Soil Volumes - For unit pavers along the side edge of proposed street tree areas of streetscape, applicant is strongly encouraged to extend subsoil volumes under paver areas and along street for additional rooting for street tree elements. Consider bridging or an approved volumetric design to ensure paver areas can support a soil volume of street trees. See earlier comment about ensuring paver details, landscape materials plan callouts and silva cell details / systems relate and reference each other clearly and consistently. Show where pavers are being integrated into silva cell systems and extent of street tree subsoils in plan (ghosted or dashed line for example)

Parking

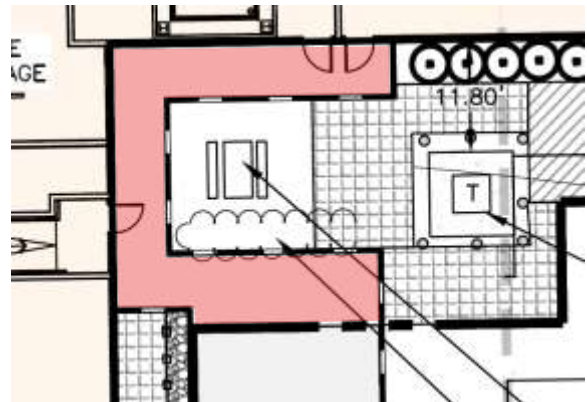
- Two 30-minute zone parking spaces on Elm Street are acceptable, and if necessary, three 30-minute zone parking spaces on Lancaster Street, but it seems excessive. The remainder of spaces labeled as “No signed for time limits or usage” should be signed as 1-Hour or 2-Hour spaces as they currently are.

Planning

- Please refer to the attached design memorandum for comments related to the building and site design. Planning staff is in receipt of two documents related to the splitting of the building into two structures and will provide comments in a subsequent letter.
- Based on responses from the Applicant, Planning staff is awaiting the submission of:
 - Updated architectural drawings to demonstrate how roof-mounted utility structures will be screened
 - Information on the estimated cost, with documented sources, of relocating all electrical service (including utility poles) underground and any barriers to revising existing overhead facilities
 - Updated application materials related to the design and location of mechanical equipment (façade- and roof-mounted)

Planning staff will provide comments in a future comment letter once these items have been submitted.

- §14.6.1.B.1: Based on the current location and proposed interior chutes for solid waste, it is unclear how residents on the ground floor in the western portion of the building would dispose of solid waste. Submit a narrative describing how ground-floor residents would dispose of solid waste. Staff recommends providing options for solid waste disposal that do not necessitate ground-floor residents who use assistive devices from having to exit onto Elm Street, go along to Oxford Street, and go to the back of the building to dispose of solid waste.
- **Outstanding Comment:** §14.6.1.D.2.a.: Indicate the location of proposed signage to comply with §1.12.4. of the Technical Manual.
- **Outstanding Comment:** §14.6.1.D.3.b.: Snow storage is proposed on the northwestern portion of the site, but does not clarify how encroachments onto pedestrian walkways (shown to the right highlighted in red) will be avoided. Update the site plan set to demonstrate how snow storage will not result in encroachment on the walkway.
- §14.6.2.C.4.: Update the submitted *Conformity with Land Use Ordinance* document to identify how the application is providing the required number of street trees (201) through new plantings (20 street trees) or alternative mechanisms (Fee in-lieu or existing plantings), with any new plantings labeled as an alternative mechanism in the landscaping plan sheet.
- §14.6.3.B.: Upon review of the submitted photometric plan, Planning staff requests the following updates:
 - Update the photometric plan and site plan to comply with the spacing and fixture requirements for



Downtown decorative lights in §10.4 of the Technical Manual.

- Confirm compliance with §12.3.1. of the Technical Manual (Maximum to Minimum Illumination levels shall not exceed a ratio of 20:1, and with the average illumination level (1.25 fc) of §12.3.2. of the Technical Manual on the photometric plan.
- Update the photometric plan to comply with §12.3.2. of the Technical Manual:
 - Minimum (0.2 fc) and maximum (5.0 fc) illumination levels. The submitted plan includes minimum illumination of 0 fc and a maximum of 8.4 fc.
 - Average illuminance level (0.5 fc), uniformity ratio (Average-to-Minimum: 3:1), and maximum illuminance level (4.0 fc) for surface parking
 - Uniformity
- Update the photometric plan to ensure that the proposed light trespass across property lines does not exceed 0.1-foot candles with the property boundary of 44 Cedar Street.
- Add notes on the photometric plan that the proposed wallpacks will utilize models that do not exceed 3,500 lumens or 3,000K CCT to comply with the standards of §12.3.3. and §12.3.5. of the Technical Manual.
- Update the photometric plan and site plan to provide lighting along the mid-block pedestrian connection on Oxford Street, while managing light trespass onto 215 Oxford Street. A combination of ground-mounted lighting and required street lighting may help to meet this requirement.

Public Works

Transportation

- The applicant shall review the placement of the trees in relation to the on street parking spaces. Passenger doors may conflict with the (raised curb) tree wells.
- Improvements in the ROW shall be dimensioned on the plan view sheets. For example ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as at locations when a width changes. In this case it is still needed from curb face to curb face. The overall ROW width should be shown for streets impacted by the project (Elm Street and Lancaster Street). In addition, the Applicant shall consider the option of shifting the curb line of Elm Street farther to the east in order to construct a cycle track from Oxford Street to Lancaster Street, including transitions to and from the existing in-street facility. A possible cross-section for Elm Street North of Oxford Street is included below:



- What is the timing proposed for the on street parking outside of the 30min signed spaces?
- The applicant shall submit a draft sidewalk easement for review.
- The applicant shall submit a draft maintenance agreement for the Bayside master plan that addresses each phase / project proposed under one agreement. Would parking meters be proposed? The Parking Division should weigh in on this item as well.
- The City has invested heavily in this area. All of the sidewalks on Elm Street between Oxford & Lancaster Streets are less than seven years old (the west side was constructed last year), including the pedscale lighting. DPW asks, to the extent that is feasible, that the applicant limit disturbance or reconstruction, and reuse equipment/materials when possible.

Water Resources

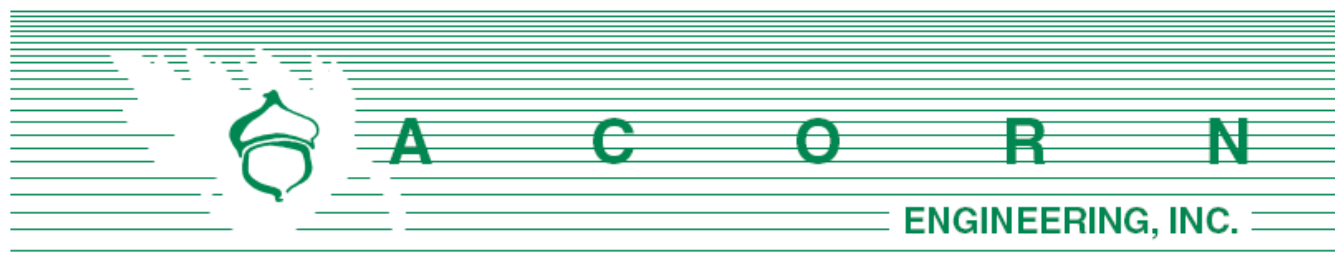
- DPW recommends that the proposed catch basin where the untreated flow enters the R-Tank have a 3' sump and be equipped with a trash guard type device to limit the migration of debris into the storage system.
- DPW recommends that the submission of a plan and profile design sheet for the proposed off-site storm drain extension on Lancaster Street, with DPW review and approval, be submitted as a condition of approval.

TDM Program Manager

I have reviewed the revised TDM Plan and find that it and the revisions made in response to comments substantively meet the plan requirements as specified in the Technical Manual (as amended November 2022).

Zoning

- The proposed *Elm Street Gateway Sign* identified in the site plan sheet and Landscape Architecture renderings is classified as a monument sign in the Land Use Code. §20.6.1.A. of the Land Use Code does not permit monument signs in the public right-of-way and there is not authorization for monument signs elsewhere in §20 of the Land Use Code. The application shall be updated to comply with the standards of §20 of the Land Use Code.



Planning and Urban Development Department
 Planning Division
 Attn: Zach Powell, Senior Planner
 City of Portland, Maine
 389 Congress Street, 4th Floor
 Portland, ME 04101

April 4th, 2023

Subject: Major Site Plan Application – 89 Elm Street Redevelopment

Zach:

On behalf of 89 Elm LLC, we are pleased to submit the accompanying package of submission materials related to the proposed redevelopment of 89 Elm Street in Portland, Maine. The project will reside at Map, Book Lot (033 H006001) whose lot line will be adjusted to encompass the entire development. Parcels 033 H018001 and 033 H009001 will be merged into one parcel whose area will remain outside the building footprint.

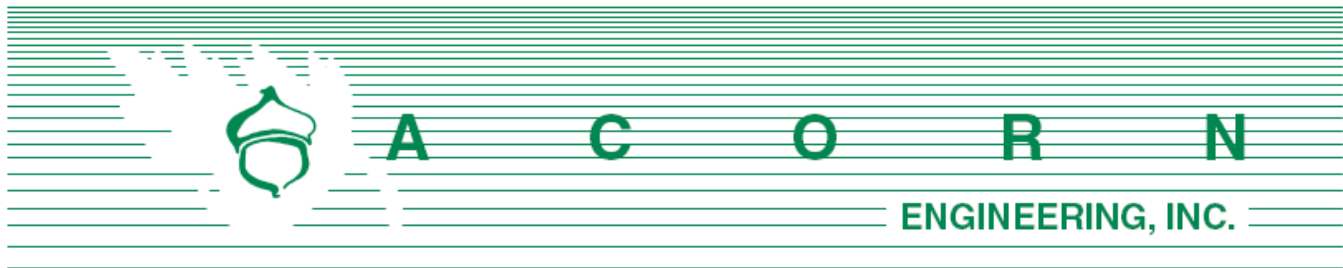
The project area is bisected by a zoning district boundary. The applicable zoning districts include the B3 Downtown Business along Elm Street and R6 Residential along Cedar Street. The building has been designed with a step-back approach within the R6 portions of the property to meet the more stringent dimensional standards in the R6 than the adjoining B3 zone. The project is also located in the Bayside Height Overlay Zone and is a part of the greater West Bayside Master Development Plan (MDP) submitted by the same Applicant in December of 2022.

The project proposes to redevelop the parcels, currently used as a parking lot, into an 8-story building featuring affordable housing and three ground level retail spaces along Lancaster and Oxford Streets. The development will include 201 residential units, all of which will be affordable, satisfying the 25% inclusionary zoning requirement for the larger 804-unit MDP. This application package is intended to meet the City's submission requirements as outlined in the Major Site Plan application procedures.

89 Elm LLC, and the design team look forward to your review of this project. If you have any questions regarding these materials or the completeness of the application materials, please do not hesitate to contact me.

Sincerely,

Sam Lebel, P.E.
 Project Manager
 Acorn Engineering, Inc.



City of Portland Planning Department
 Zach Powell – Senior Planner
 389 Congress Street, 4th Floor
 Portland, Maine 04101

June 14th, 2023

Subject: Comment Response Letter
 89 Elm Street, Portland, Maine – Major Site Plan Application

On behalf of 89 Elm Street, LLC, Acorn Engineering is pleased to respond to the following comments from the City of Portland Planning Department review of the 89 Elm Street, Major Site Plan Application.

The following is in response to the City Staff comments received May 17th, 2023, and the forestry comments received May 5th, 2023.

Consulting Traffic Engineer:

Comment: This project is a phase within the Bayside Master Plan, which is currently under review for a Traffic Movement Permit. A traffic study will be prepared in association with the TMP. The applicant should confirm that this project does not meet the threshold for a TMP as an individual project.

Response: The TMP currently under City review is associated with the permitting of 89 Elm Street (phase 1) as well as the 196 Lancaster Street, 60 Elm Street, and 315 Cumberland Avenue parcels of the Bayside Master Plan.

Comment: The site plan is maintaining a driveway on Lancaster Street west of Cedar Street. The plan shall include a layout of the parking lot. The applicant shall confirm that this driveway meets city corner clearance requirements.

Response: The site plan proposes combining two existing curb cuts at 50 Cedar Street into one curb cut. The single curb at 50 Cedar Street is to define/establish the proposed access easement to support the proposed development at 89 Elm with respect to solid waste removal. The proposed curb cut is over 100' away from the unsignalized intersection at Oxford and Cedar Street, therefore in compliance with the corner clearance requirements.

Comment: The plan shall include improvements to the curb cut for the southerly parking lot located on Cedar Street.

Response: The existing parking lots accessed by Cedar Street are to remain. The revised site plan now includes the proposed offsite curb cut improvements on the existing parking lot.

Comment: Dimensions shall be provided for the existing parking lots off Cedar Street including driveway width, aisle width, and parking stall size.

Response: The proposed development does not intend to alter the layout of the existing parking lots that are accessed from Cedar Street. These parking lots currently have leases and are intended to remain as is. Dimensions of the existing parking lots that are to remain are now provided on the Site Plan for reference.

Comment: The applicant shall provide turning template graphics for movements into and out of the Cedar Street parking lots for the design vehicle. A turning template graphic shall be provided for on-site truck movements.

Response: Turning Templates have been included as part of this application. Please refer to document “CC. Turning Template” for more information.

Comment: The project will be providing three driveways and therefore the applicant shall provide supporting documentation on a waiver from city standards of §1.5.1.A. of the Technical Manual.

Response: The project does not propose 3 driveways. Please refer to the Site Plan and the associated property line. The project proposes to eliminate the sole curb cut on its frontage while reducing the existing curb cut on Lancaster that accesses several parking spaces on the adjacent parcel. The two curb cuts on Cedar Street front a separate parcel. The proposed parcel technically has zero proposed driveways.

Comment: The applicant shall provide documentation that the current surface parking spaces are not associated with an existing project site plan approval. Also, the applicant shall provide information on how the site parking lots will be managed.

Response: Documentation on the current surface parking spaces and any relation to existing site plans will be forthcoming as part of the condition of approval associated with the Bayside Master Development Plan approved by the Planning Board on June 13, 2023.

Comment: Pedestrian access easements will be required along the project frontage in some areas

Response: Understood. These easements will be detailed in the future once other details of the project have been further flushed out. In general, the easement consists of additional sidewalk width on private property that the Applicant has elected to contribute to the streetscape.

Forestry:

Comment: Street tree well design - COP Parks department appreciates the applicant team for their willingness to collaborate with Parks in finding a best practice in creating a tree health centric approach in street tree wells and planters. Parks seeks to strike a balance that creates a comfortable, and enjoyable pedestrian circulation experience, and nourishes a healthy and lush street tree canopy for improvement of this district. We hope to facilitate any opportunity for the applicant to coordinate further with Parks and other divisions, particularly water resources, to find means of combining street tree health with stormwater infrastructure opportunities in this project.

Comment: Please distinguish street tree well typology in landscaping plan and future site plans (flush, metal style planters, vs raised granite vs. any other type, etc.). Ensure any planters with raised edges do not create conflict with building circulation, parked car doors, winter plowing routes or other circulation and element adjacent site needs.

Response: Please refer to the landscape planting plan and details for more information on



the proposed planters.

Comment: Ensure any planting areas in ROW or public spaces that have expectations of maintenance from the City of Portland use simplified, native plantings and follow low maintenance principles.

Response: Understood. All plantings within the ROW will follow the City of Portland guidelines and maintenance principles.

Comment: Some public / private partnerships exist in other areas of the city that share maintenance needs in ROW. Portland Downtown District works with City and private businesses and private entities on specific programming and maintenance efforts within the Downtown District for example. Cary Tyson is PDD executive director (cary@portlandmaine.com). Please reach out to him for any additional questions or insights.

Response: Thank you for this information.

Comment: The Parks Department will continue to work with COP planning and applicant team on ensuring a robust and effective street tree design conditions and implementation approach can be met to support future urban canopy in this neighborhood as much as possible.

Response: The project proposes to use Silva Cell modular system, or an approved equivalent, to provide an appropriate density and soil volume to support healthy and sustainable tree growth.

Comment: Opportunities to integrate street tree infrastructure with water resources / stormwater treatment is strongly encouraged. Parks is eager to facilitate that coordination between applicant and city departments, to help ensure successful and efficient integration.

Response: The design team will continue to study opportunities with the silva cell. It should be noted that the project will be significantly improving the stormwater runoff from this site by providing on-site water quality treatment, as well as detention and an extension of the separated storm drain from Preble Street.

Comment: Please consider burial of utilities that would be in conflict or prohibit a fuller canopy growth of the street tree environment.

Response: The project team is currently undergoing discussions with CMP regarding the existing overhead utility lines and the potential to reroute underground in certain areas.

Site Plan:

Comment: For street trees at intersection locations with bump out or widened sidewalk conditions, consider creating a larger planting bed for street trees at those locations, keeping in mind safe sight triangles/ lines, generous circulation and room for ramps / tip downs and street utilities / furnishings, and building egress points.

Response: Understood. Please refer to the Landscape plan for Street tree locations and typology.

Comment: At the intersection of Oxford and Elm, by the corner building entrance and at retail entrance location, and at Elm side entry: Street tree locations appear to be close to entrances and might create conflict with circulation. Ensure that any circumstances with trunks, low branching etc. do not block entry ways or unreasonably alter signage / preserve a degree of effective recognition of retail space from the outdoor environment.



Response: Please refer to the revised landscape plan and street tree layout. As shown on the plan, street tree locations have been modified to mitigate conflict with pedestrian circulation.

Comment: In the parking area and around building foundations, ensure native landscaping selections in planting areas adhere to Technical Manual requirements in Chapter 4, and provide screening from headlights and other off-site lighting or visual intrusion into lower building units, particularly in adjacent parking areas.

Response: Please refer to the Landscape plan which provides more detail on the proposed plantings as part of this site plan application.

Grading Plan:

Comment: Provide additional information on the intended use of the stairwell on the east (back) side of building along central access drive? If this stair well is providing informal access for residents, between the parking lot and internal units, consider landing grade and cross slope in relation to drive slope. Allow for egress from building to connect with a striped pedestrian route along drive to upper and lower lot areas if sidewalk or more formal walk material is infeasible.

Response: The stairwell on the east (back) side of the building is intended for egress as well as access to the solid waste enclosure. This stairwell will outlet to a “landing pad” which has been graded with slopes ranging from 1-3% to create a welcoming and accessible area, prior to the drive aisle slope of 8% down the remainder of the drive aisle.

Comment: Ensure compliance with the standards of Chapter 4, Section 4.5.2 of the Technical Manual for screening along parking lot edges with abutting neighbors is followed. Please also ensure consideration is given to views from building into parking lots or adjacent properties. Please show proposed plantings / landscape screening for the lower parking area, particularly along the walk edge and along the shared property lines with 44 Cedar Street.

Response: Please refer to the Landscape Plan for more information. Screening/vegetation has been incorporated where feasible.

Comment: Confirm whether the lower parking area will be connected with the drive aisle / loading dock corridor. Callout references detail inset, but corresponding inset is not shown on the plan. Please clarify circulation intent here.

Response: It is not proposed to connect the drive aisle to the existing parking area, there is a proposed curb providing separation. The detail inset for the subsurface R-tank system is provided on sheet C-46.

Comment: The landscape / site condition at upslope entry of delivery / drive aisle appears incomplete / obscured. Please show the condition of this area, and if it is a landscaped area, show screening and buffer design in compliance with Sections 4.5.5 and 4.5.2 of Chapter 4 of the Technical Manual.

Response: It is unclear which location is being addressed in this comment. Please refer to the Civil Site Plan and Landscape plan for further information and clarification as the landscape plan has been overhauled.

Comment: Please share the condition of the site along service ramp and back of abutting residential property along east side of parking lot connector drive.

Response: Please refer to the Landscape Plan for more information.



Comment: If the applicant seeks additional open space for new building residents, consider utilization of proposed flat roof space for open space within required technical, code and COP planning requirements.

Response: This comment will be taken into consideration. At this time, no programming is proposed on the roof.

Comment: While off-street parking is exempted through the transit proximate development and uses exemption, consideration is recommended for restrictions from new buildings utilizing resident on-street parking stickers.

Response: This does not appear to be an appropriate restriction and the Applicant does not support it.

Planning:

Comment: The proposed lot to the north of 89 Elm Street proposes site modifications that facilitate the development and infrastructure of 89 Elm Street. Application documents shall be updated to incorporate the entirety of the proposed modifications on this lot into the site plan set and provide an anticipated address.

Response: Modifications and maintenance to abutting lots are proposed as necessary. Please refer to the Civil Plan Set for further clarification on the extent of the proposed and modified conditions.

Comment: Update the site plan set to submit a landscaping sheet and photometric plan.

Response: The revised plan set now includes the landscape plan and photometric plan.

Comment: Update the architectural drawings and site plan set to match the proposed window and door openings.

Response: Please refer to the revised architectural drawings which reflect this change.

Comment: Comments related to the design of the building and site will be provided under a future cover in a Design Memorandum.

Response: Understood – please refer to the design narrative from the project architect, RSA.

Land Use Code Comments:

Comment: §14.6.1.B.1: Overall, the design provides a number of access points for pedestrians throughout the building. Enhancing pedestrian connections in the northern portion of the building to prevent automobile- pedestrian conflicts should be considered through continuous pedestrian facilities and pavement markings. Relocation of the dumpsters may support these functions and provide easier access for residents who use assistive devices, such as wheelchairs.

Response: The Site has been designed to accommodate pedestrian circulation and reducing sloping impacts where feasible.

Comment: §14.6.1.B.2.: References to turning analyses were provided in the Conformity with Land Use Ordinance document, but were not provided. Submit copies of the turning analyses for further review by City staff.



Response: Please refer to the submitted turning template, document “CC. Turning Template”, which models a 25’ long refuse truck accessing the dumpsters on site.

Comment: §14.6.1.B.3.: Include proposed modifications to curb cuts and sidewalk on Cedar Street & Lancaster Street for the new lot to the north of Cedar Street in the site plan set.

Response: It is proposed that emergency vehicles and refuse trucks will access the site via the proposed access easement through the existing parking lot drive aisle on 50 Cedar Street. As part of this access easement, it is proposed to combined the existing two curbs at 50 Cedar Street into one compliant curb cut.

Comment: §14.6.1.D.2.a.: Indicate the location of proposed signage to comply with §1.12.4. of the Technical Manual. Staff recommends publicly accessible bicycle parking, given that there is currently accessible bicycle parking at the site and no bicycle parking is required for retail uses.

Response: The development proposes public and private spaces to store bicycles. Public bicycle parking spaces are proposed to be visible and located within the public ROW. Please refer to the Site and Landscape plans for more information on bike storage and proposed locations.

Comment: §14.6.1.D.3.b.: Snow storage is proposed on the northwestern portion of the site, but does not clarify how encroachments onto pedestrian walkways will be avoided. Update the site plan set to demonstrate how snow storage will not result in encroachment on the walkway.

Response: The proposed snow storage is located behind the pedestrian walkway. It is not anticipated that storage in this location would impact the pedestrian walkway. The property will be maintained by a professional maintenance company.

Comment: §14.6.2.B.: Confirm the DBH of the existing tree in the City right-of-way at the northwestern corner of Oxford & Elm Streets. In the application documents, the tree is proposed to be removed. Provide a narrative demonstrating why the tree cannot remain during construction activities. Further review by Forestry staff will be required.

Response: The existing tree at the corner of the Oxford and Elm Street intersection has a DBH of 21”. Under current conditions the roots of this tree are emerging through the sidewalk resulting in an inaccessible condition for pedestrians requiring ADA access. Due to the current condition and non-compliance of the sidewalk due to the existing tree roots, in combination with the location of the proposed building and its foundation, preservation of the tree is extremely unlikely from a construction and accessible standpoint. Please refer to the attached narrative provided by the Landscape Architect for more information.

Comment: §14.6.2.C.2.: Update architectural drawings to demonstrate how the proposed development is screening roof-mounted utility structures. Additional comments related to roof-top appurtenance screening can be found in the design memorandum for this project.

Response: The Architect is currently reviewing opportunities for screening.

Comment: §14.6.2.C.4.: Update the submitted Conformity with Land Use Ordinance document to identify how many street trees are proposed to be planted. For street trees not able to be planted to meet requirements, document how the remaining required number of street trees will be provided through alternative mechanisms, with any new plantings labeled as an alternative mechanism in the landscaping plan sheet.

Response: Please refer to the revised Conformity with Land Use Document which outlines the proposed street trees in part of the 89 Elm Street development.



Comment: §14.6.3.B.: Staff awaits updated project materials (e.g., landscaping plan, photometric plan) to confirm compliance with §14.6.3.B. in relationship to pedestrian facilities along the surface parking area and pedestrian connections mid-block along Lancaster and Oxford Streets.

Response: Please refer to these plans as part of the resubmission.

Comment: §14.6.3.C.2.: Provide a more comprehensive narrative on the estimated cost, with documented sources, of relocating all electrical service (including utility poles) underground and any barriers to revising existing overhead facilities.

Response: Communication with CMP regarding relocating utility poles and rerouting utilities underground is in progress. Pending the outcome of the ongoing conversations, cost estimates and final layout design will be provided.

Comment: §14.6.3.C.5.: Submit a detail drawing for the proposed trash enclosure, identifying the materials used for the enclosure.

Response: Please refer to Sheet C-41 for the detail of the proposed trash enclosure. The enclosure will be contained by a 6' tall stockade fence.

Comment: §14.6.3.C.5.: Update the submitted Conformity with Land Use Ordinance document to state the anticipated collection times. City staff recommends that collection should not occur between the hours of 11:00 PM and 6:00 AM.

Response: Please refer to the Conformity with Land Use document which reflects/incorporates this request.

Comment: §14.6.4.E.3.: The project site has the possibility of including buried portions of colonial and post-colonial period structures or built features predating the Great Fire. Update the General Notes Sheet of the Site Plan Set, under Demolition Notes, to include the following note:

5. Upon a finding of archaeological resources on the site, consultation with the City of Portland's Historic Preservation Program and the Maine Historic Preservation Commission is required to determine appropriate next steps.

Response: Please refer to the revised General Note Sheet, Demolition Notes which reflects this request.

Comment: §14.6.4.G.: City staff encourages the Applicant to consider opportunities to relocate façade-mounted mechanical equipment to the roof or to integrate equipment into the design of the building (see Ephoca units used for 200 Federal Street) to minimize impacts to abutting residential properties.

Response: Noted. The configuration of rooftop equipment is under review and this suggestion will be taken into consideration.

Public Works:

Transportation

Comment: Improvements in the ROW shall be dimensions on the plan view sheets. For example ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as when a width changes.

Response: ROW improvements associated with this project are provided on Sheet C-10.



Comment: Adjust the proposed sidewalk and planters to provide a 6-foot minimum clearance width between the planters and the buildings.

Response: Please see Sheet C-10 which provides the revised planting/furnishing and pedestrian zone clearances.

Comment: The applicant shall update the plans to label or provide spot grades and slopes for the proposed sidewalks, accessible ramps, and driveways at grade breaks.

Response: Please see Sheet C-30 for more detail on spot grades and slopes throughout the site.

Comment: The applicant shall provide spot-grade information at all proposed entrances.

Response: Please see Sheet C-30 for spot grades at all proposed entrances.

Comment: The applicant shall show existing trees on the plans and provide clarification on the location and preservation of existing trees along project frontages. The applicant shall Contact City Arborist to determine if trees shall be kept or replaced and design the sidewalk improvements accordingly.

Response: Please see Sheet C-03 for the location of the existing trees along the property frontage. It is our understanding that none of the existing trees within the project street frontage are considered to be a Heritage Tree. Street trees proposed as part of the development can be found on sheet C-10 and on the Landscape Plan. Please refer to narrative prepared by the landscape architect attached to this letter for more information.

Comment: The proposed planter conflicts with the parking. The applicant shall consider other options such as sloped curb tree wells (SLOPED TYPE "C" GRANITE TREE WELL IN SIDEWALK WITH NO ESPLANADE Figure IV-4C), installing an esplanade, or minimized planter curb reveal to allow for the doors to open.

Response: Please refer to the Landscape plans for more detail on the proposed planter and tree well styles.

Comment: Proposed Tree Wells shall not be placed in front of entrances. Revise the plans to remove this conflict.

Response: Please refer to the Landscape and Site Plan for the proposed location of the street trees which have been placed to not create conflict with building entrances.

Water Resources

Comment: The applicant should provide a plan and profile design sheet for the proposed offsite storm drain extension on Lancaster Street for DPW review and approval.

Response: Understood. A plan and profile sheet will be provided and coordinated with DPW for their review and approval. This will be submitted under separate cover in tandem with the new water main replacement design and the phase 1b project, 196 Lancaster. A feasibility study has been conducted and the extension appears technically feasible.

Comment: The storm drain extension in Lancaster Street should be sized to accommodate a 25-year, 24-hour storm event. It is acceptable to only analyze the watershed area draining to this new storm drain extension and size the new pipes based on a simple Manning's equation full flow analysis. The City would like to add watershed area on Elm Street and Cedar Street from Oxford to Lancaster as part of this sizing analysis.



Response: After further discussion with Justin Pellerin, P.E. of Water Resources/DPW, due to as-built conditions within the Preble and Lancaster Street intersection, a 12" MS4 extension is the largest feasible line that can be provided. This is what's currently proposed as part of the application.

Comment: It would be advisable for the applicant to set up a meeting with DPW Water Resources to discuss the proposed storm drain extension design in greater detail to clear up any questions the applicant might have about what will be required.

Response: We have had several discussions with DPW regarding this subject, and will reach back out once the plans are further detailed and reconciled against the other utility company upgrades such as water and electric/telecom.

Comment: The applicant has provided adequate stormwater storage detention volume requested by DPW as part of the overall sewer/storm capacity analysis for the project. DPW is supportive of the comments provided by the third-party stormwater review engineer which should be addressed by the applicant. The only question is if the overflow weir could be raised any higher to maximize storage volume?

Response: We will continue to study this condition; however the current design features an optimized system.

Comment: The proposed sanitary sewer configurations and connection location to the sewer in Elm Street is acceptable. Backflow preventers should be provided in accordance with Section 2 of the Technical Manual.

Response: Please refer to Sheet C-20 for the proposed location of the Backflow preventer and sewer configuration. The proposed sewer connection is to be constructed in accordance with Section 2 of Technical Manual and Chapter 24 of the City Code.

Comment: Submit an erosion and sediment control sheet as part of the plan set.

Response: Please see Sheet C-03 the Construction Management and Erosion and Sedimentation Control Plan.

TDM Program Manager:

Comment: The Plan provides a good overview of the TDM-related transportation Context for the proposed development. It has all the required sections prescribed for the TDM Plans in the Technical Manual.

Comment: I have the following larger context comments for the applicant, and likely have some further ones as well:

- *The TDM Plan does not address/include the two retail spaces that are located on the Lancaster and Oxford Street frontages - at a minimum the employees of the retail uses should be included in surveying/reporting.*
- *The guidelines for TDM Plans were amended in November 2022 - the current draft doesn't follow key changes including doing away with vehicle trip and parking reduction targets, replaced by a focus on establishing and monitoring or mode share for TDM sites. The data/information on vehicle trips and parking can be useful in establishing and monitoring mode share but reduction targets for them are not required. An updated reporting form is available on the TDM Resource webpage that integrates the Mode Share Target Table.*



- *For residential properties, it can be most beneficial to consider all trip-making rather than just commute trips. More explanation regarding what types of trips the Mode Split Targets apply to would be helpful (just peak hours, all day, etc.). My understanding is the baseline targets suggested are based on Journey to Work Data which is focused exclusively on Work Trips.*
- *It would be beneficial to have more commitments in terms of the TDM strategies that will be implemented such as the real-time display of transit arrival and support/sponsorship of bike share (bike station sponsorship, memberships, trip vouchers/reimbursements, etc.).*

Response: Please refer to the revised TDM plan

Consulting Stormwater Engineer:

Comment: The project is required to comply with MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 requirements for stormwater management. In addition, the Applicant has received a number of comments from the City of Portland as part of the ongoing Master Development Plan review with regards to the specific requirements for stormwater management and flow control that have defined their approach for this project. The project will be reducing impervious surface, and as such the stormwater design is driven primarily by the requirements set forward by the City specific to this site. The Applicant is proposing to install a StormFilter system that has been sized adequately for the area draining to it, and an R-tank stormwater storage system that has been sized to adequately manage stormwater flow from the site. I have the following comments for consideration on the proposed system:

- *The Applicant should provide confirmation from the system manufacturers for the proposed design of the StormFilter and R-Tank systems.*

Response: As the project gets closer to approval/building, this step will be taken. In general the proposed system is a very conventional layout/design.

- *The R-tank system as proposed as a number of inlet pipes from roof leaders. The Applicant should confirm the depths of these inlets relative to the anticipated water depths in the system to ensure that there are no un-desired back-flow situations.*

Response: The R-tanks systems have been designed and analyzed intentionally and are not anticipated to cause backflow on any of the pipes entering into the system. We will continue to progress the plans and detail all inverts.

- *The Applicant has provided a stormwater maintenance plan, and will ultimately need to provide the maintenance agreement.*

Response: Understood.

Comment: I generally understand and agree with the stormwater and grading approach on the site, but I would recommend that the Applicant evaluate the area located northeast of the building for access, use, and cover over the buried features per the following comments:

- *The transformer is located in this area, and appears to be accessed from the west based on bollard placement and adjacent site conditions. It should be confirmed that the typical open area next to the transformer can be used for snow storage.*



Response: The bollard placement has since been revised to ensure that adequate area is provided for snow storage and transformer access. The transformer will be adequately protected.

- *There doesn't appear to be a large amount of cover over the top of the Stormfilter vault and the R-tank system. The Applicant should confirm that as proposed, cover is adequate to protect these systems from heavier snow removal equipment, and from the snow storage itself over the R-tank. It also appears that in the event that the transformer needs to be removed or replaced, that would likely be done by placing equipment on the R-tanks, so adequate cover for protection in the event that is required should be considered*

Response: Please refer to Sheet C-46 for a profile of the Stormfilter vault and R-Tank system. As shown in the profile, the cover over the systems varies with grade. The R-Tank HD system was selected and designed with the required cover to accommodate H-20 loading. As shown in the profile and plan view the critical cover over the R-tank system is achieved and increases throughout the system as the grade varies.

- *The plans reflect a fairly steep slope for the paved way located to the east of the building, leading back to the snow storage. The Applicant should confirm that this is acceptable for the snow equipment and for any equipment that may need to access to service the transformer.*

Response:

- *There is a series of curbs installed in the area around the R-tanks, and I generally understand the approach, to protect doorways from stormwater flow/snowmelt in this area. I would suggest a few more spot grades in that area and there may also be a need for further drain structures within the narrow walkway along the building to direct stormwater back out of the curbed area, away from doors and into the drainage system. I highlighted the area in blue below. There's not a lot of direct stormwater here, but there could be flow from snow melt. They've also called out a catch basin that I've highlighted in yellow, and it's not clear to me how that connects into the R-Tank or the piping around it.*

Response: Please refer to the revised grading plan and detail inset that provides more context to the grades in this location. The catch basin as highlighted in the Comment Response report is intended to be the final collection point of stormwater runoff prior to entering into the proposed R-Tank system. This will be a single catch basin with one outlet into the R-Tank system. Further detail connections in coordination with the manufacturer will be provided as the plans/project progress past the first Planning Board workshop.

Comment: The plans should reflect the proposed pavement repair within the roadways for the proposed stormwater and utility installations.

Response: Please refer to the Utility Plan that provides the anticipated trenching widths for utility construction within the Public ROW.

Comment: The utility plan includes a note that the contractor is to relocate existing utility pole and overhead lines or provide underground services to existing buildings. The extent of those changes and impacts on the roadway should be represented.

Response: The project team is currently undergoing consultation with CMP and



relevant providers on rerouting of the existing utility poles. This process is complex and lengthy, we will communicate our final findings once ready to do so.

Comment: The project has reached out to utilities requesting confirmation of ability to serve, and has noted responses will be provided when received.

Response: Ability to serve letters will be provided when received.

Zoning:

Comment: Buildings in the B-3 zone need to be within 5' of the street. 89 Elm Street is not currently meeting this and a waiver request has not been submitted at this time.

Response: Per the Cities Design Manual, within the B-3 Downtown Business zone standards, (b,1,e,2); increasing setback beyond street is allowed, as it provides substantial and viable publicly assessable open space and amenities. This was also accounted for, and communicated, during the Master Development Plan phase. The Master Development Plan approval on 6/13/23 formally waived this requirement which is integral to the overall site design and allocation of private space into the public realm.

In addition to the supplemental material included in this submission pertaining to the City staff comments received May 17th. The 89 Elm project team would like to address comments and provide the following supplemental material to support and assist the planning staff in response to the design review comments received May 25th, 2023, under a separate cover. Please refer to the attachment outline below for the supplemental materials provided as part of this submission.

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

Sincerely,



Sam Lebel, P.E.
Project Manager
Acorn Engineering, Inc.



Danielle McGowan, E.I.
Design Engineer
Acorn Engineering, Inc.

Attachments:

Documents:

- Street Tree Narrative



June 15, 2023

City Arborist - City of Portland Maine
Parks, Recreation & Facilities
Forestry, Parks & Horticulture
212 Canco Road - Suite A
Portland, ME. 04103

Subject: Tree #02772 Removal of Pin Oak Tree on Oxford Street

I am writing regarding Tree #02772, facility ID 02772 - a Pin Oak tree situated on Oxford Street adjacent to the 89 Elm Street affordable housing project. As the team's landscape architect, I have assessed the current conditions and would like to present the reasons for the tree's proposed removal in relation to the upcoming housing project.



The oak tree, while notable at 21-inch DBH does not fall into the Heritage tree category, has grown in a manner that now poses challenges to accessibility and its long-term health. Its growth has extended through the power lines in the area, raising concerns about safety hazards and potential disruptions to power supply. The sidewalk is currently not accessible at this time due to the tree's root flair and should be addressed in the near term by any determination (see image below). These current conditions along with the proposed building location and improved streetscape design we find the

probability of the trees survival to be unlikely.

Our team does not take the removal of street trees lightly and the decision to move ahead with the removal request comes after careful consideration. Acorn engineering has reviewed the field conditions and concluded that based upon their findings and previous experience, the tree's chances of survival during the construction process are minimal. Given the proximity of the building, the existing tree poses potential risks of damage and impediments to accessibility.

While the decision to remove such a tree is not taken lightly, we believe it is essential to balance the need for progress and the responsibility to provide affordable housing options. In



recognition of the tree's significance, we have committed to planting multiple new trees within the vicinity and incorporating green infrastructure into the housing project within the urban context. This approach ensures that we enhance the area's tree canopy while fulfilling our commitment to environmental sustainability and celebrating the important ecological function and economic function of urban trees.



We understand the importance of public sentiment surrounding these matters and will ensure that the removal process is conducted with the utmost care. Our team will coordinate closely with the appropriate departments and follow all necessary guidelines to minimize any disruption and to repurpose the tree's wood effectively.

We would be happy to meet onsite and discuss the plans further. If you have any questions or concerns, please do not hesitate to contact me at dry-la@outlook.com or by telephone (603) 496-8020. We are committed to keeping the community informed throughout the process and working together to create a balance between progress and preserving our natural environment.

Thank you for your attention to this matter.

Sincerely,

Braden Drypolcher, Principal
dry landscape architecture, LLC.



Design Review

Planning and Urban Development Department



Subject: 89 Elm Street – Major Site Plan Review
Zone: B3
Date of Review: May 25, 2023
Design Review
Reviewer(s): Sean King (Urban Designer), Zach Powell (Senior Planner), Maya Balassa (Planner)
Project ID: PL-002403-2023

I. INTRODUCTION

The proposed major site plan application for 89 Elm Street is subject to the *Master Development Plan Standards of Review*, *Land Use Code Section 14.7.5* and design standards of the *City of Portland Design Manual*, *Land Use Code Section 14.6.4.I* to include:

- *B-3 Downtown Business Zone, Appendix 1;*
- *Two-family, special needs independent living units, multiple-family, lodging houses, bed and breakfasts and emergency shelters;*

The built context of the surrounding area contains a variety of building types, architectural styles and mix of uses that vary in height and proximity to the street typically found throughout Portland's Bayside neighborhood. Several zoning districts encapsulate the proposed development area and the existing pattern of development contains large building footprints facing the street with multiple surface parking lots.

II. DESIGN REVIEW COMMENTS: red text denotes standards not met and require resubmission.

Master development plan (MDP) design standards, land use ordinance section 14.7.5 is currently under review.

A. *Creation of a cohesive identity.*

A master development plan shall be designed to create a cohesive identity through building scale, massing, and articulation; - Met

Staff comment: The proposed development includes a new multi-family building at 89 Elm Street consistent with the approved MDP for building scale, massing and articulation. The proposed building is oriented to the street along three facades with massing variation through reductions in building heights toward the residential zone.

Use of quality exterior material and architectural detailing at pedestrian scale; - Met

Staff comment: The proposed exterior materials utilize brick with texture at the ground floor with storefront windows at the proposed retail use. Additional exterior materials include corrugated metal and metal panel siding separated horizontally with a pronounced belt course and vertically with recession on the façade plane.

Consistency of design and materials for streetscape and pedestrian amenities; - Not Met

Staff comment: The proposed development includes streetscape and pedestrian amenities through tree wells, lighting and concrete sidewalks. *Staff finds the proposed streetscape amenities shall correspond more closely with the MDP currently in review that align with specific street typologies.*

Framing of outdoor open space and linkages; - Not Met

Staff comment: Staff identifies linkages to existing open spaces in the surrounding neighborhood to contribute to the outdoor open space of the proposed development. *Staff recommends additional streetscape amenities to allow for pedestrian comfort. Examples may include paving distinction at building entries, fixed seating, street trees and additional planting on private property.*

A clear conveyance of the function and significance of various buildings, entrances, and features; - Met

Staff comment: The proposed building design conveys a clear function of building uses with distinction of retail through storefront windows, entrances and material articulation at a pedestrian scale from the residential function that is identified through window fenestration pattern, distinct entrances and organization of exterior materials.

And to generally comply with design and development standards of the zone in which it is located.

Staff comment: See B-3 design standards below.

The project at 89 Elm Street shall meet the following standards based on the B-3 Downtown Business Zone design standards in the City of Portland Design Manual, *Land Use Code Section 14.6.4.1 Design standards.*

I. Relationship to pedestrian environment

- A. *Distinguish the lower 35 feet of building facades: The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment. Factors to be considered include the design, placement, character and quality of the following – Not Met*

Staff comment: The exterior design along the street facing facades include a clear distinction in materiality with recessed portions that reinforce building entrances. *Staff finds the length of façade bays and pattern of windows to be compromised by the existing Elm Street slope and recommends further articulation to enhance the pedestrian environment (e.g. punched windows at the lower floors that extend to ground plane to allow for recessed planting areas or trellis system for vines).*

1. *Storefronts and building facades, including such factors as relationship to adjacent or nearby structures or open space, pedestrian character, materials and detailing, transparency (having a visible transmittance (VT) of .7 or higher) and contemporary design. – Not Met*

Staff comment: Storefront windows identify the retail use and building entrances to activate the street. **The applicant shall indicate that a VT of .7 or higher is met at the first 35 feet of the building façade.**

2. *Building entrances, including such factors as compatibility with the building's façade, prominence along the street, access to the street, and accessibility for physically handicapped or for those with special needs.* - **Met**

Staff comment: Building entrances are compatible and recessed from the primary building facades and articulated with glass panels, canopy and accessible stoops.

3. *Blank facades; and* - **Met**

Staff comment: Blank facades are minimized through variation in exterior materials and fenestration pattern throughout each street facing facade.

4. *Special features, such as selective use of such features as building arcades and skywalks or elevated walkways.* - **Met**

Staff comment: A proposed building arcade with brick structural supports and storefront windows along Lancaster Street creates a special feature at the corner of Elm and Lancaster Street.

B. *Pedestrian Activities District (PAD)*

Staff comment: Not applicable. The site is not located within the PAD or PAD encouragement area overlay district.

C. *Sidewalk areas and open space: The design of publicly accessible sidewalk areas and open space shall complement the general pattern of the downtown pedestrian environment, conform to special City of Portland streetscape programs described in the Technical Manual, and enhance the attractiveness, comfort, security, and usability of the pedestrian environment. Factors to be considered include the design, placement, character, durability, and quality of the following:*

1. *Sidewalk, crosswalk, and street paving materials;* - **Not Met**

Staff comment: Sidewalk areas in the proposed development include concrete surfaces, pole lighting, and tree wells. **Staff recommends adequate pedestrian passage of six-feet minimum based on applicant's proposal to activate the streetscape. In addition, staff recommends a crosswalk across Lancaster Street at the corner of Elm and Lancaster Street.**

2. *Landscaping, planters, irrigation, and tree guards and grates;* - **Not Met**

Staff comment: Tree wells are proposed, with the **applicant to provide a landscape plan with tree, plant material and irrigation for staff review. In addition, staff recommends removal of tree wells in front of building entrances to eliminate narrowing of sidewalk.**

3. *Lighting;* - **Met**

Staff comment: The proposed development indicates light locations within the right of way and specifies a municipal light fixture as Peninsula Medium street (Figure X-7B) per Technical Manual, section 10 standards.

- D. *Pedestrian amenities such as benches and other seating, trash receptacles, kiosks, bus shelters, artwork, directional and informational signage, fountains, and other special features; and - Met*

Staff comment: The proposed development has not included any pedestrian amenities as indicated in this design standard. Staff recommends the location of pedestrian amenities such as benches and other seating, trash receptacles and other special features be concentrated around building entrances and to enhance the streetscape experience.

- E. *Sidewalk vendors and sidewalk cafes.*

Staff comment: The proposed development includes opportunities for sidewalk cafes along Lancaster Street.

- F. *Urban open spaces.*

Staff comment: The proposed development would create a publicly accessible urban open space along Lancaster Street through setback beyond the street build-to line. Staff finds the provision for varied, high quality, creatively designed and comfortable amenities are not met and recommends additional streetscape elements that highlight entrances with a surface material change and fixed outdoor seating that is usable beyond retail business operating hours.

II. *Relationship to existing development*

- A. *Integrate with, respect and enhance: Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the downtown, surrounding building environment and streetscape, as described and illustrated in the Downtown Urban Design Guidelines (Appendix 1). Factors to be considered include the relationship to the following existing patterns:*

1. *Street walls and building setbacks;*

Staff comment: The proposed development creates a defined street wall and minimizes building setbacks to allow for pedestrian passage or public open space. Staff finds the front setback along Lancaster Street to activate the corner with street-level plaza and building atrium for outdoor seating is appropriate.

2. *Open space;*

Staff comment: The proposed development does not detract from existing open space and allows for pedestrian connection along sidewalks to access existing open spaces beyond the property's boundaries.

3. *Building form, scale and massing;*

Staff comment: The Bayside neighborhood is composed of a mixture of building typologies, heights, organization of blocks and street-level experience. Building form, scale and massing adjacent to the proposed development responds generally to parcel lot division and use; smaller lots are residential in scale while larger lots include either surface parking or large building footprints of moderate height.

The proposed development would infill existing surface parking with a large building footprint that would span the Elm Street frontage from Lancaster Street to Oxford Street. Existing street grades slope upward from Lancaster Street toward Oxford Street. The proposed development would step floors and heights towards Oxford Street and reduce heights towards adjacent residential buildings along Cedar Street that staff finds to be appropriate for massing variation. Additional massing variation include articulation of lower floors of a brick base with a belt course to delineate upper floors, recessed portions of the façade at building entrances and other planes of the exterior wall.

Staff recommends additional variation of the façade plane to recess the upper floors and vertical material delineation, at the charcoal metal panel, to reduce the building's scale.

4. *Façade proportion and composition;*

Staff comment: The proposed building design has a clearly identifiable three-part composition with appropriate articulation to define the building's base of a pedestrian scale, organization of fenestration pattern at the building's middle and change of material at the building's top. Staff finds the punched windows along the street facing facades to be appropriate and recommends further window recession at the lower floors where residential units are proposed to allow for additional privacy, plant screening at foundation walls and further articulate a pedestrian-scaled massing.

The proposed building includes a signature building roof-top element at the Lancaster and Elm Street intersection that staff finds is not integrated into the overall building's composition. Staff recommends a stepback of the signature building roof-top element to clearly define the parapet wall at the upper floor. Furthermore, applicant to clarify if this element is a rooftop appurtenance, which would allow for a consolidation of rooftop mechanical equipment and visual screening where voids are currently proposed. Staff finds the location of façade mounted HVAC equipment to not respect the surrounding residential context and recommends either relocation to roof or an integrated window system for each unit that is less visible.

5. *Pedestrian circulation and building entrances;*

Staff comment: Pedestrian circulation is maintained along the sidewalks with building entrances accessible at the street. Frequent building entrances are proposed along each of the building's façades for residents that are recessed with a pronounced canopy that is integrated into the building. Building entrances for retail use are deeply recessed and create street-level opportunities for outdoor seating that staff finds is appropriate.

6. *Parking,*

Staff comment: In general, any surface parking associated with the proposed development is located at the rear of the property.

7. *Areas within the downtown*

Staff comment: The proposed development would engage with the character of downtown by reinforcing the street wall, street facing building entrances, municipal light fixtures and street trees at a regular interval.

B. Standards for increasing setback beyond street build-to line: A proposed development may exceed maximum setbacks:

Staff comment: The proposed development increases setbacks beyond the street build-to line with exceptions to this pattern demonstrated as follow:

1. Open space and amenity: Lancaster Street would activate the setback beyond the street build-to line for outdoor eating space with supportive ground level retail and building entrance. In addition, Elm Street would accommodate for the addition of street trees, tree wells and sidewalk widths for appropriate pedestrian circulation.
2. Prevailing character and continuity: The placement of the building as an infill development does not substantially detract from the prevailing street wall character.
3. Support for existing open space: The development does not detract from existing publicly accessible open space with the majority of existing open space located several blocks from the property.
4. Quality and orientation: The location on the corner of Lancaster Street and Elm Street afford the highest solar exposure at the west elevation of the building.

III. Roof-top appurtenances

All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building,

Staff comment: The building design does not screen the proposed mechanical equipment located on the roof. Staff recommends the applicant explore:

- Building design solutions to extend the parapet wall at facades visible from the surround streets,
- Consolidation of mechanical equipment to the special architectural element at the corner of Lancaster and Elm Street, and
- Enclosing mechanical equipment with a screening element setback from the roofline.

IV. Shadow impact on open space

The location, massing and orientation of portions of buildings in excess of 65 feet in height shall be such that substantial shadow impacts on public plazas, parks, and other publicly accessible open space are avoided.

Staff comment: Not applicable. The proposed development is not adjacent to any existing publicly accessible open spaces.

V. Wind impacts

The location, massing, orientation and architectural design of a new building or a building addition shall be such that no significant adverse wind impacts are created.

Staff comment: Staff finds the combination of building setbacks, recessed building planes and other architectural elements, such as canopies and atriums assist to reduce wind impacts.

VI. Setback from existing structures

The location and design of proposed structures shall not create a detrimental impact on the structural integrity or safety of adjacent structures or the safety of occupants thereof.

Staff comment: Not applicable. The proposed development would not be constructed at the property line and would not burden adjacent properties.

VII. Building tops

Buildings or structures which exceed one hundred fifty feet in height shall be designed so as to provide a distinctive top to the building which visually conveys a sense of interest and vertical termination to the building.

Staff comment: Not applicable. The proposed development does not exceed one hundred fifty feet.

VIII. View corridors, visual landmarks and gateways

The placement and massing of proposed development shall not substantially obstruct public views to landmarks and natural features from those locations identified on the View Corridor Protection Plan.

Staff comment: Not applicable. The proposed development is not within a view corridor, visual landmark or gateway location.

IX. Signage / Awnings / Canopies

Staff comment: Staff finds the design, placement, location and number of signs to be appropriate for the residential building entrances and retail uses as mounted to the building elements at a pedestrian scale.

MULTIPLE-FAMILY STANDARDS. Multiple-family shall meet the following standards:

1. *The exterior design of the proposed structure, shall be designed to complement and enhance the nearest residential neighborhood.*

Staff comment: The proposed development is located in the B-3 Downtown Business zone and is adjacent to the B-7 Bayside neighborhood with comparable mid-rise residential buildings that include the Schlotterbeck and Foss building and 75 Chestnut Street building. The proposed multi-family building includes architectural elements that enhance a residential character through the façade material of brick and horizontal siding and window pattern.

2. *The proposed development shall respect the existing relationship of buildings to public streets.*

Staff comment: The proposed development is located within close proximity to the street and includes streetscape elements for pedestrian with building entrances facing the street.

3. *Open space on the site for all multiple-family development shall be integrated into the development site.*

Staff comment: The proposed development includes open space within the building setbacks areas that encourage active street usage. **Staff finds the amount of open space to be limited based on the amount of residential units, and recommends the applicant integrate additional open space such as balconies for residents, landscaping or enhanced streetscape elements.**

4. *The design of proposed dwellings shall provide ample windows to enhance opportunities for sunlight and air in each dwelling in principle living areas and shall also provide sufficient storage areas.*

Staff comment: Staff finds the proposed multi-family overall provides ample windows and sufficient interior storage for each residential unit.

5. *The scale and surface area of parking and driveways and paved areas are arranged and landscape to properly screen vehicles from adjacent properties and streets.*

Staff comment: Not applicable. Existing surface parking to remain.

6. *Multiple-family dwellings shall not be converted to lodging houses unless all units in building have been vacant for at least one (1) year.*

Staff comment: Not applicable

June 19, 2023

Sean King
Urban Designer
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: 89 Elm Street Apartments - Design Narrative

Dear Sean,

Please see the below responses to the Design Review Comments provided on 5/25/23.

I A. = A note has been added to indicate 0.7 Max VT of glazing

3. = The Charcoal panel is recessed from other portions off the facade and is recessed for a portion of Elm Street

4. = The area on Elm Street where residential units are located have windows with a minimum sill height of 4'-3" above grade, the windows with lower sills are not apartments but common amenity spaces. The lowest apartment window sill on Oxford Street is 4'-2" Aff. We believe that this provides adequate privacy to the living units and is a similar relationship existing living unit windows have in the neighborhood.

4. = We can review the corner rooftop element further

4. = We can review the wall mounted HVAC unit locations for a more discreet visual appearance

III. = We can look at a parapet wall at the exterior wall to further screen the rooftop HVAC unit visibility from the surrounding neighborhood.

Sincerely,



Ryan Senatore, AIA LEED AP

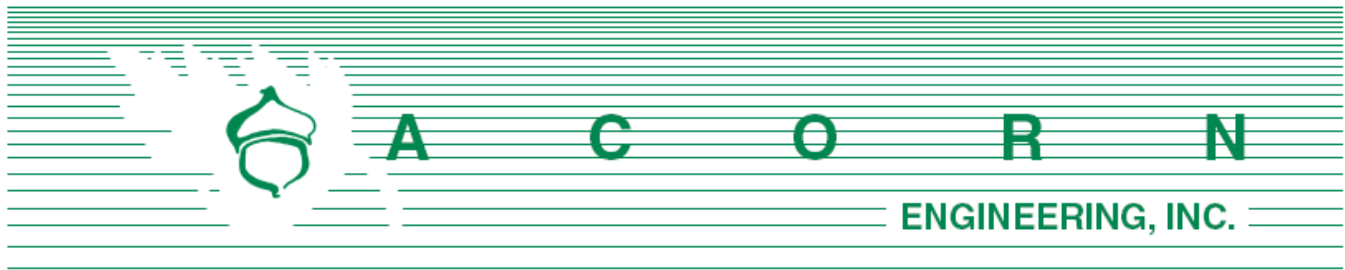
Principal

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101



City of Portland Planning Department
Zach Powell – Senior Planner
389 Congress Street, 4th Floor
Portland, Maine 04101

June 19th, 2023

Subject: Design Review Comment Response Letter
89 Elm Street, Portland, Maine – Major Site Plan Application

On behalf of 89 Elm Street, LLC, Acorn Engineering is pleased to respond to the following comments from the City of Portland Planning and Urban Development Department review of the 89 Elm Street, Major Site Plan Application.

The following is in response to the Design Review Comments received May 25th, 2023.

Design Review Comments:

Consistency of design and materials for streetscape and pedestrian amenities; - Not Met

Comment: The proposed development includes streetscape and pedestrian amenities through tree wells, lighting, and concrete sidewalks. Staff finds the proposed streetscape amenities shall correspond more closely with the MDP currently in review that align with specific street typologies.

Response: The proposed streetscape and pedestrian amenities for the 89 Elm Street development align with the street typologies submitted with the MDP. Please refer to the site and Landscaping plans which reflect the street scape amenities associated with the 89 Elm Street development.

Framing of outdoor open space and linkages; - Not Met

Comment: Staff identifies linkages to existing open spaces in the surrounding neighborhood to contribute to the outdoor open space of the proposed development. Staff recommends additional streetscape amenities to allow for pedestrian comfort. Examples may include paving distinction at building entries, fixed seating, street trees and additional planting on private property.

Response: Please refer to the Site and Landscaping plan which reflects the paving distinction and amenities proposed.

Relationship to Pedestrian Environment:

Distinguish the lower 35 feet of building facades: The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment. Factors to be considered include the design, placement, character and quality of the following – Not Met

Comment: The exterior design along the street facing facades include a clear distinction in materiality with recessed portions that reinforce building entrances. Staff finds the length of façade bays and pattern of windows to be compromised by the existing Elm Street slope and recommends further articulation to enhance the pedestrian environment (e.g. punched windows at the lower floors that extend to ground plane to allow for recessed planting areas or trellis system for vines).

Response: Please refer to the Design Narrative and Renderings (dated 6.9.23) prepared by Ryan Senatore Architecture for more detail on the exterior design of the building.

Storefronts and building facades, including such factors as relationship to adjacent or nearby structures or open space, pedestrian character, materials and detailing, transparency (having a visible transmittance (VT) or .7 higher) and contemporary design. – Not Met

Comment: Storefront windows identify the retail use and building entrances to activate the street. The applicant shall indicate that a VT of .7 or higher is met at the first 35 feet of the building façade.

Response: Please refer to the Design Narrative prepared by Ryan Senator Architecture dated 6.15.23.

Sidewalk, crosswalk, and street paving materials; - Not Met

Comment: Sidewalk areas in the proposed development include concrete surfaces, pole lighting, and tree wells. Staff recommends adequate pedestrian passage of six-feet minimum based on applicant's proposal to activate the streetscape. In addition, staff recommends a crosswalk across Lancaster Street at the corner of Elm and Lancaster Street.

Response: Please refer to the site plan which reflects the 6' concrete pedestrian zone. The plan also reflects the proposed crosswalks across the Lancaster and Elm Street intersection.

Landscaping, planters, irrigation, and tree guards and grates; - Not Met

Comment: Tree wells are proposed, with the applicant to provide a landscape plan with tree, plant material and irrigation for staff review. In addition, staff recommends removal of tree wells in front of building entrances to eliminate narrowing of sidewalk.

Response: The street tree well placement has been altered to not impede entrances. Please refer to the Site and Landscaping Plan for more information.

Pedestrian amenities such as benches and other seating, trash receptacles, kiosks, bus shelters, artwork, directional and informational signage, fountains, and other special features; and – Met

Comment: The proposed development has not included any pedestrian amenities as indicated in this design standard. Staff recommends the location of pedestrian amenities such as benches and other seating, trash receptacles and other special features be concentrated around building entrances and to enhance the streetscape experience.

Response: Please refer to the Site and Landscaping plans which reflect the placement of proposed amenities.



Urban open spaces.

Comment: The proposed development would create a publicly accessible urban open space along Lancaster Street through setback beyond the street build-to line. Staff finds the provision for varied, high quality, creatively designed and comfortable amenities are not met and recommends additional streetscape elements that highlight entrances with a surface material change and fixed outdoor seating that is usable beyond retail business operating hours.

Response: Please refer to the Revised Site and Landscaping plans which include the proposed surface material change and street scape elements.

Building form, scale and massing;

Comment: Staff recommends additional variation of the façade plane to recess the upper floors and vertical material delineation, at the charcoal metal panel, to reduce the building's scale.

Response: Please refer to the Design Narrative prepared by Ryan Senator Architecture dated 6.15.23.

Façade proportion and composition;

Comment: The proposed building design has a clearly identifiable three-part composition with appropriate articulation to define the building's base of a pedestrian scale, organization of fenestration pattern at the building's middle and change of material at the building's top. Staff finds the punched windows along the street facing facades to appropriate and recommends further window recession at the lower floors where residential units are proposed to allow for additional privacy, plant screening at foundation walls and further articulate a pedestrian-scaled massing.

The proposed building includes a signature building roof-top element at the Lancaster and Elm Street intersection that staff finds is not integrated into the overall building's composition. Staff recommends a stepback of the signature building roof-top element to clearly define the parapet wall at the upper floor. Furthermore, applicant to clarify if this element is a rooftop appurtenance, which would allow for a consolidation of rooftop mechanical equipment and visual screening where voids are currently proposed. Staff finds the location of façade mounted HVAC equipment to not respect the surrounding residential context and recommends either relocation to roof or an integrated window system for each unit that is less visible.

Response: Please refer to the Design Narrative prepared by Ryan Senatore Architecture dated 6.15.23.

Roof-top Appurtenances:

All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building,

Comment: The building design does not screen the proposed mechanical equipment located on the



roof. Staff recommends the applicant explore:

- Building design solutions to extend the parapet wall act facades visible from the surround streets,
- Consolidation of mechanical equipment to the special architectural element at the corner of Lancaster and Elm Street, and
- Enclosing mechanical equipment with a screening element setback from the roofline.

Response: Please refer to the Design Narrative prepared by Ryan Senator Architecture dated 6.15.23.

Multiple-Family Standards. Multiple-family shall meet the following standards:

Open space on the site for all multiple-family development shall be integrated into the development site.

Comment: The proposed development includes open space within the building setbacks areas that encourage active street usage. Staff finds the amount of open space to be limited based on the amount of residential units, and recommends the applicant integrate additional open space such as balconies for residents, landscaping or enhanced streetscape elements.

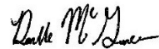
Response: The site design is in compliance with the open space standards set forth in the City of Portland Land Use Code. Please refer to the Landscaping plans for the enhanced streetscape elements.

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

Sincerely,



Sam Lebel, P.E.
Project Manager
Acorn Engineering, Inc.



Danielle McGowan, E.I.
Project Engineer
Acorn Engineering, Inc.



CITY OF PORTLAND
Planning & Urban Development Department

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
Yes	☒	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 & Interest

See attached quitclaim deed for the project property.



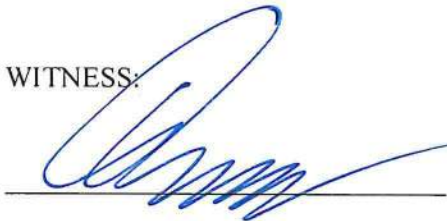
MAINE REAL ESTATE TAX PAID

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE II, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **89 ELM STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

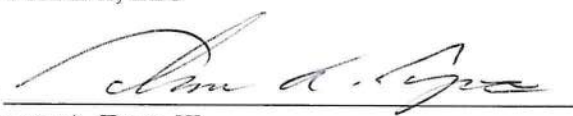
IN WITNESS WHEREOF, the said Bayside II, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE II, LLC

By


 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside II, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

EXHIBIT A
(Legal Description, Parcel 2)

A CERTAIN LOT OR PARCEL OF LAND, WITH THE IMPROVEMENTS THEREON SITUATED ON THE NORTHEASTERLY SIDELINE OF ELM STREET, THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET EAST AND THE SOUTHWESTERLY SIDELINE OF CEDAR STREET AND IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE AS SHOWN ON A PLAN TITLED "LAND DIVISION PLAN BAYSIDE II, LLC" MADE FOR RECORD OWNER BAYSIDE II, LLC BY OWEN HASKELL, INC. DATED SEPTEMBER 14, 2022, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET EAST AND THE NORTHEASTERLY SIDELINE OF ELM STREET;

THENCE, N 49° 39' 27" E ALONG SAID SIDELINE OF LANCASTER STREET EAST 210.57 FEET TO THE SOUTHWESTERLY SIDELINE OF CEDAR STREET;

THENCE, S 43° 29' 51" E ALONG SAID SIDELINE OF CEDAR STREET 40.00 FEET TO THE NORTHEASTERLY CORNER OF LAND NOW OR FORMERLY OF BAYSIDE IV, LLC AS DESCRIBED IN DEED BOOK 35293, PAGE 78;

THENCE, THE FOLLOWING COURSES AND DISTANCES ALONG SAID BAYSIDE IV, LLC LAND:

S 49° 39' 26" W A DISTANCE OF 117.00 FEET;

S 42° 13' 00" E A DISTANCE OF 39.96 FEET;

N 49° 39' 26" E A DISTANCE OF 117.89 FEET TO THE SOUTHWESTERLY SIDELINE OF SAID CEDAR STREET;

THENCE, S 43° 29' 51" E ALONG THE SIDELINE OF CEDAR STREET 39.34 FEET TO THE NORTHERLY CORNER OF LAND NOW OR FORMERLY OF AMELIA A. LABRECK AS DESCRIBED IN DEED BOOK 37970, PAGE 11;

THENCE, BY THE FOLLOWING COURSES AND DISTANCES ALONG SAID LABRECK LAND:

S 48° 42' 12" W A DISTANCE OF 118.73 FEET;

S 42° 13' 00" E A DISTANCE OF 40.00 FEET;

N 48° 41' 30" E A DISTANCE OF 119.62 FEET TO THE SIDELINE OF SAID CEDAR STREET;

THENCE, S 43° 29' 51" E ALONG THE SIDELINE OF CEDAR STREET 80.62 FEET TO THE NORTHERLY CORNER OF LAND NOW OR FORMERLY OF DAVID B. NOWLIN AS DESCRIBED IN DEED BOOK 25148, PAGE 336;

THENCE, S 48° 41' 30" W ALONG SAID NOWLIN LAND 63.30 FEET;

THENCE, THE FOLLOWING COURSES AND DISTANCES THROUGH THE LAND OF THE GRANTOR:

S 49°53'31" W A DISTANCE OF 55.81 FEET;

N 43°54'25" W A DISTANCE OF 31.26 FEET;

S 46°08'15" W A DISTANCE OF 90.10 FEET TO THE NORTHEASTERLY SIDELINE OF SAID ELM STREET;

THENCE, N 43°45'13" W ALONG THE SIDELINE OF ELM STREET 215.15 FEET TO THE POINT OF BEGINNING, CONTAINING 38,462 S.F. OR 0.88 ACRES, MORE OR LESS.

BEARINGS ARE REFERENCED TO CITY GRID.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 2 CONVEYED TO BAYSIDE II, LLC BY QUITCLAIM DEED OF OCTOBER CORPORATION, DATED JANUARY 26, 2000 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 15298, PAGE 144.

Received
Recorded Register of Deeds
Oct 13, 2022 02:30:55P
Cumberland County
Jessica M. Spaulding



ZONING ANALYSIS Relevant Zone(s) B-3

All Projects:

	Required	Proposed
Lot Size	N/A	28,082 SF
Area Per Dwelling Unit	None	
Minimum Street Frontage	15'	132'
Front Yard Minimum	None	7.6'
Front Yard Maximum	5'	18'
Rear Yard	None	0.3'
Yard Right	None	2.88'
Yard Left	None	2.88'
Side Street Setback	None	
Step Back	None	
Maximum Lot Coverage	None*	
Minimum Lot Coverage	N/A	
Maximum Height	80**	< 80'
Open Space	N/A	
Maximum Impervious Area	100%	
Pavement Setback	None	
Floor Area Ratio	None	
Off Street Parking Spaces	None***	
Loading Bays	N/A	
Other 1	30'****	<30'
Other 2		
Other 3		

Total Lot Size: 35,282 SF (.81 AC)

*Max 25% of lot area for portions of structures exceeding 125 feet in height

**See Bayside Height Overlay Map

***See Section S, Parking Study

****Max length of undifferentiated blank wall along publicly accessible way


ZONING ANALYSIS Relevant Zone(s) R-6
All Projects:

	Required	Proposed
Lot Size	2,000 SF	7,185 SF
Area Per Dwelling Unit	725 SF	1,960 SF
Minimum Street Frontage	20'	132'
Front Yard Minimum	5'	14.40'
Front Yard Maximum	N/A	
Rear Yard	10'	10.40'
Yard Right	5'	11.50'
Yard Left	5'	11.50'
Side Street Setback	N/A	
Step Back	35'*	35'
Maximum Lot Coverage	60%	40%
Minimum Lot Coverage	N/A	
Maximum Height	45'	<45'
Open Space	20%	38%
Maximum Impervious Area	100%	
Pavement Setback	None	
Floor Area Ratio	None	
Off Street Parking Spaces	None**	
Loading Bays	N/A	
Other 1	20'***	>20'
Other 2		
Other 3		

Total Lot Size: 35,282 SF (.81 AC)

*Additional 5' setback above 35'

**See Section S, Parking Study

***Lot width



ZONING ANALYSIS Relevant Zone(s) B-3

All Projects:

	Required	Proposed
Lot Size	N/A	28,082 SF
Area Per Dwelling Unit	None	
Minimum Street Frontage	15'	132'
Front Yard Minimum	None	7.6'
Front Yard Maximum	5'	18'
Rear Yard	None	0.3'
Yard Right	None	2.88'
Yard Left	None	2.88'
Side Street Setback	None	
Step Back	None	
Maximum Lot Coverage	None*	
Minimum Lot Coverage	N/A	
Maximum Height	80**	< 80'
Open Space	N/A	
Maximum Impervious Area	100%	
Pavement Setback	None	
Floor Area Ratio	None	
Off Street Parking Spaces	None***	
Loading Bays	N/A	
Other 1	30'****	<30'
Other 2		
Other 3		

Total Lot Size: 35,282 SF (.81 AC)

*Max 25% of lot area for portions of structures exceeding 125 feet in height

**See Bayside Height Overlay Map and Table 18-C for affordability bonus

***See Section S, Parking Study

****Max length of undifferentiated blank wall along publicly accessible way


ZONING ANALYSIS Relevant Zone(s) R-6
All Projects:

	Required	Proposed
Lot Size	2,000 SF	7,185 SF
Area Per Dwelling Unit	725 SF	1,960 SF
Minimum Street Frontage	20'	132'
Front Yard Minimum	5'	14.40'
Front Yard Maximum	N/A	
Rear Yard	10'	10.40'
Yard Right	5'	11.50'
Yard Left	5'	11.50'
Side Street Setback	N/A	
Step Back	35'*	35'
Maximum Lot Coverage	60%	40%
Minimum Lot Coverage	N/A	
Maximum Height	45'	<45'
Open Space	20%	38%
Maximum Impervious Area	100%	
Pavement Setback	None	
Floor Area Ratio	None	
Off Street Parking Spaces	None**	
Loading Bays	N/A	
Other 1	20'***	>20'
Other 2		
Other 3		

Total Lot Size: 35,282 SF (.81 AC)

*Additional 5' setback above 35'

**See Section S, Parking Study

***Lot width

E. Summary of Written Easements

Existing easements:

Existing easement information as provided on the plan titled "Topographic Survey" prepared and identified by Owen Haskell, Inc. last revised 3/29/23.

- CMP Easement within the property Book/Page 4811/70.

Proposed Easements:

The developer is the owner of Map 33 Lots 6, 9, and 18 within the block. The lots lines are to be adjusted per the owner's discretion, coordination of easements will be under a mutual agreement and determined by the property owner. The proposed building is to be addressed 89 Elm Street. The adjacent parcel address is to be determined. Proposed lot numbers are to be determined.

Easements granted from adjacent parcels to 89 Elm parcel:

- Access Easement for 89 Elm to be accessed from the existing 46 Cedar Street curb cut & drive lane on adjacent parcel.
- Stormwater Utility Access & Maintenance easement for access & maintaining stormwater infrastructure which serves the 89 Elm building and parcel and is located on the adjacent parcel. Stormwater which is to be conveyed through 89 Elm parcel.
- Drainage Easement for Stormwater which will be conveyed from the 89 Elm Parcel through the adjacent parcel.

Easements granted from 89 Elm parcel to adjacent parcel:

- Drainage Easement for stormwater which will be conveyed from adjacent parcel through 89 Elm parcel.



16942

Arrow Realty, a Maine corporation organized and existing by law and

having a place of business at 85 Preble Street

of Portland, Cumberland County, Maine

(being unperfected) for consideration given, grant to CENTRAL MAINE POWER COMPANY, a Maine corporation having its principal office at Edison Drive, Augusta, Maine 04336, and

New England Telephone and Telegraph Company, a New York corporation, having its principal

place of business at 185 Franklin Street, Boston, Massachusetts 02107

with warranty covenants, the right and easement to erect, bury, maintain, repair, rebuild, operate and patrol electric transmission, distribution and communication 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 wires and/or underground cables to be as follows:

extending in a southeasterly direction from pole #24 Lancaster Street to proposed pole #24.1.

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 in Book____, Page____. Together with the right to cut down, keep trimmed, and eliminate the growth of those trees and branches using formulations registered by the Environmental Protection Agency, 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 judgement 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.

Arrow Realty has caused this instrument to be signed and sealed by

[illegible]

WITNESS his hand(s) and seal(s) this 7th day of May, 1981.

Signed, Sealed and Delivered
in the presence of

ARROW REALTY

By:

Its President *Ben* .

STATE OF MAINE Cumberland ss. May 7, 1981

Personally appeared the above-named Thomas Cardente
and acknowledged this instrument to be his free act and deed, before me,
and

Justice of the Peace
~~Notary Public~~

STATE OF MAINE

CUMBERLAND, ss.

Received at 8 H 30 M A M on JUN 30 1981 and recorded in

Book 4811 Page 70 ATTEST

Leah S. Tibbels

..DEPUTY..Register

F. Waivers

No waivers are proposed for the project.



G. Financial Capacity

Please find attached the status of good standing from the Secretary of State and letter from the Applicant's bank.





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: Tue Mar 28 2023 16:20:19. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
89 ELM STREET LLC	20237398DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
09/14/2022	N/A	MAINE

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

HAWLEY R. STRAIT
C/O BERNSTEIN SHUR, PO BOX 9729
PORTLAND, ME 04104 5029

New Search

Click on a link to obtain additional information.

List of Filings

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[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 Division of Corporations, UCC & Commissions Reporting and Information



December 22, 2022

To Whom it May Concern,

I am writing regarding the future development of the Bayside parcels recently acquired by Portland-based developer Tom Watson & Co. Gorham Savings has enjoyed a long and productive relationship with this firm. Having partnered with them on several occasions and having closely reviewed the financials of both the company and key principals, it is clear that the group has the capacity and experience for a development of this nature.

Several recent projects that the company has led give a sense of the group's strength and abilities from both a financial and development perspective:

- Construction is currently underway on a 171-unit apartment property at 52 Hanover Street, a few blocks away from the subject development. The deal was financed through a participation of Maine and regional banks.
- Right next door to 52 Hanover, is the firm's 82 Hanover development. Acquired in 2018 from the city, the team repurposed a former Public Works building into 40,000 SF of retail, restaurant and office space. 82 Hanover has become a thriving hub of the Bayside community. The project is financed with a Maine-based bank.
- In 2019 the team purchased a multifamily property at 132 Marginal way. Following the acquisition, the property was converted from 100-quad units to 196 traditional apartment units. The project is financed with a Maine-based bank.
- In Biddeford, construction is nearing completion on a 96-unit historic tax credit conversion of a former mill building. This building is the first phase in a campus-style development along Gooch Street that will combine rental housing, for-sale condos and commercial space. The project is financed with a Maine-based bank.
- In Wilmington, North Carolina, Tom Watson & Co recently acquired a 219-unit multifamily property. The property was acquired with financing from a national bridge lending program with plans to refinance the property into agency financing upon completion of the improvement plan.

These and many other projects make up the firm's long list of strong projects. Tom Watson & Co has access to a wide array of debt funding sources and a deep list of loyal investors who are eager to participate in future projects.

Please reach out with any further questions.

Best,

A handwritten signature in black ink, appearing to read "Nick Weightman", with a long horizontal flourish extending to the right.

Nick Weightman SVP

Commercial Banking | Gorham Savings Bank

H. Technical Capacity

Port Property is the largest apartment manager in the city and Tom Watson & Co. has completed several development projects within Downtown, East End, Longfellow, Oakdale, West Bayside/Parkside, and West End. The apartment homes in Port Property's portfolio consist of modern infill mixed use buildings and historic buildings. The modern infill mixed use buildings have re-activated underserved areas of the city with vibrancy. These historic buildings have been renovated with modern amenities but retain much of their unique historic charm. Portland gives residents plenty to see and do with its walkable downtown, chic restaurants, boutique shopping, and waterfront activities. Convenient living in Maine's largest city has resulted in Port Property apartments to be a perfect living location. Some examples include:

- 341 Cumberland Ave – The Earl
- 638 Congress St – The Lafayette
- 117 Preble St – Schlotterbeck & Foss
- 82 Hanover St– Hanover Works
- 132 Marginal Way – The Linden
- 52 Hanover St – The Armature

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

- Munjoy Heights
- 70 Anderson St.
- 89 Anderson St. – East Bayside Lofts
- 667 Congress St – The Hiawatha
- 82 Hanover St – Hanover Works
- 132 Marginal Way – The Linden
- 52 Hanover St – The Armature

Ryan Senatore Architecture has designed several important multifamily residential projects in Southern and Central Maine, including the nine-story, steel framed high-rise apartment building known as the Hiawatha, the residential high-rise building at 200 Federal Street, and many more. 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.



I. Conformity with Land Use Ordinance

OVERVIEW

The proposed residential building with ground level retail has been designed to conform to City standards where possible, as well as improve upon existing non-conformities. This project conforms with the applicable standards of Portland's Land Use Ordinance Section 14.6.1-4 as demonstrated in the following narrative.

14.6.1 Transportation Standards

A. Impact on Surrounding Street Systems:

- a. The project will not create any significant hazard to safety on the surrounding street network. According to the City of Portland Federal Street Classification map, the site is located along Elm Street which is a minor arterial and Lancaster Street, Cedar Street, and Oxford Street all three classified as local roads. A Traffic Movement Permit Application has been filed for the project under a separate cover. There is an ongoing dialogue regarding TMP scoping with Tom Errico of TY Lin & Jeremiah Bartlett, City Transportation Engineer.
- b. According to the City of Portland Federal Street Classification map, the site is located along Elm Street which is a minor arterial and Lancaster Street, Cedar Street, and Oxford Street all three classified as local roads. The development does not intend to substantially increase congestion on the surrounding streets.

B. Access and Circulation:

1) In general

- a. The development will provide safe access and internal circulation for both pedestrians, vehicles and emergency vehicles as seen on the Site Plan and in accordance with the Technical Manual.
- b. Continuous internal walkways will be provided and will connect to the proposed sidewalks along Elm, Lancaster, Cedar, and Oxford Streets.
- c. Vehicular access to the site will be curbside along Elm, Lancaster, and Oxford Street, and through the existing curb cut at 46 Cedar Street. The site vehicular access been modeled using AutoCAD 2020 Vehicle Tracking software to confirm that the trash truck (25 foot long Hino 268AJ+Wayne Royal GT12 Refuse Truck) can access and egress the property. That is the largest proposed design vehicle to service the property through the Cedar Street entrance.



2) Loading and Servicing:

The building will be encompassed by Oxford, Elm, and Lancaster Street. The internal pavement within the development is to be accessed from the existing 46 Cedar Curb cut over a proposed access easement. It is proposed that the majority of service vehicles use this space for delivery purposes in lieu of circulating through the site and minimizing loading on public streets.

Loading zones with 30 minute parking spaces will be provided on Lancaster Street to serve the retail spaces and along Elm Street to serve the residential uses.

3) Curbs and Sidewalks:

- a. The development proposes curbing and sidewalks along all frontages and are to be installed in accordance with the City's Technical Manual.
- b. There are existing sidewalks along all abutting Streets. Any curbing or sidewalk disturbed during construction is to be repaired and rebuilt as necessary in conformance with City standards.
- c. Not applicable
- d. Not applicable

C. Public Transit Access:

- 1) The proposed development is along Elm Street which is classified as a minor arterial roadway and is currently public transit route. In addition, there are existing transit shelters within a quarter of a mile radius. Therefore, providing a transit shelter for the proposed development is not necessary. As part of the Transit Together Plan, Route 8 service along Elm St will be relocated. Coordination with METRO is ongoing as part of the West Bayside Master Development Plan and future stops will be assessed based on usage from proposed developments.
- 2) Not applicable.
- 3) Not applicable.

D. Parking:

- 1) Vehicular Parking
 - a. The parking requirements for the project will be determined by the planning board. A TDM Plan has been prepared for this project and is included as part of this Site Plan Application



- b. Not applicable
 - c. Not applicable
 - d. There are no proposed parking spaces as part of this development.
- 2) Location and Required Number of Bicycle Parking Spaces:
- a. A minimum of 41 bicycle spaces are required while 60 bicycle spaces are proposed for the 201 residential units. Please refer to the Site Plan and Architectural Floor Plans for more information.
 - b. Not applicable
- 3) Snow Storage:
- a. Please refer to the site plan for the proposed locations designated for snow storage. The Owner will be responsible for managing snow at their discretion and/or coordinating snow removal from the site when necessary.
 - b. Snow storage areas will not encroach on parking, walkways, or stormwater management systems.
- 4) Electric Vehicle (EV) charging
- a. Not applicable.

E. Transportation Demand Management (TDM):

- 1) A Transportation Demand Management (TDM) plan is provided as part of the site plan application. Please refer to the included TDM.
- 2) The plan will comply with the transportation systems and street design standards of the technical manual.

14.6.2 Environmental Quality Standards

A. Preservation of Significant Natural Features:

- 1. The site does not consist of any significant natural features. There are no known endangered species or plants existing on the site.
- 2. Not applicable
- 3. Not applicable



B. Landscape Preservation:

- 1) The site will not disturb any significant natural features.
- 2) There is no vegetation on site.
- 3) There are no existing trees on site
- 4) A waiver is not requested.
- 5) Not applicable.

C. Site Landscaping and Buffers

- 1) The development is not subject to zoning setbacks within the B3 zone. Within the R6 zone, shade trees or plantings will be installed per the City of Portland Technical Manual standards.
- 2) Buffers
 - a. The solid waste locations will be located adjacent to the building near the proposed paved access way and is to be screened from view of public sidewalks and adjacent streets.
 - b. Not applicable
 - c. The existing buffers are to remain or be replanted along all residential abutters.
- 3) Parking Landscaping
 - a. Not applicable
 - b. Not applicable.
 - c. Not applicable.
- 4) Street Trees
 - a. Street trees along the property frontage will be provided per the standards of the technical manual. Raised planters will be provided to allow for adequate storage volume of trees. Raised planters will be located offset from proposed parking spaces to avoid conflicts with door swings. Spacing is about 25'-25 feet along frontages, with some variation to avoid conflicts with proposed and existing utilities. If below overhead power lines then specific trees will be



proposed whose mature height will not interfere with the power lines.

- b. Not applicable.

D. Water Quality, Stormwater Management and Erosion Control:

- a. The site drainage will not be directed to flow or create ponding onto adjacent lots. The runoff created from the site will be collected, attenuated, and released at a rate that does not exceed the existing condition.
- b. Provisions are in place to ensure stormwater from the development will not exceed the pre-development flows. Per guidance from the Department of Public Works (DPW), the 1" storm will not exceed a discharge rate of 0.1 CFS.
- c. Coordination with DPW is in progress to confirm the capacity of the City's separated sewer and ensure the proposed development will not create any downstream problems. The project anticipates detaining the higher of a 1" storm, or the sanitary sewer flows, per guidance from DPW.
- d. 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 Erosion & Sedimentation Control and Stormwater Management Plans, respectively, for more information.
- e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The development proposes adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual. The project will be serviced by a public wastewater system.

14.6.3 Public Infrastructure and Community Safety Standards

A. Consistency with City Master Plans:

- 4. The project has been designed to be consistent with the proposed Master Development Plan, City's Zoning Ordinance, Design Manual, and off-site infrastructure. Please refer to the Master Development Plan application for additional information.
- 5. The site plan is to include necessary easements, rights, and improvements to all connections to the off premise public infrastructure.

B. Public Safety and Fire Prevention:

- 1. Public Safety Design



- a. The site has been designed to enhance the security of the public and private areas on site to reduce the potential for crime.
 - b. Adequate authorized access has been provided within the proposed 20' wide access lane off Cedar Street.
 - c. This area will promote natural surveillance and access control.
2. Emergency access has been provided. Fire trucks will be able to access 3 sides of the building and an ambulance will be able to access all 4 sides.

C . Public Utilities

1. Requests for Ability to Serve letters have been sent to the respective companies. Responses are forthcoming.
2. The electrical service will be wired underground via a new pad-mounted transformer as shown on the Utility Plan.
3. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual and the comments received from DPW as part of the Master Development Plan
4. The project will be served by connection to the public sewer system within Lancaster Street. The stormwater management system is designed to meet the standards of Chapter 500.
5. A space allocated for solid waste storage can be seen on the Site Plan (C-10). The solid waste containers will be fully enclosed and screened from the public view.

16.4.4 Site Design Standards

A. Massing, Ventilation and Wind Impact:

- a. Please refer to Section O, Architectural Design Narrative.

B. Shadows:

A shadow study is to be completed by Ryan Senatore Architecture and is to be in accordance with the Shadow Standards in the technical manual, as requested as part of the West Bayside Master Development Plan. The study is underway and will be forwarded to the city upon completion.

C. Snow and Ice Loading:

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



D. View Corridors:

Not applicable.

E. 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. It is our understanding that there are no known archaeological resources that exist on the site.

F. Exterior Lighting:

- a. Site Lighting.
 - i. Exterior lighting will be designed to meet the requirements set forth in the Technical Manual and not to negatively impact the abutting properties.
 - ii. Lighting has been designed to not adversely impact the abutting residential properties. Shielding shall be implemented when necessary.
- b. Architectural and Specialty Lighting.
 - i. No architectural and Specialty lighting is proposed, at this time.
 - ii. No up-lighting is proposed, at this time.
- c. Street lighting has been proposed in accordance with the City Technical Manual and is to include the required peninsula decorative lighting.

G. Noise and Vibration:

- a. All proposed heating, ventilation and air conditioning equipment, and emergency generators are to meet the applicable state and federal emissions requirements as defined by the Architect. They are to be located within the interior of the site or the top of the building and will also be screened when necessary.



H. Signage and Wayfinding:

- a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.
 - i. The project is not located in a historic district or subject to Article IX.
 - ii. Signage will complement the subject building and its immediate context.
 - iii. Signage will only be related to vehicular access.
 - iv. Signage will be facing downwardly to avoid glare and light spillover to towards the sky.
 - v. No proposed signs will be located along rooftops.
- b. 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. Design Standards.

- a. The Architect has designed the project to meet the standards set forth the two zoning districts of B3 Downtown Business zone and R6 Residential, as well as the City of Portland Design Manual. Please refer to the Architectural Plans.



I. Conformity with Land Use Ordinance

OVERVIEW

The proposed residential building with ground level retail has been designed to conform to City standards where possible, as well as improve upon existing non-conformities. This project conforms with the applicable standards of Portland's Land Use Ordinance Section 14.6.1-4 as demonstrated in the following narrative.

14.6.1 Transportation Standards

A. Impact on Surrounding Street Systems:

- a. The project will not create any significant hazard to safety on the surrounding street network. According to the City of Portland Federal Street Classification map, the site is located along Elm Street which is a minor arterial and Lancaster Street, Cedar Street, and Oxford Street all three classified as local roads. A Traffic Movement Permit Application has been filed for the project under a separate cover. There is an ongoing dialogue regarding TMP scoping with Tom Errico of TY Lin & Jeremiah Bartlett, City Transportation Engineer.
- b. According to the City of Portland Federal Street Classification map, the site is located along Elm Street which is a minor arterial and Lancaster Street, Cedar Street, and Oxford Street all three classified as local roads. The development does not intend to substantially increase congestion on the surrounding streets.

B. Access and Circulation:

1) In general

- a. The development will provide safe access and internal circulation for both pedestrians, vehicles and emergency vehicles as seen on the Site Plan and in accordance with the Technical Manual.
- b. Continuous internal walkways will be provided and will connect to the proposed sidewalks along Elm, Lancaster, Cedar, and Oxford Streets.
- c. Vehicular access to the site will be curbside along Elm, Lancaster, and Oxford Street, and through the existing curb cut at 46 Cedar Street. The site vehicular access been modeled using AutoCAD 2020 Vehicle Tracking software to confirm that the trash truck (25 foot long Hino 268AJ+Wayne Royal GT12 Refuse Truck) can access and egress the property. That is the largest proposed design vehicle to service the property through the Cedar Street entrance.



2) Loading and Servicing:

The building will be encompassed by Oxford, Elm, and Lancaster Street. The internal pavement within the development is to be accessed from the existing 46 Cedar Curb cut over a proposed access easement. It is proposed that the majority of service vehicles use this space for delivery purposes in lieu of circulating through the site and minimizing loading on public streets.

Loading zones with 30 minute parking spaces will be provided on Lancaster Street to serve the retail spaces and along Elm Street to serve move in and move outs for the residential uses.

3) Curbs and Sidewalks:

- a. The development proposes curbing and sidewalks along all frontages and are to be installed in accordance with the City's Technical Manual.
- b. There are existing sidewalks along all abutting Streets. Any curbing or sidewalk disturbed during construction is to be repaired and rebuilt as necessary in conformance with City standards.
- c. Not applicable
- d. Not applicable

C. Public Transit Access:

- 1) The proposed development is along Elm Street which is classified as a minor arterial roadway and is currently public transit route. In addition, there are existing transit shelters within a quarter of a mile radius. Therefore, providing a transit shelter for the proposed development is not necessary. As part of the Transit Together Plan, Route 8 service along Elm St will be relocated. Coordination with METRO is ongoing as part of the West Bayside Master Development Plan and future stops will be assessed based on usage from proposed developments.
- 2) Not applicable.
- 3) Not applicable.

D. Parking:

- 1) Vehicular Parking
 - a. The parking requirements for the project will be determined by the planning board. A TDM Plan has been prepared for this project and is included as part of this Site Plan Application



- b. Not applicable
 - c. Not applicable
 - d. There are no proposed parking spaces as part of this development.
- 2) Location and Required Number of Bicycle Parking Spaces:
 - a. A minimum of 41 bicycle spaces are required while 60 bicycle spaces are proposed for the 201 residential units. Please refer to the Site Plan and Architectural Floor Plans for more information.
 - b. Not applicable
- 3) Snow Storage:
 - a. Please refer to the site plan for the proposed locations designated for snow storage. The Owner will be responsible for managing snow at their discretion and/or coordinating snow removal from the site when necessary.
 - b. Snow storage areas will not encroach on parking, walkways, or stormwater management systems.
- 4) Electric Vehicle (EV) charging
 - a. Not applicable.

E. Transportation Demand Management (TDM):

- 1) A Transportation Demand Management (TDM) plan is provided as part of the site plan application. Please refer to the included TDM.
- 2) The plan will comply with the transportation systems and street design standards of the technical manual.

14.6.2 Environmental Quality Standards

A. Preservation of Significant Natural Features:

- 1. The site does not consist of any significant natural features. There are no known endangered species or plants existing on the site.
- 2. Not applicable
- 3. Not applicable



B. Landscape Preservation:

- 1) The site will not disturb any significant natural features.
- 2) There is no vegetation on site.
- 3) There are no existing trees on site
- 4) A waiver is not requested.
- 5) Not applicable.

C. Site Landscaping and Buffers

- 1) The development is not subject to zoning setbacks within the B3 zone. Within the R6 zone, shade trees or plantings will be installed per the City of Portland Technical Manual standards.
- 2) Buffers
 - a. The solid waste locations will be located adjacent to the building near the proposed paved access way and is to be screened from view of public sidewalks and adjacent streets.
 - b. Not applicable
 - c. The existing buffers are to remain or be replanted along all residential abutters.
- 3) Parking Landscaping
 - a. Not applicable
 - b. Not applicable.
 - c. Not applicable.
- 4) Street Trees
 - a. Approximately 20 street trees are proposed along the 89 Elm Street property frontage and will be provided per the standards of the technical manual. It is proposed to use the silva cell street tree system to provide a suitable soil volume and space to support tree root growth. Spacing is approximately 30-35 feet along frontages, with some variation to avoid conflicts with proposed and existing utilities. In areas where trees are located below overhead power lines,



specific trees will be proposed where the mature tree height will not interfere with the power lines.

A meeting was held with the Public Works Forestry Division on March 23, 2023 to begin to coordinate the street tree plan.

- b. Not applicable.

D. Water Quality, Stormwater Management and Erosion Control:

- a. The site drainage will not be directed to flow or create ponding onto adjacent lots. The runoff created from the site will be collected, attenuated, and released at a rate that does not exceed the existing condition.
- b. Provisions are in place to ensure stormwater from the development will not exceed the pre-development flows. Per guidance from the Department of Public Works (DPW), the 1" storm will not exceed a discharge rate of 0.1 CFS.
- c. Coordination with DPW is in progress to confirm the capacity of the City's separated sewer and ensure the proposed development will not create any downstream problems. The project anticipates detaining the higher of a 1" storm, or the sanitary sewer flows, per guidance from DPW.
- d. 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 Erosion & Sedimentation Control and Stormwater Management Plans, respectively, for more information.
- e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The development proposes adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual. The project will be serviced by a public wastewater system.

14.6.3 Public Infrastructure and Community Safety Standards

A. Consistency with City Master Plans:

- 4. The project has been designed to be consistent with the proposed Master Development Plan, City's Zoning Ordinance, Design Manual, and off-site infrastructure. Please refer to the Master Development Plan application for additional information.
- 5. The site plan is to include necessary easements, rights, and improvements to all connections to the off premise public infrastructure.



B. Public Safety and Fire Prevention:

1. Public Safety Design
 - a. The site has been designed to enhance the security of the public and private areas on site to reduce the potential for crime.
 - b. Adequate authorized access has been provided within the proposed 20' wide access lane off Cedar Street.
 - c. This area will promote natural surveillance and access control.
2. Emergency access has been provided. Fire trucks will be able to access 3 sides of the building and an ambulance will be able to access all 4 sides.

C . Public Utilities

1. Requests for Ability to Serve letters have been sent to the respective companies. Responses are forthcoming.
2. The electrical service will be wired underground via a new pad-mounted transformer as shown on the Utility Plan.
3. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual and the comments received from DPW as part of the Master Development Plan
4. The project will be served by connection to the public sewer system within Lancaster Street. The stormwater management system is designed to meet the standards of Chapter 500.
5. A space allocated for solid waste storage can be seen on the Site Plan (C-10). The solid waste containers will be fully enclosed and screened from the public view. Per City Staff requests, collection of solid waste shall not occur between the hours of 11:00pm and 6:00am.

16.4.4 Site Design Standards

A. Massing, Ventilation and Wind Impact:

- a. Please refer to Section O, Architectural Design Narrative.

B. Shadows:

The project vicinity does not include any existing publicly accessible open space. Therefore, per the technical manual, a shadow study is not required. Per request, a shadow study analysis was completed by Ryan Senatore Architecture.



C. Snow and Ice Loading:

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

D. View Corridors:

Not applicable.

E. 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. It is our understanding that there are no known archaeological resources that exist on the site.

F. Exterior Lighting:

- a. Site Lighting.
 - i. Exterior lighting will be designed to meet the requirements set forth in the Technical Manual and not to negatively impact the abutting properties.
 - ii. Lighting has been designed to not adversely impact the abutting residential properties. Shielding shall be implemented when necessary.
- b. Architectural and Specialty Lighting.
 - i. No architectural and Specialty lighting is proposed, at this time.
 - ii. No up-lighting is proposed, at this time.
- c. Street lighting has been proposed in accordance with the City Technical Manual and is to include the required peninsula decorative lighting.

G. Noise and Vibration:

- a. All proposed heating, ventilation and air conditioning equipment, and emergency generators are to meet the applicable state and federal emissions requirements as defined by the Architect. They are to be located within the interior of the site or the top of the building and will also be screened when necessary.



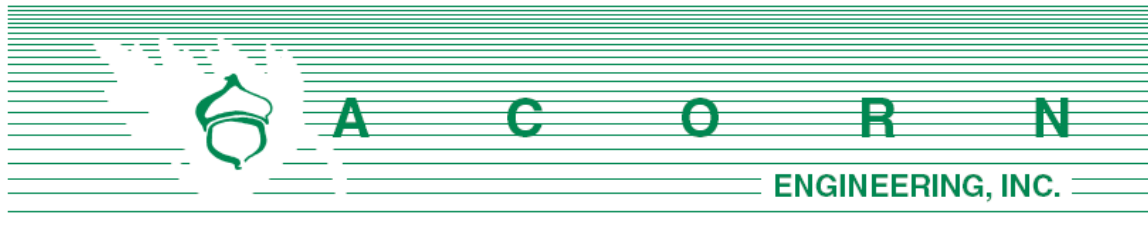
H. Signage and Wayfinding:

- a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.
 - i. The project is not located in a historic district or subject to Article IX.
 - ii. Signage will complement the subject building and its immediate context.
 - iii. Signage will only be related to vehicular access.
 - iv. Signage will be facing downwardly to avoid glare and light spillover to towards the sky.
 - v. No proposed signs will be located along rooftops.
- b. 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. Design Standards.

- a. The Architect has designed the project to meet the standards set forth the two zoning districts of B3 Downtown Business zone and R6 Residential, as well as the City of Portland Design Manual. Please refer to the Architectural Plans.





J. STORMWATER MANAGEMENT **REPORT**

Prepared For:

**89 Elm Street LLC
188 State Street, 3rd Floor
Portland, Maine 04104**

Prepared By:

**Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104**



April 2023

INTRODUCTION

Acorn Engineering, Inc. has been retained by 89 Elm LLC, to provide civil engineering services for the proposed development at 89 Elm Street in Portland, Maine. The property consists of approximately 0.81 acres of land to be transformed into an 8-story building primarily for affordable residential use with retail and restaurant space on the first floor. The project will reside at Map, Book Lot (033 H006001) whose lot line will be adjusted to encompass the entire development. Parcels 033 H018001 and 033 H009001 will be merged into one parcel whose area will remain outside the building footprint.

A stormwater analysis was prepared to address the effects of the proposed development on both the quantity and quality of stormwater runoff. The purpose of this report is to demonstrate that the project will meet and exceed the requirements set forth by Maine DEP Chapter 500 Basic, General, and Flooding 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.
- City of Portland Code of Ordinances Chapter 32 – Post-Construction Stormwater Management

EXISTING CONDITIONS

The project site is bordered by Elm, Lancaster, Cedar, and Oxford Streets. A boundary plan has been prepared by Owen Haskell Inc., dated December 8th, 2022, last revised March 29th, 2023. Summit Geoengineering Services (SGS) conducted a geotechnical investigation for the site concluded on March 24th, 2023.

The project is located in the Bayside Height Overlay Zone and is within the B3 Downtown Business and R6 Residential zoning districts. It is our understanding that there are no natural resources on site and that the development is not within an urban impaired stream watershed.

The site is currently comprised of a medium to high use surface parking lot with slopes ranging up to 9% from Oxford Street down to the Elm Street and Lancaster Street intersection, draining into the City's Combined Sewer System. No formal stormwater treatment or detention presently resides onsite.

PROPOSED DEVELOPMENT

The proposed development intends to transform the existing parking lot into a multistory primarily residential building with retail space on the ground floor. The site will feature interconnecting sidewalks and pavement for ease of drive up and drop off access to the first, second, and third floor, utilizing a stepped story approach to limit land disturbance and blend into the existing topography.

The site was designed with the intent to minimize the total area of impervious surface on the site and overall reducing both the volume and rate of runoff leaving the site. The stormwater collection, treatment, and distribution systems on site have been designed to contain and detain runoff generated from the proposed development as well as upgradient area that may run onto the site as described in this report.

In part of this project and the Master Development Plan (MDP), it is proposed to extend the City's MS4 System from Preble Street to the frontage of 89 Elm Street. Discussion with DPW of the extension and request for the current capacity analysis is in progress.

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

GENERAL STANDARDS – WATER QUALITY

All treatment BMPs proposed as part of this development have been designed to utilize StormFilter cartridges as a filter meeting the requirements of the General Standards (Section 4.B) of the Chapter 500 by CONTECH Engineered Solutions LLC, Approved by the Maine DEP March 13th, 2015.

The StormFilter system proposed will provide further storage and release of a water quality volume through R-Tank subsurface chamber system. The StormFilters are proposed to provide treatment generated from the roof. As it is not anticipated that oils and grease will be entering the StormFilter Cartridges the CONTECH provides various options of filter media for the targeted pollutant removal. Please refer to the Post Development Watershed Map in Attachment B for reference on the proposed area to be treated.

Treatment Area

Based on the approval letter by the MDEP they recommend using 7 cartridges per acre of impervious being treated. The project proposes to treat 0.39 acres of impervious surface



within the Storm Filter Cartridges. See *Table 1* below for the comparison of the City's recommended cartridges with what is proposed in part of this project.

Table 1 – StormFilter Cartridge Sizing			
	1-Year Peak Flow (cfs)	Required Cartridges	Provided Cartridges
StormFilter Cartridges	0.63	3	4

As represented in *Tables 1 and 2*, the site is in accordance with Chapter 500, General Standard rules and the MDEP approval letter for StormFilter treatment.

The proposed treatment of impervious and developed areas are as follows:

Table 2 –Treatment Area					
	Existing Area (SF)	Proposed Area (SF)	Net Change (SF)	Proposed Area with Treatment (SF)	% Overall, Area Treated
Impervious Area	31,308	30,712	-596	17,072	56%
Developed Area	35,282	35,282	0	17,072	48%
*Developed area includes impervious area, landscaped, or unvegetated area in accordance with MDEP.					

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).

Per the City comments received in part of the MDP, it is requested that we provide storage on site for the greater volume out of the following: either the sanitary flows generated from the proposed development or the equivalent runoff from 1" of rainfall over the entire developed area. The proposed flows generated for the 89 Elm Street development are as follows in *Table 3* Below.

Table 3: Required Detention Volume		
1" of rainfall over the entire redeveloped area:	19,143 GPD	2,559 cubic-feet
Projected 24 hour daily sanitary flows:	27,620 GPD	3,692 cubic-feet

Based on this comparison, the proposed development intends to store the greater volume; 3,692 cubic-feet. Detention on site is accomplished utilizing R-Tank subsurface chambers. The chambers have been sized to provide 3,693 cubic feet of available storage. The system was sized to meet the City's request and to drain between 24 to 48 hours.

The maximum permissible stormwater outflow rate into the City's system during the design storm event is to be less than or equal to 0.1 CFS per acre of watershed area draining to the detention system, per request of Portland DPW. The R-Tank system proposed is sized to provide for 0.865 acres of area draining to the R-Tank system and 0.873 acres of impervious draining to the point of interest. The site has been designed to detain and release stormwater runoff equal to 0.1 CFS off the site for the entire development during the design storm event. Please refer to the attached HydroCAD report for more information.

Pre and Post Development Subcatchments:

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.

Curve Number (CN)

Within the pre-development model, the vegetated areas were considered fair grass, and impervious areas consisted of connected pavement.

The post development landscaped areas were given a good rating for new landscaped or loam/seeded areas and fair rating for the vegetated areas to remain. Refer to the attached pre and post development maps provides a visual representation of the land covers from the pre and post conditions.

Pre and Post Development Calculations:

Pre and Post development conditions will maintain the same general topography and will drain to the same point of interest at the Elm Street and Lancaster Street intersection. Overall, the proposed development proposed to decrease the impervious area within the property line and in the overall developed area. *Table 2*, Treatment area above provides a breakdown of the existing and proposed impervious area within the property line and total developed. *Table 6* below provides the comparison of the pre and post development peak flows for 2, 10, 25, 50, and 100-yr storm events.

Table 4 – Pre-Development Peak Stormwater Flows					
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)	50-Year Storm Event (cfs)	100-Year Storm Event (cfs)
POI #1	2.7	4.2	5.4	7.0	7.7

Table 5 – Post-Development Peak Stormwater Flows					
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)	50-Year Storm Event (cfs)	100-Year Storm Event (cfs)
POI #1	2.3	4.0	4.6	5.4	5.84
POI # 2	0.0	0.1	0.1	0.1	0.1

Table 6 – Comparison of Peak Flows										
Drainage Area	2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)		50-Year Storm Event (cfs)		100-Year Storm Event (cfs)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
POI #99*	2.7	2.3	4.2	4.0	5.4	4.7	7.0	5.5	7.7	6.0
*POI #99 is represented in the Post Development HydroCAD and is located at the Elm St. and Lancaster St. intersection and is the primary drainage point for the development for both pre and post conditions.										

As shown in *Table 6*, the net impact of the post development peak flows will be 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 has been derived from the following resources:

- Soil Conservation Service Medium Intensity Soil Survey for York County
- Summit GeoEngineering Services, Geotechnical Report, dated February 2023

The site consists of soils within hydrological groups A, which have been inputted into HydroCAD accordingly. Soil borings and test pits were conducted by Summit GeoEngineering to further assess the conditions on site. In accordance with Maine Best Management Practices (BMP). The USDA soil report and geotechnical report were submitted as part of this submission.

CONCLUSION

The proposed development was designed to meet the requirements set forth in Chapter 500 Basic, General, and Flooding Standards and the following requirements from the City of Portland (the City). The site was designed with the intent to minimize the total area of impervious surface on the site and overall reducing both the volume and rate of runoff leaving the site.

Stormwater quality is proposed to be treated via StormFilter Cartridges to treat 48% of the proposed development and 56% of the proposed impervious area. Water quantity control was through R- tank Subsurface storage chambers and was designed to store 3,693 cubic-feet provided in *Table 3* of runoff per the City's requests. Overall, the development will be reducing the flow rate leaving the parcel into the City's combined sewer system from the pre to post development conditions. This is achieved through the extension of the MS4 system within Lancaster Street in combination with the use of subsurface storage systems to detain runoff onsite prior to discharging into the public system.

Please find the following attachments for more information on the stormwater analysis in addition to the proposed construction and maintenance plan for the development.

ATTACHMENTS

Attachment A: Pre-Development Watershed Map
 Attachment B: Post-Development Watershed Map
 Attachment C: HydroCAD Calculations
 Attachment D: Soil Survey
 Attachment E: Geotechnical Report prepared by Summit Geoengineering Services
 Attachment F: Post-Construction Stormwater Inspection & Maintenance Plan



SECTION J

STORMWATER MANAGMENT REPORT

Attachment A: Pre Development Watershed Map



SECTION J

STORMWATER MANAGMENT REPORT

Attachment B: Post Development Watershed Map



NOTE:
REFER TO STORMWATER REPORT FOR MORE
INFORMATION

1 SUBCATCHMENT NUMBER

2 SUBCATCHMENT EXTENTS

POI #1 POINT OF INTEREST (POI)

WATER QUALITY VOLUME:
STORMFILTER VAULT
4 CARTRIDGES
27"-CARTRIDGE FILTER
TREATMENT AREA: 17,410 SF
DESIGN FLOW RATE: 0.68 CFS
CARTRIDGE FLOW RATE: 1.67 GPM/FT2

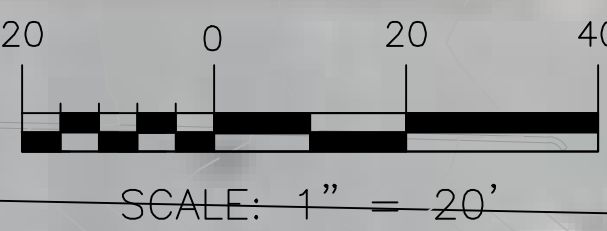
WATER QUANTITY VOLUME:
R-TANK SUBSURFACE CHAMBERS
25 ROWS
9 CHAMBERS PER ROW
21.11' X 34.81' X 5.45'
AVAILABLE STORAGE VOLUME: 3,693 CUBIC-FEET
DRAINAGE AREA: 37,675 SF

AREA WITH TREATMENT

DRAINAGE AREA TO BE STORED IN R-TANKS

DRAINAGE AREA OUTSIDE OF PROPERTY LINE TO BE STORED IN R-TANKS

TREATMENT				
IMPERVIOUS AREA TO BE TREATED (SF)		17,410		
	EXISTING (SF)	PROPOSED (SF)	NET (SF)	% OVERALL TO BE TREATED
IMPERVIOUS AREA	31,308	30,712	-596	56%
DEVELOPED AREA	35,282	35,282	0	48%



PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR

CONCEPT

PRELIM SITE

SITE PLAN

BY

DATE

WHS

4/4/23

SJL

4/5/23

4/5/23

DRAWING NAME:

POST DEVELOPMENT WATERSHED MAP

PROJECT NAME:

89 ELM STREET REDEVELOPMENT – PORTLAND

CLIENT:

89 ELM, LLC
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

ENGINEERING, INC.

PO BOX 3372, PORTLAND MAINE 04104
(207) 775-2655

FILE:

1192.2_CIVIL

JN:

1192.2

SCALE:

AS NOTED

DESIGNED BY:

SJL

DRAWN BY:

DNM

CHECKED BY:

WHS

PROFESSIONAL ENGINEER

SAMUEL J. LEBEL
No. 16505
LICENSED

4/5/23

DRAWING NO.

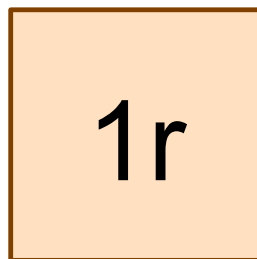
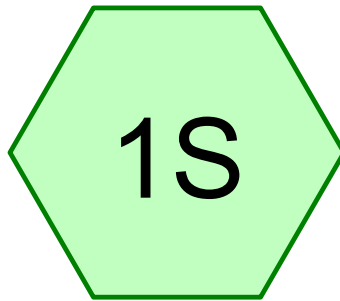
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SECTION J

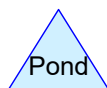
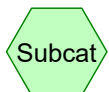
STORMWATER MANAGMENT REPORT

Attachment C: Pre Development HydroCAD





Elm/ Lancaster Street



Routing Diagram for 1192.2_PRE_4.3.23

Prepared by HP Inc., Printed 4/4/2023

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.097	49	50-75% Grass cover, Fair, HSG A (1S)
0.003	96	Gravel surface, HSG A (1S)
0.897	98	Paved parking, HSG A (1S)
0.996	93	TOTAL AREA

1192.2_PRE_4.3.23

Prepared by HP Inc.

Printed 4/4/2023

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.996	HSG A	1S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.996		TOTAL AREA

1192.2_PRE_4.3.23

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.097	0.000	0.000	0.000	0.000	0.097	50-75% Grass cover, Fair	1S
0.003	0.000	0.000	0.000	0.000	0.003	Gravel surface	1S
0.897	0.000	0.000	0.000	0.000	0.897	Paved parking	1S
0.996	0.000	0.000	0.000	0.000	0.996	TOTAL AREA	

1192.2_PRE_4.3.23*Type III 24-hr 2-year Rainfall=3.10"*

Prepared by HP Inc.

Printed 4/4/2023

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Page 5

Time span=1.00-48.00 hrs, dt=0.01 hrs, 4701 points

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: 1

Runoff Area=43,407 sf 89.98% Impervious Runoff Depth=2.35"

Tc=6.0 min CN=93 Runoff=2.66 cfs 0.195 af

Reach 1r: Elm/ Lancaster Street

Inflow=2.66 cfs 0.195 af

Outflow=2.66 cfs 0.195 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.195 af Average Runoff Depth = 2.35"
10.02% Pervious = 0.100 ac 89.98% Impervious = 0.897 ac

Summary for Subcatchment 1S: 1

Runoff = 2.66 cfs @ 12.09 hrs, Volume= 0.195 af, Depth= 2.35"

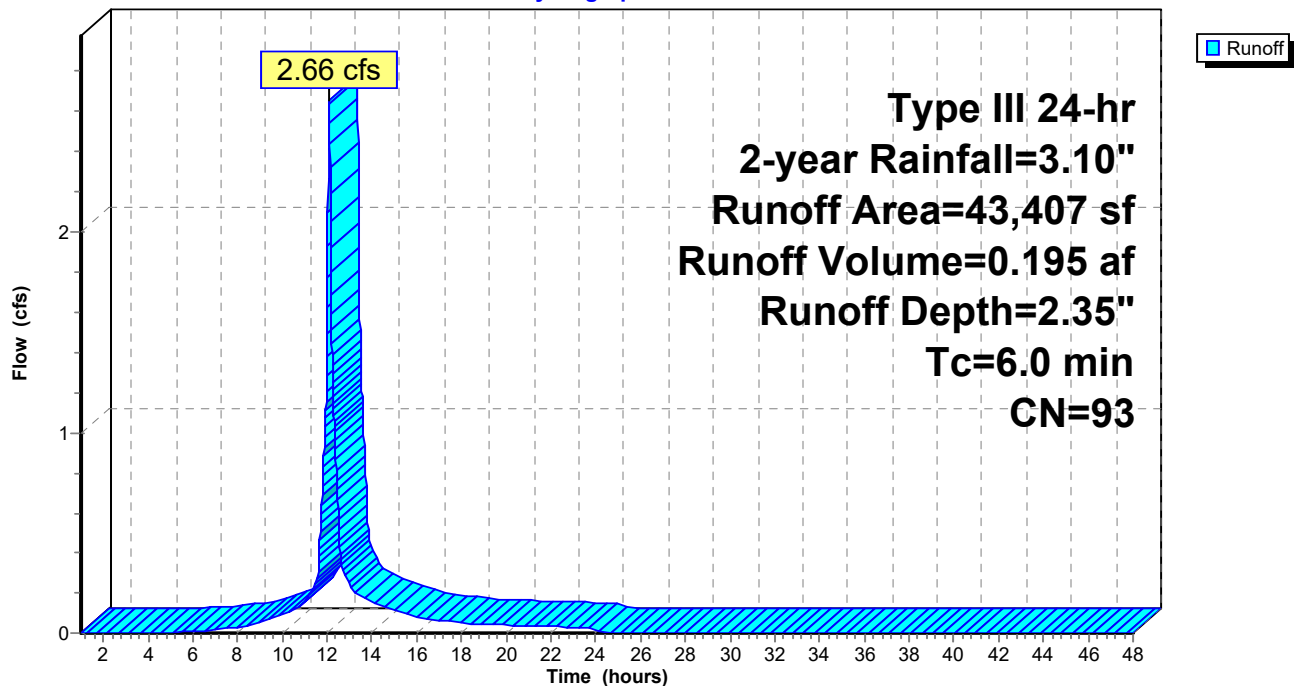
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
125	96	Gravel surface, HSG A
39,059	98	Paved parking, HSG A
4,223	49	50-75% Grass cover, Fair, HSG A
43,407	93	Weighted Average
4,348		10.02% Pervious Area
39,059		89.98% Impervious Area

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

Subcatchment 1S: 1

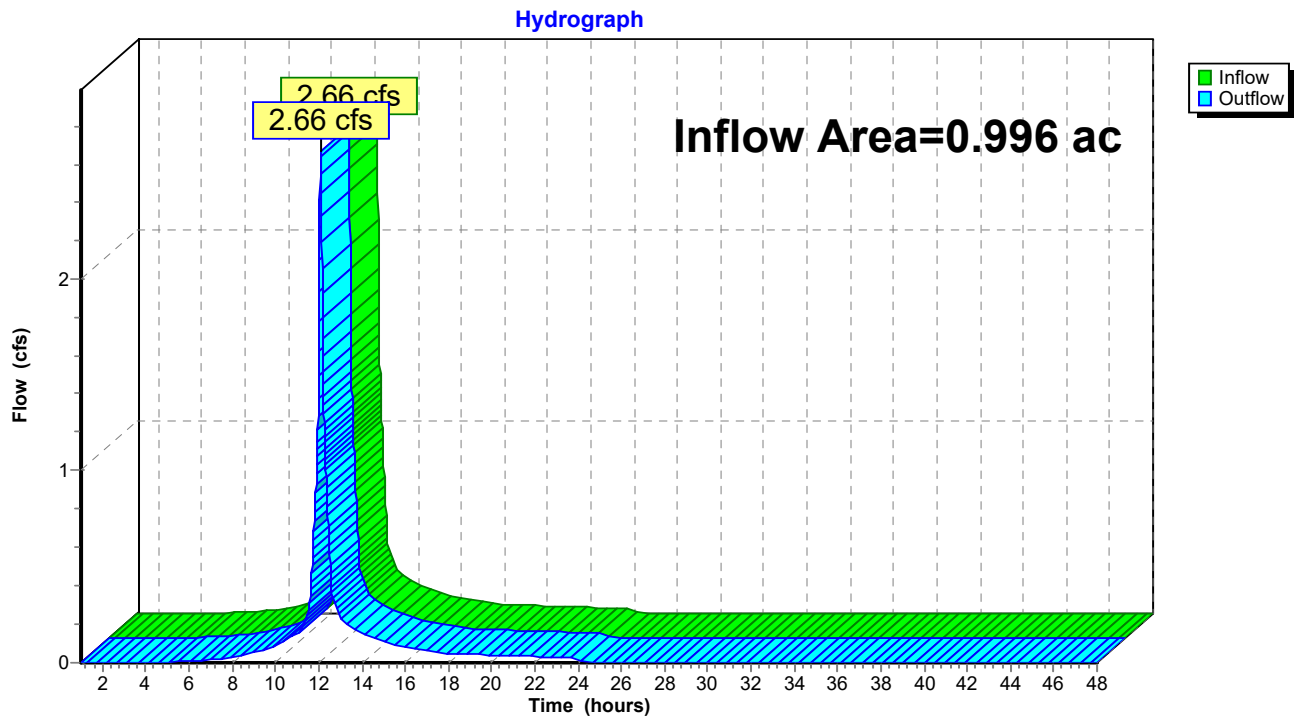
Hydrograph



Summary for Reach 1r: Elm/ Lancaster Street

Inflow Area = 0.996 ac, 89.98% Impervious, Inflow Depth = 2.35" for 2-year event
Inflow = 2.66 cfs @ 12.09 hrs, Volume= 0.195 af
Outflow = 2.66 cfs @ 12.09 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs

Reach 1r: Elm/ Lancaster Street

1192.2_PRE_4.3.23*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-48.00 hrs, dt=0.01 hrs, 4701 points

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: 1

Runoff Area=43,407 sf 89.98% Impervious Runoff Depth=3.81"

Tc=6.0 min CN=93 Runoff=4.20 cfs 0.316 af

Reach 1r: Elm/ Lancaster Street

Inflow=4.20 cfs 0.316 af

Outflow=4.20 cfs 0.316 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.316 af Average Runoff Depth = 3.81"
10.02% Pervious = 0.100 ac 89.98% Impervious = 0.897 ac

Summary for Subcatchment 1S: 1

Runoff = 4.20 cfs @ 12.08 hrs, Volume= 0.316 af, Depth= 3.81"

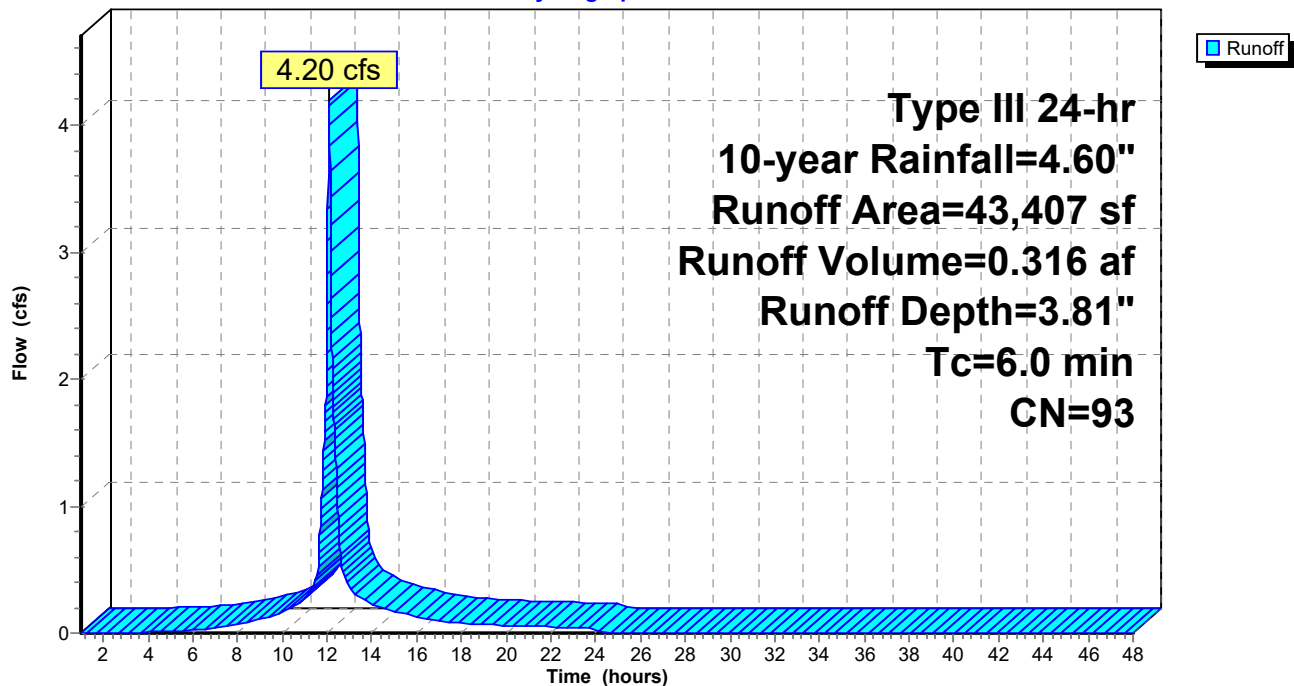
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
125	96	Gravel surface, HSG A
39,059	98	Paved parking, HSG A
4,223	49	50-75% Grass cover, Fair, HSG A
43,407	93	Weighted Average
4,348		10.02% Pervious Area
39,059		89.98% Impervious Area

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

Subcatchment 1S: 1

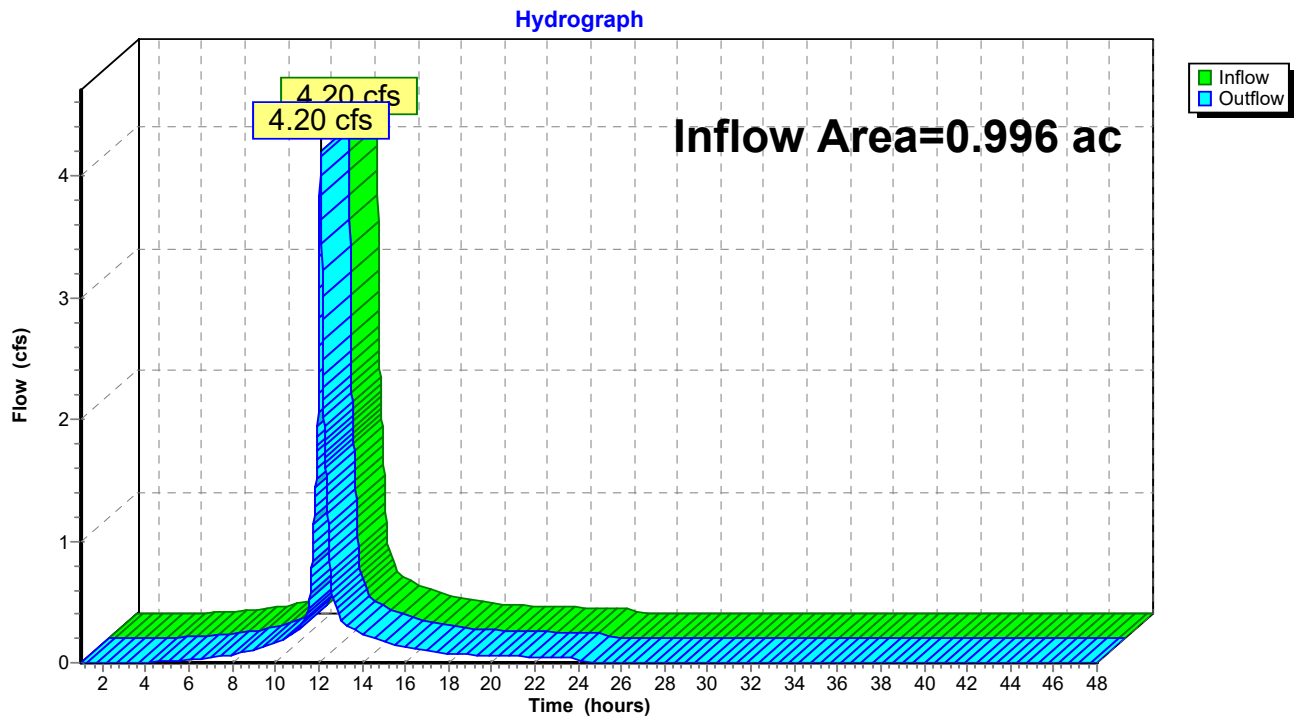
Hydrograph



Summary for Reach 1r: Elm/ Lancaster Street

Inflow Area = 0.996 ac, 89.98% Impervious, Inflow Depth = 3.81" for 10-year event
Inflow = 4.20 cfs @ 12.08 hrs, Volume= 0.316 af
Outflow = 4.20 cfs @ 12.08 hrs, Volume= 0.316 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs

Reach 1r: Elm/ Lancaster Street

1192.2_PRE_4.3.23*Type III 24-hr 25-year Rainfall=5.80"*

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Time span=1.00-48.00 hrs, dt=0.01 hrs, 4701 points

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: 1

Runoff Area=43,407 sf 89.98% Impervious Runoff Depth=4.99"

Tc=6.0 min CN=93 Runoff=5.42 cfs 0.414 af

Reach 1r: Elm/ Lancaster Street

Inflow=5.42 cfs 0.414 af

Outflow=5.42 cfs 0.414 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.414 af Average Runoff Depth = 4.99"
10.02% Pervious = 0.100 ac 89.98% Impervious = 0.897 ac

Summary for Subcatchment 1S: 1

Runoff = 5.42 cfs @ 12.08 hrs, Volume= 0.414 af, Depth= 4.99"

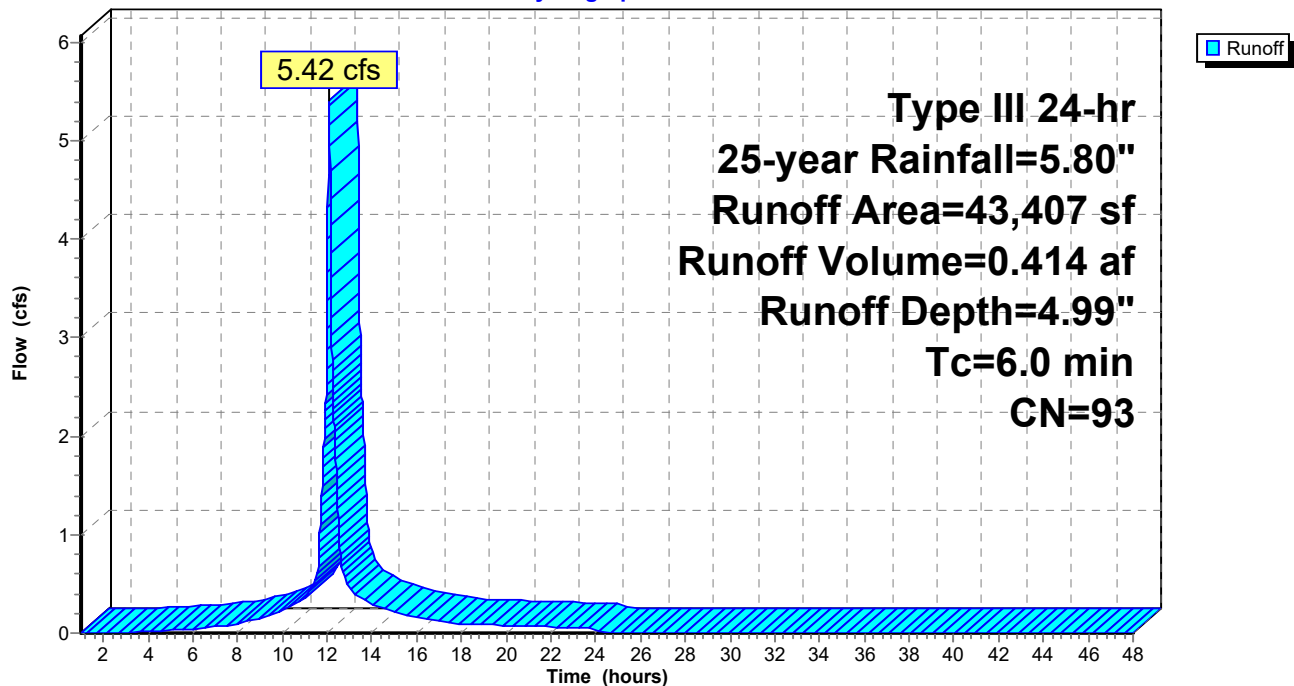
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
125	96	Gravel surface, HSG A
39,059	98	Paved parking, HSG A
4,223	49	50-75% Grass cover, Fair, HSG A
43,407	93	Weighted Average
4,348		10.02% Pervious Area
39,059		89.98% Impervious Area

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

Subcatchment 1S: 1

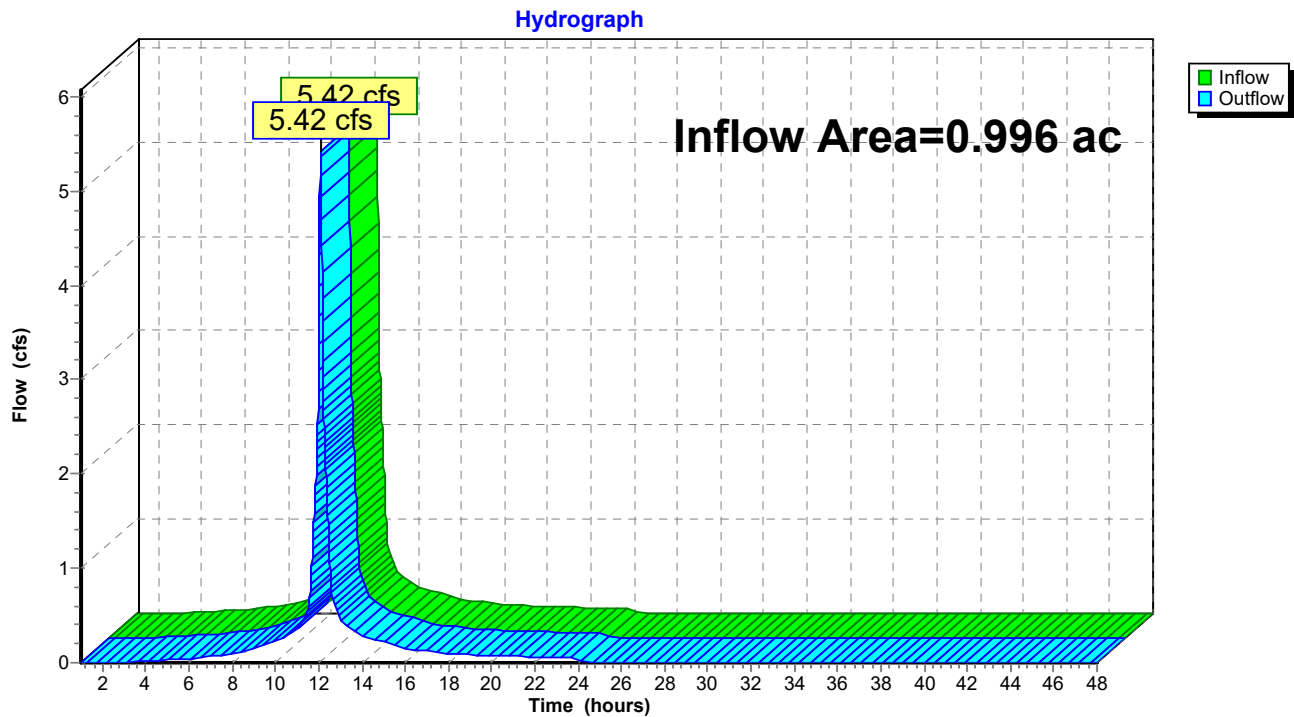
Hydrograph



Summary for Reach 1r: Elm/ Lancaster Street

Inflow Area = 0.996 ac, 89.98% Impervious, Inflow Depth = 4.99" for 25-year event
Inflow = 5.42 cfs @ 12.08 hrs, Volume= 0.414 af
Outflow = 5.42 cfs @ 12.08 hrs, Volume= 0.414 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs

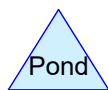
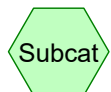
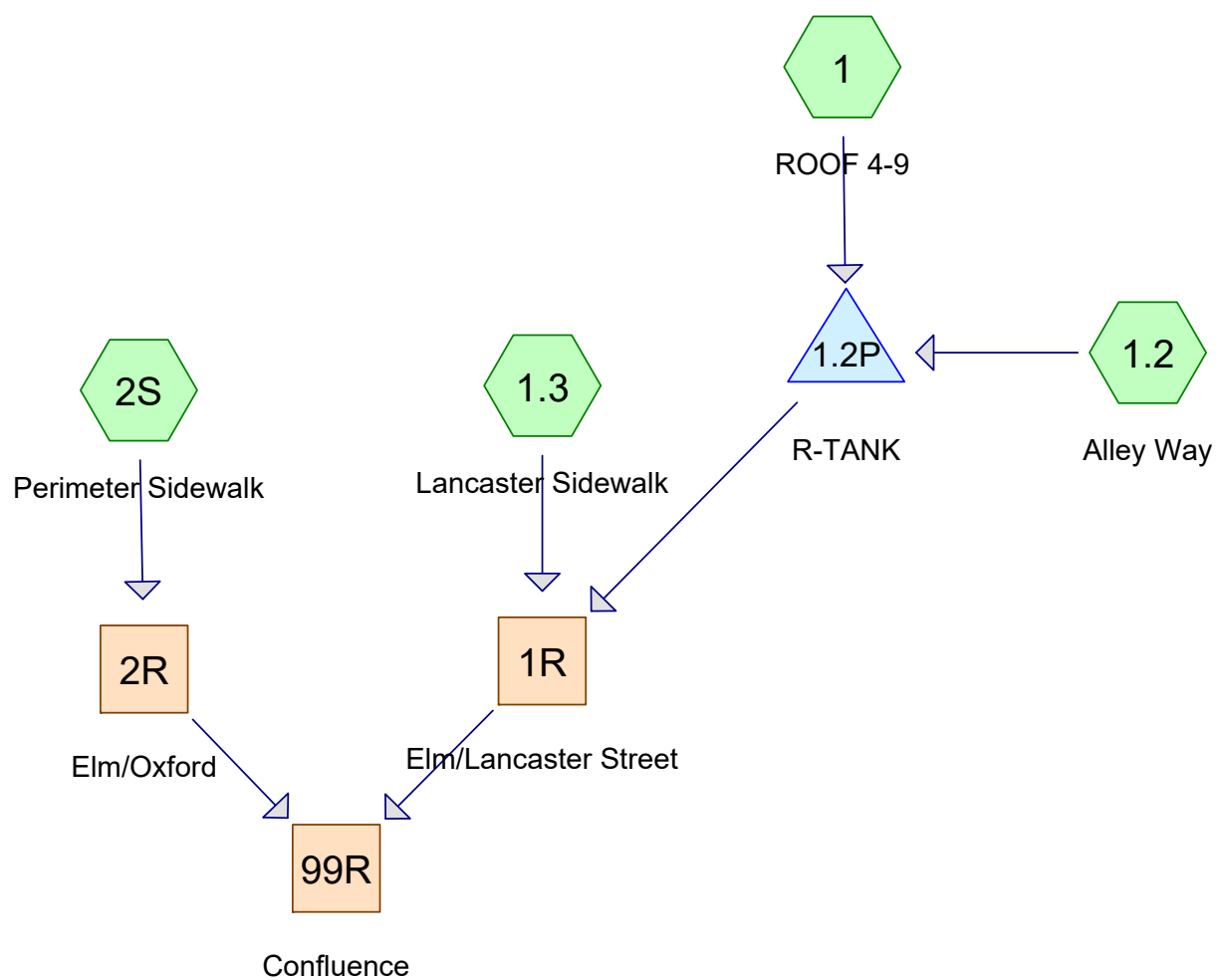
Reach 1r: Elm/ Lancaster Street

SECTION J

STORMWATER MANAGMENT REPORT

Attachment C: Post Development HydroCAD





Routing Diagram for 1192.2_Post_4.3.23

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.107	49	50-75% Grass cover, Fair, HSG A (1.2, 1.3, 2S)
0.015	96	Gravel surface, HSG A (1.2)
0.297	98	Paved parking, HSG A (1.2, 1.3)
0.566	98	Roofs, HSG A (1, 1.2)
0.010	98	Unconnected pavement, HSG A (2S)
0.996	93	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.996	HSG A	1, 1.2, 1.3, 2S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.996		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
0.107	0.000	0.000	0.000	0.000	0.107	50-75% Grass cover, Fair	1.2, 1.3, 2S
0.015	0.000	0.000	0.000	0.000	0.015	Gravel surface	1.2
0.297	0.000	0.000	0.000	0.000	0.297	Paved parking	1.2, 1.3
0.566	0.000	0.000	0.000	0.000	0.566	Roofs	1, 1.2
0.010	0.000	0.000	0.000	0.000	0.010	Unconnected pavement	2S
0.996	0.000	0.000	0.000	0.000	0.996	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	1.2P	19.05	18.85	40.0	0.0050	0.010	10.0	0.0	0.0

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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: ROOF 4-9	Runoff Area=17,072 sf 100.00% Impervious Runoff Depth=1.48" Tc=6.0 min CN=98 Runoff=0.63 cfs 0.048 af
Subcatchment 1.2: Alley Way	Runoff Area=20,598 sf 83.36% Impervious Runoff Depth=0.91" Tc=6.0 min CN=91 Runoff=0.50 cfs 0.036 af
Subcatchment 1.3: Lancaster Sidewalk	Runoff Area=4,798 sf 70.38% Impervious Runoff Depth=0.50" Tc=6.0 min CN=83 Runoff=0.06 cfs 0.005 af
Subcatchment 2S: Perimeter Sidewalk	Runoff Area=934 sf 47.22% Impervious Runoff Depth=0.18" Tc=6.0 min CN=72 Runoff=0.00 cfs 0.000 af
Reach 1R: Elm/Lancaster Street	Inflow=0.09 cfs 0.089 af Outflow=0.09 cfs 0.089 af
Reach 2R: Elm/Oxford	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Reach 99R: Confluence	Inflow=0.10 cfs 0.089 af Outflow=0.10 cfs 0.089 af
Pond 1.2P: R-TANK	Peak Elev=22.45' Storage=2,173 cf Inflow=1.13 cfs 0.084 af Outflow=0.05 cfs 0.084 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.089 af Average Runoff Depth = 1.07"
12.31% Pervious = 0.123 ac 87.69% Impervious = 0.874 ac

Summary for Subcatchment 1: ROOF 4-9

Runoff = 0.63 cfs @ 12.08 hrs, Volume= 0.048 af, Depth= 1.48"

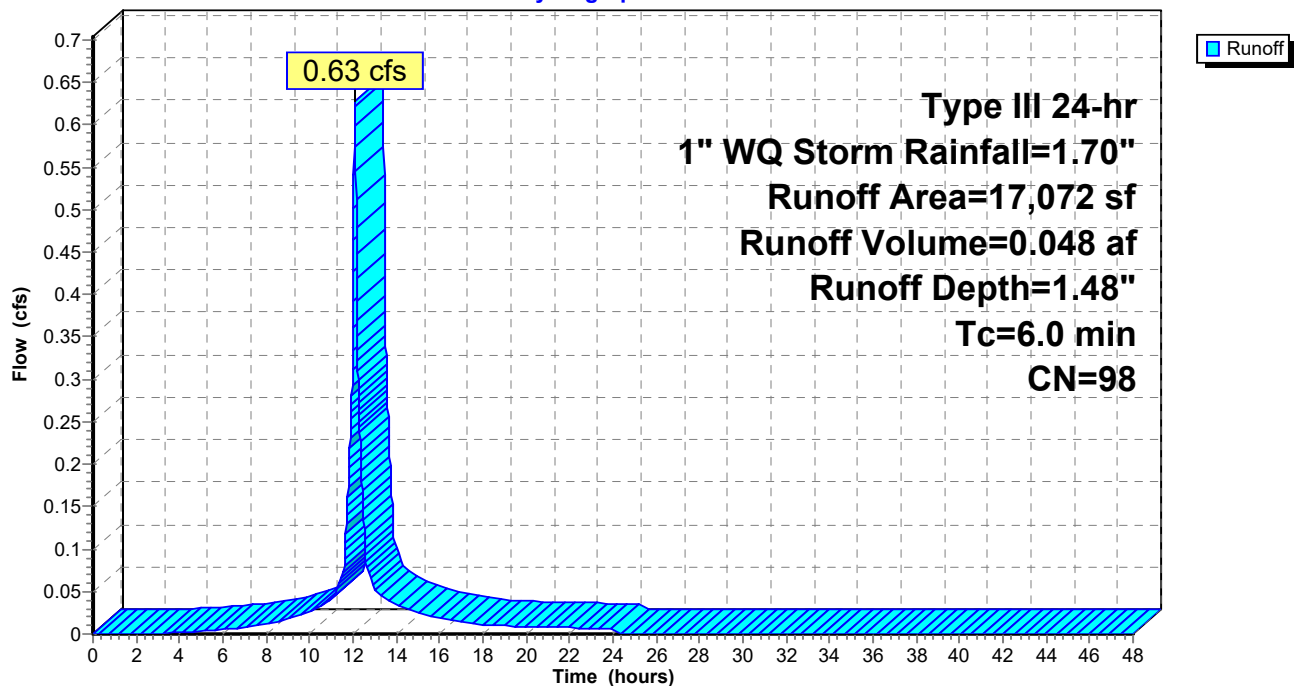
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" WQ Storm Rainfall=1.70"

Area (sf)	CN	Description
17,072	98	Roofs, HSG A
17,072		100.00% Impervious Area

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

Subcatchment 1: ROOF 4-9

Hydrograph



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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Hydrograph for Subcatchment 1: ROOF 4-9

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	1.70	1.48	0.00
0.50	0.01	0.00	0.00	27.00	1.70	1.48	0.00
1.00	0.02	0.00	0.00	27.50	1.70	1.48	0.00
1.50	0.03	0.00	0.00	28.00	1.70	1.48	0.00
2.00	0.03	0.00	0.00	28.50	1.70	1.48	0.00
2.50	0.04	0.00	0.00	29.00	1.70	1.48	0.00
3.00	0.05	0.00	0.00	29.50	1.70	1.48	0.00
3.50	0.06	0.00	0.00	30.00	1.70	1.48	0.00
4.00	0.07	0.00	0.00	30.50	1.70	1.48	0.00
4.50	0.08	0.01	0.00	31.00	1.70	1.48	0.00
5.00	0.10	0.01	0.00	31.50	1.70	1.48	0.00
5.50	0.11	0.02	0.00	32.00	1.70	1.48	0.00
6.00	0.12	0.02	0.01	32.50	1.70	1.48	0.00
6.50	0.14	0.03	0.01	33.00	1.70	1.48	0.00
7.00	0.15	0.04	0.01	33.50	1.70	1.48	0.00
7.50	0.17	0.05	0.01	34.00	1.70	1.48	0.00
8.00	0.19	0.07	0.01	34.50	1.70	1.48	0.00
8.50	0.22	0.08	0.01	35.00	1.70	1.48	0.00
9.00	0.25	0.10	0.02	35.50	1.70	1.48	0.00
9.50	0.28	0.13	0.02	36.00	1.70	1.48	0.00
10.00	0.32	0.16	0.03	36.50	1.70	1.48	0.00
10.50	0.37	0.20	0.03	37.00	1.70	1.48	0.00
11.00	0.43	0.25	0.04	37.50	1.70	1.48	0.00
11.50	0.51	0.32	0.07	38.00	1.70	1.48	0.00
12.00	0.85	0.65	0.39	38.50	1.70	1.48	0.00
12.50	1.19	0.98	0.13	39.00	1.70	1.48	0.00
13.00	1.28	1.06	0.05	39.50	1.70	1.48	0.00
13.50	1.33	1.11	0.04	40.00	1.70	1.48	0.00
14.00	1.38	1.16	0.03	40.50	1.70	1.48	0.00
14.50	1.42	1.20	0.03	41.00	1.70	1.48	0.00
15.00	1.45	1.23	0.03	41.50	1.70	1.48	0.00
15.50	1.48	1.26	0.02	42.00	1.70	1.48	0.00
16.00	1.51	1.29	0.02	42.50	1.70	1.48	0.00
16.50	1.53	1.31	0.02	43.00	1.70	1.48	0.00
17.00	1.55	1.33	0.01	43.50	1.70	1.48	0.00
17.50	1.56	1.34	0.01	44.00	1.70	1.48	0.00
18.00	1.58	1.36	0.01	44.50	1.70	1.48	0.00
18.50	1.59	1.37	0.01	45.00	1.70	1.48	0.00
19.00	1.60	1.38	0.01	45.50	1.70	1.48	0.00
19.50	1.62	1.39	0.01	46.00	1.70	1.48	0.00
20.00	1.63	1.41	0.01	46.50	1.70	1.48	0.00
20.50	1.64	1.42	0.01	47.00	1.70	1.48	0.00
21.00	1.65	1.43	0.01	47.50	1.70	1.48	0.00
21.50	1.66	1.44	0.01	48.00	1.70	1.48	0.00
22.00	1.67	1.45	0.01				
22.50	1.68	1.45	0.01				
23.00	1.68	1.46	0.01				
23.50	1.69	1.47	0.01				
24.00	1.70	1.48	0.01				
24.50	1.70	1.48	0.00				
25.00	1.70	1.48	0.00				
25.50	1.70	1.48	0.00				
26.00	1.70	1.48	0.00				

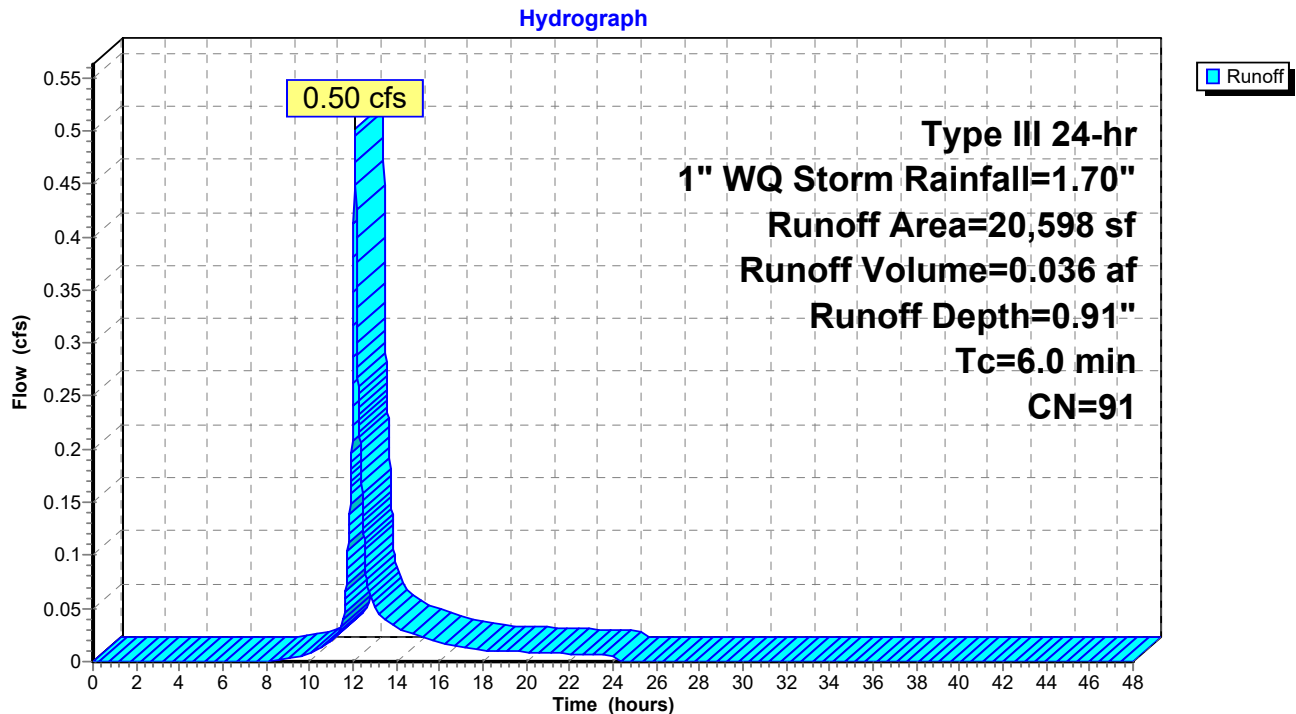
Summary for Subcatchment 1.2: Alley Way

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" WQ Storm Rainfall=1.70"

Area (sf)	CN	Description
2,755	49	50-75% Grass cover, Fair, HSG A
9,571	98	Paved parking, HSG A
672	96	Gravel surface, HSG A
7,600	98	Roofs, HSG A
20,598	91	Weighted Average
3,427		16.64% Pervious Area
17,171		83.36% Impervious Area

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

Subcatchment 1.2: Alley Way

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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Hydrograph for Subcatchment 1.2: Alley Way

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	1.70	0.91	0.00
0.50	0.01	0.00	0.00	27.00	1.70	0.91	0.00
1.00	0.02	0.00	0.00	27.50	1.70	0.91	0.00
1.50	0.03	0.00	0.00	28.00	1.70	0.91	0.00
2.00	0.03	0.00	0.00	28.50	1.70	0.91	0.00
2.50	0.04	0.00	0.00	29.00	1.70	0.91	0.00
3.00	0.05	0.00	0.00	29.50	1.70	0.91	0.00
3.50	0.06	0.00	0.00	30.00	1.70	0.91	0.00
4.00	0.07	0.00	0.00	30.50	1.70	0.91	0.00
4.50	0.08	0.00	0.00	31.00	1.70	0.91	0.00
5.00	0.10	0.00	0.00	31.50	1.70	0.91	0.00
5.50	0.11	0.00	0.00	32.00	1.70	0.91	0.00
6.00	0.12	0.00	0.00	32.50	1.70	0.91	0.00
6.50	0.14	0.00	0.00	33.00	1.70	0.91	0.00
7.00	0.15	0.00	0.00	33.50	1.70	0.91	0.00
7.50	0.17	0.00	0.00	34.00	1.70	0.91	0.00
8.00	0.19	0.00	0.00	34.50	1.70	0.91	0.00
8.50	0.22	0.00	0.00	35.00	1.70	0.91	0.00
9.00	0.25	0.00	0.00	35.50	1.70	0.91	0.00
9.50	0.28	0.01	0.00	36.00	1.70	0.91	0.00
10.00	0.32	0.01	0.01	36.50	1.70	0.91	0.00
10.50	0.37	0.03	0.01	37.00	1.70	0.91	0.00
11.00	0.43	0.04	0.02	37.50	1.70	0.91	0.00
11.50	0.51	0.07	0.04	38.00	1.70	0.91	0.00
12.00	0.85	0.26	0.29	38.50	1.70	0.91	0.00
12.50	1.19	0.50	0.12	39.00	1.70	0.91	0.00
13.00	1.28	0.56	0.05	39.50	1.70	0.91	0.00
13.50	1.33	0.61	0.04	40.00	1.70	0.91	0.00
14.00	1.38	0.64	0.03	40.50	1.70	0.91	0.00
14.50	1.42	0.67	0.03	41.00	1.70	0.91	0.00
15.00	1.45	0.70	0.03	41.50	1.70	0.91	0.00
15.50	1.48	0.73	0.02	42.00	1.70	0.91	0.00
16.00	1.51	0.75	0.02	42.50	1.70	0.91	0.00
16.50	1.53	0.76	0.02	43.00	1.70	0.91	0.00
17.00	1.55	0.78	0.01	43.50	1.70	0.91	0.00
17.50	1.56	0.79	0.01	44.00	1.70	0.91	0.00
18.00	1.58	0.80	0.01	44.50	1.70	0.91	0.00
18.50	1.59	0.81	0.01	45.00	1.70	0.91	0.00
19.00	1.60	0.83	0.01	45.50	1.70	0.91	0.00
19.50	1.62	0.84	0.01	46.00	1.70	0.91	0.00
20.00	1.63	0.84	0.01	46.50	1.70	0.91	0.00
20.50	1.64	0.85	0.01	47.00	1.70	0.91	0.00
21.00	1.65	0.86	0.01	47.50	1.70	0.91	0.00
21.50	1.66	0.87	0.01	48.00	1.70	0.91	0.00
22.00	1.67	0.88	0.01				
22.50	1.68	0.89	0.01				
23.00	1.68	0.89	0.01				
23.50	1.69	0.90	0.01				
24.00	1.70	0.91	0.01				
24.50	1.70	0.91	0.00				
25.00	1.70	0.91	0.00				
25.50	1.70	0.91	0.00				
26.00	1.70	0.91	0.00				

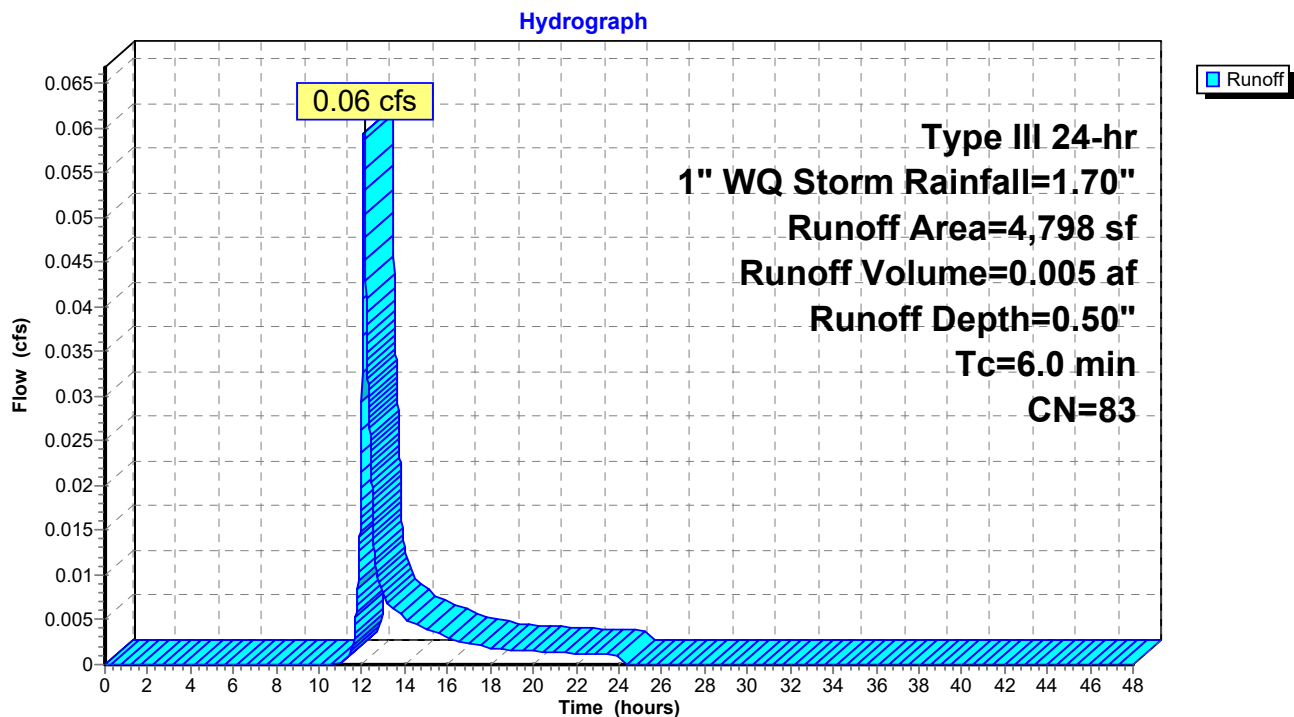
Summary for Subcatchment 1.3: Lancaster Sidewalk

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 0.005 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" WQ Storm Rainfall=1.70"

Area (sf)	CN	Description
1,538	98	Paved parking, HSG A
1,306	49	50-75% Grass cover, Fair, HSG A
115	49	50-75% Grass cover, Fair, HSG A
1,839	98	Paved parking, HSG A
4,798	83	Weighted Average
1,421		29.62% Pervious Area
3,377		70.38% Impervious Area

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

Subcatchment 1.3: Lancaster Sidewalk

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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Hydrograph for Subcatchment 1.3: Lancaster Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	1.70	0.50	0.00
0.50	0.01	0.00	0.00	27.00	1.70	0.50	0.00
1.00	0.02	0.00	0.00	27.50	1.70	0.50	0.00
1.50	0.03	0.00	0.00	28.00	1.70	0.50	0.00
2.00	0.03	0.00	0.00	28.50	1.70	0.50	0.00
2.50	0.04	0.00	0.00	29.00	1.70	0.50	0.00
3.00	0.05	0.00	0.00	29.50	1.70	0.50	0.00
3.50	0.06	0.00	0.00	30.00	1.70	0.50	0.00
4.00	0.07	0.00	0.00	30.50	1.70	0.50	0.00
4.50	0.08	0.00	0.00	31.00	1.70	0.50	0.00
5.00	0.10	0.00	0.00	31.50	1.70	0.50	0.00
5.50	0.11	0.00	0.00	32.00	1.70	0.50	0.00
6.00	0.12	0.00	0.00	32.50	1.70	0.50	0.00
6.50	0.14	0.00	0.00	33.00	1.70	0.50	0.00
7.00	0.15	0.00	0.00	33.50	1.70	0.50	0.00
7.50	0.17	0.00	0.00	34.00	1.70	0.50	0.00
8.00	0.19	0.00	0.00	34.50	1.70	0.50	0.00
8.50	0.22	0.00	0.00	35.00	1.70	0.50	0.00
9.00	0.25	0.00	0.00	35.50	1.70	0.50	0.00
9.50	0.28	0.00	0.00	36.00	1.70	0.50	0.00
10.00	0.32	0.00	0.00	36.50	1.70	0.50	0.00
10.50	0.37	0.00	0.00	37.00	1.70	0.50	0.00
11.00	0.43	0.00	0.00	37.50	1.70	0.50	0.00
11.50	0.51	0.00	0.00	38.00	1.70	0.50	0.00
12.00	0.85	0.08	0.03	38.50	1.70	0.50	0.00
12.50	1.19	0.22	0.02	39.00	1.70	0.50	0.00
13.00	1.28	0.26	0.01	39.50	1.70	0.50	0.00
13.50	1.33	0.29	0.01	40.00	1.70	0.50	0.00
14.00	1.38	0.31	0.01	40.50	1.70	0.50	0.00
14.50	1.42	0.33	0.00	41.00	1.70	0.50	0.00
15.00	1.45	0.35	0.00	41.50	1.70	0.50	0.00
15.50	1.48	0.37	0.00	42.00	1.70	0.50	0.00
16.00	1.51	0.38	0.00	42.50	1.70	0.50	0.00
16.50	1.53	0.39	0.00	43.00	1.70	0.50	0.00
17.00	1.55	0.41	0.00	43.50	1.70	0.50	0.00
17.50	1.56	0.42	0.00	44.00	1.70	0.50	0.00
18.00	1.58	0.42	0.00	44.50	1.70	0.50	0.00
18.50	1.59	0.43	0.00	45.00	1.70	0.50	0.00
19.00	1.60	0.44	0.00	45.50	1.70	0.50	0.00
19.50	1.62	0.45	0.00	46.00	1.70	0.50	0.00
20.00	1.63	0.45	0.00	46.50	1.70	0.50	0.00
20.50	1.64	0.46	0.00	47.00	1.70	0.50	0.00
21.00	1.65	0.47	0.00	47.50	1.70	0.50	0.00
21.50	1.66	0.47	0.00	48.00	1.70	0.50	0.00
22.00	1.67	0.48	0.00				
22.50	1.68	0.48	0.00				
23.00	1.68	0.49	0.00				
23.50	1.69	0.49	0.00				
24.00	1.70	0.50	0.00				
24.50	1.70	0.50	0.00				
25.00	1.70	0.50	0.00				
25.50	1.70	0.50	0.00				
26.00	1.70	0.50	0.00				

Summary for Subcatchment 2S: Perimeter Sidewalk

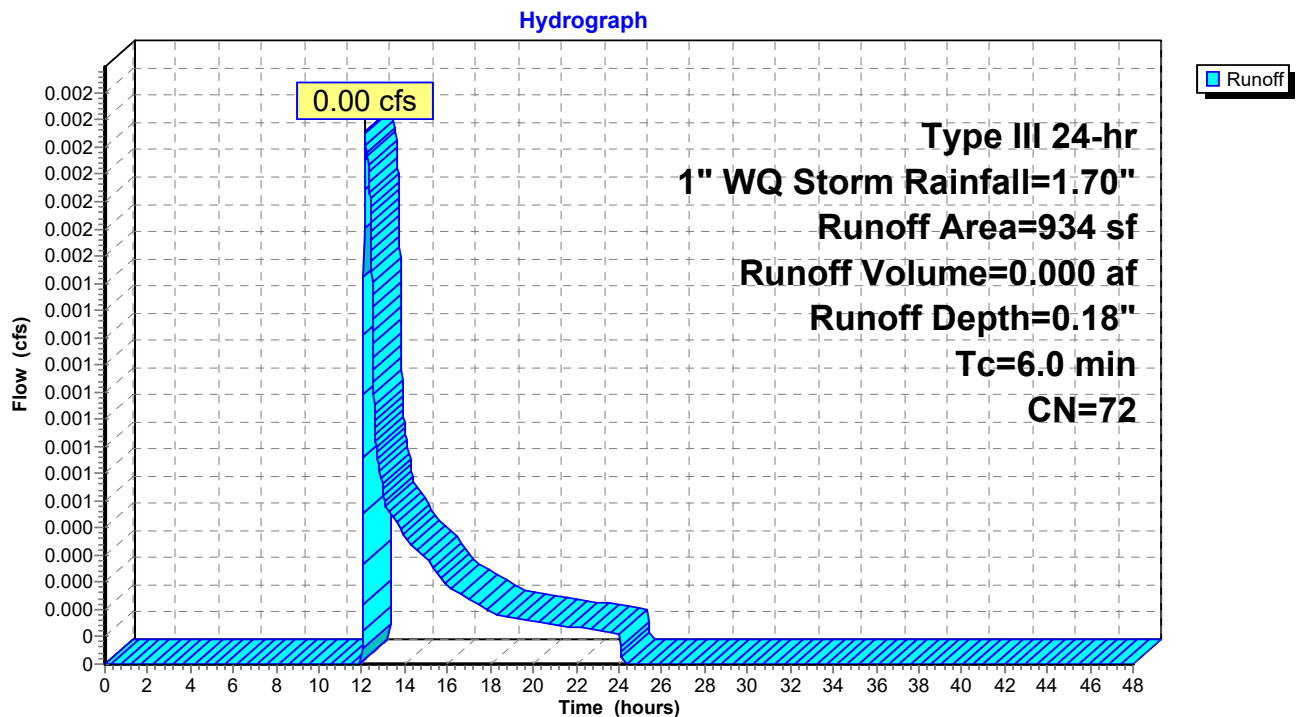
Runoff = 0.00 cfs @ 12.15 hrs, Volume= 0.000 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" WQ Storm Rainfall=1.70"

Area (sf)	CN	Description
441	98	Unconnected pavement, HSG A
493	49	50-75% Grass cover, Fair, HSG A
934	72	Weighted Average
493		52.78% Pervious Area
441		47.22% Impervious Area
441		100.00% Unconnected

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

Subcatchment 2S: Perimeter Sidewalk



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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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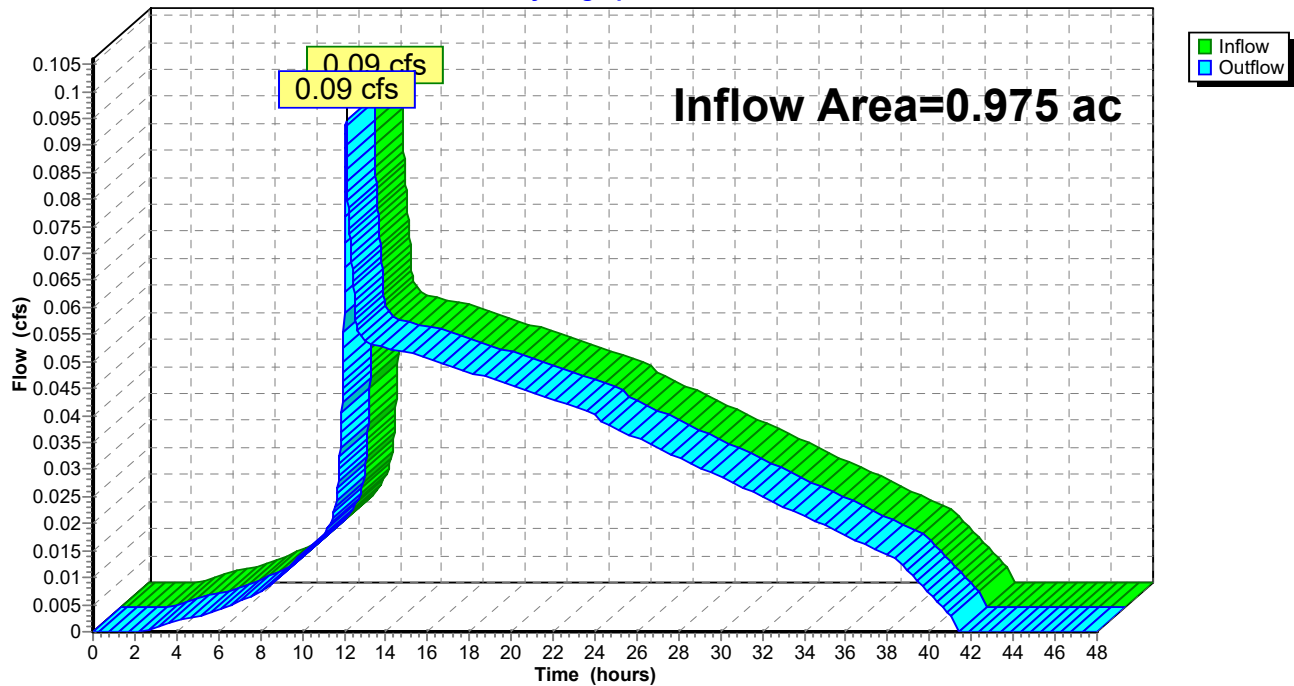
Hydrograph for Subcatchment 2S: Perimeter Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	1.70	0.18	0.00
0.50	0.01	0.00	0.00	27.00	1.70	0.18	0.00
1.00	0.02	0.00	0.00	27.50	1.70	0.18	0.00
1.50	0.03	0.00	0.00	28.00	1.70	0.18	0.00
2.00	0.03	0.00	0.00	28.50	1.70	0.18	0.00
2.50	0.04	0.00	0.00	29.00	1.70	0.18	0.00
3.00	0.05	0.00	0.00	29.50	1.70	0.18	0.00
3.50	0.06	0.00	0.00	30.00	1.70	0.18	0.00
4.00	0.07	0.00	0.00	30.50	1.70	0.18	0.00
4.50	0.08	0.00	0.00	31.00	1.70	0.18	0.00
5.00	0.10	0.00	0.00	31.50	1.70	0.18	0.00
5.50	0.11	0.00	0.00	32.00	1.70	0.18	0.00
6.00	0.12	0.00	0.00	32.50	1.70	0.18	0.00
6.50	0.14	0.00	0.00	33.00	1.70	0.18	0.00
7.00	0.15	0.00	0.00	33.50	1.70	0.18	0.00
7.50	0.17	0.00	0.00	34.00	1.70	0.18	0.00
8.00	0.19	0.00	0.00	34.50	1.70	0.18	0.00
8.50	0.22	0.00	0.00	35.00	1.70	0.18	0.00
9.00	0.25	0.00	0.00	35.50	1.70	0.18	0.00
9.50	0.28	0.00	0.00	36.00	1.70	0.18	0.00
10.00	0.32	0.00	0.00	36.50	1.70	0.18	0.00
10.50	0.37	0.00	0.00	37.00	1.70	0.18	0.00
11.00	0.43	0.00	0.00	37.50	1.70	0.18	0.00
11.50	0.51	0.00	0.00	38.00	1.70	0.18	0.00
12.00	0.85	0.00	0.00	38.50	1.70	0.18	0.00
12.50	1.19	0.04	0.00	39.00	1.70	0.18	0.00
13.00	1.28	0.06	0.00	39.50	1.70	0.18	0.00
13.50	1.33	0.07	0.00	40.00	1.70	0.18	0.00
14.00	1.38	0.08	0.00	40.50	1.70	0.18	0.00
14.50	1.42	0.09	0.00	41.00	1.70	0.18	0.00
15.00	1.45	0.10	0.00	41.50	1.70	0.18	0.00
15.50	1.48	0.11	0.00	42.00	1.70	0.18	0.00
16.00	1.51	0.11	0.00	42.50	1.70	0.18	0.00
16.50	1.53	0.12	0.00	43.00	1.70	0.18	0.00
17.00	1.55	0.13	0.00	43.50	1.70	0.18	0.00
17.50	1.56	0.13	0.00	44.00	1.70	0.18	0.00
18.00	1.58	0.14	0.00	44.50	1.70	0.18	0.00
18.50	1.59	0.14	0.00	45.00	1.70	0.18	0.00
19.00	1.60	0.14	0.00	45.50	1.70	0.18	0.00
19.50	1.62	0.15	0.00	46.00	1.70	0.18	0.00
20.00	1.63	0.15	0.00	46.50	1.70	0.18	0.00
20.50	1.64	0.16	0.00	47.00	1.70	0.18	0.00
21.00	1.65	0.16	0.00	47.50	1.70	0.18	0.00
21.50	1.66	0.16	0.00	48.00	1.70	0.18	0.00
22.00	1.67	0.17	0.00				
22.50	1.68	0.17	0.00				
23.00	1.68	0.17	0.00				
23.50	1.69	0.17	0.00				
24.00	1.70	0.18	0.00				
24.50	1.70	0.18	0.00				
25.00	1.70	0.18	0.00				
25.50	1.70	0.18	0.00				
26.00	1.70	0.18	0.00				

Summary for Reach 1R: Elm/Lancaster Street

Inflow Area = 0.975 ac, 88.58% Impervious, Inflow Depth = 1.09" for 1" WQ Storm event
Inflow = 0.09 cfs @ 12.10 hrs, Volume= 0.089 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Elm/Lancaster Street**Hydrograph**

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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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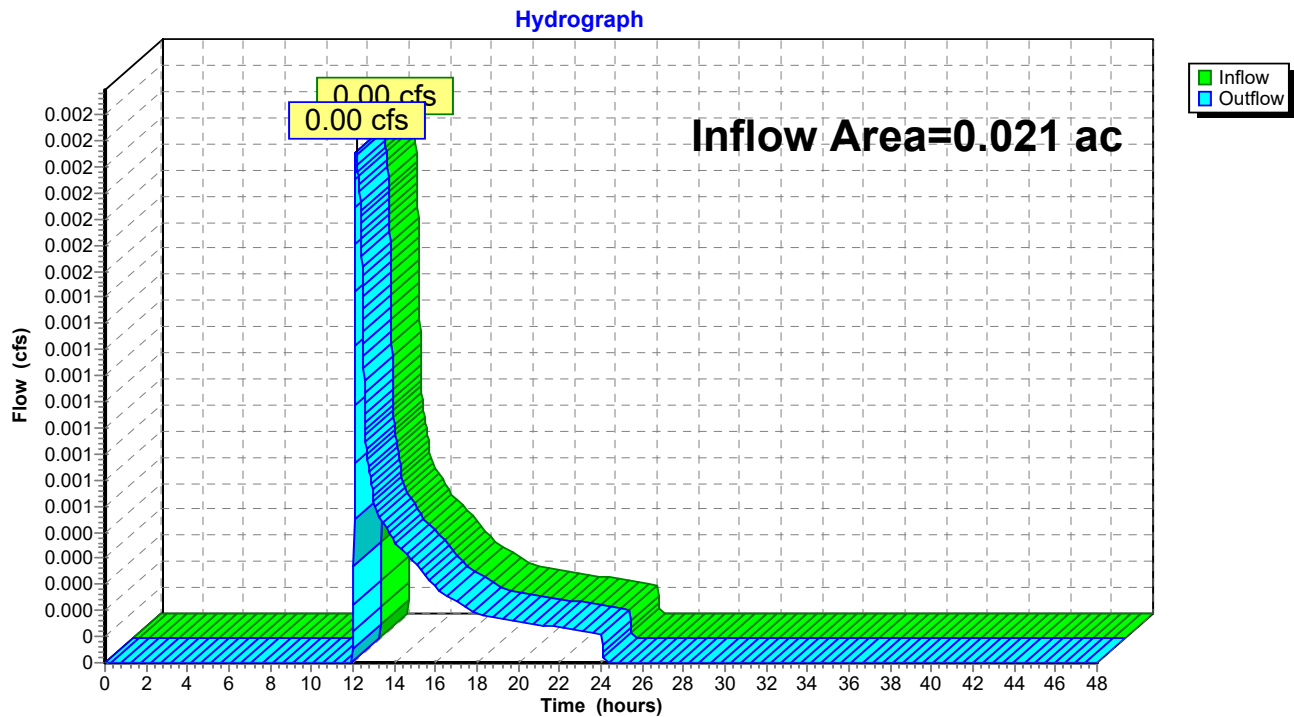
Hydrograph for Reach 1R: Elm/Lancaster Street

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.03		0.03
0.50	0.00		0.00	27.00	0.03		0.03
1.00	0.00		0.00	27.50	0.03		0.03
1.50	0.00		0.00	28.00	0.03		0.03
2.00	0.00		0.00	28.50	0.03		0.03
2.50	0.00		0.00	29.00	0.03		0.03
3.00	0.00		0.00	29.50	0.03		0.03
3.50	0.00		0.00	30.00	0.03		0.03
4.00	0.00		0.00	30.50	0.03		0.03
4.50	0.00		0.00	31.00	0.03		0.03
5.00	0.00		0.00	31.50	0.03		0.03
5.50	0.00		0.00	32.00	0.03		0.03
6.00	0.00		0.00	32.50	0.02		0.02
6.50	0.00		0.00	33.00	0.02		0.02
7.00	0.01		0.01	33.50	0.02		0.02
7.50	0.01		0.01	34.00	0.02		0.02
8.00	0.01		0.01	34.50	0.02		0.02
8.50	0.01		0.01	35.00	0.02		0.02
9.00	0.01		0.01	35.50	0.02		0.02
9.50	0.01		0.01	36.00	0.02		0.02
10.00	0.01		0.01	36.50	0.02		0.02
10.50	0.02		0.02	37.00	0.02		0.02
11.00	0.02		0.02	37.50	0.02		0.02
11.50	0.02		0.02	38.00	0.01		0.01
12.00	0.06		0.06	38.50	0.01		0.01
12.50	0.06		0.06	39.00	0.01		0.01
13.00	0.05		0.05	39.50	0.01		0.01
13.50	0.05		0.05	40.00	0.01		0.01
14.00	0.05		0.05	40.50	0.01		0.01
14.50	0.05		0.05	41.00	0.00		0.00
15.00	0.05		0.05	41.50	0.00		0.00
15.50	0.05		0.05	42.00	0.00		0.00
16.00	0.05		0.05	42.50	0.00		0.00
16.50	0.05		0.05	43.00	0.00		0.00
17.00	0.05		0.05	43.50	0.00		0.00
17.50	0.05		0.05	44.00	0.00		0.00
18.00	0.05		0.05	44.50	0.00		0.00
18.50	0.05		0.05	45.00	0.00		0.00
19.00	0.05		0.05	45.50	0.00		0.00
19.50	0.05		0.05	46.00	0.00		0.00
20.00	0.05		0.05	46.50	0.00		0.00
20.50	0.05		0.05	47.00	0.00		0.00
21.00	0.04		0.04	47.50	0.00		0.00
21.50	0.04		0.04	48.00	0.00		0.00
22.00	0.04		0.04				
22.50	0.04		0.04				
23.00	0.04		0.04				
23.50	0.04		0.04				
24.00	0.04		0.04				
24.50	0.04		0.04				
25.00	0.04		0.04				
25.50	0.04		0.04				
26.00	0.04		0.04				

Summary for Reach 2R: Elm/Oxford

Inflow Area = 0.021 ac, 47.22% Impervious, Inflow Depth = 0.18" for 1" WQ Storm event
Inflow = 0.00 cfs @ 12.15 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.15 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Elm/Oxford

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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Hydrograph for Reach 2R: Elm/Oxford

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.00		0.00
0.50	0.00		0.00	27.00	0.00		0.00
1.00	0.00		0.00	27.50	0.00		0.00
1.50	0.00		0.00	28.00	0.00		0.00
2.00	0.00		0.00	28.50	0.00		0.00
2.50	0.00		0.00	29.00	0.00		0.00
3.00	0.00		0.00	29.50	0.00		0.00
3.50	0.00		0.00	30.00	0.00		0.00
4.00	0.00		0.00	30.50	0.00		0.00
4.50	0.00		0.00	31.00	0.00		0.00
5.00	0.00		0.00	31.50	0.00		0.00
5.50	0.00		0.00	32.00	0.00		0.00
6.00	0.00		0.00	32.50	0.00		0.00
6.50	0.00		0.00	33.00	0.00		0.00
7.00	0.00		0.00	33.50	0.00		0.00
7.50	0.00		0.00	34.00	0.00		0.00
8.00	0.00		0.00	34.50	0.00		0.00
8.50	0.00		0.00	35.00	0.00		0.00
9.00	0.00		0.00	35.50	0.00		0.00
9.50	0.00		0.00	36.00	0.00		0.00
10.00	0.00		0.00	36.50	0.00		0.00
10.50	0.00		0.00	37.00	0.00		0.00
11.00	0.00		0.00	37.50	0.00		0.00
11.50	0.00		0.00	38.00	0.00		0.00
12.00	0.00		0.00	38.50	0.00		0.00
12.50	0.00		0.00	39.00	0.00		0.00
13.00	0.00		0.00	39.50	0.00		0.00
13.50	0.00		0.00	40.00	0.00		0.00
14.00	0.00		0.00	40.50	0.00		0.00
14.50	0.00		0.00	41.00	0.00		0.00
15.00	0.00		0.00	41.50	0.00		0.00
15.50	0.00		0.00	42.00	0.00		0.00
16.00	0.00		0.00	42.50	0.00		0.00
16.50	0.00		0.00	43.00	0.00		0.00
17.00	0.00		0.00	43.50	0.00		0.00
17.50	0.00		0.00	44.00	0.00		0.00
18.00	0.00		0.00	44.50	0.00		0.00
18.50	0.00		0.00	45.00	0.00		0.00
19.00	0.00		0.00	45.50	0.00		0.00
19.50	0.00		0.00	46.00	0.00		0.00
20.00	0.00		0.00	46.50	0.00		0.00
20.50	0.00		0.00	47.00	0.00		0.00
21.00	0.00		0.00	47.50	0.00		0.00
21.50	0.00		0.00	48.00	0.00		0.00
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				
26.00	0.00		0.00				

Summary for Reach 99R: Confluence

Inflow Area = 0.996 ac, 87.69% Impervious, Inflow Depth = 1.07" for 1" WQ Storm event

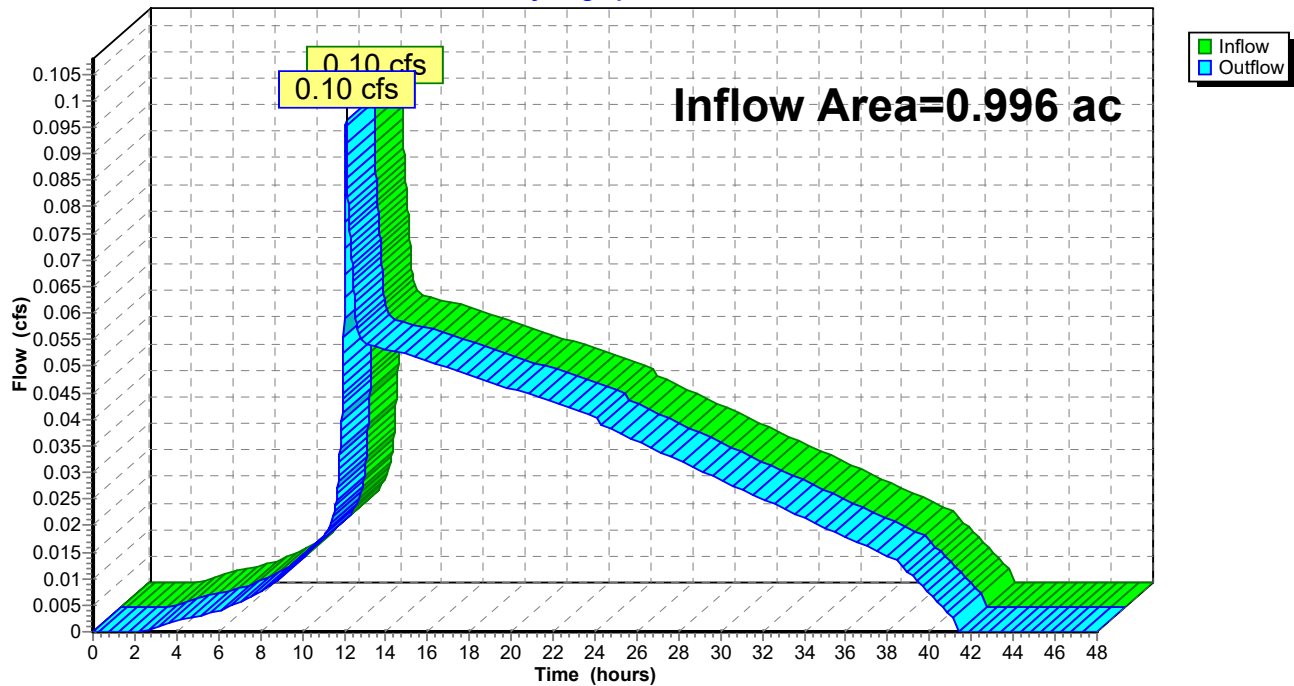
Inflow = 0.10 cfs @ 12.11 hrs, Volume= 0.089 af

Outflow = 0.10 cfs @ 12.11 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 99R: Confluence

Hydrograph



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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Hydrograph for Reach 99R: Confluence

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.03		0.03
0.50	0.00		0.00	27.00	0.03		0.03
1.00	0.00		0.00	27.50	0.03		0.03
1.50	0.00		0.00	28.00	0.03		0.03
2.00	0.00		0.00	28.50	0.03		0.03
2.50	0.00		0.00	29.00	0.03		0.03
3.00	0.00		0.00	29.50	0.03		0.03
3.50	0.00		0.00	30.00	0.03		0.03
4.00	0.00		0.00	30.50	0.03		0.03
4.50	0.00		0.00	31.00	0.03		0.03
5.00	0.00		0.00	31.50	0.03		0.03
5.50	0.00		0.00	32.00	0.03		0.03
6.00	0.00		0.00	32.50	0.02		0.02
6.50	0.00		0.00	33.00	0.02		0.02
7.00	0.01		0.01	33.50	0.02		0.02
7.50	0.01		0.01	34.00	0.02		0.02
8.00	0.01		0.01	34.50	0.02		0.02
8.50	0.01		0.01	35.00	0.02		0.02
9.00	0.01		0.01	35.50	0.02		0.02
9.50	0.01		0.01	36.00	0.02		0.02
10.00	0.01		0.01	36.50	0.02		0.02
10.50	0.02		0.02	37.00	0.02		0.02
11.00	0.02		0.02	37.50	0.02		0.02
11.50	0.02		0.02	38.00	0.01		0.01
12.00	0.06		0.06	38.50	0.01		0.01
12.50	0.06		0.06	39.00	0.01		0.01
13.00	0.05		0.05	39.50	0.01		0.01
13.50	0.05		0.05	40.00	0.01		0.01
14.00	0.05		0.05	40.50	0.01		0.01
14.50	0.05		0.05	41.00	0.00		0.00
15.00	0.05		0.05	41.50	0.00		0.00
15.50	0.05		0.05	42.00	0.00		0.00
16.00	0.05		0.05	42.50	0.00		0.00
16.50	0.05		0.05	43.00	0.00		0.00
17.00	0.05		0.05	43.50	0.00		0.00
17.50	0.05		0.05	44.00	0.00		0.00
18.00	0.05		0.05	44.50	0.00		0.00
18.50	0.05		0.05	45.00	0.00		0.00
19.00	0.05		0.05	45.50	0.00		0.00
19.50	0.05		0.05	46.00	0.00		0.00
20.00	0.05		0.05	46.50	0.00		0.00
20.50	0.05		0.05	47.00	0.00		0.00
21.00	0.04		0.04	47.50	0.00		0.00
21.50	0.04		0.04	48.00	0.00		0.00
22.00	0.04		0.04				
22.50	0.04		0.04				
23.00	0.04		0.04				
23.50	0.04		0.04				
24.00	0.04		0.04				
24.50	0.04		0.04				
25.00	0.04		0.04				
25.50	0.04		0.04				
26.00	0.04		0.04				

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Type III 24-hr 1" WQ Storm Rainfall=1.70"

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Summary for Pond 1.2P: R-TANK

Inflow Area = 0.865 ac, 90.90% Impervious, Inflow Depth = 1.16" for 1" WQ Storm event
 Inflow = 1.13 cfs @ 12.09 hrs, Volume= 0.084 af
 Outflow = 0.05 cfs @ 15.19 hrs, Volume= 0.084 af, Atten= 96%, Lag= 186.5 min
 Primary = 0.05 cfs @ 15.19 hrs, Volume= 0.084 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 22.45' @ 15.19 hrs Surf.Area= 747 sf Storage= 2,173 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 539.0 min (1,334.9 - 795.9)

Volume	Invert	Avail.Storage	Storage Description
#1B	19.15'	438 cf	34.81'W x 21.11'L x 5.45'H Field B 4,005 cf Overall - 2,909 cf Embedded = 1,096 cf x 40.0% Voids
#2B	19.40'	2,763 cf	ACF R-Tank HD 3 x 225 Inside #1 Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf 225 Chambers in 25 Rows
#3	19.15'	77 cf	4.00'D x 6.10'H Vertical Cone/Cylinder
#4	25.25'	415 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		3,693 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.25	4	0	0
26.00	1,102	415	415

Device	Routing	Invert	Outlet Devices
#1	Primary	19.05'	10.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.05' / 18.85' S= 0.0050 ' / Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#2	Device 1	19.10'	1.0" Vert. WQ Orifice C= 0.600
#3	Device 1	22.75'	4.0' long x 0.7' breadth OCS Bulkhead 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
#4	Primary	25.75'	10.0' long x 5.0' breadth Emergency Overflow. Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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Primary OutFlow Max=0.05 cfs @ 15.19 hrs HW=22.45' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 0.05 cfs of 3.58 cfs potential flow)
- 2=WQ Orifice (Orifice Controls 0.05 cfs @ 8.76 fps)
- 3=OCS Bulkhead (Controls 0.00 cfs)
- 4=Emergency Overflow. (Controls 0.00 cfs)

Pond 1.2P: R-TANK - Chamber Wizard Field B**Chamber Model = ACF R-Tank HD 3 (ACF Environmental R-Tank HD)**

Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf

Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf

9 Chambers/Row x 2.35' Long = 21.11' Row Length

25 Rows x 15.7" Wide + 12.0" Side Stone x 2 = 34.81' Base Width

3.0" Base + 50.4" Chamber Height + 12.0" Cover = 5.45' Field Height

225 Chambers x 12.3 cf = 2,763.4 cf Chamber Storage

225 Chambers x 12.9 cf = 2,908.8 cf Displacement

4,004.7 cf Field - 2,908.8 cf Chambers = 1,095.9 cf Stone x 40.0% Voids = 438.4 cf Stone Storage

Chamber Storage + Stone Storage = 3,201.7 cf = 0.074 af

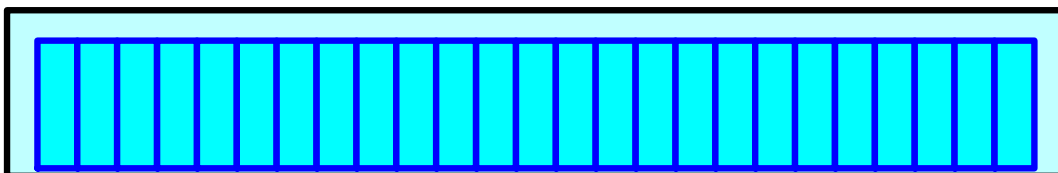
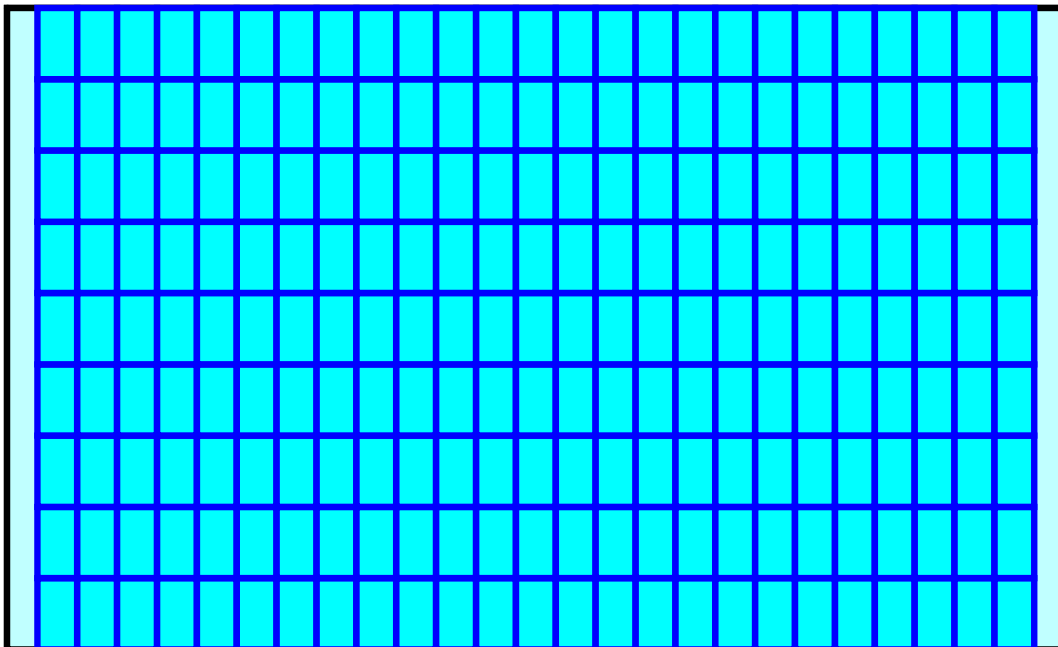
Overall Storage Efficiency = 79.9%

Overall System Size = 21.11' x 34.81' x 5.45'

225 Chambers

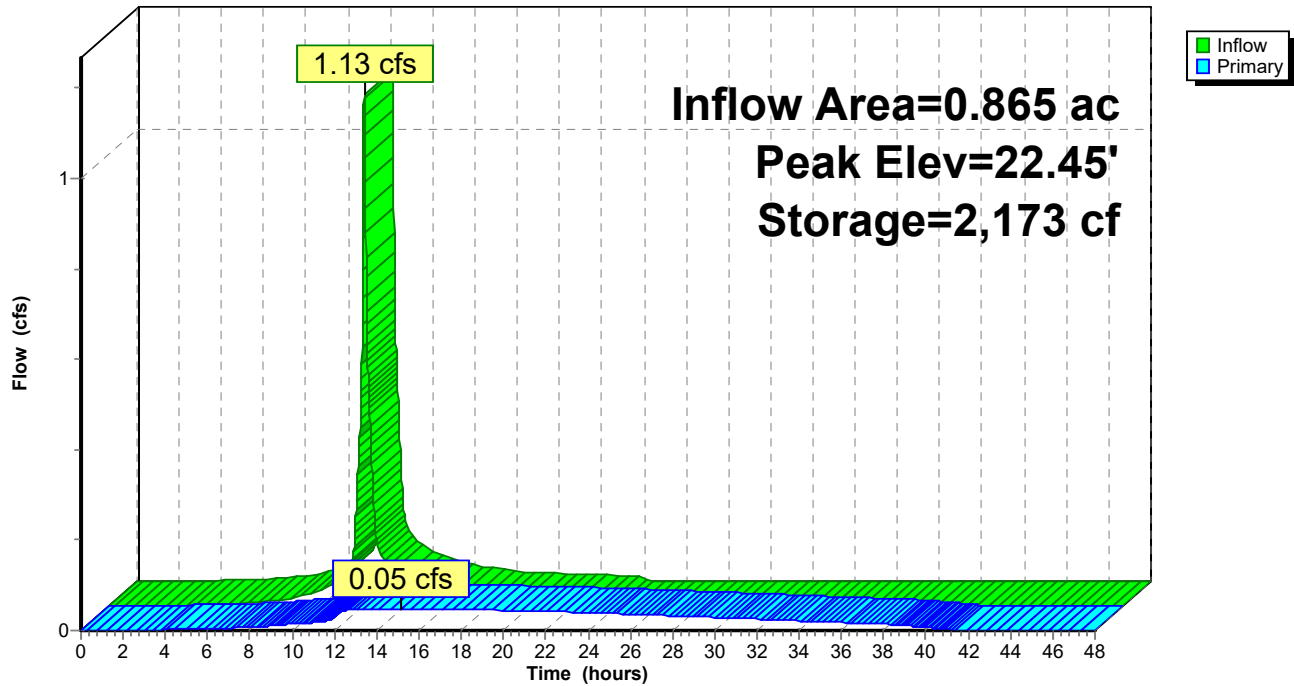
148.3 cy Field

40.6 cy Stone



Pond 1.2P: R-TANK

Hydrograph



1192.2_Post_4.3.23*Type III 24-hr 1" WQ Storm Rainfall=1.70"*

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Hydrograph for Pond 1.2P: R-TANK

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	19.15	0.00
1.00	0.00	0	19.15	0.00
2.00	0.00	0	19.15	0.00
3.00	0.00	0	19.15	0.00
4.00	0.00	0	19.15	0.00
5.00	0.00	1	19.15	0.00
6.00	0.01	5	19.16	0.00
7.00	0.01	11	19.19	0.01
8.00	0.01	22	19.22	0.01
9.00	0.02	46	19.30	0.01
10.00	0.03	99	19.43	0.01
11.00	0.06	209	19.59	0.02
12.00	0.68	776	20.42	0.03
13.00	0.10	2,008	22.21	0.05
14.00	0.07	2,135	22.39	0.05
15.00	0.05	2,172	22.45	0.05
16.00	0.04	2,156	22.43	0.05
17.00	0.03	2,100	22.34	0.05
18.00	0.02	2,023	22.23	0.05
19.00	0.02	1,933	22.10	0.05
20.00	0.02	1,839	21.96	0.04
21.00	0.02	1,743	21.82	0.04
22.00	0.01	1,645	21.68	0.04
23.00	0.01	1,546	21.54	0.04
24.00	0.01	1,447	21.39	0.04
25.00	0.00	1,312	21.20	0.04
26.00	0.00	1,179	21.00	0.04
27.00	0.00	1,054	20.82	0.03
28.00	0.00	934	20.65	0.03
29.00	0.00	822	20.48	0.03
30.00	0.00	715	20.33	0.03
31.00	0.00	616	20.18	0.03
32.00	0.00	522	20.05	0.03
33.00	0.00	436	19.92	0.02
34.00	0.00	355	19.81	0.02
35.00	0.00	282	19.70	0.02
36.00	0.00	214	19.60	0.02
37.00	0.00	153	19.51	0.02
38.00	0.00	99	19.43	0.01
39.00	0.00	53	19.32	0.01
40.00	0.00	20	19.21	0.01
41.00	0.00	2	19.16	0.00
42.00	0.00	0	19.15	0.00
43.00	0.00	0	19.15	0.00
44.00	0.00	0	19.15	0.00
45.00	0.00	0	19.15	0.00
46.00	0.00	0	19.15	0.00
47.00	0.00	0	19.15	0.00
48.00	0.00	0	19.15	0.00

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

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: ROOF 4-9	Runoff Area=17,072 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=1.18 cfs 0.094 af
Subcatchment 1.2: Alley Way	Runoff Area=20,598 sf 83.36% Impervious Runoff Depth=2.16" Tc=6.0 min CN=91 Runoff=1.18 cfs 0.085 af
Subcatchment 1.3: Lancaster Sidewalk	Runoff Area=4,798 sf 70.38% Impervious Runoff Depth=1.53" Tc=6.0 min CN=83 Runoff=0.20 cfs 0.014 af
Subcatchment 2S: Perimeter Sidewalk	Runoff Area=934 sf 47.22% Impervious Runoff Depth=0.87" Tc=6.0 min CN=72 Runoff=0.02 cfs 0.002 af
Reach 1R: Elm/Lancaster Street	Inflow=2.33 cfs 0.193 af Outflow=2.33 cfs 0.193 af
Reach 2R: Elm/Oxford	Inflow=0.02 cfs 0.002 af Outflow=0.02 cfs 0.002 af
Reach 99R: Confluence	Inflow=2.35 cfs 0.195 af Outflow=2.35 cfs 0.195 af
Pond 1.2P: R-TANK	Peak Elev=23.08' Storage=2,604 cf Inflow=2.36 cfs 0.179 af Outflow=2.14 cfs 0.179 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.195 af Average Runoff Depth = 2.34"
12.31% Pervious = 0.123 ac 87.69% Impervious = 0.874 ac

Summary for Subcatchment 1: ROOF 4-9

Runoff = 1.18 cfs @ 12.08 hrs, Volume= 0.094 af, Depth= 2.87"

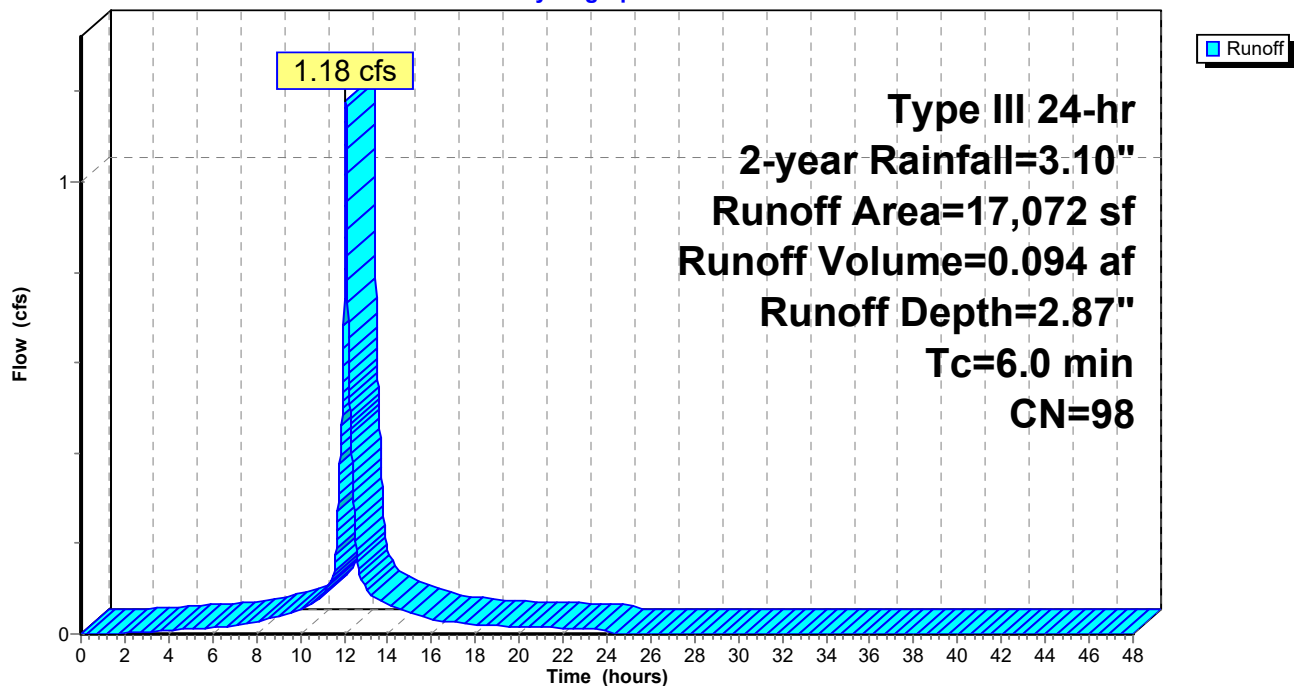
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
17,072	98	Roofs, HSG A
17,072		100.00% Impervious Area

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

Subcatchment 1: ROOF 4-9

Hydrograph



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

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Hydrograph for Subcatchment 1: ROOF 4-9

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	3.10	2.87	0.00
0.50	0.02	0.00	0.00	27.00	3.10	2.87	0.00
1.00	0.03	0.00	0.00	27.50	3.10	2.87	0.00
1.50	0.05	0.00	0.00	28.00	3.10	2.87	0.00
2.00	0.06	0.00	0.00	28.50	3.10	2.87	0.00
2.50	0.08	0.01	0.00	29.00	3.10	2.87	0.00
3.00	0.10	0.01	0.01	29.50	3.10	2.87	0.00
3.50	0.11	0.02	0.01	30.00	3.10	2.87	0.00
4.00	0.13	0.03	0.01	30.50	3.10	2.87	0.00
4.50	0.15	0.04	0.01	31.00	3.10	2.87	0.00
5.00	0.18	0.05	0.01	31.50	3.10	2.87	0.00
5.50	0.20	0.07	0.01	32.00	3.10	2.87	0.00
6.00	0.22	0.09	0.01	32.50	3.10	2.87	0.00
6.50	0.25	0.11	0.02	33.00	3.10	2.87	0.00
7.00	0.28	0.13	0.02	33.50	3.10	2.87	0.00
7.50	0.32	0.16	0.02	34.00	3.10	2.87	0.00
8.00	0.35	0.19	0.03	34.50	3.10	2.87	0.00
8.50	0.40	0.23	0.03	35.00	3.10	2.87	0.00
9.00	0.45	0.27	0.04	35.50	3.10	2.87	0.00
9.50	0.51	0.33	0.05	36.00	3.10	2.87	0.00
10.00	0.59	0.40	0.05	36.50	3.10	2.87	0.00
10.50	0.67	0.48	0.07	37.00	3.10	2.87	0.00
11.00	0.77	0.57	0.08	37.50	3.10	2.87	0.00
11.50	0.92	0.72	0.13	38.00	3.10	2.87	0.00
12.00	1.55	1.33	0.74	38.50	3.10	2.87	0.00
12.50	2.18	1.95	0.24	39.00	3.10	2.87	0.00
13.00	2.32	2.10	0.10	39.50	3.10	2.87	0.00
13.50	2.43	2.20	0.08	40.00	3.10	2.87	0.00
14.00	2.51	2.28	0.06	40.50	3.10	2.87	0.00
14.50	2.59	2.36	0.05	41.00	3.10	2.87	0.00
15.00	2.65	2.42	0.05	41.50	3.10	2.87	0.00
15.50	2.70	2.47	0.04	42.00	3.10	2.87	0.00
16.00	2.75	2.52	0.03	42.50	3.10	2.87	0.00
16.50	2.78	2.55	0.03	43.00	3.10	2.87	0.00
17.00	2.82	2.59	0.03	43.50	3.10	2.87	0.00
17.50	2.85	2.62	0.02	44.00	3.10	2.87	0.00
18.00	2.88	2.65	0.02	44.50	3.10	2.87	0.00
18.50	2.90	2.67	0.02	45.00	3.10	2.87	0.00
19.00	2.92	2.69	0.02	45.50	3.10	2.87	0.00
19.50	2.95	2.71	0.02	46.00	3.10	2.87	0.00
20.00	2.97	2.74	0.02	46.50	3.10	2.87	0.00
20.50	2.99	2.75	0.02	47.00	3.10	2.87	0.00
21.00	3.01	2.77	0.01	47.50	3.10	2.87	0.00
21.50	3.02	2.79	0.01	48.00	3.10	2.87	0.00
22.00	3.04	2.81	0.01				
22.50	3.06	2.82	0.01				
23.00	3.07	2.84	0.01				
23.50	3.09	2.85	0.01				
24.00	3.10	2.87	0.01				
24.50	3.10	2.87	0.00				
25.00	3.10	2.87	0.00				
25.50	3.10	2.87	0.00				
26.00	3.10	2.87	0.00				

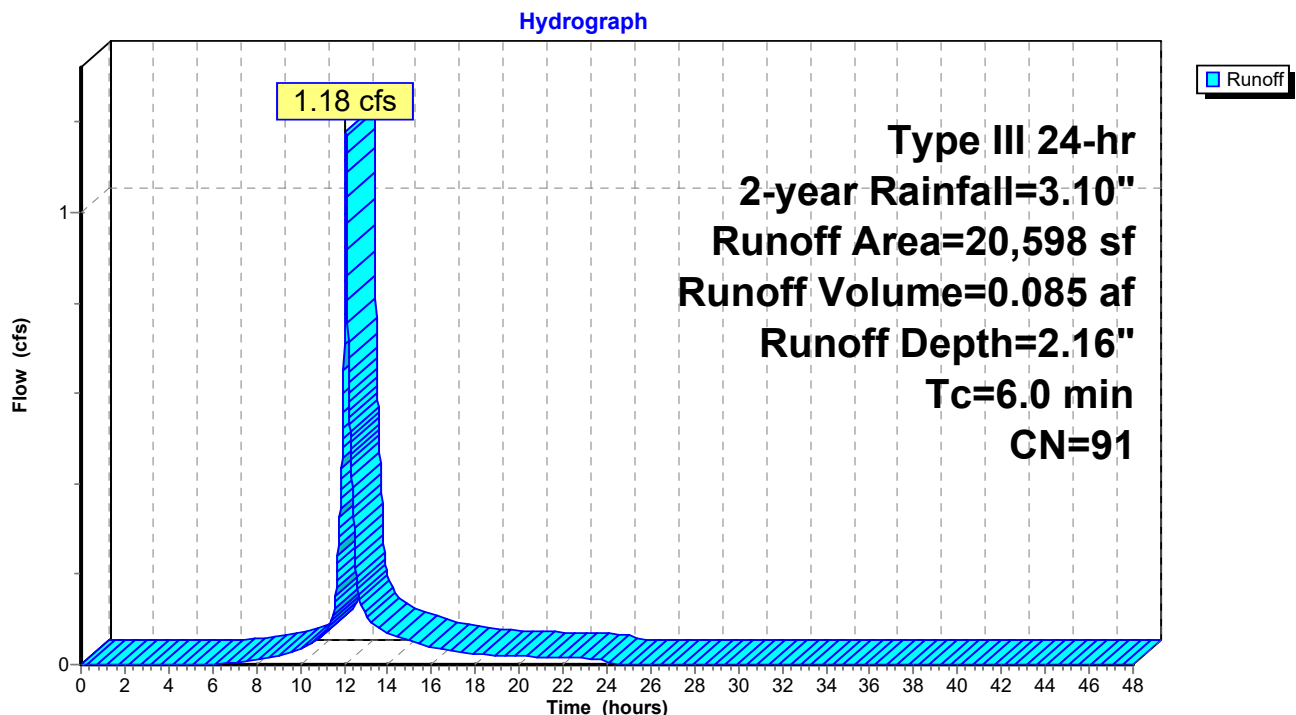
Summary for Subcatchment 1.2: Alley Way

Runoff = 1.18 cfs @ 12.09 hrs, Volume= 0.085 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
2,755	49	50-75% Grass cover, Fair, HSG A
9,571	98	Paved parking, HSG A
672	96	Gravel surface, HSG A
7,600	98	Roofs, HSG A
20,598	91	Weighted Average
3,427		16.64% Pervious Area
17,171		83.36% Impervious Area

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

Subcatchment 1.2: Alley Way

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

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Hydrograph for Subcatchment 1.2: Alley Way

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	3.10	2.16	0.00
0.50	0.02	0.00	0.00	27.00	3.10	2.16	0.00
1.00	0.03	0.00	0.00	27.50	3.10	2.16	0.00
1.50	0.05	0.00	0.00	28.00	3.10	2.16	0.00
2.00	0.06	0.00	0.00	28.50	3.10	2.16	0.00
2.50	0.08	0.00	0.00	29.00	3.10	2.16	0.00
3.00	0.10	0.00	0.00	29.50	3.10	2.16	0.00
3.50	0.11	0.00	0.00	30.00	3.10	2.16	0.00
4.00	0.13	0.00	0.00	30.50	3.10	2.16	0.00
4.50	0.15	0.00	0.00	31.00	3.10	2.16	0.00
5.00	0.18	0.00	0.00	31.50	3.10	2.16	0.00
5.50	0.20	0.00	0.00	32.00	3.10	2.16	0.00
6.00	0.22	0.00	0.00	32.50	3.10	2.16	0.00
6.50	0.25	0.00	0.00	33.00	3.10	2.16	0.00
7.00	0.28	0.01	0.00	33.50	3.10	2.16	0.00
7.50	0.32	0.01	0.01	34.00	3.10	2.16	0.00
8.00	0.35	0.02	0.01	34.50	3.10	2.16	0.00
8.50	0.40	0.03	0.01	35.00	3.10	2.16	0.00
9.00	0.45	0.05	0.02	35.50	3.10	2.16	0.00
9.50	0.51	0.08	0.03	36.00	3.10	2.16	0.00
10.00	0.59	0.11	0.03	36.50	3.10	2.16	0.00
10.50	0.67	0.15	0.05	37.00	3.10	2.16	0.00
11.00	0.77	0.21	0.06	37.50	3.10	2.16	0.00
11.50	0.92	0.31	0.11	38.00	3.10	2.16	0.00
12.00	1.55	0.78	0.71	38.50	3.10	2.16	0.00
12.50	2.18	1.32	0.26	39.00	3.10	2.16	0.00
13.00	2.32	1.45	0.11	39.50	3.10	2.16	0.00
13.50	2.43	1.55	0.08	40.00	3.10	2.16	0.00
14.00	2.51	1.62	0.07	40.50	3.10	2.16	0.00
14.50	2.59	1.69	0.06	41.00	3.10	2.16	0.00
15.00	2.65	1.75	0.05	41.50	3.10	2.16	0.00
15.50	2.70	1.80	0.04	42.00	3.10	2.16	0.00
16.00	2.75	1.84	0.04	42.50	3.10	2.16	0.00
16.50	2.78	1.87	0.03	43.00	3.10	2.16	0.00
17.00	2.82	1.90	0.03	43.50	3.10	2.16	0.00
17.50	2.85	1.93	0.03	44.00	3.10	2.16	0.00
18.00	2.88	1.96	0.02	44.50	3.10	2.16	0.00
18.50	2.90	1.98	0.02	45.00	3.10	2.16	0.00
19.00	2.92	2.00	0.02	45.50	3.10	2.16	0.00
19.50	2.95	2.02	0.02	46.00	3.10	2.16	0.00
20.00	2.97	2.04	0.02	46.50	3.10	2.16	0.00
20.50	2.99	2.06	0.02	47.00	3.10	2.16	0.00
21.00	3.01	2.08	0.02	47.50	3.10	2.16	0.00
21.50	3.02	2.09	0.02	48.00	3.10	2.16	0.00
22.00	3.04	2.11	0.01				
22.50	3.06	2.12	0.01				
23.00	3.07	2.14	0.01				
23.50	3.09	2.15	0.01				
24.00	3.10	2.16	0.01				
24.50	3.10	2.16	0.00				
25.00	3.10	2.16	0.00				
25.50	3.10	2.16	0.00				
26.00	3.10	2.16	0.00				

Summary for Subcatchment 1.3: Lancaster Sidewalk

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 1.53"

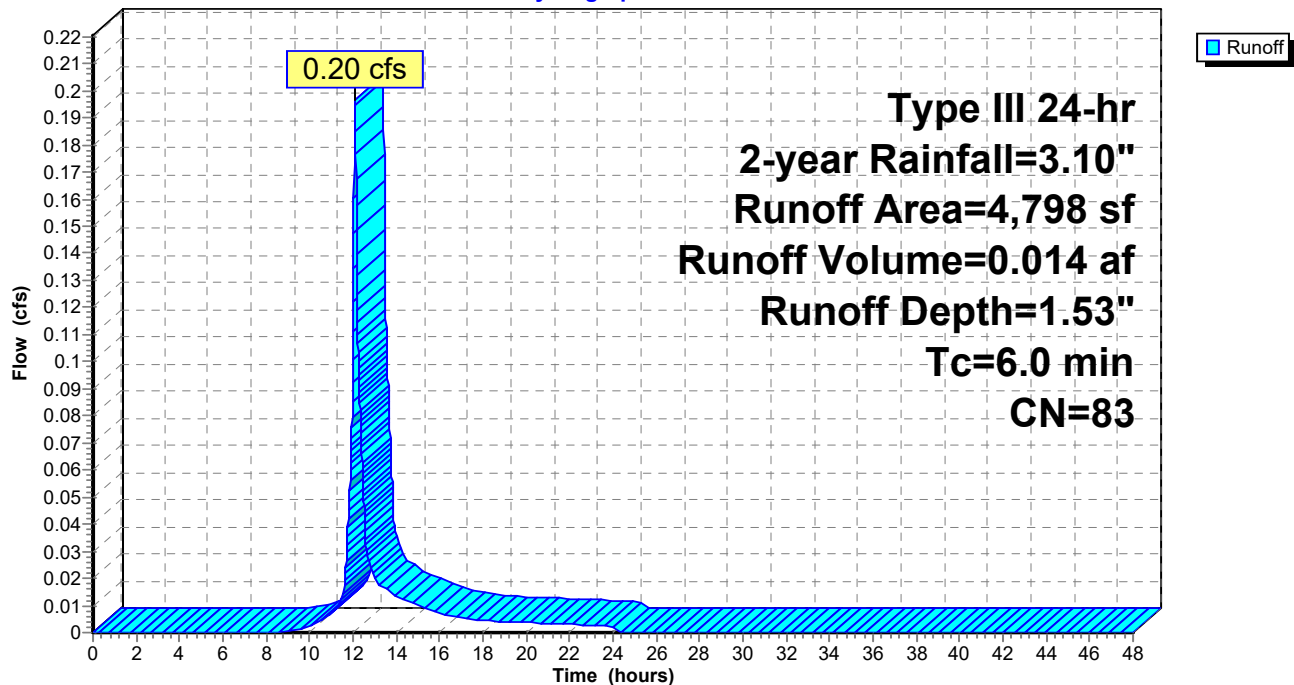
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
1,538	98	Paved parking, HSG A
1,306	49	50-75% Grass cover, Fair, HSG A
115	49	50-75% Grass cover, Fair, HSG A
1,839	98	Paved parking, HSG A
4,798	83	Weighted Average
1,421		29.62% Pervious Area
3,377		70.38% Impervious Area

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

Subcatchment 1.3: Lancaster Sidewalk

Hydrograph



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

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Hydrograph for Subcatchment 1.3: Lancaster Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	3.10	1.53	0.00
0.50	0.02	0.00	0.00	27.00	3.10	1.53	0.00
1.00	0.03	0.00	0.00	27.50	3.10	1.53	0.00
1.50	0.05	0.00	0.00	28.00	3.10	1.53	0.00
2.00	0.06	0.00	0.00	28.50	3.10	1.53	0.00
2.50	0.08	0.00	0.00	29.00	3.10	1.53	0.00
3.00	0.10	0.00	0.00	29.50	3.10	1.53	0.00
3.50	0.11	0.00	0.00	30.00	3.10	1.53	0.00
4.00	0.13	0.00	0.00	30.50	3.10	1.53	0.00
4.50	0.15	0.00	0.00	31.00	3.10	1.53	0.00
5.00	0.18	0.00	0.00	31.50	3.10	1.53	0.00
5.50	0.20	0.00	0.00	32.00	3.10	1.53	0.00
6.00	0.22	0.00	0.00	32.50	3.10	1.53	0.00
6.50	0.25	0.00	0.00	33.00	3.10	1.53	0.00
7.00	0.28	0.00	0.00	33.50	3.10	1.53	0.00
7.50	0.32	0.00	0.00	34.00	3.10	1.53	0.00
8.00	0.35	0.00	0.00	34.50	3.10	1.53	0.00
8.50	0.40	0.00	0.00	35.00	3.10	1.53	0.00
9.00	0.45	0.00	0.00	35.50	3.10	1.53	0.00
9.50	0.51	0.01	0.00	36.00	3.10	1.53	0.00
10.00	0.59	0.01	0.00	36.50	3.10	1.53	0.00
10.50	0.67	0.03	0.00	37.00	3.10	1.53	0.00
11.00	0.77	0.06	0.01	37.50	3.10	1.53	0.00
11.50	0.92	0.10	0.01	38.00	3.10	1.53	0.00
12.00	1.55	0.41	0.11	38.50	3.10	1.53	0.00
12.50	2.18	0.82	0.05	39.00	3.10	1.53	0.00
13.00	2.32	0.93	0.02	39.50	3.10	1.53	0.00
13.50	2.43	1.00	0.02	40.00	3.10	1.53	0.00
14.00	2.51	1.07	0.01	40.50	3.10	1.53	0.00
14.50	2.59	1.12	0.01	41.00	3.10	1.53	0.00
15.00	2.65	1.17	0.01	41.50	3.10	1.53	0.00
15.50	2.70	1.21	0.01	42.00	3.10	1.53	0.00
16.00	2.75	1.25	0.01	42.50	3.10	1.53	0.00
16.50	2.78	1.28	0.01	43.00	3.10	1.53	0.00
17.00	2.82	1.30	0.01	43.50	3.10	1.53	0.00
17.50	2.85	1.33	0.01	44.00	3.10	1.53	0.00
18.00	2.88	1.35	0.00	44.50	3.10	1.53	0.00
18.50	2.90	1.37	0.00	45.00	3.10	1.53	0.00
19.00	2.92	1.39	0.00	45.50	3.10	1.53	0.00
19.50	2.95	1.40	0.00	46.00	3.10	1.53	0.00
20.00	2.97	1.42	0.00	46.50	3.10	1.53	0.00
20.50	2.99	1.44	0.00	47.00	3.10	1.53	0.00
21.00	3.01	1.45	0.00	47.50	3.10	1.53	0.00
21.50	3.02	1.47	0.00	48.00	3.10	1.53	0.00
22.00	3.04	1.48	0.00				
22.50	3.06	1.49	0.00				
23.00	3.07	1.50	0.00				
23.50	3.09	1.52	0.00				
24.00	3.10	1.53	0.00				
24.50	3.10	1.53	0.00				
25.00	3.10	1.53	0.00				
25.50	3.10	1.53	0.00				
26.00	3.10	1.53	0.00				

Summary for Subcatchment 2S: Perimeter Sidewalk

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 0.87"

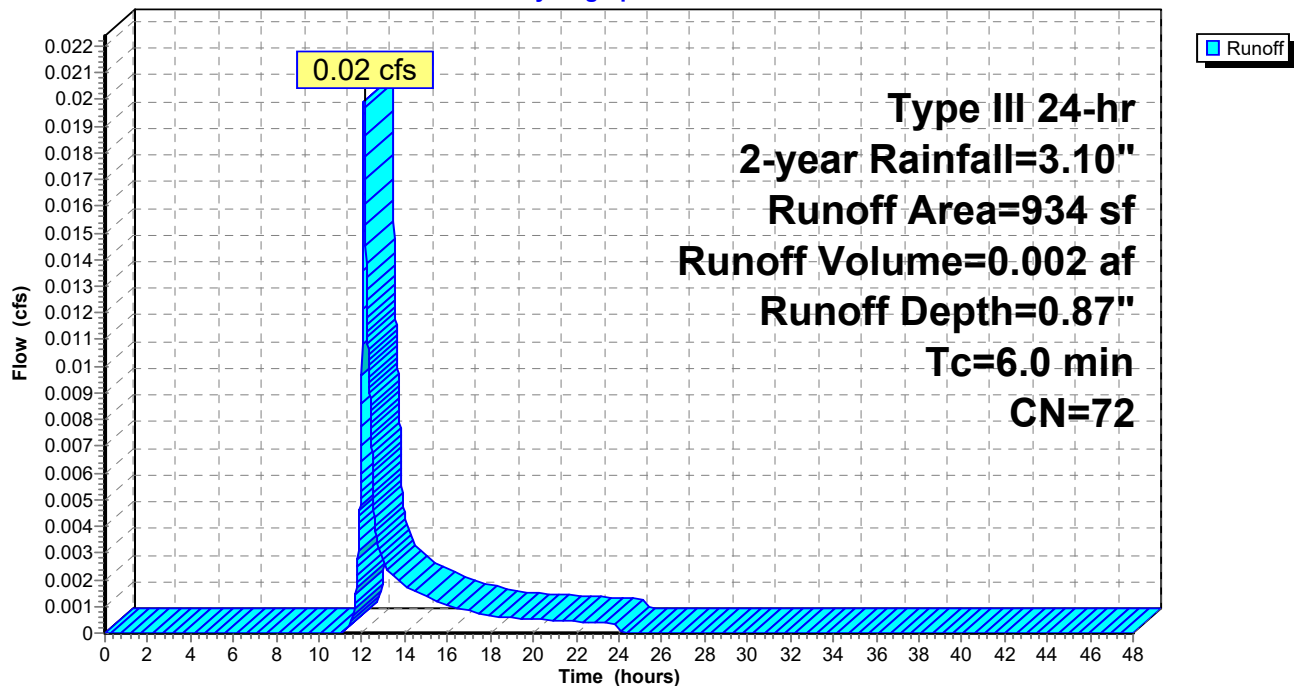
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
441	98	Unconnected pavement, HSG A
493	49	50-75% Grass cover, Fair, HSG A
934	72	Weighted Average
493		52.78% Pervious Area
441		47.22% Impervious Area
441		100.00% Unconnected

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

Subcatchment 2S: Perimeter Sidewalk

Hydrograph



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

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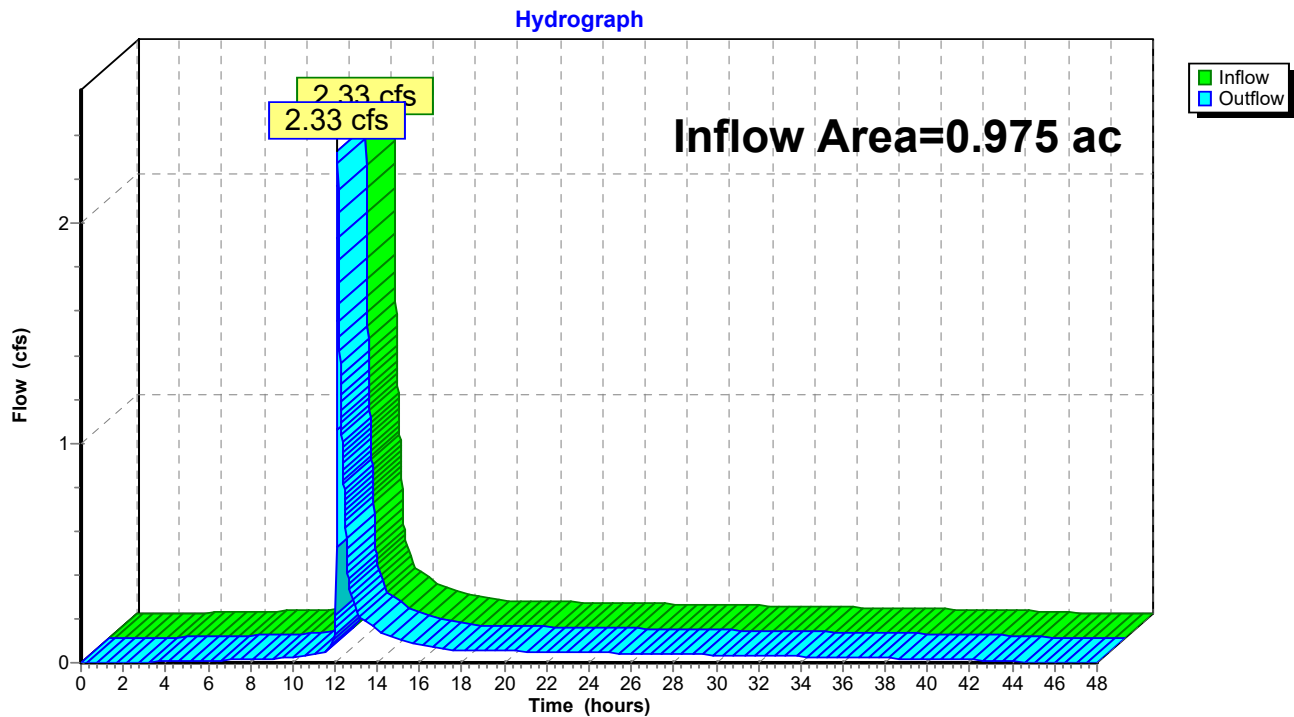
Hydrograph for Subcatchment 2S: Perimeter Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	3.10	0.87	0.00
0.50	0.02	0.00	0.00	27.00	3.10	0.87	0.00
1.00	0.03	0.00	0.00	27.50	3.10	0.87	0.00
1.50	0.05	0.00	0.00	28.00	3.10	0.87	0.00
2.00	0.06	0.00	0.00	28.50	3.10	0.87	0.00
2.50	0.08	0.00	0.00	29.00	3.10	0.87	0.00
3.00	0.10	0.00	0.00	29.50	3.10	0.87	0.00
3.50	0.11	0.00	0.00	30.00	3.10	0.87	0.00
4.00	0.13	0.00	0.00	30.50	3.10	0.87	0.00
4.50	0.15	0.00	0.00	31.00	3.10	0.87	0.00
5.00	0.18	0.00	0.00	31.50	3.10	0.87	0.00
5.50	0.20	0.00	0.00	32.00	3.10	0.87	0.00
6.00	0.22	0.00	0.00	32.50	3.10	0.87	0.00
6.50	0.25	0.00	0.00	33.00	3.10	0.87	0.00
7.00	0.28	0.00	0.00	33.50	3.10	0.87	0.00
7.50	0.32	0.00	0.00	34.00	3.10	0.87	0.00
8.00	0.35	0.00	0.00	34.50	3.10	0.87	0.00
8.50	0.40	0.00	0.00	35.00	3.10	0.87	0.00
9.00	0.45	0.00	0.00	35.50	3.10	0.87	0.00
9.50	0.51	0.00	0.00	36.00	3.10	0.87	0.00
10.00	0.59	0.00	0.00	36.50	3.10	0.87	0.00
10.50	0.67	0.00	0.00	37.00	3.10	0.87	0.00
11.00	0.77	0.00	0.00	37.50	3.10	0.87	0.00
11.50	0.92	0.01	0.00	38.00	3.10	0.87	0.00
12.00	1.55	0.13	0.01	38.50	3.10	0.87	0.00
12.50	2.18	0.37	0.01	39.00	3.10	0.87	0.00
13.00	2.32	0.44	0.00	39.50	3.10	0.87	0.00
13.50	2.43	0.49	0.00	40.00	3.10	0.87	0.00
14.00	2.51	0.54	0.00	40.50	3.10	0.87	0.00
14.50	2.59	0.57	0.00	41.00	3.10	0.87	0.00
15.00	2.65	0.61	0.00	41.50	3.10	0.87	0.00
15.50	2.70	0.64	0.00	42.00	3.10	0.87	0.00
16.00	2.75	0.66	0.00	42.50	3.10	0.87	0.00
16.50	2.78	0.68	0.00	43.00	3.10	0.87	0.00
17.00	2.82	0.70	0.00	43.50	3.10	0.87	0.00
17.50	2.85	0.72	0.00	44.00	3.10	0.87	0.00
18.00	2.88	0.74	0.00	44.50	3.10	0.87	0.00
18.50	2.90	0.75	0.00	45.00	3.10	0.87	0.00
19.00	2.92	0.76	0.00	45.50	3.10	0.87	0.00
19.50	2.95	0.78	0.00	46.00	3.10	0.87	0.00
20.00	2.97	0.79	0.00	46.50	3.10	0.87	0.00
20.50	2.99	0.80	0.00	47.00	3.10	0.87	0.00
21.00	3.01	0.81	0.00	47.50	3.10	0.87	0.00
21.50	3.02	0.82	0.00	48.00	3.10	0.87	0.00
22.00	3.04	0.83	0.00				
22.50	3.06	0.84	0.00				
23.00	3.07	0.85	0.00				
23.50	3.09	0.86	0.00				
24.00	3.10	0.87	0.00				
24.50	3.10	0.87	0.00				
25.00	3.10	0.87	0.00				
25.50	3.10	0.87	0.00				
26.00	3.10	0.87	0.00				

Summary for Reach 1R: Elm/Lancaster Street

Inflow Area = 0.975 ac, 88.58% Impervious, Inflow Depth = 2.38" for 2-year event
Inflow = 2.33 cfs @ 12.12 hrs, Volume= 0.193 af
Outflow = 2.33 cfs @ 12.12 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Elm/Lancaster Street

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

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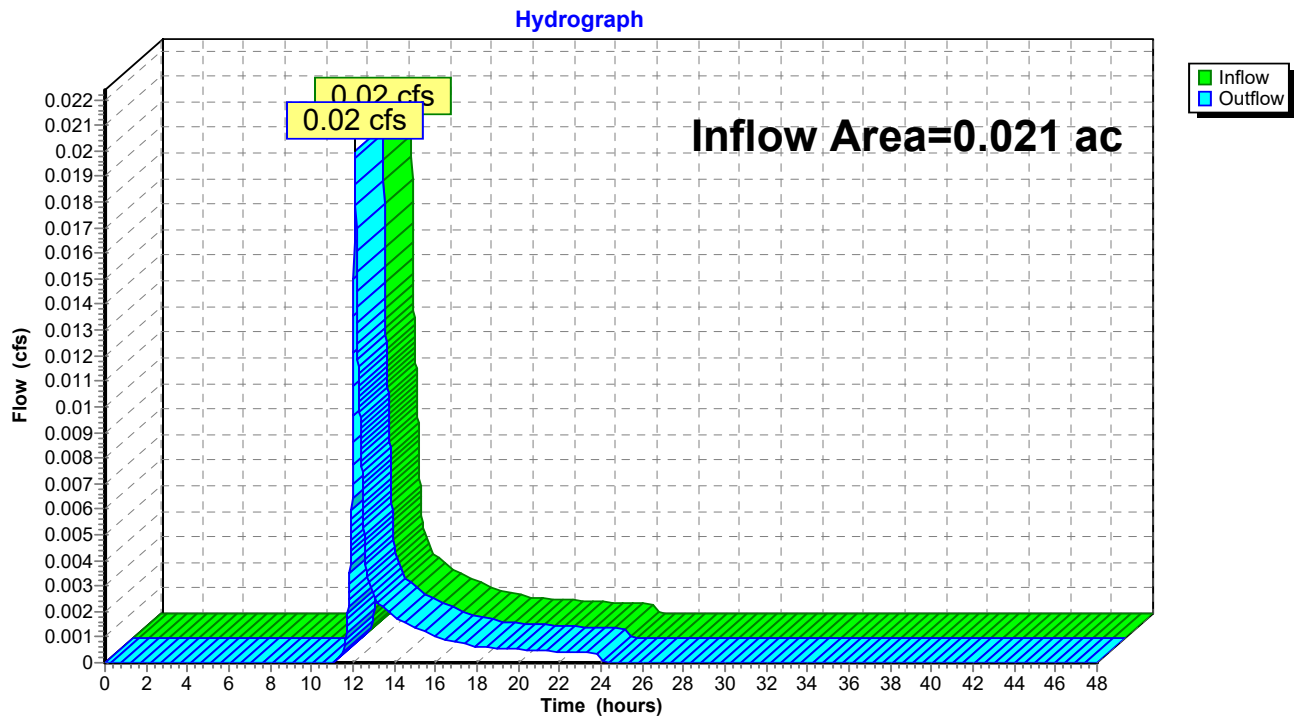
Hydrograph for Reach 1R: Elm/Lancaster Street

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.04		0.04
0.50	0.00		0.00	27.00	0.04		0.04
1.00	0.00		0.00	27.50	0.04		0.04
1.50	0.00		0.00	28.00	0.04		0.04
2.00	0.00		0.00	28.50	0.04		0.04
2.50	0.00		0.00	29.00	0.04		0.04
3.00	0.00		0.00	29.50	0.04		0.04
3.50	0.00		0.00	30.00	0.04		0.04
4.00	0.01		0.01	30.50	0.03		0.03
4.50	0.01		0.01	31.00	0.03		0.03
5.00	0.01		0.01	31.50	0.03		0.03
5.50	0.01		0.01	32.00	0.03		0.03
6.00	0.01		0.01	32.50	0.03		0.03
6.50	0.01		0.01	33.00	0.03		0.03
7.00	0.01		0.01	33.50	0.03		0.03
7.50	0.01		0.01	34.00	0.03		0.03
8.00	0.01		0.01	34.50	0.03		0.03
8.50	0.02		0.02	35.00	0.03		0.03
9.00	0.02		0.02	35.50	0.03		0.03
9.50	0.02		0.02	36.00	0.02		0.02
10.00	0.03		0.03	36.50	0.02		0.02
10.50	0.03		0.03	37.00	0.02		0.02
11.00	0.04		0.04	37.50	0.02		0.02
11.50	0.05		0.05	38.00	0.02		0.02
12.00	0.16		0.16	38.50	0.02		0.02
12.50	0.62		0.62	39.00	0.02		0.02
13.00	0.24		0.24	39.50	0.02		0.02
13.50	0.18		0.18	40.00	0.02		0.02
14.00	0.15		0.15	40.50	0.02		0.02
14.50	0.13		0.13	41.00	0.02		0.02
15.00	0.11		0.11	41.50	0.01		0.01
15.50	0.10		0.10	42.00	0.01		0.01
16.00	0.08		0.08	42.50	0.01		0.01
16.50	0.07		0.07	43.00	0.01		0.01
17.00	0.06		0.06	43.50	0.01		0.01
17.50	0.06		0.06	44.00	0.01		0.01
18.00	0.05		0.05	44.50	0.00		0.00
18.50	0.05		0.05	45.00	0.00		0.00
19.00	0.05		0.05	45.50	0.00		0.00
19.50	0.05		0.05	46.00	0.00		0.00
20.00	0.05		0.05	46.50	0.00		0.00
20.50	0.05		0.05	47.00	0.00		0.00
21.00	0.05		0.05	47.50	0.00		0.00
21.50	0.05		0.05	48.00	0.00		0.00
22.00	0.05		0.05				
22.50	0.05		0.05				
23.00	0.05		0.05				
23.50	0.05		0.05				
24.00	0.05		0.05				
24.50	0.05		0.05				
25.00	0.04		0.04				
25.50	0.04		0.04				
26.00	0.04		0.04				

Summary for Reach 2R: Elm/Oxford

Inflow Area = 0.021 ac, 47.22% Impervious, Inflow Depth = 0.87" for 2-year event
Inflow = 0.02 cfs @ 12.10 hrs, Volume= 0.002 af
Outflow = 0.02 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Elm/Oxford

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

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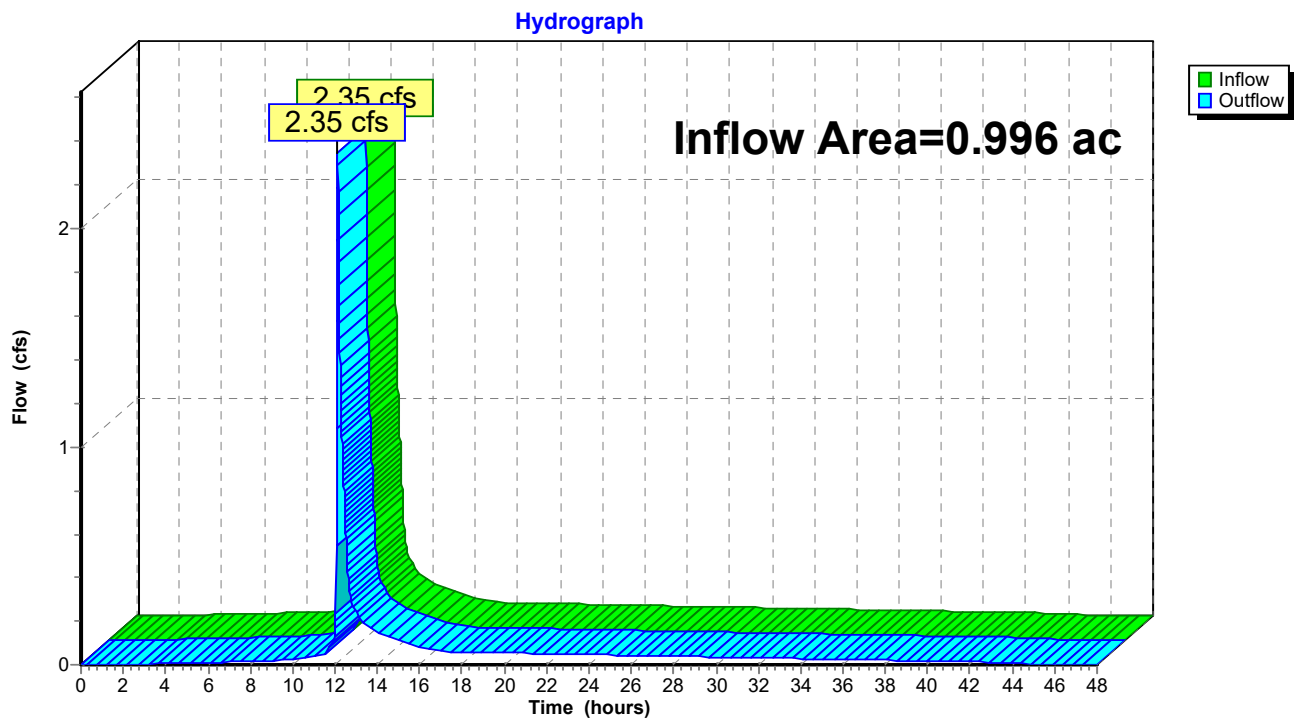
Hydrograph for Reach 2R: Elm/Oxford

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.00		0.00
0.50	0.00		0.00	27.00	0.00		0.00
1.00	0.00		0.00	27.50	0.00		0.00
1.50	0.00		0.00	28.00	0.00		0.00
2.00	0.00		0.00	28.50	0.00		0.00
2.50	0.00		0.00	29.00	0.00		0.00
3.00	0.00		0.00	29.50	0.00		0.00
3.50	0.00		0.00	30.00	0.00		0.00
4.00	0.00		0.00	30.50	0.00		0.00
4.50	0.00		0.00	31.00	0.00		0.00
5.00	0.00		0.00	31.50	0.00		0.00
5.50	0.00		0.00	32.00	0.00		0.00
6.00	0.00		0.00	32.50	0.00		0.00
6.50	0.00		0.00	33.00	0.00		0.00
7.00	0.00		0.00	33.50	0.00		0.00
7.50	0.00		0.00	34.00	0.00		0.00
8.00	0.00		0.00	34.50	0.00		0.00
8.50	0.00		0.00	35.00	0.00		0.00
9.00	0.00		0.00	35.50	0.00		0.00
9.50	0.00		0.00	36.00	0.00		0.00
10.00	0.00		0.00	36.50	0.00		0.00
10.50	0.00		0.00	37.00	0.00		0.00
11.00	0.00		0.00	37.50	0.00		0.00
11.50	0.00		0.00	38.00	0.00		0.00
12.00	0.01		0.01	38.50	0.00		0.00
12.50	0.01		0.01	39.00	0.00		0.00
13.00	0.00		0.00	39.50	0.00		0.00
13.50	0.00		0.00	40.00	0.00		0.00
14.00	0.00		0.00	40.50	0.00		0.00
14.50	0.00		0.00	41.00	0.00		0.00
15.00	0.00		0.00	41.50	0.00		0.00
15.50	0.00		0.00	42.00	0.00		0.00
16.00	0.00		0.00	42.50	0.00		0.00
16.50	0.00		0.00	43.00	0.00		0.00
17.00	0.00		0.00	43.50	0.00		0.00
17.50	0.00		0.00	44.00	0.00		0.00
18.00	0.00		0.00	44.50	0.00		0.00
18.50	0.00		0.00	45.00	0.00		0.00
19.00	0.00		0.00	45.50	0.00		0.00
19.50	0.00		0.00	46.00	0.00		0.00
20.00	0.00		0.00	46.50	0.00		0.00
20.50	0.00		0.00	47.00	0.00		0.00
21.00	0.00		0.00	47.50	0.00		0.00
21.50	0.00		0.00	48.00	0.00		0.00
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				
26.00	0.00		0.00				

Summary for Reach 99R: Confluence

Inflow Area = 0.996 ac, 87.69% Impervious, Inflow Depth = 2.34" for 2-year event
Inflow = 2.35 cfs @ 12.12 hrs, Volume= 0.195 af
Outflow = 2.35 cfs @ 12.12 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 99R: Confluence

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

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Hydrograph for Reach 99R: Confluence

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.04		0.04
0.50	0.00		0.00	27.00	0.04		0.04
1.00	0.00		0.00	27.50	0.04		0.04
1.50	0.00		0.00	28.00	0.04		0.04
2.00	0.00		0.00	28.50	0.04		0.04
2.50	0.00		0.00	29.00	0.04		0.04
3.00	0.00		0.00	29.50	0.04		0.04
3.50	0.00		0.00	30.00	0.04		0.04
4.00	0.01		0.01	30.50	0.03		0.03
4.50	0.01		0.01	31.00	0.03		0.03
5.00	0.01		0.01	31.50	0.03		0.03
5.50	0.01		0.01	32.00	0.03		0.03
6.00	0.01		0.01	32.50	0.03		0.03
6.50	0.01		0.01	33.00	0.03		0.03
7.00	0.01		0.01	33.50	0.03		0.03
7.50	0.01		0.01	34.00	0.03		0.03
8.00	0.01		0.01	34.50	0.03		0.03
8.50	0.02		0.02	35.00	0.03		0.03
9.00	0.02		0.02	35.50	0.03		0.03
9.50	0.02		0.02	36.00	0.02		0.02
10.00	0.03		0.03	36.50	0.02		0.02
10.50	0.03		0.03	37.00	0.02		0.02
11.00	0.04		0.04	37.50	0.02		0.02
11.50	0.05		0.05	38.00	0.02		0.02
12.00	0.17		0.17	38.50	0.02		0.02
12.50	0.63		0.63	39.00	0.02		0.02
13.00	0.24		0.24	39.50	0.02		0.02
13.50	0.18		0.18	40.00	0.02		0.02
14.00	0.15		0.15	40.50	0.02		0.02
14.50	0.13		0.13	41.00	0.02		0.02
15.00	0.11		0.11	41.50	0.01		0.01
15.50	0.10		0.10	42.00	0.01		0.01
16.00	0.08		0.08	42.50	0.01		0.01
16.50	0.07		0.07	43.00	0.01		0.01
17.00	0.06		0.06	43.50	0.01		0.01
17.50	0.06		0.06	44.00	0.01		0.01
18.00	0.05		0.05	44.50	0.00		0.00
18.50	0.05		0.05	45.00	0.00		0.00
19.00	0.05		0.05	45.50	0.00		0.00
19.50	0.05		0.05	46.00	0.00		0.00
20.00	0.05		0.05	46.50	0.00		0.00
20.50	0.05		0.05	47.00	0.00		0.00
21.00	0.05		0.05	47.50	0.00		0.00
21.50	0.05		0.05	48.00	0.00		0.00
22.00	0.05		0.05				
22.50	0.05		0.05				
23.00	0.05		0.05				
23.50	0.05		0.05				
24.00	0.05		0.05				
24.50	0.05		0.05				
25.00	0.04		0.04				
25.50	0.04		0.04				
26.00	0.04		0.04				

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

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Summary for Pond 1.2P: R-TANK

Inflow Area = 0.865 ac, 90.90% Impervious, Inflow Depth = 2.48" for 2-year event
 Inflow = 2.36 cfs @ 12.08 hrs, Volume= 0.179 af
 Outflow = 2.14 cfs @ 12.12 hrs, Volume= 0.179 af, Atten= 9%, Lag= 2.3 min
 Primary = 2.14 cfs @ 12.12 hrs, Volume= 0.179 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 23.08' @ 12.12 hrs Surf.Area= 747 sf Storage= 2,604 cf

Plug-Flow detention time= 353.8 min calculated for 0.179 af (100% of inflow)
 Center-of-Mass det. time= 354.0 min (1,133.2 - 779.3)

Volume	Invert	Avail.Storage	Storage Description
#1B	19.15'	438 cf	34.81'W x 21.11'L x 5.45'H Field B 4,005 cf Overall - 2,909 cf Embedded = 1,096 cf x 40.0% Voids
#2B	19.40'	2,763 cf	ACF R-Tank HD 3 x 225 Inside #1 Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf 225 Chambers in 25 Rows
#3	19.15'	77 cf	4.00'D x 6.10'H Vertical Cone/Cylinder
#4	25.25'	415 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		3,693 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.25	4	0	0
26.00	1,102	415	415

Device	Routing	Invert	Outlet Devices
#1	Primary	19.05'	10.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.05' / 18.85' S= 0.0050 ' / Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#2	Device 1	19.10'	1.0" Vert. WQ Orifice C= 0.600
#3	Device 1	22.75'	4.0' long x 0.7' breadth OCS Bulkhead 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
#4	Primary	25.75'	10.0' long x 5.0' breadth Emergency Overflow. Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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

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Primary OutFlow Max=2.14 cfs @ 12.12 hrs HW=23.08' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 2.14 cfs of 3.94 cfs potential flow)
- 2=WQ Orifice (Orifice Controls 0.05 cfs @ 9.55 fps)
- 3=OCS Bulkhead (Weir Controls 2.09 cfs @ 1.60 fps)
- 4=Emergency Overflow. (Controls 0.00 cfs)

Pond 1.2P: R-TANK - Chamber Wizard Field B

Chamber Model = ACF R-Tank HD 3 (ACF Environmental R-Tank HD)

Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf

Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf

9 Chambers/Row x 2.35' Long = 21.11' Row Length

25 Rows x 15.7" Wide + 12.0" Side Stone x 2 = 34.81' Base Width

3.0" Base + 50.4" Chamber Height + 12.0" Cover = 5.45' Field Height

225 Chambers x 12.3 cf = 2,763.4 cf Chamber Storage

225 Chambers x 12.9 cf = 2,908.8 cf Displacement

4,004.7 cf Field - 2,908.8 cf Chambers = 1,095.9 cf Stone x 40.0% Voids = 438.4 cf Stone Storage

Chamber Storage + Stone Storage = 3,201.7 cf = 0.074 af

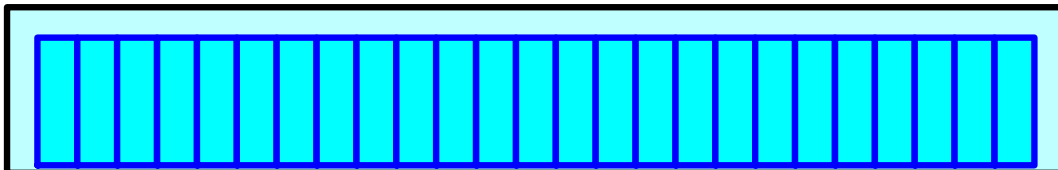
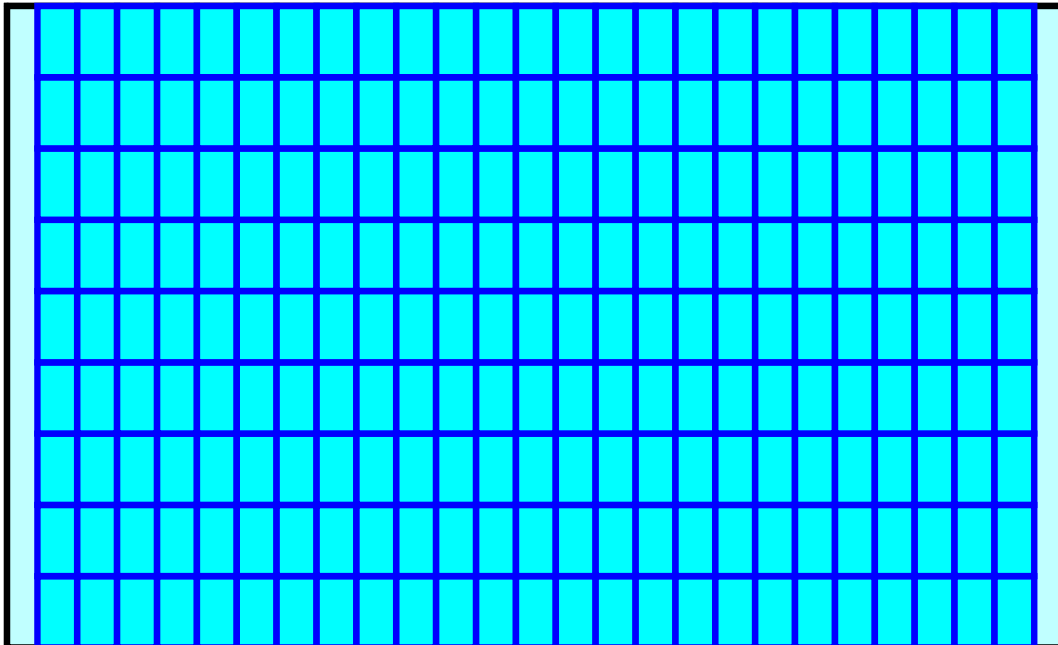
Overall Storage Efficiency = 79.9%

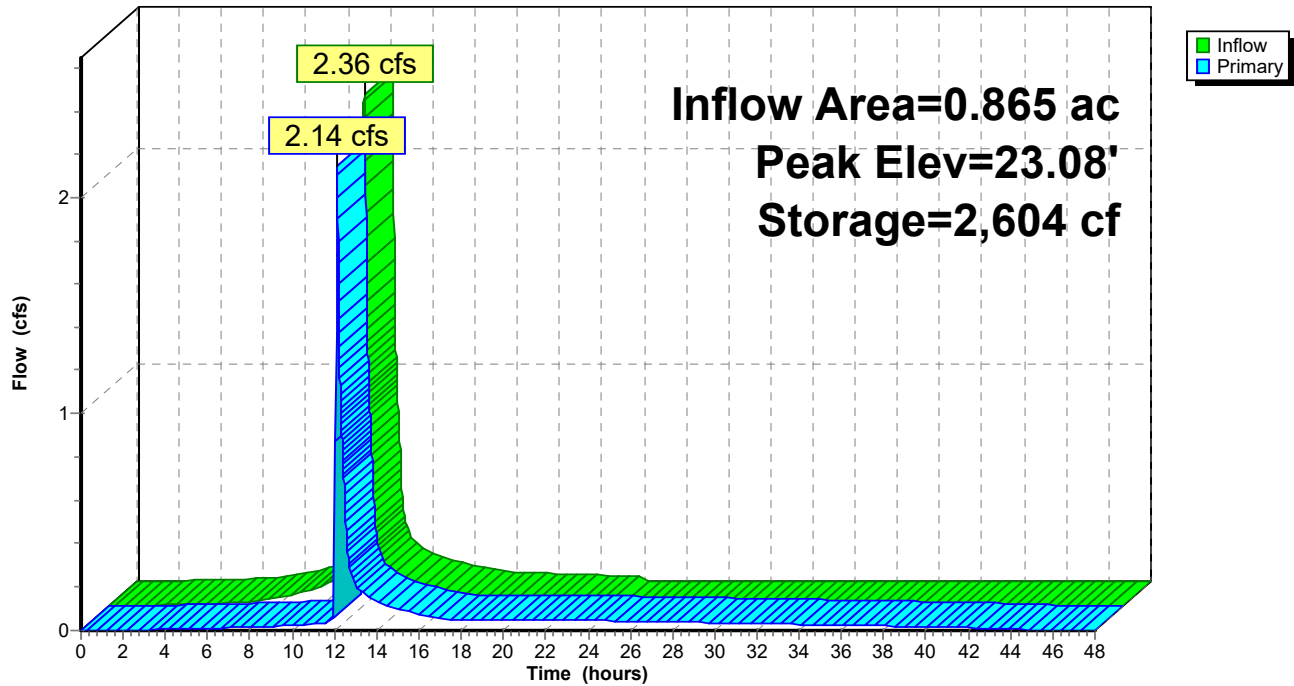
Overall System Size = 21.11' x 34.81' x 5.45'

225 Chambers

148.3 cy Field

40.6 cy Stone



Pond 1.2P: R-TANK**Hydrograph**

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

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Hydrograph for Pond 1.2P: R-TANK

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	19.15	0.00
1.00	0.00	0	19.15	0.00
2.00	0.00	0	19.15	0.00
3.00	0.01	3	19.16	0.00
4.00	0.01	10	19.18	0.01
5.00	0.01	22	19.22	0.01
6.00	0.01	37	19.27	0.01
7.00	0.02	67	19.37	0.01
8.00	0.04	123	19.47	0.01
9.00	0.06	230	19.62	0.02
10.00	0.09	419	19.90	0.02
11.00	0.14	738	20.36	0.03
12.00	1.45	2,054	22.28	0.05
13.00	0.21	2,422	22.81	0.22
14.00	0.13	2,406	22.79	0.13
15.00	0.10	2,399	22.78	0.10
16.00	0.07	2,391	22.77	0.07
17.00	0.06	2,385	22.76	0.06
18.00	0.04	2,374	22.74	0.05
19.00	0.04	2,339	22.69	0.05
20.00	0.03	2,291	22.62	0.05
21.00	0.03	2,233	22.54	0.05
22.00	0.03	2,167	22.44	0.05
23.00	0.03	2,093	22.33	0.05
24.00	0.02	2,012	22.21	0.05
25.00	0.00	1,856	21.99	0.04
26.00	0.00	1,700	21.76	0.04
27.00	0.00	1,550	21.54	0.04
28.00	0.00	1,407	21.34	0.04
29.00	0.00	1,270	21.14	0.04
30.00	0.00	1,140	20.95	0.04
31.00	0.00	1,016	20.77	0.03
32.00	0.00	899	20.60	0.03
33.00	0.00	788	20.43	0.03
34.00	0.00	684	20.28	0.03
35.00	0.00	586	20.14	0.03
36.00	0.00	495	20.01	0.02
37.00	0.00	410	19.89	0.02
38.00	0.00	332	19.77	0.02
39.00	0.00	260	19.67	0.02
40.00	0.00	195	19.57	0.02
41.00	0.00	136	19.49	0.02
42.00	0.00	84	19.41	0.01
43.00	0.00	41	19.28	0.01
44.00	0.00	13	19.19	0.01
45.00	0.00	0	19.15	0.00
46.00	0.00	0	19.15	0.00
47.00	0.00	0	19.15	0.00
48.00	0.00	0	19.15	0.00

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

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: ROOF 4-9	Runoff Area=17,072 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.76 cfs 0.143 af
Subcatchment 1.2: Alley Way	Runoff Area=20,598 sf 83.36% Impervious Runoff Depth=3.59" Tc=6.0 min CN=91 Runoff=1.92 cfs 0.142 af
Subcatchment 1.3: Lancaster Sidewalk	Runoff Area=4,798 sf 70.38% Impervious Runoff Depth=2.81" Tc=6.0 min CN=83 Runoff=0.36 cfs 0.026 af
Subcatchment 2S: Perimeter Sidewalk	Runoff Area=934 sf 47.22% Impervious Runoff Depth=1.89" Tc=6.0 min CN=72 Runoff=0.05 cfs 0.003 af
Reach 1R: Elm/Lancaster Street	Inflow=3.97 cfs 0.310 af Outflow=3.97 cfs 0.310 af
Reach 2R: Elm/Oxford	Inflow=0.05 cfs 0.003 af Outflow=0.05 cfs 0.003 af
Reach 99R: Confluence	Inflow=4.02 cfs 0.313 af Outflow=4.02 cfs 0.313 af
Pond 1.2P: R-TANK	Peak Elev=23.21' Storage=2,696 cf Inflow=3.68 cfs 0.284 af Outflow=3.61 cfs 0.284 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.313 af Average Runoff Depth = 3.77"
12.31% Pervious = 0.123 ac 87.69% Impervious = 0.874 ac

Summary for Subcatchment 1: ROOF 4-9

Runoff = 1.76 cfs @ 12.08 hrs, Volume= 0.143 af, Depth= 4.36"

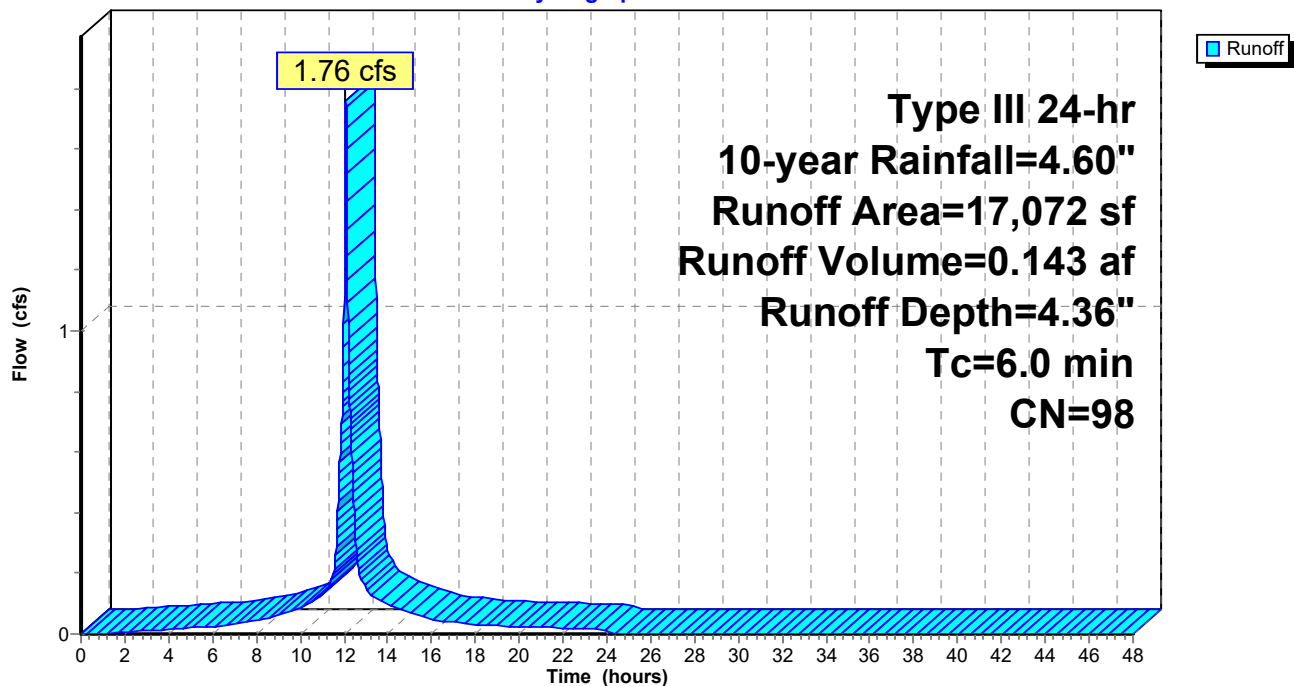
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
17,072	98	Roofs, HSG A
17,072		100.00% Impervious Area

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

Subcatchment 1: ROOF 4-9

Hydrograph



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

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Hydrograph for Subcatchment 1: ROOF 4-9

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	4.60	4.36	0.00
0.50	0.02	0.00	0.00	27.00	4.60	4.36	0.00
1.00	0.05	0.00	0.00	27.50	4.60	4.36	0.00
1.50	0.07	0.00	0.00	28.00	4.60	4.36	0.00
2.00	0.09	0.01	0.01	28.50	4.60	4.36	0.00
2.50	0.12	0.02	0.01	29.00	4.60	4.36	0.00
3.00	0.14	0.03	0.01	29.50	4.60	4.36	0.00
3.50	0.17	0.05	0.01	30.00	4.60	4.36	0.00
4.00	0.20	0.07	0.02	30.50	4.60	4.36	0.00
4.50	0.23	0.09	0.02	31.00	4.60	4.36	0.00
5.00	0.26	0.11	0.02	31.50	4.60	4.36	0.00
5.50	0.30	0.14	0.02	32.00	4.60	4.36	0.00
6.00	0.33	0.17	0.02	32.50	4.60	4.36	0.00
6.50	0.37	0.20	0.03	33.00	4.60	4.36	0.00
7.00	0.42	0.24	0.03	33.50	4.60	4.36	0.00
7.50	0.47	0.29	0.04	34.00	4.60	4.36	0.00
8.00	0.52	0.34	0.04	34.50	4.60	4.36	0.00
8.50	0.59	0.40	0.05	35.00	4.60	4.36	0.00
9.00	0.67	0.48	0.06	35.50	4.60	4.36	0.00
9.50	0.76	0.56	0.07	36.00	4.60	4.36	0.00
10.00	0.87	0.66	0.08	36.50	4.60	4.36	0.00
10.50	1.00	0.79	0.10	37.00	4.60	4.36	0.00
11.00	1.15	0.94	0.13	37.50	4.60	4.36	0.00
11.50	1.37	1.15	0.20	38.00	4.60	4.36	0.00
12.00	2.30	2.07	1.11	38.50	4.60	4.36	0.00
12.50	3.23	3.00	0.36	39.00	4.60	4.36	0.00
13.00	3.45	3.22	0.15	39.50	4.60	4.36	0.00
13.50	3.60	3.37	0.11	40.00	4.60	4.36	0.00
14.00	3.73	3.50	0.09	40.50	4.60	4.36	0.00
14.50	3.84	3.60	0.08	41.00	4.60	4.36	0.00
15.00	3.93	3.69	0.07	41.50	4.60	4.36	0.00
15.50	4.01	3.77	0.06	42.00	4.60	4.36	0.00
16.00	4.08	3.84	0.05	42.50	4.60	4.36	0.00
16.50	4.13	3.90	0.04	43.00	4.60	4.36	0.00
17.00	4.18	3.95	0.04	43.50	4.60	4.36	0.00
17.50	4.23	3.99	0.03	44.00	4.60	4.36	0.00
18.00	4.27	4.03	0.03	44.50	4.60	4.36	0.00
18.50	4.30	4.07	0.03	45.00	4.60	4.36	0.00
19.00	4.34	4.10	0.03	45.50	4.60	4.36	0.00
19.50	4.37	4.14	0.03	46.00	4.60	4.36	0.00
20.00	4.40	4.17	0.02	46.50	4.60	4.36	0.00
20.50	4.43	4.20	0.02	47.00	4.60	4.36	0.00
21.00	4.46	4.22	0.02	47.50	4.60	4.36	0.00
21.50	4.49	4.25	0.02	48.00	4.60	4.36	0.00
22.00	4.51	4.28	0.02				
22.50	4.54	4.30	0.02				
23.00	4.56	4.32	0.02				
23.50	4.58	4.34	0.02				
24.00	4.60	4.36	0.02				
24.50	4.60	4.36	0.00				
25.00	4.60	4.36	0.00				
25.50	4.60	4.36	0.00				
26.00	4.60	4.36	0.00				

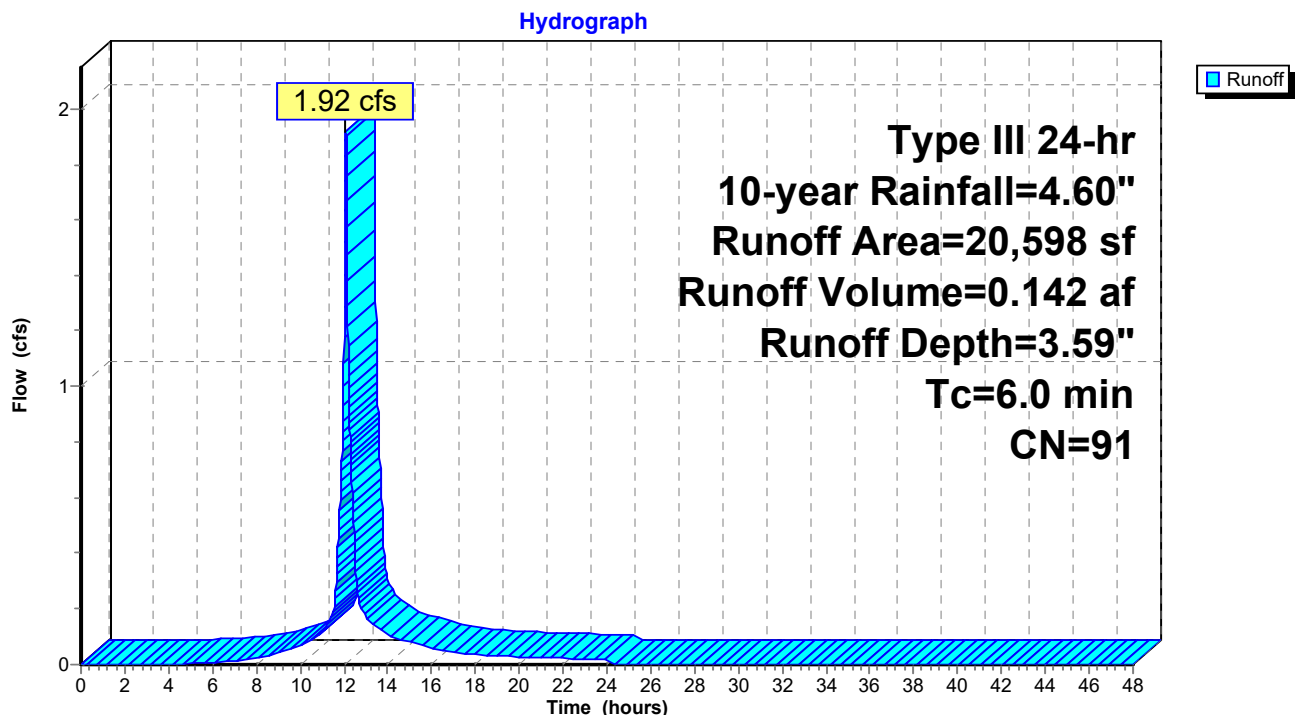
Summary for Subcatchment 1.2: Alley Way

Runoff = 1.92 cfs @ 12.08 hrs, Volume= 0.142 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
2,755	49	50-75% Grass cover, Fair, HSG A
9,571	98	Paved parking, HSG A
672	96	Gravel surface, HSG A
7,600	98	Roofs, HSG A
20,598	91	Weighted Average
3,427		16.64% Pervious Area
17,171		83.36% Impervious Area

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

Subcatchment 1.2: Alley Way

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

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Hydrograph for Subcatchment 1.2: Alley Way

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	4.60	3.59	0.00
0.50	0.02	0.00	0.00	27.00	4.60	3.59	0.00
1.00	0.05	0.00	0.00	27.50	4.60	3.59	0.00
1.50	0.07	0.00	0.00	28.00	4.60	3.59	0.00
2.00	0.09	0.00	0.00	28.50	4.60	3.59	0.00
2.50	0.12	0.00	0.00	29.00	4.60	3.59	0.00
3.00	0.14	0.00	0.00	29.50	4.60	3.59	0.00
3.50	0.17	0.00	0.00	30.00	4.60	3.59	0.00
4.00	0.20	0.00	0.00	30.50	4.60	3.59	0.00
4.50	0.23	0.00	0.00	31.00	4.60	3.59	0.00
5.00	0.26	0.00	0.00	31.50	4.60	3.59	0.00
5.50	0.30	0.01	0.01	32.00	4.60	3.59	0.00
6.00	0.33	0.02	0.01	32.50	4.60	3.59	0.00
6.50	0.37	0.03	0.01	33.00	4.60	3.59	0.00
7.00	0.42	0.04	0.01	33.50	4.60	3.59	0.00
7.50	0.47	0.06	0.02	34.00	4.60	3.59	0.00
8.00	0.52	0.08	0.02	34.50	4.60	3.59	0.00
8.50	0.59	0.11	0.03	35.00	4.60	3.59	0.00
9.00	0.67	0.15	0.04	35.50	4.60	3.59	0.00
9.50	0.76	0.21	0.05	36.00	4.60	3.59	0.00
10.00	0.87	0.27	0.07	36.50	4.60	3.59	0.00
10.50	1.00	0.36	0.09	37.00	4.60	3.59	0.00
11.00	1.15	0.47	0.11	37.50	4.60	3.59	0.00
11.50	1.37	0.64	0.19	38.00	4.60	3.59	0.00
12.00	2.30	1.43	1.18	38.50	4.60	3.59	0.00
12.50	3.23	2.29	0.41	39.00	4.60	3.59	0.00
13.00	3.45	2.49	0.17	39.50	4.60	3.59	0.00
13.50	3.60	2.64	0.13	40.00	4.60	3.59	0.00
14.00	3.73	2.76	0.11	40.50	4.60	3.59	0.00
14.50	3.84	2.86	0.09	41.00	4.60	3.59	0.00
15.00	3.93	2.95	0.08	41.50	4.60	3.59	0.00
15.50	4.01	3.03	0.07	42.00	4.60	3.59	0.00
16.00	4.08	3.09	0.06	42.50	4.60	3.59	0.00
16.50	4.13	3.14	0.05	43.00	4.60	3.59	0.00
17.00	4.18	3.19	0.05	43.50	4.60	3.59	0.00
17.50	4.23	3.24	0.04	44.00	4.60	3.59	0.00
18.00	4.27	3.28	0.03	44.50	4.60	3.59	0.00
18.50	4.30	3.31	0.03	45.00	4.60	3.59	0.00
19.00	4.34	3.34	0.03	45.50	4.60	3.59	0.00
19.50	4.37	3.37	0.03	46.00	4.60	3.59	0.00
20.00	4.40	3.40	0.03	46.50	4.60	3.59	0.00
20.50	4.43	3.43	0.03	47.00	4.60	3.59	0.00
21.00	4.46	3.46	0.03	47.50	4.60	3.59	0.00
21.50	4.49	3.48	0.02	48.00	4.60	3.59	0.00
22.00	4.51	3.51	0.02				
22.50	4.54	3.53	0.02				
23.00	4.56	3.55	0.02				
23.50	4.58	3.58	0.02				
24.00	4.60	3.59	0.02				
24.50	4.60	3.59	0.00				
25.00	4.60	3.59	0.00				
25.50	4.60	3.59	0.00				
26.00	4.60	3.59	0.00				

Summary for Subcatchment 1.3: Lancaster Sidewalk

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Depth= 2.81"

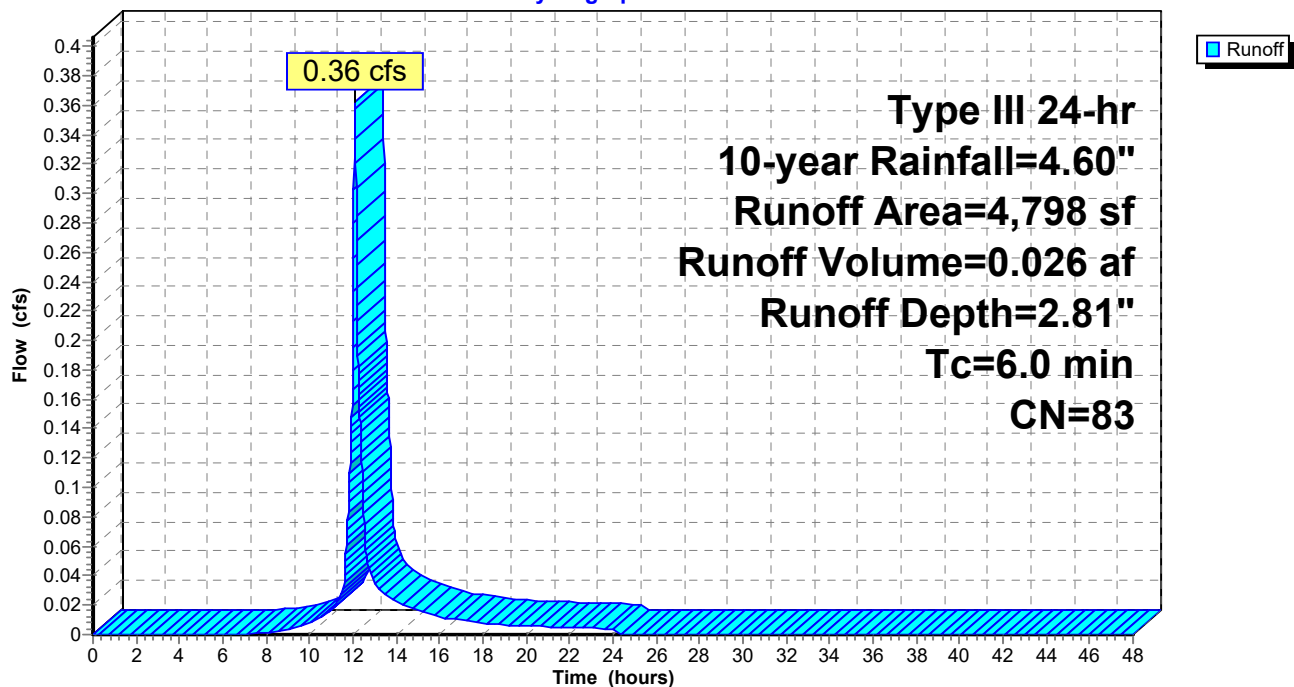
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
1,538	98	Paved parking, HSG A
1,306	49	50-75% Grass cover, Fair, HSG A
115	49	50-75% Grass cover, Fair, HSG A
1,839	98	Paved parking, HSG A
4,798	83	Weighted Average
1,421		29.62% Pervious Area
3,377		70.38% Impervious Area

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

Subcatchment 1.3: Lancaster Sidewalk

Hydrograph



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

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Hydrograph for Subcatchment 1.3: Lancaster Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	4.60	2.81	0.00
0.50	0.02	0.00	0.00	27.00	4.60	2.81	0.00
1.00	0.05	0.00	0.00	27.50	4.60	2.81	0.00
1.50	0.07	0.00	0.00	28.00	4.60	2.81	0.00
2.00	0.09	0.00	0.00	28.50	4.60	2.81	0.00
2.50	0.12	0.00	0.00	29.00	4.60	2.81	0.00
3.00	0.14	0.00	0.00	29.50	4.60	2.81	0.00
3.50	0.17	0.00	0.00	30.00	4.60	2.81	0.00
4.00	0.20	0.00	0.00	30.50	4.60	2.81	0.00
4.50	0.23	0.00	0.00	31.00	4.60	2.81	0.00
5.00	0.26	0.00	0.00	31.50	4.60	2.81	0.00
5.50	0.30	0.00	0.00	32.00	4.60	2.81	0.00
6.00	0.33	0.00	0.00	32.50	4.60	2.81	0.00
6.50	0.37	0.00	0.00	33.00	4.60	2.81	0.00
7.00	0.42	0.00	0.00	33.50	4.60	2.81	0.00
7.50	0.47	0.00	0.00	34.00	4.60	2.81	0.00
8.00	0.52	0.01	0.00	34.50	4.60	2.81	0.00
8.50	0.59	0.01	0.00	35.00	4.60	2.81	0.00
9.00	0.67	0.03	0.00	35.50	4.60	2.81	0.00
9.50	0.76	0.05	0.01	36.00	4.60	2.81	0.00
10.00	0.87	0.08	0.01	36.50	4.60	2.81	0.00
10.50	1.00	0.13	0.01	37.00	4.60	2.81	0.00
11.00	1.15	0.20	0.02	37.50	4.60	2.81	0.00
11.50	1.37	0.31	0.03	38.00	4.60	2.81	0.00
12.00	2.30	0.91	0.21	38.50	4.60	2.81	0.00
12.50	3.23	1.63	0.08	39.00	4.60	2.81	0.00
13.00	3.45	1.82	0.03	39.50	4.60	2.81	0.00
13.50	3.60	1.95	0.03	40.00	4.60	2.81	0.00
14.00	3.73	2.05	0.02	40.50	4.60	2.81	0.00
14.50	3.84	2.15	0.02	41.00	4.60	2.81	0.00
15.00	3.93	2.23	0.02	41.50	4.60	2.81	0.00
15.50	4.01	2.29	0.01	42.00	4.60	2.81	0.00
16.00	4.08	2.35	0.01	42.50	4.60	2.81	0.00
16.50	4.13	2.40	0.01	43.00	4.60	2.81	0.00
17.00	4.18	2.45	0.01	43.50	4.60	2.81	0.00
17.50	4.23	2.49	0.01	44.00	4.60	2.81	0.00
18.00	4.27	2.52	0.01	44.50	4.60	2.81	0.00
18.50	4.30	2.55	0.01	45.00	4.60	2.81	0.00
19.00	4.34	2.58	0.01	45.50	4.60	2.81	0.00
19.50	4.37	2.61	0.01	46.00	4.60	2.81	0.00
20.00	4.40	2.64	0.01	46.50	4.60	2.81	0.00
20.50	4.43	2.66	0.01	47.00	4.60	2.81	0.00
21.00	4.46	2.69	0.01	47.50	4.60	2.81	0.00
21.50	4.49	2.71	0.01	48.00	4.60	2.81	0.00
22.00	4.51	2.74	0.00				
22.50	4.54	2.76	0.00				
23.00	4.56	2.78	0.00				
23.50	4.58	2.80	0.00				
24.00	4.60	2.81	0.00				
24.50	4.60	2.81	0.00				
25.00	4.60	2.81	0.00				
25.50	4.60	2.81	0.00				
26.00	4.60	2.81	0.00				

Summary for Subcatchment 2S: Perimeter Sidewalk

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.003 af, Depth= 1.89"

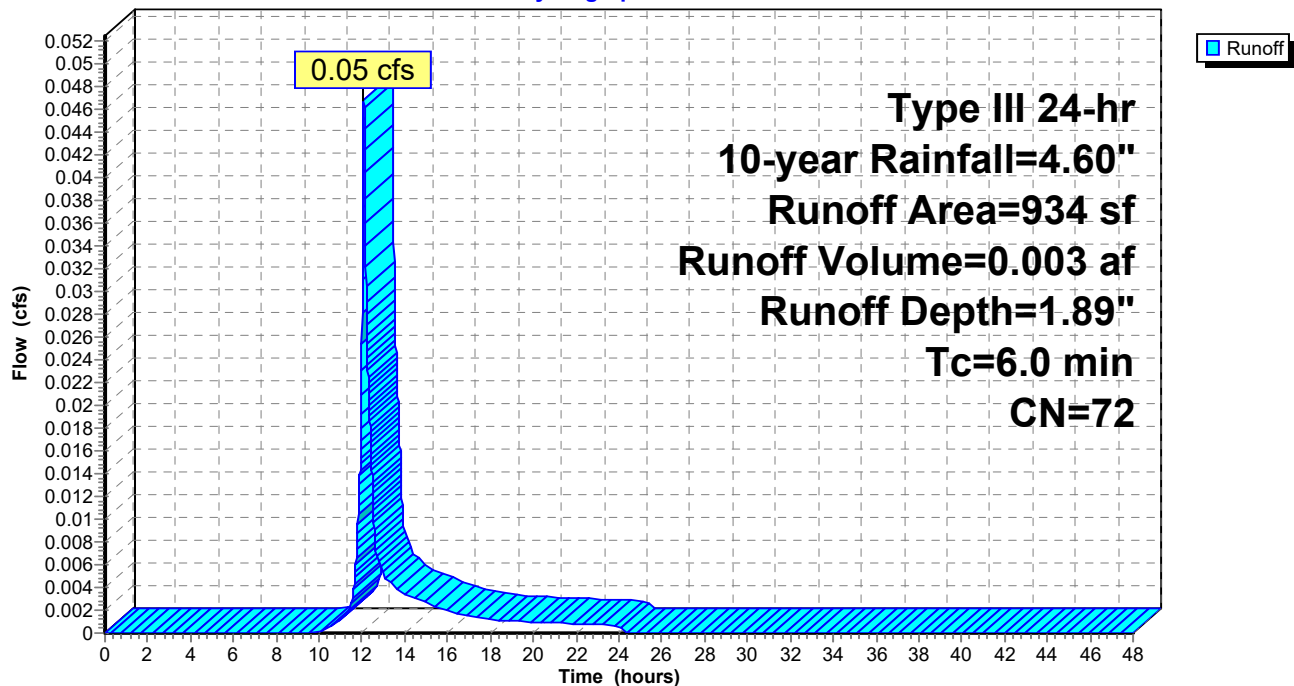
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
441	98	Unconnected pavement, HSG A
493	49	50-75% Grass cover, Fair, HSG A
934	72	Weighted Average
493		52.78% Pervious Area
441		47.22% Impervious Area
441		100.00% Unconnected

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

Subcatchment 2S: Perimeter Sidewalk

Hydrograph



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

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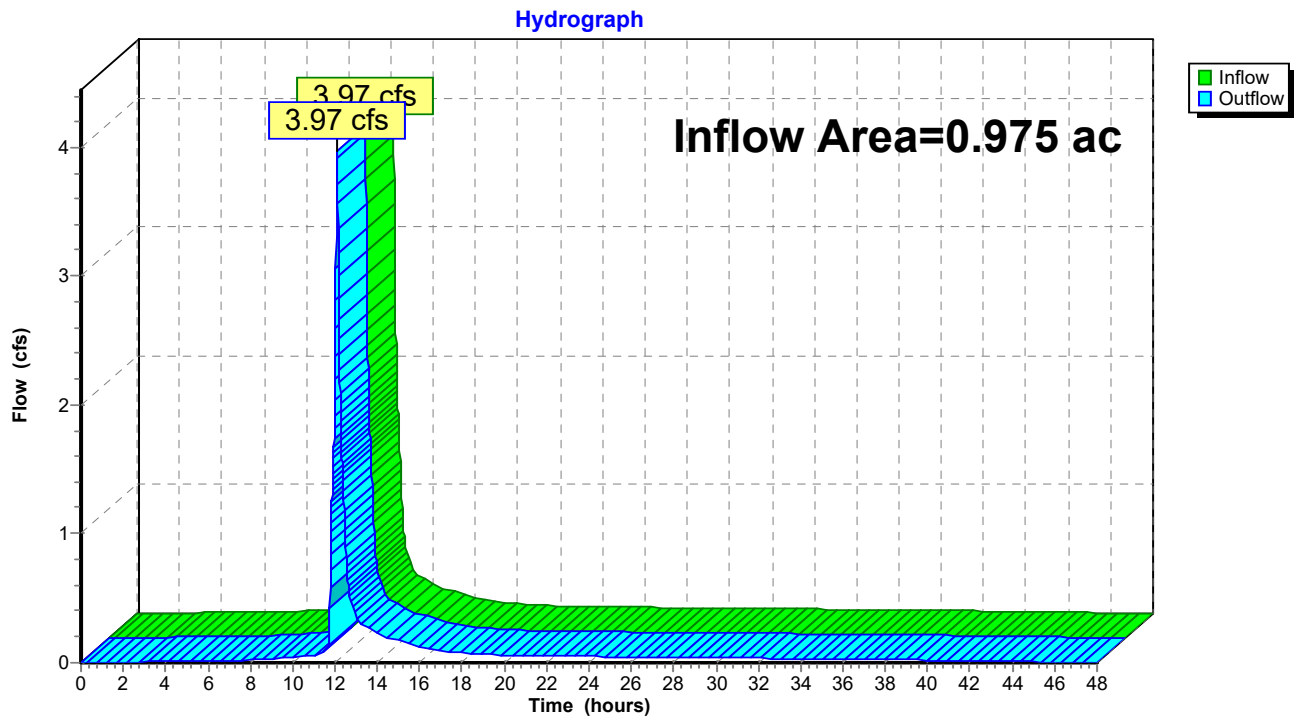
Hydrograph for Subcatchment 2S: Perimeter Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	4.60	1.89	0.00
0.50	0.02	0.00	0.00	27.00	4.60	1.89	0.00
1.00	0.05	0.00	0.00	27.50	4.60	1.89	0.00
1.50	0.07	0.00	0.00	28.00	4.60	1.89	0.00
2.00	0.09	0.00	0.00	28.50	4.60	1.89	0.00
2.50	0.12	0.00	0.00	29.00	4.60	1.89	0.00
3.00	0.14	0.00	0.00	29.50	4.60	1.89	0.00
3.50	0.17	0.00	0.00	30.00	4.60	1.89	0.00
4.00	0.20	0.00	0.00	30.50	4.60	1.89	0.00
4.50	0.23	0.00	0.00	31.00	4.60	1.89	0.00
5.00	0.26	0.00	0.00	31.50	4.60	1.89	0.00
5.50	0.30	0.00	0.00	32.00	4.60	1.89	0.00
6.00	0.33	0.00	0.00	32.50	4.60	1.89	0.00
6.50	0.37	0.00	0.00	33.00	4.60	1.89	0.00
7.00	0.42	0.00	0.00	33.50	4.60	1.89	0.00
7.50	0.47	0.00	0.00	34.00	4.60	1.89	0.00
8.00	0.52	0.00	0.00	34.50	4.60	1.89	0.00
8.50	0.59	0.00	0.00	35.00	4.60	1.89	0.00
9.00	0.67	0.00	0.00	35.50	4.60	1.89	0.00
9.50	0.76	0.00	0.00	36.00	4.60	1.89	0.00
10.00	0.87	0.00	0.00	36.50	4.60	1.89	0.00
10.50	1.00	0.01	0.00	37.00	4.60	1.89	0.00
11.00	1.15	0.03	0.00	37.50	4.60	1.89	0.00
11.50	1.37	0.08	0.00	38.00	4.60	1.89	0.00
12.00	2.30	0.43	0.03	38.50	4.60	1.89	0.00
12.50	3.23	0.95	0.01	39.00	4.60	1.89	0.00
13.00	3.45	1.09	0.01	39.50	4.60	1.89	0.00
13.50	3.60	1.19	0.00	40.00	4.60	1.89	0.00
14.00	3.73	1.27	0.00	40.50	4.60	1.89	0.00
14.50	3.84	1.35	0.00	41.00	4.60	1.89	0.00
15.00	3.93	1.41	0.00	41.50	4.60	1.89	0.00
15.50	4.01	1.47	0.00	42.00	4.60	1.89	0.00
16.00	4.08	1.51	0.00	42.50	4.60	1.89	0.00
16.50	4.13	1.55	0.00	43.00	4.60	1.89	0.00
17.00	4.18	1.59	0.00	43.50	4.60	1.89	0.00
17.50	4.23	1.62	0.00	44.00	4.60	1.89	0.00
18.00	4.27	1.65	0.00	44.50	4.60	1.89	0.00
18.50	4.30	1.68	0.00	45.00	4.60	1.89	0.00
19.00	4.34	1.70	0.00	45.50	4.60	1.89	0.00
19.50	4.37	1.73	0.00	46.00	4.60	1.89	0.00
20.00	4.40	1.75	0.00	46.50	4.60	1.89	0.00
20.50	4.43	1.77	0.00	47.00	4.60	1.89	0.00
21.00	4.46	1.79	0.00	47.50	4.60	1.89	0.00
21.50	4.49	1.81	0.00	48.00	4.60	1.89	0.00
22.00	4.51	1.83	0.00				
22.50	4.54	1.85	0.00				
23.00	4.56	1.86	0.00				
23.50	4.58	1.88	0.00				
24.00	4.60	1.89	0.00				
24.50	4.60	1.89	0.00				
25.00	4.60	1.89	0.00				
25.50	4.60	1.89	0.00				
26.00	4.60	1.89	0.00				

Summary for Reach 1R: Elm/Lancaster Street

Inflow Area = 0.975 ac, 88.58% Impervious, Inflow Depth = 3.82" for 10-year event
Inflow = 3.97 cfs @ 12.10 hrs, Volume= 0.310 af
Outflow = 3.97 cfs @ 12.10 hrs, Volume= 0.310 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Elm/Lancaster Street

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

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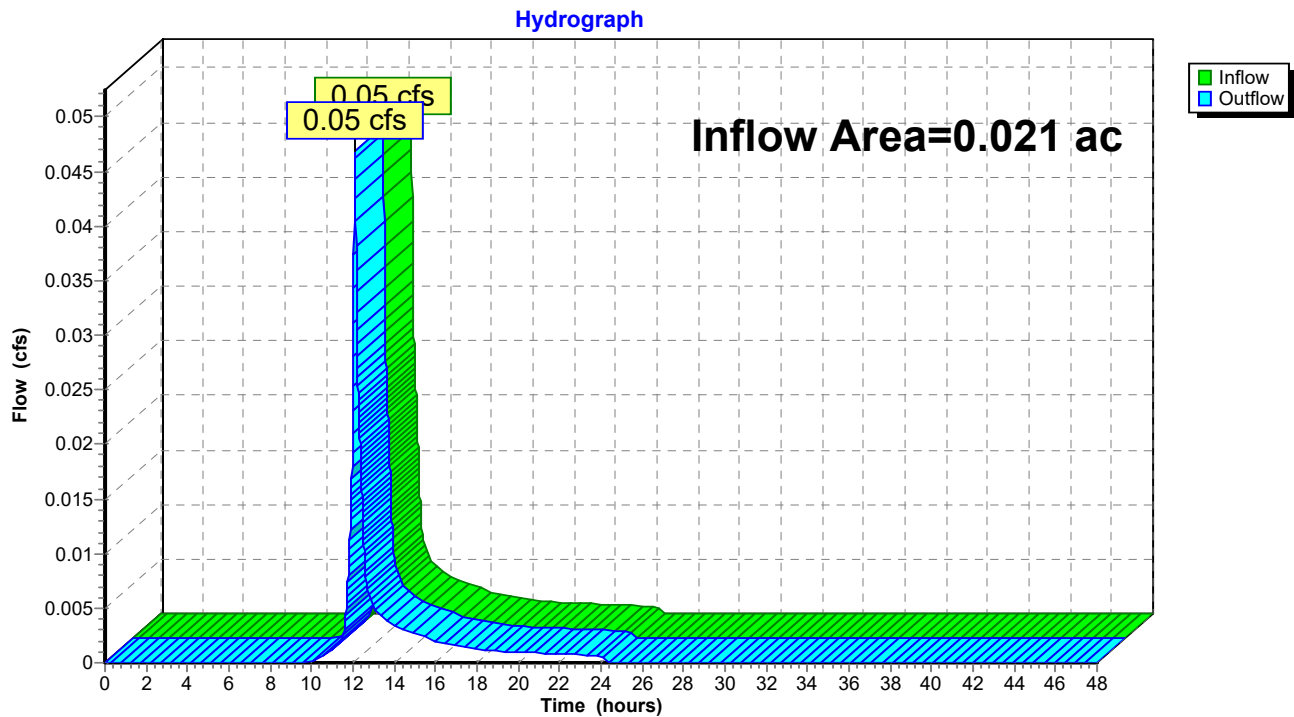
Hydrograph for Reach 1R: Elm/Lancaster Street

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.04		0.04
0.50	0.00		0.00	27.00	0.04		0.04
1.00	0.00		0.00	27.50	0.04		0.04
1.50	0.00		0.00	28.00	0.04		0.04
2.00	0.00		0.00	28.50	0.04		0.04
2.50	0.01		0.01	29.00	0.04		0.04
3.00	0.01		0.01	29.50	0.04		0.04
3.50	0.01		0.01	30.00	0.04		0.04
4.00	0.01		0.01	30.50	0.04		0.04
4.50	0.01		0.01	31.00	0.04		0.04
5.00	0.01		0.01	31.50	0.04		0.04
5.50	0.01		0.01	32.00	0.03		0.03
6.00	0.01		0.01	32.50	0.03		0.03
6.50	0.02		0.02	33.00	0.03		0.03
7.00	0.02		0.02	33.50	0.03		0.03
7.50	0.02		0.02	34.00	0.03		0.03
8.00	0.02		0.02	34.50	0.03		0.03
8.50	0.03		0.03	35.00	0.03		0.03
9.00	0.03		0.03	35.50	0.03		0.03
9.50	0.03		0.03	36.00	0.03		0.03
10.00	0.04		0.04	36.50	0.03		0.03
10.50	0.05		0.05	37.00	0.03		0.03
11.00	0.06		0.06	37.50	0.02		0.02
11.50	0.07		0.07	38.00	0.02		0.02
12.00	2.20		2.20	38.50	0.02		0.02
12.50	0.95		0.95	39.00	0.02		0.02
13.00	0.37		0.37	39.50	0.02		0.02
13.50	0.28		0.28	40.00	0.02		0.02
14.00	0.23		0.23	40.50	0.02		0.02
14.50	0.19		0.19	41.00	0.02		0.02
15.00	0.17		0.17	41.50	0.02		0.02
15.50	0.15		0.15	42.00	0.02		0.02
16.00	0.12		0.12	42.50	0.02		0.02
16.50	0.11		0.11	43.00	0.01		0.01
17.00	0.10		0.10	43.50	0.01		0.01
17.50	0.08		0.08	44.00	0.01		0.01
18.00	0.07		0.07	44.50	0.01		0.01
18.50	0.07		0.07	45.00	0.01		0.01
19.00	0.06		0.06	45.50	0.01		0.01
19.50	0.06		0.06	46.00	0.00		0.00
20.00	0.06		0.06	46.50	0.00		0.00
20.50	0.06		0.06	47.00	0.00		0.00
21.00	0.06		0.06	47.50	0.00		0.00
21.50	0.05		0.05	48.00	0.00		0.00
22.00	0.05		0.05				
22.50	0.05		0.05				
23.00	0.05		0.05				
23.50	0.05		0.05				
24.00	0.05		0.05				
24.50	0.05		0.05				
25.00	0.05		0.05				
25.50	0.05		0.05				
26.00	0.05		0.05				

Summary for Reach 2R: Elm/Oxford

Inflow Area = 0.021 ac, 47.22% Impervious, Inflow Depth = 1.89" for 10-year event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 0.003 af
Outflow = 0.05 cfs @ 12.09 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Elm/Oxford

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

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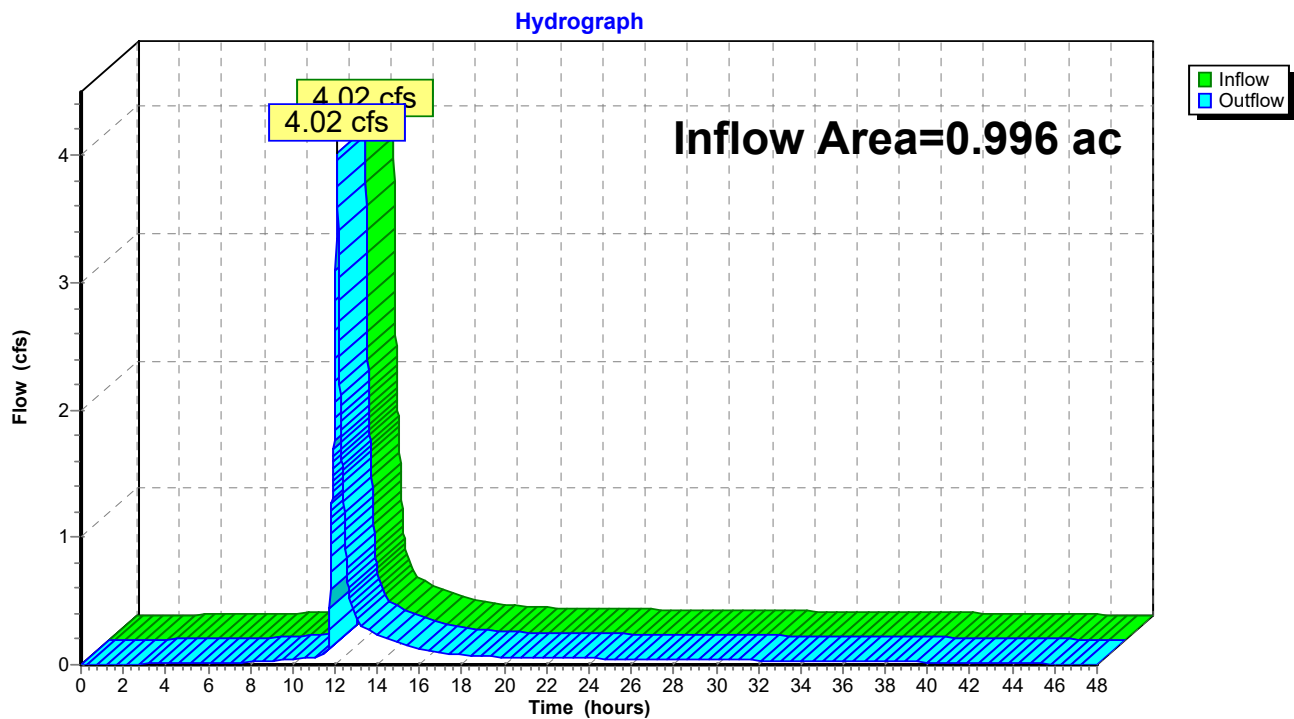
Hydrograph for Reach 2R: Elm/Oxford

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.00		0.00
0.50	0.00		0.00	27.00	0.00		0.00
1.00	0.00		0.00	27.50	0.00		0.00
1.50	0.00		0.00	28.00	0.00		0.00
2.00	0.00		0.00	28.50	0.00		0.00
2.50	0.00		0.00	29.00	0.00		0.00
3.00	0.00		0.00	29.50	0.00		0.00
3.50	0.00		0.00	30.00	0.00		0.00
4.00	0.00		0.00	30.50	0.00		0.00
4.50	0.00		0.00	31.00	0.00		0.00
5.00	0.00		0.00	31.50	0.00		0.00
5.50	0.00		0.00	32.00	0.00		0.00
6.00	0.00		0.00	32.50	0.00		0.00
6.50	0.00		0.00	33.00	0.00		0.00
7.00	0.00		0.00	33.50	0.00		0.00
7.50	0.00		0.00	34.00	0.00		0.00
8.00	0.00		0.00	34.50	0.00		0.00
8.50	0.00		0.00	35.00	0.00		0.00
9.00	0.00		0.00	35.50	0.00		0.00
9.50	0.00		0.00	36.00	0.00		0.00
10.00	0.00		0.00	36.50	0.00		0.00
10.50	0.00		0.00	37.00	0.00		0.00
11.00	0.00		0.00	37.50	0.00		0.00
11.50	0.00		0.00	38.00	0.00		0.00
12.00	0.03		0.03	38.50	0.00		0.00
12.50	0.01		0.01	39.00	0.00		0.00
13.00	0.01		0.01	39.50	0.00		0.00
13.50	0.00		0.00	40.00	0.00		0.00
14.00	0.00		0.00	40.50	0.00		0.00
14.50	0.00		0.00	41.00	0.00		0.00
15.00	0.00		0.00	41.50	0.00		0.00
15.50	0.00		0.00	42.00	0.00		0.00
16.00	0.00		0.00	42.50	0.00		0.00
16.50	0.00		0.00	43.00	0.00		0.00
17.00	0.00		0.00	43.50	0.00		0.00
17.50	0.00		0.00	44.00	0.00		0.00
18.00	0.00		0.00	44.50	0.00		0.00
18.50	0.00		0.00	45.00	0.00		0.00
19.00	0.00		0.00	45.50	0.00		0.00
19.50	0.00		0.00	46.00	0.00		0.00
20.00	0.00		0.00	46.50	0.00		0.00
20.50	0.00		0.00	47.00	0.00		0.00
21.00	0.00		0.00	47.50	0.00		0.00
21.50	0.00		0.00	48.00	0.00		0.00
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				
26.00	0.00		0.00				

Summary for Reach 99R: Confluence

Inflow Area = 0.996 ac, 87.69% Impervious, Inflow Depth = 3.77" for 10-year event
Inflow = 4.02 cfs @ 12.10 hrs, Volume= 0.313 af
Outflow = 4.02 cfs @ 12.10 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 99R: Confluence

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

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Hydrograph for Reach 99R: Confluence

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.04		0.04
0.50	0.00		0.00	27.00	0.04		0.04
1.00	0.00		0.00	27.50	0.04		0.04
1.50	0.00		0.00	28.00	0.04		0.04
2.00	0.00		0.00	28.50	0.04		0.04
2.50	0.01		0.01	29.00	0.04		0.04
3.00	0.01		0.01	29.50	0.04		0.04
3.50	0.01		0.01	30.00	0.04		0.04
4.00	0.01		0.01	30.50	0.04		0.04
4.50	0.01		0.01	31.00	0.04		0.04
5.00	0.01		0.01	31.50	0.04		0.04
5.50	0.01		0.01	32.00	0.03		0.03
6.00	0.01		0.01	32.50	0.03		0.03
6.50	0.02		0.02	33.00	0.03		0.03
7.00	0.02		0.02	33.50	0.03		0.03
7.50	0.02		0.02	34.00	0.03		0.03
8.00	0.02		0.02	34.50	0.03		0.03
8.50	0.03		0.03	35.00	0.03		0.03
9.00	0.03		0.03	35.50	0.03		0.03
9.50	0.03		0.03	36.00	0.03		0.03
10.00	0.04		0.04	36.50	0.03		0.03
10.50	0.05		0.05	37.00	0.03		0.03
11.00	0.06		0.06	37.50	0.02		0.02
11.50	0.08		0.08	38.00	0.02		0.02
12.00	2.23		2.23	38.50	0.02		0.02
12.50	0.96		0.96	39.00	0.02		0.02
13.00	0.37		0.37	39.50	0.02		0.02
13.50	0.28		0.28	40.00	0.02		0.02
14.00	0.23		0.23	40.50	0.02		0.02
14.50	0.20		0.20	41.00	0.02		0.02
15.00	0.17		0.17	41.50	0.02		0.02
15.50	0.15		0.15	42.00	0.02		0.02
16.00	0.12		0.12	42.50	0.02		0.02
16.50	0.11		0.11	43.00	0.01		0.01
17.00	0.10		0.10	43.50	0.01		0.01
17.50	0.09		0.09	44.00	0.01		0.01
18.00	0.08		0.08	44.50	0.01		0.01
18.50	0.07		0.07	45.00	0.01		0.01
19.00	0.07		0.07	45.50	0.01		0.01
19.50	0.06		0.06	46.00	0.00		0.00
20.00	0.06		0.06	46.50	0.00		0.00
20.50	0.06		0.06	47.00	0.00		0.00
21.00	0.06		0.06	47.50	0.00		0.00
21.50	0.06		0.06	48.00	0.00		0.00
22.00	0.06		0.06				
22.50	0.05		0.05				
23.00	0.05		0.05				
23.50	0.05		0.05				
24.00	0.05		0.05				
24.50	0.05		0.05				
25.00	0.05		0.05				
25.50	0.05		0.05				
26.00	0.05		0.05				

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

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Summary for Pond 1.2P: R-TANK

Inflow Area = 0.865 ac, 90.90% Impervious, Inflow Depth = 3.94" for 10-year event
 Inflow = 3.68 cfs @ 12.08 hrs, Volume= 0.284 af
 Outflow = 3.61 cfs @ 12.10 hrs, Volume= 0.284 af, Atten= 2%, Lag= 0.9 min
 Primary = 3.61 cfs @ 12.10 hrs, Volume= 0.284 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 23.21' @ 12.10 hrs Surf.Area= 747 sf Storage= 2,696 cf

Plug-Flow detention time= 256.3 min calculated for 0.284 af (100% of inflow)
 Center-of-Mass det. time= 256.5 min (1,026.0 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1B	19.15'	438 cf	34.81'W x 21.11'L x 5.45'H Field B 4,005 cf Overall - 2,909 cf Embedded = 1,096 cf x 40.0% Voids
#2B	19.40'	2,763 cf	ACF R-Tank HD 3 x 225 Inside #1 Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf 225 Chambers in 25 Rows
#3	19.15'	77 cf	4.00'D x 6.10'H Vertical Cone/Cylinder
#4	25.25'	415 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		3,693 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.25	4	0	0
26.00	1,102	415	415

Device	Routing	Invert	Outlet Devices
#1	Primary	19.05'	10.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.05' / 18.85' S= 0.0050 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#2	Device 1	19.10'	1.0" Vert. WQ Orifice C= 0.600
#3	Device 1	22.75'	4.0' long x 0.7' breadth OCS Bulkhead 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
#4	Primary	25.75'	10.0' long x 5.0' breadth Emergency Overflow. Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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

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Primary OutFlow Max=3.61 cfs @ 12.10 hrs HW=23.21' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 3.61 cfs of 4.01 cfs potential flow)
- 2=WQ Orifice (Orifice Controls 0.05 cfs @ 9.71 fps)
- 3=OCS Bulkhead (Weir Controls 3.56 cfs @ 1.93 fps)
- 4=Emergency Overflow. (Controls 0.00 cfs)

Pond 1.2P: R-TANK - Chamber Wizard Field B**Chamber Model = ACF R-Tank HD 3 (ACF Environmental R-Tank HD)**

Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf

Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf

9 Chambers/Row x 2.35' Long = 21.11' Row Length

25 Rows x 15.7" Wide + 12.0" Side Stone x 2 = 34.81' Base Width

3.0" Base + 50.4" Chamber Height + 12.0" Cover = 5.45' Field Height

225 Chambers x 12.3 cf = 2,763.4 cf Chamber Storage

225 Chambers x 12.9 cf = 2,908.8 cf Displacement

4,004.7 cf Field - 2,908.8 cf Chambers = 1,095.9 cf Stone x 40.0% Voids = 438.4 cf Stone Storage

Chamber Storage + Stone Storage = 3,201.7 cf = 0.074 af

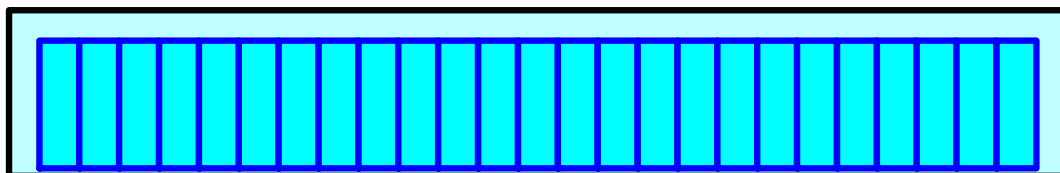
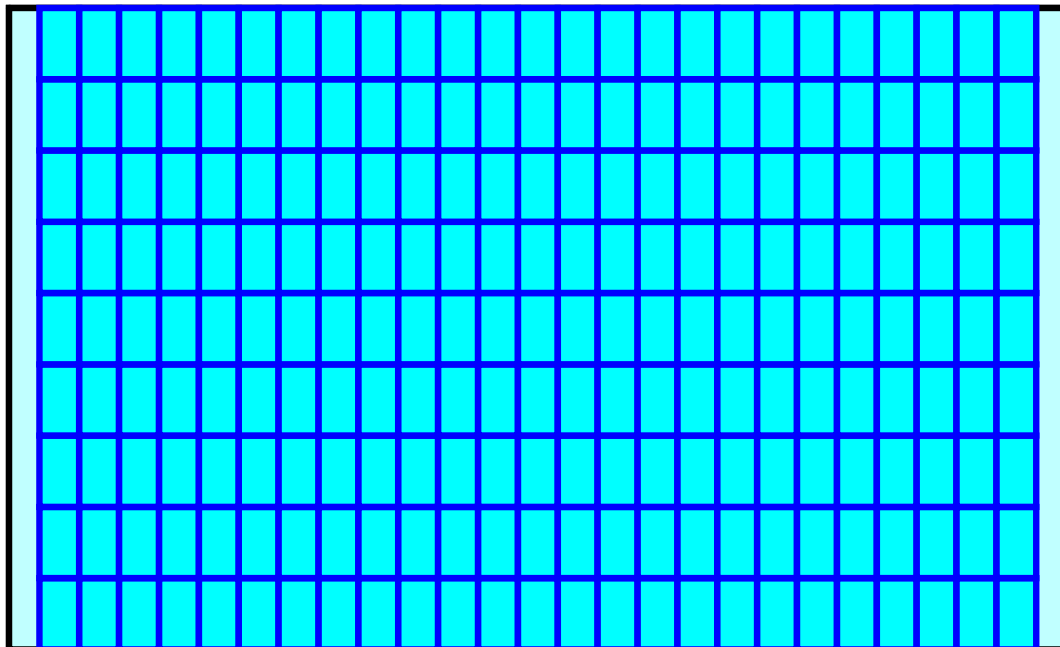
Overall Storage Efficiency = 79.9%

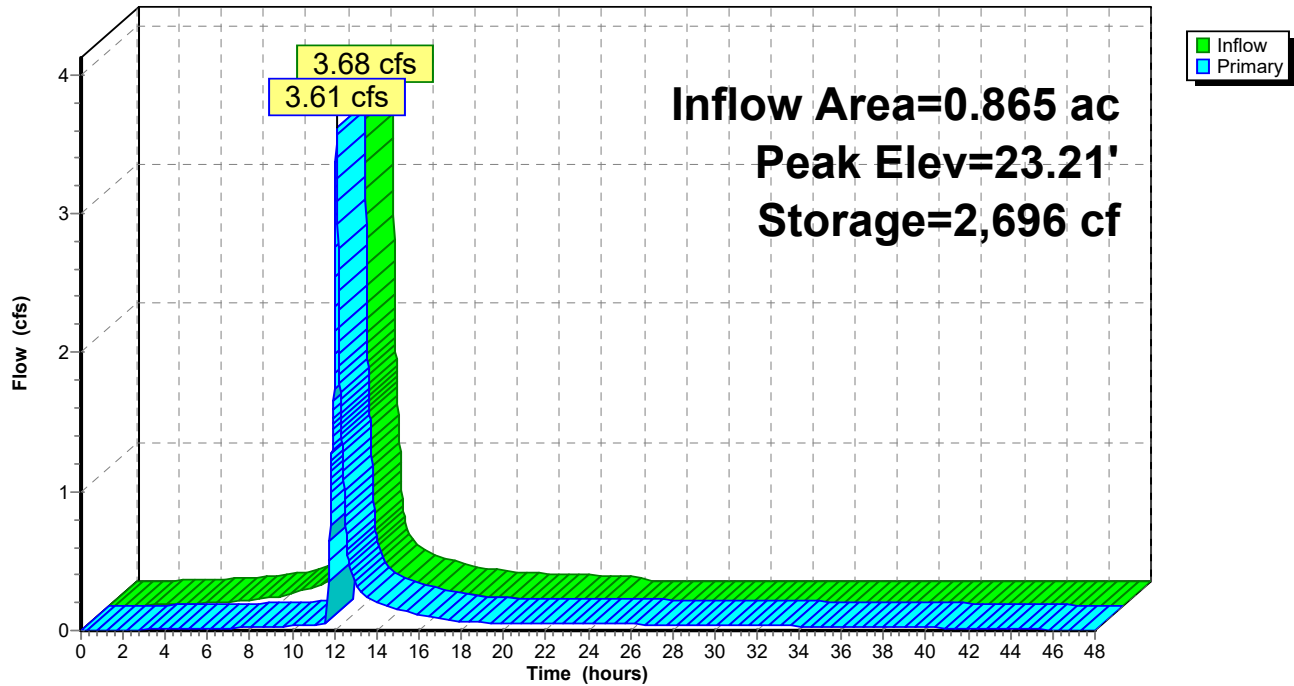
Overall System Size = 21.11' x 34.81' x 5.45'

225 Chambers

148.3 cy Field

40.6 cy Stone



Pond 1.2P: R-TANK**Hydrograph**

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

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Hydrograph for Pond 1.2P: R-TANK

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	19.15	0.00
1.00	0.00	0	19.15	0.00
2.00	0.01	4	19.16	0.00
3.00	0.01	16	19.20	0.01
4.00	0.02	36	19.27	0.01
5.00	0.02	67	19.37	0.01
6.00	0.03	115	19.46	0.01
7.00	0.05	197	19.57	0.02
8.00	0.07	331	19.77	0.02
9.00	0.10	551	20.09	0.03
10.00	0.15	906	20.61	0.03
11.00	0.24	1,470	21.43	0.04
12.00	2.29	2,593	23.06	1.99
13.00	0.32	2,439	22.84	0.33
14.00	0.20	2,420	22.81	0.20
15.00	0.15	2,410	22.79	0.15
16.00	0.11	2,401	22.78	0.11
17.00	0.08	2,395	22.77	0.09
18.00	0.06	2,389	22.76	0.07
19.00	0.06	2,385	22.76	0.06
20.00	0.05	2,382	22.75	0.05
21.00	0.05	2,377	22.75	0.05
22.00	0.04	2,360	22.72	0.05
23.00	0.04	2,327	22.67	0.05
24.00	0.03	2,280	22.60	0.05
25.00	0.00	2,118	22.37	0.05
26.00	0.00	1,952	22.13	0.05
27.00	0.00	1,791	21.89	0.04
28.00	0.00	1,638	21.67	0.04
29.00	0.00	1,491	21.46	0.04
30.00	0.00	1,350	21.25	0.04
31.00	0.00	1,216	21.06	0.04
32.00	0.00	1,088	20.87	0.03
33.00	0.00	967	20.70	0.03
34.00	0.00	853	20.53	0.03
35.00	0.00	745	20.37	0.03
36.00	0.00	643	20.22	0.03
37.00	0.00	548	20.09	0.03
38.00	0.00	459	19.96	0.02
39.00	0.00	377	19.84	0.02
40.00	0.00	302	19.73	0.02
41.00	0.00	233	19.63	0.02
42.00	0.00	170	19.54	0.02
43.00	0.00	114	19.45	0.01
44.00	0.00	65	19.36	0.01
45.00	0.00	28	19.24	0.01
46.00	0.00	5	19.17	0.00
47.00	0.00	0	19.15	0.00
48.00	0.00	0	19.15	0.00

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

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: ROOF 4-9	Runoff Area=17,072 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=2.23 cfs 0.182 af
Subcatchment 1.2: Alley Way	Runoff Area=20,598 sf 83.36% Impervious Runoff Depth=4.76" Tc=6.0 min CN=91 Runoff=2.50 cfs 0.188 af
Subcatchment 1.3: Lancaster Sidewalk	Runoff Area=4,798 sf 70.38% Impervious Runoff Depth=3.91" Tc=6.0 min CN=83 Runoff=0.50 cfs 0.036 af
Subcatchment 2S: Perimeter Sidewalk	Runoff Area=934 sf 47.22% Impervious Runoff Depth=2.83" Tc=6.0 min CN=72 Runoff=0.07 cfs 0.005 af
Reach 1R: Elm/Lancaster Street	Inflow=4.60 cfs 0.405 af Outflow=4.60 cfs 0.405 af
Reach 2R: Elm/Oxford	Inflow=0.07 cfs 0.005 af Outflow=0.07 cfs 0.005 af
Reach 99R: Confluence	Inflow=4.67 cfs 0.410 af Outflow=4.67 cfs 0.410 af
Pond 1.2P: R-TANK	Peak Elev=23.43' Storage=2,844 cf Inflow=4.73 cfs 0.369 af Outflow=4.13 cfs 0.369 af

Total Runoff Area = 0.996 ac Runoff Volume = 0.410 af Average Runoff Depth = 4.94"
12.31% Pervious = 0.123 ac 87.69% Impervious = 0.874 ac

Summary for Subcatchment 1: ROOF 4-9

Runoff = 2.23 cfs @ 12.08 hrs, Volume= 0.182 af, Depth= 5.56"

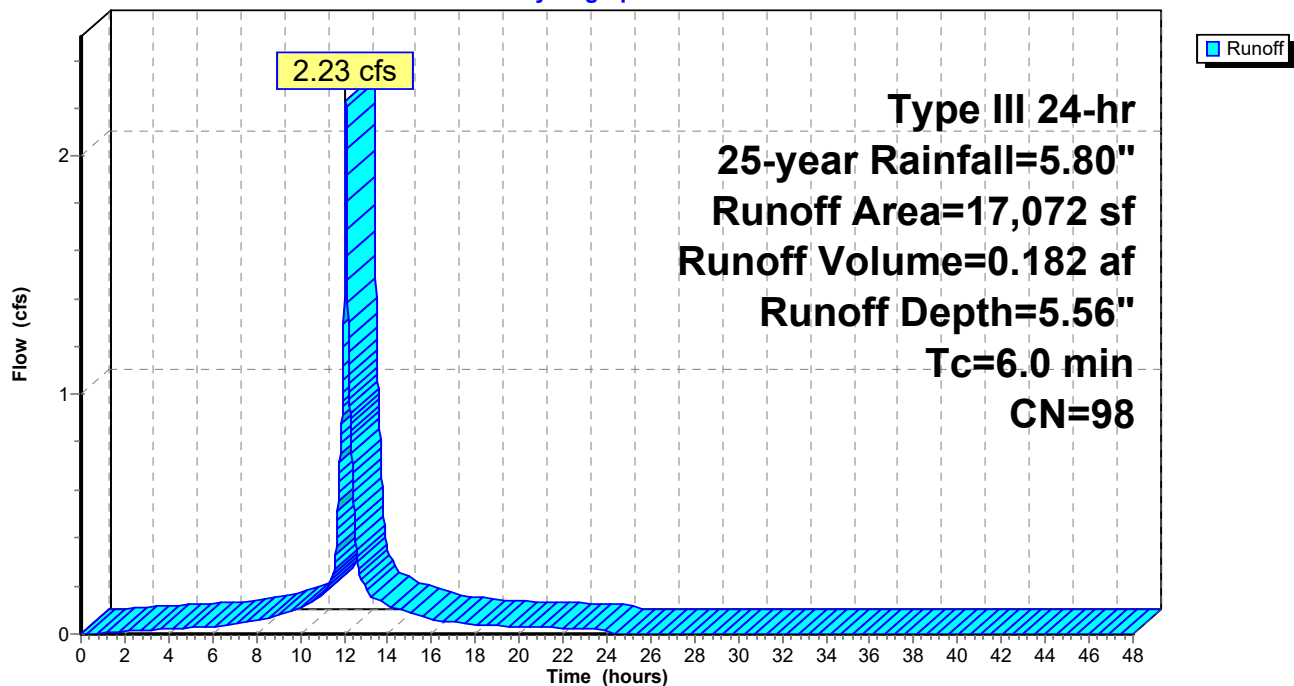
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
17,072	98	Roofs, HSG A
17,072		100.00% Impervious Area

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

Subcatchment 1: ROOF 4-9

Hydrograph



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

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Hydrograph for Subcatchment 1: ROOF 4-9

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	5.80	5.56	0.00
0.50	0.03	0.00	0.00	27.00	5.80	5.56	0.00
1.00	0.06	0.00	0.00	27.50	5.80	5.56	0.00
1.50	0.09	0.01	0.01	28.00	5.80	5.56	0.00
2.00	0.12	0.02	0.01	28.50	5.80	5.56	0.00
2.50	0.15	0.04	0.01	29.00	5.80	5.56	0.00
3.00	0.18	0.06	0.02	29.50	5.80	5.56	0.00
3.50	0.21	0.08	0.02	30.00	5.80	5.56	0.00
4.00	0.25	0.11	0.02	30.50	5.80	5.56	0.00
4.50	0.29	0.14	0.02	31.00	5.80	5.56	0.00
5.00	0.33	0.17	0.03	31.50	5.80	5.56	0.00
5.50	0.37	0.21	0.03	32.00	5.80	5.56	0.00
6.00	0.42	0.24	0.03	32.50	5.80	5.56	0.00
6.50	0.47	0.29	0.04	33.00	5.80	5.56	0.00
7.00	0.52	0.34	0.04	33.50	5.80	5.56	0.00
7.50	0.59	0.40	0.05	34.00	5.80	5.56	0.00
8.00	0.66	0.47	0.05	34.50	5.80	5.56	0.00
8.50	0.74	0.55	0.07	35.00	5.80	5.56	0.00
9.00	0.85	0.64	0.08	35.50	5.80	5.56	0.00
9.50	0.96	0.75	0.09	36.00	5.80	5.56	0.00
10.00	1.10	0.88	0.11	36.50	5.80	5.56	0.00
10.50	1.26	1.04	0.13	37.00	5.80	5.56	0.00
11.00	1.45	1.23	0.16	37.50	5.80	5.56	0.00
11.50	1.73	1.51	0.25	38.00	5.80	5.56	0.00
12.00	2.90	2.67	1.40	38.50	5.80	5.56	0.00
12.50	4.07	3.84	0.46	39.00	5.80	5.56	0.00
13.00	4.35	4.11	0.19	39.50	5.80	5.56	0.00
13.50	4.54	4.31	0.14	40.00	5.80	5.56	0.00
14.00	4.70	4.47	0.12	40.50	5.80	5.56	0.00
14.50	4.84	4.60	0.10	41.00	5.80	5.56	0.00
15.00	4.95	4.72	0.09	41.50	5.80	5.56	0.00
15.50	5.06	4.82	0.08	42.00	5.80	5.56	0.00
16.00	5.14	4.90	0.06	42.50	5.80	5.56	0.00
16.50	5.21	4.97	0.05	43.00	5.80	5.56	0.00
17.00	5.28	5.04	0.05	43.50	5.80	5.56	0.00
17.50	5.33	5.10	0.04	44.00	5.80	5.56	0.00
18.00	5.38	5.15	0.04	44.50	5.80	5.56	0.00
18.50	5.43	5.19	0.04	45.00	5.80	5.56	0.00
19.00	5.47	5.23	0.03	45.50	5.80	5.56	0.00
19.50	5.51	5.27	0.03	46.00	5.80	5.56	0.00
20.00	5.55	5.31	0.03	46.50	5.80	5.56	0.00
20.50	5.59	5.35	0.03	47.00	5.80	5.56	0.00
21.00	5.62	5.39	0.03	47.50	5.80	5.56	0.00
21.50	5.66	5.42	0.03	48.00	5.80	5.56	0.00
22.00	5.69	5.45	0.02				
22.50	5.72	5.48	0.02				
23.00	5.75	5.51	0.02				
23.50	5.77	5.54	0.02				
24.00	5.80	5.56	0.02				
24.50	5.80	5.56	0.00				
25.00	5.80	5.56	0.00				
25.50	5.80	5.56	0.00				
26.00	5.80	5.56	0.00				

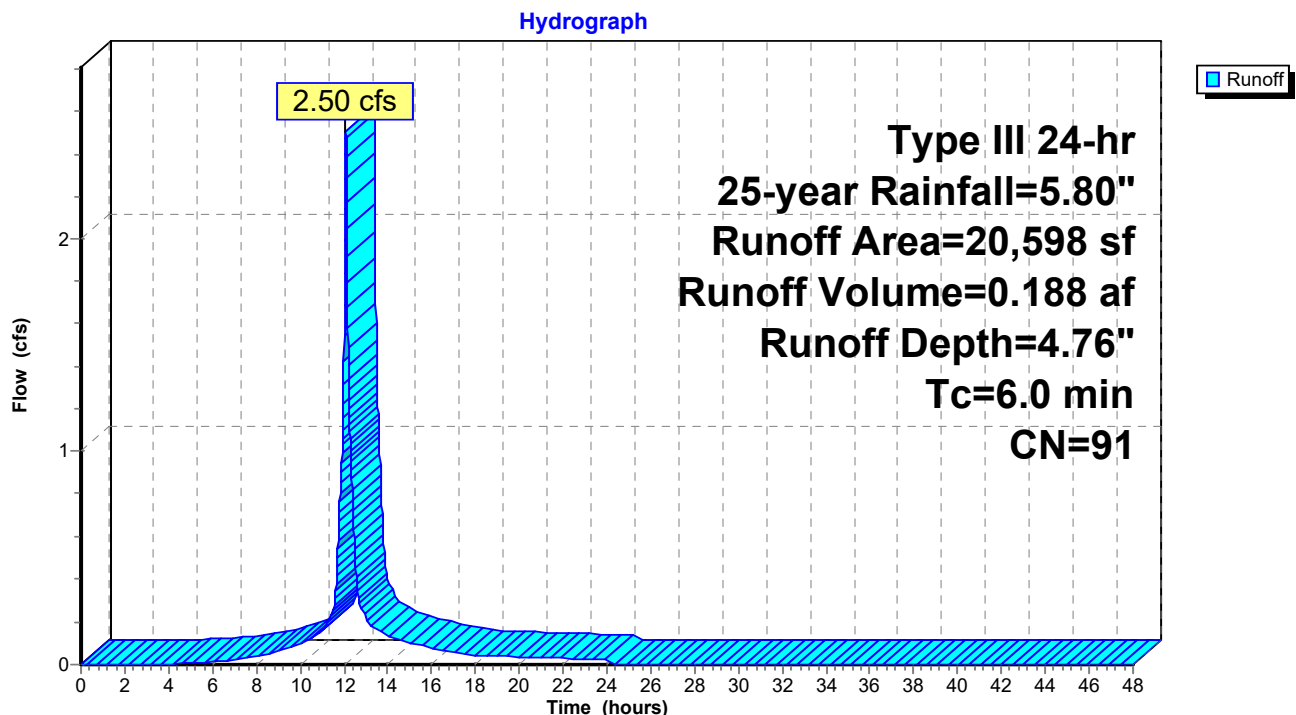
Summary for Subcatchment 1.2: Alley Way

Runoff = 2.50 cfs @ 12.08 hrs, Volume= 0.188 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
2,755	49	50-75% Grass cover, Fair, HSG A
9,571	98	Paved parking, HSG A
672	96	Gravel surface, HSG A
7,600	98	Roofs, HSG A
20,598	91	Weighted Average
3,427		16.64% Pervious Area
17,171		83.36% Impervious Area

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

Subcatchment 1.2: Alley Way

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

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Hydrograph for Subcatchment 1.2: Alley Way

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	5.80	4.76	0.00
0.50	0.03	0.00	0.00	27.00	5.80	4.76	0.00
1.00	0.06	0.00	0.00	27.50	5.80	4.76	0.00
1.50	0.09	0.00	0.00	28.00	5.80	4.76	0.00
2.00	0.12	0.00	0.00	28.50	5.80	4.76	0.00
2.50	0.15	0.00	0.00	29.00	5.80	4.76	0.00
3.00	0.18	0.00	0.00	29.50	5.80	4.76	0.00
3.50	0.21	0.00	0.00	30.00	5.80	4.76	0.00
4.00	0.25	0.00	0.00	30.50	5.80	4.76	0.00
4.50	0.29	0.01	0.01	31.00	5.80	4.76	0.00
5.00	0.33	0.02	0.01	31.50	5.80	4.76	0.00
5.50	0.37	0.03	0.01	32.00	5.80	4.76	0.00
6.00	0.42	0.04	0.01	32.50	5.80	4.76	0.00
6.50	0.47	0.06	0.02	33.00	5.80	4.76	0.00
7.00	0.52	0.08	0.02	33.50	5.80	4.76	0.00
7.50	0.59	0.11	0.03	34.00	5.80	4.76	0.00
8.00	0.66	0.15	0.04	34.50	5.80	4.76	0.00
8.50	0.74	0.19	0.05	35.00	5.80	4.76	0.00
9.00	0.85	0.26	0.06	35.50	5.80	4.76	0.00
9.50	0.96	0.33	0.08	36.00	5.80	4.76	0.00
10.00	1.10	0.43	0.10	36.50	5.80	4.76	0.00
10.50	1.26	0.55	0.12	37.00	5.80	4.76	0.00
11.00	1.45	0.70	0.16	37.50	5.80	4.76	0.00
11.50	1.73	0.93	0.26	38.00	5.80	4.76	0.00
12.00	2.90	1.98	1.55	38.50	5.80	4.76	0.00
12.50	4.07	3.09	0.53	39.00	5.80	4.76	0.00
13.00	4.35	3.35	0.22	39.50	5.80	4.76	0.00
13.50	4.54	3.54	0.17	40.00	5.80	4.76	0.00
14.00	4.70	3.69	0.14	40.50	5.80	4.76	0.00
14.50	4.84	3.82	0.12	41.00	5.80	4.76	0.00
15.00	4.95	3.94	0.10	41.50	5.80	4.76	0.00
15.50	5.06	4.04	0.09	42.00	5.80	4.76	0.00
16.00	5.14	4.12	0.07	42.50	5.80	4.76	0.00
16.50	5.21	4.19	0.06	43.00	5.80	4.76	0.00
17.00	5.28	4.25	0.06	43.50	5.80	4.76	0.00
17.50	5.33	4.31	0.05	44.00	5.80	4.76	0.00
18.00	5.38	4.35	0.04	44.50	5.80	4.76	0.00
18.50	5.43	4.40	0.04	45.00	5.80	4.76	0.00
19.00	5.47	4.44	0.04	45.50	5.80	4.76	0.00
19.50	5.51	4.48	0.04	46.00	5.80	4.76	0.00
20.00	5.55	4.52	0.04	46.50	5.80	4.76	0.00
20.50	5.59	4.55	0.03	47.00	5.80	4.76	0.00
21.00	5.62	4.59	0.03	47.50	5.80	4.76	0.00
21.50	5.66	4.62	0.03	48.00	5.80	4.76	0.00
22.00	5.69	4.65	0.03				
22.50	5.72	4.68	0.03				
23.00	5.75	4.71	0.03				
23.50	5.77	4.74	0.02				
24.00	5.80	4.76	0.02				
24.50	5.80	4.76	0.00				
25.00	5.80	4.76	0.00				
25.50	5.80	4.76	0.00				
26.00	5.80	4.76	0.00				

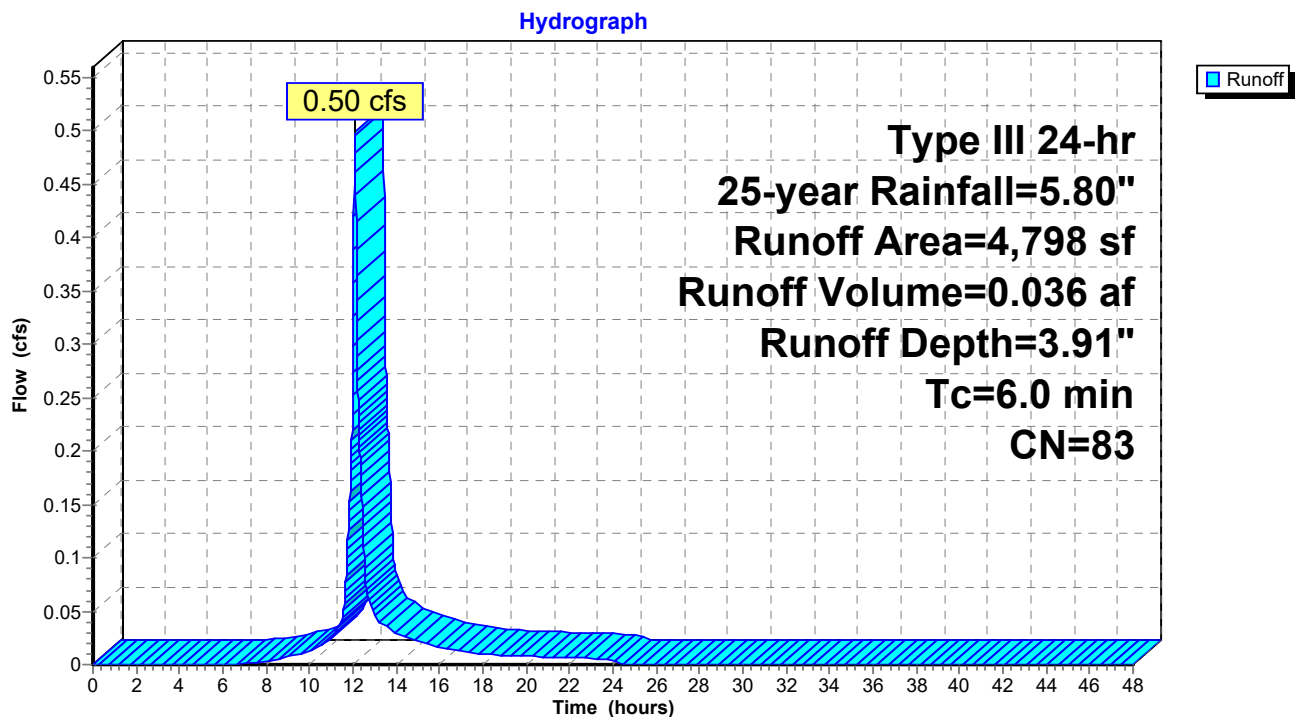
Summary for Subcatchment 1.3: Lancaster Sidewalk

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
1,538	98	Paved parking, HSG A
1,306	49	50-75% Grass cover, Fair, HSG A
115	49	50-75% Grass cover, Fair, HSG A
1,839	98	Paved parking, HSG A
4,798	83	Weighted Average
1,421		29.62% Pervious Area
3,377		70.38% Impervious Area

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

Subcatchment 1.3: Lancaster Sidewalk

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

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Hydrograph for Subcatchment 1.3: Lancaster Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	5.80	3.91	0.00
0.50	0.03	0.00	0.00	27.00	5.80	3.91	0.00
1.00	0.06	0.00	0.00	27.50	5.80	3.91	0.00
1.50	0.09	0.00	0.00	28.00	5.80	3.91	0.00
2.00	0.12	0.00	0.00	28.50	5.80	3.91	0.00
2.50	0.15	0.00	0.00	29.00	5.80	3.91	0.00
3.00	0.18	0.00	0.00	29.50	5.80	3.91	0.00
3.50	0.21	0.00	0.00	30.00	5.80	3.91	0.00
4.00	0.25	0.00	0.00	30.50	5.80	3.91	0.00
4.50	0.29	0.00	0.00	31.00	5.80	3.91	0.00
5.00	0.33	0.00	0.00	31.50	5.80	3.91	0.00
5.50	0.37	0.00	0.00	32.00	5.80	3.91	0.00
6.00	0.42	0.00	0.00	32.50	5.80	3.91	0.00
6.50	0.47	0.00	0.00	33.00	5.80	3.91	0.00
7.00	0.52	0.01	0.00	33.50	5.80	3.91	0.00
7.50	0.59	0.01	0.00	34.00	5.80	3.91	0.00
8.00	0.66	0.03	0.00	34.50	5.80	3.91	0.00
8.50	0.74	0.05	0.00	35.00	5.80	3.91	0.00
9.00	0.85	0.08	0.01	35.50	5.80	3.91	0.00
9.50	0.96	0.12	0.01	36.00	5.80	3.91	0.00
10.00	1.10	0.17	0.01	36.50	5.80	3.91	0.00
10.50	1.26	0.25	0.02	37.00	5.80	3.91	0.00
11.00	1.45	0.35	0.03	37.50	5.80	3.91	0.00
11.50	1.73	0.52	0.04	38.00	5.80	3.91	0.00
12.00	2.90	1.37	0.30	38.50	5.80	3.91	0.00
12.50	4.07	2.35	0.11	39.00	5.80	3.91	0.00
13.00	4.35	2.59	0.05	39.50	5.80	3.91	0.00
13.50	4.54	2.76	0.04	40.00	5.80	3.91	0.00
14.00	4.70	2.91	0.03	40.50	5.80	3.91	0.00
14.50	4.84	3.03	0.03	41.00	5.80	3.91	0.00
15.00	4.95	3.13	0.02	41.50	5.80	3.91	0.00
15.50	5.06	3.22	0.02	42.00	5.80	3.91	0.00
16.00	5.14	3.30	0.02	42.50	5.80	3.91	0.00
16.50	5.21	3.37	0.01	43.00	5.80	3.91	0.00
17.00	5.28	3.42	0.01	43.50	5.80	3.91	0.00
17.50	5.33	3.48	0.01	44.00	5.80	3.91	0.00
18.00	5.38	3.52	0.01	44.50	5.80	3.91	0.00
18.50	5.43	3.56	0.01	45.00	5.80	3.91	0.00
19.00	5.47	3.60	0.01	45.50	5.80	3.91	0.00
19.50	5.51	3.64	0.01	46.00	5.80	3.91	0.00
20.00	5.55	3.68	0.01	46.50	5.80	3.91	0.00
20.50	5.59	3.71	0.01	47.00	5.80	3.91	0.00
21.00	5.62	3.74	0.01	47.50	5.80	3.91	0.00
21.50	5.66	3.77	0.01	48.00	5.80	3.91	0.00
22.00	5.69	3.80	0.01				
22.50	5.72	3.83	0.01				
23.00	5.75	3.86	0.01				
23.50	5.77	3.88	0.01				
24.00	5.80	3.91	0.01				
24.50	5.80	3.91	0.00				
25.00	5.80	3.91	0.00				
25.50	5.80	3.91	0.00				
26.00	5.80	3.91	0.00				

Summary for Subcatchment 2S: Perimeter Sidewalk

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 0.005 af, Depth= 2.83"

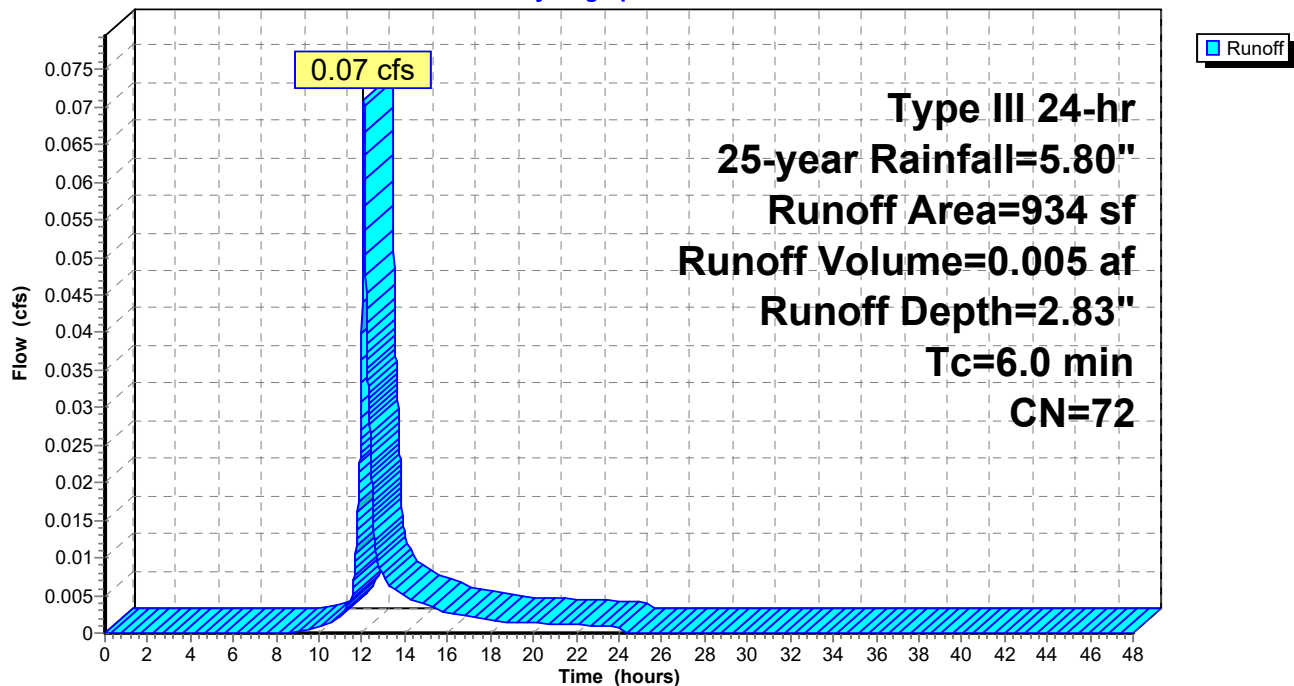
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
441	98	Unconnected pavement, HSG A
493	49	50-75% Grass cover, Fair, HSG A
934	72	Weighted Average
493		52.78% Pervious Area
441		47.22% Impervious Area
441		100.00% Unconnected

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

Subcatchment 2S: Perimeter Sidewalk

Hydrograph



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

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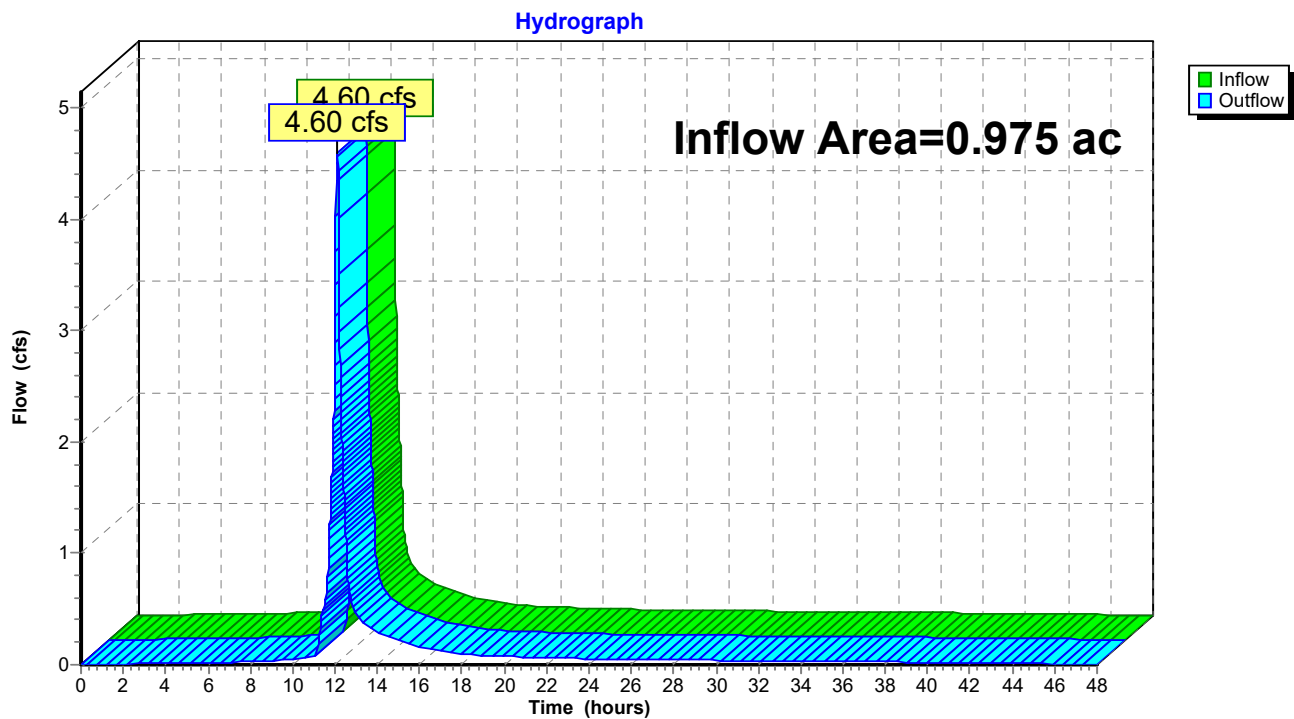
Hydrograph for Subcatchment 2S: Perimeter Sidewalk

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	5.80	2.83	0.00
0.50	0.03	0.00	0.00	27.00	5.80	2.83	0.00
1.00	0.06	0.00	0.00	27.50	5.80	2.83	0.00
1.50	0.09	0.00	0.00	28.00	5.80	2.83	0.00
2.00	0.12	0.00	0.00	28.50	5.80	2.83	0.00
2.50	0.15	0.00	0.00	29.00	5.80	2.83	0.00
3.00	0.18	0.00	0.00	29.50	5.80	2.83	0.00
3.50	0.21	0.00	0.00	30.00	5.80	2.83	0.00
4.00	0.25	0.00	0.00	30.50	5.80	2.83	0.00
4.50	0.29	0.00	0.00	31.00	5.80	2.83	0.00
5.00	0.33	0.00	0.00	31.50	5.80	2.83	0.00
5.50	0.37	0.00	0.00	32.00	5.80	2.83	0.00
6.00	0.42	0.00	0.00	32.50	5.80	2.83	0.00
6.50	0.47	0.00	0.00	33.00	5.80	2.83	0.00
7.00	0.52	0.00	0.00	33.50	5.80	2.83	0.00
7.50	0.59	0.00	0.00	34.00	5.80	2.83	0.00
8.00	0.66	0.00	0.00	34.50	5.80	2.83	0.00
8.50	0.74	0.00	0.00	35.00	5.80	2.83	0.00
9.00	0.85	0.00	0.00	35.50	5.80	2.83	0.00
9.50	0.96	0.01	0.00	36.00	5.80	2.83	0.00
10.00	1.10	0.02	0.00	36.50	5.80	2.83	0.00
10.50	1.26	0.05	0.00	37.00	5.80	2.83	0.00
11.00	1.45	0.10	0.00	37.50	5.80	2.83	0.00
11.50	1.73	0.19	0.00	38.00	5.80	2.83	0.00
12.00	2.90	0.75	0.04	38.50	5.80	2.83	0.00
12.50	4.07	1.51	0.02	39.00	5.80	2.83	0.00
13.00	4.35	1.71	0.01	39.50	5.80	2.83	0.00
13.50	4.54	1.85	0.01	40.00	5.80	2.83	0.00
14.00	4.70	1.97	0.00	40.50	5.80	2.83	0.00
14.50	4.84	2.07	0.00	41.00	5.80	2.83	0.00
15.00	4.95	2.16	0.00	41.50	5.80	2.83	0.00
15.50	5.06	2.24	0.00	42.00	5.80	2.83	0.00
16.00	5.14	2.31	0.00	42.50	5.80	2.83	0.00
16.50	5.21	2.36	0.00	43.00	5.80	2.83	0.00
17.00	5.28	2.41	0.00	43.50	5.80	2.83	0.00
17.50	5.33	2.46	0.00	44.00	5.80	2.83	0.00
18.00	5.38	2.50	0.00	44.50	5.80	2.83	0.00
18.50	5.43	2.53	0.00	45.00	5.80	2.83	0.00
19.00	5.47	2.57	0.00	45.50	5.80	2.83	0.00
19.50	5.51	2.60	0.00	46.00	5.80	2.83	0.00
20.00	5.55	2.63	0.00	46.50	5.80	2.83	0.00
20.50	5.59	2.66	0.00	47.00	5.80	2.83	0.00
21.00	5.62	2.69	0.00	47.50	5.80	2.83	0.00
21.50	5.66	2.71	0.00	48.00	5.80	2.83	0.00
22.00	5.69	2.74	0.00				
22.50	5.72	2.76	0.00				
23.00	5.75	2.79	0.00				
23.50	5.77	2.81	0.00				
24.00	5.80	2.83	0.00				
24.50	5.80	2.83	0.00				
25.00	5.80	2.83	0.00				
25.50	5.80	2.83	0.00				
26.00	5.80	2.83	0.00				

Summary for Reach 1R: Elm/Lancaster Street

Inflow Area = 0.975 ac, 88.58% Impervious, Inflow Depth = 4.99" for 25-year event
Inflow = 4.60 cfs @ 12.10 hrs, Volume= 0.405 af
Outflow = 4.60 cfs @ 12.10 hrs, Volume= 0.405 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Elm/Lancaster Street

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

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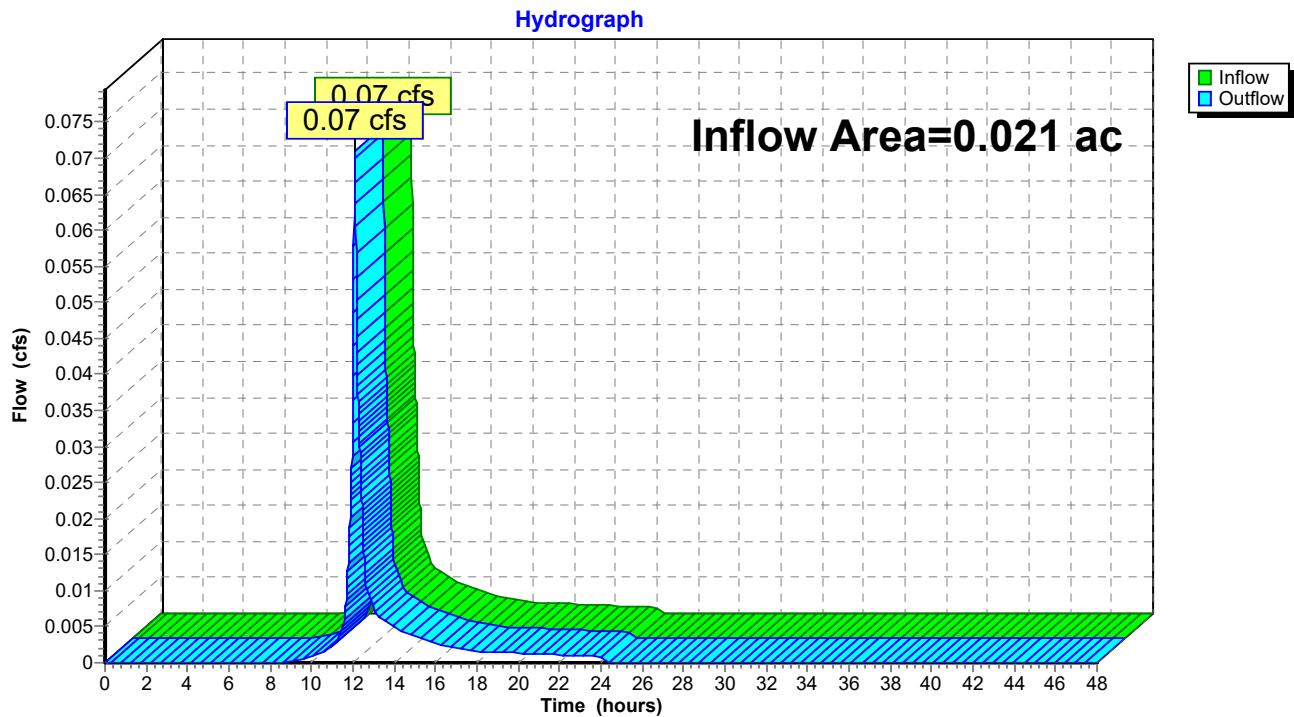
Hydrograph for Reach 1R: Elm/Lancaster Street

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.05		0.05
0.50	0.00		0.00	27.00	0.04		0.04
1.00	0.00		0.00	27.50	0.04		0.04
1.50	0.00		0.00	28.00	0.04		0.04
2.00	0.01		0.01	28.50	0.04		0.04
2.50	0.01		0.01	29.00	0.04		0.04
3.00	0.01		0.01	29.50	0.04		0.04
3.50	0.01		0.01	30.00	0.04		0.04
4.00	0.01		0.01	30.50	0.04		0.04
4.50	0.01		0.01	31.00	0.04		0.04
5.00	0.02		0.02	31.50	0.04		0.04
5.50	0.02		0.02	32.00	0.04		0.04
6.00	0.02		0.02	32.50	0.03		0.03
6.50	0.02		0.02	33.00	0.03		0.03
7.00	0.02		0.02	33.50	0.03		0.03
7.50	0.03		0.03	34.00	0.03		0.03
8.00	0.03		0.03	34.50	0.03		0.03
8.50	0.03		0.03	35.00	0.03		0.03
9.00	0.04		0.04	35.50	0.03		0.03
9.50	0.04		0.04	36.00	0.03		0.03
10.00	0.05		0.05	36.50	0.03		0.03
10.50	0.06		0.06	37.00	0.03		0.03
11.00	0.07		0.07	37.50	0.03		0.03
11.50	0.53		0.53	38.00	0.02		0.02
12.00	2.89		2.89	38.50	0.02		0.02
12.50	1.21		1.21	39.00	0.02		0.02
13.00	0.47		0.47	39.50	0.02		0.02
13.50	0.35		0.35	40.00	0.02		0.02
14.00	0.29		0.29	40.50	0.02		0.02
14.50	0.25		0.25	41.00	0.02		0.02
15.00	0.22		0.22	41.50	0.02		0.02
15.50	0.19		0.19	42.00	0.02		0.02
16.00	0.15		0.15	42.50	0.02		0.02
16.50	0.13		0.13	43.00	0.02		0.02
17.00	0.12		0.12	43.50	0.01		0.01
17.50	0.11		0.11	44.00	0.01		0.01
18.00	0.09		0.09	44.50	0.01		0.01
18.50	0.09		0.09	45.00	0.01		0.01
19.00	0.08		0.08	45.50	0.01		0.01
19.50	0.08		0.08	46.00	0.01		0.01
20.00	0.07		0.07	46.50	0.00		0.00
20.50	0.07		0.07	47.00	0.00		0.00
21.00	0.07		0.07	47.50	0.00		0.00
21.50	0.06		0.06	48.00	0.00		0.00
22.00	0.06		0.06				
22.50	0.06		0.06				
23.00	0.06		0.06				
23.50	0.06		0.06				
24.00	0.05		0.05				
24.50	0.05		0.05				
25.00	0.05		0.05				
25.50	0.05		0.05				
26.00	0.05		0.05				

Summary for Reach 2R: Elm/Oxford

Inflow Area = 0.021 ac, 47.22% Impervious, Inflow Depth = 2.83" for 25-year event
Inflow = 0.07 cfs @ 12.09 hrs, Volume= 0.005 af
Outflow = 0.07 cfs @ 12.09 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Elm/Oxford

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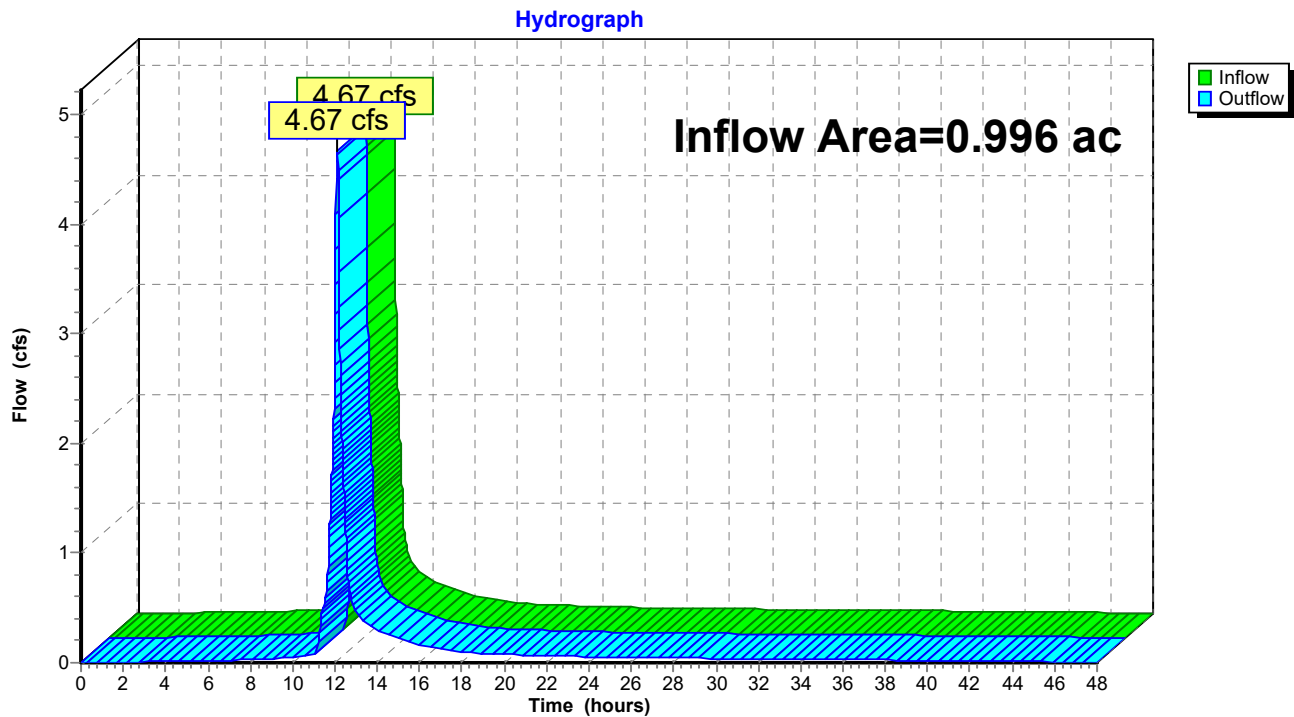
Hydrograph for Reach 2R: Elm/Oxford

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.00		0.00
0.50	0.00		0.00	27.00	0.00		0.00
1.00	0.00		0.00	27.50	0.00		0.00
1.50	0.00		0.00	28.00	0.00		0.00
2.00	0.00		0.00	28.50	0.00		0.00
2.50	0.00		0.00	29.00	0.00		0.00
3.00	0.00		0.00	29.50	0.00		0.00
3.50	0.00		0.00	30.00	0.00		0.00
4.00	0.00		0.00	30.50	0.00		0.00
4.50	0.00		0.00	31.00	0.00		0.00
5.00	0.00		0.00	31.50	0.00		0.00
5.50	0.00		0.00	32.00	0.00		0.00
6.00	0.00		0.00	32.50	0.00		0.00
6.50	0.00		0.00	33.00	0.00		0.00
7.00	0.00		0.00	33.50	0.00		0.00
7.50	0.00		0.00	34.00	0.00		0.00
8.00	0.00		0.00	34.50	0.00		0.00
8.50	0.00		0.00	35.00	0.00		0.00
9.00	0.00		0.00	35.50	0.00		0.00
9.50	0.00		0.00	36.00	0.00		0.00
10.00	0.00		0.00	36.50	0.00		0.00
10.50	0.00		0.00	37.00	0.00		0.00
11.00	0.00		0.00	37.50	0.00		0.00
11.50	0.00		0.00	38.00	0.00		0.00
12.00	0.04		0.04	38.50	0.00		0.00
12.50	0.02		0.02	39.00	0.00		0.00
13.00	0.01		0.01	39.50	0.00		0.00
13.50	0.01		0.01	40.00	0.00		0.00
14.00	0.00		0.00	40.50	0.00		0.00
14.50	0.00		0.00	41.00	0.00		0.00
15.00	0.00		0.00	41.50	0.00		0.00
15.50	0.00		0.00	42.00	0.00		0.00
16.00	0.00		0.00	42.50	0.00		0.00
16.50	0.00		0.00	43.00	0.00		0.00
17.00	0.00		0.00	43.50	0.00		0.00
17.50	0.00		0.00	44.00	0.00		0.00
18.00	0.00		0.00	44.50	0.00		0.00
18.50	0.00		0.00	45.00	0.00		0.00
19.00	0.00		0.00	45.50	0.00		0.00
19.50	0.00		0.00	46.00	0.00		0.00
20.00	0.00		0.00	46.50	0.00		0.00
20.50	0.00		0.00	47.00	0.00		0.00
21.00	0.00		0.00	47.50	0.00		0.00
21.50	0.00		0.00	48.00	0.00		0.00
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				
26.00	0.00		0.00				

Summary for Reach 99R: Confluence

Inflow Area = 0.996 ac, 87.69% Impervious, Inflow Depth = 4.94" for 25-year event
Inflow = 4.67 cfs @ 12.10 hrs, Volume= 0.410 af
Outflow = 4.67 cfs @ 12.10 hrs, Volume= 0.410 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 99R: Confluence

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Hydrograph for Reach 99R: Confluence

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.50	0.05		0.05
0.50	0.00		0.00	27.00	0.04		0.04
1.00	0.00		0.00	27.50	0.04		0.04
1.50	0.00		0.00	28.00	0.04		0.04
2.00	0.01		0.01	28.50	0.04		0.04
2.50	0.01		0.01	29.00	0.04		0.04
3.00	0.01		0.01	29.50	0.04		0.04
3.50	0.01		0.01	30.00	0.04		0.04
4.00	0.01		0.01	30.50	0.04		0.04
4.50	0.01		0.01	31.00	0.04		0.04
5.00	0.02		0.02	31.50	0.04		0.04
5.50	0.02		0.02	32.00	0.04		0.04
6.00	0.02		0.02	32.50	0.03		0.03
6.50	0.02		0.02	33.00	0.03		0.03
7.00	0.02		0.02	33.50	0.03		0.03
7.50	0.03		0.03	34.00	0.03		0.03
8.00	0.03		0.03	34.50	0.03		0.03
8.50	0.03		0.03	35.00	0.03		0.03
9.00	0.04		0.04	35.50	0.03		0.03
9.50	0.04		0.04	36.00	0.03		0.03
10.00	0.05		0.05	36.50	0.03		0.03
10.50	0.06		0.06	37.00	0.03		0.03
11.00	0.07		0.07	37.50	0.03		0.03
11.50	0.54		0.54	38.00	0.02		0.02
12.00	2.93		2.93	38.50	0.02		0.02
12.50	1.22		1.22	39.00	0.02		0.02
13.00	0.47		0.47	39.50	0.02		0.02
13.50	0.36		0.36	40.00	0.02		0.02
14.00	0.29		0.29	40.50	0.02		0.02
14.50	0.25		0.25	41.00	0.02		0.02
15.00	0.22		0.22	41.50	0.02		0.02
15.50	0.19		0.19	42.00	0.02		0.02
16.00	0.16		0.16	42.50	0.02		0.02
16.50	0.14		0.14	43.00	0.02		0.02
17.00	0.12		0.12	43.50	0.01		0.01
17.50	0.11		0.11	44.00	0.01		0.01
18.00	0.10		0.10	44.50	0.01		0.01
18.50	0.09		0.09	45.00	0.01		0.01
19.00	0.08		0.08	45.50	0.01		0.01
19.50	0.08		0.08	46.00	0.01		0.01
20.00	0.08		0.08	46.50	0.00		0.00
20.50	0.07		0.07	47.00	0.00		0.00
21.00	0.07		0.07	47.50	0.00		0.00
21.50	0.07		0.07	48.00	0.00		0.00
22.00	0.06		0.06				
22.50	0.06		0.06				
23.00	0.06		0.06				
23.50	0.06		0.06				
24.00	0.06		0.06				
24.50	0.05		0.05				
25.00	0.05		0.05				
25.50	0.05		0.05				
26.00	0.05		0.05				

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

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Summary for Pond 1.2P: R-TANK

Inflow Area = 0.865 ac, 90.90% Impervious, Inflow Depth = 5.12" for 25-year event
 Inflow = 4.73 cfs @ 12.08 hrs, Volume= 0.369 af
 Outflow = 4.13 cfs @ 12.13 hrs, Volume= 0.369 af, Atten= 13%, Lag= 2.7 min
 Primary = 4.13 cfs @ 12.13 hrs, Volume= 0.369 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 23.43' @ 12.13 hrs Surf.Area= 747 sf Storage= 2,844 cf

Plug-Flow detention time= 210.0 min calculated for 0.369 af (100% of inflow)
 Center-of-Mass det. time= 210.2 min (974.4 - 764.2)

Volume	Invert	Avail.Storage	Storage Description
#1B	19.15'	438 cf	34.81'W x 21.11'L x 5.45'H Field B 4,005 cf Overall - 2,909 cf Embedded = 1,096 cf x 40.0% Voids
#2B	19.40'	2,763 cf	ACF R-Tank HD 3 x 225 Inside #1 Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf 225 Chambers in 25 Rows
#3	19.15'	77 cf	4.00'D x 6.10'H Vertical Cone/Cylinder
#4	25.25'	415 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		3,693 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.25	4	0	0
26.00	1,102	415	415

Device	Routing	Invert	Outlet Devices
#1	Primary	19.05'	10.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.05' / 18.85' S= 0.0050 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#2	Device 1	19.10'	1.0" Vert. WQ Orifice C= 0.600
#3	Device 1	22.75'	4.0' long x 0.7' breadth OCS Bulkhead 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
#4	Primary	25.75'	10.0' long x 5.0' breadth Emergency Overflow. Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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

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Primary OutFlow Max=4.12 cfs @ 12.13 hrs HW=23.42' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 4.12 cfs @ 7.56 fps)
- 2=WQ Orifice (Passes < 0.05 cfs potential flow)
- 3=OCS Bulkhead (Passes < 6.63 cfs potential flow)
- 4=Emergency Overflow. (Controls 0.00 cfs)

Pond 1.2P: R-TANK - Chamber Wizard Field B

Chamber Model = ACF R-Tank HD 3 (ACF Environmental R-Tank HD)

Inside= 15.7"W x 50.4"H => 5.24 sf x 2.35'L = 12.3 cf

Outside= 15.7"W x 50.4"H => 5.51 sf x 2.35'L = 12.9 cf

9 Chambers/Row x 2.35' Long = 21.11' Row Length

25 Rows x 15.7" Wide + 12.0" Side Stone x 2 = 34.81' Base Width

3.0" Base + 50.4" Chamber Height + 12.0" Cover = 5.45' Field Height

225 Chambers x 12.3 cf = 2,763.4 cf Chamber Storage

225 Chambers x 12.9 cf = 2,908.8 cf Displacement

4,004.7 cf Field - 2,908.8 cf Chambers = 1,095.9 cf Stone x 40.0% Voids = 438.4 cf Stone Storage

Chamber Storage + Stone Storage = 3,201.7 cf = 0.074 af

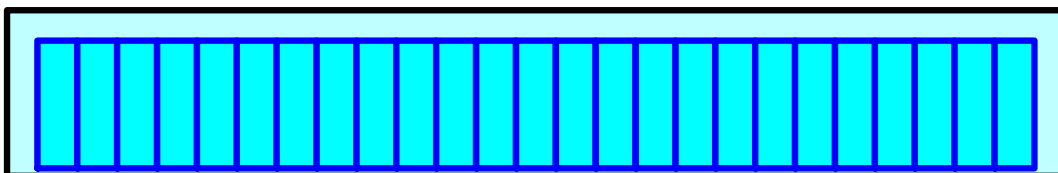
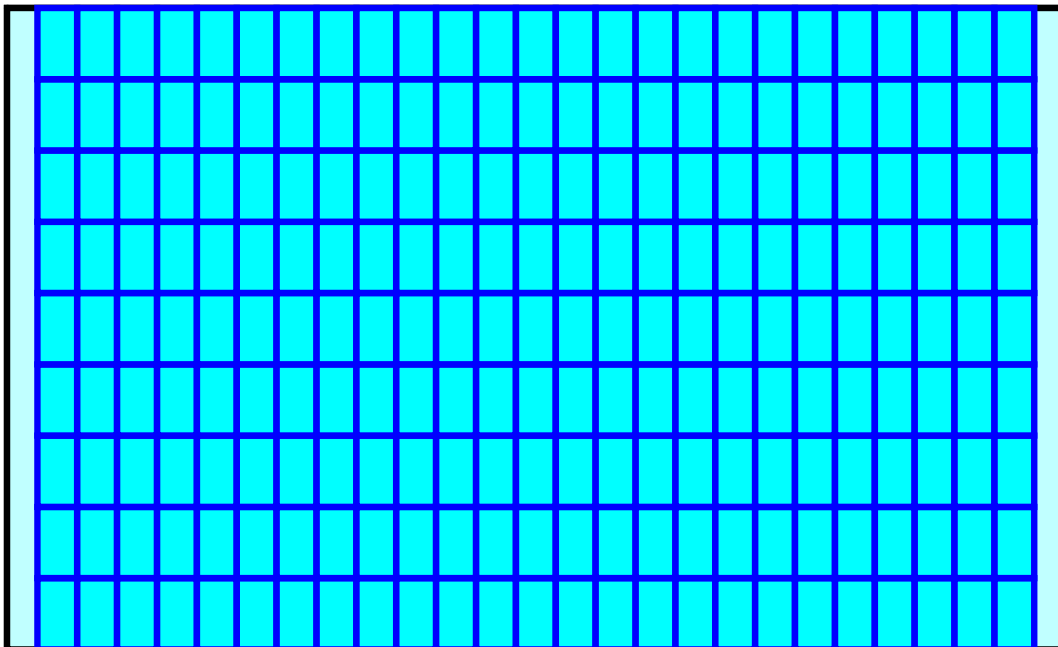
Overall Storage Efficiency = 79.9%

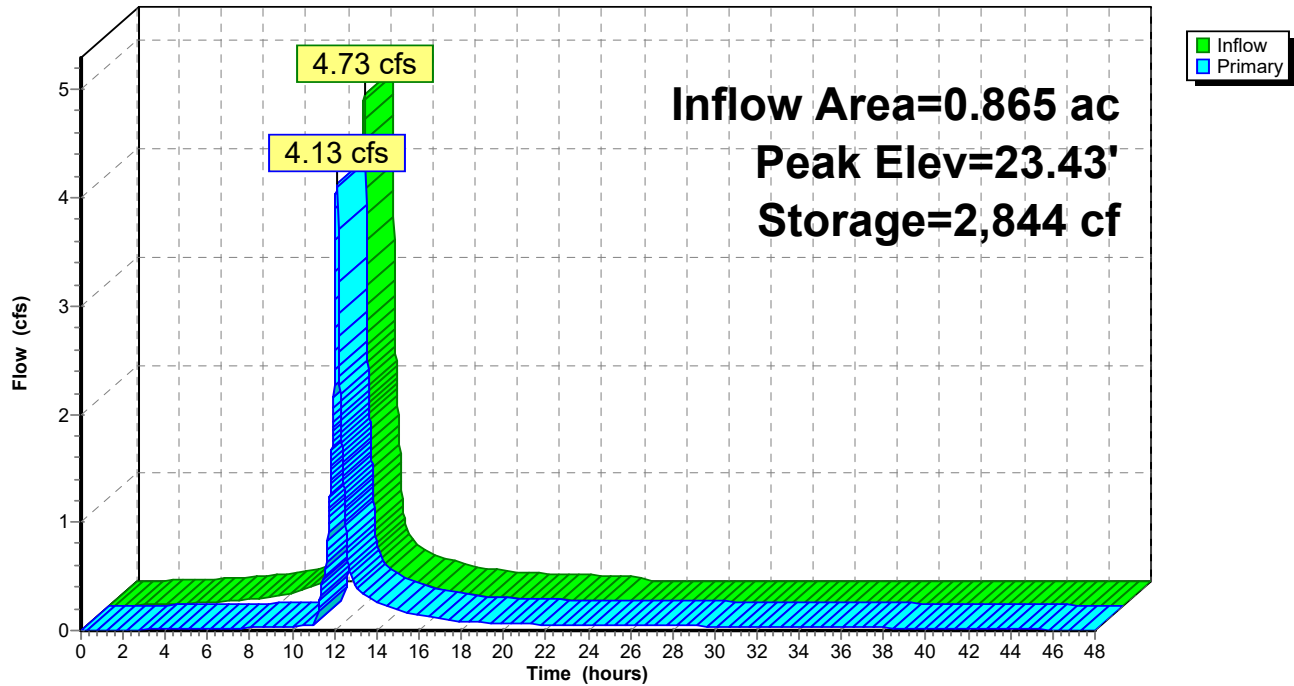
Overall System Size = 21.11' x 34.81' x 5.45'

225 Chambers

148.3 cy Field

40.6 cy Stone



Pond 1.2P: R-TANK**Hydrograph**

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Hydrograph for Pond 1.2P: R-TANK

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	19.15	0.00
1.00	0.00	0	19.15	0.00
2.00	0.01	11	19.19	0.01
3.00	0.02	33	19.26	0.01
4.00	0.03	67	19.37	0.01
5.00	0.04	126	19.47	0.02
6.00	0.05	213	19.60	0.02
7.00	0.07	344	19.79	0.02
8.00	0.09	546	20.08	0.03
9.00	0.14	862	20.54	0.03
10.00	0.20	1,357	21.26	0.04
11.00	0.32	2,125	22.38	0.05
12.00	2.95	2,635	23.12	2.59
13.00	0.40	2,451	22.85	0.42
14.00	0.25	2,429	22.82	0.26
15.00	0.19	2,418	22.81	0.19
16.00	0.13	2,407	22.79	0.14
17.00	0.11	2,401	22.78	0.11
18.00	0.08	2,394	22.77	0.08
19.00	0.07	2,391	22.77	0.07
20.00	0.07	2,389	22.76	0.07
21.00	0.06	2,386	22.76	0.06
22.00	0.05	2,384	22.76	0.05
23.00	0.05	2,380	22.75	0.05
24.00	0.04	2,365	22.73	0.05
25.00	0.00	2,203	22.49	0.05
26.00	0.00	2,034	22.25	0.05
27.00	0.00	1,870	22.01	0.04
28.00	0.00	1,713	21.78	0.04
29.00	0.00	1,563	21.56	0.04
30.00	0.00	1,419	21.35	0.04
31.00	0.00	1,282	21.15	0.04
32.00	0.00	1,151	20.96	0.04
33.00	0.00	1,027	20.78	0.03
34.00	0.00	909	20.61	0.03
35.00	0.00	798	20.45	0.03
36.00	0.00	693	20.30	0.03
37.00	0.00	594	20.15	0.03
38.00	0.00	503	20.02	0.02
39.00	0.00	417	19.90	0.02
40.00	0.00	338	19.78	0.02
41.00	0.00	266	19.68	0.02
42.00	0.00	200	19.58	0.02
43.00	0.00	141	19.49	0.02
44.00	0.00	88	19.42	0.01
45.00	0.00	44	19.29	0.01
46.00	0.00	15	19.20	0.01
47.00	0.00	0	19.15	0.00
48.00	0.00	0	19.15	0.00

SECTION J

STORMWATER MANAGMENT REPORT

Attachment D: USDA Soil Survey





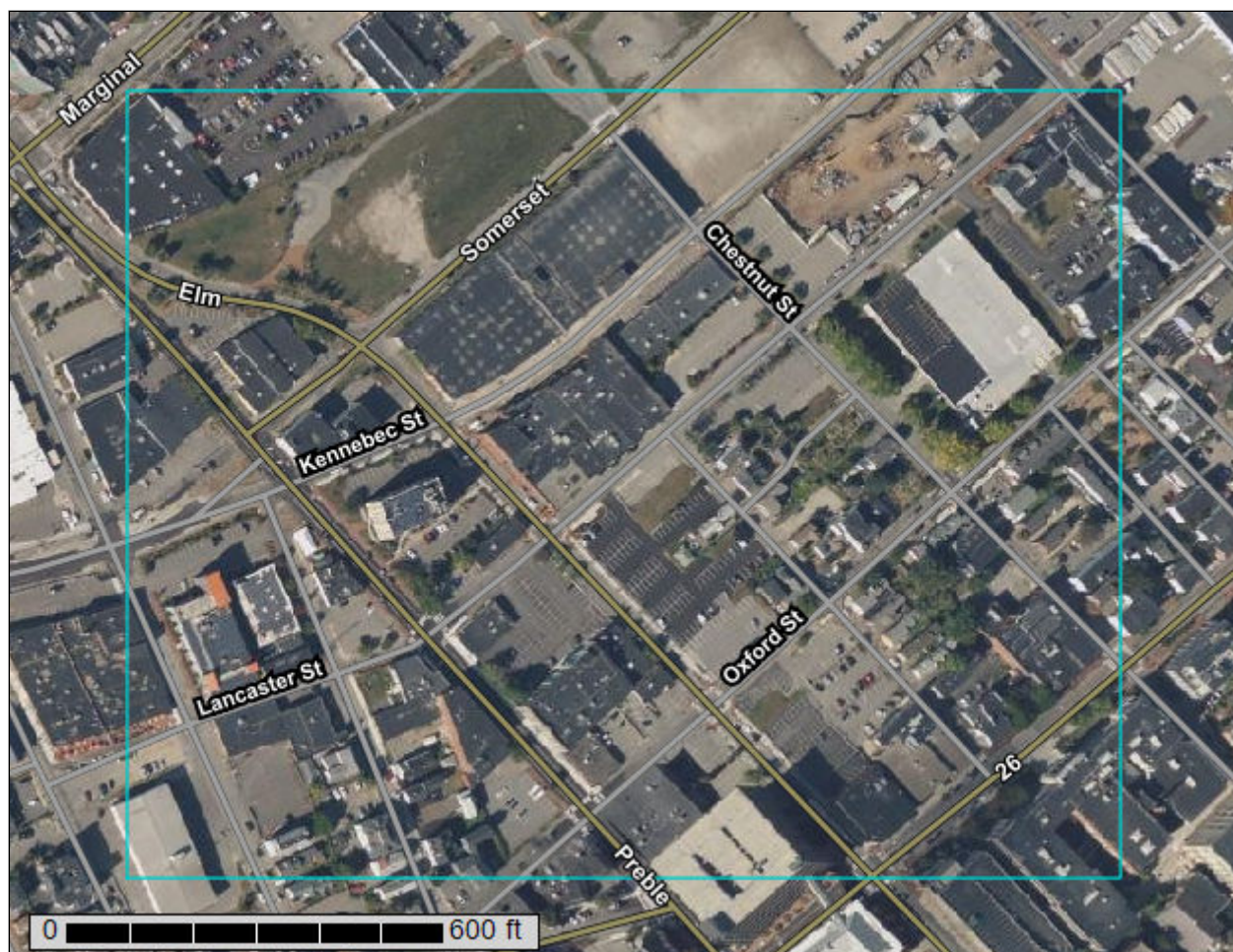
United States
Department of
Agriculture

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



January 31, 2023

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

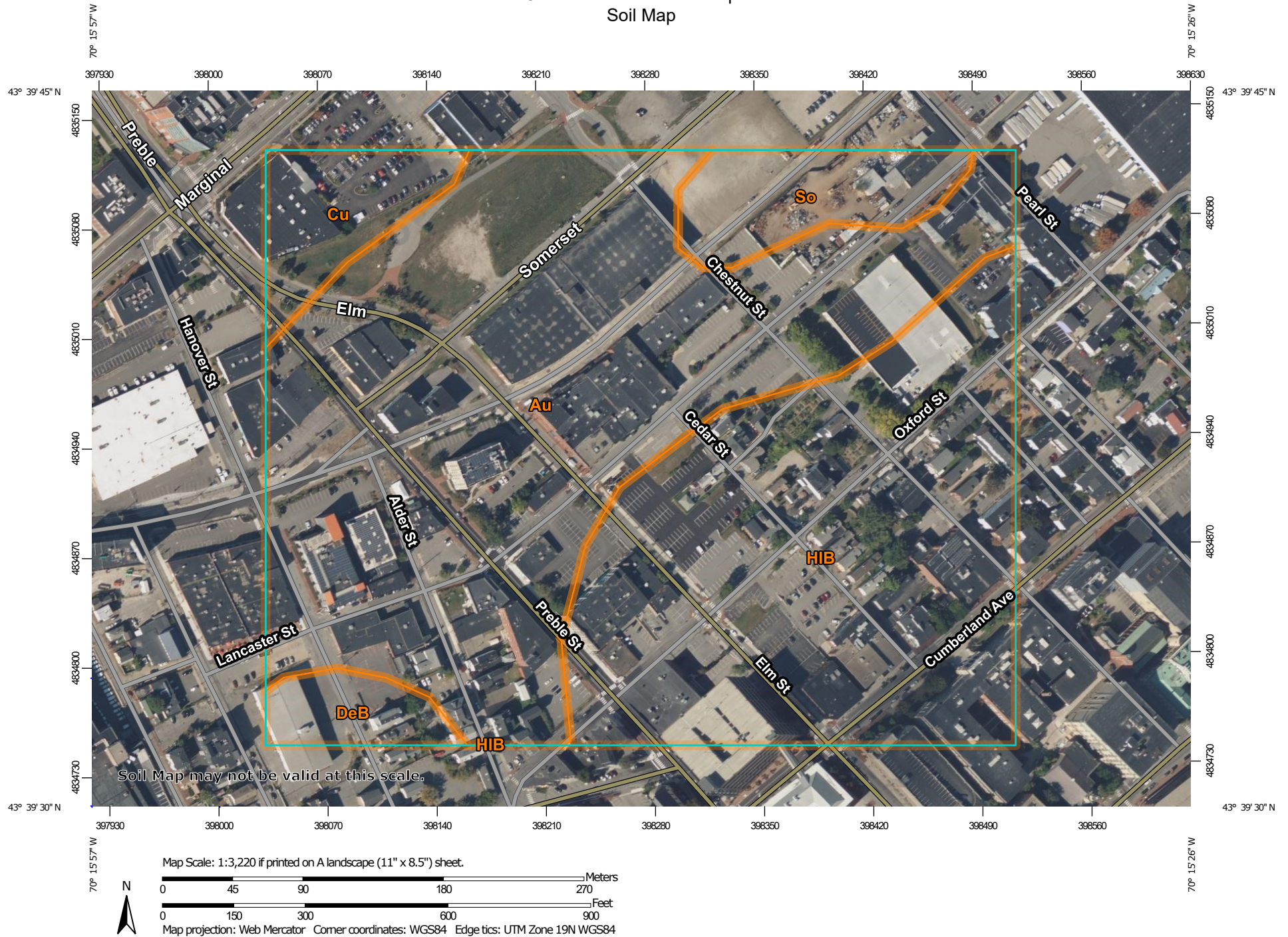
Custom Soil Resource Report

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 19, Aug 30, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
Au	Au Gres loamy sand	23.4	51.5%
Cu	Cut and fill land	2.1	4.6%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	1.2	2.7%
HIB	Hinckley loamy sand, 3 to 8 percent slopes	16.3	35.8%
So	Scarboro sandy loam	2.4	5.4%
Totals for Area of Interest		45.4	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

Au—Au Gres loamy sand

Map Unit Setting

National map unit symbol: blgr
Elevation: 200 to 1,800 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Au gres and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Au Gres

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from granite and gneiss

Typical profile

H1 - 0 to 10 inches: loamy sand
H2 - 10 to 32 inches: loamy sand
H3 - 32 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Cu—Cut and fill land

Map Unit Composition

Cut and fill land: 90 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

Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

DeB—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9

Elevation: 0 to 1,190 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Kame terraces, outwash plains, outwash terraces, outwash deltas

Landform position (three-dimensional): Tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand

Bw - 9 to 25 inches: loamy fine sand

BC - 25 to 33 inches: fine sand

Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

HIB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash plains, eskers, moraines, kame terraces, kames, outwash terraces, outwash deltas
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand

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Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

So—Scarboro sandy loam

Map Unit Setting

National map unit symbol: bljz
Elevation: 10 to 2,800 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 80 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from granite and gneiss

Typical profile

Oa - 0 to 8 inches: mucky peat
H2 - 8 to 24 inches: mucky sand

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H3 - 24 to 65 inches: coarse sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 14.17 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F144BY303ME - Acidic Swamp, F144BY301ME - Loamy Till Swamp

Hydric soil rating: Yes

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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.

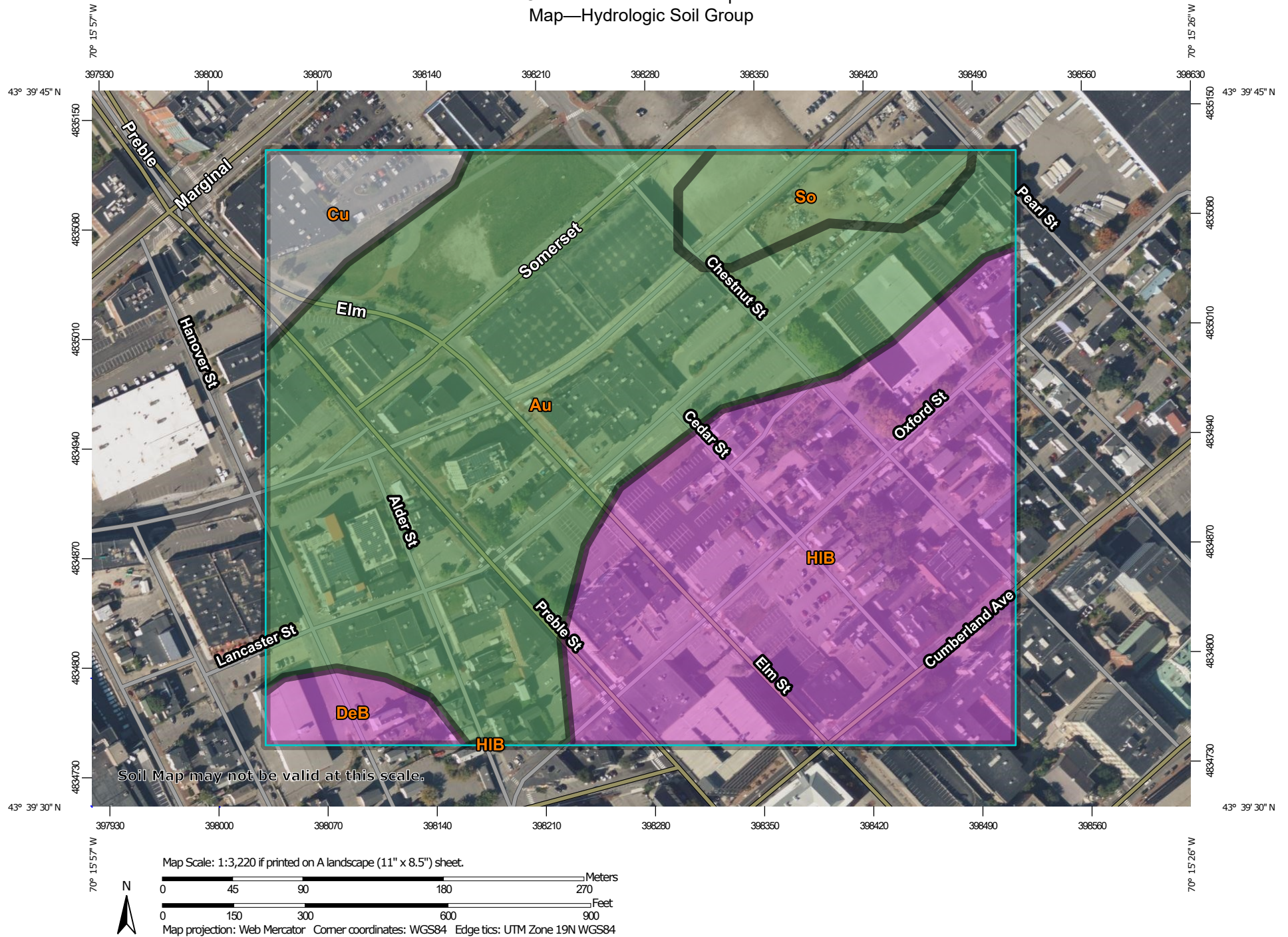
Custom Soil Resource Report

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.

Custom Soil Resource Report Map—Hydrologic Soil Group



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 19, Aug 30, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Au	Au Gres loamy sand	A/D	23.4	51.5%
Cu	Cut and fill land		2.1	4.6%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	A	1.2	2.7%
HIB	Hinckley loamy sand, 3 to 8 percent slopes	A	16.3	35.8%
So	Scarboro sandy loam	A/D	2.4	5.4%
Totals for Area of Interest			45.4	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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SECTION J

STORMWATER MANAGMENT REPORT

Attachment E: Geotechnical Report



The key to success starts with a solid foundation.
ENGINEERING | EXPLORATION | EXPERIENCE

Geotechnical Report

Bayside Development (Phase 1a & 1b)
Lancaster and Elm Street, Portland, ME



Client

Tom Watson & Co/Bush-Watson
188 State Street, 3rd Floor
Portland, ME 04101

Project #: 22504
Date: 3/24/2023

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Appendix A – Exploration Location Plan

Appendix B – Exploration Logs

Appendix C – Laboratory Results

March 24, 2023
SGS Project #: 22504

Tom Watson & Co/Bush-Watson
188 State Street, 3rd Floor
Portland, ME 04101
Attn: Michael Barton

Reference: Geotechnical Report – Bayside Development (Phase 1a: 196 Lancaster Street & Phase 1b: 89 Elm Street)
Lancaster and Elm Street, Portland, ME

Dear Mike,

Summit Geoengineering Services, Inc. (SGS) has completed a geotechnical investigation for the construction of the proposed development at the site referenced above. Our scope of services included the observation of fifteen test borings, the installation of five observation wells, laboratory testing, and the preparation of this geotechnical report summarizing our findings and providing geotechnical recommendations.

Our scope of services for this project did not include an environmental site assessment or further investigation for the presence or absence of hazardous or toxic material on, below, or around the site. Any statements in this report, or on the exploration logs, regarding odors or unusual and suspicious conditions observed are for informational purposes and are not intended to constitute an environmental assessment. It should be noted that an environmental site assessment was performed by TRC Companies.

1.0 Project Description

The project consists of the construction of a new development near the intersection of Lancaster and Elm Street in Portland, Maine. This report will address Phase 1a and Phase 1b of the development focusing on two of the proposed buildings in the development, 196 Lancaster Street and 89 Elm Street. The buildings will consist of the following:

Phase 1a: 196 Lancaster Street

- 8-Stories, 111 units
- Approximately 11,400 square feet
- Existing grades within the proposed building footprint range from elevation 18 to 22 feet)
- Grading not known as of the writing of this report (Assumed maximum 10 feet of cut and 6 feet of fill)
- Maximum anticipated column load (dead and live) ~ 630 kips

Phase 1b: 89 Elm Street

- 8-Stories, 201 units
- Approximately 25,000 square feet
- Existing grades within the proposed building footprint range from elevation 18 to 43 feet)

- 3 different finished floor elevations increasing towards the south (Elevation 18.75 to 36.10 to 44.00)
- The following maximum cuts and fills per section:
 - Elevation 18.75
 - 1 foot fill; 10.5 feet cut
 - Elevation 36.10
 - 8 feet fill; 1 foot cut
 - Elevation 44.00
 - 7 feet fill; 0 feet cut
- Maximum anticipated column load (dead and live) ~ 630 kips

Parking lots will append the new developments. The existing sites consist of large parking lots, isolated landscaped areas, concrete walkways, an existing concrete retaining wall near 73 Elm Street, and an existing building near 196 Lancaster Street, set to be demolished.

If the final plans do not reflect the assumptions above, SGS should be contacted so we can confirm the recommendations in this report are appropriate.

Proposed and existing conditions for 89 Elm Street were referenced from a plan entitled *Grading and Drainage Plan – 89 Elm Street Redevelopment* by Acorn Engineering, Inc. dated February 13, 2023.

2.0 Explorations

Summit Geoengineering Services (SGS) observed the subsurface conditions from February 7, 2023 to February 10, 2023 with the drilling of 15 borings and the installation of 5 groundwater wells. TRC Companies was on-site during the explorations to complete an environmental site assessment.

The borings were completed by SGS using a rubber tracked AMS PowerProbe 9500 VTR drill rig. The borings were drilled to depths ranging from 17 feet (elevation 13.5 feet, auger refusal) to 50 feet (elevation -32 feet, no refusal). The borings were completed using both 2 1/4-inch hollow stem augers and 3 1/4-inch hollow stem augers. Standard Penetration Tests (SPT) were performed from the ground surface. The upper 10 feet on a majority of the borings were sampled continuously and then in increments of 5 feet afterwards. Soils were visually classified (*ASTM D2488*) using SPT split spoon sampling (*ASTM D1586*).

An undisturbed tube sample was collected in SB-5 at 20 feet. Field vanes were performed in the lower glacial marine in SB-1, SB-5, and SB-6.

Groundwater observation wells were installed in SB-1, 2, 3, 4 and SB-12. The wells consisted of a 2-inch PVC pipe with varying amounts of screen and riser placements, see the boring logs in *Appendix B*. After initial installation of the wells in SB-2 and SB-12, it was determined that pre-packed PVC wells were a necessity at the site. This decision was made by both SGS and TRC Companies.

The exploration locations were determined by SGS and TRC Companies and were marked out by SGS prior to drilling. An exploration location plan and the exploration logs are included in *Appendix A* and *Appendix B*, respectively.

3.0 Laboratory Testing

Laboratory testing was performed at the following locations and depths within the lower glacial marine layer:

LABORATORY TEST RESULTS			
Location	Depth (ft)	Type of Test	Results
SB-1	10 to 12	Moisture Content	MC = 33.5%
	15 to 17	Moisture Content	MC = 41.6%
	20 to 22	Moisture Content	MC = 44.3%
SB-5	10 to 12	Moisture Content	MC = 36.5%
	15 to 17	Atterberg Limit	LL = 43 PI = 22 MC = 46.0%
SB-7	15 to 17	Moisture Content	MC = 38.3%
	20 to 22	Atterberg Limit	LL = 45 PI = 23 MC = 45.8%

Detailed results of the laboratory testing can be found in *Appendix C*.

4.0 Subsurface Conditions

4.1 Soil

From the explorations, the soil at this site generally consists of the following:

- **Pavement** (6 inches thick)
- **Fill** (0.5 feet to 9.5 feet thick)
- **Glacial Marine**
 - Upper Layer: 3.5 feet to 12 feet thick
 - Lower Layer (soft clay; encountered in SB-1, 5, 6, 7, & 8; 10 feet to 32 feet thick)
- **Glacial Till** (11.5 feet to 20.7 feet thick; some portions greater than 20.5 feet thick)
- **(Probable) Bedrock** (encountered in SB-2, 10, 14, & 15 at depths ranging from 17.0 feet (elevation 13.5 feet) to 24.2 feet (elevation 1.8 feet))

The **fill** generally consists of brown sand with some silt, little gravel, and frequent pieces of brick and asphalt. Silt and clay mixtures were often present throughout the fill with occasional portions having layers of ash. It is generally very loose to compact and damp to moist. It is 0.5 to 9.5 feet thick and is visually classified as either SM or SP, in accordance with the Unified Soil

Classification System (USCS). SPT N-values range from 1 blow per foot (bpf) to 28 bpf and average 8 bpf.

The **glacial marine** can be separated into two distinct layers, an upper and a lower layer. The upper layer generally consists of gray silty clay with little to trace fine sand. There were occasional layers of silty sand and clayey silt throughout the upper glacial marine. It is generally firm to stiff and damp to wet with occasional soft clay lenses. It is 3.5 feet to 12 feet thick and is visually classified as CL, in accordance with the USCS. SPT N-values range from 5 bpf to 12 bpf and average 7 bpf. Pocket penetrometer readings, a measure of unconfined compressive strength, range from 1.0 tsf to 4.5 tsf.

The lower glacial marine starts at depths ranging from 10 feet to 15 feet below the ground surface and generally consists of gray silty clay with trace fine sand. The layer is generally very soft to soft and damp to saturated. It is 10 to 32 feet thick and is visually classified as CL, in accordance with the USCS. The SPT N-values for this layer range from weight of hammer (WH) to 4 bpf. Field vanes performed in the lower glacial marine range from 550 psf to 1375 psf and average 725 psf.

The liquid limit (LL) in the lower glacial marine ranges from 43 to 45 and the plasticity index (PI) ranges from 22 to 23. The moisture contents in the lower glacial marine range from 33.5% to 46.0% and average 40.9%.

The **glacial till** generally consists of brown and gray silty sand with some to little clay and little gravel. It is very loose to compact and damp to saturated. The layer is estimated to be 11.5 to 20.7 feet thick with portions of the glacial till likely greater than 20.5 feet. The glacial till thickness was either sampled through to bedrock or estimated through probing with a spear tip placed on the end of rods and hammered using the SPT hammer. The glacial till overlies probable bedrock. It is visually classified as SM, in accordance with the USCS. The SPT N-values range from 3 bpf to 25 bpf and average 13 bpf. Pocket penetrometer readings range from 1.3 tsf to greater than 4.5 tsf.

Detailed descriptions of the soil can be found in the exploration logs in *Appendix B*.

4.2 Groundwater

Groundwater was measured or estimated at the following depths and approximate elevations:

GROUNDWATER DEPTHS AND ELEVATIONS				
Location	Date	Depth (ft)	Approximate Elevation (ft +/-)	Reference
SB-1/GW-1	2/10/2023	5.0	13.0	Measured in well
	2/24/2023	4.9	13.1	
SB-2/GW-2	2/10/2023	4.8	21.2	
	2/24/2023	8.0	18.0	
SB-3/GW-3	2/10/2023	8.0	17.0	
	2/24/2023	8.7	16.3	
SB-4/GW-4	2/10/2023	8.7	33.3	Estimated in spoon samples
	2/24/2023	5.5	36.5	
SB-5	2/9/2023	7.0	16.0	
SB-6	2/10/2023	5.0	16.0	
SB-7	2/10/2023	3.0	16.0	
SB-8	2/7/2023	5.5	14.5	
SB-9	2/8/2023	3.0	26.5	
SB-10	2/10/2023	6.0	24.5	
SB-11	2/8/2023	NE	NE	
SB-12/GW-5	2/10/2023	2.8	15.2	Measured in well
	2/24/2023	2.8	15.2	
SB-13	2/10/2023	7.0	18.0	Estimated in spoon samples
SB-14	2/8/2023	NE	NE	NE
SB-15	2/9/2023	NE	NE	NE

Note: NE = None encountered

Due to the low permeability of the glacial marine and the glacial till soils, groundwater could not be accurately estimated in the spoon samples. After completion of the borings, the groundwater did not have enough time to infiltrate the boreholes for an accurate reading. Our five groundwater monitoring wells revealed that groundwater is likely shallower than our initial estimated groundwater depths in the spoon samples. Based on this, our estimation of groundwater in spoon samples is based on plotting groundwater elevations from the known groundwater depths and from estimating slight increases in visual moisture contents in the borings. Groundwater will likely follow the existing ground contours of the site flowing from southeast to northeast. Groundwater will fluctuate seasonally and with precipitation levels.

4.3 Bedrock

Refusal on probable bedrock was encountered in SB-2, 10, 14, & 15 at depths ranging from 17.0 feet (elevation 13.5 feet) to 24.2 feet (elevation 1.8 feet). Probable bedrock slopes from east to west across the site following the existing contours, generally becoming deeper towards the west.

Samples of the bedrock were not obtained for examination. According to the *Bedrock Geology Map* from the Maine Geological Survey, the bedrock around Lancaster and Elm Street in Portland, ME is classified as a Spring Point Formation primarily consisting of actinolite-biotite-chlorite-plagioclase-quartz schist and amphibolite.

Bedrock will not be encountered during construction.

5.0 Geotechnical Evaluations and Considerations

Based on the data collected during the field explorations, the subgrade conditions are suitable for the building to be supported on conventional spread or continuous footings. Some geotechnical considerations for the proposed building are:

- Varying subgrade bearing conditions, including imported granular fill, glacial marine, and glacial till.
- Manmade elements, including bricks, asphalt, and ash, within the fill layer, likely needing to be removed before construction. Large elements in the native subgrade will also need to be removed (cobbles and boulders).
- Large building loads overlying large thicknesses of soft clay, especially at the 196 Lancaster Street development.
- Varying groundwater elevations across the site potentially being encountered in the footing subgrades and the large cuts within the buildings.

There is potential for the varying subgrade conditions to cause differential settlement between footings. To minimize the potential for differential settlement and to create a uniform bearing surface between all footings, we recommend all footings be constructed on $\frac{3}{4}$ -inch crushed stone (CS) placed over a woven geotextile placed over compacted subgrade soils (thickness of CS and type of geotextile dependent on location at the development, see *Section 6.1*).

Pending the results of the environmental site assessment, the fill soils may need to be removed. If it is determined that these soils are acceptable within the building footprint, we recommend any large elements be removed and replaced with CS. Any soft, wet, or unstable portions of the fill should be removed and replaced with CS. Large cobbles and boulders in the glacial till may be encountered in the footing and slab subgrades. We recommend these elements be removed and replaced with CS also.

SGS evaluated settlement for the 196 Lancaster Street development. At the writing of this report, SGS did not have proposed grading for this portion of the development. Based on this, we assumed a range of conditions with the same control parameters. These control parameters for each analysis included the same layering conditions based on SB-1 (thickest clay layer), a bearing pressure of 3,000 psf, and a maximum column load of 630 kips (square footing with B/L = 14.5 ft). SGS then changed the respective fill and cut heights for our analysis. The results of the analysis are as follows:

196 LANCASTER STREET SETTLEMENT ANALYSIS				
Loading	Immediate Settlement (Footing Only) (in)	Consolidation Settlement (Footing Only) (in)	Consolidation Settlement (Fill Only) (in)	Total Settlement (in)
6 ft fill; Footing 2 ft above GS	0.72	0.35	0.79	1.86
4 ft fill; Footing at GS	0.79	0.40	0.55	1.74
2 ft fill; Footing 2 ft below GS	0.53	0.45	0.29	1.27
0 ft fill; Footing 4 ft below GS	0.54	0.51	0.00	1.05
Footing 6 ft below GS	0.45	0.58	0.00	1.03
Footing 8 ft below GS	0.35	0.67	0.00	1.02
Footing 10 ft below GS	0.23	0.78	0.00	1.01

Note: GS = Ground surface

Settlement values should be assumed as approximate. The values above are meant to represent general trends in settlement as the loading conditions vary.

Assumptions: Soil layering based on SB-1; Bearing Pressure = 3,000 psf; Max Column Load = 630 kips

Based on the analysis, settlement from the footings will be greater than 1 inch but less than 1.5 inches. Based on this, we believe the settlement can be reduced to an acceptable level if localized subgrade improvements are implemented consisting of CS and a woven geotextile. If fill loads greater than 2 feet are proposed for the development at 196 Lancaster Street, a no lost time preload will likely need to be implemented to allow the underlying soft clay to consolidate without hindering the construction schedule. SGS should be notified of the proposed grading as soon as it is available so we can compare the proposed conditions to our analysis.

The subgrade conditions are generally different between the building at 89 Elm Street and 196 Lancaster Street. Though 89 Elm Street will have similar loading conditions to 196 Lancaster Street, 89 Elm will bear primarily on dense glacial till soils with minimal thicknesses of soft clay across the building. The subgrade preparation and improvements will be different between these two buildings. *Section 6.1* will provide specific recommendations for each building.

Due to the varying groundwater elevations across the site, groundwater will likely be encountered in the construction of the developments. De-watering during construction will likely be required to mitigate the groundwater. Foundation underdrains are also highly recommended even if groundwater isn't encountered during construction to mitigate the presence of fluctuating groundwater conditions and surface infiltration.

6.0 Geotechnical Recommendations

6.1 Bearing Capacity and Subgrade Preparation

Based on the results of our subsurface explorations, foundations can be supported on conventional spread footing foundations. We recommend that the bottom of the footings for the proposed developments be constructed on CS and a woven geotextile placed over proofrolled native soil. Assuming that the recommendations below are followed, the footings for both buildings can be proportioned using a maximum allowable bearing pressure of **3,000 pounds per**

square foot (psf). With proper subgrade improvements, total settlement for each building is expected to be 1 inch or less and differential settlement is expected to remain within tolerable limits. The allowable bearing pressure is based on the specific construction sequences across the site, separated below for each building.

6.1.1 196 Lancaster Street Subgrade Preparation

- After grubbing the building footprint and removing all existing pavement, proofroll the exposed soil by making a minimum of 4 passes in each of two perpendicular directions using a vibratory compactor with a minimum operating weight of 8 tons. Proofrolling is not necessary where the exposed soil consists of fine-grained soil (silt and clay), as long as a smooth-edged bucket is used for excavations to limit disturbance to the upper layer of clay.
- Excavate to 12 inches below the proposed bottom of footing elevation. Excavations should be completed using a smooth-edged bucket. Proofroll the exposed soil by making a minimum of 4 passes using a plate compactor. If the subgrade consists of fine-grained soil, these soils do not need to be proofrolled to avoid disturbing the fine-grained soils, as long as the excavation is compacted with a smooth-edged bucket. Soft, wet, or unstable areas should be removed and replaced with CS.
- Place a layer of woven geotextile, such as Mirafi HP570, RS580i, or equivalent, directly on the proofrolled subgrade. The geotextile should extend a minimum of 2 feet outside of the footing on all sides and should be pulled taught to remove wrinkles.
- Place a minimum of 12 inches of CS directly on the geotextile. CS should be compacted to lock the particles together. The footings can be constructed directly on the compacted CS. In no case shall footings be constructed in standing water or frozen soil.
- SGS should observe the footing subgrade conditions after proofrolling and prior to the placement of the geotextile and CS.

6.1.2 89 Elm Street Subgrade Preparation

- After grubbing the building footprint and removing all existing pavement, proofroll the exposed soil by making a minimum of 4 passes in each of two perpendicular directions using a vibratory compactor with a minimum operating weight of 8 tons. Proofrolling is not necessary where the exposed soil consists of fine-grained soil (silt and clay), as long as a smooth-edged bucket is used for excavations to limit disturbance to the upper layer of clay.
- Excavate to 8 inches below the proposed bottom of footing elevation. Excavations should be completed using a smooth-edged bucket. Proofroll the exposed soil by making a minimum of 4 passes using a plate compactor. If the subgrade consists of fine-grained soil, these soils do not need to be proofrolled to avoid disturbing the fine-grained soils, as

long as the excavation is compacted with a smooth-edged bucket. Soft, wet, or unstable areas should be removed and replaced with CS.

- Place a layer of woven geotextile, such as Mirafi 600X, or equivalent, directly on the proofrolled subgrade. The geotextile should extend a minimum of 2 feet outside of the footing on all sides and should be pulled taught to remove wrinkles.
- Place a minimum of 8 inches of CS directly on the geotextile. CS should be compacted to lock the particles together. The footings can be constructed directly on the compacted CS. In no case shall footings be constructed in standing water or frozen soil.
- SGS should observe the footing subgrade conditions after proofrolling and prior to the placement of the geotextile and CS.

6.2 Frost Protection

The design air freezing index for the Portland, Maine area is approximately 1,190-degree F days (10-year, 90% probability). Based on this, exterior footings and other footings exposed to freezing temperatures should be placed at a minimum depth of **4.0 feet** in order to provide adequate frost protection. We recommend that all foundations exposed to freezing temperatures be backfilled with Granular Borrow (GB), see *Section 7.2* for gradation requirements. GB should be compacted to a minimum of 95% of *ASTM D1557* when beneath paved areas, under slabs and under footings. The compaction can be reduced to 90% in landscaped areas.

6.3 Seismic Design

Based on the discovered soils, this site can be classified as **Seismic Site Class D** in accordance with ASCE 7-10 and 7-16 and **Seismic Site Class CD** in accordance with ASCE 7-22. The following seismic design coefficients should be used:

SUBGRADE SITE SEISMIC DESIGN COEFFICIENTS – ASCE 7			
Seismic Coefficient	ASCE 7-10 (Class D)	ASCE 7-16 (Class D)	ASCE 7-22 (Class CD)
S _s	0.241	0.281	0.280
S ₁	0.078	0.072	0.063
S _{MS}	0.386	0.443	0.320
S _{M1}	0.188	0.172	0.110
S _{DS}	0.257	0.295	0.210
S _{D1}	0.125	0.115	0.074
PGA _m	0.201 g	0.244 g	0.170 g

No liquefiable soils were encountered in our explorations.

6.4 Groundwater Control

Based on observed groundwater levels and the potential for groundwater to fluctuate across the site, we recommend underdrains be installed along the exterior and interior foundations of the

buildings. Underdrains should consist of 4-inch rigid PVC or flexible ADS pipe surrounded by 6 inches of $\frac{3}{4}$ -inch crushed stone (CS) which is then surrounded by Mirafi 140N or equivalent. Underdrains should be outlet to a free draining location. Where exposed at the ground surface, a screen or other device should be placed over the outlet to prevent the migration of animals into the underdrain system.

In addition, we recommend all exterior grades slope away from the building footprints to reduce runoff water from infiltrating the foundation backfill soils.

6.5 Slabs-on-Grade

All fill should be compacted to a minimum of 95% of *ASTM D1557*. The gradation requirements for Granular Borrow (GB), $\frac{3}{4}$ -inch crushed stone (CS), and Structural Fill (SF) can be found in *Section 7.2*.

6.5.1 Interior Slabs

To provide a uniform support condition for slabs-on-grade, we recommend the following steps be taken for construction:

- After grubbing and removing all existing pavement, grade the entire building footprint to 8 or 12 inches below the proposed finished slab-on-grade elevation, depending on the material being used as the slab subbase (CS or SF). Fill required to raise the grade to the bottom of the slab subbase soil should consist of GB or SF. The maximum particle size for these materials should be limited to 6 inches. GB and SF should be compacted to a minimum of 95% of *ASTM D1557*.
- Place either 8 inches of CS or 12 inches of SF. The CS should be compacted to lock the particles together. The SF should be compacted to a minimum of 95% of *ASTM D1557*. The slab can be constructed directly on the compacted SF or CS.

6.5.2 Exterior Slabs

For slabs in unheated entry areas, the following options should be considered for frost protection:

- Construct slab on frost wall foundation, in accordance with *Section 6.1 and 6.2*
- 6-inch slab (minimum thickness) over 2 inches of rigid insulation over 12 inches CS or SF (compacted)
- 6-inch slab (minimum thickness) over 36 inches CS or SF (compacted)

We recommend that insulation, if used, be extended 2 feet beyond the edge of the slabs and that it consist of a rigid polystyrene product.

6.6 Pavement Section Recommendations

The mean annual freezing index for the Portland, Maine area is estimated at 890-degree F days (2-year, 50% probability). Based on the subgrade and mean annual freezing index, the anticipated mean annual frost penetration depth is 36 inches.

For the parking lots and access road, we recommend a minimum total section thickness of **18 inches**. We further recommend that the pavement section consist of the following materials:

PAVEMENT SECTION MATERIALS AND THICKNESSES		
Material	Thickness (in)	Specifications
Asphalt Surface Course	1 1/4	MDOT 703.09 Type 9.5 mm (Light Duty) or 12.5 mm (Heavy Duty)
Asphalt Binder Course	1 3/4	MDOT 703.09 Type 19 mm
Base Soil	3	MDOT 703.06 Type A
Subbase Soil	12	MDOT 703.06 Type D

Reference: MDOT Standard Specifications, 2014

Fill beneath the subbase soil can consist of SF or GB placed and compacted to a minimum of 95% of *ASTM D1557*.

Underdrains are not necessary beneath paved areas. Ditches should be provided adjacent to paved areas wherever possible.

6.7 Basement Walls

SGS recommends the following design parameters be used for basement walls across the site:

DESIGN PARAMETERS FOR SOILS ACROSS THE SITE					
Parameter	Structural Fill (SF)	Granular Borrow (GB)	Glacial Till	Existing Fill	Upper Glacial Marine
Moist Unit Weight (γ_m)	135 pcf	125 pcf	135 pcf	120 pcf	122 pcf
Buoyant Unit Weight (γ_b)	78 pcf	68 pcf	78 pcf	63 pcf	65 pcf
Friction Coefficient (f)*	0.55	0.5	0.45	0.4	0.35
Passive Earth Pressure Coefficient (K_p)	3.54	3.25	3.25	3.00	1.0
Active Earth Pressure Coefficient (K_a)	0.28	0.31	0.31	0.33	1.0
At Rest Pressure Coefficient (K_o)	0.44	0.47	0.47	0.5	1.0
Effective Friction Angle (ϕ°)	34°	32°	32°	30°	0°
Undrained Shear Strength (s_u)	0 psf	0 psf	0 psf	0 psf	1000 psf

Note: The equivalent fluid pressure for computing retaining wall lateral loads can be taken as the product $\gamma_t \cdot (K_a, K_o, \text{ or } K_p)$

*The friction coefficient is assumed to be the interface between cast-in-place concrete and the soil

Basement wall footings should be prepared with the same subgrade preparations outlined in *Section 6.1* (preparation requirements dependent on the building location). Footings should be placed at proper frost protection depth. The footings should be proportioned using a maximum allowable bearing pressure of 3,000 psf. Concrete footings bearing on CS should have an assumed friction coefficient of 0.60. We recommend all basement walls be backfilled with either Granular Borrow (GB) or Structural Fill (SF). We recommend the following equivalent fluid pressures be used across the site:

EQUIVALENT FLUID PRESSURES		
Backfill Material	Structural Fill (SF)	Granular Borrow (GB)
Active	40 psf/foot	40 psf/foot
At-Rest	60 psf/foot	60 psf/foot
Passive	480 psf/foot	405 psf/foot

Active earth pressure coefficients assume structures are free to rotate at the top. At-rest earth pressure coefficients assume the top of structures are braced prior to backfilling and no lateral movement occurs.

The values above are based on groundwater being controlled at the base of the walls with underdrains to prevent the buildup of hydrostatic pressures. The underdrains should be located adjacent to the wall on the top of the footing. All underdrains should be surrounded by a minimum of 6 inches of crushed stone and filter fabric to prevent clogging from the migration of the fine soil particles in the foundation backfill soils. The underdrain pipe should outlet to a location where it will be free flowing.

7.0 Earthwork Considerations

7.1 Earthwork for Construction

The following temporary side slope requirements should be used during construction:

OSHA EXCAVATION STABILITY SOIL CLASSIFICATION		
Soil Type	OSHA Classification	Occupied Excavation >5 feet Temporary Side Slope Requirement
Structural Fill (SF)	Type C	1.5H:1V
¾-inch Crushed Stone (CS)		
Granular Borrow (GB)		
Existing Fill		
Glacial Till	Type A	0.75H:1V
Upper Glacial Marine		

The permissible slopes noted above are for excavations less than 20 feet deep. Excavations deeper than this should be designed by a professional engineer. If seepage occurs in any occupied excavation deeper than 5 feet, de-watering techniques should be considered and side slopes shall not exceed 1.5H:1V. De-watering in the excavations may also be required if water

begins to pond in the excavations. We anticipate that dewatering, if necessary, can be accomplished using shallow sump and pumps.

Adequate proof rolling of the subgrade soil is important to the success of any fill as a uniform bearing material, especially if the subgrade soil is loose in isolated areas. Excavations into fine-grained soils should be performed using a smooth-edged bucket. Fine-grained soils do not need to be proofrolled if excavations are completed using a smooth-edged bucket. All foundations should be constructed on CS and a woven geotextile (thickness of CS and type of geotextile dependent on the location of the building within the development).

To the extent possible, construction should occur during periods of dry weather to minimize disturbance to excavated subgrade areas, including clay soils which are subject to softening when wet and disturbed. If excavations and construction occur during wet periods, the contractor should employ the necessary measures to eliminate disturbance to the subgrade from heavy rainfall, surface water runoff, freeze/thaw softening, or any other potential weather-related cause of subgrade disturbance.

Once excavation for the footings is initiated, SGS should be contacted to observe the subgrade conditions after proofrolling and prior to the placement of the geotextile and CS.

7.2 Materials

The gradation requirements reflect the portion of soil passing the 3-inch sieve size. The following table presents the recommended grain sizes for the materials to be used at the site:

GRADATION REQUIREMENTS FOR SITE MATERIALS			
Sieve Size	¹ Structural Fill (SF)	² Crushed Stone (CS)	³ Granular Borrow (GB)
3 Inch	100	---	100
2 Inch	---	---	---
1 Inch	---	100	---
¾ Inch	---	90 – 100	---
½ Inch	35 – 80	20 – 55	---
⅜ Inch	---	0 – 15	---
¼ Inch	25 – 65	---	---
No. 4	---	0 – 5	---
No. 40	0 – 30	---	0 – 70
No. 200	0 – 7	---	0 – 7
Maximum Particle Size	6"	1"	6"
⁴ Minimum Compaction Requirement	95%	---	⁵ 95%

¹Maine DOT Specification 703.06, 2014, Type D

²Maine DOT Specification 703.13, 2020, Crushed Stone ¾-Inch

³Maine DOT Specification 703.19, 2020, Granular Borrow

⁴Per ASTM D1557

⁵Compaction requirement for GB can be reduced to 90%, when in landscaping areas.

CS should be placed in 12-inch maximum lifts and compacted with a minimum of 4 passes with a vibratory compactor. GB should consist of a free draining, granular soil.

8.0 Closure

Our recommendations are based on professional judgment, generally accepted principles of geotechnical engineering and project information provided by others. No other warranty is expressed or implied. Some changes in subsurface conditions from those presented in this report may occur. Should the subsurface conditions, finish grades, or foundation loadings differ materially from those described in this report, SGS should be notified so that we can re-evaluate our recommendations.

We recommend that a qualified third-party testing agency be retained to provide QA/QC services during construction.

SGS should be contacted to observe the footing subgrades for each building after compaction and before the placement of the geotextile and CS to ensure the subgrade conditions are sufficient to support the proposed foundations.

We appreciate the opportunity to serve you during this phase of your project. If there are any questions or if additional information is required, please do not hesitate to call.

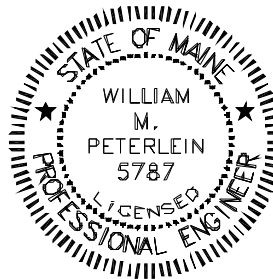
Sincerely,
Summit Geoengineering Services, Inc.



Colin M. Plante, E.I.
Geotechnical Engineer

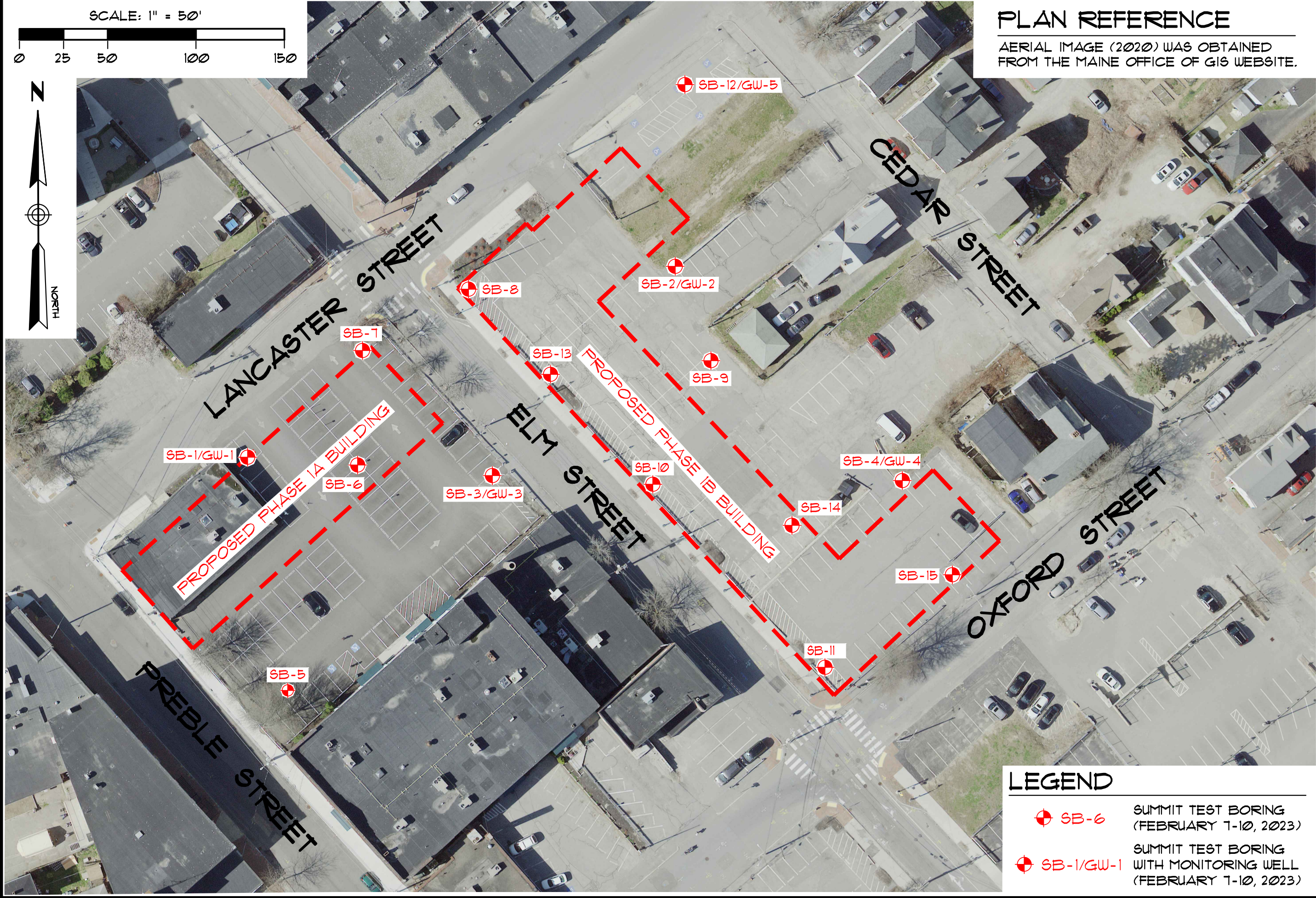


William M. Peterlein, P.E.
President & Principal Engineer

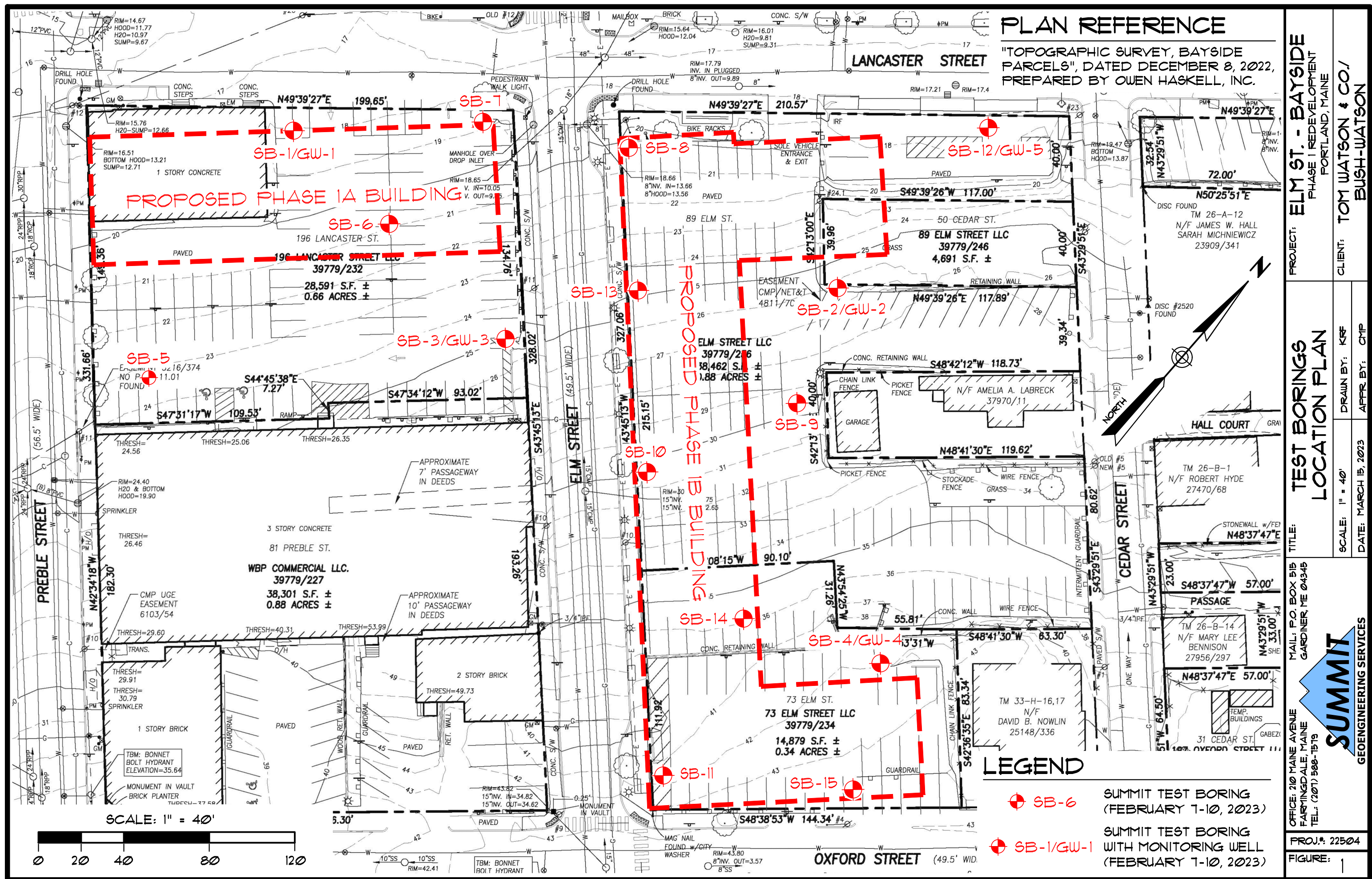


Appendix A

Exploration Location Plan



OFFICE: 210 MAINE AVENUE FARMINGDALE, MAINE TEL.: (207) 588-1519		MAIL: P.O. BOX 515 GARDINER, ME 04345 SUMMIT GEOENGINEERING SERVICES		PROJECT: ELM ST. - BAYSIDE PHASE 1 REDEVELOPMENT PORTLAND, MAINE		CLIENT: TOM WATSON & CO./ BUSH-WATSON			
PROJ.#: 22504		FIGURE: 1		TITLE: TEST BORINGS LOCATION PLAN		SCALE: 1" = 50'		DRAWN BY: KRF	
						DATE: FEBRUARY 17, 2023		APPR BY: CMF	



Appendix B

Exploration Logs

						SOIL BORING LOG		Boring #: SB-1 GW-1	
Drilling Co: Summit Geoengineering Services, Inc.						Project: Bayside Development		Project #: 22504	
Driller: S. Floyd						Location: Lancaster and Elm Street		Sheet: 1 of 2	
Summit Staff: C. Plante, EI						City, State: Portland, ME		Chkd by: WMP	
Boring Elevation 18 ft +/-						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Date started: 2/9/2023						Date Completed: 2/9/2023			
DRILLING METHOD		SAMPLER				ESTIMATED GROUND WATER DEPTH			
Vehicle:	AMS PP	Length:	24" SS			Date	Depth	Elevation	Reference
Model:	9500 VTR	Diameter:	2"OD/1.5"ID			2/10/2023	5.0 ft	13.0 ft +/-	Measured in well
Method:	3 1/4" HSA	Hammer:	140 lb			2/24/2023	4.9 ft	13.1 ft +/-	Measured in well
Hammer Style:	Automatic	Method:	ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					17.5	6" Pavement		GRAVEL/PAVE BENTONITE BACKFILL	PAVEMENT
1	S-1	24/11	1-3	32		Brown SAND, some Gravel and Silt, trace weathered rock, compact, damp, SM			FILL
2				7		Brick and ash in tip			
3				7		Hard drilling to 3 ft			
	S-2	24/11	3-5	3	14.5	Black and brown SAND, some ash, asphalt, and brick		GLACIAL MARINE Riser	
4				2		Gray Silty CLAY, trace fine Sand, strong petroleum odor, firm, moist to wet, CL			
5				3					
	S-3	24/21	5-7	3		Gray Silty CLAY, little fine Sand seams, strong petroleum odor, firm, moist to wet, CL		PP = 1.0 - 2.0 tsf	
6				4					
7				2					
8								Pre-Packed Screen	
9									
10									
	S-4	24/24	10-12	1		Gray Silty CLAY, trace fine Sand, slightly mottled, soft, moist to wet, CL			
11				1					
12				2					
13									
14									
15									
	S-5	24/24	15-17	WH		Gray Silty CLAY, some organic streaks, trace fine Sand, very soft, wet, CL			
16				WH					
17				WH					
18									
19	FV-1		18			Su = 1050 psf			
20						Su(r) = 25 psf			
	FV-2		19			Su = 1375 psf			
21						Su(r) = 50 psf			
22	S-6	24/24	20-22	WH		Gray Silty CLAY, little organic streaks, trace fine Sand, very soft, saturated, CL			
				WH		Gray Silty fine SAND, some Clay, trace seashells, SM-SC			
				WH		Gray Silty CLAY, little organic streaks, trace fine Sand, very soft, saturated, CL			
				WH					
Granular Soils		Cohesive Soils		% Composition		NOTES:			Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength			Dry: S = 0%
0-4	V. Loose	<2	V. soft	< 5% Trace		Bedrock Joints Shallow = 0 to 35 degrees			Humid: S = 1 to 25%
5-10	Loose	2-4	Soft	5-15% Little		Dipping = 35 to 55 degrees			Damp: S = 26 to 50%
11-30	Compact	5-8	Firm	15-30% Some		Steep = 55 to 90 degrees			Moist: S = 51 to 75%
31-50	Dense	9-15	Stiff	> 30% With		Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			Wet: S = 76 to 99%
>50	V. Dense	16-30	V. Stiff			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			Saturated: S = 100%

					SOIL BORING LOG			Boring #: SB-1 GW-1	
Drilling Co: Summit Geoengineering Services, Inc.					Project: Bayside Development			Project #: 22504	
Driller: S. Floyd					Location: Lancaster and Elm Street			Sheet: 2 of 2	
Summit Staff: C. Plante, EI					City, State: Portland, ME			Chkd by: WMP	
Boring Elevation 18 ft +/-					Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22				
Date started: 2/9/2023					Date Completed: 2/9/2023				
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH				
Vehicle: AMS PP		Length: 24" SS			Date	Depth	Elevation	Reference	
Model: 9500 VTR		Diameter: 2"OD/1.5"ID			2/10/2023	5.0 ft	13.0 ft +/-	Measured in well 	
Method: 3 1/4" HSA		Hammer: 140 lb			2/24/2023	4.9 ft	13.1 ft +/-	Measured in well 	
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
23						Gray Silty CLAY, little organic streaks, trace fine Sand, very soft, saturated, CL Probe with spear tip and SPT hammer			GLACIAL MARINE
24				WH					
25				WH					
26				WH					
27				WH					
28				WH					
29				WH					
30				WH					
31				WH					
32				WH					
33				WH					
34				WH					
35				WH					
36				WH					
37				WH					
38				WH					
39				WH					
40				WH					
41				WH					
42				WH	-24				
43				5					
44				5					
45				5					
46				5					
47				5					
48				12					
49				10					
50				11	-32				
51									
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End of Boring at 50 ft - No refusal									
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		Dry: S = 0%	
0-4	V. Loose	<2	V. soft	< 5% Trace		Bedrock Joints		Humid: S = 1 to 25%	
5-10	Loose	2-4	Soft	5-15% Little		Shallow = 0 to 35 degrees		Damp: S = 26 to 50%	
11-30	Compact	5-8	Firm	15-30% Some		Dipping = 35 to 55 degrees		Moist: S = 51 to 75%	
31-50	Dense	9-15	Stiff	> 30% With		Steep = 55 to 90 degrees		Wet: S = 76 to 99%	
>50	V. Dense	16-30	V. Stiff			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches		Saturated: S = 100%	
		>30	Hard			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			

					SOIL BORING LOG			Boring #: SB-2 GW-2	
Drilling Co: Summit Geoengineering Services, Inc.					Project: Bayside Development			Project #: 22504	
Driller: S. Floyd					Location: Lancaster and Elm Street			Sheet: 1 of 2	
Summit Staff: C. Plante, EI					City, State: Portland, ME			Chkd by: WMP	
Boring Elevation 26 ft +/-					Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22				
Date started: 2/7/2023					Date Completed: 2/7/2023				
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH				
Vehicle:	AMS PP	Length:	24" SS		Date	Depth	Elevation	Reference	
Model:	9500 VTR	Diameter:	2"OD/1.5"ID		2/10/2023	4.8 ft	21.2 ft +/-	Measured in well 	
Method:	3 1/4" HSA	Hammer:	140 lb		2/24/2023	8.0 ft	18.0 ft +/-	Measured in well 	
Hammer Style:	Automatic	Method:	ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					25.5	6" Pavement		GRAVEL/PAVE	PAVEMENT
1	S-1	24/8	1-3	6		Dark brown fine SAND, sm Silt, tr Gravel and ash, SM		BENTONITE	FILL
2				4		Brown fine-medium SAND, trace Silt, loose, damp, SP			Riser
3				1					
4	S-2	24/17	3-5	1	22.5	Brown fine-medium SAND, trace Silt, loose, damp, SP			
5				2		Brown Silty fine SAND, little Gravel and Clay, moderately mottled, loose, moist, SM			GLACIAL TILL
6				2					
7	S-3	24/20	5-7	1		Brown Silty SAND, some to little Clay, little Gravel, moderately mottled, loose, moist, SM-SC		PP = 2.8 - 3.8 tsf	
8				4					
9				6					
10				6					
11				6					
12				7					
13									
14									
15									
16	S-4	24/24	10-12	1		Brownish gray Silty fine SAND, some Clay, little Gravel, loose, moist, SM-SC		PP = 3.5 - 4.0 tsf	
17				6					
18				5					
19				7					
20				12					
21				13					
22									
23									
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31	S-5	24/18	15-17	4		Gray Silty SAND, some to little Clay, little Gravel, compact, damp to moist, SM-SC		PP = 4.3 - >4.5 tsf	
32				7					
33				12					
34				13					
35									
36									
37									
38									
39									
40									
41	S-6	24/19	20-22	1		Gray Silty SAND, some to little Clay, little Gravel, loose, moist, SM-SC			
42				3					
43				5					
44				10					
45									
46									
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						SOIL BORING LOG			Boring #: SB-2 GW-2		
Drilling Co: Summit Geoengineering Services, Inc.						Project: Bayside Development			Project #: 22504		
Driller: S. Floyd						Location: Lancaster and Elm Street			Sheet: 2 of 2		
Summit Staff: C. Plante, EI						City, State: Portland, ME			Chkd by: WMP		
Boring Elevation: 26 ft +/-						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22					
Date started: 2/7/2023						Date Completed: 2/7/2023					
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP			Length: 24" SS			Date	Depth	Elevation	Reference		
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			2/10/2023	4.8 ft	21.2 ft +/-	Measured in well		
Method: 3 1/4" HSA			Hammer: 140 lb			2/24/2023	8.0 ft	18.0 ft +/-	Measured in well		
Hammer Style: Automatic			Method: ASTM D1586								
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION			Geological/ Test Data	Geological Stratum	
23					1.8	Gray Silty SAND, some to little Clay, little Gravel, loose, moist, SM-SC			BACKFILL	GLACIAL TILL	
24									Screen		
25					End of Boring at 24.2 ft - Auger refusal					(PROBABLE) BEDROCK	
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test <u>Bedrock Joints</u> Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200					Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency							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 5-15% Little 15-30% Some > 30% With							
5-10	Loose	2-4	Soft								
11-30	Compact	5-8	Firm								
31-50	Dense	9-15	Stiff								
>50	V. Dense	16-30 >30	V. Stiff Hard								

						SOIL BORING LOG		Boring #: SB-3 GW-3	
Project: Bayside Development						Project #: 22504			
Location: Lancaster and Elm Street						Sheet: 1 of 1			
City, State: Portland, ME						Chkd by: WMP			
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 25 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/9/2023 Date Completed: 2/9/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/10/2023	8.0 ft	17.0 ft +/-	Measured in well		
Method: 3 1/4" HSA		Hammer: 140 lb		2/24/2023	8.7 ft	16.3 ft +/-	Measured in well		
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					24.5	6" Pavement		GRAVEL/PAVE BENTONITE BACKFILL	PAVEMENT
1	S-1	24/18	0.5-2.5	11	21	Brown fine SAND, little to trace Silt, some Silty Clay seams, compact, moist, SP			FILL
2				6		Olive Silty CLAY, trace fine Sand, firm, moist, CL			
3	S-2	24/13	2.5-4.5	3		Black and brown SAND, some ash, brick, and wood pieces, little Gravel and asphalt, moist, SP			
4				3					
5				5	21	Olive gray Silty CLAY, firm, moist, CL		GLACIAL MARINE	
6	S-3	24/16	5-7	WH		Olive Silty CLAY, trace fine Sand, strong petroleum odor, firm, damp to moist, CL			
7				3					
8				3					
9					6			Pre-Packed Screen	
10	S-4	24/24	10-12	1		Olive gray Silty CLAY, trace fine Sand, slightly mottled, firm, damp to moist, CL			
11				2					
12				3					
13					6			GLACIAL TILL	
14									
15	S-5	24/19	15-17	2		Olive brown Silty fine SAND, trace Clay, very loose, saturated, SM			
16				2		Many olive Silty Clay seams			
17				WH	3	Gray soft clay in tip			
18									
19									
20						Hard drilling at 19 ft			
21	S-6	24/14	20-22	13	3	Gray Silty fine SAND, some Clay, little Gravel, very loose, saturated, SM-SC			
22				2					
				2					
				3					
End of Boring at 22 ft - No refusal									
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		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		Bedrock Joints			
5-10	Loose	2-4	Soft	5-15% Little		Shallow = 0 to 35 degrees			
11-30	Compact	5-8	Firm	15-30% Some		Dipping = 35 to 55 degrees			
31-50	Dense	9-15	Stiff	> 30% With		Steep = 55 to 90 degrees			
>50	V. Dense	16-30	V. Stiff			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			
		>30	Hard			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			

						SOIL BORING LOG		Boring #: SB-4 GW-4	
Drilling Co: Summit Geoengineering Services, Inc.						Project: Bayside Development		Project #: 22504	
Driller: S. Floyd						Location: Lancaster and Elm Street		Sheet: 1 of 1	
Summit Staff: C. Plante, EI						City, State: Portland, ME		Chkd by: WMP	
Boring Elevation 42 ft +/-						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Date started: 2/8/2023						Date Completed: 2/9/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle:	AMS PP	Length:	24" SS	Date	Depth	Elevation	Reference		
Model:	9500 VTR	Diameter:	2"OD/1.5"ID	2/10/2023	8.7 ft	33.3 ft +/-	Measured in well		
Method:	3 1/4" HSA	Hammer:	140 lb	2/24/2023	5.5 ft	36.5 ft +/-	Measured in well		
Hammer Style:	Automatic	Method:	ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					41.5	6" Pavement		GRAVEL/PAVE BENTONITE BACKFILL	PAVEMENT
1	S-1	24/15	1-3	2		Brown Silty fine SAND, little Clay and Gravel, trace brick, very loose, moist, SM			FILL
2				1					
3				3		Light brown fine SAND, some Silt, trace Clay and Gravel, loose, damp to moist, SM			
3	S-2	24/16	3-5	6		Olive brown fine SAND, some Silt, little Gravel, trace Clay, compact, moist, SM (Re-worked)			Riser
4				9	38				
5				12		Olive brown Silty fine SAND, little Clay and Gravel, compact, moist, SM (Weathered rock in tip)			GLACIAL TILL
5	S-3	24/22	5-7	5		Olive brown Silty fine SAND, some to little Clay, little Gravel, slightly mottled, compact, moist to wet, SM-SC			
6				8					
6				10					
7				10		Very hard drilling at 6.5 ft; probable Boulder or Cobble			
8									
9									
10	S-4	24/22	10-12	4		Olive brown Silty fine SAND, some to little Clay, little Gravel, slightly braided, compact, damp to moist, SM-SC		PP = 4.3 - >4.5 tsf	
11				11					
12				13		White weathered rock at 11.7 ft			
13									
14									
15	S-5	24/24	15-17	4		Gray Silty fine SAND, little Clay and Gravel, compact, moist to wet, SM		PP = 3.3 - >4.5 tsf	Pre-Packed Screen
16				5					
17				7					
17				8					
18									
19									
20									
20	S-6	24/10	20-22	2		Gray Silty fine SAND, some Clay, little Gravel, firm, wet, SM-SC			
21				3					
22				5					
22				5	20				
End of Boring at 22 ft									

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		PP = Pocket Penetrometer, MC = Moisture Content	Dry: S = 0%
5-10	Loose	2-4	Soft	< 5% Trace	LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test	Humid: S = 1 to 25%
11-30	Compact	5-8	Firm	5-15% Little	Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength	Damp: S = 26 to 50%
31-50	Dense	9-15	Stiff	15-30% Some	Shallow = 0 to 35 degrees	Moist: S = 51 to 75%
>50	V. Dense	16-30	V. Stiff	> 30% With	Dipping = 35 to 55 degrees	Wet: S = 76 to 99%
		>30	Hard		Steep = 55 to 90 degrees	Saturated: S = 100%

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 BORING LOG		Boring #: SB-5	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 2	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 23 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/9/2023 Date Completed: 2/9/2023			
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS PP			Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			2/9/2023	7.0 ft	16.0 ft +/-	Estimated in spoon samples
Method: 3 1/4" HSA			Hammer: 140 lb						
Hammer Style: Automatic			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					22.5	6" Pavement			PAVEMENT
1	S-1	24/8	1-3	6		Brown fine-medium SAND, trace asphalt and brick, compact, damp, SP Spoon bending in hole; no sample at 3 ft			FILL
2				12					
3				15					
4									
5									
6	S-2	24/12	5-7	1		Gray and black Silty CLAY, some Sand and Gravel, trace ash and brick, very soft, saturated, CL			
7				WH					
8				2					
9									
10									
11	S-3	24/24	10-12	WH		Olive gray Silty CLAY, trace fine Sand, soft, moist to wet, CL		PP = 1.0 - 1.3 tsf	GLACIAL MARINE
12				1					
13				2					
14									
15									
16	S-4	24/24	15-17	WH		Gray Silty CLAY, trace fine Sand, very soft, wet, CL			
17				WH					
18				WH					
19				WH					
20									
21	FV-1		18			Su = 700 psf Su(r) = 50 psf			
22									
	UT-1	30/12	20-22.5	PUSH		Olive gray Silty CLAY, very soft, wet, CL			
				PUSH					
						Tube refusal at 21 ft			GLACIAL TILL
Granular Soils		Cohesive Soils		% Composition		NOTES:			
Blows/ft. Density		Blows/ft. Consistency		ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			
0-4	V. Loose	<2	V. soft	< 5% Trace		Soil Moisture Condition			
5-10	Loose	2-4	Soft	5-15% Little		Dry: S = 0%			
11-30	Compact	5-8	Firm	15-30% Some		Humid: S = 1 to 25%			
31-50	Dense	9-15	Stiff	> 30% With		Damp: S = 26 to 50%			
>50	V. Dense	16-30	V. Stiff			Moist: S = 51 to 75%			
		>30	Hard			Wet: S = 76 to 99%			
						Saturated: S = 100%			

					SOIL BORING LOG			Boring #: SB-5		
					Project: Bayside Development			Project #: 22504		
					Location: Lancaster and Elm Street			Sheet: 2 of 2		
					City, State: Portland, ME			Chkd by: WMP		
Drilling Co: Summit Geoengineering Services, Inc.					Boring Elevation 23 ft +/-					
Driller: S. Floyd					Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22					
Summit Staff: C. Plante, EI					Date started: 2/9/2023 Date Completed: 2/9/2023					
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS			Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID			2/9/2023	7.0 ft	16.0 ft +/-	Estimated in spoon samples		
Method: 3 1/4" HSA		Hammer: 140 lb								
Hammer Style: Automatic		Method: ASTM D1586								
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum	
				3		Probe with spear tip and SPT hammer			GLACIAL TILL	
23				10						
24				23						
25				14						
26				20						
27					-4					
28						End of Boring at 27 ft - No refusal				
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test <u>Bedrock Joints</u> Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200				Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%	
Blows/ft.	Density	Blows/ft.	Consistency							
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With						
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 #: SB-6	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 2	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 21 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/10/2023 Date Completed: 2/10/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/10/2023	5.0 ft	16.0 ft +/-	Estimated in spoon samples		
Method: 2 1/4" HSA		Hammer: 140 lb							
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
						6" Pavement			PAVEMENT
1	S-1	24/13	1-3	5		Brown SAND, trace Silt, loose, damp to moist, SP			FILL
2				2		Black Silty SAND, some ash and brick, SM			
3				3		Brown SAND, some Silt and ash, many brick pieces, SM			
4	S-2	24/9	3-5	2		Gray Silty CLAY, some fine Sand and wood pieces, firm, moist, CL			
5				3					
6	S-3	24/22	5-7	2	I6	Gray Silty CLAY, some fine Sand, firm, moist, CL Some to little fine Sand and slightly mottled at 5.5 ft		PP = 1.5 - 2.0 tsf	GLACIAL MARINE
7				3					
8				5					
9									
10									
11	S-4	24/24	10-12	2		Olive gray Silty CLAY, little to trace fine Sand, slightly mottled, soft, moist, CL		PP = 1.3 - 2.5 tsf	
12				2					
13				3					
14									
15									
16	S-5	24/24	15-17	WH		Gray Silty CLAY, trace fine Sand and organic streaks, very soft, moist to wet, CL			
17				WH					
18				WH					
19	FV-1		18			Su = 600 psf Su(r) = 75 psf			
20	FV-2		19			Su = 600 psf Su(r) = 75 psf			
21	FV-3		20			Su = 550 psf Su(r) = 50 psf			
22									
	FV-4		22			Su = 550 psf Su(r) = 50 psf			
Granular Soils		Cohesive Soils		% Composition		NOTES:			Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength			Dry: S = 0%
0-4	V. Loose	<2	V. soft	< 5% Trace		Bedrock Joints Shallow = 0 to 35 degrees			Humid: S = 1 to 25%
5-10	Loose	2-4	Soft	5-15% Little		Dipping = 35 to 55 degrees			Damp: S = 26 to 50%
11-30	Compact	5-8	Firm	15-30% Some		Steep = 55 to 90 degrees			Moist: S = 51 to 75%
31-50	Dense	9-15	Stiff	> 30% With		Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			Wet: S = 76 to 99%
>50	V. Dense	16-30	V. Stiff			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			Saturated: S = 100%
		>30	Hard						

						SOIL BORING LOG		Boring #: SB-6	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		2 of 2	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 21 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/10/2023 Date Completed: 2/10/2023			
DRILLING METHOD			SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS PP			Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR			Diameter: 2"OD/1.5"ID			2/10/2023	5.0 ft	16.0 ft +/-	Estimated in spoon samples
Method: 2 1/4" HSA			Hammer: 140 lb						
Hammer Style: Automatic			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
23						Su = 550 psf Su(r) = 50 psf Su = 600 psf Su(r) = 75 psf Su = 800 psf Su(r) = 200 psf Probe with spear tip and SPT hammer			GLACIAL MARINE
24									
25	FV-5		24						
26									
27	FV-6		26						
28									
29	FV-7		28						
30									GLACIAL TILL
31				WH	-12				
32				WH					
33				WH					
34				6					
35				6					
36				6					
37				5					
38				6					
39				7					
40				10					
41				8					
42				9					
43				10					
44				13					
45				14					
46				16					
47				16					
48				15					
49				15	-28	End of Boring at 49 ft - No refusal			
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									
63									
64									
65									
66									

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft			
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			

						SOIL BORING LOG		Boring #: SB-7	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 2	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 19 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/10/2023 Date Completed: 2/10/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/10/2023	3.0 ft	16.0 ft +/-	Estimated in spoon samples		
Method: 2 1/4" HSA		Hammer: 140 lb							
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					18.5	6" Pavement			PAVEMENT
1	S-1	24/13	0.5-2.5	6		Brown fine SAND, trace Silt and Gravel, many brick pieces, SP			FILL
				5		Silty SAND seam at 1 ft			
2				3					
				3					
3	S-2	24/5	2.5-4.5	3		Brown SAND, trace Silt, large brick, porcelain, & weathered rock pieces, saturated, SP			
4				2					
				5					
5									
	S-3	24/20	5-7	2	13.5	Gray Silty CLAY, little fine Sand, many wood pieces, CL		PP = 2.0 - 3.0 tsf	GLACIAL MARINE
6				2	Gray Silty CLAY, little fine Sand, slightly mottled, firm, moist to wet, CL				
7				3					
				4					
8									
9									
10									
	S-4	24/4	10-12	2	Gray Silty CLAY, trace fine Sand, slightly braided, firm, saturated, CL				
11				3					
				2					
12				3					
13									
14									
15									
	S-5	24/24	15-17	WH	Gray Silty CLAY, trace fine Sand and organic streaks, very soft, saturated, CL				
16				WH					
				WH					
17				WH					
18									
19									
20									
	S-6	24/24	20-22	WH	Gray Silty CLAY, trace fine Sand and organic streaks, very soft, wet, CL				
21				WH					
				WH					
22				WH					
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		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		Bedrock Joints			
5-10	Loose	2-4	Soft	5-15% Little		Shallow = 0 to 35 degrees			
11-30	Compact	5-8	Firm	15-30% Some		Dipping = 35 to 55 degrees			
31-50	Dense	9-15	Stiff	> 30% With		Steep = 55 to 90 degrees			
>50	V. Dense	16-30	V. Stiff			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			
		>30	Hard			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			

					SOIL BORING LOG			Boring #: SB-7		
					Project: Bayside Development			Project #: 22504		
					Location: Lancaster and Elm Street			Sheet: 2 of 2		
					City, State: Portland, ME			Chkd by: WMP		
Drilling Co: Summit Geoengineering Services, Inc.					Boring Elevation 19 ft +/-					
Driller: S. Floyd					Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22					
Summit Staff: C. Plante, EI					Date started: 2/10/2023 Date Completed: 2/10/2023					
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS			Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID			2/10/2023	3.0 ft	16.0 ft +/-	Estimated in spoon samples		
Method: 2 1/4" HSA		Hammer: 140 lb								
Hammer Style: Automatic		Method: ASTM D1586								
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum	
23				WH	-9	Gray Silty CLAY, trace fine Sand and organic streaks, very soft, wet, CL Probe with spear tip and SPT hammer			GLACIAL MARINE	
24				WH						
25				WH						
26				WH						
27				WH						
28				WH						
29				7	-19				GLACIAL TILL	
30				3						
31				3						
32				4						
33				6						
34				13						
35				17						
36				18						
37				26						
38				35						
39										
40										
41										
42										
43										
44										
End of Boring at 38 ft - No refusal										
Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test <u>Bedrock Joints</u> Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200				Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency						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 5-15% Little 15-30% Some > 30% With						
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 #: SB-8	
Drilling Co: Summit Geoengineering Services, Inc.					Project: Bayside Development		Project #: 22504	
Driller: S. Floyd					Location: Lancaster and Elm Street		Sheet: 1 of 1	
Summit Staff: C. Plante, EI					City, State: Portland, ME		Chkd by: WMP	
Boring Elevation: 20 ft +/-					Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Date started: 2/7/2023					Date Completed: 2/7/2023			
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH			
Vehicle: AMS PP		Length: 24" SS			Date	Depth	Elevation	Reference
Model: 9500 VTR		Diameter: 2"OD/1.5"ID			2/7/2023	5.5 ft	14.5 ft +/-	Estimated in spoon samples
Method: 3 1/4" HSA		Hammer: 140 lb						
Hammer Style: Automatic		Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data
					19.5	6" Pavement		Geological Stratum
1	S-1	24/19	1-3	7	18.5	Brown Silty fine-medium SAND, little Clay, trace Gravel, ash, asphalt, and brick, loose, damp to moist, SM		PAVEMENT
2				2		Olive gray Clayey SILT, little fine Sand, firm, damp to moist, ML		FILL
3				3				GLACIAL MARINE
4	S-2	24/17	3-5	5		Brownish gray Silty CLAY, little fine Sand, slightly mottled stiff, damp, CL		PP = 1.8 - 2.3 tsf
5				5				PP = 2.5 - 3.8 tsf
6	S-3	24/24	5-7	2		Brownish gray Silty CLAY, little fine Sand, firm, damp, CL		
7				3		Grayish brown Clayey fine SAND, some Silt and Silty Clay seams, slightly mottled, loose, moist, SC-SM		
8				4				
9								
10								
11	S-4	24/24	10-12	1		Gray Silty CLAY, trace fine Sand, soft, damp to moist, CL		PP = 1.8 - 2.5 tsf
12				2				
13				3				
14								
15								
16	S-5	24/24	15-17	WH		Gray Silty CLAY, trace fine Sand, very soft, wet, CL		
17				WH				
18				WH				
19				2		Clayey Sand in tip		
20					0			
21	S-6	24/20	20-22	WR		Gray Clayey SILT, some fine Sand, trace Gravel, soft, saturated, ML		GLACIAL TILL
22				3		Gray Silty fine-medium SAND, little Clay and Gravel, loose, saturated, SM		
				4				
				6	-2			
						End of Boring at 22 ft - No refusal		
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		Dry: S = 0%
0-4	V. Loose	<2	V. soft	< 5% Trace		Bedrock Joints Shallow = 0 to 35 degrees		Humid: S = 1 to 25%
5-10	Loose	2-4	Soft	5-15% Little		Dipping = 35 to 55 degrees		Damp: S = 26 to 50%
11-30	Compact	5-8	Firm	15-30% Some		Steep = 55 to 90 degrees		Moist: S = 51 to 75%
31-50	Dense	9-15	Stiff	> 30% With		Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches		Wet: S = 76 to 99%
>50	V. Dense	16-30	V. Stiff			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200		Saturated: S = 100%
		>30	Hard					

						SOIL BORING LOG		Boring #: SB-9	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 1	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 29.5 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/8/2023 Date Completed: 2/8/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/8/2023	3.0 ft	26.5 ft +/-	Estimated in spoon samples		
Method: 2 1/4" HSA		Hammer: 140 lb							
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					29	6" Pavement			PAVEMENT
1	S-1	24/15	1-3	8	27.5	Olive brown fine SAND, some Silt, little Gravel, trace brick, compact, damp, SM			FILL
2				22		White and gray weathered rock			
3				7		Olive Silty SAND, little Clay, trace coarse Sand, compact, moist, SM			GLACIAL TILL
4	S-2	24/16	3-5	3		Olive brown Silty fine SAND, some to little Clay, little to trace Gravel, loose, moist, SM-SC			
5				4		Hard drilling to 4 ft; many Cobbles			
6	S-3	24/18	5-7	4		Olive brown Silty fine SAND, some to little Clay, little Gravel, moderately mottled, loose, damp to moist, SM-SC		PP = 3.3 - 4.0 tsf	
7				5					
8				6					
9									
10									
11	S-4	24/18	10-12	6		Olive gray Silty fine-medium SAND, some to little Gravel and Clay, trace weathered rock seams, compact, saturated, SM-SC			
12				14					
13				6		Very hard drilling to 15 ft			
14				10					
15									
16	S-5	24/20	15-17	4		Gray Silty fine-medium SAND, little Gravel and Clay, compact, saturated, SM		PP = 3.0 - >4.5 tsf	
17				8					
18				7					
19				8					
20									
21	S-6	24/19	20-22	4		Gray Silty fine-medium SAND, little Gravel and Clay, compact, saturated, SM			
22				7					
				12					
				12	7.5				
						End of Boring at 22 ft - No refusal			
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		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		Bedrock Joints			
5-10	Loose	2-4	Soft	5-15% Little		Shallow = 0 to 35 degrees			
11-30	Compact	5-8	Firm	15-30% Some		Dipping = 35 to 55 degrees			
31-50	Dense	9-15	Stiff	> 30% With		Steep = 55 to 90 degrees			
>50	V. Dense	16-30	V. Stiff			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			
		>30	Hard			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			

						SOIL BORING LOG		Boring #: SB-10	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 1	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 30.5 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/10/2023 Date Completed: 2/10/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/10/2023	6.0 ft	24.5 ft +/-	Estimated in spoon samples		
Method: 2 1/4" HSA		Hammer: 140 lb							
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					30	6" Pavement			PAVEMENT
1	S-1	24/10	1-3	7		Brown fine SAND, some Gravel, little Silt, trace asphalt, loose, damp, SP			FILL
2				3		Gray weathered rock			
				3		Re-worked Silty fine SAND, little Clay and Gravel			
3	S-2	24/18	3-5	3		Gray weathered rock			
4				3		Re-worked Silty fine SAND, little Clay and Gravel			
				4		Olive brown fine Sandy SILT, some Clay, heavily mottled, firm, damp, ML-CL			GLACIAL TILL
5				7		Olive brown fine Sandy SILT, some Clay			
6	S-3	24/22	5-7	4	25	Gray Silty fine SAND, some Clay, loose, moist to wet, SM-SC			
7				4		Trace Gravel in tip			
8				6					
9									GLACIAL TILL
10									
11	S-4	24/20	10-12	2		Olive brown Silty fine SAND, little Clay and Gravel, loose, moist to wet, SM		PP = 1.3 - 4.0 tsf	
12				4					
13				5					
14				7					GLACIAL TILL
15									
16	S-5	24/21	15-17	3		Gray Silty fine SAND, little Gravel, little to trace Clay, compact, damp to moist, SM			
17				9					
18				10					
19				14	13.5	Trace white weathered rock in tip			(PROBABLE) BEDROCK
20						End of Boring at 17.0 ft - Auger refusal			
21									
22									

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft			
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			

						SOIL BORING LOG		Boring #: SB-11	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 1	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 42 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/8/2023 Date Completed: 2/8/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/8/2023			None observed		
Method: 2 1/4" HSA		Hammer: 140 lb							
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					41.5	6" Pavement			PAVEMENT
1	S-1	24/17	1-3	4	40.5	Brown SAND, some Silt, little Gravel, trace weathered rock, loose, damp to moist, SM			FILL
2				5		Olive brown Silty fine SAND, little Gravel, trace Clay, slightly mottled, compact, damp to moist, SM			GLACIAL TILL
3				7					
4	S-2	24/15	3-5	6		Olive brown Silty fine SAND, little Gravel, trace Clay and weathered rock seams, compact, damp to moist, SM			
5				12		Little Clay at 3.8 ft			
6				12		Few Cobbles in drilling to 4 ft			
7	S-3	24/22	5-7	4		Olive brown Silty fine SAND, some to little Clay, little Gravel, slightly mottled, compact, damp to moist, SM-SC		PP = 3.3 - 4.5 tsf	
8				7					
9				9		Cobbles in drilling at 9 ft			
10									
11	S-4	24/24	10-12	4		Gray Silty fine SAND, some to little Clay, little to trace Gravel, loose, moist, SM-SC		PP = 3.5 - 3.8 tsf	
12				5					
13				6					
14				12					
15									
16	S-5	24/21	15-17	6		Gray fine SAND, some Silt, little Clay and Gravel, compact, damp to moist, SM			
17				9					
18				10					
19				13					
20									
21	S-6	24/24	20-22	5		Gray Silty fine SAND, little Clay and Gravel, compact, damp to moist, SM			
22				8					
				10					
				13	20				
End of Boring at 22 ft - No refusal									
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		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		Bedrock Joints			
5-10	Loose	2-4	Soft	5-15% Little		Shallow = 0 to 35 degrees			
11-30	Compact	5-8	Firm	15-30% Some		Dipping = 35 to 55 degrees			
31-50	Dense	9-15	Stiff	> 30% With		Steep = 55 to 90 degrees			
>50	V. Dense	16-30	V. Stiff			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			
		>30	Hard			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			

						SOIL BORING LOG		Boring #: SB-12 GW-5	
Project: Bayside Development						Project #: 22504			
Location: Lancaster and Elm Street						Sheet: 1 of 1			
City, State: Portland, ME						Chkd by: WMP			
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 18 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/7/2023 Date Completed: 2/7/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/10/2023	2.8 ft	15.2 ft +/-	Measured in well		
Method: 3 1/4" HSA		Hammer: 140 lb		2/24/2023	2.8 ft	15.2 ft +/-	Measured in well		
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					17.5	6" Pavement		GRAVEL/PAVE BENTONITE BACKFILL	PAVEMENT
1	S-1	24/20	1-3	8	16.5	Black SAND with Gravel, some asphalt, trace brick, SP			FILL
2				3		Brownish gray Silty CLAY, some fine Sand, firm, moist to wet, CL			GLACIAL MARINE
3				4				Riser	
3	S-2	24/18	3-5	6		Olive brown Silty fine SAND, some Clay, slightly mottled, compact, moist to wet, SM-SC			
4				8					
5				4					
5	S-3	24/21	5-7	1	13	Gray Silty fine-medium SAND, some Clay, little Gravel, very loose, moist to wet, SM-SC			GLACIAL TILL
6				2					
7				2					
8									
9									
10									
10	S-4	24/19	10-12	4		Gray Silty fine SAND, some to little Clay, little Gravel, loose, moist, SM-SC			
11				3					
12				6					
12				7					
13									
14									
15									
15	S-5	24/19	15-17	3		Gray Silty fine SAND, some to little Clay, little Gravel, loose, moist to wet, SM-SC			
16				4					
17				6					
17				7					
18									
19						Hard drilling at 18.5 ft			
20									
20	S-6	24/24	20-22	4		Gray Silty fine SAND, some to little Clay, little Gravel, compact, moist to wet, SM-SC			
21				9					
22				9					
22				12	-4				
End of Boring at 22 ft - No refusal									
Granular Soils		Cohesive Soils		% Composition		NOTES:		Soil Moisture Condition	
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength		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		Bedrock Joints			
5-10	Loose	2-4	Soft	5-15% Little		Shallow = 0 to 35 degrees			
11-30	Compact	5-8	Firm	15-30% Some		Dipping = 35 to 55 degrees			
31-50	Dense	9-15	Stiff	> 30% With		Steep = 55 to 90 degrees			
>50	V. Dense	16-30	V. Stiff			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			
		>30	Hard			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			

						SOIL BORING LOG		Boring #: SB-15	
Project: Bayside Development						Project #:		22504	
Location: Lancaster and Elm Street						Sheet:		1 of 1	
City, State: Portland, ME						Chkd by:		WMP	
Drilling Co: Summit Geoengineering Services, Inc.						Boring Elevation 43 ft +/-			
Driller: S. Floyd						Reference: Topographic Survey, Bayside Parcels, Owen Haskell Inc., 12/8/22			
Summit Staff: C. Plante, EI						Date started: 2/9/2023 Date Completed: 2/9/2023			
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS PP		Length: 24" SS		Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		2/9/2023			None observed		
Method: 2 1/4" HSA		Hammer: 140 lb							
Hammer Style: Automatic		Method: ASTM D1586							
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
					42.5	6" Pavement			PAVEMENT
1	S-1	24/19	0.5-2.5	5	42	Lt brn f SAND, sm Silt, tr Gravel & asphalt, loose, moist, SM			FILL
				6		Olive brown Silty fine SAND, little to trace Clay, little Gravel, loose, moist, SM			GLACIAL TILL
2				6					
				7					
3	S-2	24/24	2.5-4.5	8		Olive brown Silty fine SAND, some to little Clay, little Gravel, trace weathered rock, slightly mottled, comact, moist, SM-SC			
				8					
4				9					
				14					
5									
	S-3	24/23	5-7	4		Olive brown Silty fine SAND, some to little Clay, little Gravel, trace coarse Sand seams, slightly mottled, compact, moist, SM-SC		PP = 3.0 - 4.0 tsf	
6				6					
				11					
7				14					
8									
9									
10									
	S-4	24/24	10-12	4		Gray Silty fine SAND, some to little Clay, little Gravel, loose, moist, SM-SC		PP = 1.5 - 4.0 tsf	
11				5					
				4					
12				6					
13									
14									
15						Hard drilling at 14.5 ft			
	S-5	24/24	15-17	11		Gray Silty fine SAND, some to little Clay, little Gravel, compact, moist, SM-SC			
16				12					
				9					
17				7					
18									
19									
20									
	S-6	24/11	20-22	3		Gray Silty fine SAND, little Clay and Gravel, compact, moist, SM (Gray weathered rock in tip)			(PROBABLE) BEDROCK
21				8	21.9				
				25 for 1"		End of Boring at 21.1 ft - Spoon refusal			
22									
Granular Soils		Cohesive Soils		% Composition		NOTES:			Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength			Dry: S = 0%
0-4	V. Loose	<2	V. soft	< 5% Trace		Bedrock Joints Shallow = 0 to 35 degrees			Humid: S = 1 to 25%
5-10	Loose	2-4	Soft	5-15% Little		Dipping = 35 to 55 degrees			Damp: S = 26 to 50%
11-30	Compact	5-8	Firm	15-30% Some		Steep = 55 to 90 degrees			Moist: S = 51 to 75%
31-50	Dense	9-15	Stiff	> 30% With		Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches			Wet: S = 76 to 99%
>50	V. Dense	16-30	V. Stiff			Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200			Saturated: S = 100%
		>30	Hard						

Appendix C

Laboratory Results



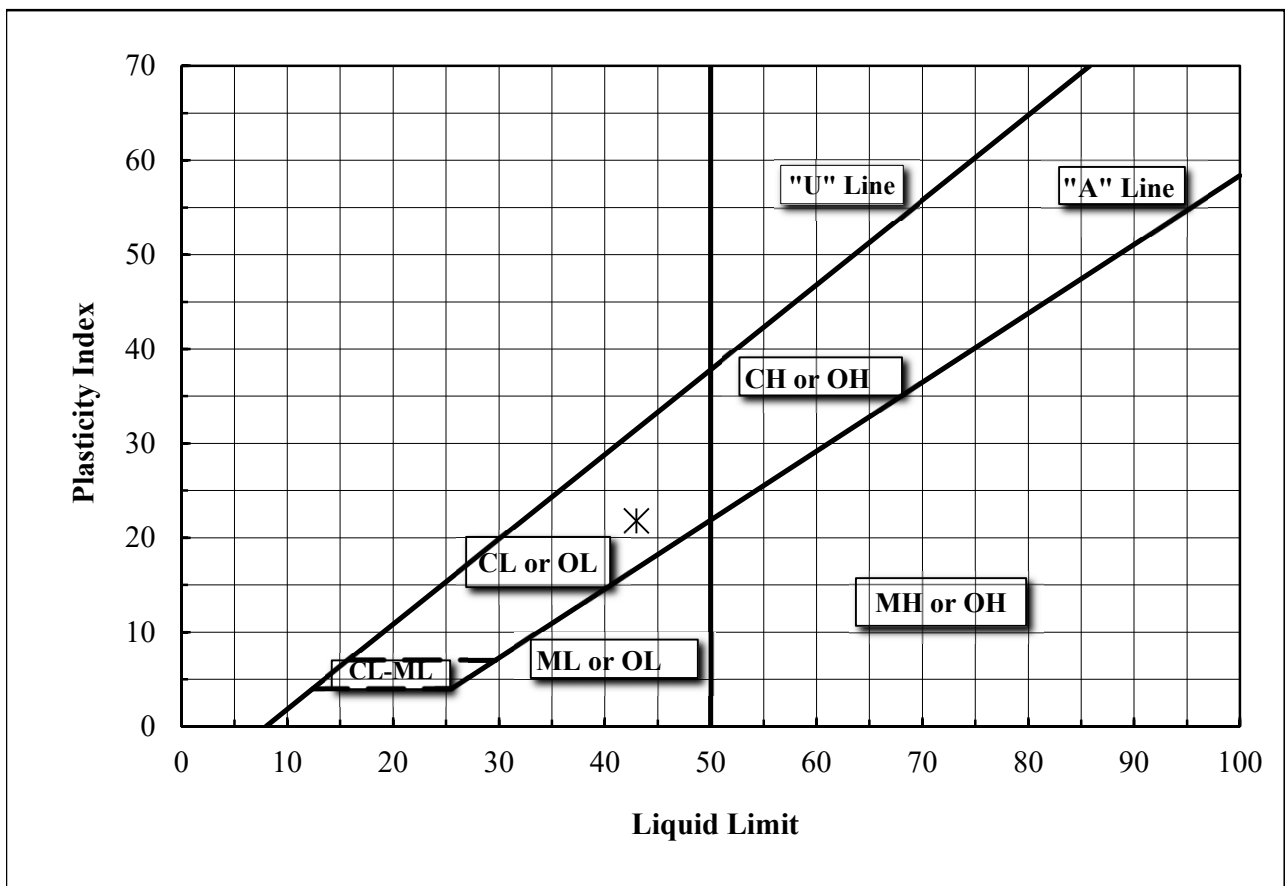
ATTERBERG LIMIT TEST - ASTM D4318

Method "A" (Multi-point)

PROJECT NAME:	Bayside Development	PROJECT NUMBER:	22504
LOCATION:	Lancaster and Elm Street, Portland, ME	SAMPLE NUMBER:	S-4
CLIENT:	Tom Watson & Co.	DEPTH:	15' to 17'
TEST DATE:	3/10/2023	TECHNICIAN:	C. Plante, EI

DATA

Source	Depth	LL	PL	PI	Classification
SB-5	15' to 17'	43	21	22	Gray Silty CLAY, trace fine Sand and organic streaks, very soft, wet, CL



Notes: Moisture Content = 46%

Reviewed By: ELS

Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344



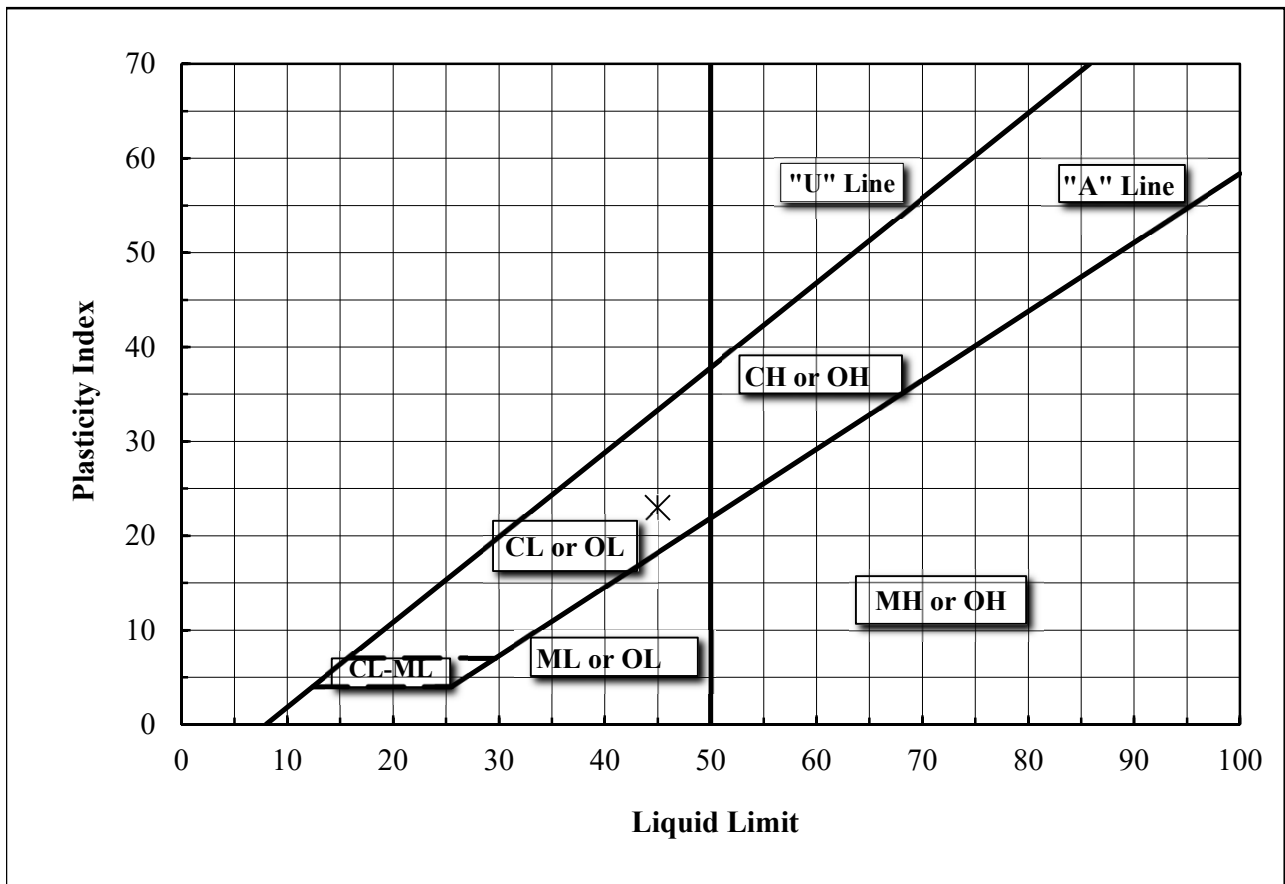
ATTERBERG LIMIT TEST - ASTM D4318

Method "A" (Multi-point)

PROJECT NAME:	Bayside Development	PROJECT NUMBER:	22504
LOCATION:	Lancaster and Elm Street, Portland, ME	SAMPLE NUMBER:	S-6
CLIENT:	Tom Watson & Co.	DEPTH:	20' to 22'
TEST DATE:	3/10/2023	TECHNICIAN:	C. Plante, EI

DATA

Source	Depth	LL	PL	PI	Classification
SB-7	20' to 22'	45	22	23	Gray Silty CLAY, trace fine Sand and organic streaks, very soft, wet, CL



Notes: Moisture Content = 45.8%

Reviewed By: ELS

Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344



Laboratory Determination of Water (Moisture) Content of Soil ASTM D2216

PROJECT NAME:	Bayside Development	PROJECT #:	22504
PROJECT LOCATION:	Lancaster and Elm Street, Portland, ME	DRYING METHOD:	Oven Dried
CLIENT:	Tom Watson & Co.	DESCRIPTION:	Glacial Marine
SOURCE:	Borings	TECHNICIAN:	C. Plante, EI
COLLECTION DATE:	02/09/23	TESTING DATE:	03/10/23

<u>Location</u>	<u>Sample No.</u>	<u>Depth</u>	<u>Moisture Content</u>	<u>Remarks</u>
SB-1	S-4	10 to 12	33.5%	
SB-1	S-5	15 to 17	41.6%	
SB-1	S-6	20 to 22	44.3%	
SB-5	S-3	10 to 12	36.5%	
SB-5	S-4	15 to 17	46.0%	(Atterberg Limit)
SB-7	S-5	15 to 17	38.3%	
SB-7	S-6	20 to 22	45.8%	(Atterberg Limit)

REMARKS:

Reviewed By: ELS

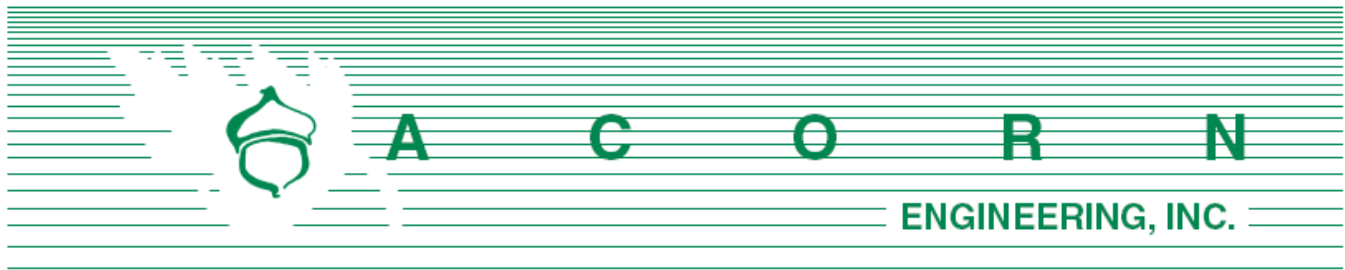
Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344

SECTION J

STORMWATER MANAGMENT REPORT

Attachment F: Post-Construction Stormwater Inspection & Maintenance Plan





POST CONSTRUCTION - STORMWATER INSPECTION & MAINTENANCE PLAN

Prepared For:

**89 Elm St. LLC
188 State Street, 3rd Floor
Portland, Maine 04104**

Prepared By:

**Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104**



April 2023

RESPONSIBLE PARTY

The owner, 89 Elm Street LLC, and/or their successor shall be responsible for contracting with a qualified stormwater professional to implement the Inspection and Maintenance Plan. The qualified stormwater professional shall maintain a stormwater log (report) summarizing inspections, maintenance, and corrective action taken. The Qualified Stormwater Professional shall annually submit the Stormwater Log to the Department of Public Services prior to June 30th.

The following is an example of a qualified stormwater professional that the owner may contract through.

Organization: Acorn Engineering, Inc.
Attn: Will Savage, PE
Portland, Maine

Phone: (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 inspection and maintenance criteria are based upon the Maine DEP - Stormwater Management for Maine, Volume III: BMPs Technical Design Manual. Refer to the Grading and Drainage Plan for the location of the BMPs.

PURPOSE

This Inspection and Maintenance Plan has been individually tailored to this parcel's stormwater infrastructure, site characteristics, and their respective opportunities and limitations related to reducing the pollutant load on the receiving watershed. The maintenance of a parcel's impervious surfaces and stormwater infrastructure is critical to extending the long-term performance and effectiveness of Best Management Practices (BMPs). The Inspection and Maintenance Plan represents the parcel's minimum activities to meet the permit requirements. The parcel shall still be subject to any applicable Civil Site Plans, Permit Applications, Erosion and Sedimentation Control Plans Reports, Stormwater Management Plans, Inspection and Maintenance Manuals, and all Municipal, State, and Federal rules.



OPERATION AND MAINTENANCE ACTIVITY

StormFilter Cartridges:

Inspection and Maintenance shall be conducted per the Contech StormFilter Inspection and Maintenance Procedures manual. General inspection and maintenance information for the StormFilter and StormFilter cartridges is provided below.

StormFilter Systems to be inspected at least once every six months, and filters maintained annually per the manufacturer's guidelines.

- Conducting inspections during a rain event is desirable to observe relative flow through the filter cartridges.
 - If cartridges are plugged with sediment and little flow is being discharged from the drainage pipes, then, maintenance is warranted, and the cartridges need to be replaced.
- In addition to the above circumstance, maintenance may also be warranted based on the following conditions.
 - >4" of sediment* accumulation on vault door.
 - >1/4" of sediment* accumulation on top of cartridge.
 - >4" of static water above cartridge bottom for more than 24 hours after end of rain event.
 - Plugged Media; pore space between media granules is absent.
 - StormFilter remain in bypass condition during average rainfall event.
 - Hazardous material release is reported in or around the StormFilter.
 - Pronounced scum line (>1/4" thick) is present above top cap.

If maintenance is to be performed, maintenance personnel shall follow all applicable OSHA safety regulations including but not limited to confined space entry. Maintenance shall be completed in agreement with the methods outlined in the Contech StormFilter Inspection and Maintenance Procedures. Any inspection or maintenance done to the StormFilter shall be accompanied by a detailed inspection/maintenance report.

*Sediment deposition depths and patterns within the StormFilter are likely to be quite different compared to systems without upstream storage and therefore shouldn't be used exclusively to evaluate a need for maintenance.

Subsurface R-Tank Storage Chambers:

Inspection and Maintenance shall be conducted per the R-Tank Operation, Inspection and Maintenance manual. General inspection and maintenance information for the R-Tank system is provided below.

R-Tank Systems to be inspected at least once annually (six months during the first year of operation). Inspections may be required more frequently for pre-treatment systems.

- All access points shall be examined including to complete a thorough inspection.
 - Inspection ports – Usually located centrally in the R-Tank System, are perforated columns designed to give the user a base-line sediment depth across the system floor.
 - Maintenance ports – Usually located near inlet and outlet connections, will likely have deeper deposits of heavier sediments.



- Pipes – check for sediment or debris in the pipe connecting to the R-Tank
- Manholes – Usually located at the inlet and outlet. If there is more than one location where stormwater enters the system then there will be additional manholes to inspect.
 - Manholes often include a sump below the invert of the pipe connecting to the R-Tank. Existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.
- If sediment or debris is observed in any of these structures the depth of the material shall be logged and kept on file.
- Maintenance of the R-Tank System should be conducted once sediment accumulation has reached 6" or 15% of the total system height.

If maintenance is to be performed, maintenance personnel shall follow all applicable OSHA safety regulations including but not limited to confined space entry. Maintenance shall be completed in agreement with the methods outlined in the R-Tank Operation, Inspection and Maintenance manual. Any inspection or maintenance done to the R-Tank System shall be accompanied by a detailed inspection/maintenance report.

Sweeping:

Annual sweeping of the driveways and parking areas following the snow melt for accumulated winter sand, if necessary. Appropriately dispose of all collected material.

General Operation:

Facility operations including but not limited to salt storage shall occur within the maintenance building or offsite at an appropriate area. Vehicle oil changes shall be performed inside the building or at an appropriate offsite area.

Catch Basins:

Catch basins shall be inspected to confirm that the structure is operating properly.

- Inspect the presence of accumulated sediment or debris any sediment shall be removed. The equipment shall meet the following minimum specifications; power jet and water source for washing down the storm drain, vacuum attachment for catch basin cleaning, and a liquid handling method to dewater the material.
- Sediment shall be removed when accumulation is within 12 inches of the outfall pipe invert. Legally dispose of accumulated sediment and debris from the bottom of the basin, inlet grates, and inflow channels to the basin.

Landscaped and Vegetated Areas:

Inspect all landscaped and or vegetated slopes and embankments on an annual basis. Vegetated areas with bare areas or sparse growth (<90% coverage) shall be revegetated. Mulch shall be applied to landscaped areas, as necessary. Dead or decaying landscaping (ground cover, shrubs, trees etc.) shall be replanted in accordance with the contract documents.



Absorbent Boom:

Absorbent booms shall be replaced periodically to ensure effective removal of petroleum oils per manufacturer's recommendations. Ensure booms are secured and anchored upon replacement.

- Inspect and ensure boom systems are secured and anchored in periodically.
- Booms shall be replaced approximately every six months. Replacement and inspection interval dependent on owners' observations of pollutant load in addition to the manufacturer's recommendations of the final product selected.
- Appropriately dispose of all collected material

INSPECTION AND MAINTENANCE TABLE

Inspection and Maintenance Frequency	Spring or Yearly	Summer	Fall	As Necessary
StormFilter Cartridges	X			X
R-Tank	X		X	X
Sweeping	X			X
Catch Basins			X	X
Landscaped/Vegetated Areas	X	X		X



Post-Construction Stormwater BMP Inspection Log

CATCH BASINS:							
Location: 89 Elm Street, Portland Maine 04101				Latitude:			
				Longitude:			
Description of Located Point: See Sheet C-20 & C-30				Inspector:			
				Date of Inspection:			
DOT Region:				Weather Conditions:			
MATS Asset Number:		WIN:		Design Drawings:			
Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Catch Basins							
Catch basin is working properly and is free of debris and sediment	☒	☒	☒	☐ Yes ☐ No ☐ N/A			
Basin outlet hood (if any) is working properly.	☒	☐	☒	☐ Yes ☐ No ☐ N/A			
Inter-basin storm drain is functioning properly and free of sediment and debris.	☒	☐	☒	☐ Yes ☐ No ☐ N/A			
Sediment sacks and hydrocarbon absorptive pads are working properly.	☒	☐	☒	☐ Yes ☐ No ☐ N/A			
General							
Access to facility is adequate	☒	☐	☐	☐ Yes ☐ No ☐ N/A			
Photographs of most recent site inspection are included	☒	☐	☐				
Additional Comments:							



R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you **MUST** follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports

Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports

Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes

Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does **NOT** necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

R-TANK OPERATION INSPECTION & MAINTENANCE

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).



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Richmond, Virginia, 23234
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Step-By-Step Inspection & Maintenance Routine

1) Inspection

- a. Inspection Port
 - i. Remove Cap
 - ii. Use flashlight to detect sediment deposits
 - iii. If present, measure sediment depth with stadia rod
 - iv. Record results on Maintenance Log
 - v. Replace Cap
- b. Maintenance Port/s
 - i. Remove Cap
 - ii. Use flashlight to detect sediment deposits
 - iii. If present, measure sediment depth with stadia rod
 - iv. Record results on Maintenance Log
 - v. Replace Cap
 - vi. Repeat for ALL Maintenance Ports
- c. Adjacent Manholes
 - i. Remove Cover
 - ii. Use flashlight to detect sediment deposits
 - iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
 - iv. Inspect pipes connecting to R-Tank
 - v. Record results on Maintenance Log
 - vi. Replace Cover
 - vii. Repeat for ALL Manholes that connect to the R-Tank

2) Maintenance

- a. Plug system outlet to prevent discharge of back-flush water
- b. Determine best location to pump out back-flush water
- c. Remove Cap from Maintenance Port
- d. Pump water as rapidly as possible (without over-topping port) into system until at least 1" of water covers system bottom
- e. Replace Cap
- f. Repeat at ALL Maintenance Ports
- g. Pump out back-flush water to complete back-flushing
- h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
- i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
- j. Replace any remaining Caps or Covers
- k. Record the back-flushing event in your Maintenance Log with any relevant specifics



**Company Responsible
for Maintenance:** _____

Contact: _____

Phone Number: _____

[illegible]

StormFilter Inspection and Maintenance Procedures



Maintenance Guidelines

The primary purpose of the Stormwater Management StormFilter® is to filter and prevent pollutants from entering our waterways. Like any effective filtration system, periodically these pollutants must be removed to restore the StormFilter to its full efficiency and effectiveness.

Maintenance requirements and frequency are dependent on the pollutant load characteristics of each site. Maintenance activities may be required in the event of a chemical spill or due to excessive sediment loading from site erosion or extreme storms. It is a good practice to inspect the system after major storm events.

Maintenance Procedures

Although there are many effective maintenance options, we believe the following procedure to be efficient, using common equipment and existing maintenance protocols. The following two-step procedure is recommended::

1. Inspection

- Inspection of the vault interior to determine the need for maintenance.

2. Maintenance

- Cartridge replacement
- Sediment removal

Inspection and Maintenance Timing

At least one scheduled inspection should take place per year with maintenance following as warranted.

First, an inspection should be done before the winter season. During the inspection the need for maintenance should be determined and, if disposal during maintenance will be required, samples of the accumulated sediments and media should be obtained.

Second, if warranted, a maintenance (replacement of the filter cartridges and removal of accumulated sediments) should be performed during periods of dry weather.

In addition to these two activities, it is important to check the condition of the StormFilter unit after major storms for potential damage caused by high flows and for high sediment accumulation that may be caused by localized erosion in the drainage area. It may be necessary to adjust the inspection/maintenance schedule depending on the actual operating conditions encountered by the system. In general, inspection activities can be conducted at any time, and maintenance should occur, if warranted, during dryer months in late summer to early fall.

Maintenance Frequency

The primary factor for determining frequency of maintenance for the StormFilter is sediment loading.

A properly functioning system will remove solids from water by trapping particulates in the porous structure of the filter media inside the cartridges. The flow through the system will naturally decrease as more and more particulates are trapped. Eventually the flow through the cartridges will be low enough to require replacement. It may be possible to extend the usable span of the cartridges by removing sediment from upstream trapping devices on a routine as-needed basis, in order to prevent material from being re-suspended and discharged to the StormFilter treatment system.

The average maintenance lifecycle is approximately 1-5 years. Site conditions greatly influence maintenance requirements. StormFilter units located in areas with erosion or active construction may need to be inspected and maintained more often than those with fully stabilized surface conditions.

Regulatory requirements or a chemical spill can shift maintenance timing as well. The maintenance frequency may be adjusted as additional monitoring information becomes available during the inspection program. Areas that develop known problems should be inspected more frequently than areas that demonstrate no problems, particularly after major storms. Ultimately, inspection and maintenance activities should be scheduled based on the historic records and characteristics of an individual StormFilter system or site. It is recommended that the site owner develop a database to properly manage StormFilter inspection and maintenance programs..





Inspection Procedures

The primary goal of an inspection is to assess the condition of the cartridges relative to the level of visual sediment loading as it relates to decreased treatment capacity. It may be desirable to conduct this inspection during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, then typically large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, then maintenance is warranted and the cartridges need to be replaced.

Warning: In the case of a spill, the worker should abort inspection activities until the proper guidance is obtained. Notify the local hazard control agency and Contech Engineered Solutions immediately.

To conduct an inspection:

Important: Inspection should be performed by a person who is familiar with the operation and configuration of the StormFilter treatment unit and the unit's role, relative to detention or retention facilities onsite.

1. If applicable, set up safety equipment to protect and notify surrounding vehicle and pedestrian traffic.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the access portals to the vault and allow the system vent.
4. Without entering the vault, visually inspect the inside of the unit, and note accumulations of liquids and solids.
5. Be sure to record the level of sediment build-up on the floor of the vault, in the forebay, and on top of the cartridges. If flow is occurring, note the flow of water per drainage pipe. Record all observations. Digital pictures are valuable for historical documentation.
6. Close and fasten the access portals.
7. Remove safety equipment.
8. If appropriate, make notes about the local drainage area relative to ongoing construction, erosion problems, or high loading of other materials to the system.
9. Discuss conditions that suggest maintenance and make decision as to whether or not maintenance is needed.

Maintenance Decision Tree

The need for maintenance is typically based on results of the inspection. The following Maintenance Decision Tree should be used as a general guide. (Other factors, such as Regulatory Requirements, may need to be considered).

Please note Stormwater Management StormFilter devices installed downstream of, or integrated within, a stormwater storage facility typically have different operational parameters (i.e. draindown time). In these cases, the inspector must understand the relationship between the retention/detention facility and the treatment system by evaluating site specific civil engineering plans, or contacting the engineer of record, and make adjustments to the below guidance as necessary. Sediment deposition depths and patterns within the StormFilter are likely to be quite different compared to systems without upstream storage and therefore shouldn't be used exclusively to evaluate a need for maintenance.

1. Sediment loading on the vault floor.
 - a. If $>4"$ of accumulated sediment, maintenance is required.
2. Sediment loading on top of the cartridge.
 - a. If $>1/4"$ of accumulation, maintenance is required.
3. Submerged cartridges.
 - a. If $>4"$ of static water above cartridge bottom for more than 24 hours after end of rain event, maintenance is required. (Catch basins have standing water in the cartridge bay.)
4. Plugged media.
 - a. While not required in all cases, inspection of the media within the cartridge may provide valuable additional information.
 - b. If pore space between media granules is absent, maintenance is required.
5. Bypass condition.
 - a. If inspection is conducted during an average rain fall event and StormFilter remains in bypass condition (water over the internal outlet baffle wall or submerged cartridges), maintenance is required.
6. Hazardous material release.
 - a. If hazardous material release (automotive fluids or other) is reported, maintenance is required.
7. Pronounced scum line.
 - a. If pronounced scum line (say $\geq 1/4"$ thick) is present above top cap, maintenance is required.

Maintenance

Depending on the configuration of the particular system, maintenance personnel will be required to enter the vault to perform the maintenance.

Important: If vault entry is required, OSHA rules for confined space entry must be followed.

Filter cartridge replacement should occur during dry weather. It may be necessary to plug the filter inlet pipe if base flows is occurring.

Replacement cartridges can be delivered to the site or customers facility. Information concerning how to obtain the replacement cartridges is available from Contech Engineered Solutions.

Warning: In the case of a spill, the maintenance personnel should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and Contech Engineered Solutions immediately.

To conduct cartridge replacement and sediment removal maintenance:

1. If applicable, set up safety equipment to protect maintenance personnel and pedestrians from site hazards.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the doors (access portals) to the vault and allow the system to vent.
4. Without entering the vault, give the inside of the unit, including components, a general condition inspection.
5. Make notes about the external and internal condition of the vault. Give particular attention to recording the level of sediment build-up on the floor of the vault, in the forebay, and on top of the internal components.
6. Using appropriate equipment offload the replacement cartridges (up to 150 lbs. each) and set aside.
7. Remove used cartridges from the vault using one of the following methods:

Method 1:

- A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Disconnect each filter cartridge from the underdrain connector by rotating counterclockwise 1/4 of a turn. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.

Using appropriate hoisting equipment, attach a cable from the boom, crane, or tripod to the loose cartridge. Contact Contech Engineered Solutions for suggested attachment devices.

- B. Remove the used cartridges (up to 250 lbs. each) from the vault.



Important: Care must be used to avoid damaging the cartridges during removal and installation. The cost of repairing components damaged during maintenance will be the responsibility of the owner.

- C. Set the used cartridge aside or load onto the hauling truck.
- D. Continue steps a through c until all cartridges have been removed.

Method 2:

- A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Disconnect each filter cartridge from the underdrain connector by rotating counterclockwise 1/4 of a turn. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.
- B. Unscrew the cartridge cap.
- C. Remove the cartridge hood and float.
- D. At location under structure access, tip the cartridge on its side.
- E. Empty the cartridge onto the vault floor. Reassemble the empty cartridge.
- F. Set the empty, used cartridge aside or load onto the hauling truck.
- G. Continue steps a through e until all cartridges have been removed.

8. Remove accumulated sediment from the floor of the vault and from the forebay. This can most effectively be accomplished by use of a vacuum truck.
9. Once the sediments are removed, assess the condition of the vault and the condition of the connectors.
10. Using the vacuum truck boom, crane, or tripod, lower and install the new cartridges. Once again, take care not to damage connections.
11. Close and fasten the door.
12. Remove safety equipment.
13. Finally, dispose of the accumulated materials in accordance with applicable regulations. Make arrangements to return the used **empty** cartridges to Contech Engineered Solutions.

Related Maintenance Activities - Performed on an as-needed basis

StormFilter units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

In order for maintenance of the StormFilter to be successful, it is imperative that all other components be properly maintained. The maintenance/repair of upstream facilities should be carried out prior to StormFilter maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads.

Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.



Inspection Report

Date: _____ Personnel: _____

Location: _____ System Size: _____ Months in Service: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other: _____

Sediment Thickness in Forebay: _____ Date: _____

Sediment Depth on Vault Floor: _____

Sediment Depth on Cartridge Top(s): _____

Structural Damage: _____

Estimated Flow from Drainage Pipes (if available): _____

Cartridges Submerged: Yes ☐ No ☐ Depth of Standing Water: _____

StormFilter Maintenance Activities (check off if done and give description)

☐ Trash and Debris Removal: _____

☐ Minor Structural Repairs: _____

☐ Drainage Area Report _____

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

Items Needing Further Work: _____

Owners should contact the local public works department and inquire about how the department disposes of their street waste residuals.

Other Comments:

Review the condition reports from the previous inspection visits.

StormFilter Maintenance Report

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other: _____

List Safety Procedures and Equipment Used: _____

System Observations

Months in Service: _____

Oil in Forebay (if present): Yes ☐ No ☐

Sediment Depth in Forebay (if present): _____

Sediment Depth on Vault Floor: _____

Sediment Depth on Cartridge Top(s): _____

Structural Damage: _____

Drainage Area Report

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

StormFilter Cartridge Replacement Maintenance Activities

Remove Trash and Debris: Yes ☐ No ☐ Details: _____

Replace Cartridges: Yes ☐ No ☐ Details: _____

Sediment Removed: Yes ☐ No ☐ Details: _____

Quantity of Sediment Removed (estimate?): _____

Minor Structural Repairs: Yes ☐ No ☐ Details: _____

Residuals (debris, sediment) Disposal Methods: _____

Notes:



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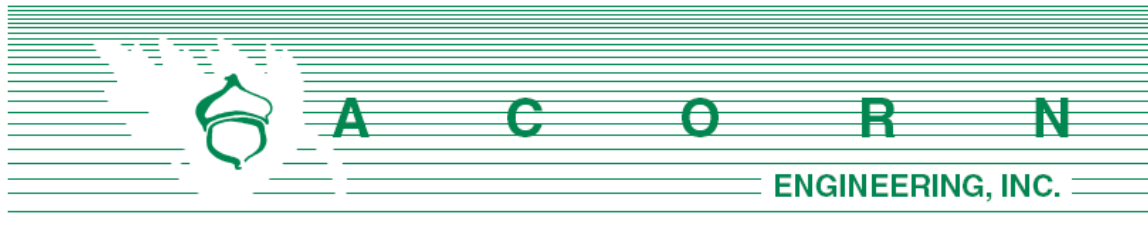
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Support

- Drawings and specifications are available at www.conteches.com.
- Site-specific design support is available from our engineers.

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K. EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

**89 Elm Street LLC
188 State Street, 3rd Floor
Portland, Maine 04104**

Prepared By:

**Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104**



April 2023

INTRODUCTION

Acorn Engineering, Inc. has been retained by 89 Elm LLC, to provide civil engineering services for the proposed development at 89 Elm Street in Portland, Maine. The property consists of approximately 0.81 acres of land to be transformed into an 8-story building primarily for residential use with retail and restaurant space on the first floor. The project will reside at Map, Book Lot (033 H006001) whose lot line will be adjusted to encompass the entire development. Parcels 033 H018001 and 033 H009001 will be merged into one parcel whose area will remain outside the building footprint.

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 project site is bordered by Elm Street, Lancaster Street, Cedar Street, and Oxford Street. A boundary plan has been prepared by Owen Haskell Inc., dated December 8th, 2022, last revised March 29th, 2023.

The applicable zoning districts are B3 Downtown Business and R6 Residential Zone and within the Bayside Height Overlay Zone.

The site currently consists of a .81-acre parcel with approximately .64-acres used as a surface parking lot. Currently the lots pavement slopes ranging up to 9% with From Oxford Street to Lancaster and appears to be primarily draining to the Lancaster and Elm Street intersection.

The site is currently developed greater than 50 percent and does not contain or propose onsite wastewater. Proposed stormwater management features on site are to be lined and will not be infiltration systems. Please refer to the Stormwater Management Report for and plan details for more information on the proposed systems.

It is our understanding that the site is not located within any protected natural resources or within the watershed of an urban impaired stream. Therefore, per City standards this document intends to comply with the Basic standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules.

1.1 Existing Soils

Onsite soil information derived from the following resources:



- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey
- Geotechnical Report prepared by Summit Geoengineering Services, dated 3/24/23

Summit Geoengineering Services (SGS) conducted a geotechnical investigation for the site concluded on March 24th, 2023. SGS's scope of work consisted of the observations of fifteen test borings, five observation wells, laboratory testing, and the preparation of the attached geotechnical report summarizing their findings. Please refer to the geotechnical report prepared by Summit Geoengineering services analysis and site recommendations. As addressed in SGS's report, an environmental assessment was performed by TRC companies, Companies the report is forthcoming.

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

Table 1 - "K" Value		
Soils Type	Subsurface	Substratum
Au Gres Loamy Sand	0.15	0.15
Deerfield Loamy Fine Sand	0.20	0.20
Hinckley loamy Sand	0.17	0.17

The soil "K" value for the soil, listed above, shows a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although 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 on site that may require special attention during construction would be primarily at locations where existing retaining and block walls are being removed or reconstructed.

1.4 Protected Natural Resource

The client is not aware of the presence of any existing significant natural features located on the site as listed in Section 14-526 (b) 1. of the Land Use Code. The project



is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

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

1.6 Timber Harvesting

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

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

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

2.1 Temporary Erosion Control Measures

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

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

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

2.1.2 Siltation fence or erosion control berm shall be installed downgradient 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 large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam. When time for removal, it is recommended that silt fences be removed by cutting the fence material at ground level to avoid additional soil disturbance.

- 2.1.3 Hay mulch, including hydroseeding, is intended to provide cover for denuded or seeded areas until revegetation is established. Temporary mulch should be applied to areas that will not be actively worked for more than 14 days (7 days in sensitive areas). 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 Elm, Lancaster, Cedar, and Oxford 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. All sweeping conducted shall not be sweep into the existing wetland.

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. Frequent reapplication of water may be necessary to mitigate dust occurring on warm sunny days, the distribution of water should not cause turbid runoff. Sweeping of paved road surface should occur during dry conditions and shall be swept from the centerline to the edge of the travel way, and shall not to be swept into a waterbody or wetland. Public roads may also require sweeping when necessary.

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 Elm 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



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

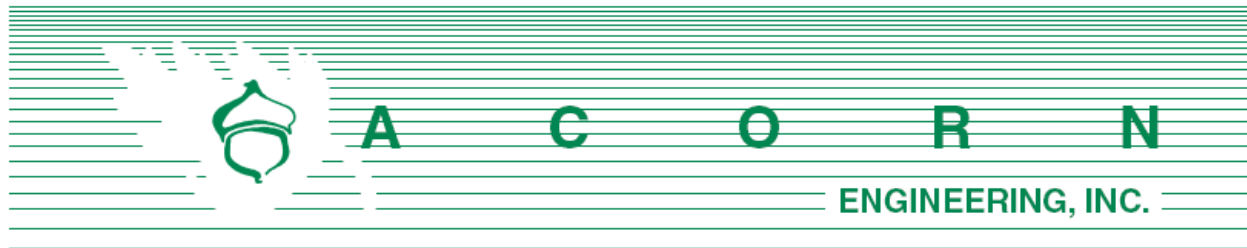
Mulching

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.





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

April 4, 2023

Subject: 89 Elm Street Redevelopment– Fire Department Checklist
 Section L of Application

On behalf of 89 Elm, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

89 Elm, LLC
 188 State Street, 3rd Floor
 Portland, Maine 04101
 (207) 939-5432

2. Name, address, telephone number of architect

Ryan Senatore Architecture
 500 Congress Street, Suite 2
 Portland, ME 04101
 (207) 650-6414

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

NFPA: Apartments/Mercantile IBC: R2 and M

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

Proposed Building		
Ground	9,365	sf
2 nd Floor	18,156	sf
3 rd & 4 th Floor	24,882	sf
5 th & 6 th Floor	24,489	sf
7 th Floor	21,801	sf
8 th Floor	13,565	sf
Total	161,629	sf



5. Elevation of all structures

The proposed building height, based upon IBC's average grade plane method, is 76.54' which is consistent with the Bayside Height Overlay allowance.

6. Proposed fire protection of all structures

The building will be serviced by an 8" sprinkler service with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

7. Hydrant locations

Existing located along Lancaster Street, one located at the corner of Lancaster and Cedar Street. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

8. Water main size and location

The redevelopment is anticipated to be serviced by the existing water main within Lancaster Street. An 8" fire line, 4" domestic line, and 2" domestic line will serve the proposed development. The building is expected to have internal sprinkler risers and a Fire Department pump connection.

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

Access to the structure is provided directly on the public right-of-way along Oxford, Elm, and Lancaster Streets.

10. Code summaries will be provided by the Architects upon request.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

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

- Lancaster Street: 35.93' wide and 19.93' wide between parking stalls and edge of pavement.
- Cedar Street: 20.7 feet wide and 11.7 feet wide between parking stall and edge of pavement.
- Oxford Street: 31.6 feet and 23.6 feet wide between parking stall and edge of pavement.
- Elm Street: 30.6 feet and 11.6 feet wide between the bike lane and edge of pavement.



Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety

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

Response: Not applicable

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

Response: The building is accessible from at least 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 a circuitous route through the site 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: The proposed elevators will meet this requirement.

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

Response: The applicant is currently working 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,



Sam Lebel, P.E.
Project Manager
Acorn Engineering, Inc.



M. Calculation of Wastewater Flowrate

The proposed project will include the redevelopment of a site that is currently occupied by an existing parking lot used for vehicles. The existing parking lot will be redeveloped into a mixed-use 8-story building primarily for affordable residential use with retail and restaurant space on the first floor. Based upon 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- none</i>			
<i>Proposed</i>			
Restaurant: 50 GPD per 100 square feet	4,000 sf restaurant space/ 100 sf = 40	50	2,000
Retail: Employees at place of employment with no showers (12 GPD per employee)	2 retail units (5 employees per unit)	10	120
Studio	40	120	4,800
1-bedroom	138	120	16,560
2-bedroom	23	180	4,140
Total Existing			0
Total Proposed			27,620
Net Change			+27,620 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 27,620 gallons per day. As proposed within the stormwater report, we will be providing onsite detention for an equivalent storage volume. Please see attached for the formal application template.



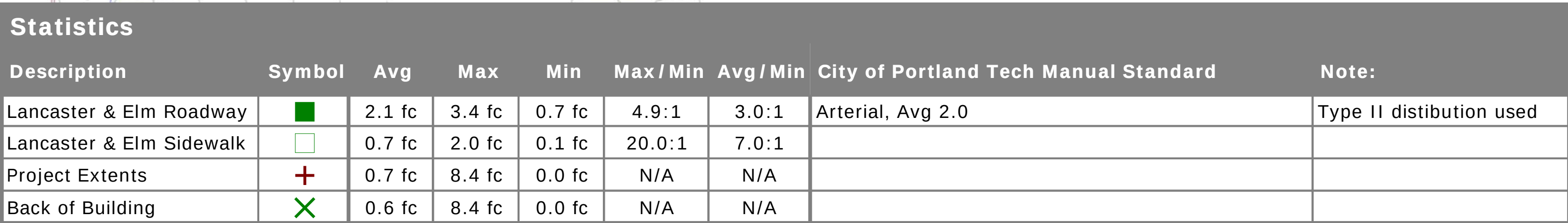
N. Lighting

The photometric plan and cut sheets for the proposed site lighting are forthcoming. The proposed lighting is to be in accordance with the City's Technical Manual. A photometric Plan and cut sheets are to be provided when available.



N. Lighting

Please find attached the photometric plan and cut sheets for the proposed site lighting.



PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

 City of Portland City of Portland City of Portland	Section 10 - Municipal Street Lighting Revision 03/2016
 PORTLAND  DATE: _____ MONTH: _____ YEAR: _____	Street & Sidewalk Lighting DECORATIVE LIGHT - PENNINSLA LEGEND 1.00 PENNINSLA 1.01 PENNINSLA 1.02 PENNINSLA 1.03 PENNINSLA 1.04 PENNINSLA 1.05 PENNINSLA 1.06 PENNINSLA 1.07 PENNINSLA 1.08 PENNINSLA 1.09 PENNINSLA 1.10 PENNINSLA 1.11 PENNINSLA 1.12 PENNINSLA 1.13 PENNINSLA 1.14 PENNINSLA 1.15 PENNINSLA 1.16 PENNINSLA 1.17 PENNINSLA 1.18 PENNINSLA 1.19 PENNINSLA 1.20 PENNINSLA 1.21 PENNINSLA 1.22 PENNINSLA 1.23 PENNINSLA 1.24 PENNINSLA 1.25 PENNINSLA 1.26 PENNINSLA 1.27 PENNINSLA 1.28 PENNINSLA 1.29 PENNINSLA 1.30 PENNINSLA 1.31 PENNINSLA 1.32 PENNINSLA 1.33 PENNINSLA 1.34 PENNINSLA 1.35 PENNINSLA 1.36 PENNINSLA 1.37 PENNINSLA 1.38 PENNINSLA 1.39 PENNINSLA 1.40 PENNINSLA 1.41 PENNINSLA 1.42 PENNINSLA 1.43 PENNINSLA 1.44 PENNINSLA 1.45 PENNINSLA 1.46 PENNINSLA 1.47 PENNINSLA 1.48 PENNINSLA 1.49 PENNINSLA 1.50 PENNINSLA 1.51 PENNINSLA 1.52 PENNINSLA 1.53 PENNINSLA 1.54 PENNINSLA 1.55 PENNINSLA 1.56 PENNINSLA 1.57 PENNINSLA 1.58 PENNINSLA 1.59 PENNINSLA 1.60 PENNINSLA 1.61 PENNINSLA 1.62 PENNINSLA 1.63 PENNINSLA 1.64 PENNINSLA 1.65 PENNINSLA 1.66 PENNINSLA 1.67 PENNINSLA 1.68 PENNINSLA 1.69 PENNINSLA 1.70 PENNINSLA 1.71 PENNINSLA 1.72 PENNINSLA 1.73 PENNINSLA 1.74 PENNINSLA 1.75 PENNINSLA 1.76 PENNINSLA 1.77 PENNINSLA 1.78 PENNINSLA 1.79 PENNINSLA 1.80 PENNINSLA 1.81 PENNINSLA 1.82 PENNINSLA 1.83 PENNINSLA 1.84 PENNINSLA 1.85 PENNINSLA 1.86 PENNINSLA 1.87 PENNINSLA 1.88 PENNINSLA 1.89 PENNINSLA 1.90 PENNINSLA 1.91 PENNINSLA 1.92 PENNINSLA 1.93 PENNINSLA 1.94 PENNINSLA 1.95 PENNINSLA 1.96 PENNINSLA 1.97 PENNINSLA 1.98 PENNINSLA 1.99 PENNINSLA 2.00 PENNINSLA 2.01 PENNINSLA 2.02 PENNINSLA 2.03 PENNINSLA 2.04 PENNINSLA 2.05 PENNINSLA 2.06 PENNINSLA 2.07 PENNINSLA 2.08 PENNINSLA 2.09 PENNINSLA 2.10 PENNINSLA 2.11 PENNINSLA 2.12 PENNINSLA 2.13 PENNINSLA 2.14 PENNINSLA 2.15 PENNINSLA 2.16 PENNINSLA 2.17 PENNINSLA 2.18 PENNINSLA 2.19 PENNINSLA 2.20 PENNINSLA 2.21 PENNINSLA 2.22 PENNINSLA 2.23 PENNINSLA 2.24 PENNINSLA 2.25 PENNINSLA 2.26 PENNINSLA 2.27 PENNINSLA 2.28 PENNINSLA 2.29 PENNINSLA 2.30 PENNINSLA 2.31 PENNINSLA 2.32 PENNINSLA 2.33 PENNINSLA 2.34 PENNINSLA 2.35 PENNINSLA 2.36 PENNINSLA 2.37 PENNINSLA 2.38 PENNINSLA 2.39 PENNINSLA 2.40 PENNINSLA 2.41 PENNINSLA 2.42 PENNINSLA 2.43 PENNINSLA 2.44 PENNINSLA 2.45 PENNINSLA 2.46 PENNINSLA 2.47 PENNINSLA 2.48 PENNINSLA 2.49 PENNINSLA 2.50 PENNINSLA 2.51 PENNINSLA 2.52 PENNINSLA 2.53 PENNINSLA 2.54 PENNINSLA 2.55 PENNINSLA 2.56 PENNINSLA 2.57 PENNINSLA 2.58 PENNINSLA 2.59 PENNINSLA 2.60 PENNINSLA 2.61 PENNINSLA 2.62 PENNINSLA 2.63 PENNINSLA 2.64 PENNINSLA 2.65 PENNINSLA 2.66 PENNINSLA 2.67 PENNINSLA 2.68 PENNINSLA 2.69 PENNINSLA 2.70 PENNINSLA 2.71 PENNINSLA 2.72 PENNINSLA 2.73 PENNINSLA 2.74 PENNINSLA 2.75 PENNINSLA 2.76 PENNINSLA 2.77 PENNINSLA 2.78 PENNINSLA 2.79 PENNINSLA 2.80 PENNINSLA 2.81 PENNINSLA 2.82 PENNINSLA 2.83 PENNINSLA 2.84 PENNINSLA 2.85 PENNINSLA 2.86 PENNINSLA 2.87 PENNINSLA 2.88 PENNINSLA 2.89 PENNINSLA 2.90 PENNINSLA 2.91 PENNINSLA 2.92 PENNINSLA 2.93 PENNINSLA 2.94 PENNINSLA 2.95 PENNINSLA 2.96 PENNINSLA 2.97 PENNINSLA 2.98 PENNINSLA 2.99 PENNINSLA 3.00 PENNINSLA 3.01 PENNINSLA 3.02 PENNINSLA 3.03 PENNINSLA 3.04 PENNINSLA 3.05 PENNINSLA 3.06 PENNINSLA 3.07 PENNINSLA 3.08 PENNINSLA 3.09 PENNINSLA 3.10 PENNINSLA 3.11 PENNINSLA 3.12 PENNINSLA 3.13 PENNINSLA 3.14 PENNINSLA 3.15 PENNINSLA 3.16 PENNINSLA 3.17 PENNINSLA 3.18 PENNINSLA 3.19 PENNINSLA 3.20 PENNINSLA 3.21 PENNINSLA 3.22 PENNINSLA 3.23 PENNINSLA 3.24 PENNINSLA 3.25 PENNINSLA 3.26 PENNINSLA 3.27 PENNINSLA 3.28 PENNINSLA 3.29 PENNINSLA 3.30 PENNINSLA 3.31 PENNINSLA 3.32 PENNINSLA 3.33 PENNINSLA 3.34 PENNINSLA 3.35 PENNINSLA 3.36 PENNINSLA 3.37 PENNINSLA 3.38 PENNINSLA 3.39 PENNINSLA 3.40 PENNINSLA 3.41 PENNINSLA 3.42 PENNINSLA 3.43 PENNINSLA 3.44 PENNINSLA 3.45 PENNINSLA 3.46 PENNINSLA 3.47 PENNINSLA 3.48 PENNINSLA 3.49 PENNINSLA 3.50 PENNINSLA 3.51 PENNINSLA 3.52 PENNINSLA 3.53 PENNINSLA 3.54 PENNINSLA 3.55 PENNINSLA 3.56 PENNINSLA 3.57 PENNINSLA 3.58 PENNINSLA 3.59 PENNINSLA 3.60 PENNINSLA 3.61 PENNINSLA 3.62 PENNINSLA

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Round Tapered Steel Pole

Smooth Straight Shaft

Tenon: Ø3.5"x8"

(1)Cambridge Cast Alum. Clamshell Base, Black

Less Anchor Bolts

OUC Series Roadway Arm

45" Long for Single Fixture, Black

Boston Harbor Decorative Fitter

QSM Hub for Stem Mtd. Luminaire, Black

Esplanade Teardrop LED 3 Series

P20 Performance Pkg, 3000 Series CCT

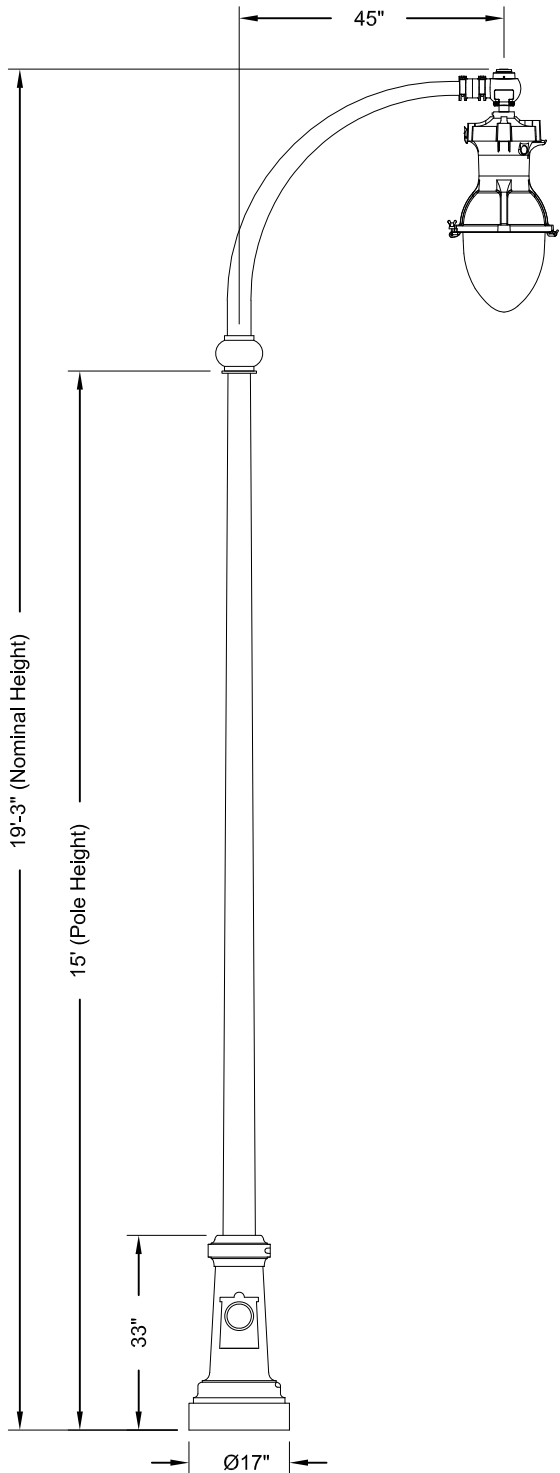
120-277V, Black finish

Teardrop Type 3 Optics

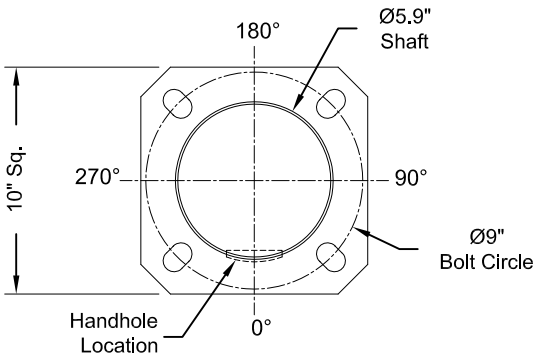
Quick Lock Stem Mount

7-Pin NEMA Dimmable Photocontrol External Receptacle

1"x1" NEMA Wattage Label



Anchorage Detail



CUSTOMER NOTES:

1. **ANCHORAGE DETAIL PROVIDED FOR VISUAL ONLY - DO NOT USE TO SET ANCHOR BOLTS.**
2. SIGNED APPROVAL TO ACCOMPANY PO.

Catalog #'s:

Pole: AORTS1559E08HDBGK **RFD325238**
 Anchor Bolts: VAL1ABSET **RFD325238**
 Clamshell Base: CM17CSBCARC59BK **RFD325238**
 Roadway Arm: OUC45IN1ATNBK
 Fitter: BHDFQSMBKPR7E
 Fixture: ESL2P20S30KMVOLTGTG3QSMBKPR7ENL2X2

Customer Signature

Date



Portland, Maine

ORDER #:	TYPE: (X-7B POLE/ARM)	DRAWING #:
REVISION: 1	REVISION DATE:	
DRAWN: MAB	ORIGIN DATE:	PAGE: 1 of 1

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ESL3

Esplanade® Tear Drop Large Roadway LED Pendant



Catalog Number ESL3 P20S 30K MVOLT TG2 QSM RAL PR7E NL1X1	
Notes Teardrop Glass & Door: Type 2 application	Type X-7B FIXTURE

Description

The Esplanade luminaire is styled to replicate the "teardrop" luminaires that lighted boulevards in the first half of the 1900s. Designed for light control and ease of installation and maintenance, the Esplanade has a precision optical system for true street lighting performance.

Mechanical

The luminaire housing:

- Heavy grade A360 cast aluminum (aluminum with <1% copper)
- IP65 rated housing provides a spring-loaded latch for toolless access and a hinge for easy installation and servicing
- Optic door incorporates a hinge and wing nut enabling toolless access to install and service
- EEI- NEMA twist lock photocontrol receptacle can be mounted in electrical housing or externally; housing contains a tempered glass window to allow light to reach the cell for internally mounting

Electrical

- Certified by UL or CSA for wet locations
- A factory programmable electronic driver with 0-10V dimming control leads meets maximum total harmonic distortion (THD) of 20%, >0.90 Power Factor and are ROHS compliant.
- Minimum operating temperature is -40°C. Electronic driver has an estimated minimum life of 100,000 hours at 25°C.
- Optional DALI driver available
- 20kV/10kA surge protection, fail off, with indicator light meets ANSI/IEEE C62.41.2
- Quick disconnect connectors for ease of installation and maintenance.
- Three pole terminal block is standard, with optional prewired leads for ease of installation
- Configurable with CCT options of 2700K, 3000K, 4000K and 5000K, 70 CRI minimum

Finish

- Rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5,000 hours exposure to salt fog chamber (operated per ASTM B117) on standard and RAL finish options.
- RAL (RALxxxxSDCR) paint colors are Super Durable Corrosion Resistant, 80% gloss.

Certification

CSA listing suitable for wet location up to 40°C. Consult factory for details.

Optical

The optical system is IP66 rated and consists of a precisely molded thermal resistant borosilicate glass refractor mounted within the borosilicate refractor Teardrop, Bowl, Sag shaped glass optic or the tempered Flat glass retained by the cast aluminum door. Designed for Type 2, 3, 4 & 5 distribution, see performance data table for configurations. For zero uplight options the flat glass option or the decorative shallow or deep skirt used with the bowl or sag glass.

Control Options

The control options shall include, but not limited to, the following:

- Field adjustable output to adjust output to luminaire - AO
- Long life photocontrol, 20 years – PCLL, P34 and P48 with DTL
- 3 and 7 pin receptacles internally in housing (PR3, PR7) or externally mounted on the leveling fitter (PR3E, PR7E)
- On externally mounted options, the photocontrol or shorting cap are selected with the leveling fitter

Mounting Style (Leveling Fitter Options)

Three mounting versions are available.

- An arm mount version which is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.
- A pendant mount version (either 1.25NPT or 1.5NPT) which threads to a vertical NPT male threaded pipe fitting and is locked in place by a stainless-steel set screw.
- A QSM (Quick Lock Stem Mounting), which consists of a vertical stem with flared top that mounts into a matching QSM fitter or arm. The QSM mount can aid in installation speed as it is a quicker installation than the other mounting methods.

Note: the QSM style is compatible with the following leveling fitters:

- Boston Harbor Decorative Arm Fitter (BHDF)
- GlasWerks Decorative Arm Fitter (GWDF)
- West Liberty Decorative Arm Fitter (WLDF)
- Ball Style Decorative Arm Fitter (BADF)

BUY AMERICAN

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FARS, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buyamerican for additional information.

Warranty

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

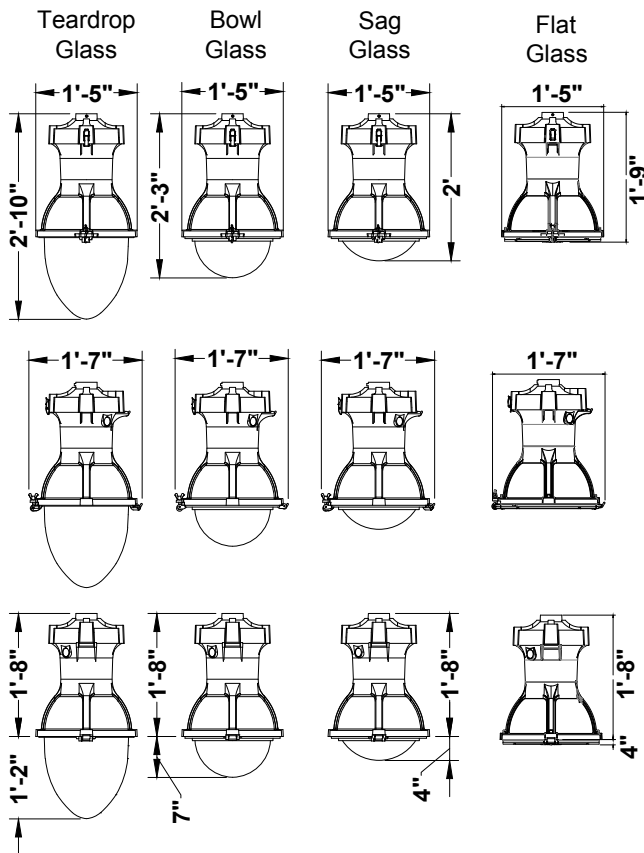
Note:

Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

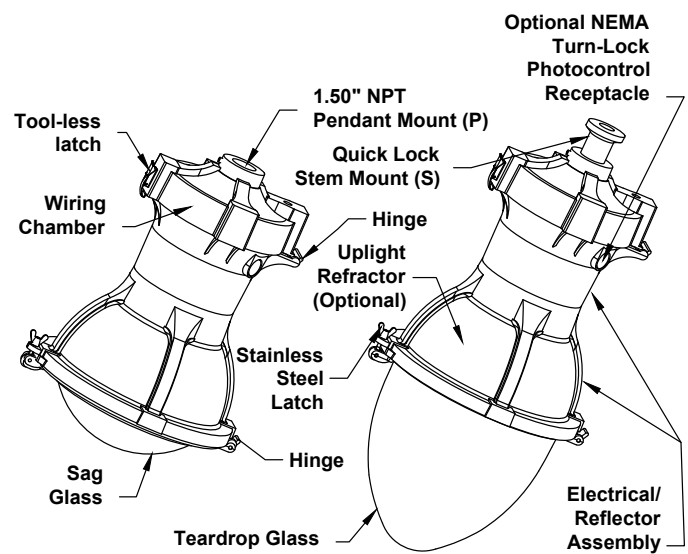
DIMENSIONAL DATA



Maximum Weight - 69 lbs (Up Light Version)

Maximum Weight - 69 lbs (Down Light Version)

Maximum Effective Projected Area - ESL3 2.62 ft², ESL3 SS 2.86 ft², ESL3 DS 3.06 ft²



ORDERING INFORMATION

Example: ESL3 P30S 30K MVOLT TG3 QSM BK

Series	Lumen/Wattage Package				Color Temperature		Voltage	
ESL3 Esplanade style housings	P10S	Standard housing, 44W	P35S	Standard housing, 112W	27K	2700 series CCT	MVOLT	Auto-sensing voltage (120 thru 277) 50/60 HZ
	P15S	Standard housing, 54W	P40S	Standard housing, 132W	30K	3000 series CCT	HVOLT	Auto-sensing voltage (347 thru 480) 50/60 HZ
	P20S	Standard housing, 73W	P45S	Standard housing, 153W	40K	4000 series CCT		
	P20U	Uplight housing, 94W	P50S	Standard housing, 173W	50K	5000 series CCT		
	P25S	Standard housing, 82W	P55S	Standard housing, 193W				
	P25U	Uplight housing, 109W	P60S	Standard housing, 215W				
	P30S	Standard housing, 92W	P65S	Standard housing, 247W				
	P30U	Uplight housing, 122W						

Optic				Mounting	
TG2	Teardrop Glass & Door: Type 2 application	BG4	Bowl Glass & Door: Type 4 application	NPT	Threaded top opening - 1.50" NPT
TG3	Teardrop Glass & Door: Type 3 application	BG5	Bowl Glass & Door: Type 5 application	QSM	Quick Lock Stem mount
TG4	Teardrop Glass & Door: Type 4 application	SG2	Sag Glass & Door: Type 2 application		
FG3	Flat Glass & Door: Type 3 application	SG3	Sag Glass & Door: Type 3 application		
FG5	Flat Glass & Door: Type 5 application	SG4	Sag Glass & Door: Type 4 application		
BG2	Bowl Glass & Door: Type 2 application	SG5	Sag Glass & Door: Type 5 application		
BG3	Bowl Glass & Door: Type 3 application				

Finish		Options		
BK	Black	AO	Field Adjustable Output	<u>Prewire Lead Options</u>
DB	Dark Blue	PR3	NEMA twistlock photocontrol receptacle - 3 pin	L1H 1.5 ft. prewired leads
GR	Grey	PR7	NEMA twistlock dimming photocontrol receptacle - 7 pin	L03 3 ft. prewired leads
GH	Graphite	PR3E	NEMA twistlock photocontrol receptacle - 3 pin (Externally mounted to Fitter)	L10 10 ft. prewired leads
GN	Green	PR7E	NEMA twistlock dimming photocontrol receptacle - 7 pin (Externally mounted to Fitter)	L20 20 ft. prewired leads
PP	Prime Paint	PCLL	Long Life DTL Twistlock Photocontrol for Solid State, Fail Off, MVOLT	L25 25 ft. prewired leads
SL	Silver	P34	Long Life DTL Twistlock Photocontrol for Solid State, Fail Off, 347V	L30 30 ft. prewired leads
WH	White	P48	Long Life DTL Twistlock Photocontrol for Solid State, Fail Off, 480V	L35 35 ft. prewired leads
BZ	Bronze	SH	Shorting cap	<u>NEMA Label Options</u>
CMC	Custom Match Color Finish			NL1X1 1X1 NEMA Label
RALxxxxSDCR	RAL Super Durable Corrosion Resistant, 80% Gloss Paint, replace xxxx with RAL number.			NL3X3 3X3 NEMA Label
CTBS	Standard Finish to be determined			<u>Shielding Options</u>
				DS Deep Skirt, 30" diameter
				SS Shallow Skirt, 30" diameter
				HSS90 Factory installed Large TearDrop, Bowl & Flat Glass House Side Shield 90 degrees
				HSS120 Factory installed Large TearDrop, Bowl & Flat Glass House Side Shield 120 degrees
				HSS180 Factory installed Large TearDrop, Bowl & Flat Glass House Side Shield 180 degrees
				HSG90 Factory installed Large Sag Glass House Side Shield 90 degrees
				HSG120 Factory installed Large Sag Glass House Side Shield 120 degrees
				HSG180 Factory installed Large Sag Glass House Side Shield 180 degrees

Accessories: Order as separate catalog number, ships separately & field installed.Shielding Options

LTD3HSS90	Large TearDrop, Bowl & Flat Glass House side shield 90 degree
LTD3HSS120	Large TearDrop, Bowl & Flat Glass House side shield 120 degree
LTD3HSS180	Large TearDrop, Bowl & Flat Glass House side shield 180 degree
LTD3HSG90	Large Sag Glass House side shield 90 degree
LTD3HSG120	Large Sag Glass House side shield 120 degree
LTD3HSG180	Large Sag Glass House side shield 180 degree
LTD3xx	Deep Skirt, 30" Diameter, replace xx with Finish option
LTSSxx	Shallow Skirt, 30" Diameter, replace xx with Finish option

OPTIONS MATRIX

OPTIONS		Performance Package														Voltage		Options									
		P10S	P15S	P20S	P20U	P25S	P25U	P30S	P30U	P35S	P40S	P45S	P50S	P55S	P60S	P65S	MVOLT	HVOLT	A0	PR3	PR7	PR3E	PR7E	PCLL	P34	P48	SH
Performance Package	P10S		N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P15S	N		N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P20S	N	N		N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P20U	N	N	N		N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P25S	N	N	N	N		N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P25U	N	N	N	N	N		N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P30S	N	N	N	N	N	N		N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P30U	N	N	N	N	N	N	N		N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P35S	N	N	N	N	N	N	N	N		N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P40S	N	N	N	N	N	N	N	N	N		N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P45S	N	N	N	N	N	N	N	N	N	N		N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P50S	N	N	N	N	N	N	N	N	N	N	N		N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P55S	N	N	N	N	N	N	N	N	N	N	N	N		N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P60S	N	N	N	N	N	N	N	N	N	N	N	N	N		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P65S	N	N	N	N	N	N	N	N	N	N	N	N	N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Voltage	MVOLT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		N	Y	Y	Y	Y	Y	Y	N	N	Y
	HVOLT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N		Y	Y	Y	Y	Y	N	Y	Y	Y
Options	A0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y
	PR3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		N	N	N	Y	Y	Y	Y
	PR7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N		N	N	Y	Y	Y	Y
	PR3E	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N		N	N	N	N	N
	PR7E	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N		N	N	N	N
	PCLL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N
	P34	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N
	P48	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N
	SH	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N

OPTICS by PERFORMANCE PACKAGE		Performance Package													
		TG2	TG3	TG4	FG3	FG5	BG2	BG3	BG4	BG5	SG2	SG3	SG4	SG5	
Performance Package	P10S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P15S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P20S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P20U	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	
	P25S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P25U	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	
	P30S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P30U	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	
	P35S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P40S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P45S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P50S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P55S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P60S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	P65S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

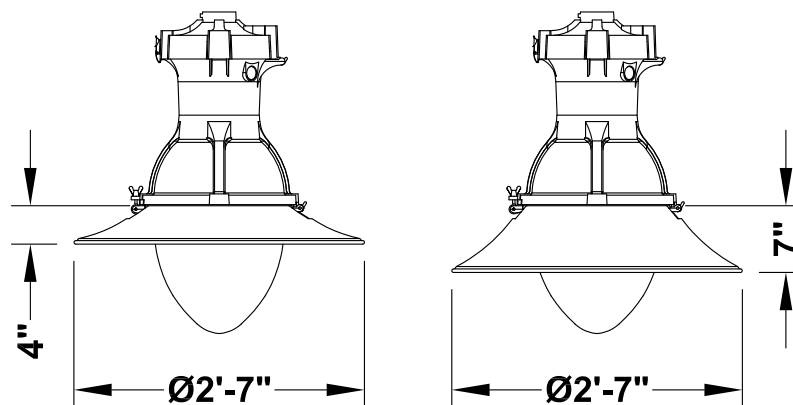
ESL3

Esplanade® Tear Drop Large Roadway LED Pendant

MARK APPROPRIATE BOX FOR TRIM OPTIONS

	STANDARD	SHALLOW SKIRT	DEEP SKIRT
TEARDROP GLASS (Asymmetric)	☐	☐	☐
BOWL GLASS (Asymmetric) (Symmetric)	☐	☐	☐
SAG GLASS (Asymmetric) (Symmetric)	☐	☐	☐
FLAT GLASS (Asymmetric) (Symmetric)	☐	☐	☐

SKIRT DIMENSIONS



PERFORMANCE DATA. FOR SKIRT AND HOUSE SIDE SHIELD OPTIONS, CONSULT FACTORY OR WEBSITE.

LED Package	Glass / Optic	System Watts	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P10S	TG2	44	6,013	137	1	3	3	6,490	148	2	3	3	6,609	150	2	3	3	6,705	152	2	3	3
	TG3		6,033	137	1	3	3	6,511	148	2	3	3	6,630	151	2	3	3	6,727	153	2	3	3
	TG4		5,671	129	1	3	3	6,121	139	1	3	3	6,233	142	1	3	3	6,324	144	1	3	3
	FG3		3,912	89	1	0	1	4,222	96	1	0	1	4,300	98	1	0	1	4,362	99	1	0	1
	FG5		3,846	87	2	0	1	4,150	94	2	0	1	4,227	96	2	0	1	4,288	97	2	0	1
	BG2		5,750	131	2	3	3	6,206	141	2	3	3	6,320	144	2	3	3	6,412	146	2	3	3
	BG3		5,692	129	2	3	3	6,143	140	2	3	4	6,256	142	2	3	4	6,347	144	2	3	4
	BG4		5,389	122	1	3	3	5,816	132	1	3	3	5,923	135	1	3	3	6,009	137	1	3	4
	BG5		6,004	136	3	3	3	6,480	147	3	3	3	6,599	150	3	3	3	6,695	152	3	3	3
	SG2		5,778	131	1	3	3	6,236	142	1	3	3	6,350	144	1	3	3	6,443	146	1	3	3
	SG3		5,773	131	1	3	3	6,231	142	1	3	3	6,346	144	1	3	3	6,438	146	1	3	3
	SG4		5,452	124	1	3	3	5,884	134	1	3	3	5,992	136	1	3	3	6,079	138	1	3	3
	SG5		6,041	137	3	3	2	6,520	148	3	3	2	6,640	151	3	3	2	6,737	153	3	3	2
P15S	TG2	54	7,487	139	2	3	3	8,080	150	2	3	3	8,229	152	2	3	3	8,348	155	2	3	3
	TG3		7,511	139	2	3	3	8,106	150	2	3	3	8,255	153	2	3	3	8,375	155	2	3	3
	TG4		7,061	131	1	3	3	7,621	141	2	3	3	7,761	144	2	3	3	7,874	146	2	3	3
	FG3		4,871	90	1	0	1	5,257	97	2	0	1	5,353	99	2	0	1	5,431	101	2	0	1
	FG5		4,788	89	2	0	1	5,167	96	2	0	1	5,262	97	2	0	1	5,339	99	2	0	1
	BG2		7,159	133	2	3	4	7,727	143	2	3	4	7,869	146	2	3	4	7,983	148	2	3	4
	BG3		7,086	131	2	3	4	7,648	142	2	3	4	7,789	144	2	3	4	7,902	146	2	3	4
	BG4		6,710	124	1	3	4	7,241	134	2	3	4	7,375	137	2	3	4	7,482	139	2	3	4
	BG5		7,475	138	3	3	3	8,068	149	3	3	3	8,216	152	3	3	3	8,335	154	3	3	3
	SG2		7,193	133	2	3	3	7,763	144	2	3	3	7,906	146	2	3	3	8,021	149	2	3	3
	SG3		7,188	133	2	3	3	7,758	144	2	3	3	7,900	146	2	3	3	8,015	148	2	3	3
	SG4		6,788	126	1	3	3	7,326	136	1	3	3	7,460	138	1	3	3	7,569	140	1	3	3
	SG5		7,522	139	3	3	2	8,118	150	3	3	2	8,267	153	3	3	2	8,387	155	3	3	2
P20S	TG2	73	10,290	141	2	3	3	11,106	152	2	3	3	11,310	155	2	3	3	11,474	157	2	3	3
	TG3		10,323	141	2	3	3	11,141	153	2	3	4	11,346	155	2	3	4	11,511	158	2	3	4
	TG4		9,705	133	2	3	3	10,474	143	2	3	3	10,667	146	2	3	3	10,822	148	2	3	3
	FG3		6,694	92	2	0	1	7,225	99	2	0	2	7,358	101	2	0	2	7,465	102	2	0	2
	FG5		6,581	90	2	0	1	7,102	97	2	0	1	7,233	99	2	0	1	7,338	101	2	0	1
	BG2		9,840	135	2	3	4	10,620	145	2	3	5	10,816	148	2	3	5	10,973	150	3	3	5
	BG3		9,740	133	2	3	5	10,512	144	2	3	5	10,705	147	2	3	5	10,861	149	2	3	5
	BG4		9,222	126	2	3	5	9,953	136	2	3	5	10,136	139	2	3	5	10,283	141	2	3	5
	BG5		10,274	141	3	3	4	11,089	152	3	3	4	11,293	155	4	3	4	11,457	157	4	3	4
	SG2		9,887	135	2	3	3	10,671	146	2	3	3	10,867	149	2	3	3	11,025	151	2	3	3
	SG3		9,879	135	2	3	3	10,662	146	2	3	4	10,859	149	2	3	4	11,016	151	2	3	4
	SG4		9,329	128	2	3	3	10,069	138	2	3	3	10,254	140	2	3	3	10,403	143	2	3	3
	SG5		10,338	142	3	3	3	11,158	153	3	3	3	11,363	156	4	3	3	11,528	158	4	3	3
P20U	TG2	94	12,937	138	2	5	3	13,962	149	2	5	3	14,219	151	2	5	3	14,426	153	2	5	3
	TG3		12,978	138	2	5	4	14,006	149	2	5	4	14,264	152	2	5	4	14,471	154	2	5	4
	TG4		12,201	130	2	5	3	13,168	140	2	5	4	13,410	143	2	5	4	13,605	145	2	5	4
	BG2		12,371	132	2	5	4	13,351	142	3	5	5	13,597	145	3	5	5	13,794	147	3	5	5
	BG3		12,245	130	2	5	5	13,216	141	2	5	5	13,459	143	2	5	5	13,654	145	2	5	5
	BG4		11,594	123	2	5	5	12,513	133	2	5	5	12,744	136	2	5	5	12,929	138	2	5	5
	BG5		12,917	137	3	5	4	13,941	148	4	5	4	14,198	151	4	5	4	14,404	153	4	5	4
	SG2		12,430	132	2	5	3	13,415	143	2	5	3	13,662	145	2	5	3	13,861	147	2	5	3
	SG3		12,421	132	2	5	4	13,405	143	2	5	4	13,652	145	2	5	4	13,850	147	2	5	4
	SG4		11,729	125	2	5	3	12,658	135	2	5	4	12,891	137	2	5	4	13,078	139	2	5	4
	SG5		12,997	138	3	5	3	14,028	149	4	5	3	14,286	152	4	5	3	14,493	154	4	5	3

PERFORMANCE DATA. FOR SKIRT AND HOUSE SIDE SHIELD OPTIONS, CONSULT FACTORY OR WEBSITE.

LED Package	Glass / Optic	System Watts	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P25S	TG2	82	11,665	142	2	3	4	12,590	154	3	3	4	12,821	156	3	3	4	13,008	159	3	3	4
	TG3		11,703	143	2	3	4	12,630	154	2	3	4	12,862	157	3	3	4	13,049	159	3	3	4
	TG4		11,002	134	2	3	3	11,874	145	2	3	4	12,092	147	2	3	4	12,268	150	2	3	4
	FG3		7,589	93	2	0	2	8,190	100	2	0	2	8,341	102	2	0	2	8,462	103	2	0	2
	FG5		7,460	91	2	0	1	8,051	98	3	0	1	8,199	100	3	0	1	8,319	101	3	0	1
	BG2		11,155	136	3	3	5	12,039	147	3	3	5	12,261	150	3	3	5	12,439	152	3	3	5
	BG3		11,042	135	2	3	5	11,917	145	3	3	5	12,136	148	3	3	5	12,312	150	3	3	5
	BG4		10,454	127	2	3	5	11,283	138	2	3	5	11,491	140	2	3	5	11,658	142	2	3	5
	BG5		11,647	142	4	3	4	12,570	153	4	3	4	12,802	156	4	3	4	12,988	158	4	3	4
	SG2		11,208	137	2	3	3	12,096	148	2	3	4	12,319	150	2	3	4	12,498	152	2	3	4
	SG3		11,200	137	2	3	4	12,087	147	2	3	4	12,310	150	2	3	4	12,488	152	2	3	4
	SG4		10,576	129	2	3	4	11,414	139	2	3	4	11,624	142	2	3	4	11,793	144	2	3	4
	SG5		11,720	143	4	3	3	12,649	154	4	3	3	12,881	157	4	3	3	13,069	159	4	3	3
P25U	TG2	109	14,701	135	2	5	4	15,866	146	3	5	4	16,158	148	3	5	4	16,393	150	3	5	4
	TG3		14,747	135	2	5	4	15,916	146	3	5	4	16,209	149	3	5	4	16,445	151	3	5	4
	TG4		13,865	127	2	5	4	14,964	137	2	5	4	15,239	140	2	5	4	15,460	142	2	5	4
	BG2		14,058	129	3	5	5	15,172	139	3	5	5	15,451	142	3	5	5	15,675	144	3	5	5
	BG3		13,915	128	3	5	5	15,018	138	3	5	5	15,294	140	3	5	5	15,516	142	3	5	5
	BG4		13,176	121	2	5	5	14,220	130	2	5	5	14,481	133	2	5	5	14,692	135	2	5	5
	BG5		14,679	135	4	5	4	15,842	145	4	5	4	16,134	148	4	5	4	16,368	150	4	5	4
	SG2		14,125	130	2	5	4	15,245	140	2	5	4	15,525	142	2	5	4	15,751	145	2	5	4
	SG3		14,115	129	2	5	4	15,233	140	2	5	4	15,514	142	2	5	4	15,739	144	2	5	4
	SG4		13,328	122	2	5	4	14,384	132	2	5	4	14,649	134	2	5	4	14,862	136	2	5	4
	SG5		14,770	136	4	5	3	15,941	146	4	5	3	16,234	149	4	5	3	16,470	151	4	5	3
P30S	TG2	92	12,968	141	3	3	4	13,996	152	3	3	4	14,254	155	3	3	4	14,461	157	3	3	4
	TG3		13,010	141	3	3	4	14,041	153	3	3	4	14,300	155	3	3	4	14,507	158	3	3	4
	TG4		12,231	133	2	3	4	13,201	143	2	3	4	13,443	146	2	3	4	13,639	148	2	3	4
	FG3		8,437	92	2	0	2	9,106	99	2	0	2	9,273	101	2	0	2	9,408	102	2	0	2
	FG5		8,294	90	3	0	1	8,951	97	3	0	1	9,116	99	3	0	1	9,248	101	3	0	2
	BG2		12,402	135	3	3	5	13,385	145	3	3	5	13,631	148	3	3	5	13,829	150	3	3	5
	BG3		12,275	133	3	3	5	13,248	144	3	3	5	13,492	147	3	3	5	13,688	149	3	3	5
	BG4		11,623	126	2	3	5	12,544	136	2	3	5	12,774	139	2	3	5	12,960	141	2	3	5
	BG5		12,949	141	4	3	4	13,975	152	4	3	4	14,232	155	4	3	4	14,439	157	4	3	4
	SG2		12,460	135	2	3	4	13,448	146	2	3	4	13,695	149	2	3	4	13,894	151	2	3	4
	SG3		12,451	135	2	3	4	13,438	146	2	3	4	13,685	149	2	3	4	13,884	151	3	3	4
	SG4		11,758	128	2	3	4	12,690	138	2	3	4	12,923	140	2	3	4	13,111	143	2	3	4
	SG5		13,029	142	4	3	3	14,062	153	4	3	3	14,321	156	4	3	3	14,529	158	4	3	3
P30U	TG2	122	16,481	135	3	5	4	17,787	146	3	5	4	18,115	148	3	5	4	18,378	151	3	5	4
	TG3		16,533	136	3	5	4	17,843	146	3	5	4	18,172	149	3	5	5	18,436	151	3	5	5
	TG4		15,543	127	2	5	4	16,775	138	2	5	4	17,084	140	2	5	4	17,332	142	2	5	4
	BG2		15,760	129	3	5	5	17,009	139	3	5	5	17,322	142	3	5	5	17,573	144	3	5	5
	BG3		15,600	128	3	5	5	16,836	138	3	5	5	17,146	141	3	5	5	17,395	143	3	5	5
	BG4		14,771	121	2	5	5	15,942	131	2	5	5	16,235	133	2	5	5	16,471	135	3	5	5
	BG5		16,456	135	4	5	4	17,760	146	4	5	5	18,087	148	4	5	5	18,350	150	4	5	5
	SG2		15,836	130	2	5	4	17,091	140	3	5	4	17,405	143	3	5	4	17,658	145	3	5	4
	SG3		15,824	130	2	5	4	17,078	140	3	5	4	17,392	143	3	5	4	17,645	145	3	5	4
	SG4		14,942	122	2	5	4	16,126	132	2	5	4	16,423	135	2	5	4	16,661	137	2	5	4
	SG5		16,558	136	4	5	3	17,871	146	4	5	3	18,199	149	4	5	3	18,464	151	4	5	3

PERFORMANCE DATA. FOR SKIRT AND HOUSE SIDE SHIELD OPTIONS, CONSULT FACTORY OR WEBSITE.

LED Package	Glass / Optic	System Watts	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P355	TG2	112	15,526	139	3	3	4	16,757	150	3	3	4	17,065	152	3	3	4	17,313	155	3	3	4
	TG3		15,576	139	3	3	4	16,810	150	3	3	5	17,120	153	3	3	5	17,368	155	3	3	5
	TG4		14,643	131	3	3	4	15,804	141	3	3	4	16,095	144	3	3	4	16,328	146	3	3	4
	FG3		10,101	90	3	0	2	10,901	97	3	0	2	11,102	99	3	0	2	11,263	101	3	0	2
	FG5		9,929	89	3	0	2	10,716	96	3	0	2	10,913	97	3	0	2	11,072	99	3	0	2
	BG2		14,847	133	3	3	5	16,024	143	3	3	5	16,319	146	3	3	5	16,556	148	3	3	5
	BG3		14,696	131	3	3	5	15,861	142	3	4	5	16,153	144	3	4	5	16,388	146	3	4	5
	BG4		13,915	124	2	3	5	15,018	134	3	3	5	15,294	137	3	3	5	15,516	139	3	3	5
	BG5		15,502	138	4	3	5	16,731	149	4	3	5	17,039	152	4	3	5	17,286	154	4	3	5
	SG2		14,918	133	3	3	4	16,100	144	3	3	4	16,396	146	3	3	4	16,634	149	3	3	4
	SG3		14,906	133	3	3	4	16,088	144	3	3	5	16,384	146	3	3	5	16,622	148	3	3	5
	SG4		14,076	126	2	3	4	15,192	136	2	3	4	15,472	138	2	3	4	15,696	140	2	3	4
	SG5		15,599	139	4	3	3	16,835	150	4	3	3	17,145	153	4	3	3	17,394	155	4	3	3
P405	TG2	132	18,148	137	3	3	5	19,586	148	3	3	5	19,947	151	3	3	5	20,236	153	3	3	5
	TG3		18,206	138	3	3	5	19,649	149	3	3	5	20,011	152	3	3	5	20,301	154	3	3	5
	TG4		17,116	130	3	3	4	18,473	140	3	3	5	18,812	143	3	3	5	19,086	145	3	3	5
	FG3		11,806	89	3	0	2	12,742	97	3	0	2	12,977	98	3	0	2	13,165	100	3	0	2
	FG5		11,606	88	3	0	2	12,526	95	3	0	2	12,756	97	3	0	2	12,941	98	3	0	2
	BG2		17,355	131	3	4	5	18,730	142	3	4	5	19,075	145	3	4	5	19,352	147	3	4	5
	BG3		17,178	130	3	4	5	18,539	140	3	4	5	18,880	143	3	4	5	19,155	145	3	4	5
	BG4		16,264	123	3	3	5	17,553	133	3	4	5	17,876	135	3	4	5	18,136	137	3	4	5
	BG5		18,120	137	4	3	5	19,556	148	4	3	5	19,916	151	4	4	5	20,205	153	4	4	5
	SG2		17,437	132	3	3	5	18,819	143	3	3	5	19,165	145	3	3	5	19,443	147	3	3	5
	SG3		17,424	132	3	3	5	18,805	142	3	3	5	19,151	145	3	3	5	19,429	147	3	3	5
	SG4		16,453	125	2	3	5	17,758	135	3	3	5	18,084	137	3	3	5	18,347	139	3	3	5
	SG5		18,233	138	4	3	3	19,678	149	4	3	3	20,040	152	4	3	3	20,331	154	4	3	3
P455	TG2	153	20,508	134	3	3	5	22,134	145	3	3	5	22,541	147	3	3	5	22,868	149	3	3	5
	TG3		20,574	134	3	3	5	22,205	145	3	3	5	22,613	148	3	3	5	22,942	150	3	3	5
	TG4		19,342	126	3	3	5	20,875	136	3	3	5	21,259	139	3	3	5	21,568	141	3	3	5
	FG3		13,342	87	3	0	2	14,399	94	3	0	3	14,664	96	3	0	3	14,877	97	3	0	3
	FG5		13,115	86	3	0	2	14,155	93	3	0	2	14,415	94	3	0	2	14,625	96	3	0	2
	BG2		19,612	128	3	4	5	21,166	138	3	4	5	21,555	141	3	4	5	21,869	143	3	4	5
	BG3		19,412	127	3	4	5	20,951	137	3	4	5	21,336	139	3	4	5	21,646	141	3	4	5
	BG4		18,380	120	3	4	5	19,836	130	3	4	5	20,201	132	3	4	5	20,495	134	3	4	5
	BG5		20,477	134	4	4	5	22,100	144	4	4	5	22,506	147	5	4	5	22,833	149	5	4	5
	SG2		19,705	129	3	3	5	21,266	139	3	3	5	21,658	142	3	3	5	21,972	144	3	3	5
	SG3		19,690	129	3	3	5	21,250	139	3	3	5	21,641	141	3	3	5	21,956	144	3	3	5
	SG4		18,593	122	3	3	5	20,067	131	3	3	5	20,436	134	3	3	5	20,733	136	3	3	5
	SG5		20,604	135	4	3	3	22,238	145	4	3	3	22,647	148	5	3	3	22,976	150	5	3	4
P505	TG2	173	22,698	131	3	3	5	24,497	142	3	3	5	24,948	144	3	4	5	25,310	146	3	4	5
	TG3		22,771	132	3	3	5	24,576	142	3	3	5	25,028	145	3	3	5	25,392	147	3	4	5
	TG4		21,408	124	3	3	5	23,104	134	3	3	5	23,529	136	3	3	5	23,871	138	3	3	5
	FG3		14,767	85	3	0	3	15,937	92	3	0	3	16,230	94	3	0	3	16,466	95	3	0	3
	FG5		14,516	84	3	0	2	15,666	91	3	0	2	15,955	92	3	0	2	16,186	94	3	0	2
	BG2		21,706	125	3	4	5	23,426	135	3	4	5	23,857	138	3	4	5	24,204	140	3	4	5
	BG3		21,485	124	3	4	5	23,188	134	3	4	5	23,615	137	3	4	5	23,958	138	3	4	5
	BG4		20,342	118	3	4	5	21,955	127	3	4	5	22,359	129	3	4	5	22,684	131	3	4	5
	BG5		22,663	131	5	4	5	24,460	141	5	4	5	24,910	144	5	4	5	25,272	146	5	4	5
	SG2		21,809	126	3	3	5	23,537	136	3	3	5	23,970	139	3	3	5	24,319	141	3	3	5
	SG3		21,792	126	3	3	5	23,520	136	3	3	5	23,952	138	3	3	5	24,300	140	3	3	5
	SG4		20,579	119	3	3	5	22,210	128	3	3	5	22,619	131	3	3	5	22,947	133	3	3	5
	SG5		22,805	132	5	3	4	24,612	142	5	3	4	25,065	145	5	3	4	25,429	147	5	3	4

PERFORMANCE DATA. FOR SKIRT AND HOUSE SIDE SHIELD OPTIONS, CONSULT FACTORY OR WEBSITE.

LED Package	Glass / Optic	System Watts	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P555	TG2	193	24,807	129	3	3	5	26,773	139	3	4	5	27,266	141	3	4	5	27,662	143	3	4	5
	TG3		24,887	129	3	3	5	26,859	139	3	4	5	27,353	142	3	4	5	27,751	144	3	4	5
	TG4		23,397	121	3	3	5	25,251	131	3	3	5	25,716	133	3	3	5	26,089	135	3	4	5
	FG3		16,139	84	3	0	3	17,418	90	3	0	3	17,738	92	3	0	3	17,996	93	3	0	3
	FG5		15,865	82	3	0	2	17,122	89	3	0	2	17,437	90	3	0	2	17,690	92	3	0	2
	BG2		23,723	123	3	4	5	25,603	133	3	4	5	26,074	135	3	4	5	26,453	137	3	4	5
	BG3		23,481	122	3	4	5	25,342	131	3	4	5	25,809	134	3	4	5	26,184	136	3	4	5
	BG4		22,232	115	3	4	5	23,995	124	3	4	5	24,436	127	3	4	5	24,791	128	3	4	5
	BG5		24,769	128	5	4	5	26,732	139	5	4	5	27,224	141	5	4	5	27,620	143	5	4	5
	SG2		23,835	123	3	3	5	25,724	133	3	3	5	26,198	136	3	3	5	26,578	138	3	3	5
	SG3		23,817	123	3	3	5	25,705	133	3	3	5	26,178	136	3	3	5	26,558	138	3	3	5
	SG4		22,491	117	3	3	5	24,274	126	3	3	5	24,720	128	3	3	5	25,079	130	3	3	5
	SG5		24,924	129	5	3	4	26,899	139	5	3	4	27,394	142	5	3	4	27,792	144	5	3	4
P605	TG2	215	27,208	127	3	4	5	29,364	137	3	4	5	29,905	139	3	4	5	30,339	141	3	4	5
	TG3		27,295	127	3	4	5	29,459	137	3	4	5	30,001	140	3	4	5	30,437	142	3	4	5
	TG4		25,661	119	3	3	5	27,695	129	3	4	5	28,204	131	3	4	5	28,614	133	3	4	5
	FG3		17,701	82	3	0	3	19,104	89	3	0	3	19,455	90	3	0	3	19,738	92	3	0	3
	FG5		17,400	81	3	0	2	18,779	87	4	0	2	19,124	89	4	0	2	19,402	90	4	0	2
	BG2		26,019	121	3	4	5	28,081	131	4	4	5	28,597	133	4	4	5	29,013	135	4	4	5
	BG3		25,754	120	3	4	5	27,795	129	4	4	5	28,306	132	4	4	5	28,718	134	4	4	5
	BG4		24,384	113	3	4	5	26,317	122	3	4	5	26,801	125	3	4	5	27,190	126	3	4	5
	BG5		27,166	126	5	4	5	29,319	136	5	4	5	29,859	139	5	4	5	30,293	141	5	4	5
	SG2		26,142	122	3	3	5	28,214	131	3	3	5	28,733	134	3	3	5	29,150	136	3	3	5
	SG3		26,122	121	3	3	5	28,193	131	3	3	5	28,711	134	3	3	5	29,128	135	3	3	5
	SG4		24,668	115	3	3	5	26,623	124	3	3	5	27,113	126	3	3	5	27,506	128	3	3	5
	SG5		27,336	127	5	3	4	29,502	137	5	3	4	30,045	140	5	3	4	30,481	142	5	3	4
P655	TG2	247	30,354	123	3	4	5	32,760	133	4	4	5	33,363	135	4	4	5	33,848	137	4	4	5
	TG3		30,452	123	3	4	5	32,866	133	4	4	5	33,470	136	4	4	5	33,956	137	4	4	5
	TG4		28,629	116	3	4	5	30,898	125	3	4	5	31,466	127	3	4	5	31,923	129	3	4	5
	FG3		19,748	80	3	0	3	21,313	86	3	0	3	21,705	88	3	0	3	22,020	89	3	0	3
	FG5		19,412	79	4	0	2	20,951	85	4	0	3	21,336	86	4	0	3	21,646	88	4	0	3
	BG2		29,028	118	4	4	5	31,328	127	4	4	5	31,905	129	4	4	5	32,368	131	4	4	5
	BG3		28,732	116	4	4	5	31,009	126	4	5	5	31,580	128	4	5	5	32,039	130	4	5	5
	BG4		27,204	110	3	4	5	29,360	119	3	4	5	29,900	121	3	4	5	30,335	123	3	4	5
	BG5		30,308	123	5	4	5	32,710	132	5	4	5	33,312	135	5	4	5	33,796	137	5	4	5
	SG2		29,165	118	3	3	5	31,477	127	3	3	5	32,056	130	3	4	5	32,522	132	3	4	5
	SG3		29,143	118	3	3	5	31,453	127	3	4	5	32,032	130	3	4	5	32,497	132	3	4	5
	SG4		27,520	111	3	3	5	29,702	120	3	3	5	30,248	122	3	3	5	30,688	124	3	3	5
	SG5		30,497	123	5	3	4	32,914	133	5	3	4	33,520	136	5	3	4	34,007	138	5	3	4

LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use the factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F)

Ambient Temp.		Lumen Multiplier (by Performance Package)			
°C	°F	P10S, P15S, P20S, P20U, P25S, P25U, P30S, P30U, P35S, P40S, P45S & P50S	P55S	P60S	P65S
0	32	1.03	1.04	1.04	1.04
5	41	1.03	1.03	1.03	1.04
10	50	1.02	1.02	1.03	1.03
15	59	1.01	1.02	1.02	1.02
20	68	1.01	1.01	1.01	1.01
25	77	1.00	1.00	1.00	1.00
30	86	0.99	0.99	0.99	0.99
35	95	0.99	0.98	0.98	0.98
40	104	0.98	0.97	0.97	0.97

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the platforms noted in 25°C ambient, based on 6,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11). To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Lumen Maintenance - LLD (by Performance Package)									
Hours		0	25,000	36,000	50,000	60,000	67,500	75,000	100,000
Factor for:	P10S, P15S, P20S, P20U, P25S, P25U, P30S, P30U, P35S, P40S, P45S & P50S	1.00	0.95	0.94	0.91	0.90	0.89	0.88	0.84
	P55S	1.00	0.95	0.93	0.91	0.90	0.89	0.87	0.84
	P60S & P65S	1.00	0.95	0.93	0.90	0.89	0.87	0.86	0.82

FIELD ADJUSTABLE OUTPUT (AO option)

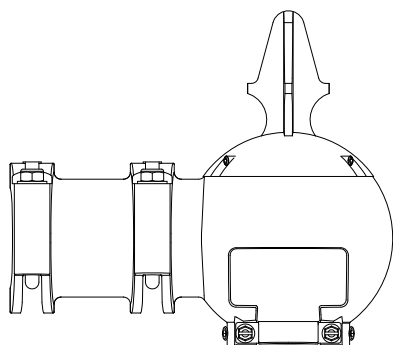
The data is the same for MVOLT & HVOLT.

Performance Package	FAO Position	% Lumen Output	% Wattage	Performance Package	FAO Position	% Lumen Output	% Wattage	Performance Package	FAO Position	% Lumen Output	% Wattage
P10S	8	100%	100%	P25U	8	100%	100%	P45S	8	100%	100%
	7	94%	94%		7	94%	94%		7	95%	94%
	6	80%	80%		6	81%	80%		6	82%	79%
	5	68%	68%		5	69%	68%		5	71%	67%
	4	55%	55%		4	56%	54%		4	58%	54%
	3	41%	42%		3	43%	41%		3	45%	41%
	2	28%	29%		2	30%	29%		2	31%	28%
	1	13%	15%		1	15%	15%		1	16%	14%
P15S	8	100%	100%	P30S	8	100%	100%	P50S	8	100%	100%
	7	94%	94%		7	94%	94%		7	95%	94%
	6	80%	80%		6	81%	80%		6	82%	79%
	5	68%	68%		5	69%	67%		5	71%	67%
	4	55%	55%		4	56%	54%		4	59%	54%
	3	42%	42%		3	43%	41%		3	45%	41%
	2	28%	29%		2	30%	28%		2	32%	28%
	1	14%	15%		1	15%	15%		1	16%	14%
P20S	8	100%	100%	P30U	8	100%	100%	P55S	8	100%	100%
	7	94%	94%		7	94%	94%		7	95%	94%
	6	81%	80%		6	81%	80%		6	83%	79%
	5	69%	68%		5	70%	67%		5	72%	67%
	4	56%	54%		4	57%	54%		4	59%	54%
	3	42%	41%		3	44%	41%		3	46%	41%
	2	29%	29%		2	30%	29%		2	32%	28%
	1	14%	15%		1	15%	15%		1	17%	14%
P20U	8	100%	100%	P35S	8	100%	100%	P60S	8	100%	100%
	7	94%	94%		7	94%	94%		7	95%	94%
	6	81%	80%		6	81%	79%		6	83%	79%
	5	69%	68%		5	70%	67%		5	72%	67%
	4	56%	55%		4	57%	54%		4	60%	54%
	3	43%	42%		3	44%	41%		3	47%	41%
	2	29%	29%		2	30%	28%		2	33%	28%
	1	15%	15%		1	15%	15%		1	17%	14%
P25S	8	100%	100%	P40S	8	100%	100%	P65S	8	100%	100%
	7	94%	94%		7	95%	94%		7	95%	94%
	6	81%	80%		6	82%	79%		6	84%	79%
	5	69%	67%		5	70%	67%		5	73%	67%
	4	56%	54%		4	57%	54%		4	61%	53%
	3	43%	41%		3	44%	41%		3	48%	40%
	2	29%	28%		2	31%	28%		2	33%	28%
	1	15%	15%		1	16%	15%		1	18%	14%

Catalog Number ESL3 P20S 30K MVOLT TG2 QSM RAL PR7E NL1X1	
Notes Teardrop Glass & Door: Type 2 application	Type X-7B FIXTURE

BHDF SERIES BOSTON HARBOUR STYLE

Decorative Arm Fitter



Specifications

General Description

The Boston Harbour style decorative arm fitter is designed to replicate the look of period cast arm mounts.

Materials

The fitter body, top cover, and door assembly shall be heavy wall cast aluminum. All mounting and locking hardware shall be stainless steel.

Function

The fitter is designed to be used on 2" horizontal arms with pendant luminaires having either a quick stem mount (QSM) or a 1.5NPT (NPT) as the selected mounting method.

Mounting Options

- QSM: The quick stem mount significantly simplify installation, ensures that the luminaire is hanging properly and does not require pipe dope. The swivel action on the stem allows for +/- 4 degree adjustment from vertical. The contoured door (with integral lanyard) is removed to allow the stem to engage inside the fitter. The door is replaced to the capture the luminaire stem.
- NPT15S or NPT15R: The 1.5NPT requires pipe dope. There are two NPT mounting options, the swivel (NPT15S) and the rigid (NPT15R)

Installation

The fitter is provided with (2) U-bolts, washers and nuts and (2) leveling set screws that lock the fitter to a nominal 2" horizontal arm and allow a +/- 5 degree adjustment from horizontal to the fitter. (3) set screws lock either the QSM stem or NPT15S threaded male connector in place. The cast top cover can be removed to allow access to the inside of the fitter to facilitate wire connections. (3) set screws lock the cover to the fitter.

Finish

- Utilize a polyester powder coat paint to ensure maximum durability.
- Rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5,000 hours exposure to salt fog chamber (operated per ASTM B117) on standard and RAL finish options.
- RAL (RALxxxxSDCR) paint colors are Super Durable Corrosion Resistant, 80% gloss.

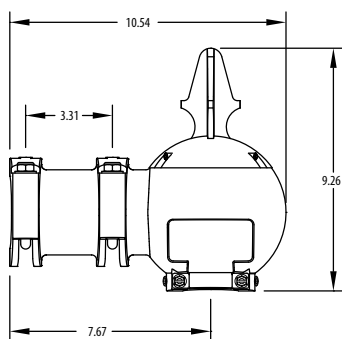
Warranty

1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

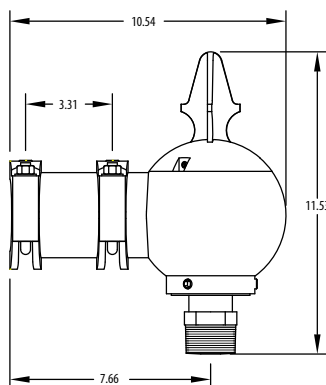
Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

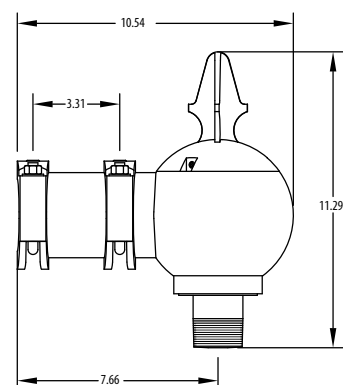
DIMENSIONAL DATA



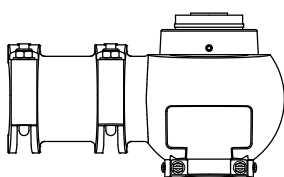
QSM Mounting



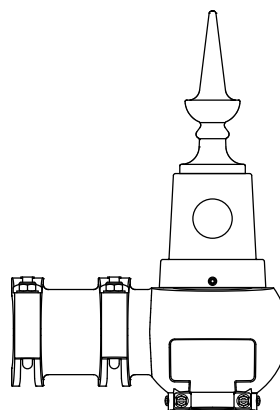
NPT15S Mounting



NPT15R Mounting



QSM Mounting with PR3E or PR7E option



TPRCSXX Accessory

BHDF SERIES BOSTON HARBOUR STYLE

Decorative Arm Fitter



ORDERING INFORMATION

Example: BHDF QSM BK PR7E PCLL

Series		Size		Finish		Options
BHDF	Harbor Decorative Arm Fitter	NPT15S	Pendant 1.50 NPT Swivel	BK	Black	PR3E External Mounted NEMA Twist Lock Photocontrol Receptacle - 3 PIN
		NPT15R	Pendant 1.50 NPT Rigid	BZ	Bronze	PR7E External Mounted NEMA Twist Lock Dimming Photocontrol Receptacle - 7 PIN
		QSM	Quick Stem Mount	DB	Dark Blue	SH Shorting cap
				GH	Graphite	PCLL Long Life DTL Twistlock Photocontrol for Solid State, MVOLT
				GN	Green	P34 Long Life DTL Twistlock Photocontrol for Solid State, 347V
				GR	Gray	P48 Long Life DTL Twistlock Photocontrol for Solid State, 480V
				PP	Prime Painted	
				SL	Silver	
				WH	White	
				CMC	Customer matching color	
				CTBS	Standard color to be selected	
				RALxxxxSDCR	RAL Super Durable Corrosion Resistant, 80% Gloss Paint, replace xxxx with RAL number.	

Accessories

TPRCSXX Twistlock Photocontrol Cover Assembly with Spike Finial

Note:

Cover will only work with PR3E or PR73 with Acuity's PCLL, P34, P48, SH or other like devices equal in dimension.

HLWPC2

Wallpack® Full Cutoff LED



Mechanical

- Heavy grade A360 cast aluminum (aluminum with <1% copper)
- Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering
- Mounts to a standard junction box
- Wet location listed
- IP65 rated housing, down light only
- 3/4" painted threaded entry (3/4" - 14 NPT) on each side and on top, accepts 3/4" and 1/2" conduit
- 3/4" threaded plugs are painted on each side
- Vibration tested to 1.5G per ANSI C136.31.

Electrical

- Certified by UL or CSA
- Rated for -40°C (-40°F) minimum ambient
- A programmable electronic driver with 0-10V control leads
- Available in: 120-277V 50/60 Hz and 347-480V 50/60 Hz,
- Standard: 3000K, 4000K and 5000K CCT (>70 CRI)
- Optional >80 CRI (3000K, 4000K and 5000K CCT)
- Internally mounted emergency battery backup for operation in an ambient temperature ranging from -20°C (-4°F) to 30°C (86°F), available with P10 thru P40 performance packages, non CEC compliant
- All surge protection meets ANSI/IEEE C62.41.2 10kV/10kA
- Standard surge protection is 20kV/10kA per ANSI C136.2
- Optional surge protection is 10kV/5kA per ANSI C136.2

Optical

- Light engine housing is IP66 rated
- Acrylic optical system
- Type V: E (entry), M (medium), R (rectangle) & W (wide)
- Asymmetric

Controls

- Field adjustable output (AO)
- Button style photocontrol (PE)
- Motion sensor & ambient photocontrol combination for mounting low (8-15') (MASL) and high (15-30') (MASH) mounting heights

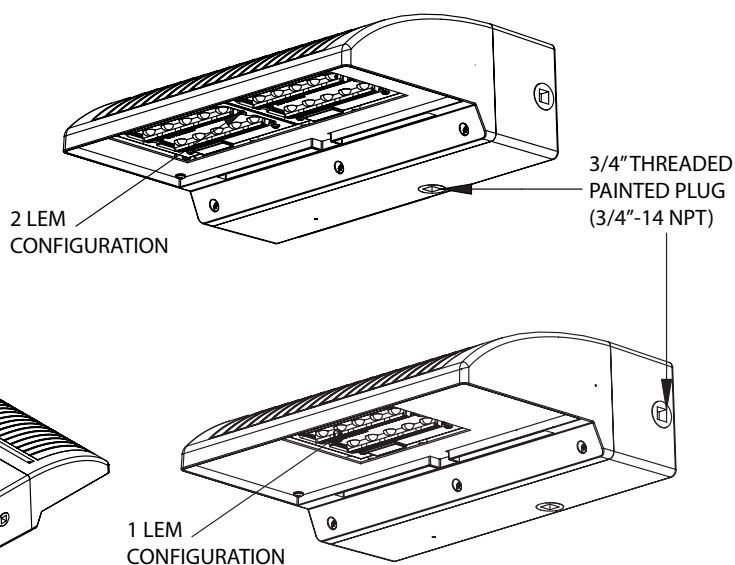
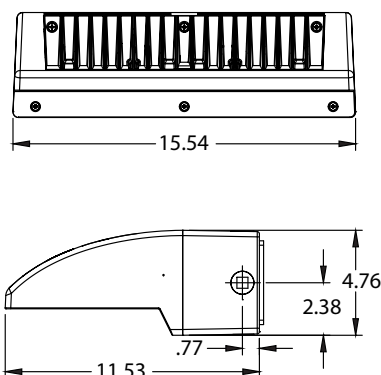
Certification and Standards

- Luminaire is CSA listed, US and Canada
- Suitable for operation in an ambient temperature up to 40°C/104°F per UL or CSA certification
- Design Lights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- LM-79 compliant
- The projected LED Lumen Maintenance shall be based only on IES LM-80-08 and TM-21

Warranty

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Note: Maximum weight 22 lbs.

HLWPC2

Wallpack® Full Cutoff LED

ORDERING INFORMATION

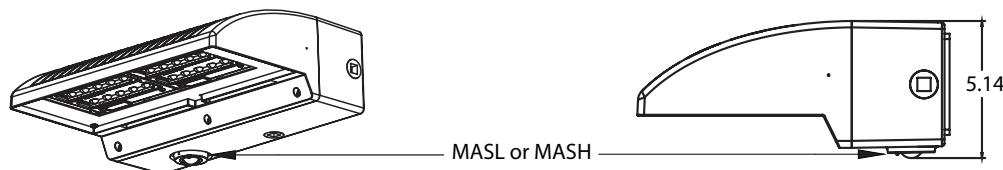
Example: HLWPC2 P20 40K AS T3M BZSDP

Series	Lumen Package	Color Temperature	Voltage	Optics	Color	CRI
HLWPC2 Wallpack Full Cutoff LED	1 LEM Package	AMB True Amber	120 120 volts	T2S Type 2 Short	BKSDP Black	Blank 70 CRI (STD)
	P10 3,100 lm	30K 3,000 K CCT	208 208 volts	T2M Type 2 Medium	BZSDP Bronze	80CRI 80 CRI
	P20 5,600 lm	40K 4,000 K CCT	240 240 volts	T3S Type 3 Short	GYSDP Grey	
		50K 5,000 K CCT	277 277 volts	T3M Type 3 Medium	WHSDP White	
	2 LEM Package		347 347 volts	T4M Type 4 Medium		
	P30 7,800 lm		480 480 volts	TFTM Forward Throw Medium		
	P40 9,900 lm		HVOLT 347/480 volts	ASYDF Asymmetric Diffuse		
	P50 11,700 lm		MVOLT 120-277 volts	SYMDF Symmetric Diffuse		
	(Nominal Lumens, 4000K)					

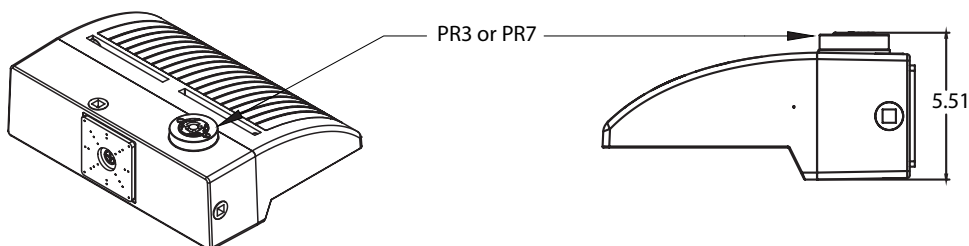
Options:		
Adjustable/Programmable Options AO Field Adjustable Output Circuit Options 2CI 2 Independent Circuits Control - Motion Sensor Options MASL Motion / Ambient Sensor, 8-15' Mounting Height Ambient Sensor Enabled at 1 FC MASH Motion / Ambient Sensor, 15-30' Mounting Height Ambient Sensor Enabled at 1 FC	Control - Photocontrol Options PE Button Style Photocontrol P3 N.E.M.A. Twistlock Receptacle Mount -3 PIN P7 N.E.M.A. Twistlock Receptacle Mount -7 PIN PCLL DTL Long Life Twistlock Photocontrol for Solid State PSC Shorting Cap	Fuse Option SF Single Fuse DF Double Fuse Safety Option EM Integral Emergency Battery TP Tamper Resistant Hardware Surge Protection Option - 20kV/10kA is Standard 10KV 10kV/5kA Surge Protection, in place of 20kV/10kA

Options Location

Motion/Ambient Sensor mount options for Low (8-15') (MASL) and Height (15-30') (MASH) applications

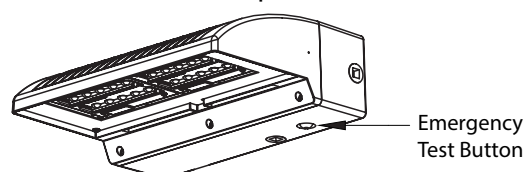


N.E.M.A. Twistlock Receptacle P3 and P7 Options, P7 Shown

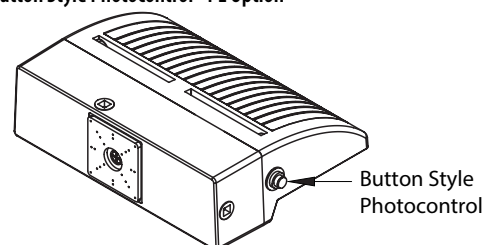


Internal Emergency Battery Test Button - EM Option

Test Button - EM Option



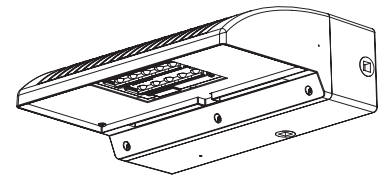
Button Style Photocontrol - PE Option



Driver & LEM Configuration Based on Circuit Options

Number of LEMs & Drivers / Circuit		Single Circuit (std.)		Two Circuit (2CI option)	
		LEMs	Drivers	LEMs	Drivers
Lumen Maintenance Factor	P10	1	1	-	-
	P20	1	1	2	2
	P30	2	1	2	2
	P40	2	1	2	2
	P50	2	1	-	-

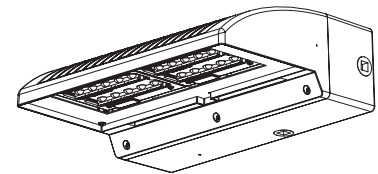
1 LEM Luminaire



SPD Based on Circuit Options

Number of LEMs & Drivers / Circuit		Single Circuit (std.)				Two Circuit (2CI option)			
		LEMs	Drivers	No. of SPDs	SPD	LEMs	Drivers	No. of SPDs	SPD
Lumen Maintenance Factor	P10	1	1	1	20kV/10kA	-	-	-	-
	P20	1	1	1	20kV/10kA	2	2	2	10kV/5kA
	P30	2	1	1	20kV/10kA	2	2	2	10kV/5kA
	P40	2	1	1	20kV/10kA	2	2	2	10kV/5kA
	P50	2	1	1	20kV/10kA	-	-	-	-

2 LEM Luminaire



Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platform noted in a 25°C ambient, based on 6,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

The italicized data is extrapolated beyond the TM-21 standard.

$$E = (LM) \times (CU) \times (LAT) \times (LLD)$$

LM and CU are obtained from published photometry.

Operating Hours (Standard)		0	25,000	30,000	36,000	45,000	50,000	60,000	75,000	100,000
Lumen Maintenance Factor	P10	1	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.92
	P20	1	0.97	0.95	0.94	0.93	0.92	0.90	0.88	0.85
	P30	1	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.92
	P40	1	0.97	0.95	0.94	0.93	0.92	0.90	0.88	0.85

Operating Hours (2CI Option)		0	25,000	30,000	36,000	45,000	50,000	60,000	75,000	100,000
Lumen Maintenance Factor	P10	1	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
	P20	1	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
	P30	1	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
	P40	1	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Single Circuit Application

Ambient	P10	P20	P30	P40	P50
0°C 32°F	1.02	1.03	1.03	1.04	1.05
10°C 50°F	1.01	1.02	1.02	1.03	1.03
20°C 68°F	1.01	1.01	1.01	1.01	1.01
25°C 77°F	1.00	1.00	1.00	1.00	1.00
30°C 86°F	0.99	0.99	0.99	0.99	0.99
40°C 104°F	0.98	0.97	0.98	0.97	0.97

Optional Two Independent Circuit (2CI) Application

Ambient	P20	P30	P40
0°C 32°F	1.02	1.02	1.02
10°C 50°F	1.01	1.01	1.02
20°C 68°F	1.00	1.01	1.01
25°C 77°F	1.00	1.00	1.00
30°C 86°F	0.99	0.99	0.99
40°C 104°F	0.98	0.98	0.98

Electrical Load

Single Circuit Application

LEDs	Drive Current (mA)	System Watts/Circuit	Current (A)					
			120	208	240	277	247	480
P10	700	28	0.23	0.13	0.12	0.10	0.08	0.06
P20	1400	47	0.41	0.24	0.20	0.18	0.14	0.10
P30	1050	71	0.63	0.37	0.32	0.29	0.22	0.18
P40	1420	95	0.78	0.45	0.40	0.35	0.27	0.20
P50	1720	115	0.95	0.55	0.48	0.42	0.33	0.24

Optional Two Independent Circuit (2CI) Application

LEDs	Drive Current (mA)	System Watts/Circuit	Current (A)					
			120	208	240	277	247	480
P10	-	-	-	-	-	-	-	-
P20	700	22	0.10	0.06	0.05	0.04	-	-
P30	1000	32	0.14	0.08	0.07	0.06	-	-
P40	1250	47	0.18	0.10	0.09	0.08	-	-
P50	-	-	-	-	-	-	-	-

Operating Characteristics

LED Package	Distribution	System Watts	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P10	T2S	28	2,904	104	1	0	1	3,128	112	1	0	1	3,168	113	1	0	1
	T2M	28	2,887	103	1	0	1	3,110	111	1	0	1	3,149	112	1	0	1
	T3S	28	2,964	106	1	0	1	3,194	114	1	0	1	3,234	116	1	0	1
	T3M	28	2,801	100	1	0	1	3,017	108	1	0	1	3,055	109	1	0	1
	T4M	28	2,858	102	1	0	1	3,079	110	1	0	1	3,118	111	1	0	1
	TFTM	28	2,979	106	1	0	1	3,209	115	1	0	1	3,250	116	1	0	1
	SYMDF	28	2,771	99	1	0	1	2,986	107	1	0	1	3,023	108	1	0	1
P20	ASYDF	28	2,756	98	1	0	1	2,969	106	1	0	1	3,007	107	1	0	1
	T2S	47	5,303	113	1	0	1	5,713	122	1	0	1	5,785	123	1	0	1
	T2M	47	5,272	112	1	0	2	5,680	121	1	0	2	5,751	122	1	0	2
	T3S	47	5,414	115	1	0	2	5,832	124	1	0	2	5,906	126	1	0	2
	T3M	47	5,115	109	1	0	2	5,510	117	1	0	2	5,580	119	1	0	2
	T4M	47	5,220	111	1	0	2	5,623	120	1	0	2	5,694	121	1	0	2
	TFTM	47	5,440	116	1	0	2	5,861	125	1	0	2	5,935	126	1	0	2
P30	SYMDF	47	5,062	108	2	0	2	5,453	116	2	0	2	5,522	117	2	0	2
	ASYDF	47	5,033	107	1	0	1	5,422	115	2	0	1	5,491	117	2	0	1
	T2S	71	7,319	103	2	0	2	7,884	111	2	0	2	7,984	112	2	0	2
	T2M	71	7,276	102	2	0	2	7,838	110	2	0	2	7,937	112	2	0	2
	T3S	71	7,472	105	1	0	2	8,049	113	2	0	2	8,151	115	2	0	2
	T3M	71	7,059	99	2	0	2	7,604	107	2	0	2	7,700	108	2	0	2
	T4M	71	7,203	101	2	0	2	7,760	109	2	0	2	7,858	111	2	0	2
P40	TFTM	71	7,508	106	1	0	2	8,088	114	2	0	2	8,190	115	2	0	2
	SYMDF	71	6,985	98	2	0	2	7,525	106	3	0	3	7,620	107	3	0	3
	ASYDF	71	6,946	98	2	0	2	7,483	105	2	0	2	7,578	107	2	0	2
	T2S	95	9,320	98	2	0	2	10,041	106	2	0	2	10,168	107	2	0	2
	T2M	95	9,266	98	2	0	2	9,982	105	2	0	3	10,108	106	2	0	3
	T3S	95	9,515	100	2	0	2	10,251	108	2	0	2	10,381	109	2	0	2
	T3M	95	8,989	95	2	0	2	9,684	102	2	0	2	9,807	103	2	0	2
P50	T4M	95	9,174	97	2	0	2	9,883	104	2	0	3	10,008	105	2	0	3
	TFTM	95	9,561	101	2	0	2	10,300	108	2	0	2	10,431	110	2	0	2
	SYMDF	95	8,896	94	3	0	3	9,583	101	3	0	3	9,705	102	3	0	3
	ASYDF	95	8,846	93	2	0	2	9,530	100	2	0	2	9,650	102	2	0	2
	T2S	115	10,972	95	2	0	2	11,820	103	2	0	2	11,969	104	2	0	2
	T2M	115	10,908	95	2	0	3	11,751	102	2	0	3	11,900	103	2	0	3
	T3S	115	11,202	97	2	0	2	12,067	105	2	0	2	12,220	106	2	0	2
P50	T3M	115	10,582	92	2	0	2	11,400	99	2	0	3	11,544	100	2	0	3
	T4M	115	10,799	94	2	0	3	11,634	101	2	0	3	11,781	102	2	0	3
	TFTM	115	11,256	98	2	0	2	12,126	105	2	0	2	12,279	107	2	0	2
	SYMDF	115	10,472	91	3	0	3	11,282	98	3	0	3	11,424	99	3	0	3
	ASYDF	115	10,414	91	2	0	2	11,219	98	3	0	2	11,361	99	3	0	2

Use the following to scale 70CRI to 80CRI.

CCT	Multiplier
3000K	0.909
4000K	0.886
5000K	0.865

All IES files available on product web page

Operating Characteristics (continued)

LED Package	Distribution	System Watts	30K + 2CI Option (3000K, 70 CRI)					40K + 2CI Option (4000K, 70 CRI)					50K + 2CI Option (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P20	T2S	49	5,015	102	1	0	1	5,402	110	1	0	1	5,471	112	1	0	1
	T2M	49	4,985	102	1	0	2	5,371	110	1	0	2	5,439	111	1	0	2
	T3S	49	5,120	104	1	0	1	5,515	113	1	0	2	5,585	114	1	0	2
	T3M	49	4,837	99	1	0	2	5,210	106	1	0	2	5,276	108	1	0	2
	T4M	49	4,936	101	1	0	2	5,317	109	1	0	2	5,385	110	1	0	2
	TFTM	49	5,144	105	1	0	2	5,542	113	1	0	2	5,612	115	1	0	2
	SYMDF	49	4,786	98	2	0	2	5,156	105	2	0	2	5,222	107	2	0	2
	ASYDF	49	4,760	97	1	0	1	5,127	105	1	0	1	5,192	106	1	0	1
P30	T2S	70	6,769	97	1	0	1	7,293	104	2	0	2	7,385	106	2	0	2
	T2M	70	6,730	96	2	0	2	7,250	104	2	0	2	7,342	105	2	0	2
	T3S	70	6,911	99	1	0	2	7,445	106	1	0	2	7,539	108	1	0	2
	T3M	70	6,529	93	2	0	2	7,033	100	2	0	2	7,123	102	2	0	2
	T4M	70	6,663	95	2	0	2	7,178	103	2	0	2	7,269	104	2	0	2
	TFTM	70	6,945	99	1	0	2	7,481	107	1	0	2	7,576	108	2	0	2
	SYMDF	70	6,461	92	2	0	2	6,960	99	2	0	2	7,049	101	2	0	2
	ASYDF	70	6,425	92	2	0	2	6,922	99	2	0	2	7,009	100	2	0	2
P40	T2S	89	8,370	94	2	0	2	9,017	101	2	0	2	9,131	103	2	0	2
	T2M	89	8,321	93	2	0	2	8,964	101	2	0	2	9,078	102	2	0	2
	T3S	89	8,545	96	2	0	2	9,205	103	2	0	2	9,322	105	2	0	2
	T3M	89	8,073	91	2	0	2	8,696	98	2	0	2	8,807	99	2	0	2
	T4M	89	8,238	93	2	0	2	8,875	100	2	0	2	8,987	101	2	0	2
	TFTM	89	8,586	96	2	0	2	9,250	104	2	0	2	9,367	105	2	0	2
	SYMDF	89	7,989	90	3	0	3	8,606	97	3	0	3	8,715	98	3	0	3
	ASYDF	89	7,944	89	2	0	2	8,558	96	2	0	2	8,666	97	2	0	2

Use the following to
scale 70CRI to 80CRI.

CCT	Multiplier
3000K	0.909
4000K	0.886
5000K	0.865

All IES files available on
product web page

LED Package	Distribution	System Watts	AMB (Wavelength)					LED Package	Distribution	System Watts	AMB (Wavelength)				
			Lumens	LPW	B	U	G				Lumens	LPW	B	U	G
P10	T2S	28	1,061	38	0	0	1	P30	T2S	28	1,975	71	0	0	1
	T2M	28	1,054	38	0	0	1		T2M	28	1,964	70	0	0	1
	T3S	28	1,083	39	0	0	1		T3S	28	2,016	72	0	0	1
	T3M	28	1,023	37	0	0	1		T3M	28	1,905	68	0	0	1
	T4M	28	1,044	37	0	0	1		T4M	28	1,944	69	0	0	1
	TFTM	28	1,088	39	0	0	1		TFTM	28	2,026	72	0	0	1
	SYMDF	28	1,012	36	1	0	1		SYMDF	28	1,885	67	1	0	1
	ASYDF	28	1,007	36	0	0	1		ASYDF	28	1,875	67	0	0	1

Options Matrix

Parameters		LED AMB	Options (Start with SF, DF, 2CI or EM if being used)													
			PE	P3	P7	PSC	PCLL	MASH	MASL	SF	DF	TP	10kV	AO	2CI	EM
LED Performance Package	P10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
	P20	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P30	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P40	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P50	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Voltage	A5	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y
	AH	Y	N	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	N
	12	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
	20	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
	24	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
	27	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
	34	Y	Y	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	N	N
	48	Y	N	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	N	N
Options	PE	Y		N	N	N	N	N	N	Y	Y	Y	Y	Y	N	Y
	P3	Y	N		N	M	Y	N	N	Y	Y	Y	Y	N	N	N
	P7	Y	N	N		M	Y	N	N	Y	Y	Y	Y	N	N	N
	PSC	Y	N	M	M		N	N	N	Y	Y	Y	Y	N	N	N
	PCLL	Y	N	Y	Y	N		N	N	Y	Y	Y	Y	N	N	N
	MASH	Y	N	N	N	N	N		N	Y	Y	Y	Y	N	N	N
	MASL	Y	N	N	N	N	N	N		Y	Y	Y	Y	N	N	N
	SF	Y	Y	Y	Y	Y	Y	Y	Y		N	Y	Y	Y	Y	Y
	DF	Y	Y	Y	Y	Y	Y	Y	Y	N		Y	Y	Y	Y	Y
	TP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y
	10kV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	M	M
	AO	Y	Y	N	N	N	N	N	N	Y	Y	Y	Y		N	N
	2CI	Y	N	N	N	N	N	N	N	Y	Y	Y	M	N		N
	EM	Y	Y	N	N	N	N	N	N	Y	Y	Y	M	N	N	

Notes

I = Included with option

M = Must have: one of these must be installed for the luminaire to operate

N = Combination Not available

P30 = Valid Option Combination, not available with P10 Performance Packabe

Y = Valid Option Combination

HLWPC2

Wallpack® Full Cutoff LED

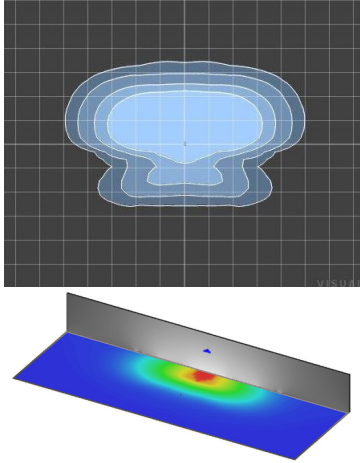


Photometric Diagrams

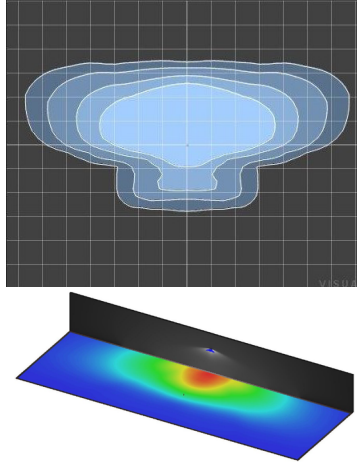
To see complete photometric reports or download .ies files for this product, visit the [Holophane's Wallpack FCO LED homepage](#). Isofootcandle plots for the HLWPC2 P30 40K. Distance are in units of mounting height (12"). Grid is 10'x10'.

0.1 fc 1 fc 0.2 fc 0.5 fc

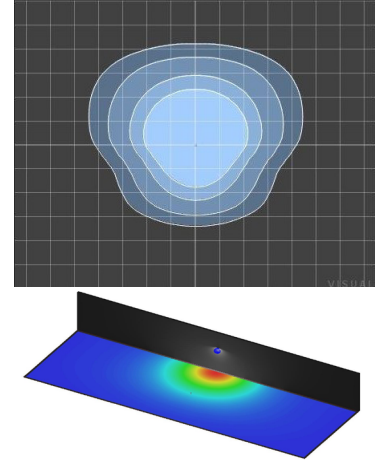
HLWPC2 P30 40K XX T2S



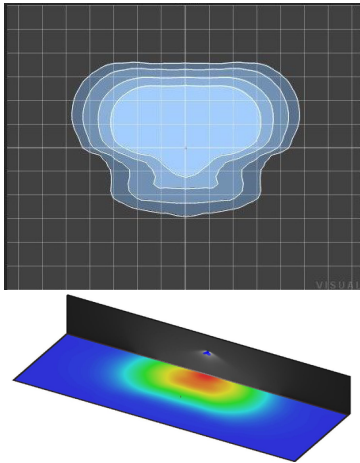
HLWPC2 P30 40K XX T2M



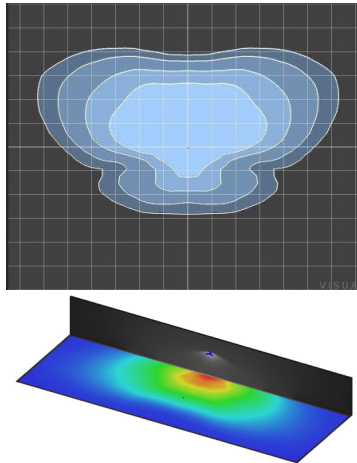
HLWPC2 P30 40K XX ASYDF



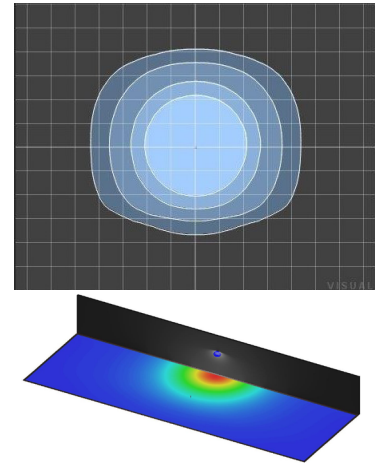
HLWPC2 P30 40K XX T3S



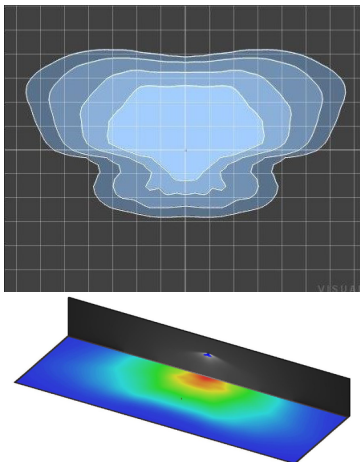
HLWPC2 P30 40K XX T3M



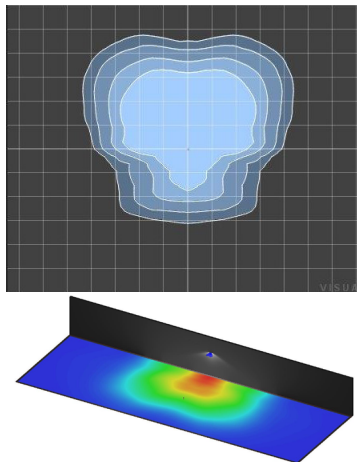
HLWPC2 P30 40K XX SYMDF



HLWPC2 P30 40K XX T4M



HLWPC2 P30 40K XX TFTM

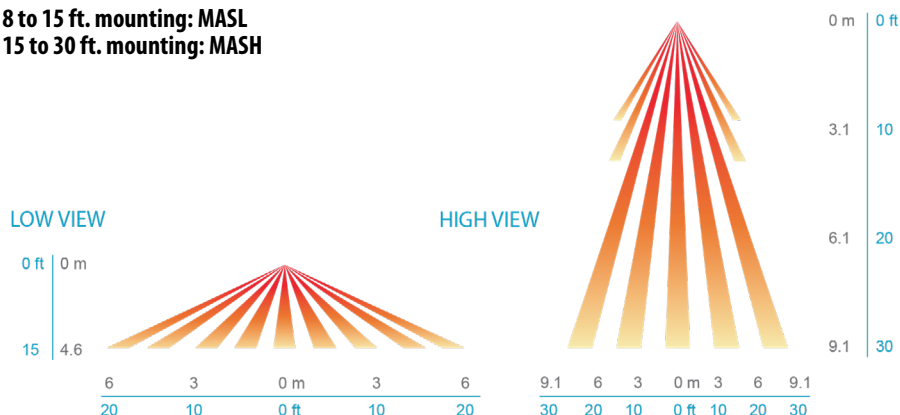


HLWPC2

Wallpack® Full Cutoff LED

Coverage Pattern

8 to 15 ft. mounting: MASL
15 to 30 ft. mounting: MASH



Control Options

Button Style Photocontrol

PE



N.E.M.A. Receptacle

P3

P7



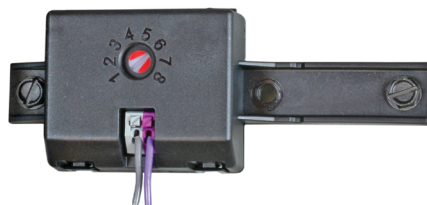
Motion & Ambient Combined Sensor

MASL/MASH



Field Adjustable Output Module

The Field Adjustable Output (AO) module is an onboard device that adjusts the light output and input voltage to meet specific requirements, allowing a single fixture configuration to be flexibly applied in many different applications. The AO option is available on the HLWPC2 series.



P10 - AS and AH		
AO Position	% Lumens	% Wattage
8	100%	100%
7	94%	95%
6	83%	82%
5	71%	69%
4	59%	57%
3	46%	45%
2	34%	33%
1	21%	21%

P20 - AS and AH		
AO Position	% Lumens	% Wattage
8	100%	100%
7	95%	94%
6	84%	80%
5	73%	67%
4	61%	54%
3	48%	42%
2	35%	30%
1	21%	18%

P30 - AS and AH		
AO Position	% Lumens	% Wattage
8	100%	100%
7	95%	94%
6	84%	80%
5	73%	67%
4	61%	54%
3	48%	42%
2	35%	30%
1	21%	18%

P40 - AS and AH		
AO Position	% Lumens	% Wattage
8	100%	100%
7	95%	95%
6	85%	82%
5	74%	68%
4	62%	55%
3	49%	43%
2	36%	30%
1	21%	17%

P50 - AS and AH		
AO Position	% Lumens	% Wattage
8	100%	100%
7	96%	95%
6	86%	81%
5	75%	68%
4	64%	55%
3	51%	42%
2	37%	29%
1	22%	17%

O. Architectural Design Narrative

Please find attached the design narrative completed by Ryan Senatore Architecture.



March 28, 2023

Christine Gramando
Planning and Urban Development Department Director
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: 89 Elm Street Apartments - Design Narrative

Dear Christine,

The proposed building to be located at 89 Elm Street in Portland's Bayside Neighborhood consists of 201 affordable residential apartment units.

Prior to developing the building concept we spent time walking the surrounding streets, 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, and time periods of design and construction. The surrounding streets contain residential structures with sloped roofs, large commercial buildings with flat roofs, brick exterior walls, lap siding, concrete exterior walls, and metal panel siding.

We designed the building using color, massing and texture to scale the building as reflected on the attached elevations. The facades utilize punched openings in pairs with horizontal metal siding that reference residential vernacular Architecture. The facade is organized into bays that work their way down Elm street, these bays are broken by recesses and contrasting dark panel siding. The windows in these vertical breaks are single windows versus the paired windows to provide a bit more differentiation. The building has a brick base in a contemporary buff color, this base is a durable material at pedestrian level that references the historic brick buildings in the neighborhood.

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

The massing of the building steps in height along Elm Street as well as along Oxford and Lancaster toward the Eastern existing residential structures.

The siding materials proposed are factory finished metal corrugated siding, metal panel siding and brick, chosen for their 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.

We look forward to discussing the project at the upcoming Planning Board workshop.

Sincerely,



Ryan Senatore, AIA LEED AP

Principal

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

P. Utilities

The proposed project will include installation of multiple utility services to the proposed building.

Water:

Based on the City archive plans, there is an existing 8" water main within Lancaster Street and 6" water main within Elm Street. It is proposed to connect into the existing 8" water main along Lancaster Street with three services to feed the proposed building. The connections include a 2" and 4" domestic service, and an 8" fire service line.

Sewer:

An existing 15" sewer exists in Elm Street. It is proposed to connect a new 8" PVC lateral into the existing SMH-4 on Elm Street. A backflow preventer is proposed at the property line before connecting into the existing manhole.

Stormwater:

Overall, the impervious area on site will decrease due to the current site use being a surface parking lot. The relatively large amount of roof area and additional green space will result in a more favorable pollutant ranking as compared to the existing condition.

Treatment will be accomplished using Storm-filter cartridges to further discharge into a proposed R-Tank subsurface detention system. Per the City comments received in part of the West Bayside Master development plan, it is requested that we provide storage on site for the greater volume out of the following; either the sanitary flows generated from the proposed development or 1" of rainfall over the entire developed area.

Based on the city archive plans, there is an existing 10" clay sewer "feeder" pipe. from 1904 within the frontage of 89 Elm Street along Lancaster Street. Based on discussions with DPW, there is potential to abandon this pipe in place and install a new separated 12" storm drain within the same corridor. It is proposed to tie 89 Elm's stormwater discharge into this proposed 12" line. This new storm drain will run within Lancaster Street and tie into the existing MS4 at the intersection of Preble and Lancaster. Please refer to the Grading & Drainage plans as well as the Stormwater Management Report for more information.

Electric/Communications:

The development currently proposes to extend 3-phase power from Elm Street and route the overhead lines to a new proposed utility pole along the frontage of 89 Elm within the Lancaster Street ROW. Currently it is proposed to drop 3-phase underground from the newly proposed utility pole into a pull box/ manhole and route



to the proposed transformer on site. Depending on the final building design and proposed loads to be generated, this design may change. Potential improvements and temporary routing to the existing network and the proposed, are to be coordinated with the appropriate utility companies.

Gas:

It is our understanding that a 2" gas main exists within Elm, Oxford, and Cedar Street. It is proposed to connect a new gas line to the 2" gas main within Oxford Street and is proposed to serve the development. See Sheet C-20, Utility Plan, for more information.

Ability to serve letters have been sent out to the respective utility companies in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use. Responses from the utility companies are forthcoming.



Q. Construction Management Plan

Project Address: 89 Elm Street, Portland Maine, 04101

Project Description:

The project proposes to redevelop the current parcel consisting of a surface level parking lot into a proposed 8-story building. The building will be utilized by primarily residential space with retail and restaurant space on the first floor. The project will be providing a paved travel way for internal circulation, reduce overall impervious area on site, in addition to including stormwater management features to reduce stormwater runoff.

Project Team Summary:

Owner:	89 Elm Street, LLC
General Contractor:	TBD
Civil & Environmental Engineer:	Acorn Engineering, Inc.
Architect:	Ryan Senatore Architecture
Structural Engineer:	Structural Integrity Consulting Engineers
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 14-11 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. In addition to the best practices set forth in the Inclusionary Zoning Guidelines for Developers of rental housing.

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>	Spring 2024
<u>Project End Date:</u>	Spring 2026

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City.

F. Security

1. The Construction Management Plan, Sheet C-03, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations*.
3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - Good Housekeeping
 - On-site security
 - Installation of new fire protection systems as construction progresses
 - Preservation of existing systems during demolition
 - Organization and training of an on-site fire brigade
 - Development of a pre-fire plan with the local fire department
 - Rapid communication
 - Consideration of special hazards resulting from previous occupancies
 - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans



1. Construction Activity in Public Streets

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

2. Sewer and Stormwater

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

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 Lancaster and Oxford 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 the 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 – 3,640 CY. Earthwork subcontractor(s) pit to project site.



- Hot Mix Asphalt – 460 Tons. Paving subcontractor pit to project site.

L. Dewatering Plans

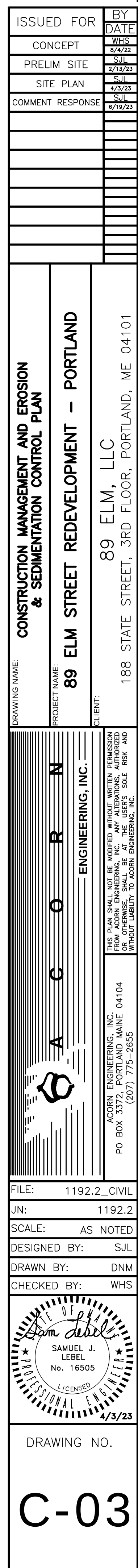
1. A basic dewatering plan for any construction work is required and shall be submitted by the Contractor. The plan must cover construction sites where groundwater is not expected but the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including 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 spaces allocated for solid waste storage as noted on the Site Plan (C-10).

A private hauler will be contracted for removal. The solid waste containers will be fully enclosed and screened from the public view. The waste containers will have trash chutes installed at the owner's discretion and is proposed to have a door accessible for tenants/pedestrian use.



S. Parking Analysis

Parking requirements for the project are to be determined by the Planning Board. A Transportation Demand Management (TDM) Plan has been prepared for the project per the requirements of Chapter 17 of the City of Portland Technical Manual. The project is within a quarter mile of a transit facility, and therefore with a TDM plan, no parking is required or provided on site (Table 19-B within the Zoning Ordinance).



T. Transportation Demand Management Plan

See attached to this section Transportation Demand Management Plan for 89 Elm Street prepared by Levine Planning Strategies, LLC.



TRANSPORTATION DEMAND MANAGEMENT PLAN

89 ELM STREET, PORTLAND, MAINE

Submitted for West Bayside Partners, LLC
by Levine Planning Strategies, LLC
February 2023



LEVINE PLANNING STRATEGIES
Tools for Building Communities

Project Overview

On behalf of West Bayside Partners, LLC and Port Property, we are pleased to submit a Transportation Demand Management (TDM) Plan for the proposed redevelopment project at 89 Elm Street. The portion that is proposed for redevelopment is in the B-3 zone.

The project proposes to convert the western portion of this lot from a surface parking lot into a deed-restricted affordable housing development. This new building will provide homes for approximately 200 Portland households that earn 60% or less of the area median income. The building as planned will have eight stories, with housing units on the second through eighth floors and two commercial spaces and common areas on the first floor. No site work is expected outside the limits of the existing building except for utility connections. Due to the change of use at the property exceeding 20,000 square feet, the project is subject to a Major Site Plan Development Application and approval from the Planning Board.

According to the October 2022 City Parking Survey of Downtown Garages and Lots, nearby parking spaces rent for between \$125 and \$160 a month. By providing a robust TDM plan, this project aims to significantly reduce the number of tenants who choose to rent off-site spaces. In addition, by not incorporating on-site parking into the cost of the development will allow financial feasibility within the cost constraints of affordable housing finance programs.

As this project is within ¼ mile of a transit line, it does not need to provide parking, provided it submits a Transportation Demand Management Plan (Portland Land Use Code Table 19-B.) This project is an excellent opportunity to provide an alternative to automobile ownership and leverage the walkability, bikeability, and transit access of its downtown location.

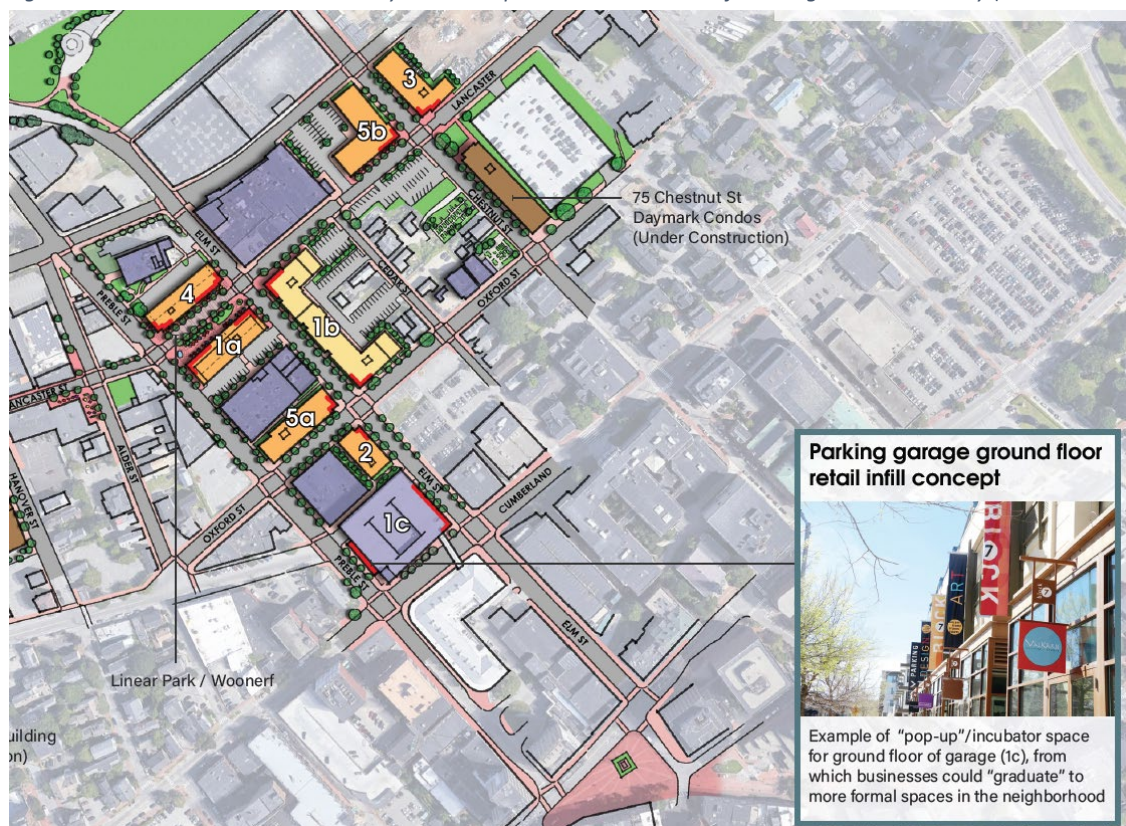
We are confident that, with this TDM plan in place, this project will not require on-site parking, nor will it have an undue burden on other parking supply in the area.

For ease of review, we have drafted this TDM plan generally following the format of the City's Technical Manual Section 17.3. ("Transportation Demand Management.")

Expected 89 Elm Unit Mix				
Floor	Studios	1 BR	2 BR	TOTAL
2	4	14	3	21
3	4	19	6	29
4	6	22	6	34
5	6	22	6	34
6	6	21	5	32
7	6	21	5	32
8	2	16	1	19
TOTAL	34	135	32	201



Figures 1a and 1b: 89 Elm Street on City Parcel Maps and in the Context of Buildings Planned Nearby (89 Elm is labelled “1b”)



Transportation Narrative

This project is in a location with a myriad of transportation options that lend themselves towards transportation demand management. It is located on Elm Street along a section identified as a “priority corridor” as well as being located in the Bayside development “enhance” node identified in *Portland’s Plan*.

Priority Nodes & Corridors

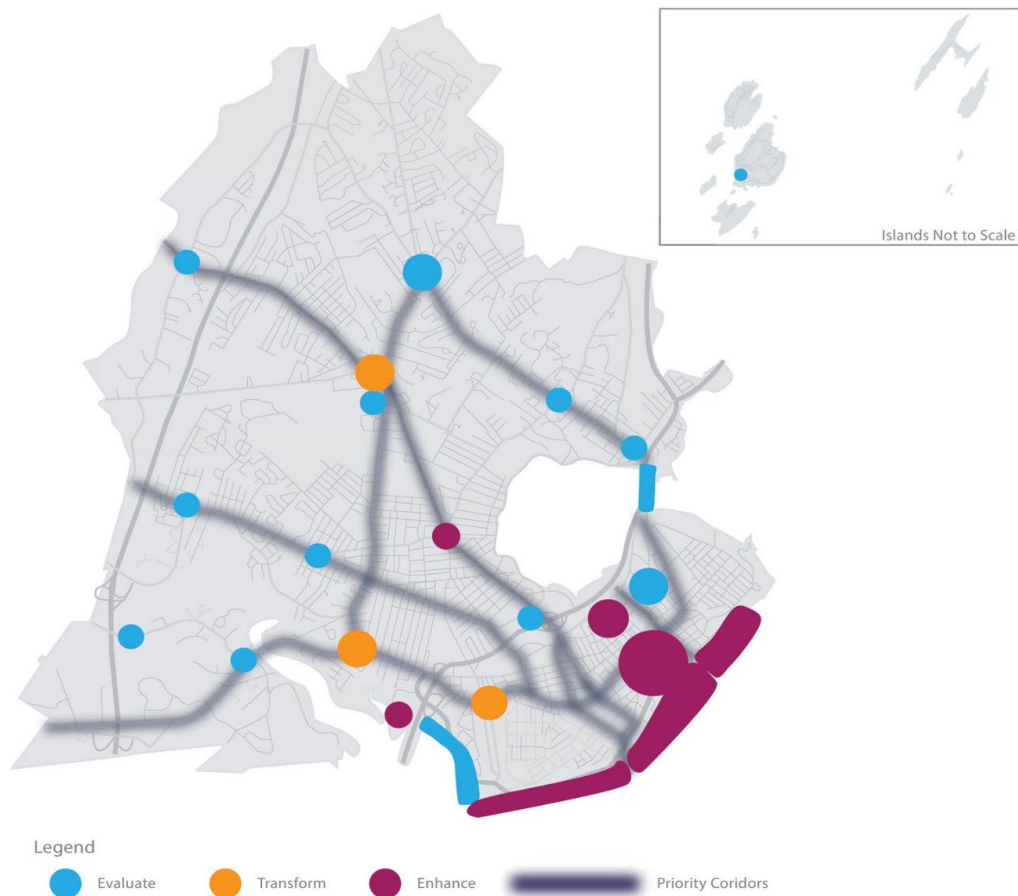


Figure 2: Priority Development Nodes and Corridors from Portland's Plan 2030

Roadways

As mentioned above, this project is located on Elm Street, between the intersections with Cumberland Avenue and Marginal Way. These streets are designed to provide multimodal access, with good sidewalk connections that are generally compliant with accessibility standards. Bicycle accommodations, while good, could be improved along all these corridors, though new bike lanes on Elm and Preble Streets as well as the extension of the Bayside Trail have provided significant new options for bikers.

Transit

Very few developments are in as good a position as this one to take advantage of existing transit.

This project is in the heart of the Greater Portland Transit District's system. The METRO Pulse is just a few short blocks away and several bus lines stop nearby. The Route 8 provides service on Elm Street. In addition, in response to the *Transit Together* study recently completed by the Portland Area Comprehensive Transportation System, Greater Portland METRO is considering options to modify the Route 8 and other Peninsula bus services to provide better options for users. Some of this work began prior to the COVID-19 pandemic but was paused due to various factors and will be reconsidered in light of the *Transit Together* recommendations.

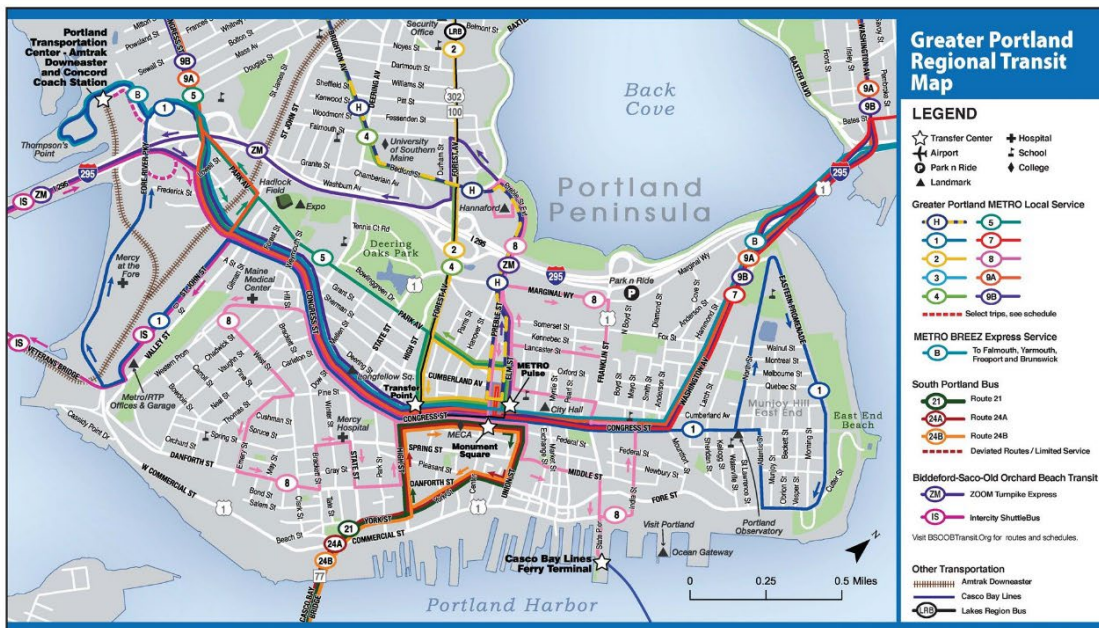
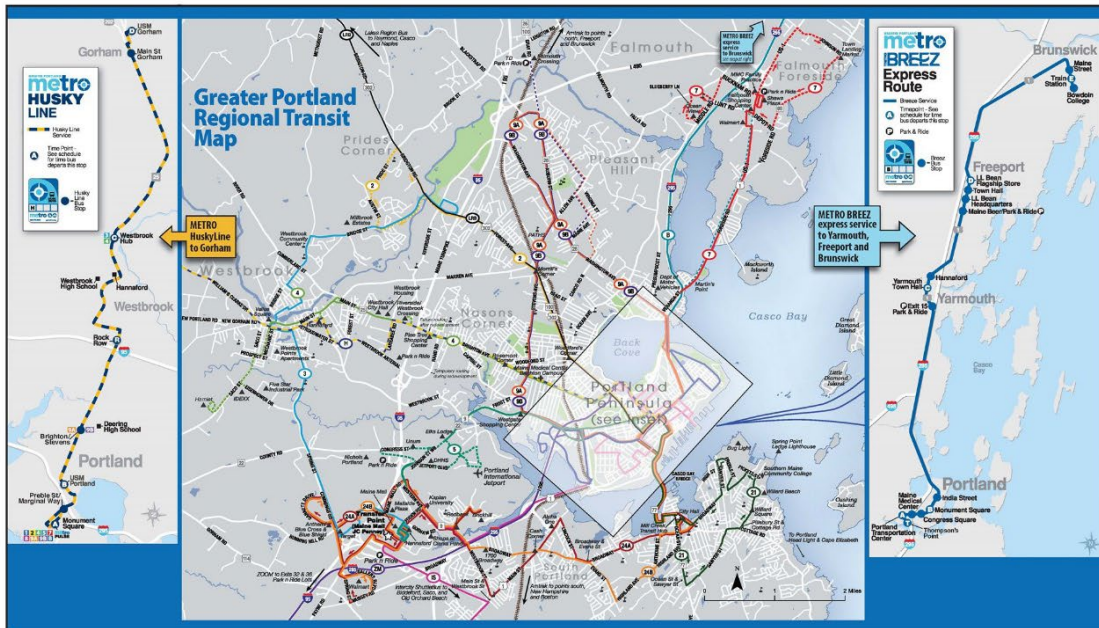
In addition, the South Portland Bus Service operates routes from this area to destinations across the Casco Bay Bridge, including Southern Maine Community College and services and offices in South Portland.

Congress Street was recently modified to prioritize transit access, through provision of in-line stops along the street as well as shelters. METRO service also provides easy access to the Portland Transportation Center, where intercity bus and train service provides connections as far as New York City, and to the Portland International Jetport for those going farther afield.



Figure 3: Existing METRO bus routes servicing the area, from the Bayside Transportation Master Plan

Greater Portland Regional Transit Map



Effective August 29, 2021

Figure 4: Greater Portland METRO's transit network, from METRO

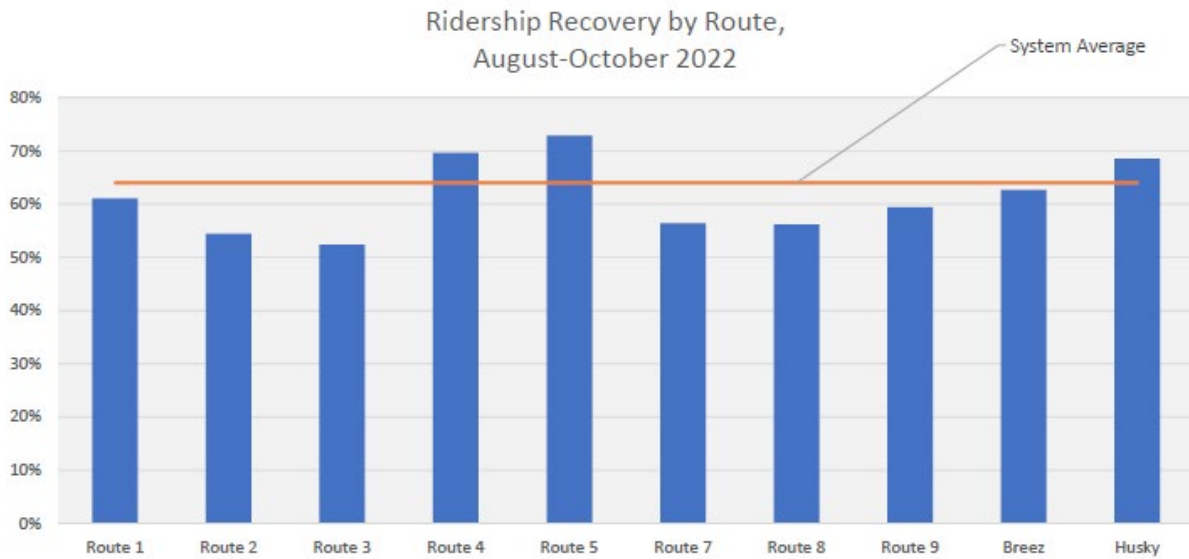
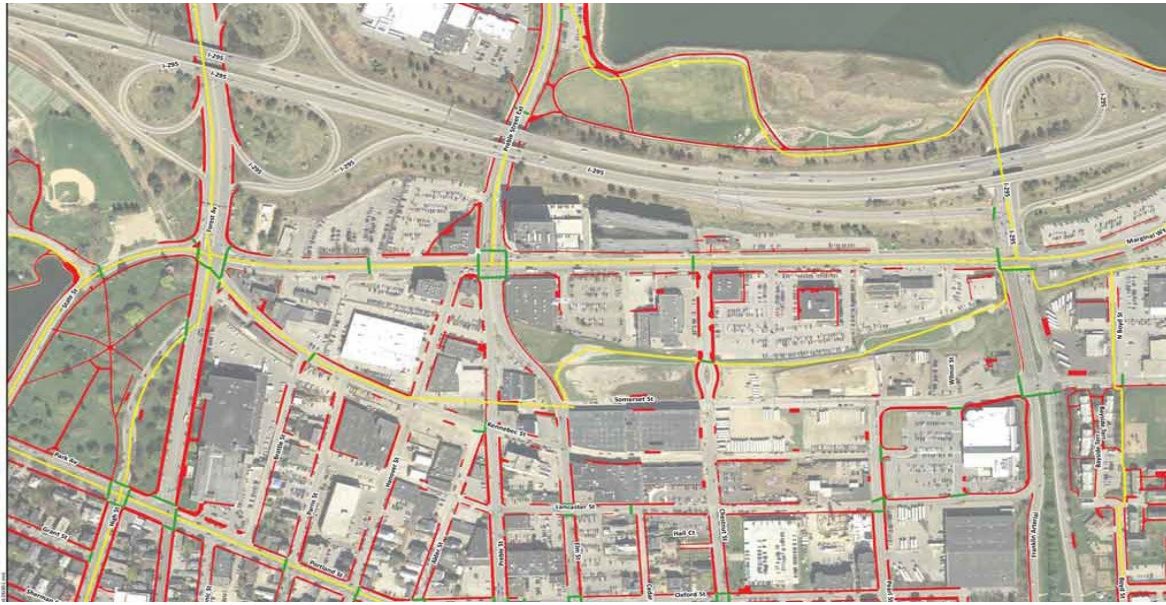


Figure 5: Ridership recovery on METRO routes since the start of the pandemic

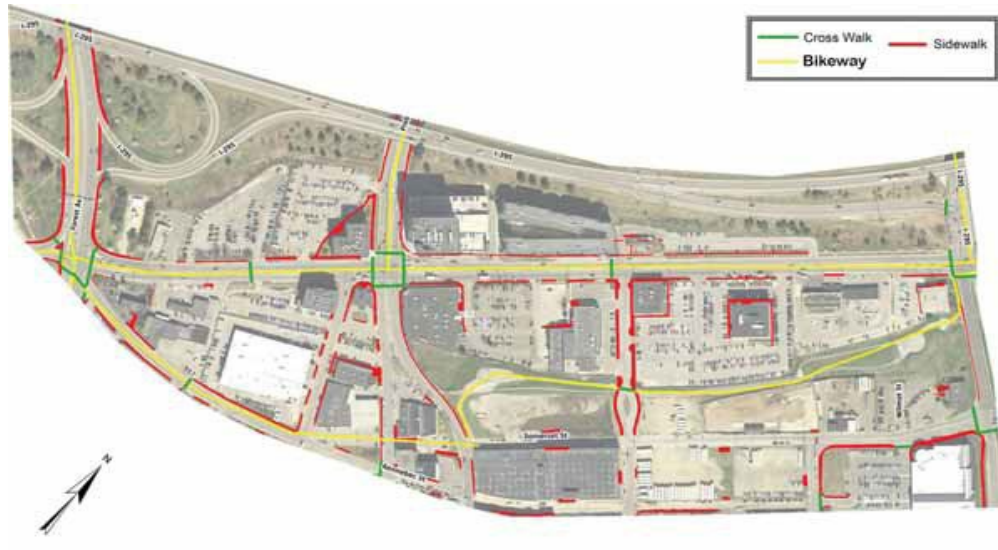
Bicycle and Pedestrian Facilities

As mentioned above, all the nearby roadways have sidewalks on both sides. Accessibility is generally acceptable on these sidewalks, with tip downs generally provided. Many of these sidewalks are cleared in the winter as part of Portland Downtown's services. Some of the brick surfaces are not ideal in the rain or snow for those with limited mobility, making Portland Downtown's services particularly important.

The area has excellent bike facilities. The Bayside Trail is nearby, as is the Back Cove Trail and additional dedicated bicycle/pedestrian facilities that circle much of the downtown peninsula. In addition, the City recently partnered with Tandem Mobility to launch a bike sharing system. That system offers both conventional and e-bikes for general use. In 2022, there were two Portland Bikeshare stations in close walking distance of 89 Elm Street, one at Marginal Way and Elm Street and the other at Hanover Street and Lancaster Street.



Figures 6a and 5b:
Existing Pedestrian
and Bicycle
Facilities, from the
Bayside
Transportation
Master Plan. Note
that improvements
have been made
since this map was
prepared, included
recommended bike
lanes and sidewalk
improvements on
Elm & Preble
Streets.



Bayside Transportation Master Plan

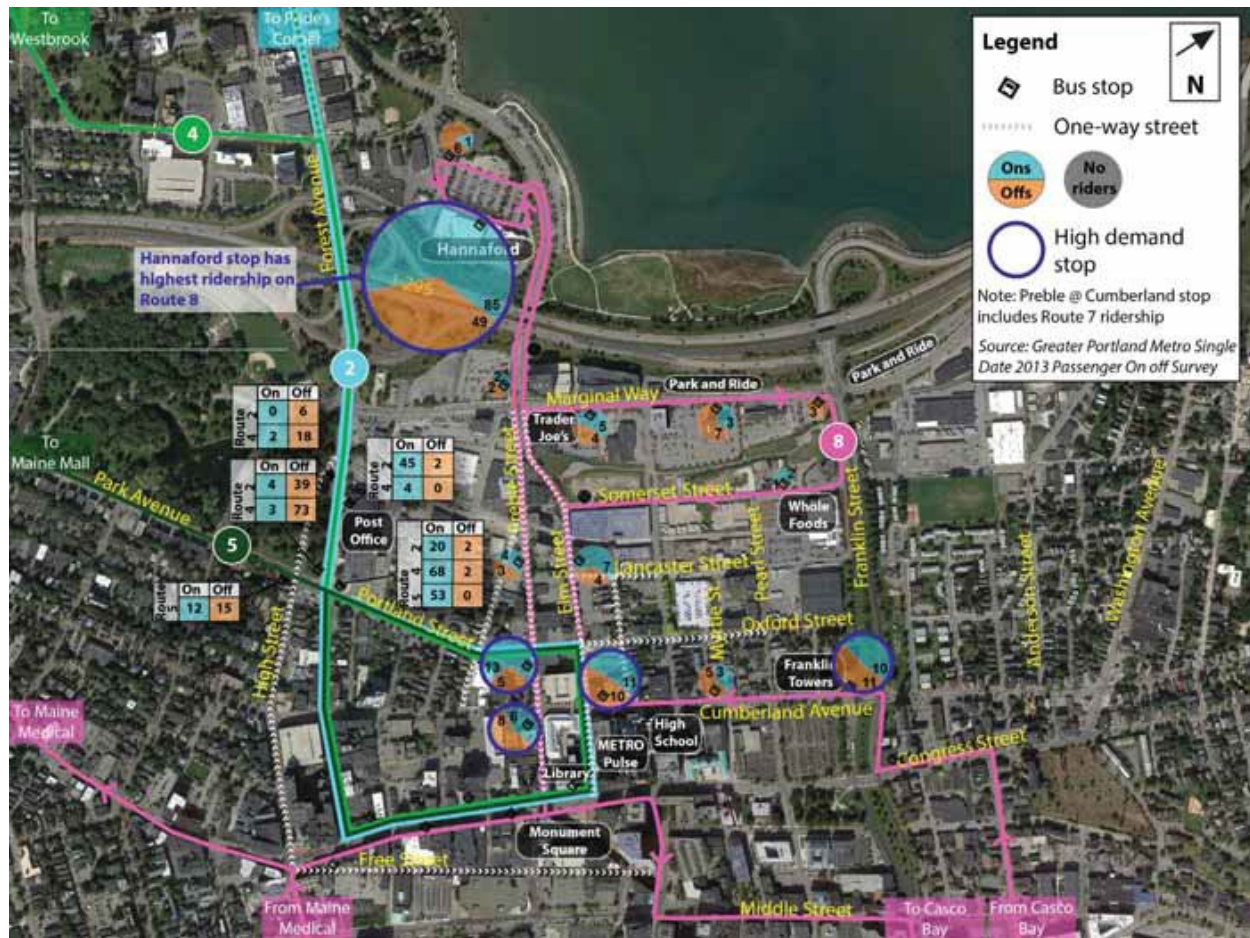


Figure 7: Ridership at Bayside METRO stops from the Bayside Transportation Master Plan



Figure 8: Issues and Opportunities at Bayside bus stops from the Bayside Transportation Master Plan



Figure 9: Long-term recommendation for Elm Street at Lancaster Street from the Bayside Transportation Master Plan (since implemented)

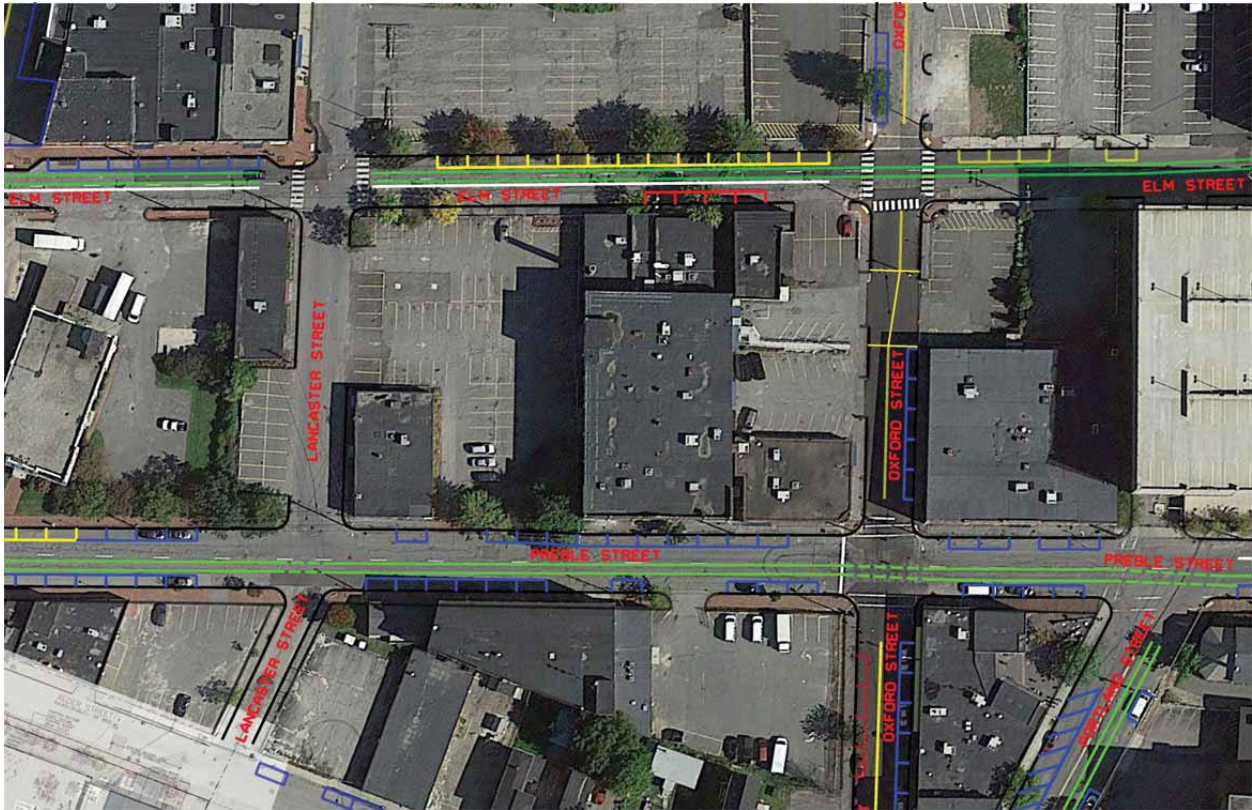


Figure 10: Preble and Elm Streets as planned in the Bayside Transportation Master Plan (this layout has since been implemented)

Characteristics of Likely Residents

In thinking through who may be likely to live in this building, it makes sense to first look at who currently lives in the neighborhood. Census Tract 6 includes much of the surrounding neighborhood in west Bayside. For that reason, we've looked at data from the 2021 American Community Survey 5-year data from the U.S. Census. That data provides a sense of some key characteristics of likely residents, with respect to car ownership, household size and commuting patterns. This data informs the best TDM strategies for this development.

In this tract, the average household size is 1.74, and one third of households have no vehicle available. In fact, almost half of single-person household have no available vehicles, and almost half of all households have just one vehicle available. The proximity of key assets, such as downtown amenities, jobs, and supermarkets, make this a good place to live car-free, or car-light.

As shown in Figure 11 below, many workers in this Census tract walk to work, work from home, or use alternative modes to get to work. Less than half of the workers in this tract drive to work. When you look at young workers (under age 25) you find that over 2/3 walk to work, and almost 3/4 get to work by alternative modes. The addition of Portland Bikeshare and the redesign of the Route 8 are likely to increase these numbers further.

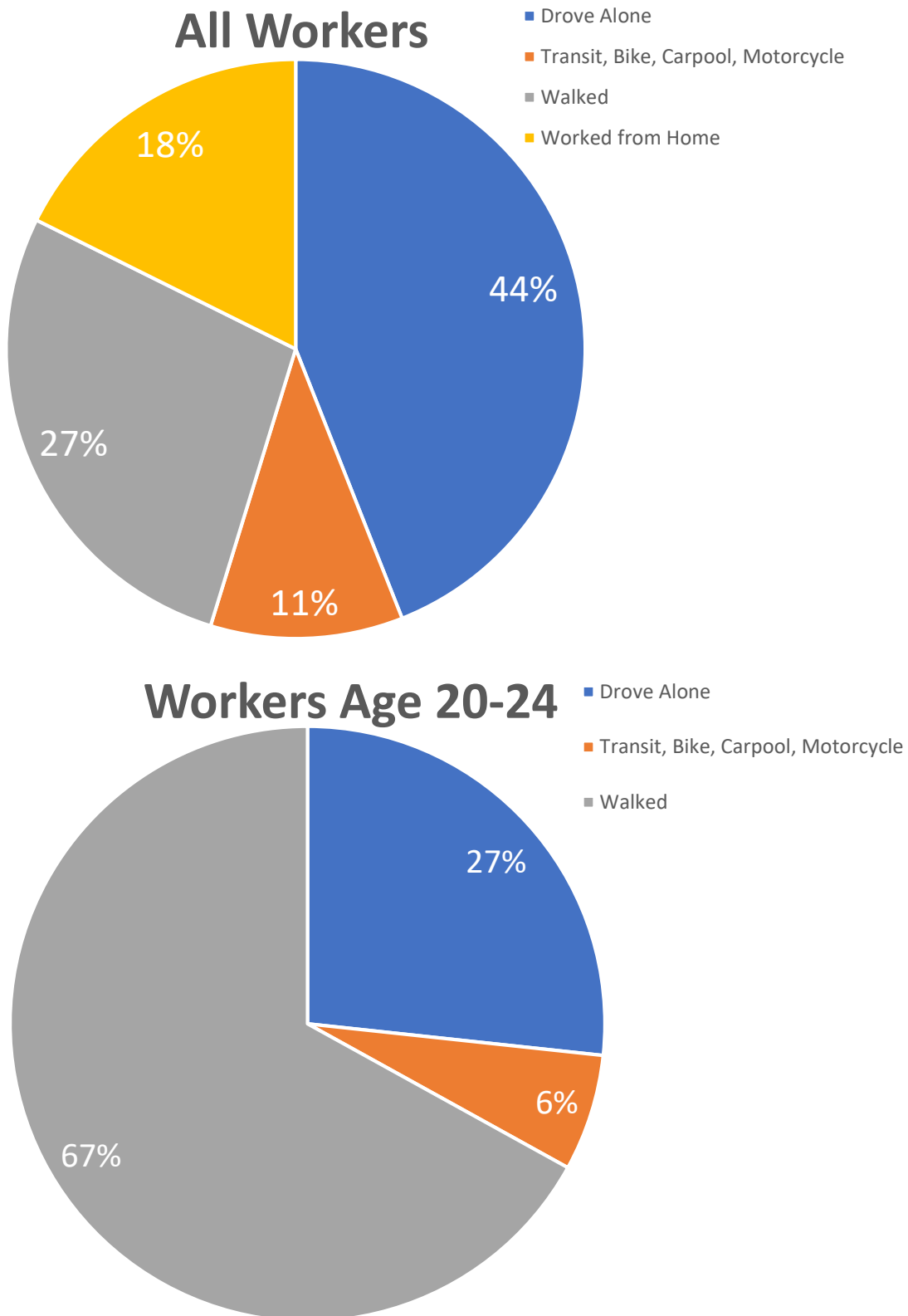
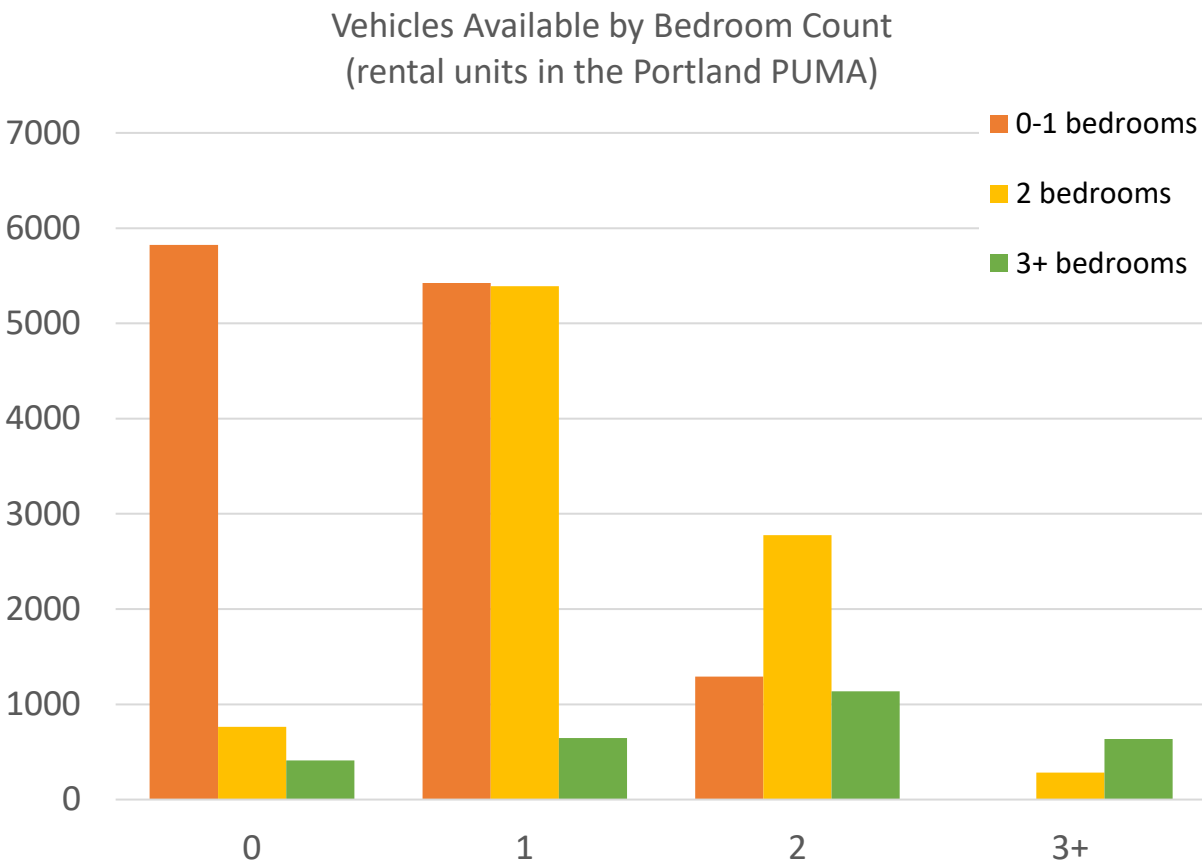


Figure 11: Commuting modes for all workers and workers age 20-40 (2021 5-Year American Community Survey)

Looking at vehicle availability by unit size reveals similar data. Overall, for the Portland Public Use Microdata Area, vehicle availability identified in the 2021 American Community Survey 1-year data is low. As seen in the chart below, small units (0-1 bedrooms) have an average of 0.64 vehicles available, and two-bedroom units have an average of 1.28 vehicles available. Given that having a vehicle available does not necessarily mean owning a vehicle, these numbers would likely be even lower for vehicle ownership.



TDM Administrator

The TDM Administrator for this project will be:

Jen Munroe, Property Manager
Port Property Management
82 Hanover Street, Suite 5
Portland, ME 04101
jennifer@portpropmgt.com
(207) 233-8418

Ms. Munroe will also serve as the TDM Coordinator for the 52 Hanover Street building under construction, so she will be able to apply best practices across the two buildings. Ms. Munroe may work

with property management to implement details of this TDM plan but will be the one-stop contact when needed.

Resident Survey

In order to gauge the effectiveness of this TDM plan – and to adjust it if needed – the TDM Administrator will conduct an annual survey of residents in the building. This survey will be conducted electronically using contact information on file with the management office for each unit. It will be include questions on:

- Vehicle ownership and parking location
- Modes of transportation for commuting, household chores, and recreation
- Interest in carpooling or otherwise sharing transportation expenses with other tenants to reduce trips
- Barriers to vehicle trip reduction best practices, such as bicycle use and transit ridership, and
- Other transportation needs and/or interests of tenants.

Those tenants that express interest in sharing information for carpooling or other trip reduction purposes will have their information provided to other tenants who have expressed a similar interest.

The results of this survey will be provided to the City's Planning & Urban Development Department using a form similar to the one provided on the City's web site (see Attachment.) The survey will remain substantively consistent from year to year, in order to allow the results to be used to monitor the effectiveness of this TDM plan and allow for adjustments as needed.

Trip Reduction Targets

Trip Generation and Reduction

This project's trip generation rates were determined using the following ITE Trip Generation Land Use Codes:

- ✓ LUC 223 Affordable housing (201 units)
- ✓ LUC 932 High Turnover sit down restaurant (2,000 sf)
- ✓ LUC 822 Strip retail plaza (<40k) (2,500 sf)

In total, the development is expected to generate 132 trips at morning peak hour and 139 at evening peak hour. Those figures are based on a typical affordable housing development with few transit, pedestrian or bicycle options. For this project, there is likely to be some trip-chaining, or combining of separate trips.

What is particularly different about this project is the mode and distance of these trips. In many cases, most of the trips generated would involve individual vehicle trips. However, in this case, with good TDM strategies in place, most of the expected trips will be on foot, on bike, or on transit.

The development will have a target vehicle trip reduction of 25% within three years, increasing to 50% over seven years. That would mean 99 AM vehicle trips and 104 PM vehicle trips within three to five

years. These targets would go to 66 AM vehicle trips and 70 PM vehicle trips after seven years. This will be accomplished by setting mode targets as shown.

Trip Generation Reduction Targets

	Project Baseline	3-5 Year Target	7 Year Target
Vehicle Trips (AM)	132	99 (25%)	66 (50%)
Vehicle Trips (PM)	139	104 (25%)	70 (50%)

Mode Split Targets

	Baseline	3-5 Year Target	7 Year Target
Drive Alone	44%	33%	22%
Carpool/Vanpool	3%	3%	3%
Transit	4%	8%	12%
Bicycle	4%	8%	12%
Walk	27%	30%	33%
Work from Home	18%	18%	18%

Parking Need and Reduction

Research has shown that parking demand in transit-oriented developments such as this one can be as little as one-fifth the ITE supply guideline (see, for example, Ewing et al, *Landscape & Urban Planning* 160 (2017) 69-78.) Given the project's location, the decoupling of parking costs from rents, and the robust measures proposed in this TDM plan, the parking generation of this project can be entirely accommodated in nearby lots and overnight on-street parking with limited negative impacts.

Parking & Trip Reduction Strategies

As a primarily residential building with units best suited to one to three persons, this project will have different parking and trip reduction strategies than commercial buildings, or even residential buildings with larger units. The parking and trip reduction strategies for this development are focused on the needs of likely tenants, including younger workers in a variety of fields and older single persons seeking the convenience of a downtown location.

These strategies are designed to respond to the following needs:

- Convenience
- Cost-effectiveness
- Leverage of downtown location, and
- Pushing of information to users rather than expecting them to pull information from on-line sources.

Education

A key part of this TDM plan is to convey clear, compelling and accurate information to tenants and visitors as to the transportation options available other than driving. As part of a welcome packet, all new tenants will be provided information including the following:

- Transit maps, schedules, and information about real-time transit trackers
- Information about transportation providers, including transit operators, transportation-as-a-service (TAAS) companies, and other options to avoid driving
- A building-wide ride board to allow tenants to share trips, and
- Information on bike routes, parking infrastructure, and other incentives.

This educational packet will be provided online as well, so tenants and visitors can refer to it at any time.

Monitoring

As mentioned above, there is a TDM Administrator designated for this development who will be responsible for monitoring this plan. Following an annual survey of residents, the TDM Administrator will report results to the City's Department of Planning & Urban Development and propose modifications to this plan to make it more effective, if need. This reporting will also be helpful in reviewing future TDM plans, as we expect that additional developments will propose using the option in Table 19-B in the future.

The report for this development will include, at a minimum, the following:

1. Building occupation.
2. Mode split by trip type.
3. Automobile ownership of tenants.
4. Parking locations utilized by tenants, and
5. Suggested enhancements to transit, bicycle and pedestrian infrastructure.

TDM Action Steps

The core actions of this TDM Plan are consistent with, and in many cases exceed, the recommended actions in the Technical Manual. These action steps will result in trip and parking demand reductions that meet or exceed the goals listed. In addition, by providing residents with transportation options that reduce per-capita emissions, these steps will have external benefits that will improve the quality of the air in downtown Portland and help address the goals of the *One Climate Future* plan. Finally, by reducing vehicle trips in individual vehicles, this TDM Plan will save the City and state money by reducing the wear and tear on city streets.

TLU 2.2 Summary - Complete Neighborhoods and Transit-Oriented Development

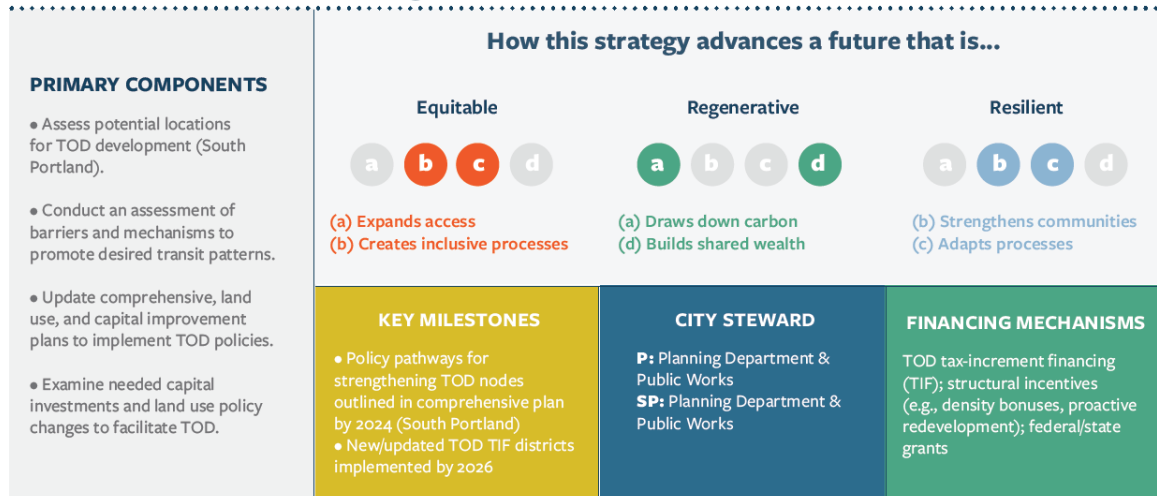


Figure 12: Portland's Climate Action Plan calls for infill development such as this project
(Source: *One Climate Future*, p. 151)

1. Infrastructure

- Transit Lounge:** With the closest transit stops outside the door, and others feet away, it will be easy for tenants to access several bus lines just up the street at the METRO Pulse. The developer will work with METRO to develop a "transit lounge" in the lobby that provides a comfortable place to wait for buses, with posted schedules and, as noted below, potentially real-time transit arrival information.
- Transit Information:** As has become a best practice in transit-oriented developments in other cities, real-time transit information is key. The developer will work to provide either a real-time transit information screen in the transit lounge, with a comfortable waiting area, or develop a kiosk working with other buildings under development in the area and METRO staff that provides transit information and shelter in a common space.
- Bicycle Parking:** This development will provide at least 40 indoor bicycle parking spaces in a dedicated bike room in the building.
- Bike Repair Station:** The development will offer a bike repair station for the use of residents, located conveniently in a common area.

2. Incentives

- a. Unbundled Parking: As mentioned above, the cost of parking has been "unbundled" from the cost of developing and operating the building. Tenants who choose not to own their own vehicle are then able to enjoy the full benefit of a reduction in their housing and transportation cost by not having to pay for a parking space.
- b. Transit Incentives: Research has shown that moving into a new home is a chance for residents to try new transportation options. In order to make sure that new tenants are aware of, and have incentives to try, transit, will provide all new tenants with easy access to the Umo app for use on METRO, BSOOB Transit and/or South Portland Bus Service. All new tenants will also receive \$50 pre-loaded onto their Umo account to allow them to try transit options and develop new habits (or continue previous ones) in this location. For tenants without smartphones, a METRO fare card loaded with \$50 will be provided.
- c. Car and Bike Sharing: While Portland currently does not have a car-sharing vendor, should one become available, the owners commit to working with the City to provide a carsharing vehicle nearby. Similarly, they are interested in working with the City as it seeks to expand Portland Bikeshare and will sponsor a station nearby if appropriate.
- d. Telecommuting: This building will be wired broadband infrastructure that meets the build-to standard of the Maine Connectivity Authority and ConnectMaine, in order to encourage telecommuting as a trip reduction strategy.



Figure 13: A real-time transit display in an apartment lobby
(Source: <https://www.redmon.com/expertise/transit-display/>)

3. Education

- a. Information: As part of a welcome packet, all new tenants will be provided information including the following:
 - Transit maps, schedules, and information about real-time transit trackers
 - Information about transportation providers, including transit operators, transportation-as-a-service (TAAS) companies, and other options to avoid driving
 - A building-wide ride board to allow tenants to share trips, and
 - Information on bike routes, parking infrastructure, and other incentives.
 - This educational packet will be provided online as well, so tenants and visitors can refer to it at any time.
- b. Recognition: In order to recognize and provide positive reinforcement for resident TDM efforts, the building management will also provide an annual recognition of leaders in trip reduction from the building.

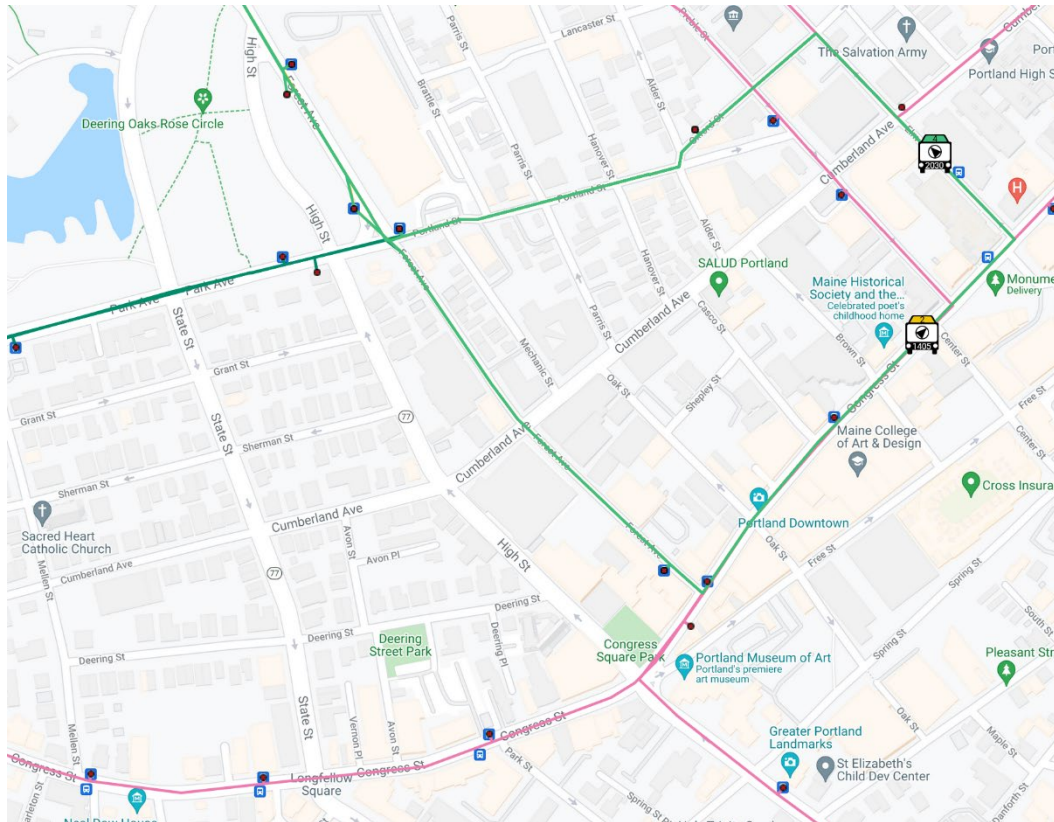


Figure 14: Transit tracking in downtown Portland that can be utilized in a lobby screen system (Source: <http://bustimeweb.smttracker.com/bustime/map/displaymap.jsp>)

T. Transportation Demand Management Plan

See attached to this section Transportation Demand Management Plan for 89 Elm Street prepared by Levine Planning Strategies, LLC.



TRANSPORTATION DEMAND MANAGEMENT PLAN

89 ELM STREET, PORTLAND, MAINE

Submitted for West Bayside Partners, LLC
by Levine Planning Strategies, LLC
May 2023



LEVINE PLANNING STRATEGIES
Tools for Building Communities

Project Overview

On behalf of West Bayside Partners, LLC and Port Property, we are pleased to submit a Transportation Demand Management (TDM) Plan for the proposed redevelopment project at 89 Elm Street. The portion that is proposed for redevelopment is in the B-3 zone.

The project proposes to convert the western portion of this lot from a surface parking lot into a deed-restricted affordable housing development. This new building will provide homes for approximately 200 Portland households that earn 60% or less of the area median income. The building as planned will have eight stories, with housing units on the second through eighth floors and two commercial spaces and common areas on the first floor. No site work is expected outside the limits of the existing building except for utility connections. Due to the change of use at the property exceeding 20,000 square feet, the project is subject to a Major Site Plan Development Application and approval from the Planning Board.

According to the October 2022 City Parking Survey of Downtown Garages and Lots, nearby parking spaces rent for between \$125 and \$160 a month. By providing a robust TDM plan, this project aims to significantly reduce the number of tenants who choose to rent off-site spaces. In addition, by not incorporating on-site parking into the cost of the development will allow financial feasibility within the cost constraints of affordable housing finance programs.

As this project is within ¼ mile of a transit line, it does not need to provide parking, provided it submits a Transportation Demand Management Plan (Portland Land Use Code Table 19-B.) This project is an excellent opportunity to provide an alternative to automobile ownership and leverage the walkability, bikeability, and transit access of its downtown location.

We are confident that, with this TDM plan in place, this project will not require on-site parking, nor will it have an undue burden on other parking supply in the area.

For ease of review, we have drafted this TDM plan generally following the format of the City's Technical Manual Section 17.3. ("Transportation Demand Management.")

Expected 89 Elm Unit Mix				
Floor	Studios	1 BR	2 BR	TOTAL
2	4	14	3	21
3	4	19	6	29
4	6	22	6	34
5	6	22	6	34
6	6	21	5	32
7	6	21	5	32
8	2	16	1	19
TOTAL	34	135	32	201



Figures 1a and 1b: 89 Elm Street on City Parcel Maps and in the Context of Buildings Planned Nearby (89 Elm is labelled “1b”)



Transportation Narrative

This project is in a location with a myriad of transportation options that lend themselves towards transportation demand management. It is located on Elm Street along a section identified as a “priority corridor” as well as being located in the Bayside development “enhance” node identified in *Portland’s Plan*.

Priority Nodes & Corridors

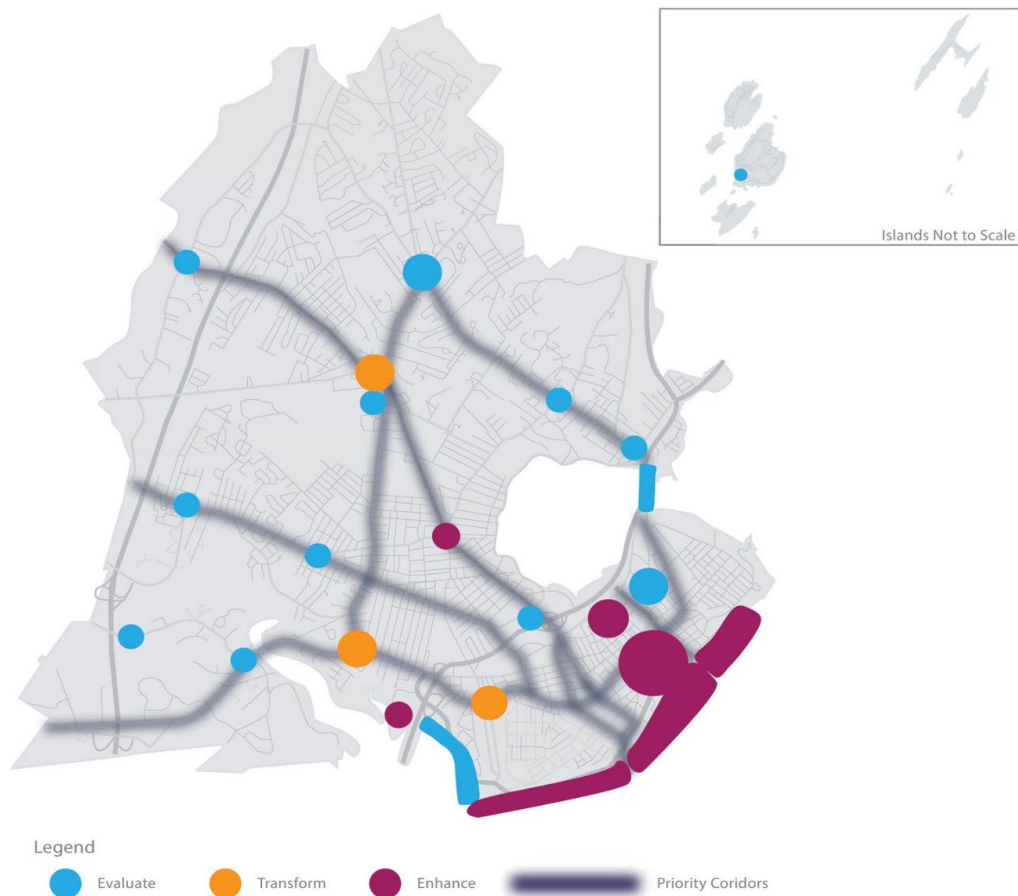


Figure 2: Priority Development Nodes and Corridors from Portland's Plan 2030

Roadways

As mentioned above, this project is located on Elm Street, between the intersections with Cumberland Avenue and Marginal Way. These streets are designed to provide multimodal access, with good sidewalk connections that are generally compliant with accessibility standards. Bicycle accommodations, while good, could be improved along all these corridors, though new bike lanes on Elm and Preble Streets as well as the extension of the Bayside Trail have provided significant new options for bikers.

Transit

Very few developments are in as good a position as this one to take advantage of existing transit.

This project is in the heart of the Greater Portland Transit District's system. The METRO Pulse is just a few short blocks away and several bus lines stop nearby. The Route 8 provides service on Elm Street. In addition, in response to the *Transit Together* study recently completed by the Portland Area Comprehensive Transportation System, Greater Portland METRO is considering options to modify the Route 8 and other Peninsula bus services to provide better options for users. Some of this work began prior to the COVID-19 pandemic but was paused due to various factors and will be reconsidered in light of the *Transit Together* recommendations.

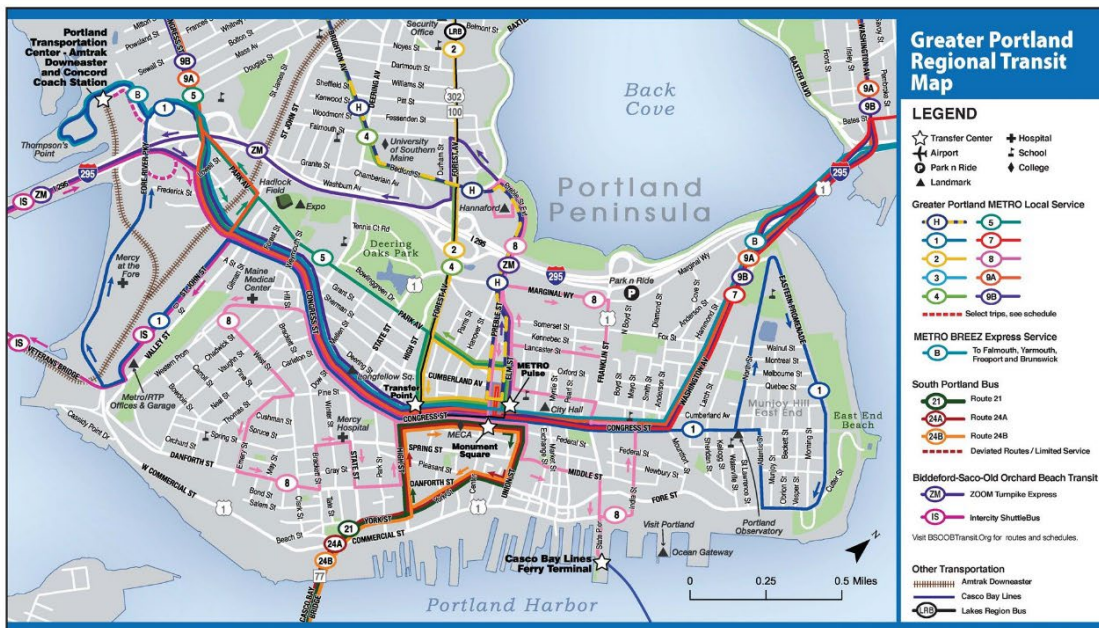
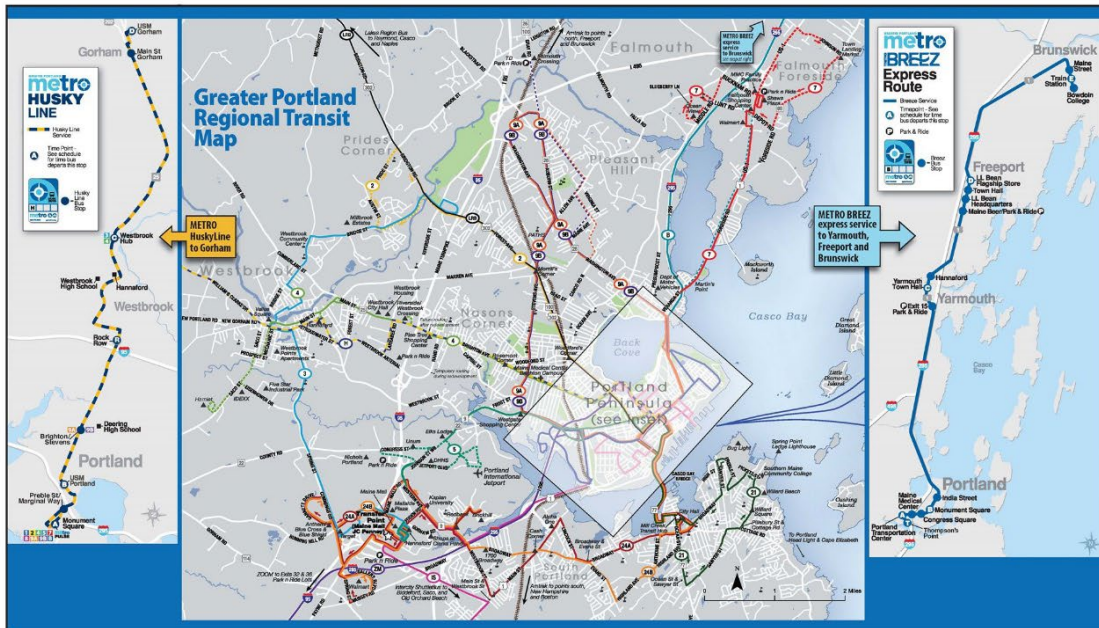
In addition, the South Portland Bus Service operates routes from this area to destinations across the Casco Bay Bridge, including Southern Maine Community College and services and offices in South Portland.

Congress Street was recently modified to prioritize transit access, through provision of in-line stops along the street as well as shelters. METRO service also provides easy access to the Portland Transportation Center, where intercity bus and train service provides connections as far as New York City, and to the Portland International Jetport for those going farther afield.



Figure 3: Existing METRO bus routes servicing the area, from the Bayside Transportation Master Plan

Greater Portland Regional Transit Map



Effective August 29, 2021

Figure 4: Greater Portland METRO's transit network, from METRO

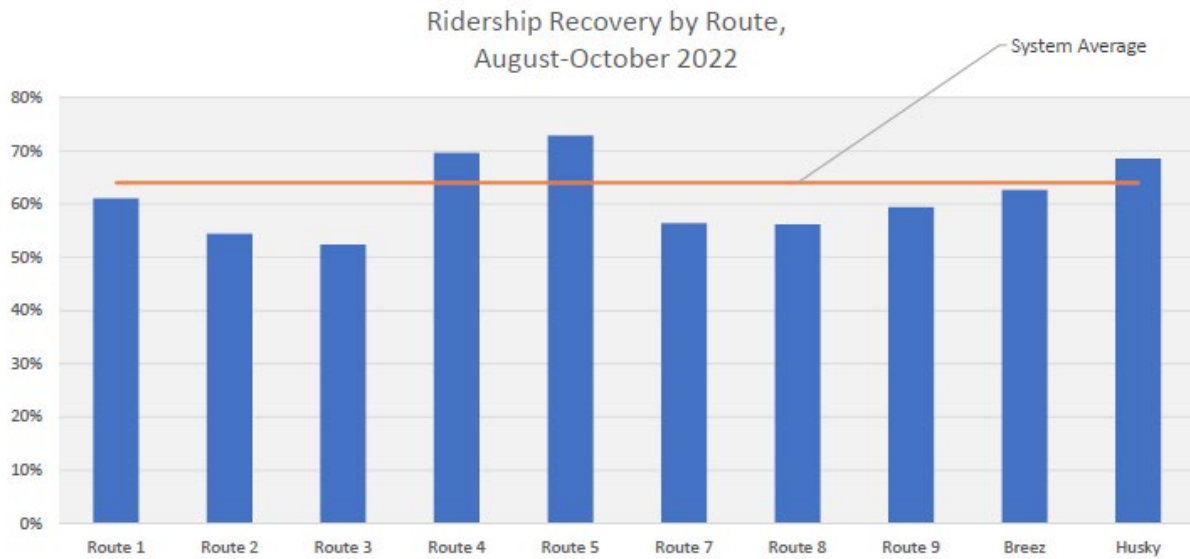
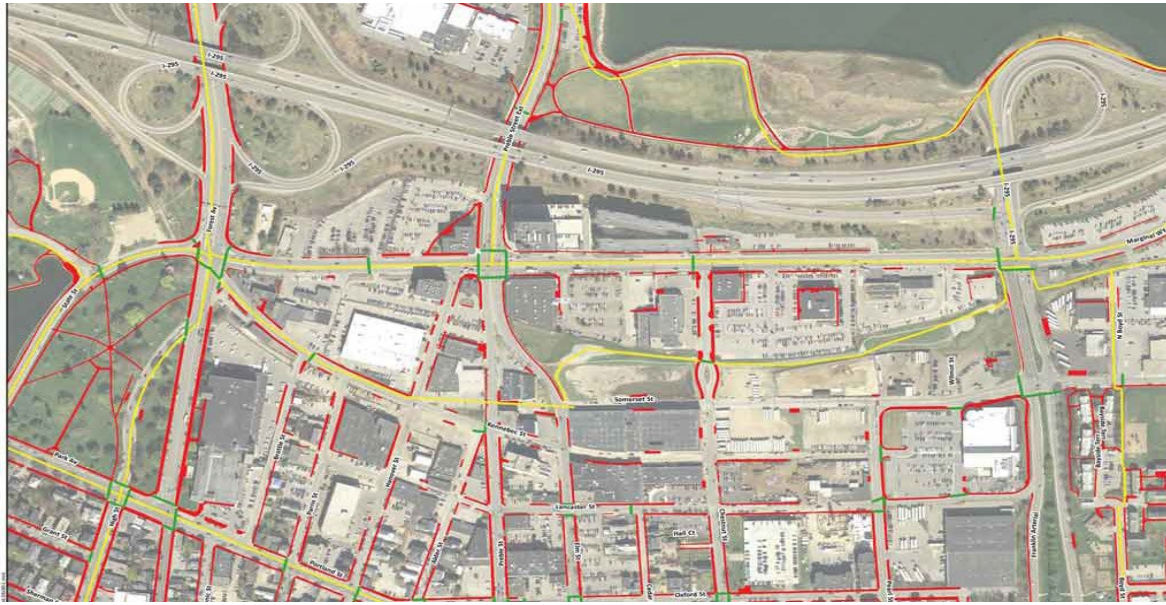


Figure 5: Ridership recovery on METRO routes since the start of the pandemic

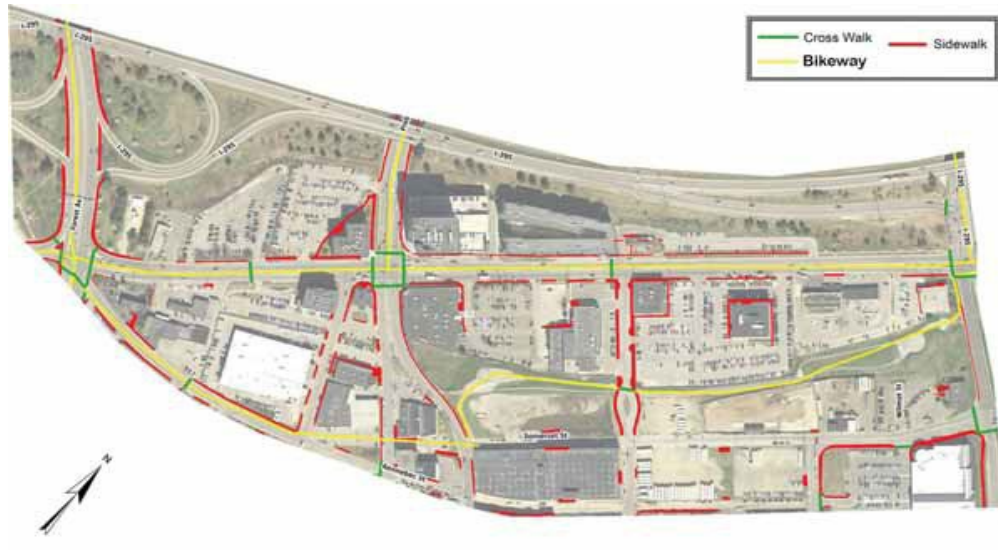
Bicycle and Pedestrian Facilities

As mentioned above, all the nearby roadways have sidewalks on both sides. Accessibility is generally acceptable on these sidewalks, with tip downs generally provided. Many of these sidewalks are cleared in the winter as part of Portland Downtown's services. Some of the brick surfaces are not ideal in the rain or snow for those with limited mobility, making Portland Downtown's services particularly important.

The area has excellent bike facilities. The Bayside Trail is nearby, as is the Back Cove Trail and additional dedicated bicycle/pedestrian facilities that circle much of the downtown peninsula. In addition, the City recently partnered with Tandem Mobility to launch a bike sharing system. That system offers both conventional and e-bikes for general use. In 2022, there were two Portland Bikeshare stations in close walking distance of 89 Elm Street, one at Marginal Way and Elm Street and the other at Hanover Street and Lancaster Street.



Figures 6a and 5b:
Existing Pedestrian
and Bicycle
Facilities, from the
Bayside
Transportation
Master Plan. Note
that improvements
have been made
since this map was
prepared, included
recommended bike
lanes and sidewalk
improvements on
Elm & Preble
Streets.



Bayside Transportation Master Plan

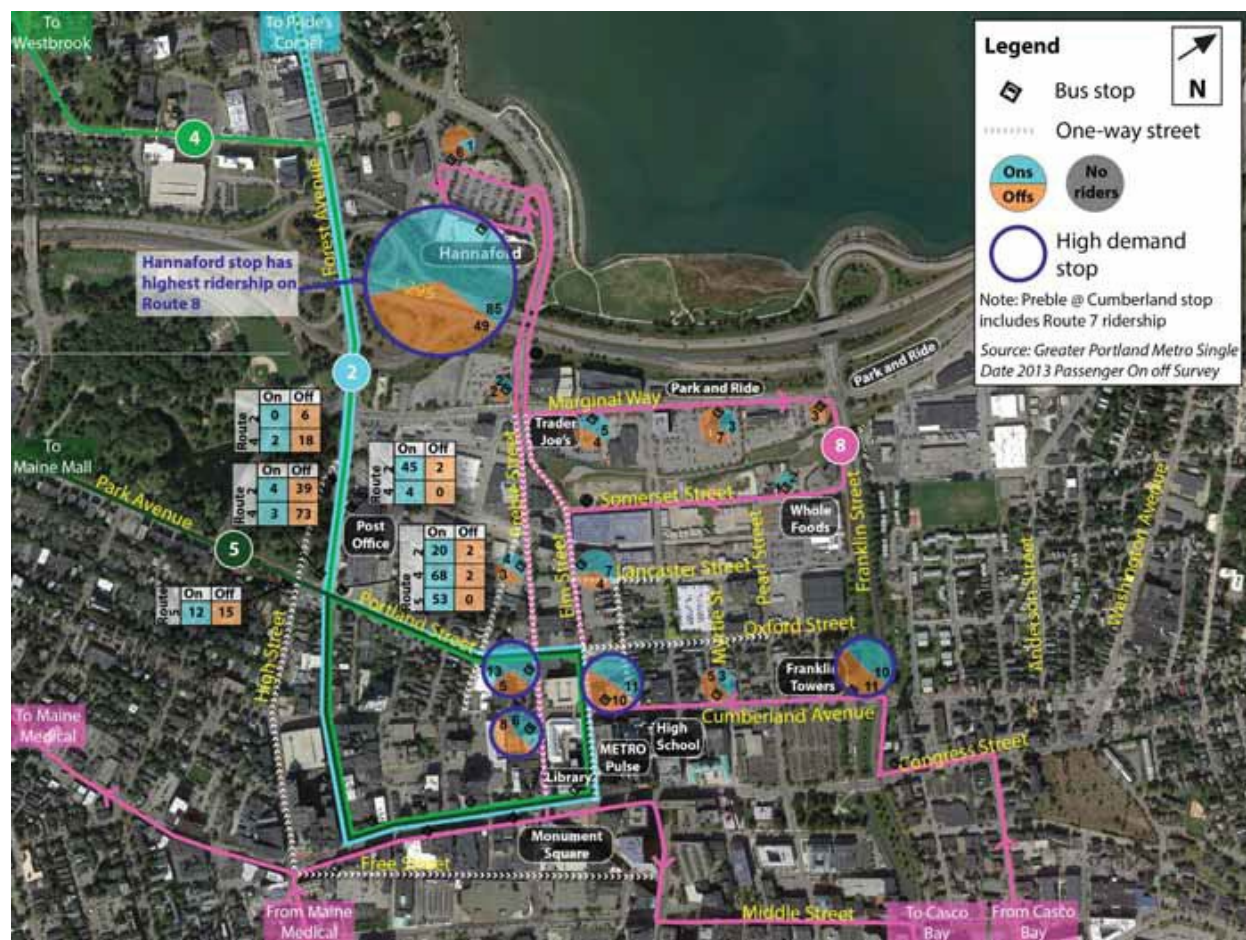


Figure 7: Ridership at Bayside METRO stops from the Bayside Transportation Master Plan



Figure 8: Issues and Opportunities at Bayside bus stops from the Bayside Transportation Master Plan



Figure 9: Long-term recommendation for Elm Street at Lancaster Street from the Bayside Transportation Master Plan (since implemented)

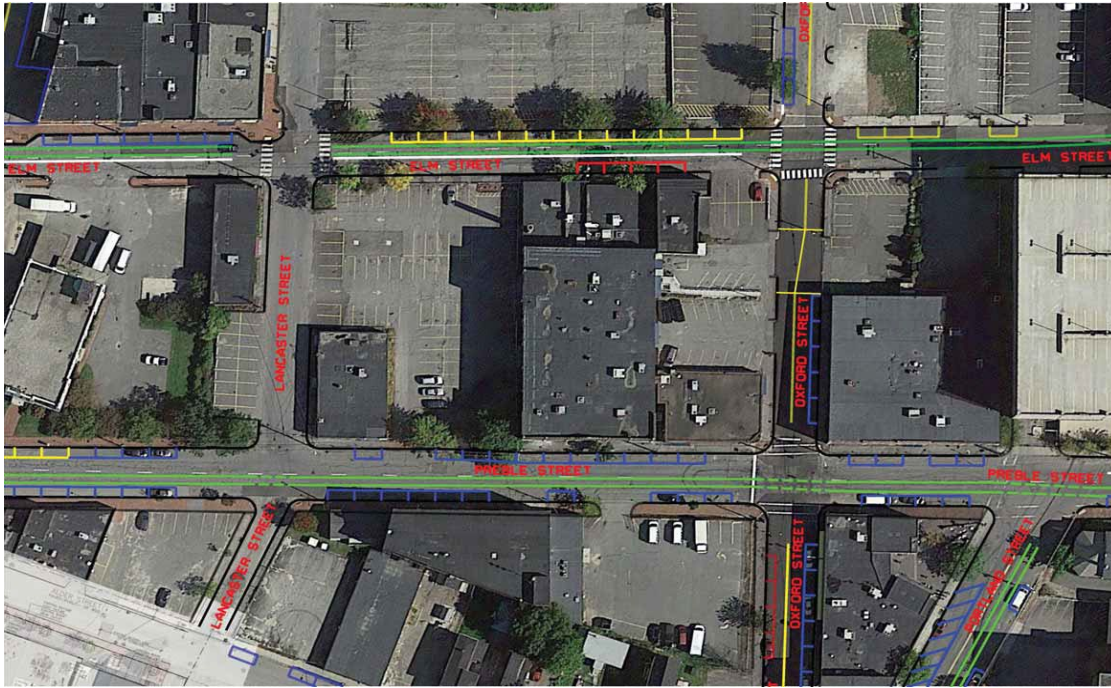


Figure 10: Preble and Elm Streets as planned in the Bayside Transportation Master Plan (this layout has since been implemented)

Characteristics of Likely Residents and Workers

In thinking through who may be likely to live in this building, it makes sense to first look at who currently lives in the neighborhood. Census Tract 6 includes much of the surrounding neighborhood in west Bayside. For that reason, we've looked at data from the 2021 American Community Survey 5-year data from the U.S. Census. That data provides a sense of some key characteristics of likely residents, with respect to car ownership, household size and commuting patterns. This data informs the best TDM strategies for this development.

In this tract, the average household size is 1.74, and one third of households have no vehicle available. In fact, almost half of single-person household have no available vehicles, and almost half of all households have just one vehicle available. The proximity of key assets, such as downtown amenities, jobs, and supermarkets, make this a good place to live car-free, or car-light.

As shown in Figure 11 below, many workers in this Census tract walk to work, work from home, or use alternative modes to get to work. Less than half of the workers in this tract drive to work. When you look at young workers (under age 25) you find that over 2/3 walk to work, and almost 3/4 get to work by alternative modes. The addition of Portland Bikeshare and the redesign of the Route 8 are likely to increase these numbers further.

The retail spaces on Lancaster and Oxford Streets will have a small number of employees. In all likelihood, the tenants will be the types of businesses catering to residents in the building and other nearby buildings. The employees of these businesses will be included in all TDM efforts.

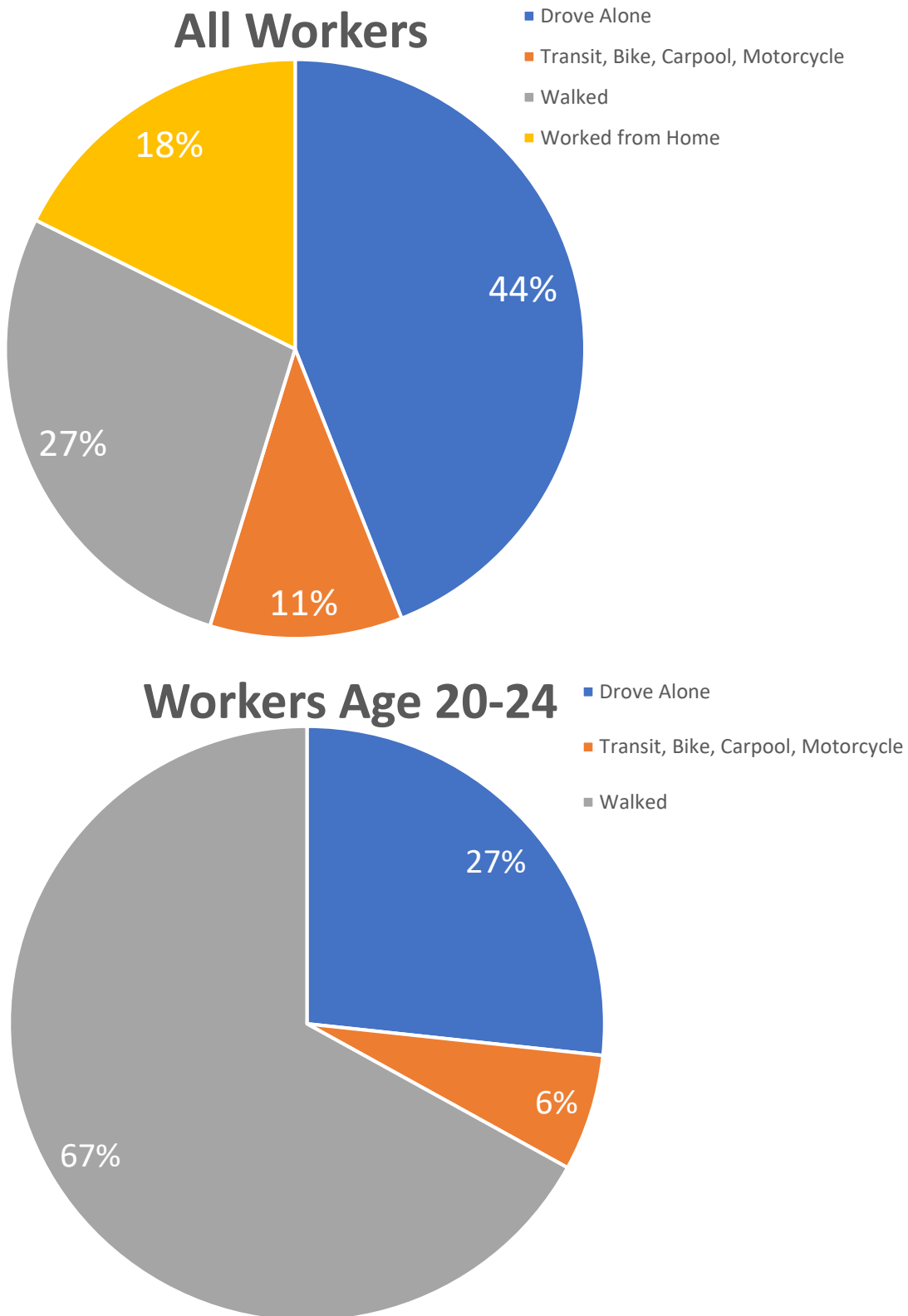


Figure 11: Commuting modes for all workers and workers age 20-40 (2021 5-Year American Community Survey)

TDM Administrator

The TDM Administrator for this project will be:

*Jen Munroe, Property Manager
Port Property Management
82 Hanover Street, Suite 5
Portland, ME 04101
jennifer@portpropmgt.com
(207) 233-8418*

Ms. Munroe will also serve as the TDM Coordinator for the 52 Hanover Street building under construction, so she will be able to apply best practices across the two buildings. Ms. Munroe may work with property management to implement details of this TDM plan but will be the one-stop contact when needed.

Resident and Employee Survey

To gauge the effectiveness of this TDM plan – and to adjust it if needed – the TDM Administrator will conduct an annual survey of residents in the building as well as employees of the ground level spaces. This survey will be conducted electronically using contact information on file with the management office for each unit. It will include questions on:

- Vehicle ownership and parking location
- Modes of transportation for commuting, household chores, and recreation
- Interest in carpooling or otherwise sharing transportation expenses with other tenants to reduce trips
- Barriers to vehicle trip reduction best practices, such as bicycle use and transit ridership, and
- Other transportation needs and/or interests of tenants.

Those tenants and employees that express interest in sharing information for carpooling or other trip reduction purposes will have their information provided to others who have also expressed interest.

The results of this survey will be provided to the City's Planning & Urban Development Department using a form like the one provided on the City's web site (see Attachment.) The survey will remain substantively consistent from year to year, to allow the results to be used to monitor the effectiveness of this TDM plan and allow for adjustments as needed.

Trip Generation and Parking Supply

This project's trip generation rates were determined using the following ITE Trip Generation Land Use Codes:

- ✓ LUC 223 Affordable housing (201 units)
- ✓ LUC 932 High Turnover sit down restaurant (2,000 sf)
- ✓ LUC 822 Strip retail plaza (<40k) (2,500 sf)

In total, the development is expected to generate 132 trips at morning peak hour and 139 at evening peak hour. Those figures are based on a typical affordable housing development with few transit, pedestrian or bicycle options. For this project, there is likely to be some trip-chaining, or combining of separate trips.

What is particularly different about this project is the mode and distance of these trips. In many cases, most of the trips generated would involve individual vehicle trips. However, in this case, with good TDM strategies in place, most of the expected trips will be on foot, on bike, or on transit.

This project has an expected parking demand of 40 spaces. However, research has shown that parking demand in transit-oriented developments such as this one can be as little as one-fifth the ITE supply guideline (see, for example, Ewing et al, *Landscape & Urban Planning* 160 (2017) 69-78.) We believe that, given the project's location, the decoupling of parking costs from rents, and the robust measures proposed in this TDM plan, the parking generation of this project can be accommodated in nearby lots and overnight on-street parking with limited negative impacts

Mode Shift Targets

What is particularly different about this project is the mode and distance of these trips. In many cases, most of the trips generated would involve individual vehicle trips. However, in this case, with good TDM strategies in place, most of the expected trips will be on foot, on bike, or on transit. This project sets the following mode split targets as per the City TDM guidelines:

Mode Split Targets

	Baseline	3-5 Year Target	7 Year Target
Drive Alone	44%	33%	22%
Carpool/Vanpool	3%	3%	3%
Transit	4%	8%	12%
Bicycle	4%	8%	12%
Walk	27%	30%	33%
Work from Home	18%	18%	18%

Mode Shift Strategies

As a primarily residential building with units best suited to one to three persons, this project will have different mode shift strategies than commercial buildings, or even residential buildings with larger units. The tenants in the retail spaces will also factor into mode shift plans.

The mode shift strategies for this development are focused on the needs of likely tenants, including younger workers in a variety of fields and older single persons seeking the convenience of a downtown location.

These strategies are designed to respond to the following needs:

- Convenience
- Cost-effectiveness
- Leverage of downtown location, and

- Pushing of information to users rather than expecting them to pull information from on-line sources.

Shift strategies will include education as well as provision of convenient alternatives.

A key part of this TDM plan is to convey clear, compelling and accurate information to tenants and visitors as to the transportation options available other than driving. As part of a welcome packet, all new tenants will be provided information including the following:

- Transit maps, schedules, and information about real-time transit trackers
- Information about transportation providers, including transit operators, transportation-as-a-service (TAAS) companies, and other options to avoid driving
- A building-wide ride board to allow tenants to share trips, and
- Information on bike routes, parking infrastructure, and other incentives.

This educational packet will be provided online as well, so tenants and visitors can refer to it at any time.

Monitoring

As mentioned above, there is a TDM Administrator designated for this development who will be responsible for monitoring this plan. Following an annual survey of residents, the TDM Administrator will report results to the City's Department of Planning & Urban Development and propose modifications to this plan to make it more effective, if need. This reporting will also be helpful in reviewing future TDM plans, as we expect that additional developments will propose using the option in Table 19-B in the future.

The report for this development will include, at a minimum, the following:

1. Building occupation
2. Mode split, and
3. Suggested enhancements to transit, bicycle and pedestrian infrastructure.

TDM Action Steps

The core actions of this TDM Plan are consistent with, and in many cases exceed, the recommended actions in the Technical Manual. These action steps will result in trip and parking demand reductions that meet or exceed the goals listed. In addition, by providing residents with transportation options that reduce per-capita emissions, these steps will have external benefits that will improve the quality of the air in downtown Portland and help address the goals of the *One Climate Future* plan. Finally, by reducing vehicle trips in individual vehicles, this TDM Plan will save the City and state money by reducing the wear and tear on city streets.

TLU 2.2 Summary - Complete Neighborhoods and Transit-Oriented Development

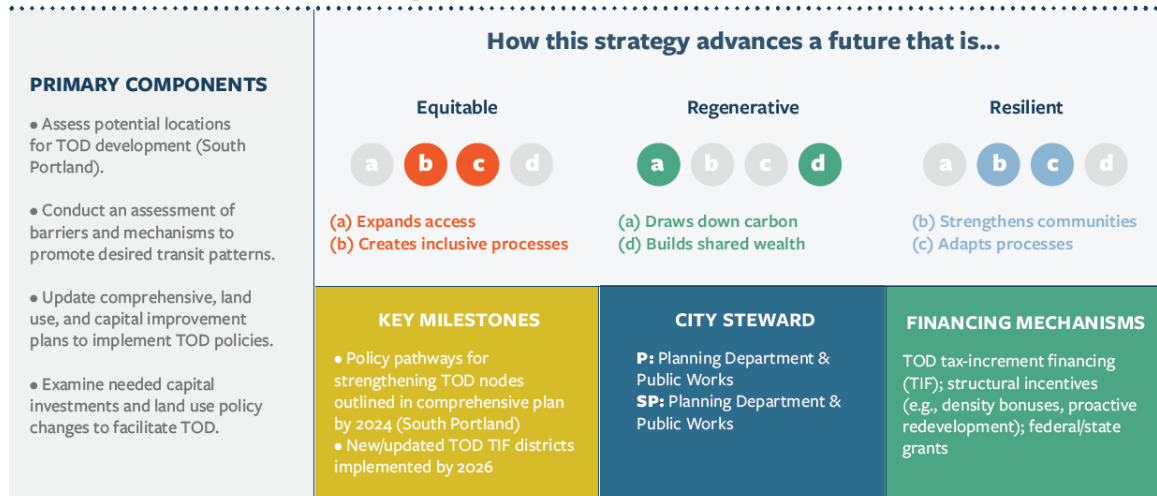


Figure 12: Portland's Climate Action Plan calls for infill development such as this project
 (Source: *One Climate Future*, p. 151)

1. Infrastructure

- Transit Lounge:** With the closest transit stops outside the door, and others feet away, it will be easy for tenants to access several bus lines just up the street at the METRO Pulse. The developer will work with METRO to develop a "transit lounge" in the lobby that provides a comfortable place to wait for buses, with posted schedules and, as noted below, potentially real-time transit arrival information.
- Transit Information:** As has become a best practice in transit-oriented developments in other cities, real-time transit information is key. The developer will work to provide either a real-time transit information screen in the transit lounge, with a comfortable waiting area, or develop a kiosk working with other buildings under development in the area and METRO staff that provides transit information and shelter in a common space.
- Bicycle Parking:** This development will provide at least 40 indoor bicycle parking spaces in a dedicated bike room in the building.
- Bike Repair Station:** The development will offer a bike repair station for the use of residents, located conveniently in a common area.

2. Incentives

- a. Unbundled Parking: As mentioned above, the cost of parking has been "unbundled" from the cost of developing and operating the building. Tenants who choose not to own their own vehicle are then able to enjoy the full benefit of a reduction in their housing and transportation cost by not having to pay for a parking space.
- b. Transit Incentives: Research has shown that moving into a new home is a chance for residents to try new transportation options. In order to make sure that new tenants are aware of, and have incentives to try, transit, will provide all new tenants with easy access to the Umo app for use on METRO, BSOOB Transit and/or South Portland Bus Service. All new tenants will also receive \$50 pre-loaded onto their Umo account to allow them to try transit options and develop new habits (or continue previous ones) in this location. For tenants without smartphones, a METRO fare card loaded with \$50 will be provided.
- c. Car and Bike Sharing: While Portland currently does not have a car-sharing vendor, should one become available, the owners commit to working with the City to provide a carsharing vehicle nearby. Similarly, they agree to working with the City as it seeks to expand Portland Bikeshare and will sponsor a station nearby.
- d. Telecommuting: This building will be wired broadband infrastructure that meets the build-to standard of the Maine Connectivity Authority and ConnectMaine, in order to encourage telecommuting as a trip reduction strategy.



Figure 132: A real-time transit display in an apartment lobby
(Source: <https://www.redmon.com/expertise/transit-display/>)

3. Education

- a. Information: As part of a welcome packet, all new tenants will be provided information including the following:
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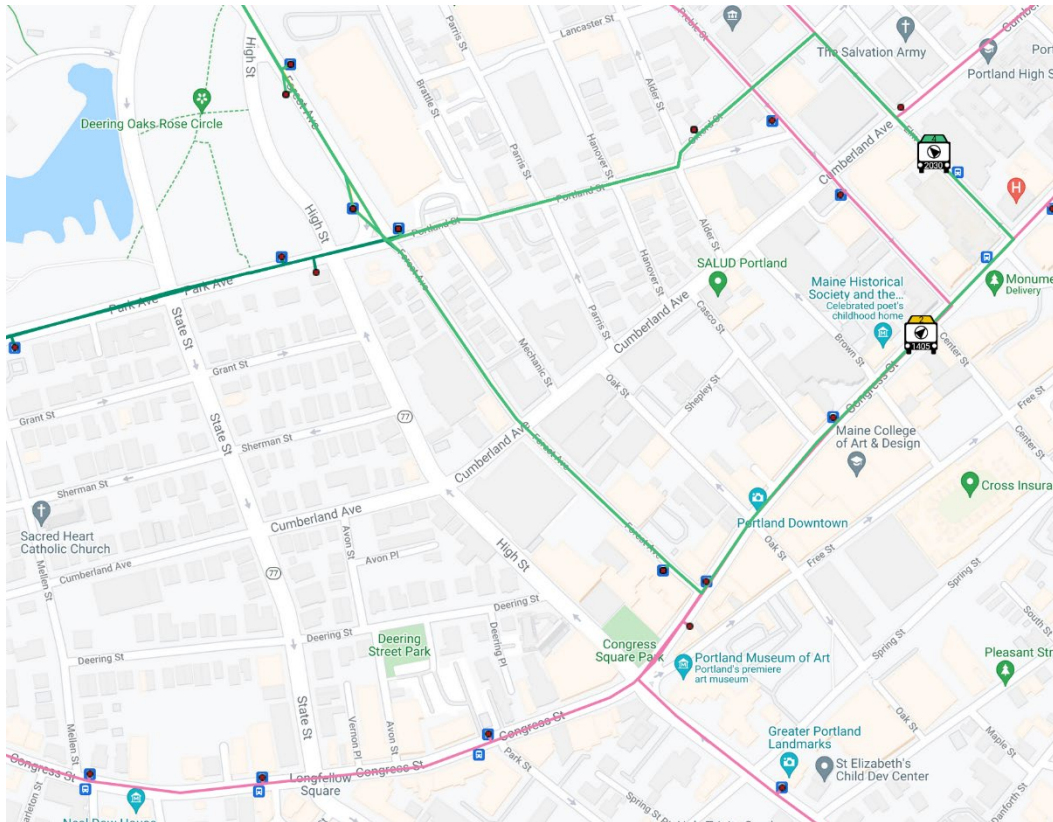
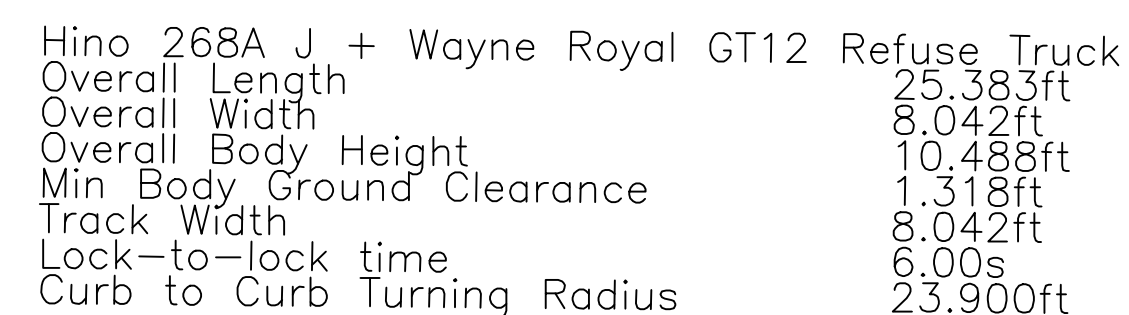
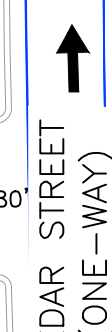
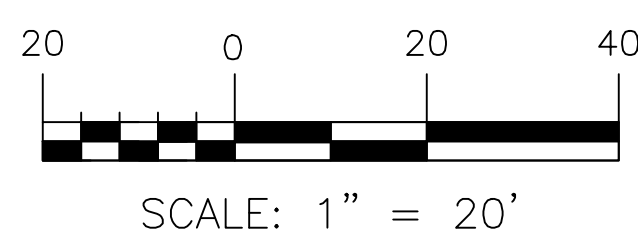


Figure 14: Transit tracking in downtown Portland that can be utilized in a lobby screen system (Source: <http://bustimeweb.smttracker.com/bustime/map/displaymap.jsp>)



196 LANCASTER STREET LLC
39779/232
28,591 S.F. ±
0.66 ACRES ±

WBP COMMERCIAL LLC
39779/227
38,301 S.F. ±
0.88 ACRES ±



OXFORD STREET
(ONE-WAY) →

PRELIMINARY
NOT ISSUED FOR
CONSTRUCTION

[illegible]

TURNING TEMPLATE

NAME: 889 ELM STREET REDEVELOPMENT - PORTLAND

89 ELM, LLC

DRAWING NAME:

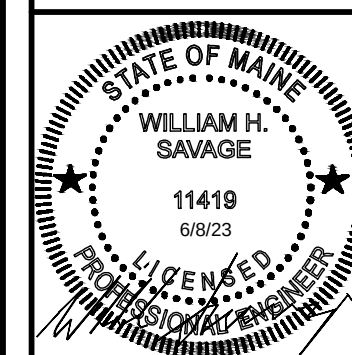
PROJECT NAME: R N 89

CLIENT:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACCORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR UNAUTHORIZED, SHALL BE AT THE USER'S SOLE RISK, AND NO OTHER FEE SHALL BE CHARGED.

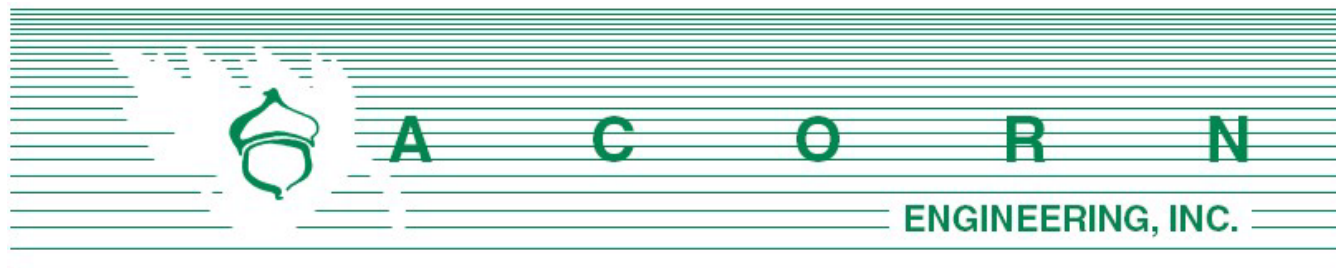
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04104

FILE:	1192.2-CIV
JN:	1192
SCALE:	AS NOTED
DESIGNED BY:	SA
DRAWN BY:	DN
CHECKED BY:	WH



DRAWING NO.

EX-1



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

May 25th, 2023

Subject: 89 Elm Street Neighborhood Meeting

I, Sam Lebel, hereby certify that a neighborhood meeting was held on May 16th, 2023 at 190 Lancaster Street, Portland, ME 04101, at 5:30 pm.

I also certify that on May 4th, 2023, 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.

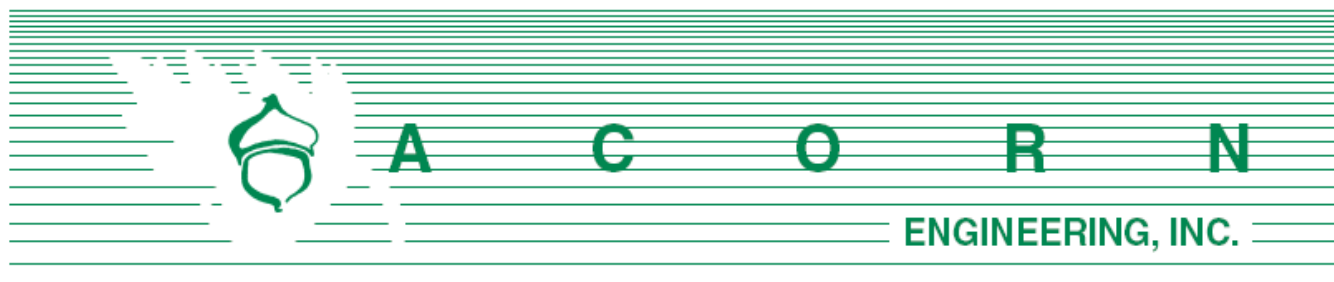
Sincerely,

A handwritten signature in black ink 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 4th, 2023

On behalf of 89 Elm LLC, we are pleased to invite you to a neighborhood meeting on May 16th, 2023, to discuss the proposed Major Site Plan Application submitted for the approximate 0.81-acre parcel located at 89 Elm Street (CBL 33/H/6001). The proposed redevelopment project intends to transform the existing parking lot into an 8-story building to provide 201 affordable residential units with 3 ground-level retail spaces. This project is part of the greater West Bayside Master Development Plan (MDP) that is currently under review. Each phase of the MDP will be submitted and reviewed under its own Site plan application separate from the Master Plan Application. Please refer to the meeting information below:

Meeting Location: 190 Lancaster Street, Portland, ME 04101
Meeting Date/Time: Tuesday, May 16th, 2023, at 5:30pm

A sign-in sheet will be circulated, and a record of the meeting will be taken. Both the sign-in sheet and record will be submitted to the Planning Board. If you have any questions, please call (207) 775-2655.

Sincerely,

Sam Lebel, P.E.
Project Manager
Acorn Engineering, Inc.

Note: Under the City of Portland land use code, an applicant for a major site plan, master development plan, subdivision of over five lots, or zoning map amendment is required to hold a neighborhood meeting within 30 days of an application being deemed complete and no less than seven calendar days before a public hearing. Should you wish to offer additional comments on this proposed development, you may forward them by e-mail to planning@portlandmaine.gov or by mail to the Planning and Urban Development Department, Planning Division, 4th Floor, 389 Congress Street Portland, ME 04101.



Sign-in Sheet

Participants:

Name	Email
Kirsten Springer	Kirsten.Portlandia@gmail.com
Sarah Lewis	Sarahannelewis@gmail.com
Jed Nitzky	jednitzky@gmail.com
Laura Underkuffler + David Nowlin	lu27@cornell.edu
IAN JACOB	IAN@BWEANCTHORDSLIM.COM
BRADLEY DRYPOLTER	Bradleydrypolter@gmail.com
Ed Gardner	Ed@gardnergroup.com
Avery Yale Kamika	
Michelle Hansen	michelle.hansen@opportunityalliance.org
Robert Sylvain	email@robertsylvain.com
Andrew Rosenfeld	andrew@maec.com
Emily Dupraz	emily.dupraz@gmail.com
Mohamud Barre	ronta2012@hotmail.com
Amelia Laboeck	

Sign-in Sheet

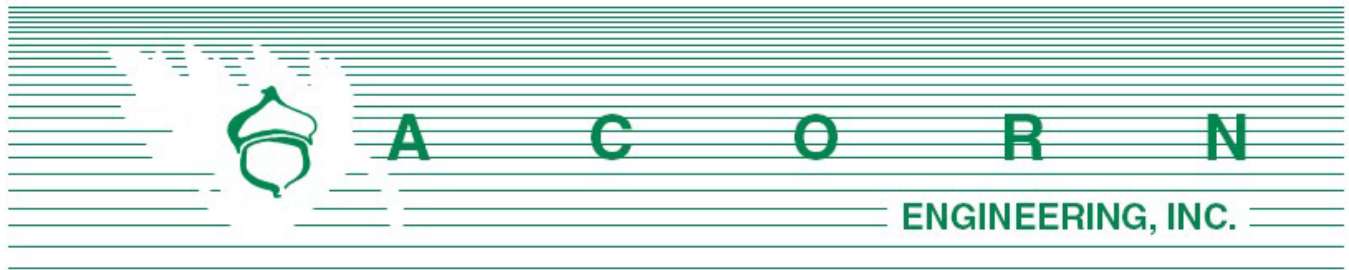
Participants:

Name	Email
Emerson Addams	emeryaddams@gmail.com
Mila German	milengermon@gmail.com
Sarah Michniewicz	SARAHMICHNIEWICZ@MAC.COM
Jim Hall	MTJIMHALL@GMAIL.COM
Refur Markoe	pjmarkoe@gmail.com
Aideh	
Carrie Swarthout	carrie.swarthout@opportunityalliance.org
Tony Armstrong	anthony.armstrong@sun.com
Patrick Beacham	patrick.beacham16@gmail.com
Alec Jaegerman	alecjaegerman@gmail.com
Susan McClosky	smcclosky@maine.net

Sign-in Sheet

Presenters:

Name	Email
Michael Barton	mbarton@bushwatson.com
John Laliberte	john@bushwatson.com
William Savage	wsavage@acorn-engineering.com
Sam Lebel	slebel@acorn-engineering.com
Reid Tozier	reid@senatorearchitecture.com



89 Elm Street

Neighborhood Meeting Minutes

May 16th, 2023 / 5:30 pm

190 Lancaster Street, Portland, ME

Project Team Attendees:

Michael Barton (**MB**): Client/Presenter

John Laliberte (**JL**): Client/Presenter

Jessica James (**JJ**): Client Team (Longfellow Communications)

Reid Tozier (**RT**): Architect/Presenter (Ryan Senatore Architecture)

William Savage (**WS**): Civil Engineer/Presenter (Acorn Engineering)

Sam Lebel (**SL**): Civil Engineer/Presenter (Acorn Engineering)

Danielle McGowan (**DM**): Civil Engineer/Note Taker (Acorn Engineering)

The meeting started at approximately 5:35 pm.

Presentation:

Mike Barton:

- Team Introduction
- Overview of meeting
- Project Introduction

Sam Lebel:

- Project Overview; Existing and Proposed conditions and improvements

Will Savage:

- Overview of the utilities and the proposed separated stormwater system. Review of the quality and quantity of stormwater generated from the site.
- Relation to MDP and expansion of Publicly accessible area
- Overview of proposed street trees and approach to maximize tree health

Reid Tozier:

- Reviewed the floor layouts and renderings of the building

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.

Neighbor: Clarify the B-3 Zone Use 30-ft extension into the R6 zone?

MB: Explained the 30ft extension as outlined in the City Land Use code. Described the goal for 18-hour activation within the proposed MDP and hope it extends beyond into the surrounding neighborhood.

Neighbor: Concern on 18-hour activation of portion in R-6 zone and requested clarification of what the “retail” would be.

MB: Addressed that there are no set plans as to what will be in the retail spaces. What does end up in the space will meet the City’s requirements and noise standards.

Neighbor: Is there any parking included other than the parking garage? Any street parking included? Anything on the access drive aisle?

MB: The parking garage has space available and will be used for the development to meet the city parking requirements.

Neighbor: How much parking is currently available in the parking garage?

MB: The parking garage has approximately 595 parking spaces and they will allocate the necessary parking spaces and offer available spaces to future tenants. Outlined the recent City Study that addressed 44% of the area walk and bike.

Neighbor: Clarify status of TMP?

MB: TMP is currently under review by the City and their 3rd party traffic engineer

Neighbor: What area is considered to be within the 44% walkable/ biking community? How did we get this number?

MB: The 44% was Census tracked and believe it roughly encompasses Congress Street to Marginal Way and from Franklin Street to Forest Ave.

Neighbor: How many parking spaces will be removed and how many will be replaced?

MB: Unsure at this time how many will be removed, but there are 3 new parking spaces proposed along Lancaster Street as part of the 89 Elm Steet project.

Neighbor: Clarify the parking on Cedar Street? Is there more parking proposed?

WS: The Site plan, sheet C-10 provides the parking layout surrounding the site. It reflects the existing spaces and does not propose any new parking spaces.

Neighbor: What drives the size of the retail spaces? Compared with 40 Free Street (a project by the same architect firm) has what seems to be smaller retail spaces. Curious about the reasoning for this layout.

RT: The retail square footages are comparable in size (<2,000 sf) to what was provided at 40 Free St.

JL: This retail space/size seems to be more preferred and attractive to tenants.



Neighbor: Would like the applicant to revisit the neighborhood needs when selecting the size and placement of the retail units with a preference for smaller retail units

JL: Addressed that they have found that this size is the most flexible to the widest range of businesses allowed to operate in this zoning district.

RT/MB: Mentioned there are opportunities to subdivide the retail units as currently proposed.

Neighbor: What is the impetus for maintaining the current one-way traffic pattern on Oxford Street?

MB: The topic has been discussed with the city and is under review with VHB, the project's traffic engineer. Depending on the outcome of the traffic movement permit, changes may be made. The majority of Oxford Street is outside of the MDP.

Neighbor: Concerns that there is not enough screening around the mechanical features on the roof that were shown in the rendering.

RT: Addressed these are early-stage renderings and are not the final design in particular for the roof features and mechanical equipment screening. The project will likely use heat pumps for the majority of its HVAC. The mechanical features are oriented back from the roof edge such that visibility via line of site is mitigated.

Neighbor: Suggested there be parking proposed on Oxford Street.

Neighbor: Concern about traffic patterns on Cedar Street and entrance to the access aisle. Concerns that a garbage truck will not fit into the access aisle.

WS: AutoTurn tracking software has modeled a garbage truck turning onto Cedar Street and into and out of the development. Turning Templates will be submitted based upon the neighbor's request.

MB: Restated that the access aisle to the rear of 89 Elm is for service vehicles, trash trucks, and emergency vehicles. There will not be constant traffic, these are one off (mostly predictable) situations.

Neighbor: Have there been other considerations for locations of the trash enclosure? Believes the quality of Cedar Street will decrease with more traffic and that the current layout would not support the influx particularly for move in situations with moving trucks.

WS: Clarified that move ins will be handled within the proposed two 30-minute parking spaces on Elm St. The duration of the spaces has not been finalized but is intended to provide enough time for move-ins while promoting a high turnover.

MB: Addressed there will not be an influx of move ins at one time. There is a system in place to control move ins (daily limits, timing windows, spacing, elevator coordination, etc). They coordinate and spread-out move-in/move-out to limit congestion when tenants move in.

SL: In relation to other areas to move the trash enclosure or provide vehicular access, due to the steep slopes from Oxford down into the site, it is not practical to provide a driveway off Oxford.

Neighbor: Concerns of homeless population in area with lack of capacity to house them. Requested clarification on what affordability means and is there are rent incentives in place to help and who is eligible to apply?

MB/JL: Affordability is 60% of the area median income in the city. There is a voucher program available that anyone who makes at or under the 60% area median income is allowed to apply for and would be reviewed for conformance during leasing periods.



Neighbor: Will the existing parking lease be honored?

MB: Yes.

Neighbor: Requested that the turning templates be submitted to the city and would like clarification on the size of vehicle used.

WS: Confirmed that the vehicle dimensions and turning templates would be submitted.

Neighbor: Requested clarification on how low-income housing funding is received and if the funds have been allocated yet? Is there a required unit count and mix related to the grant?

MB: Acknowledged the funds have been allocated for this proposed project. Acknowledged there is no set unit mix associated with the grant but there is a default cost cap associated with the allocated funds.

Neighbor: What do they anticipate rent to be?

JL: Verified that nothing has been established et. John provided an example using 60% of the average median income, assuming it to be around \$30,000. In this scenario, the estimated rent could be around \$900 / \$1,000. The rent will be dependent on the average median income at the time and the unit size the tenant selects.

Neighbor: Curious if existing leases in the area will be kept and proposed they rent out the retail spaces to social services.

JL: The existing leases established will remain, it is up to the tenant to renew their lease when the term is up. Explained that staff are in close contact with all current tenants. Reiterated their intent to continue relationships with existing tenants.

Neighbor: Commented on the lack of housing where larger families can live.

Neighbor: How was the unit count selected? Curious in the study completed to back into this number and mix.

MB: It is apparent that a higher ratio of 1 bedroom units for this market would be more appropriate than this proposed project from market analysis. The bedroom mix within this project is a greater ratio of bedrooms/units as compared to the proposed market rate units in the MDP.

Neighbor: Curious on the MDP process and linkage. If the MDP is delayed will the 89 Elm Street application continue?

MB: MDP process is optional. If the MDP doesn't move forward with the City, the application for 89 Elm Street will continue.

Neighbor: When is the next workshop?

MB: Once the city comments are received and our team responds back to the city, updated materials including comment responses are redistributed to the public realm, then the next workshop or hearing can then be scheduled.

Neighbor: Objects to running traffic down cedar street. Believes it will diminish the life of the community and that parking will be an issue.

Neighbor: Mentioned the shadow study was removed from the city website?



MB: Thanked him for informing him it was not showing up anymore and that we will coordinate with the city on that.

Neighbor: Questioned the shadow study evaluation periods. Curious if we are building as high as possible. Voiced opinion that traffic and parking impact will go down if the building loses a few floors.

MB: Although not required, the shadow study was completed voluntarily and in alignment with the standard for this kind of study. Verified the proposal does not meet or exceed the height limit and, therefore, the proposed height is allowed in the current zone. The unit count/mix and stepped height configuration works within the maximum allowed density and is the most efficient use of space that they reviewed.

Neighbor: Curious as to what the grey hatched area is on the plan.

SL: Clarified it is a drive aisle for access to the transformer, emergency and occasional service vehicle access.

Neighbor: Addressed concerns for the existing heritage tree on the property and asked why the tree is going to be removed.

WS: Clarified the tree would not be expected to survive the excavation required for the foundation.

SL: Addressed the sidewalk as is with the roots breaking the pavement is not ADA accessible. Acknowledged we are doing what we can to offset the negative impacts of construction.

Neighbor: Expressed their interest in another project being developed down the road in another zone, and how they like the recreational space and amenities included with that development. Claimed that this development, blocks down the road, will look bad for low-income housing if more amenities are not included. Claimed that the bayside trail is being compromised by the homeless population and that they would prefer a development to go there. Claimed that there are not enough trees in the area as is, and that the development does not have enough mature trees.

JL: The proposed development at 89 Elm Street, along with the other proposed buildings included in the MDP, are anticipated to have similar designs and amenities. The property at 52 Hanover Street is within a different zone and is not part of the Master Development Plan.

WS: Acknowledged the 17 or 18 trees that were received through ARPA funding and that following a meeting with the City Forestry Division the consensus to use those trees in the MDP area and the Applicant would provide approximately 80 street trees within the Master Development Boundary.

MB: Addressed that they are in the first steps with the landscape plan design. Program elements will come about once this is finalized. Noted that the tree study conducted by the city identified about 300 locations in the Bayside neighborhood (including E. Bayside) for trees with current city/state/federal funds available to deploy 80. This project will deploy in excess of 17 or 18 trees displaced in the entirety of the MDP in phase 1 and will include approximately 80 street trees in totality once complete.

Neighbor: Will the roof top turret feature be accessible to tenants? Will it be considered open space or is it just an accent feature?

JL: The roof top turret feature is an architectural element.



Neighbor: Is the parking lot currently used for Baxter parking and what will happen with the spots designated to Baxter? What is the parking count before and after the development? Where will existing parking leases go?

JL: Portions of the current lot are used by Baxter. We are working with them on parking solutions.

Neighbor: What is the percentage investment with Metro and GPCOG? Requested more information and solutions at the next meeting.

JL: They are in communication with Metro as they look at changes to their service, can not confirm that solutions will be available at the next meeting.

Neighbor: Expressed they would prefer the retail spaces not to be bars. Expressed opinion that the development is not thinking about the neighborhood.

JL: Addressed they are thinking about the community and neighborhood, with this phase of the project and in combination with the entire MDP to enhance the neighborhood and provide much needed housing. Reiterated there aren't any set businesses going into the retail space as of yet and anything could go there that's permitted in the zone.

Neighbor: Is it possible to disperse the funds allocated for the affordability to other existing buildings with the same Property Management?

JL: The affordable units being proposed are integrated and designed as part of the master development plan. They are not intended to be dispersed into existing properties.

Neighbor: Questioned why all affordable units are in the 89 Elm parcel and curious why they aren't being spread out.

JL: From a financing perspective, the available funds would need to be used on the 89 Elm project.

Neighbor: Addressed they will push for more affordability in the next market rate phases.

Neighbor: Curious if the developer has considered a smoker's porch?

MB: They will take this comment into consideration.

Neighbor: Questioned if they are able to manage an affordable housing building and believes that another company would need to manage the property.

JL: Shared that integrated management company has experience with affordable housing and that they will be managing the property.

MB: We intend to work with a consulting firm as needed to support the initial professional/administrative guidance required to ensure compliance, but they do have the team and resources capable of carrying out most of the tasks through use of existing internal systems.

Neighbor: Thinks the building design looks institutional and asked if there was a reason that there is no walkable throughway from Elm Street to Cedar?

MB: It is challenging to create that walkway from a few perspectives; main drivers being site topography, constructability and maintaining the target affordable unit mix ratio.

Neighbor: Is the 25% affordability the unit count or bedroom count?

MB: 25% is the bedroom count. The unit count is derived from what is allowed on the parcel with respect to the land use code.



Neighbor: Why aren't there some market rate units in each building? How was the funding received?

MB: Funding is a one-time ARPA distribution.

Neighbor: Has there been consideration of underground/ covered parking?

JL: It is economically infeasible to have covered parking.

Neighbor: Is there an opportunity for affordable retail spaces in the building for local business owners? What is the retail plan?

MB: Interested in hearing more from the public as to what that would entail and what local business retail is in demand right now.

JJ: Offered to do outreach and collect feedback from the neighborhood on what retail they think would be most suitable in the building and will coordinate with neighbors and interested parties for the upcoming meetings.

Neighbor: Concerns that they will take the garden away in 5 years after their lease is up? Thinks that they should deed the garden to the City.

JJ: Clarified they are not losing the garden, the Bayside Neighborhood Association has been offered a five year lease for \$1 for the space with the option to renew the lease for another 5 years once the initial lease is up.

Neighbor: What are the City requirements when working with a road that was recently repaved like Elm Street?

MB: There is a moratorium fee and repaving standards when working within a moratorium street.

Neighbor: Is there a lack of parking in the building/ underground due to economic/ affordability factors?

JL: Financing is a factor.

MB: No underground parking proposed. They have over 400 parking spaces available in their parking garage the next block up.

Neighbor: Prefers to have two taller buildings over one larger one. Is it too late to discuss this option?

MB: It is not too late to discuss conformance with design standards. The planning board has not undergone the design review but we are expecting staff comment soon. In addition to comments received from design review, the planning board will be workshopping this project and may also have comments. With a full compilation of comments, the design/development team can move forward and re-evaluate the design if necessary, after all check-ins are complete. The design/development team will take into consideration recommendations from staff, members of the public at tonight's meeting, and the planning board during workshops/hearings.

Mike Barton concluded the meeting and acknowledged his appreciation for the comments received tonight and looks forward to continuing the conversation and opportunities for the development. Directed Neighbors to reach out to Jessica James with Port Property and Zach Powell the City Planner with any further questions and comments.

The meeting concluded at approximately 7:45 pm.



The abovementioned material was 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,



Danielle McGowan, E.I.
Project Engineer
Acorn Engineering, Inc.



February 3, 2023
Resubmitted April 12, 2023

Mr. Zachary Powell
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Application for Traffic Movement Permit
West Bayside Development
Portland, Maine

Dear Zachary,

On behalf of West Bayside Partners, LLC (applicant), VHB is pleased to submit this Traffic Movement Permit Application for a mixed-use phased development located on Lancaster Street and Elm Street in Portland.

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

- Sections 1-6
- Signed Application Form
- Notice of Intent to File
- List of Abutters
- \$500 application fee

We look forward to scheduling a Scoping Meeting in the near future.

Very truly yours,



Jennifer Conley, PE, PTOE
Director, Transportation Systems
Jconley@vhb.com

Table of Contents

Traffic Movement Permit Application

Notice of Intent to File

Abutters List

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Attachment 1A

Attachment 1B

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Section 2

Attachment 2

Section 3

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Section 4

Attachment 4

Section 5

Section 6

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-624-3600

FOR MDOT USE
ID #

Total Fees:

Date: Received

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

Please type or print:

This application is for:

Traffic 100-200 PCE's _____
Traffic 100-200 PCE's (Expedited) _____
Traffic 200+ PCE's X

Name of Applicant: West Bayside Partners, LLC

Address: 82 Hanover Street, Suite 5, Portland, ME 04101 Telephone: 207-761-0832

Name of local contact or agent: Michael Barton

Address: 82 Hanover Street, Suite 5, Portland, ME 04101 Telephone: 207-761-0832

Name and type of development: The development consists of 215 multi family housing units, 201 affordable housing units, 6,000 sf retail, 2,000 sf coffee shop, and 6,000 sf restaurant

Location of development including road, street, or nearest route number: The site is bounded by Preble Street to the southwest, Lancaster Street to the northwest, Cedar Street and Elm Street to the northeast, Cumberland and Oxford Street to the southeast.

City/Town/Plantation: Portland, County: Cumberland, Tax Map # 033, Lot # G003, G006, H005-7, H0018, M012001, M004001

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

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

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

Is this project located within a compact area of an urban compact municipality? Yes X No ____

Is this development or any portion of the site currently subject to state or municipal enforcement action?
None Known

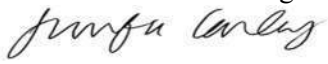
Existing DEP or MDOT permit number (if applicable): None Known

Name(s) of DOT staff person(s) contacted concerning this application: _____

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: N/A

CERTIFICATION

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

Signature:  Re/Cert/Lic No.: Maine PE #15652

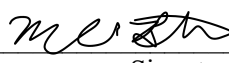
Name (print): Jennifer Conley

Date: March 24, 2023



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

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

 03/25/2023
Signature of applicant Date

NOTICE OF INTENT TO FILE
Traffic Movement Permit

Please take notice that

West Bayside Partners, LLC
82 Hanover Street, Suite 5
Portland, ME 04101

is intending to file a Traffic Movement Permit application with the City of Portland, who has delegated review authority to administer the application, pursuant to the provisions of 23 M.R.S.A. § 704 – A on or about February 3, 2023 resubmitted on March 24, 2023.

The application is for the development of 215 multi family housing units, 201 affordable housing units, and 14,000 sf of commercial space comprising of retail, restaurant, and a coffee shop. The project is forecast to generate 340 and 349 AM and PM weekday peak hour trip ends respectively based on ITE Trip Generation, 11th edition. Each of the uses described are anticipated to be constructed in 2025 and occupied in 2026.

at the following location:

The site is bounded by Preble Street to the southwest, Lancaster Street to the northwest, Cedar Street and Elm Street to the northeast, Cumberland Avenue and Oxford Street to the southeast.

Any interested party may request in writing to participate in the City of Portland scoping meeting for the subject project no later than 20 days after the application is found by the City to be complete and is accepted for processing. Requests shall be sent to the State Traffic Engineer, 16 State House Station, Augusta, ME 04333. Public comments on the application pertaining to either congestion or safety will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Transportation Region office in Scarborough (Region 1) during normal working hours. Addresses may be found at the following website: <https://www.maine.gov/mdot/about/regions/> A copy of the application may also be seen at the municipal offices in Portland, Maine.

Written public comments concerning congestion or safety only, may be sent to the following address:
Attention Zachary Powell, City of Portland, 389 Congress Street, Portland, ME 04101.



Jennifer Conley, PE, PTOE
VHB, Inc.



Parcel ID	Address	Owner	Owners Mailing Address
034 I001000	125 KENNEBEC STREET	125 KENNEBEC STREET CONDO	125 KENNEBEC STREET, PORTLAND, ME, 04101
034 I001001	125 KENNEBEC STREET	PORTLAND ARCHITECTURAL SALVAGE INC	125 KENNEBEC STREET, PORTLAND, ME, 04101
034 I001002	125 KENNEBEC STREET	PD2 LLC	6 PHANTOM FARM RD, CAPE ELIZABETH, ME, 04107
025 E001001	71 KENNEBEC STREET	HOWLES CORPORATION	PO BOX 938, PORTLAND, ME, 04104
025 C002001	53 KENNEBEC STREET	HOWLES CORPORATION	PO BOX 938, PORTLAND, ME, 04104
025 D008001	145 LANCASTER STREET	PERRY E IRON & METAL CO	115 LANCASTER ST, PORTLAND, ME, 04101
026 E004504	75 CHESTNUT STREET	75 CHESTNUT STREET OWNER LLC	220 BROADWAY # 302, LYNNFIELD, MA, 01940
026 A001001	158 LANCASTER STREET	BAYSIDE II LLC	ONE CANAL PLAZA, PORTLAND, ME, 04101
033 H008001	178 LANCASTER STREET	BAYSIDE II LLC	ONE CANAL PLAZA, PORTLAND, ME, 04101
033 H009001	50 CEDAR STREET	BAYSIDE IV LLC	ONE CANAL PLAZA STE 500, PORTLAND, ME, 04101
033 H010001	48 CEDAR STREET	BAYSIDE II LLC	PO BOX 266, CAPRE ELIZABETH, ME, 04107
033 H011001	44 CEDAR STREET	LABRECK AMELIA A	87 MUNJOY ST, PORTLAND, ME, 04101
033 H012001	40 CEDAR STREET	BAYSIDE II LLC	PO BOX 266, CAPRE ELIZABETH, ME, 04107
033 H013001	36 CEDAR STREET	BAYSIDE II LLC	ONE CANAL PLAZA, PORTLAND, ME, 04101
033 H016001	215 OXFORD STREET	NOWLIN DAVID B	360 PLEASANT HILL RD, SCARBOROUGH, ME, 04074
033 N009001	18 CEDAR STREET	SALVATION ARMY THE	88 PREBLE ST, PORTLAND, ME, 04101
033 N003001	220 OXFORD STREET	AVESTA HOUSING DEVELOPMENT CORPORATION	307 CUMBERLAND AVE, PORTLAND, ME, 04101
033 N001001	67 ELM STREET	AVESTA HOUSING DEVELOPMENT CORPORATION	307 CUMBERLAND AVE, PORTLAND, ME, 04101
033 N002001	65 ELM STREET	AVESTA HOUSING DEVELOPMENT CORPORATION	307 CUMBERLAND AVE, PORTLAND, ME, 04101
033 N004001	61 ELM STREET	AVESTA HOUSING DEVELOPMENT CORPORATION	307 CUMBERLAND AVE, PORTLAND, ME, 04101
033 N006001	55 ELM STREET	AVESTA HOUSING DEVELOPMENT CORPORATION	307 CUMBERLAND AVE, PORTLAND, ME, 04101
033 N018001	307 CUMBERLAND AVE	AVESTA HOUSING DEVELOPMENT CORPORATION	307 CUMBERLAND AVE, PORTLAND, ME, 04101
027 A001001	320 CUMBERLAND AVE	EAST END CORP	PO BOX 10291, PORTLAND, ME, 04104
037 F020001	38 PREBLE STREET	PREBLE STREET	38 PREBLE ST, PORTLAND, ME, 04101
033 K010001	331 CUMBERLAND AVE	YOUTH AND FAMILY OUTREACH	331 CUMBERLAND AVE, PORTLAND, ME, 04101
033 L004001	9 PORTLAND STREET	PREBLE STREET RESOURCE CENTER INC	331 CUMBERLAND AVE, PORTLAND, ME, 04101
033 D015001	74 PREBLE STREET	SALVATION ARMY THE	88 PREBLE ST, PORTLAND, ME, 04101
033 D006001	98 PREBLE STREET	SALVATION ARMY THE	88 PREBLE ST, PORTLAND, ME, 04101
033 O002001	106 PREBLE STREET	114 PREBLE BLOCK LLC	PO BOX 779, PORTLAND, ME, 04104
033 O001001	114 PREBLE STREET	114 PREBLE BLOCK LLC	PO BOX 779, PORTLAND, ME, 04104
033 O004001	120 PREBLE STREET	114 PREBLE BLOCK LLC	PO BOX 779, PORTLAND, ME, 04104
033 O003001	75 ALDER STREET	STATE OF MAINE	16 STATE HOUSE STATION, AUGUSTA, ME, 04330
034 K004001	101 HANOVER STREET	KENNEBEC KROSSING LLC	PO BOX 779, PORTLAND, ME, 04104
027 B001001	284 CUMBERLAND AVE	CITY OF PORTLAND	389 CONGRESS ST, PORTLAND, ME, 04101
026 B012001	31 CEDAR STREET	197 OXFORD STREET LLC	82 HANOVER ST, PORTLAND, ME 04101
026 B014001	33 CEDAR STREET	BENNISON MARY LEE	33 CEDAR ST, PORTLAND, ME 04101
026 B004001	4 HALL COURT	197 OXFORD STREET LLC	82 HANOVER ST, PORTLAND, ME 04101
026 B001001	39 CEDAR STREET	HYDE ROBERT	39 CEDAR ST, PORTLAND, ME 04101
026 A009001	45 CEDAR STREET	AMES PETER P & ALICE D JTS	69 ROCK RIDGE RUN, CUMBERLAND, ME 04021
026 A011001	47 CEDAR STREET	HALL JAMES W & SARAH E MICHNIEWICZ JTS	47 CEDAR ST, PORTLAND, ME 04101
026 A001001	158 LANCASTER STREET	WBP COMMERCIAL LLC	82 HANOVER ST, PORTLAND, ME 04101

West Bayside Development

Traffic Movement Permit (Phase 1 & 2)

PREPARED FOR

West Bayside Partners, LLC
82 Hanover Street, Suite 5
Portland, ME 04101

PREPARED BY



500 Southborough Drive
Suite 105B
South Portland, ME 04106-6928

April 12, 2023

1

Section 1: Site and Traffic Information

1.A Site Description and Site Plan

The site is located on multiple streets in the West Bayside neighborhood including Preble Street, Elm Street, Lancaster Street, and Oxford Street in Portland, Maine. Existing space to be developed includes predominately surface lots and a few existing buildings. The site is identified on the following City Parcels:

- 196 Lancaster Street – 033 G003, G006 (Phase 1)
- 89 Elm Street – 033 H018, H005, H006, H007 (Phase 1)
- 60 Elm Street – 033 M012001 (Phase 2)
- 315 Cumberland Avenue – 033 M004001 (Existing Garage)

The site and boundary surveys, and proposed site plan are included in Attachment 1A.

1.B Existing and Proposed Site Uses

The following describes the existing and proposed uses:

Existing Uses

196 Lancaster Street is currently being used as a 4,250 sf office building. 89 and 60 Elm Street are currently surface parking lots. The Portland Public Market Garage is a seven-level, 595-space parking structure. Vehicular access to and from the garage is provided on both Preble Street and Elm Street.

Proposed Site Uses

The Project consists of a mixed-use two-phase redevelopment of four sites. The following presents the land use program by phase.

Phase 1

- › 130 Multi-family housing units
- › 201 Affordable housing units
- › 4,000 sf general retail

- › 2,000 sf coffee shop
- › 6,000 sf restaurant

Phase 2

- › 85 Multi-family housing units
- › 2,000 sf general retail

The existing 595 space Portland Public Market Garage will provide parking for these uses since it is controlled by the developer and is largely vacant. As it does today, the parking garage will continue to have access/egress on both Preble Street and Elm Street. A detailed site plan for 89 Elm Street and a master site plan level for 196 Lancaster Street and 60 Elm Street is provided in Attachment 1A. Parking allocated by site is presented in Table 1.

Table 1 Vehicle Parking Allocation in the Portland Public Market Garage

Site Location	Number of Parking Spaces Allocated
Phase 1	
196 Lancaster Street	73
89 Elm Street	40
Phase 2	
60 Elm Street	56
Total	169

1.C Regional Mapping

Site location maps showing the development area is included in Attachment 1A.

The site is bounded by Preble Street to the southwest, Lancaster Street to the northwest, Cedar Street and Elm Street to the northeast, Cumberland Avenue and Oxford Street to the southeast.

1.D Proposed Uses in the Study Area

Projects that have been approved but are not yet occupied as well as projects that have applied for approval are required to be included in the predevelopment traffic volumes. A mapping of locations of these projects is provided in Attachment 1C.

- › 385 Congress Street (Mixed-Use Development) (PL001970-2022) This mixed-use development is approved and not yet constructed. A minimal number of trips may pass near the West Bayside proposed development.
- › 477-481 Congress Street (PL-01003-2021) This project is a redevelopment of the existing building at 477 Congress Street into a 186-room hotel with retail space, restaurant, rooftop bar, and associated hotel amenities. The site was previously used as an office and retail and a revised trip generation was reviewed by the City and found that the expected AM peak hour traffic will not change while the PM peak hour traffic reduces from the previous use on the site.

- › 29 Marginal Way (PL-01879-2021) 29 Marginal Way is a multi-tenant commercial site with a total of six commercial buildings. The re-development of this site has been constructed and has been occupied.
- › 343 Cumberland Street (PL-002095-2022) This project combines two existing facilities within 500' of each other and is not expected to increase traffic on the adjacent roadway network.

1.E Trip Generation

Trip generation estimates for the Project are based on the Institute of Transportation Engineers (ITE) publication, Trip Generation, 11th Edition. The ITE Trip Generation Manual categorizes various land uses and provides weekday daily, weekday morning peak hour, and weekday evening peak hour unadjusted vehicle trip generation estimates for each use. Trip generation estimates for the proposed uses were projected using data published in the ITE Trip Generation Manual based on the metrics and land use codes presented in Table 2.

Table 2 Project Program & ITE Land Use Codes

Land Use	Size	Land Use Code	
Multi-family housing	215 units	221	Multifamily Housing (Mid-Rise)
Affordable housing	201 units	223	Affordable Housing
General retail	6,000 sf	822	Strip Retail Plaza (<40k)
Coffee shop	2,000 sf	936*	Coffee/Donut Shop without drive through window
Restaurant	6,000 sf	932	High-Turnover (Sit-Down)

Source: ITE Trip Generation 11th Edition

* AM peak hour is based on trip generation for coffee shop as included in 52 Hanover Street TMP

Site trip generation for the proposed coffee shop is developed based upon methodology used for the approved 52 Hanover Street development in Portland, Maine by using count data taken at an existing neighborhood coffee shop at the intersection of Congress Street and Atlantic Street. Table 3 below summarizes the results of from the 52 Hanover Street traffic movement permit.

Table 3 Trip Generation Neighborhood Coffee Shop

Land Use	Entering Trips		Exiting Trips		Total Trips	
	Pedestrian Trips	Vehicle Trips	Pedestrian Trips	Vehicle Trips	Pedestrian Trips	Vehicle Trips
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
Peak Hour (8:30 – 9:30) Total	33	7	31	7	64	14

Source: AM peak hour is based on trip generation for coffee shop as included in 52 Hanover Street TMP

The existing coffee shop generates far fewer vehicle trips than pedestrian trips during the AM peak hour. For the analysis, we have included the pedestrian and vehicular trips into our total trip count listed below.

The unadjusted ITE vehicle trip generation was calculated for the weekday AM and PM peak hours for the remainder of the land uses on site as presented in Table 4. Trip generation calculations are provided in Attachment 1D.

Table 4 Total Unadjusted Trips

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Multi-family housing	19	64	83	51	33	84
Affordable housing	29	72	101	54	38	92
General retail	12	8	21	27	27	54
Restaurant	31	26	57	33	21	54
Coffee shop*	<u>40</u>	<u>38</u>	<u>78</u>	<u>33</u>	<u>33</u>	<u>65</u>
Total	132	208	340	198	151	349

Source: ITE Trip Generation 11th Edition

*AM peak hour is based on trip generation for coffee shop as included in 52 Hanover Street TMP

Internal Capture

As a multi-use development, the trip generation characteristics of the Project will be different from single-use sites. Some of the traffic to be generated by the Project will be contained among the components of the site as “internal” or “shared vehicle” trips. This concept means that some patrons could visit more than one of the uses on the Project Site. For example, apartment residents may also patronize the site’s retail and restaurant spaces.

While these shared trips represent new traffic to the individual uses, they would not correspond to new vehicle trips on the surrounding roadway network.

As described in the ITE Trip Generation Handbook, “because of the complementary nature of these land uses, some trips are made among the on-site uses. This capture of trips internal to the Development Site has the net effect of reducing vehicle trip generation between the overall Development Site and the external street system (compared to the total number of trips generated by comparable land uses developed individually on stand-alone sites) an internal capture rate can generally be defined as the percentage of total person trips generated by a site that are made entirely within the Development Site. The trip origin, destination, and travel path are all within the site.”

Because this site is not contiguous, internal capture has been determined at the building level rather than site level. Credit is taken only for trips that would occur between uses in the same building. The internal capture adjustment calculations are presented in Attachment 1D. The internal and external trips are presented in Table 5 and Table 6.

Table 5 Internal Capture Adjustment – AM Peak Hour

	Total Trips			Internal Trips			Net External Trips
	Retail	Restaurant	Residential	Retail	Restaurant	Residential	
196 Lancaster							
Enter	--	61	12	--	8	1	64
Exit	--	55	39	--	1	8	85
89 Elm							
Enter	8	10	29	2	3	1	41
Exit	5	9	72	2	1	3	80
60 Elm							
Enter	4	--	8	0	--	0	12
Exit	3	--	25	0	--	0	28
TOTAL	20	135	185	4	13	13	310

Table 6 Internal Capture Adjustment – PM Peak Hour

	Total Trips			Internal Trips			Net External Trips
	Retail	Restaurant	Residential	Retail	Restaurant	Residential	
196 Lancaster							
Enter	--	55	31	--	4	5	77
Exit	--	47	20	--	5	4	58
89 Elm							
Enter	18	11	54	5	5	6	67
Exit	18	7	38	8	4	4	47
60 Elm							
Enter	9	--	20	1	--	2	26
Exit	9	--	13	2	--	1	19
TOTAL	54	120	176	16	18	22	294

1.F Trip Distribution

To determine the likely travel patterns of trips to the redevelopment area, the US Census Journey to Work data was consulted. Based on this data, most Portland residents work in either Portland or points to the north and south along the interstate. The distribution of these Portland resident work trips is presented in Table 7. The likely travel patterns to and from the redevelopment area are illustrated to follow these same patterns.

Table 7 Trip Distribution Percentages for Residents

Route	Proposed Distribution ¹
I-295 points north	28%
I-95 points north	7%
26/100 points north/west	9%
302 points north/west	8%
25 points west	2%
I-295 points south	41%
Marginal Way	1%
Casco Bay Bridge points south	3%
High or State streets (local)	1%
Cumberland Ave (local)	1%

1: Trip distribution based on journey to work information sorted by Portland residence.

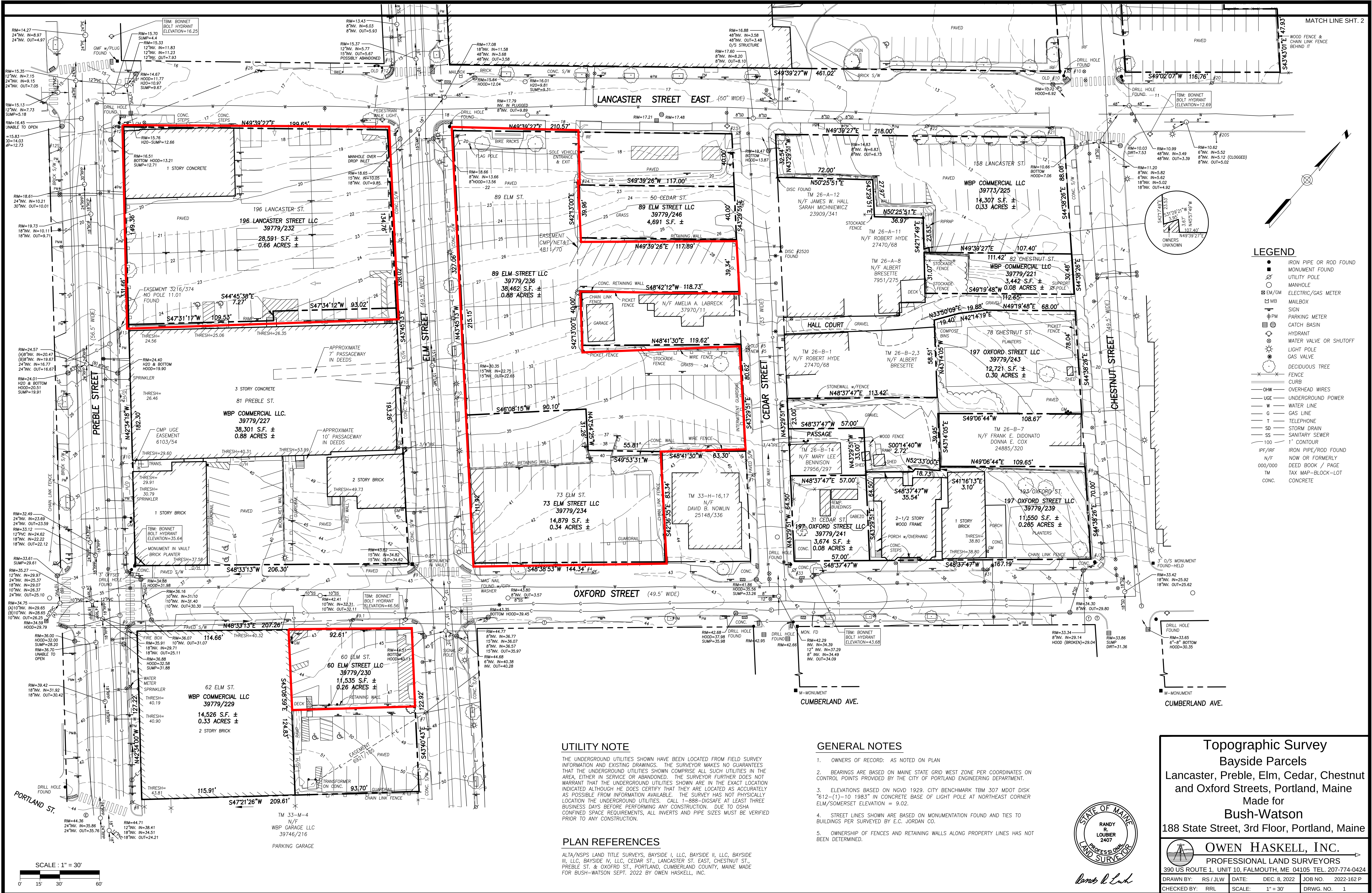
1.G Trip Assignment

Typically, some share of trips to coffee shops and restaurants are counted as pass-by trips. To be conservative, all vehicle trips are assumed to be 100% primary with reductions only for internal capture. With no pass-by trips, all vehicle trips are anticipated to start or end at the existing Portland Public Market Garage at Preble and Elm Streets. New vehicle trips were assigned based on the distribution in Table 7. The resulting trip assignment is shown in Attachment 1D.

Attachment 1A

Boundary Survey

Overall Site Plan



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 CONTAINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

PLAN REFERENCES

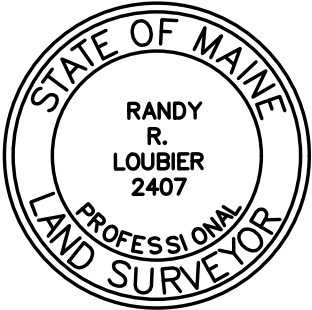
ALTA/NSPS LAND TITLE SURVEYS, BAYSIDE I, LLC, BAYSIDE II, LLC, BAYSIDE III, LLC, BAYSIDE IV, LLC, CEDAR ST., LANCASTER ST. EAST, CHESTNUT ST., PREBLE ST. & OXFORD ST., PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR BUSH-WATSON SEPT. 2022 BY OWEN HASKELL, INC.

GENERAL NOTES

- OWNERS OF RECORD: AS NOTED ON PLAN
- BEARINGS ARE BASED ON MAINE STATE GRID WEST ZONE PER COORDINATES ON CONTROL POINTS PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
- ELEVATIONS BASED ON NGVD 1929. CITY BENCHMARK TBM 307 MDT DISK "612"-(1)-10 1983" IN CONCRETE BASE OF LIGHT POLE AT NORTHEAST CORNER ELM/SOMERSET ELEVATION = 9.02.
- STREET LINES SHOWN ARE BASED ON MONUMENTATION FOUND AND TIES TO BUILDINGS PER SURVEYED BY E.C. JORDAN CO.
- OWNERSHIP OF FENCES AND RETAINING WALLS ALONG PROPERTY LINES HAS NOT BEEN DETERMINED.

Topographic Survey
Bayside Parcels
Lancaster, Preble, Elm, Cedar, Chestnut
and Oxford Streets, Portland, Maine
Made for
Bush-Watson
188 State Street, 3rd Floor, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 202-774-0424
DRAWN BY: RS/JLW DATE: DEC. 8, 2022 JOB NO. 2022-162 P
CHECKED BY: RRL SCALE: 1" = 30' DRWG. NO. 1



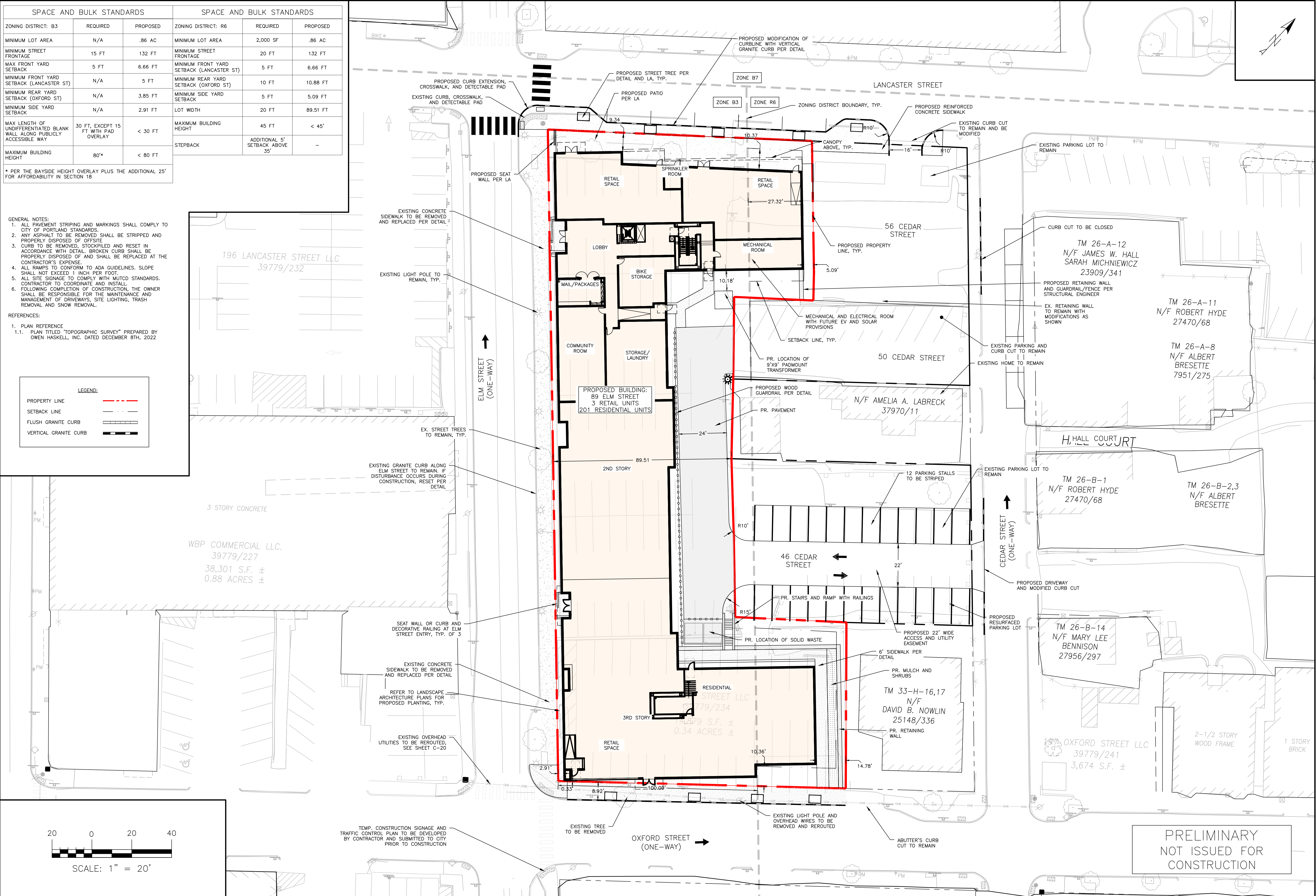
Randy R. Louber

SPACE AND BULK STANDARDS			SPACE AND BULK STANDARDS		
ZONING DISTRICT: B3	REQUIRED	PROPOSED	ZONING DISTRICT: R6	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	.86 AC	MINIMUM LOT AREA	2,000 SF	.86 AC
MINIMUM STREET FRONTAGE	15 FT	132 FT	MINIMUM STREET FRONTAGE	20 FT	132 FT
MAX FRONT YARD SETBACK	5 FT	6.66 FT	MINIMUM FRONT YARD SETBACK (LANCASTER ST)	5 FT	6.66 FT
MINIMUM FRONT YARD SETBACK (LANCASTER ST)	N/A	5 FT	MINIMUM REAR YARD SETBACK (OXFORD ST)	10 FT	10.88 FT
MINIMUM REAR YARD SETBACK (OXFORD ST)	N/A	3.85 FT	MINIMUM SIDE YARD SETBACK	5 FT	5.09 FT
MINIMUM SIDE YARD SETBACK	N/A	2.91 FT	LOT WIDTH	20 FT	89.51 FT
MAX LENGTH OF UNDIFFERENTIATED BLANK WALL ALONG PUBLICLY ACCESSIBLE WAY	30 FT, EXCEPT 15 FT WITH PAD OVERLAY	< 30 FT	MAXIMUM BUILDING HEIGHT	45 FT	< 45'
MAXIMUM BUILDING HEIGHT	80'+	< 80 FT	STEPBACK	ADDITIONAL 5' SETBACK ABOVE 35'	-
* PER THE BAYSIDE HEIGHT OVERLAY PLUS THE ADDITIONAL 25' FOR AFFORDABILITY IN SECTION 18					

- GENERAL NOTES:
- ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
 - ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
 - CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
 - ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1" INCH PER FOOT.
 - ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
 - FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

- REFERENCES:
- PLAN REFERENCE
 - 1.1. PLAN TITLED "TOPOGRAPHIC SURVEY" PREPARED BY OWEN HASKELL, INC. DATED DECEMBER 8TH, 2022

LEGEND:	
PROPERTY LINE	---
SETBACK LINE	- - -
FLUSH GRANITE CURB	=====
VERTICAL GRANITE CURB	=====



ISSUED FOR

CONCEPT

PRELIM SITE

DATE

WHS

2/4/22

SJL

2/7/23

SITE PLAN

PROJECT NAME

89 ELM STREET REDEVELOPMENT - PORTLAND

CLIENT

TOM WATSON & CO., LLC

188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

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

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

FILE:

1192.2_CIVIL

JN:

1192.2

SCALE:

AS NOTED

DESIGNED BY:

SJL

DRAWN BY:

DNM

CHECKED BY:

WHS

STATE OF MAINE

SAMUEL J. LABEL

PROFESSIONAL ENGINEER

21423

DRAWING NO.

C-10

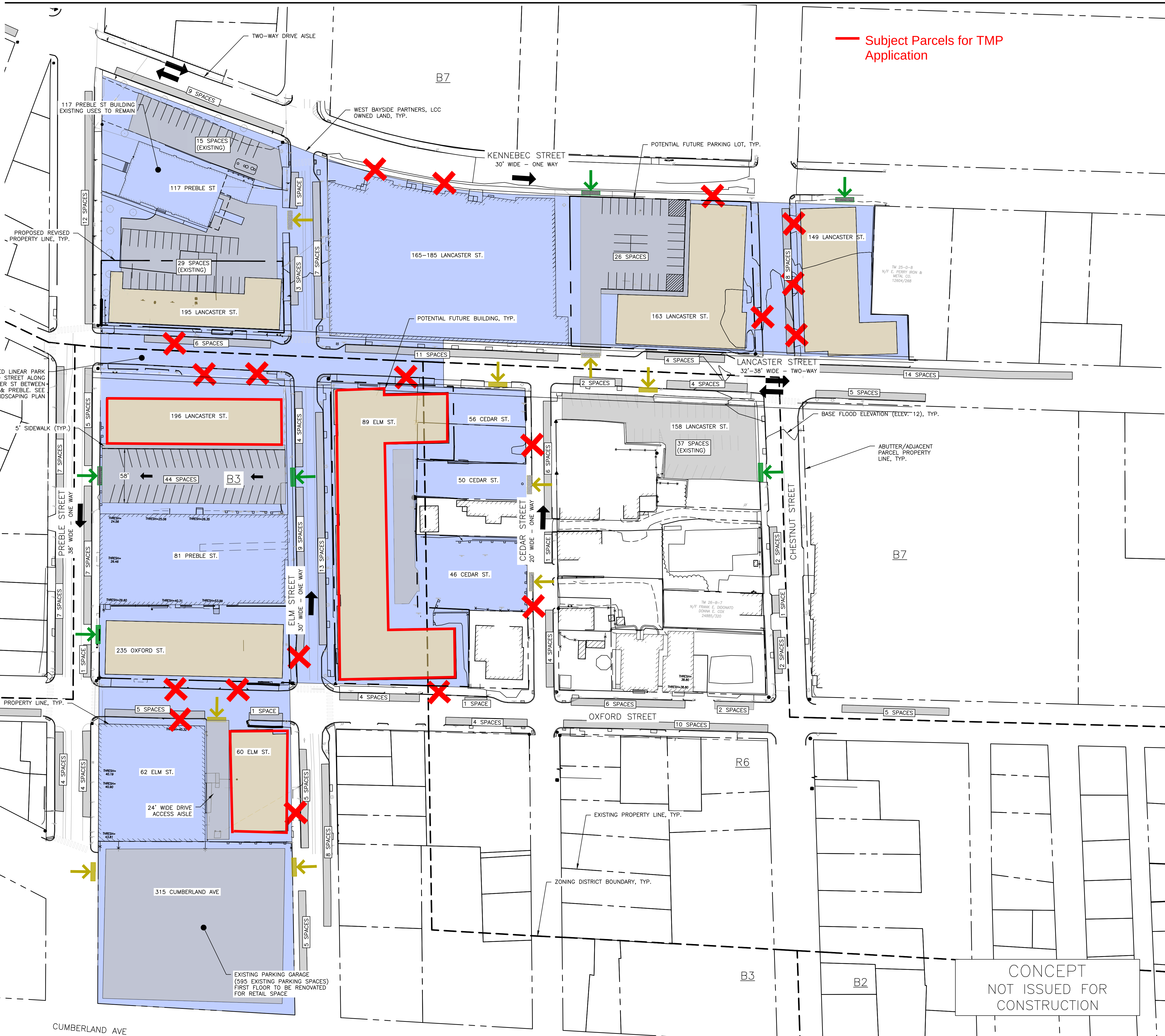
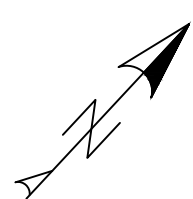
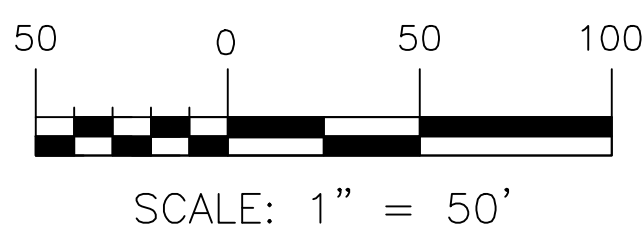
1. EXISTING CONDITIONS PROVIDED BY "TOPOGRAPHIC SURVEY BAYSIDE PARCELS LANCASTER, PREBLE, ELM, CEDAR, CHESTNUT AND OXFORD STREETS, PORTLAND, MAINE" PREPARED FOR BUSH WATSON DATED DECEMBER 6, 2002 BY OWEN HASKELL, INC. UTILITY INFORMATION OBTAINED FROM PORTLAND WATER DISTRICT MAPPING, UTILTY MAPPING, AND THE CITY OF PORTLAND GIS DATA CATALOG.
2. ADDITIONAL EXISTING INFORMATION FROM CAD FILE PROVIDED BY OWEN HASKELL, INC. OF "BOUNDARY & TOPOGRAPHIC SURVEY AT 117 PREBLE STREET, PORTLAND, MAINE" DATED SEPTEMBER 28, 2015,

LEGEND:

PROPOSED BUILDING	
WEST BAYSIDE PARTNERS, LLC OWNED LAND	
PROPOSED PARKING AREA	
PROPOSED CURB CUT	
EXISTING CURB CUT TO REMAIN	
CURB CUT TO BE REMOVED	
ZONING BOUNDARY/ZONE	 B3

PARKING SUMMARY	
	# PARKING SPACES
PRIVATE SPACES	168
PUBLIC SPACES	225
GARAGE SPACES (EX.)	595

1. ALL BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE RESULT 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. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

[illegible]

DRAWING NAME: MASTER SITE PLAN

PROJECT NAME: WEST BAYSIDE MASTER DEVELOPMENT PLAN

CLIENT: WEST BAYSIDE PARTNERS, LLC
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

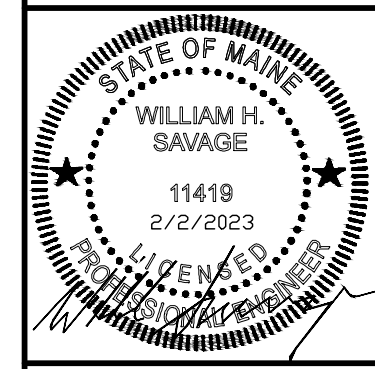

A C O R N

 ENGINEERING, INC.

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

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

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SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	ZMS
CHECKED BY:	WHS



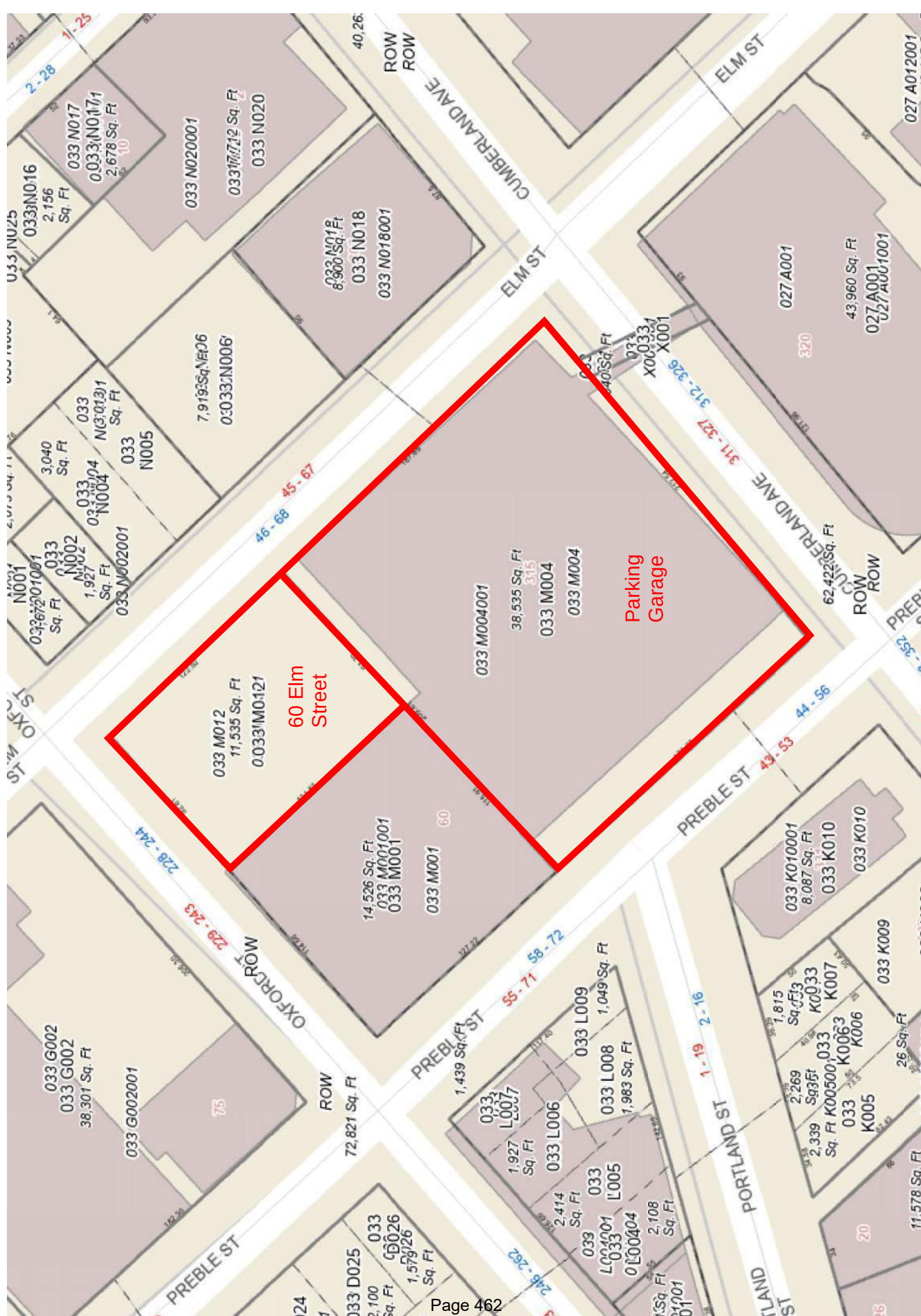
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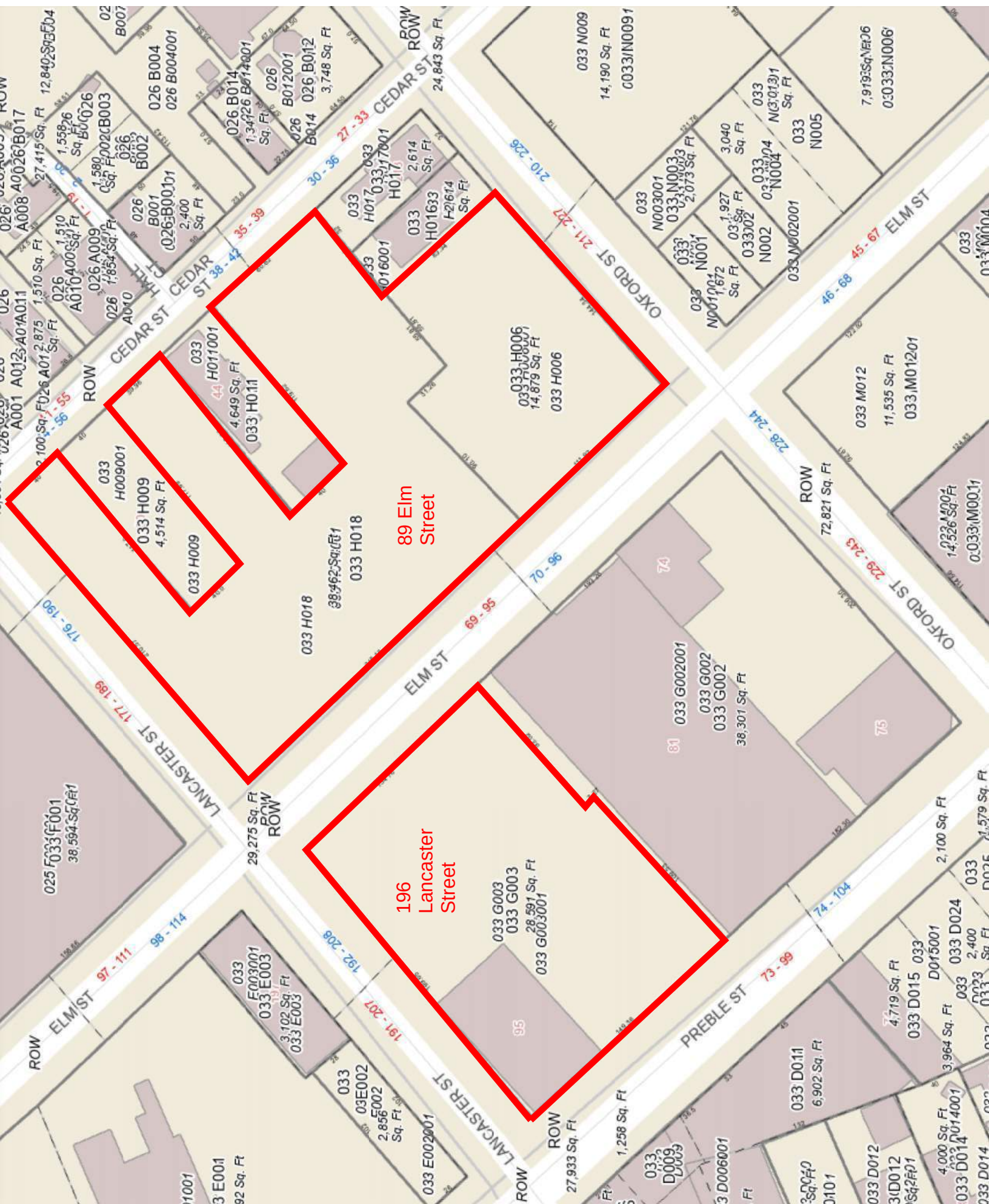




Attachment 1B

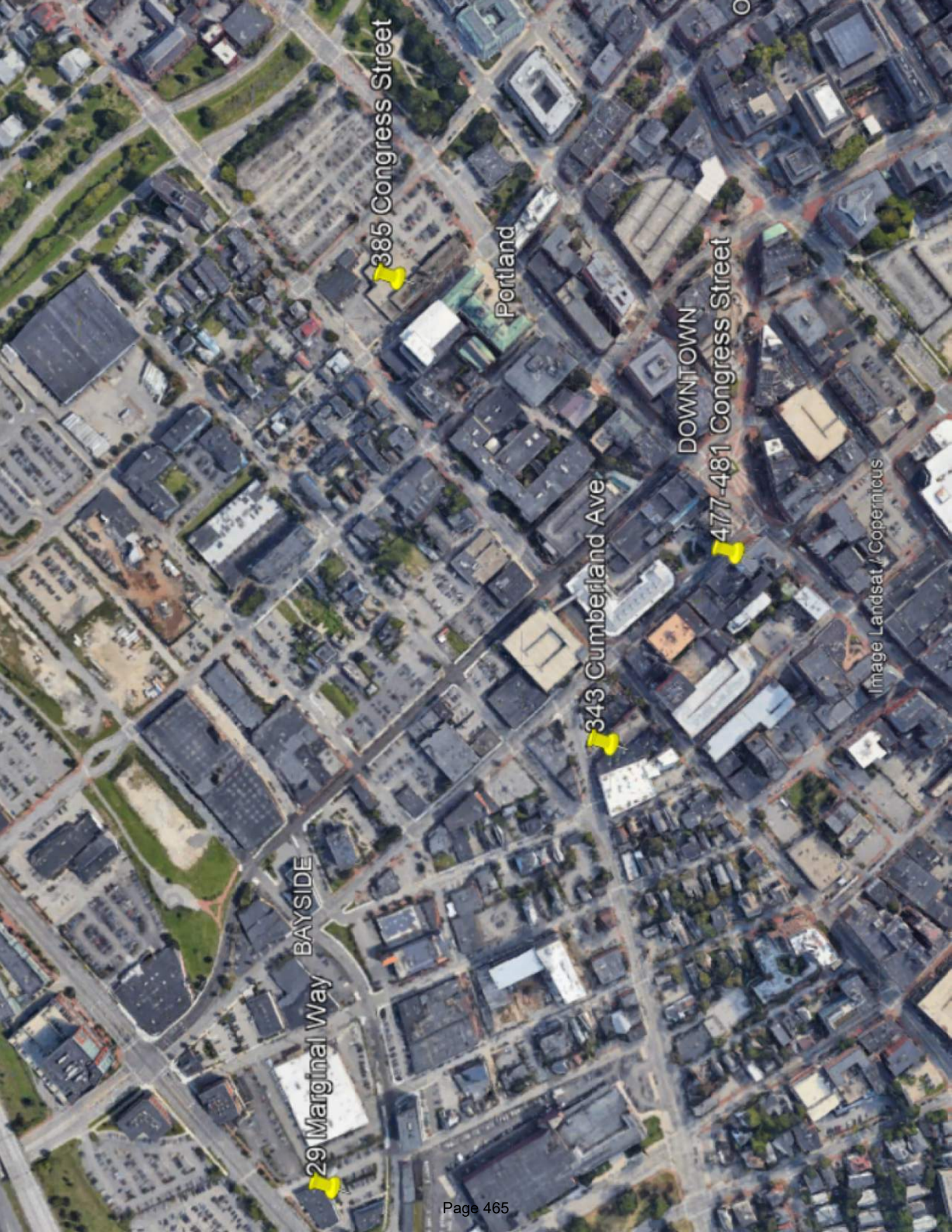
Tax Maps





Attachment 1C

Other Project Locations Map



385 Congress Street

PORTLAND

477-481 Congress Street

DOWNTOWN

343 Cumberland Ave

29 Marginal Way

BAYSIDE

Image Landsat / Copernicus

Attachment 1D

Trip Generation Calculations

Site Trip Diagrams

ITE Trip Generation 11th Edition - Proposed
Total Site generated trips (not accounting for internal, pass-by, or diverted trips)

Site Land Uses and Descriptions				AM PK HR OF ADJACENT STREET TRAFFIC										PM PK HR OF ADJACENT STREET TRAFFIC																					
Code	Land Use	Size	Unit	directional distribution	average				regression		# trips		Entering Exiting		directional dist.		average				regression		# trips		Entering Exiting										
				% exit	# studies	Avg Rate	Std Dev.	Total by Avg	r ²	total by Eq'n	Method Chosen	Total Trips			% enter	% exit	# studies	Avg Rate	Std Dev.	Total by Avg	r ²	total by Eq'n	Method Chosen	Total Trips											
Overall Trip Gen																61%	39%	31	0.39	0.08	84	0.91	84	Regression	84	51	33								
221	Multifamily Housing (Mid-Rise)	215	Dwelling Units	77%	30	0.37	0.09	80	0.91	83	Regression	83	19	64	59%	41%	8	0.46	0.28	92	0.67	86	Average	92	54	38									
223	Affordable Housing	201	Dwelling Units	71%	7	0.50	0.39	101	0.73	91	Average	101	29	72	50%	50%	16	32	12.64	65	N/A	N/A	Average	65	33	33									
936*	Coffee/Donut Shop without Drive-Thro	2	1000 SF GFA	49%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	78	40	38	50%	50%	25	6.59	2.94	40	0.56	54	Regression	54	27	27									
822	Strip Retail Plaza (<40k)	6	1000 SF GFA	40%	5	2.36	0.94	14	0.57	21	Regression	21	12	8	61%	39%	104	9.05	6.18	54	N/A	N/A	Average	54	33	21									
932	High-Turnover (Sit-Down)	6	1000 SF GFA	45%	37	9.57	11.61	57	N/A	N/A	Average	57	31	26																					
196 Lancaster Only																61%	39%											51	31	20					
221	Multifamily Housing (Mid-Rise)	130	Dwelling Units	77%								50	12	39	50%	50%								65	33	33									
936*	Coffee/Donut Shop without Drive-Thro	2	1000 SF GFA	49%								78	40	38	61%	39%								36	22	14									
932	High-Turnover (Sit-Down)	4	1000 SF GFA	45%								38	21	17																					
89 Elm St Only																59%	41%											92	54	38					
223	Affordable Housing	201	Dwelling Units	71%								101	29	72	61%	39%								18	11	7									
932	High-Turnover (Sit-Down)	2	1000 SF GFA	45%								19	10	9	50%	50%								36	18	18									
822	Strip Retail Plaza (<40k)	4	1000 SF GFA	40%								14	8	5																					
60 Elm St Only																61%	39%											33	20	13					
221	Multifamily Housing (Mid-Rise)	85	Dwelling Units	77%								33	8	25	50%	50%								18	9	9									
822	Strip Retail Plaza (<40k)	2	1000 SF GFA	40%								7	4	3																					
Based on ITE 11th Edition												total			entering			exiting			total			entering			exiting								
*AM peak hour is based on trip generation for coffee shop as included in 52 Hanover Street TMP												AM Peak Hour Total Site Trips:			340			132			208			PM Peak Hour Total Site Trips:			349			198			151		

Proposed

Trip Generation Summary

Total	Total Peak Hour Site Generated Trips		
	Total		
Peak Period	Unadjusted ITE	Internal	External
Weekday Morning			
Enter	132	15	117
Exit	208	15	193
Total	340	30	310
Weekday Evening			
Enter	198	28	170
Exit	151	28	123
Total	349	56	293

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	West Bayside			Organization:	VHB
Project Location:	196 Lancaster St, Portland, ME			Performed By:	EPH
Scenario Description:				Date:	3/20/2023
Analysis Year:	2023			Checked By:	MC
Analysis Period:	AM Street Peak Hour			Date:	3/20/2023

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				0		
Retail				0		
Restaurant	932/936	4	1K sf	116	61	55
Cinema/Entertainment				0		
Residential	221	130	ea	51	12	39
Hotel				0		
All Other Land Uses ²				0		
Total				167	73	94

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		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	8	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	167	73	94
Internal Capture Percentage	11%	12%	10%
External Vehicle-Trips ³	149	64	85
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	N/A	N/A
Retail	N/A	N/A
Restaurant	13%	2%
Cinema/Entertainment	N/A	N/A
Residential	8%	21%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-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 Transportation Institute

Project Name:	West Bayside
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	0	0	1.00	0	0
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	61	61	1.00	55	55
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	12	12	1.00	39	39
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		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	17	8		0	2	2
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	8	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		0	14	0	0	0
Retail	0		31	0	0	0
Restaurant	0	0		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	12	0		0
Hotel	0	0	4	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	0	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	8	53	61	53	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	11	12	11	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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	0	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	1	54	55	54	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	8	31	39	31	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	West Bayside			Organization:	VHB
Project Location:	196 Lancaster St, Portland, ME			Performed By:	EPH
Scenario Description:				Date:	3/20/2023
Analysis Year:	2023			Checked By:	MC
Analysis Period:	PM Street Peak Hour			Date:	3/20/2023

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				0		
Retail				0		
Restaurant	932/936	4	1K sf	102	55	47
Cinema/Entertainment				0		
Residential	221	130	ea	51	31	20
Hotel				0		
All Other Land Uses ²				0		
Total				153	86	67

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	0	0
Restaurant	0	0		0	5	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	4	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	153	86	67
Internal Capture Percentage	12%	10%	13%
External Vehicle-Trips ³	135	77	58
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	N/A	N/A
Retail	N/A	N/A
Restaurant	7%	11%
Cinema/Entertainment	N/A	N/A
Residential	16%	20%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-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 Transportation Institute

Project Name:	West Bayside
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	0	0	1.00	0	0
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	55	55	1.00	47	47
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	31	31	1.00	20	20
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		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	1	19		4	8	3
Cinema/Entertainment	0	0	0		0	0
Residential	1	8	4	0		1
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	1	0	1	0
Retail	0		16	0	14	0
Restaurant	0	0		0	5	0
Cinema/Entertainment	0	0	2		1	0
Residential	0	0	8	0		0
Hotel	0	0	3	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	0	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	4	51	55	51	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	5	26	31	26	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	5	42	47	42	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	16	20	16	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	West Bayside			Organization:	VHB
Project Location:	89 Elm St, Portland, ME			Performed By:	EPH
Scenario Description:				Date:	3/20/2023
Analysis Year:	2023			Checked By:	MC
Analysis Period:	AM Street Peak Hour			Date:	3/20/2023

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				0		
Retail	822	4	1k sf	13	8	5
Restaurant	932	2	1k sf	19	10	9
Cinema/Entertainment				0		
Residential	223	201	ea	101	29	72
Hotel				0		
All Other Land Uses ²				0		
Total				133	47	86

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		0	0	0	0	0
Retail	0		1	0	1	0
Restaurant	0	1		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	2	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	133	47	86
Internal Capture Percentage	9%	13%	7%
External Vehicle-Trips ³	121	41	80
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	N/A	N/A
Retail	25%	40%
Restaurant	30%	11%
Cinema/Entertainment	N/A	N/A
Residential	3%	4%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-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.

Project Name:	West Bayside
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	0	0	1.00	0	0
Retail	1.00	8	8	1.00	5	5
Restaurant	1.00	10	10	1.00	9	9
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	29	29	1.00	72	72
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		0	0	0	0	0
Retail	1		1	0	1	0
Restaurant	3	1		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	14	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		3	2	0	0	0
Retail	0		5	0	1	0
Restaurant	0	1		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	2	0		0
Hotel	0	0	1	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	0	0	0	0	0	0
Retail	2	6	8	6	0	0
Restaurant	3	7	10	7	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	28	29	28	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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	0	0	0	0	0	0
Retail	2	3	5	3	0	0
Restaurant	1	8	9	8	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	69	72	69	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	West Bayside			Organization:	VHB
Project Location:	89 Elm St, Portland, ME			Performed By:	EPH
Scenario Description:				Date:	3/20/2023
Analysis Year:	2023			Checked By:	MC
Analysis Period:	PM Street Peak Hour			Date:	3/20/2023

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				0		
Retail	822	4	1k sf	36	18	18
Restaurant	932	2	1k sf	18	11	7
Cinema/Entertainment				0		
Residential	223	201	ea	92	54	38
Hotel				0		
All Other Land Uses ²				0		
Total				146	83	63

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		3	0	5	0
Restaurant	0	3		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	2	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	146	83	63
Internal Capture Percentage	22%	19%	25%
External Vehicle-Trips ³	114	67	47
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	N/A	N/A
Retail	28%	44%
Restaurant	45%	57%
Cinema/Entertainment	N/A	N/A
Residential	11%	11%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-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 Transportation Institute

Project Name:	West Bayside
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	0	0	1.00	0	0
Retail	1.00	18	18	1.00	18	18
Restaurant	1.00	11	11	1.00	7	7
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	54	54	1.00	38	38
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		0	0	0	0	0
Retail	0		5	1	5	1
Restaurant	0	3		1	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	16	8	0		1
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		1	0	0	2	0
Retail	0		3	0	25	0
Restaurant	0	9		0	9	0
Cinema/Entertainment	0	1	0		2	0
Residential	0	2	2	0		0
Hotel	0	0	1	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	0	0	0	0	0	0
Retail	5	13	18	13	0	0
Restaurant	5	6	11	6	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	6	48	54	48	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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	0	0	0	0	0
Retail	8	10	18	10	0	0
Restaurant	4	3	7	3	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	34	38	34	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	West Bayside			Organization:	VHB
Project Location:	60 Elm St, Portland, ME			Performed By:	EPH
Scenario Description:				Date:	3/20/2023
Analysis Year:	2023			Checked By:	MC
Analysis Period:	AM Street Peak Hour			Date:	3/20/2023

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				0		
Retail	822	2	1k sf	7	4	3
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	85	ea	33	8	25
Hotel				0		
All Other Land Uses ²				0		
Total				40	12	28

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		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	40	12	28
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips ³	40	12	28
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	N/A	N/A
Retail	0%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	0%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-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 Transportation Institute

Project Name:	West Bayside
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	0	0	1.00	0	0
Retail	1.00	4	4	1.00	3	3
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	8	8	1.00	25	25
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		0	0	0	0	0
Retail	1		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	5	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	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	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	0	0	0	0	0	0
Retail	0	4	4	4	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	8	8	8	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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	0	0	0	0	0	0
Retail	0	3	3	3	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	25	25	25	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	West Bayside			Organization:	VHB
Project Location:	60 Elm St, Portland, ME			Performed By:	EPH
Scenario Description:				Date:	3/20/2023
Analysis Year:	2023			Checked By:	MC
Analysis Period:	PM Street Peak Hour			Date:	3/20/2023

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				0		
Retail	822	2	1k sf	18	9	9
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	85	ea	33	20	13
Hotel				0		
All Other Land Uses ²				0		
Total				51	29	22

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	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	51	29	22
Internal Capture Percentage	12%	10%	14%
External Vehicle-Trips ³	45	26	19
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	N/A	N/A
Retail	11%	22%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	10%	8%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-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 Transportation Institute

Project Name:	West Bayside
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	0	0	1.00	0	0
Retail	1.00	9	9	1.00	9	9
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	20	20	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		0	0	0	0	0
Retail	0		3	0	2	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		1	0	0	1	0
Retail	0		0	0	9	0
Restaurant	0	5		0	3	0
Cinema/Entertainment	0	0	0		1	0
Residential	0	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	0	0	0	0	0	0
Retail	1	8	9	8	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	18	20	18	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	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	0	0	0	0	0
Retail	2	7	9	7	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	12	13	12	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

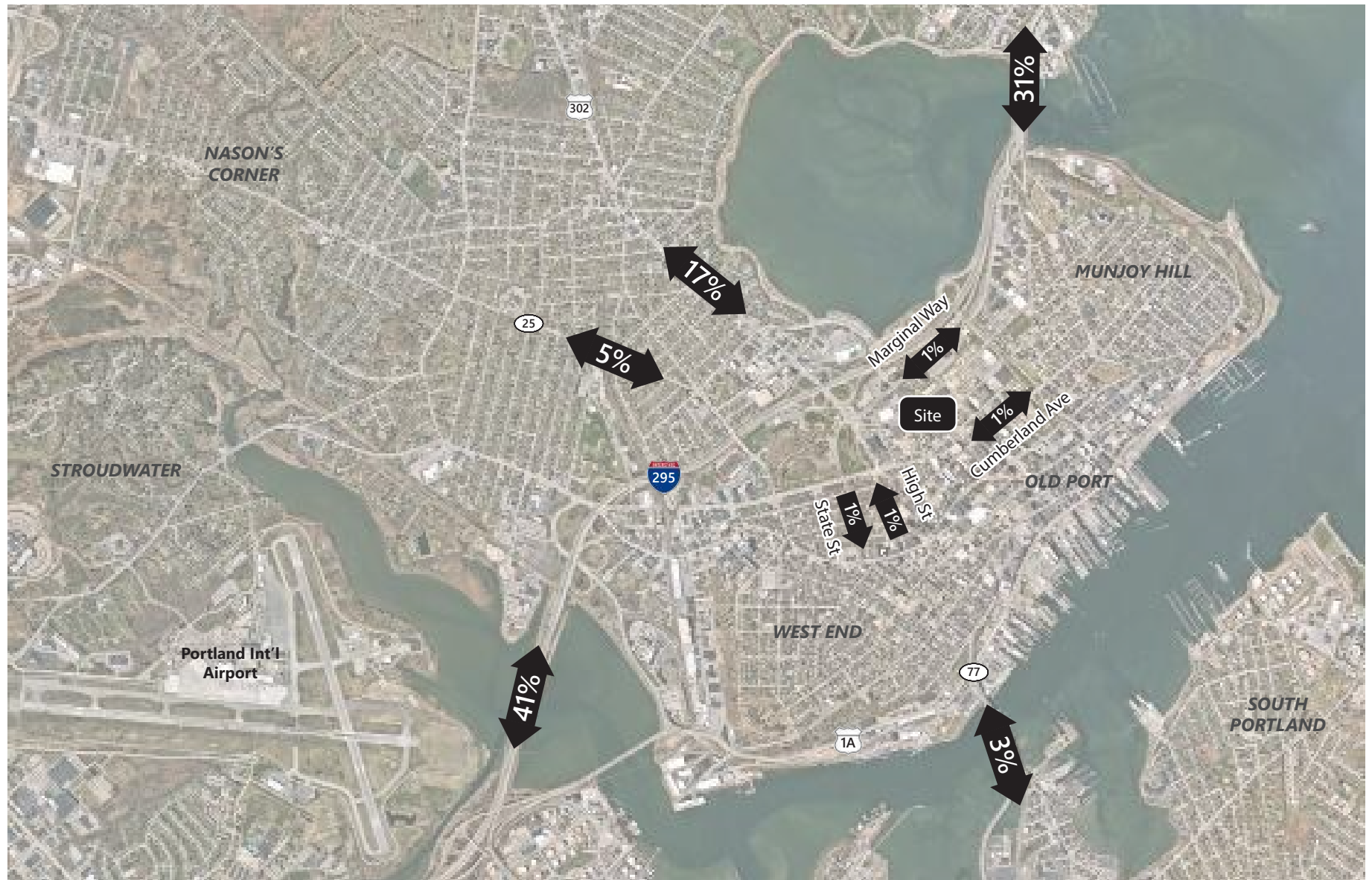
³Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

County	Potential Routes	Work Destination	I-295 points north	I-95 points north	26/100 points north/west	302 points north/west	25 points west	I-295 points south	Marginal Way	State Street points south	High Street Points north	Cumberland Ave	totals
Androscoggin		229	115	114									229
Aroostook		7	7										7
Cumberland		3,084											3084
	Baldwin	36						36					36
	Bridgton	43		43									43
	Brunswick	111	33					78					111
	Cape Elizabeth	115						115					115
	Casco	60			30	30							60
	Chebeague Island	7						7					7
	Cumberland	58	58										58
	Falmouth	220	220										220
	Freeport	133	133										133
	Frye Island	0											0
	Gorham	145						145					145
	Gray	50			50								50
	Harpswell	30	30										30
	Harrison	0											0
	Long Island	19						19					19
	Naples	36		36									36
	New Gloucester	84	56		28								84
	North Yarmouth	28	28										28
	Pownal	7		7									7
	Raymond	25			18	8							25
	Scarborough	224						224					224
	Sebago	0											0
	Standish	25						25					25
	Windham	107			54	53							107
	Yarmouth	85	85										85
Cities	Portland	814	41		81	163		366	41	41	41	41	814
	S. Portland	339						226		113			339
	Westbrook	283			94	94	94						283
	Franklin	13	13										13
	Hancock	26	17	9									26
	Kennebec	169	85	84									169
	Knox	47	47										47
	Lincoln	42	42										42
	Oxford	72			50	22							72
	Penobscot	40	40										40
	Piscataquis	0											0
	Sagadahoc	251	251										251
	Somerset	57	29	28									57
	Waldo	0											0
	Washington	13	13										13
	York	683						683					683
	Sum	4,733	1344	321	405	369	94	1924	41	154	41	41	4733
			28%	7%	9%	8%	2%	41%	1%	3%	1%	1%	100%

Project Traffic Distribution

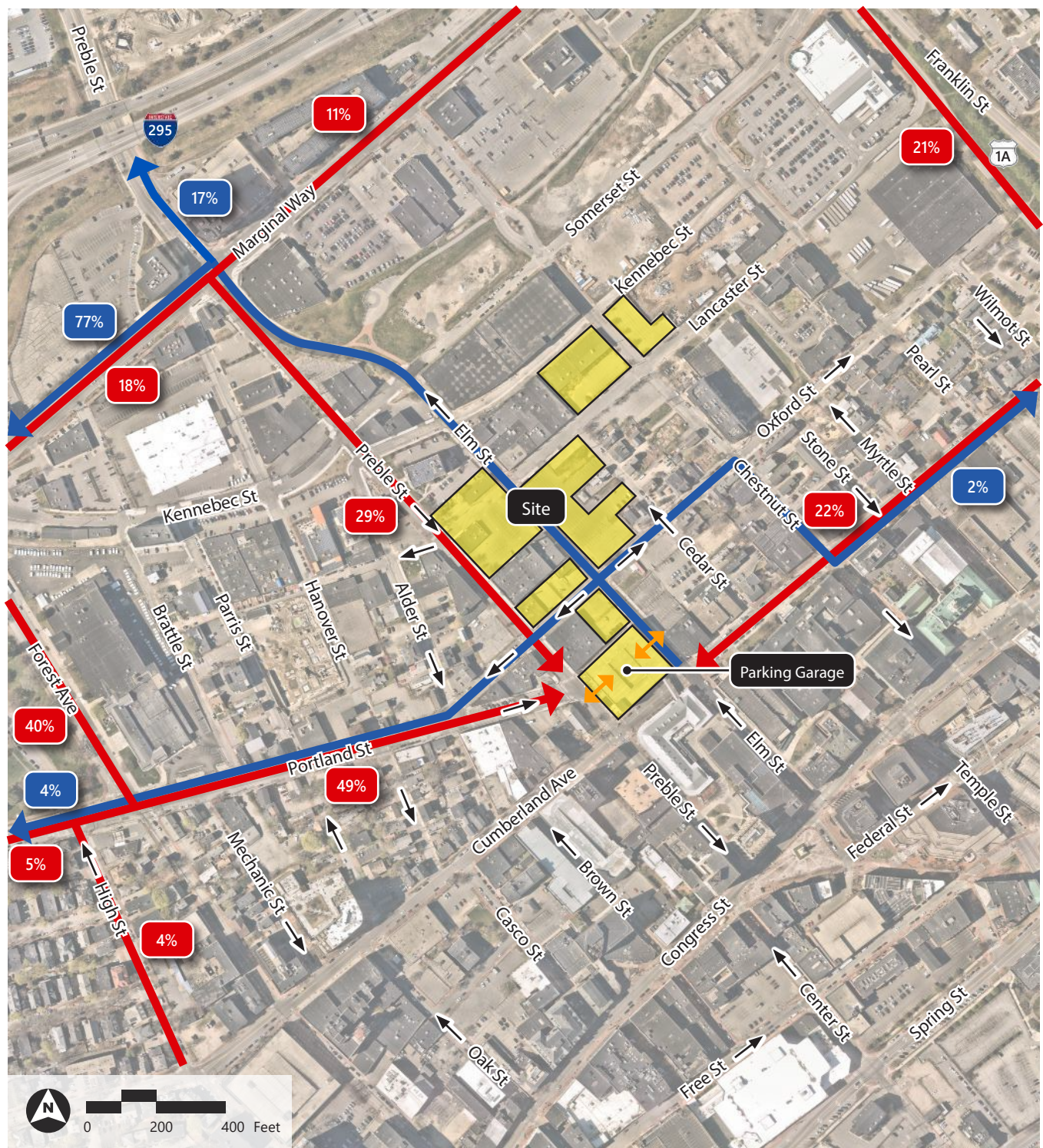
West Bayside | Portland, Maine



↔ % Project Traffic In/Out

Project Traffic Assignment

West Bayside | Portland, Maine



\\vnb\gb\proj\Portland\55678.00 West Bayside\Graphics\FIGURES\Transportation Figures - SY working.indd p6 12/23/22

→ One-way directional travel

Note: Streets with no arrows accommodate two-way traffic



Project Traffic In



Garage Entrance/ Exit



Project Traffic Out

Source: Nearmap Aerial

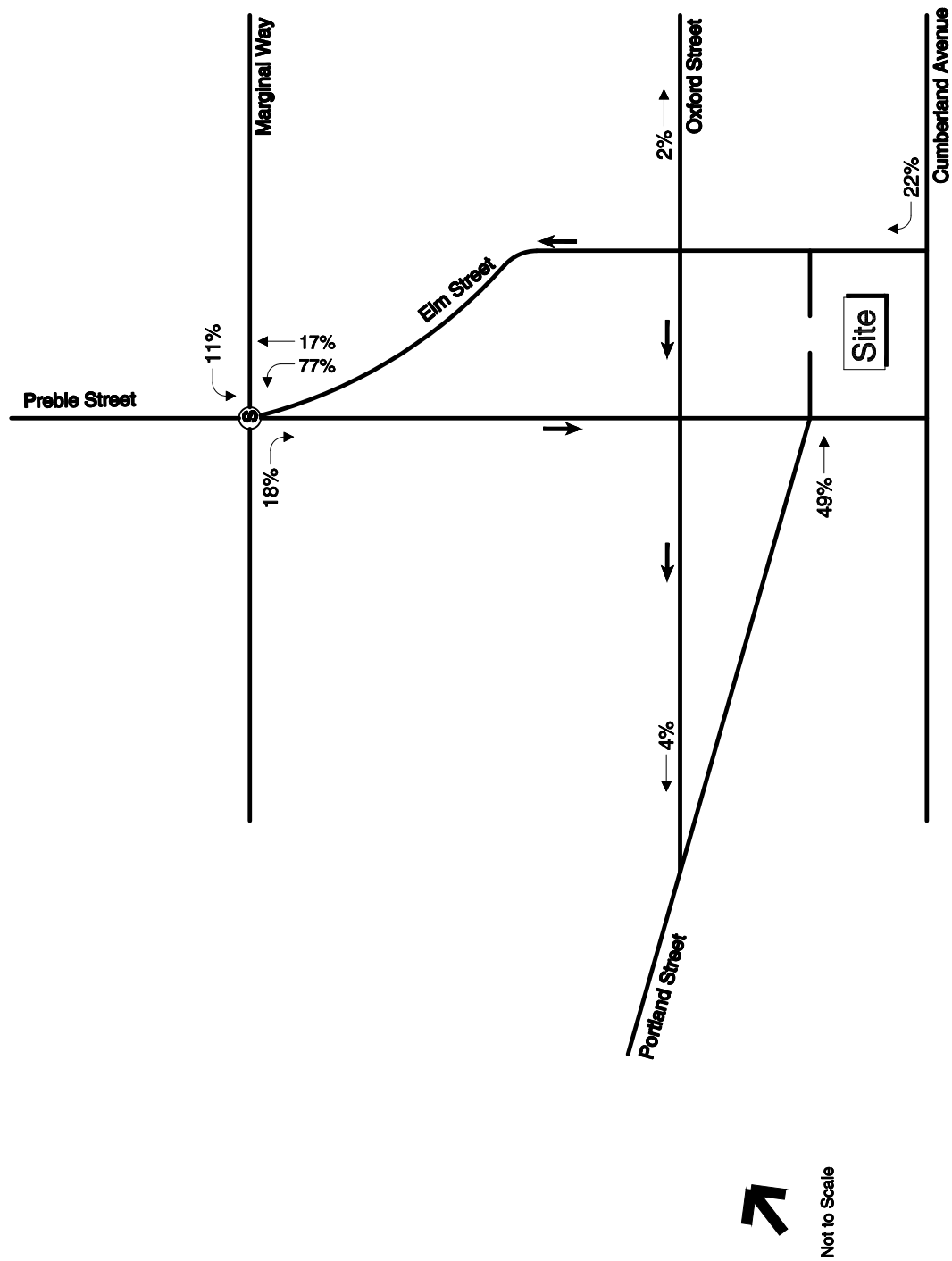
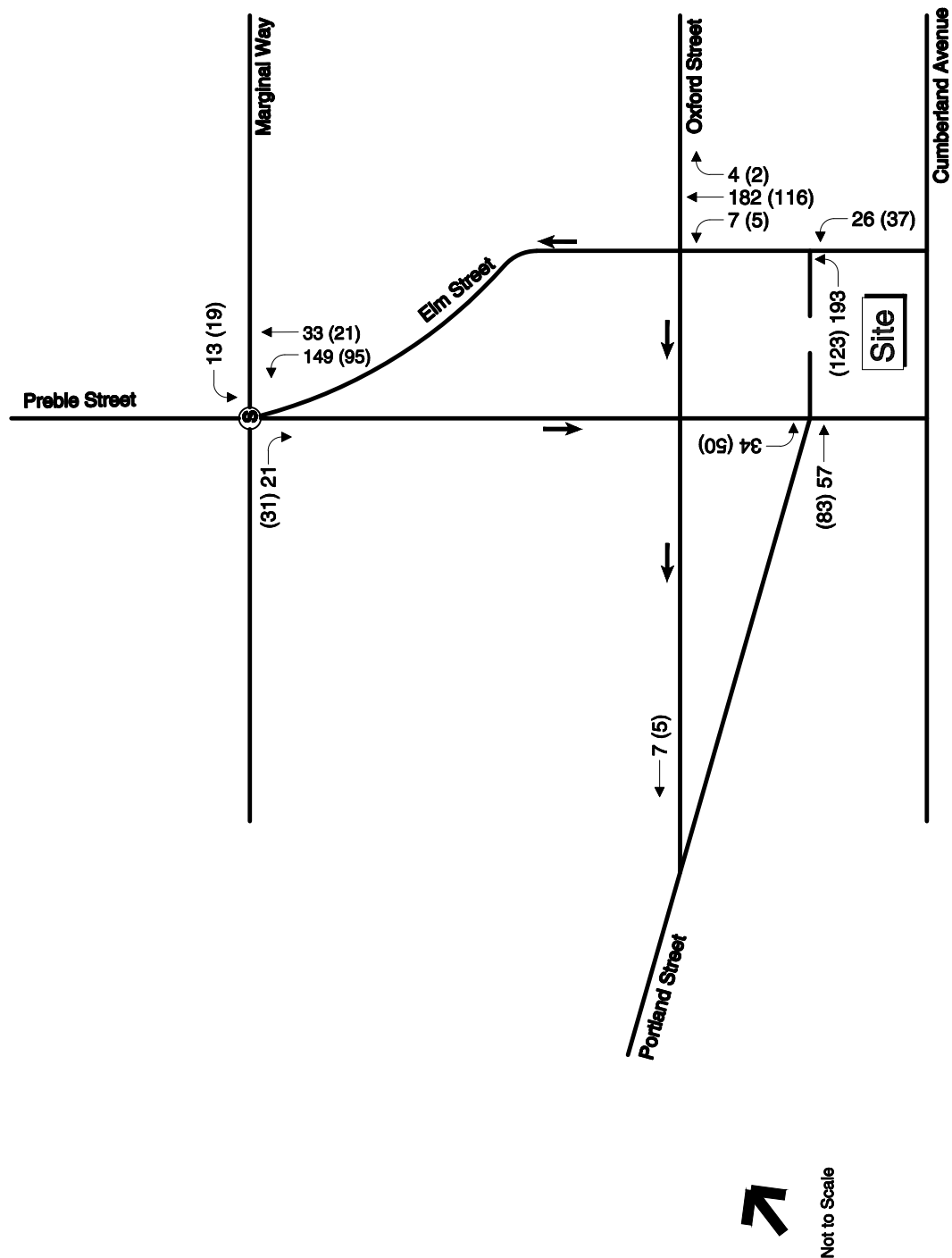


Figure 1
Trip Distribution Percentages



Not to Scale



Figure 2
Trip Assignment
Site Generated Vehicle Trips

2

Section 2: Traffic Crashes

2.A Crash Summary Data

VHB obtained the crash data from MaineDOT for the period 2019-2021, the most recent three-year period available.

In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor (CRF) of 1.00 or more for a three-year period. A CRF compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicated a rate of less than average and:
2. A minimum of eight crashes over the same three-year period

Based on the crash data provided by MaineDOT, there are no HCLs in the site vicinity.

The crash information for the intersections in the site vicinity is provided in Attachment 2.

2.B Bicycle and Pedestrian Crashes

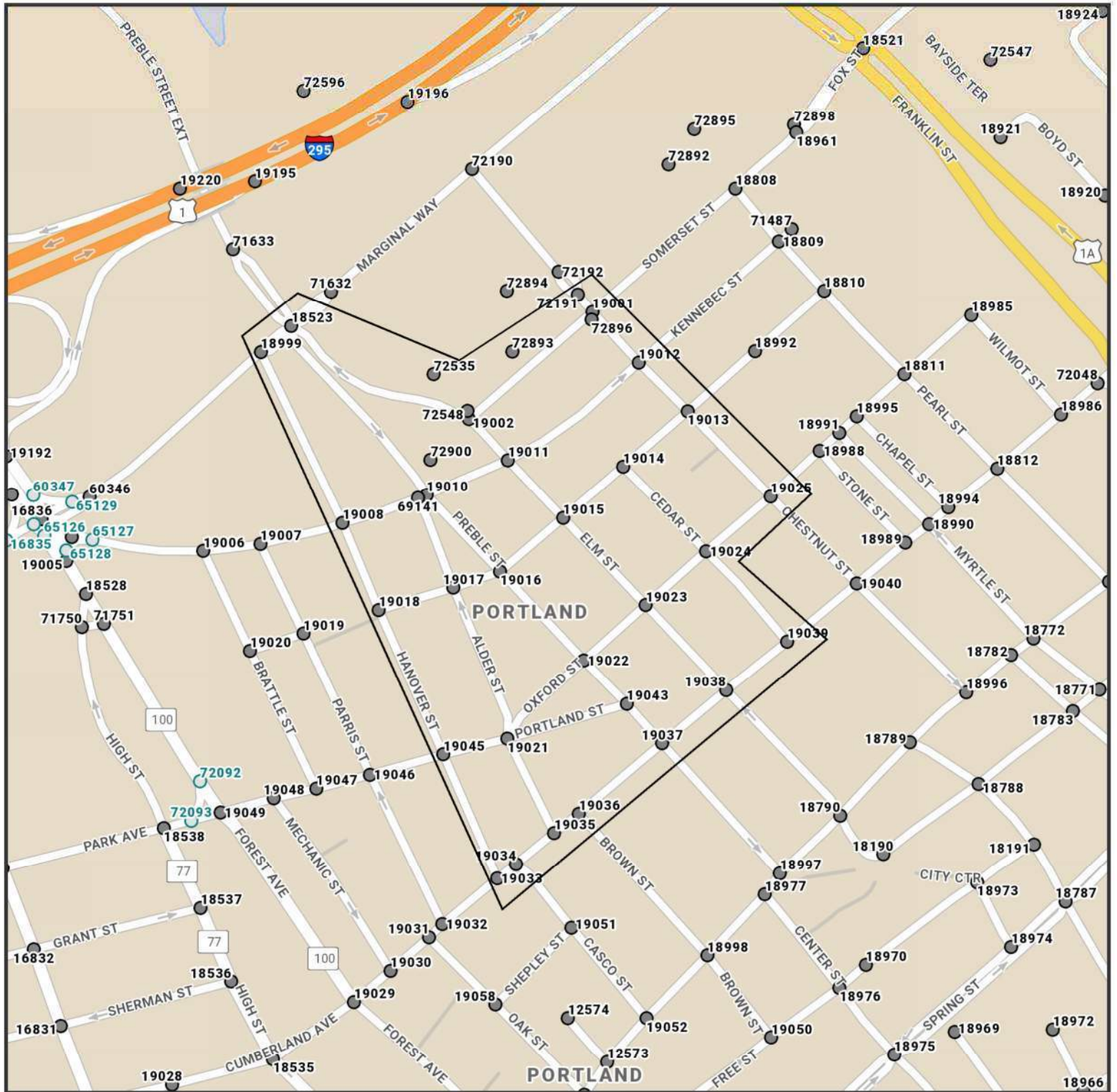
There have been 8 crashes involving bicycles and 6 crashes involving pedestrians in the past three years in the vicinity of the site. Six of the crashes involving bicycles occurred at numerous locations along Preble and Elm Street with 4 of them resulting in injury. Three of the crashes involving pedestrians occurred at the intersection of Cumberland Avenue and Elm Street, all resulting in injury and occurring during the afternoon.

Attachment 2

Node Map

Crash Summary

WEST BAYSIDE



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.1
Miles
1 inch = 0.11 miles

Date: 1/10/2023
Time: 2:54:21 PM

LEGEND



Report Selections and Input Parameters

REPORT SELECTIONS

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

REPORT DESCRIPTION

Portland Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: 0560477	Start Node: 18999 End Node: 18523	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☐ Exclude Last Node
Route: 3210331	Start Node: 18523 End Node: 18999	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0561238	Start Node: 19033 End Node: 19039	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☐ Exclude Last Node
Route: 0560345	Start Node: 18999 End Node: 19033	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560597	Start Node: 18523 End Node: 19037	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560252	Start Node: 19038 End Node: 18523	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560120	Start Node: 19014 End Node: 19039	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☒ Exclude Last Node
Route: 0560135	Start Node: 19025 End Node: 72191	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☐ Exclude Last Node
Route: 0560008	Start Node: 69141 End Node: 19035	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☒ Exclude Last Node
Route: 0560667	Start Node: 19002 End Node: 19001	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560414	Start Node: 19012	Start Offset: 0	☒ Exclude First Node

Report Selections and Input Parameters

REPORT SELECTIONS

☒ Crash Summary I

☐ Section Detail

☒ Crash Summary II

☐ 1320 Public

☐ 1320 Private

☐ 1320 Summary

REPORT DESCRIPTION

Portland Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

	End Node: 19011	End Offset: 0	☒ Exclude Last Node
Route: 0560414	Start Node: 19011 End Node: 19010	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560414	Start Node: 19010 End Node: 69141	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560414	Start Node: 69141 End Node: 19008	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560426	Start Node: 19013 End Node: 19014	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560426	Start Node: 19014 End Node: 19015	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560426	Start Node: 19015 End Node: 19016	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560426	Start Node: 19016 End Node: 19017	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560426	Start Node: 19017 End Node: 19018	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560560	Start Node: 19021 End Node: 19022	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560560	Start Node: 19022 End Node: 19023	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node

Report Selections and Input Parameters

REPORT SELECTIONS

☒ Crash Summary I

☐ Section Detail

☒ Crash Summary II

☐ 1320 Public

☐ 1320 Private

☐ 1320 Summary

REPORT DESCRIPTION

Portland Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: 0560560	Start Node: 19023 End Node: 19024	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560560	Start Node: 19024 End Node: 19025	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560593	Start Node: 19045 End Node: 19021	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560593	Start Node: 19021 End Node: 19043	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node

Crash Summary I

Nodes													
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury Crashes			Percent Annual M Injury	Ent-Veh	Crash Rate	Critical Rate	CRF
					A	B	C	PD					
18999	0560477 - 0.16	Int of HANOVER ST MARGINAL WY	2	4	0	0	0	4	0.0	4.035	0.33	0.36	0.00
18523	0560477 - 0.19	Int of ELM ST MARGINAL WY PREBLE ST EX	9	20	0	1	4	13	27.8	8.927	0.75	1.03	0.72
19033	0561238 - 0.28	Int of CUMBERLAND AV HANOVER ST	2	3	0	0	0	3	0.0	2.699	0.37	0.39	0.00
19034	0561238 - 0.29	Int of CASCO ST CUMBERLAND AV	2	3	0	2	0	1	66.7	2.765	0.36	0.39	0.00
19035	0561238 - 0.32	Int of ALDER ST CUMBERLAND AV	2	1	0	0	1	0	100.0	2.571	0.13	0.40	0.00
19036	0561238 - 0.34	Int of BROWN ST CUMBERLAND AV	2	0	0	0	0	0	0.0	2.710	0.00	0.39	0.00
19037	0561238 - 0.41	Int of CUMBERLAND AV PREBLE ST	9	8	0	0	1	2	5	5.725	0.47	1.12	0.42
19038	0561238 - 0.46	Int of CUMBERLAND AV ELM ST	9	11	0	1	2	2	6	4.731	0.77	1.17	0.66
19039	0561238 - 0.51	Int of CEDAR ST CUMBERLAND AV	2	0	0	0	0	0	0.0	3.171	0.00	0.38	0.00
19008	0560345 - 0.11	Int of HANOVER ST KENNEBEC ST	2	0	0	0	0	0	0.0	1.167	0.00	0.45	0.00
19018	0560345 - 0.17	Int of HANOVER ST LANCASTER ST	2	1	0	0	0	1	0.0	0.401	0.83	0.52	1.61
19045	0560345 - 0.26	Int of HANOVER ST PORTLAND ST	2	1	0	0	0	1	0.0	1.513	0.22	0.46	0.00
19010	0560597 - 0.13	Int of KENNEBEC ST PREBLE ST	2	4	0	0	1	3	25.0	1.679	0.79	0.44	1.79
19043	0560597 - 0.30	Int of PORTLAND ST PREBLE ST	2	2	0	0	2	0	100.0	2.890	0.23	0.39	0.00
19022	0560597 - 0.26	Int of OXFORD ST PREBLE ST	2	3	0	0	0	3	0.0	2.545	0.39	0.40	0.00
19016	0560597 - 0.19	Int of LANCASTER ST PREBLE ST	2	2	0	0	1	0	50.0	1.838	0.36	0.43	0.00
19015	0560252 - 0.24	Int of ELM ST LANCASTER ST	2	3	0	0	1	2	33.3	1.336	0.75	0.47	1.59
19011	0560252 - 0.29	Int of ELM ST KENNEBEC ST	2	7	0	0	3	2	71.4	1.555	1.50	0.45	3.31
19023	0560252 - 0.17	Int of ELM ST OXFORD ST	2	1	0	0	0	1	0.0	1.741	0.19	0.44	0.00
19002	0560252 - 0.32	Int of ELM ST SOMERSET ST	2	0	0	0	0	0	0.0	2.075	0.00	0.42	0.00
19014	0560120 - 0	Int of CEDAR ST LANCASTER ST	2	0	0	0	0	0	0.0	0.907	0.00	0.48	0.00
19024	0560120 - 0.07	Int of CEDAR ST OXFORD ST	2	0	0	0	0	0	0.0	0.463	0.00	0.52	0.00

Nodes																								
Node	Route - MP	Node Description	U/R	Total Crashes	K	A	B	C	PD	Injury	Percent Annual M Ent-Veh	Crash Rate	Critical Rate	CRF										
19012	0560135 - 0.27	Int of CHESTNUT ST KENNEBEC ST	2	0	0	0	0	0	0	0.0	1.042	0.00	0.46	0.00										
19001	0560135 - 0.31	Int of CHESTNUT ST SOMERSET ST	2	1	0	0	1	0	0	100.0	1.665	0.20	0.42	0.00										
19013	0560135 - 0.23	Int of CHESTNUT ST LANCASTER ST	2	0	0	0	0	0	0	0.0	1.330	0.00	0.44	0.00										
19025	0560135 - 0.16	Int of CHESTNUT ST OXFORD ST	2	0	0	0	0	0	0	0.0	0.874	0.00	0.48	0.00										
72191	0560135 - 0.32	Non Int CHESTNUT ST	2	0	0	0	0	0	0	0.0	0.879	0.00	0.48	0.00										
19017	0560008 - 0.06	Int of ALDER ST LANCASTER ST	2	0	0	0	0	0	0	0.0	0.384	0.00	0.52	0.00										
19021	0560008 - 0.16	Int of ALDER ST, OXFORD ST, PORTLAND ST	2	1	0	0	0	0	1	0.0	1.264	0.26	0.48	0.00										
69141	0560008 - 0	Int of ALDER ST KENNEBEC ST	2	0	0	0	0	0	0	0.0	0.412	0.00	0.52	0.00										
Study Years: 3.00			NODE TOTALS:											76	0	3	11	13	47	35.5	65.294	0.39	0.38	1.03

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18523	18999	3106676 Int of ELM ST MARGINAL WY PREBLE ST EXT	0 - 0.03	0560477 - 0.16 RD INV 05 60477	0.03	2	0	0	0	0	0	0.0	0.00052	0.00	765.88 Statewide Crash Rate: 189.30	0.00
18523	18999	4210645 Int of ELM ST MARGINAL WY PREBLE ST	0 - 0.02	3210331 - 0.03 RD INV 3210331	0.02	2	0	0	0	0	0	0.0	0.00035	0.00	807.42 Statewide Crash Rate: 189.30	0.00
19033	19034	3130203 Int of CUMBERLAND AV HANOVER ST	0 - 0.01	0561238 - 0.28 RD INV 05 61238	0.01	2	0	0	0	0	0	0.0	0.00026	0.00	677.25 Statewide Crash Rate: 158.39	0.00
19034	19035	3123316 Int of CASCO ST CUMBERLAND AV	0 - 0.03	0561238 - 0.29 RD INV 05 61238	0.03	2	0	0	0	0	0	0.0	0.00075	0.00	619.52 Statewide Crash Rate: 158.39	0.00
19035	19036	3122300 Int of ALDER ST CUMBERLAND AV	0 - 0.02	0561238 - 0.32 RD INV 05 61238	0.02	2	0	0	0	0	0	0.0	0.00049	0.00	663.08 Statewide Crash Rate: 158.39	0.00
19036	19037	3106839 Int of BROWN ST CUMBERLAND AV	0 - 0.07	0561238 - 0.34 RD INV 05 61238	0.07	2	5	0	0	0	5	0.0	0.00166	1005.57	517.59 Statewide Crash Rate: 158.39	1.94
19037	19038	3122301 Int of CUMBERLAND AV PREBLE ST	0 - 0.05	0561238 - 0.41 RD INV 05 61238	0.05	2	0	0	0	0	0	0.0	0.00162	0.00	520.37 Statewide Crash Rate: 158.39	0.00
19038	19039	3117970 Int of CUMBERLAND AV ELM ST	0 - 0.05	0561238 - 0.46 RD INV 05 61238	0.05	2	2	0	0	0	2	0.0	0.00158	420.85	523.46 Statewide Crash Rate: 158.39	0.00
18999	19008	194689 Int of HANOVER ST MARGINAL WY	0 - 0.11	0560345 - 0 RD INV 05 60345	0.11	2	2	0	0	0	2	0.0	0.00115	580.98	1028.96 Statewide Crash Rate: 351.30	0.00
19008	19018	5080409 Int of HANOVER ST KENNEBEC ST	0 - 0.06	0560345 - 0.11 RD INV 05 60345	0.06	2	0	0	0	0	0	0.0	0.00029	0.00	1411.88 Statewide Crash Rate: 351.30	0.00
19018	19045	5080405 Int of HANOVER ST LANCASTER ST	0 - 0.09	0560345 - 0.17 RD INV 05 60345	0.09	2	7	0	1	0	5	28.6	0.00026	9129.81	1442.85 Statewide Crash Rate: 351.30	6.33
19033	19045	194749 Int of CUMBERLAND AV HANOVER ST	0 - 0.08	0560345 - 0.26 RD INV 05 60345	0.08	2	0	0	0	0	0	0.0	0.00007	0.00	1287.57 Statewide Crash Rate: 351.30	0.00
18523	19010	3940497 Int of ELM ST MARGINAL WY PREBLE ST	0 - 0.13	0560597 - 0 RD INV 05 60597	0.13	2	1	0	0	0	1	0.0	0.00179	185.75	579.47 Statewide Crash Rate: 189.30	0.00
19010	19016	3106835 Int of KENNEBEC ST PREBLE ST	0 - 0.06	0560597 - 0.13 RD INV 05 60597	0.06	2	1	0	0	0	0	0.0	0.00104	320.77	663.69 Statewide Crash Rate: 189.30	0.00
19016	19022	3106836 Int of LANCASTER ST PREBLE ST	0 - 0.07	0560597 - 0.19 RD INV 05 60597	0.07	2	1	0	0	0	0	0.0	0.00143	232.43	613.43 Statewide Crash Rate: 189.30	0.00
19022	19043	3117969 Int of OXFORD ST PREBLE ST	0 - 0.04	0560597 - 0.26 RD INV 05 60597	0.04	2	0	0	0	0	0	0.0	0.00071	0.00	722.78 Statewide Crash Rate: 189.30	0.00
19037	19043	3124005 Int of CUMBERLAND AV PREBLE ST	0 - 0.03	0560597 - 0.30 RD INV 05 60597	0.03	2	1	0	0	0	1	0.0	0.00088	380.66	690.47 Statewide Crash Rate: 189.30	0.00
19023	19038	3122299 Int of ELM ST OXFORD ST	0 - 0.07	0560252 - 0.10 RD INV 05 60252	0.07	2	2	0	0	0	2	0.0	0.00122	546.90	638.66 Statewide Crash Rate: 189.30	0.00
19015	19023	3123553 Int of ELM ST LANCASTER ST	0 - 0.07	0560252 - 0.17 RD INV 05 60252	0.07	2	1	0	0	0	1	0.0	0.00065	512.02	735.27 Statewide Crash Rate: 189.30	0.00

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	A	B	C	PD	Injury Percent	Annual HVM	Crash Rate	Critical Rate	CRF
19011	19015	3119283 Int of ELM ST KENNEBEC ST	0 - 0.05	0560252 - 0.24 RD INV 05 60252	0.05	2	1	0	0	0	1	0.0	0.00070	475.15	724.29 Statewide Crash Rate: 189.30	0.00
19002	19011	3129301 Int of ELM ST SOMERSET ST	0 - 0.03	0560252 - 0.29 RD INV 05 60252	0.03	2	1	0	0	0	1	0.0	0.00055	611.15	759.91 Statewide Crash Rate: 189.30	0.00
18523	19002	3106678 Int of ELM ST MARGINAL WY PREBLE ST PREBLE ST EXT	0 - 0.12	0560252 - 0.32 RD INV 05 60252	0.12	2	0	0	0	0	0	0.0	0.00257	0.00	528.34 Statewide Crash Rate: 189.30	0.00
19014	19024	194713 Int of CEDAR ST LANCASTER ST	0 - 0.07	0560120 - 0 RD INV 05 60120	0.07	2	1	0	0	0	0	0.0	0.00016	2100.86	1513.88 Statewide Crash Rate: 351.30	1.39
19024	19039	5080414 Int of CEDAR ST OXFORD ST	0 - 0.07	0560120 - 0.07 RD INV 05 60120	0.07	2	1	0	0	0	1	0.0	0.00012	2842.33	1504.22 Statewide Crash Rate: 351.30	1.89
19013	19025	5080419 Int of CHESTNUT ST LANCASTER ST	0 - 0.07	0560135 - 0.16 RD INV 05 60135	0.07	2	1	0	0	0	1	0.0	0.00045	745.93	1297.00 Statewide Crash Rate: 351.30	0.00
19012	19013	194709 Int of CHESTNUT ST KENNEBEC ST	0 - 0.04	0560135 - 0.23 RD INV 05 60135	0.04	2	1	0	0	1	0	100.0	0.00033	1004.00	1379.16 Statewide Crash Rate: 351.30	0.00
19001	19012	5080420 Int of CHESTNUT ST SOMERSET ST	0 - 0.04	0560135 - 0.27 RD INV 05 60135	0.04	2	1	0	0	0	1	0.0	0.00029	1153.67	1414.40 Statewide Crash Rate: 351.30	0.00
19001	72191	4348461 Int of CHESTNUT ST SOMERSET ST	0 - 0.01	0560135 - 0.31 RD INV 05 60135	0.01	2	0	0	0	0	0	0.0	0.00009	0.00	1428.41 Statewide Crash Rate: 351.30	0.00
69141	19017	3525695 Int of ALDER ST KENNEBEC ST	0 - 0.06	0560008 - 0 RD INV 05 60008	0.06	2	0	0	0	0	0	0.0	0.00013	0.00	1513.73 Statewide Crash Rate: 351.30	0.00
19017	19021	194719 Int of ALDER ST LANCASTER ST	0 - 0.10	0560008 - 0.06 RD INV 05 60008	0.10	2	2	0	0	0	2	0.0	0.00021	3215.64	1483.38 Statewide Crash Rate: 351.30	2.17
19021	19035	194725 Int of ALDER ST, OXFORD ST, PORTLAND ST	0 - 0.06	0560008 - 0.16 RD INV 05 60008	0.06	2	1	0	0	0	1	0.0	0.00005	6646.59	964.27 Statewide Crash Rate: 351.30	6.89
19001	19002	194691 Int of CHESTNUT ST SOMERSET ST	0 - 0.10	0560667 - 0 RD INV 05 60667	0.10	2	1	0	0	0	1	0.0	0.00051	649.07	1256.84 Statewide Crash Rate: 351.30	0.00
19011	19012	194707 Int of ELM ST KENNEBEC ST	0 - 0.10	0560414 - 0.11 RD INV 05 60414	0.10	2	0	0	0	0	0	0.0	0.00019	0.00	1498.08 Statewide Crash Rate: 351.30	0.00
19010	19011	194704 Int of KENNEBEC ST PREBLE ST	0 - 0.05	0560414 - 0.21 RD INV 05 60414	0.05	2	0	0	0	0	0	0.0	0.00015	0.00	1515.93 Statewide Crash Rate: 351.30	0.00
69141	19010	3509369 Int of ALDER ST KENNEBEC ST	0 - 0.01	0560414 - 0.26 RD INV 05 60414	0.01	2	0	0	0	0	0	0.0	0.00003	0.00	-166.94 Statewide Crash Rate: 351.30	0.00
19008	69141	5094277 Int of HANOVER ST KENNEBEC ST	0 - 0.05	0560414 - 0.27 RD INV 05 60414	0.05	2	0	0	0	0	0	0.0	0.00016	0.00	1514.46 Statewide Crash Rate: 351.30	0.00
19013	19014	5080418 Int of CHESTNUT ST LANCASTER ST	0 - 0.05	0560426 - 0.10 RD INV 05 60426	0.05	2	1	0	0	0	0	0.0	0.00033	1020.38	1383.40 Statewide Crash Rate: 351.30	0.00
19014	19015	194712 Int of CEDAR ST LANCASTER ST	0 - 0.05	0560426 - 0.15 RD INV 05 60426	0.05	2	0	0	0	0	0	0.0	0.00035	0.00	1362.02 Statewide Crash Rate: 351.30	0.00
19015	19016	5080410 Int of ELM ST LANCASTER ST	0 - 0.05	0560426 - 0.20 RD INV 05 60426	0.05	2	0	0	0	0	0	0.0	0.00005	0.00	1020.97 Statewide Crash Rate: 351.30	0.00

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	A	B	C	PD	Percent Injury	Annual HVM	Crash Rate	Critical Rate	CRF
19016	19017	194716	0 - 0.03	0560426 - 0.25	0.03	2	0	0	0	0	0	0.0	0.00003	0.00	87.16	0.00
Int of LANCASTER ST PREBLE ST RD INV 05 60426																
19017	19018	194718	0 - 0.05	0560426 - 0.28	0.05	2	0	0	0	0	0	0.0	0.00002	0.00	-3401.07	0.00
Int of ALDER ST LANCASTER ST RD INV 05 60426																
19021	19022	3106837	0 - 0.07	0560560 - 0	0.07	2	1	0	0	0	1	0.0	0.00054	621.25	655.82	0.00
Int of ALDER ST, OXFORD ST, PORTLAND ST RD INV 05 60560																
19022	19023	3122298	0 - 0.05	0560560 - 0.07	0.05	2	0	0	0	0	0	0.0	0.00025	0.00	674.98	0.00
Int of OXFORD ST PREBLE ST RD INV 05 60560																
19023	19024	194730	0 - 0.05	0560560 - 0.12	0.05	2	0	0	0	0	0	0.0	0.00015	0.00	1516.58	0.00
Int of ELM ST OXFORD ST RD INV 05 60560																
19024	19025	194732	0 - 0.05	0560560 - 0.17	0.05	2	1	0	0	0	1	0.0	0.00012	2823.00	1505.11	1.88
Int of CEDAR ST OXFORD ST RD INV 05 60593																
19021	19045	3122297	0 - 0.04	0560593 - 0.14	0.04	2	2	0	0	2	0	100.0	0.00040	1675.67	677.87	2.47
Int of ALDER ST, OXFORD ST, PORTLAND ST RD INV 05 60593																
19021	19043	3129954	0 - 0.07	0560593 - 0.18	0.07	2	6	0	0	0	4	20.0	0.00078	2554.76	614.47	4.16
Int of ALDER ST, OXFORD ST, PORTLAND ST RD INV 05 60593																

Study Years:	3.00	Section Totals:	2.68	45	0	1	2	3	34	13.3	0.02640	568.17	342.01	1.66
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Grand Totals:	2.68	121	0	4	13	16	81	27.3	0.02640	1527.73	464.84	3.29
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Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
18523	18999	3106676	0 - 0.03	0560477 - 0.16	0	0	0	0	0	0				
18523	18999	4210645	0 - 0.02	3210331 - 0.03	0	0	0	0	0	0				
19033	19034	3130203	0 - 0.01	0561238 - 0.28	0	0	0	0	0	0				
19034	19035	3123316	0 - 0.03	0561238 - 0.29	0	0	0	0	0	0				
19035	19036	3122300	0 - 0.02	0561238 - 0.32	0	0	0	0	0	0				
19036	19037	3106839	0 - 0.07	0561238 - 0.34	5	0	0	0	0	5	2019-67019	10/03/2019	0.35	PD
											2019-46162	03/13/2019	0.37	PD
											2019-58617	07/18/2019	0.38	PD
											2019-1495	01/14/2019	0.39	PD
											2019-73097	11/24/2019	0.40	PD
19037	19038	3122301	0 - 0.05	0561238 - 0.41	0	0	0	0	0	0				
19038	19039	3117970	0 - 0.05	0561238 - 0.46	2	0	0	0	0	2	2019-69195	10/25/2019	0.47	PD
											2019-48636	04/10/2019	0.50	PD
18999	19008	194689	0 - 0.11	0560345 - 0	2	0	0	0	0	2	2019-58618	07/18/2019	0.03	PD
											2021-8903	04/11/2021	0.06	PD
19008	19018	5080409	0 - 0.06	0560345 - 0.11	0	0	0	0	0	0				
19018	19045	5080405	0 - 0.09	0560345 - 0.17	7	0	1	0	1	5	2020-18215	07/31/2020	0.18	PD
											2020-11372	04/20/2020	0.18	PD
											2021-13760	05/09/2021	0.21	C
											2019-2633	01/18/2019	0.21	PD
											2019-47842	03/29/2019	0.23	PD
											2019-44843	03/01/2019	0.23	PD
											2019-72752	11/21/2019	0.25	A
19033	19045	194749	0 - 0.08	0560345 - 0.26	0	0	0	0	0	0				
18523	19010	3940497	0 - 0.13	0560597 - 0	1	0	0	0	0	1	2019-44220	02/27/2019	0.12	PD
19010	19016	3106835	0 - 0.06	0560597 - 0.13	1	0	0	0	0	0	2019-1870	01/17/2019	0.17	
19016	19022	3106836	0 - 0.07	0560597 - 0.19	1	0	0	0	0	0	2019-52933	05/23/2019	0.23	
19022	19043	3117969	0 - 0.04	0560597 - 0.26	0	0	0	0	0	0				
19037	19043	3124005	0 - 0.03	0560597 - 0.30	1	0	0	0	0	1	2021-12331	05/21/2021	0.31	PD
19023	19038	3122299	0 - 0.07	0560252 - 0.10	2	0	0	0	0	2	2021-16503	07/01/2021	0.13	PD
											2021-32496	11/18/2021	0.15	PD
19015	19023	3123553	0 - 0.07	0560252 - 0.17	1	0	0	0	0	1	2019-58250	07/15/2019	0.18	PD
19011	19015	3119283	0 - 0.05	0560252 - 0.24	1	0	0	0	0	1	2019-67929	10/14/2019	0.28	PD
19002	19011	3129301	0 - 0.03	0560252 - 0.29	1	0	0	0	0	1	2020-29957	12/02/2020	0.30	PD
18523	19002	3106678	0 - 0.12	0560252 - 0.32	0	0	0	0	0	0				

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
19014	19024	194713	0 - 0.07	0560120 - 0	1	0	0	0	0	0	2021-1478	01/03/2021	0.05	
19024	19039	5080414	0 - 0.07	0560120 - 0.07	1	0	0	0	0	1	2019-52185	05/20/2019	0.11	PD
19013	19025	5080419	0 - 0.07	0560135 - 0.16	1	0	0	0	0	1	2020-20337	08/25/2020	0.19	PD
19012	19013	194709	0 - 0.04	0560135 - 0.23	1	0	0	0	1	0	2020-23199	09/29/2020	0.24	C
19001	19012	5080420	0 - 0.04	0560135 - 0.27	1	0	0	0	0	1	2019-45592	02/26/2019	0.30	PD
19001	72191	4348461	0 - 0.01	0560135 - 0.31	0	0	0	0	0	0				
69141	19017	3525695	0 - 0.06	0560008 - 0	0	0	0	0	0	0				
19017	19021	194719	0 - 0.10	0560008 - 0.06	2	0	0	0	0	2	2021-27344	10/09/2021	0.10	PD
											2019-67248	10/08/2019	0.11	PD
19021	19035	194725	0 - 0.06	0560008 - 0.16	1	0	0	0	0	1	2021-33319	11/29/2021	0.21	PD
19001	19002	194691	0 - 0.10	0560667 - 0	1	0	0	0	0	1	2019-71683	11/14/2019	0.03	PD
19011	19012	194707	0 - 0.10	0560414 - 0.11	0	0	0	0	0	0				
19010	19011	194704	0 - 0.05	0560414 - 0.21	0	0	0	0	0	0				
69141	19010	3509369	0 - 0.01	0560414 - 0.26	0	0	0	0	0	0				
19008	69141	5094277	0 - 0.05	0560414 - 0.27	0	0	0	0	0	0				
19013	19014	5080418	0 - 0.05	0560426 - 0.10	1	0	0	0	0	0	2019-59865	07/26/2019	0.13	
19014	19015	194712	0 - 0.05	0560426 - 0.15	0	0	0	0	0	0				
19015	19016	5080410	0 - 0.05	0560426 - 0.20	0	0	0	0	0	0				
19016	19017	194716	0 - 0.03	0560426 - 0.25	0	0	0	0	0	0				
19017	19018	194718	0 - 0.05	0560426 - 0.28	0	0	0	0	0	0				
19021	19022	3106837	0 - 0.07	0560560 - 0	1	0	0	0	0	1	2019-74264	12/03/2019	0.04	PD
19022	19023	3122298	0 - 0.05	0560560 - 0.07	0	0	0	0	0	0				
19023	19024	194730	0 - 0.05	0560560 - 0.12	0	0	0	0	0	0				
19024	19025	194732	0 - 0.05	0560560 - 0.17	1	0	0	0	0	1	2019-47012	03/24/2019	0.18	PD
19021	19045	3122297	0 - 0.04	0560593 - 0.14	2	0	0	2	0	0	2019-54997	06/07/2019	0.15	B
											2021-8970	04/01/2021	0.15	B
19021	19043	3129954	0 - 0.07	0560593 - 0.18	6	0	0	0	1	4	2019-59213	07/19/2019	0.21	PD
											2021-23574	09/06/2021	0.21	PD
											2019-58068	07/09/2019	0.22	PD
											2019-1375	01/12/2019	0.23	
											2020-26608	10/22/2020	0.23	C
											2020-19411	08/07/2020	0.23	PD
Totals:					45	0	1	2	3	34				

Crashes by Day and Hour

Day Of Week	Hour of Day												PM													
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Un	Tot
SUNDAY	0	1	0	1	0	0	0	0	0	1	0	0	0	1	1	0	1	2	0	0	0	0	0	0	0	8
MONDAY	0	0	0	0	0	0	0	0	4	1	2	0	1	1	1	2	1	3	0	1	1	1	0	0	0	19
TUESDAY	1	0	0	0	0	0	0	2	0	1	0	2	1	2	1	4	5	0	2	0	1	0	0	0	0	22
WEDNESDAY	0	0	0	0	0	0	0	0	1	2	0	0	2	1	2	2	2	2	2	1	0	0	1	0	0	18
THURSDAY	0	0	0	0	0	0	0	2	0	0	0	1	4	3	3	2	2	3	0	0	2	0	0	0	0	22
FRIDAY	1	0	0	0	0	0	0	0	0	1	1	1	2	6	2	0	2	3	0	1	2	1	1	0	0	24
SATURDAY	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	2	0	0	0	0	1	1	0	0	0	8
Totals	2	2	0	1	0	0	0	4	5	7	3	5	10	14	11	12	13	13	4	3	7	3	2	0	0	121

Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	135	23-Bicyclist	8
2-(Sport) Utility Vehicle	43	24-Witness	24
3-Passenger Van	1	25-Other	9
4-Cargo Van (10K lbs or Less)	4	26-Construction	1
5-Pickup	16	27-Farm Vehicle	0
6-Motor Home	0	Total	260
7-School Bus	2		
8-Transit Bus	2		
9-Motor Coach	0		
10-Other Bus	1		
11-Motorcycle	1		
12-Moped	2		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	1		
17-Medium/Heavy Trucks (More than 10,000 lbs)	4		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	6		

Crash Summary II - Characteristics

Crashes by Driver Action at Time of Crash							
Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	31	57	1	0	0	0	89
Ran Off Roadway	4	0	0	0	0	0	4
Failed to Yield Right-of-Way	18	6	0	0	0	0	24
Ran Red Light	4	1	0	0	0	0	5
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	1	0	0	0	0	0	1
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	0	0	0	0	0	0	0
Improper Turn	10	2	0	0	0	0	12
Improper Backing	8	1	0	0	0	0	9
Improper Passing	0	1	0	0	0	0	1
Wrong Way	2	0	0	0	0	0	2
Followed Too Closely	9	2	0	0	0	0	11
Failed to Keep in Proper Lane	7	2	0	0	0	0	9
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	3	0	0	0	0	0	3
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	2	0	0	0	0	0	2
Over-Correcting/Over-Steering	2	1	0	0	0	0	3
Other Contributing Action	9	3	1	0	0	0	13
Unknown	0	0	0	0	0	0	0
Total	110	76	2	0	0	0	188

Crashes by Apparent Physical Condition And Driver							
Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	102	74	2	0	0	12	190
Physically Impaired	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	1	0	0	0	0	0	1
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	2	0	0	0	0	0	2
Under the Influence of Medications/Drugs/Alcohol	4	1	0	0	0	2	7
Other	0	0	0	0	0	0	0
Total	109	75	2	0	0	14	200

Driver Age by Unit Type					
Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV
09-Under	0	0	0	0	0
10-14	0	0	0	0	0
15-19	11	0	0	0	0
20-24	22	0	0	0	0
25-29	18	0	0	0	0
30-39	40	0	0	0	0
40-49	37	0	0	0	0
50-59	33	0	0	0	0
60-69	17	0	0	0	0
70-79	14	0	0	0	0
80-Over	6	0	0	0	0
Unknown	24	8	0	6	0
Total	222	8	0	6	0

Total	222	8	0	6	0	236
--------------	------------	----------	----------	----------	----------	------------

Crash Summary II - Characteristics

Most Harmful Event			
Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	0	38-Other Fixed Object (wall, building, tunnel, etc.)	0
2-Fire / Explosion	0	39-Unknown	0
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	Total	211
6-Fell / Jumped from Motor Vehicle	0		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	0		
10-Pedalcycle	2		
11-Railway Vehicle - Train, Engine	0		
12-Animal	0		
13-Motor Vehicle in Transport	182		
14-Parked Motor Vehicle	22		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0		
Traffic Control Devices			
		Traffic Control Device	Total
16-Work Zone / Maintenance Equipment	3	1-Traffic Signals (Stop & Go)	44
17-Other Non-Fixed Object	0	2-Traffic Signals (Flashing)	2
18-Impact Attenuator / Crash Cushion	0	3-Advisory/Warning Sign	0
19-Bridge Overhead Structure	0	4-Stop Signs - All Approaches	4
20-Bridge Pier or Support	0	5-Stop Signs - Other	22
21-Bridge Rail	0	6-Yield Sign	0
22-Cable Barrier	0	7-Curve Warning Sign	0
23-Culvert	0	8-Officer, Flagman, School Patrol	1
24-Curb	0	9-School Bus Stop Arm	0
25-Ditch	0	10-School Zone Sign	0
26-Embankment	0	11-R.R. Crossing Device	0
27-Guardrail Face	0	12-No Passing Zone	0
28-Guardrail End	0	13-None	46
29-Concrete Traffic Barrier	0	14-Other	2
30-Other Traffic Barrier	0	Total	121
31-Tree (Standing)	0		
32-Utility Pole / Light Support	1		
33-Traffic Sign Support	1		
34-Traffic Signal Support	0		
35-Fence	0		
36-Mailbox	0		
37-Other Post, Pole, or Support	0		

Injury Data			
Severity Code	Injury Crashes	Number Of Injuries	
K	0	0	
A	4	4	
B	13	13	
C	16	20	
PD	81	0	
Total	114	37	

Road Character	
Road Grade	Total
1-Level	76
2-On Grade	36
3-Top of Hill	4
4-Bottom of Hill	4
5-Other	1
Total	121

Light	
Light Condition	Total
1-Daylight	94
2-Dawn	0
3-Dusk	1
4-Dark - Lighted	25
5-Dark - Not Lighted	1
6-Dark - Unknown Lighting	0
7-Unknown	0
Total	121

Crashes by Year and Month

Month	2019	2020	2021	Total
JANUARY	6	2	3	11
FEBRUARY	3	2	2	7
MARCH	5	1	2	8
APRIL	4	1	4	9
MAY	5	0	9	14
JUNE	2	1	0	3
JULY	10	3	3	16
AUGUST	0	3	2	5
SEPTEMBER	3	3	6	12
OCTOBER	5	3	3	11
NOVEMBER	7	1	2	10
DECEMBER	7	4	4	15
Total	57	24	40	121

Report is limited to the last 10 years of data.

Crash Summary II - Characteristics

Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Traffic Circle-Roundabout	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End - Sideswipe	26	0	4	23	1	4	0	0	0	0	0	0	0	0	58
Head-on - Sideswipe	4	0	1	0	0	0	0	0	0	0	0	0	0	0	5
Intersection Movement	0	0	6	24	0	3	0	0	0	0	0	0	0	0	33
Pedestrians	1	0	1	3	0	0	0	0	0	0	0	0	0	0	5
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	2	0	1	5	0	1	0	0	0	0	0	0	0	0	9
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	1	0	1	5	0	1	0	0	0	0	0	0	0	0	8
Other	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	36	0	14	61	1	9	0	0	0	0	0	0	0	0	121

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Blowing Sand, Soil, Dirt												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Blowing Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Clear												
Dark - Lighted	13	0	0	0	0	0	1	0	0	0	5	19
Dark - Not Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	72	2	0	0	0	0	1	0	0	0	1	76
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	1	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	12	0	0	0	0	0	0	0	0	0	0	12
Dusk	1	0	0	0	0	0	0	0	0	0	0	1
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Fog, Smog, Smoke												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Other												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Rain												
Dark - Lighted	0	0	1	0	0	0	0	0	0	0	4	5
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	2	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Severe Crosswinds												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	2	0	0	0	0	0	0	0	0	0	0	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Sleet, Hail (Freezing Rain or Drizzle)												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	1	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	1	0	0	0	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	101	2	1	0	0	0	2	1	0	0	14	121

3

Section 3: Development Entrances and Exits

3.A Entrance and Exit Locations

The site is bounded by Preble Street to the southwest, Lancaster Street to the northwest, Cedar Street and Elm Street to the northeast, Cumberland Avenue and Oxford Street to the southeast. All driveway locations are illustrated on the site plans as attachments to Section 1.

Project generated vehicle trips are expected to use the 595 space Public Market Garage for parking which is now controlled by this developer and is largely vacant. Vehicular access and egress are provided via both Preble Street and Elm Street. There are also supplemental surface parking proposed at 196 Lancaster Street (44 proposed spaces) with an entrance / exit on both Preble Street and Elm Street, surface parking proposed at 89 Elm Street on both Lancaster Street (15 proposed spaces) and Cedar Street (39 proposed spaces) with one entrance / exit and two entrance /exits respectively. Although surface parking will be present on these parcels, this parking is largely occupied by nearby uses and it is assumed all vehicles associated with this TMP will use the garage.

The garage access on Preble and Elm Street are located 175' from Cumberland Avenue and 200' from Oxford Street.

Existing one-way bike lanes are present on Preble Street and Elm Street and two-way bike lanes present on part of Portland Street, and Marginal Way along with the Bayside Trail multi-use path north of the site for both pedestrian and bicyclist users.

Pedestrians are well accommodated in this urban environment. Most roadways surrounding the site provide sidewalks on each side of the street and crosswalks at each major intersection.

3.B Plan View of Entrance and Exit Locations

Attachment 1A of Section 1 shows the proposed site plan. As shown, the garage site fronts onto Preble Street and Elm Street.

3.C Stopping Sight Distances

VHB followed the MaineDOT evaluation of sight distance. Sight distance is measured to and from the point of centerline of the proposed access that is located 10 feet from the edge of the traveled way. The speed limit is posted as 25 mph on Preble and Elm Street and assumed to be 25 mph on Lancaster Street and Cedar Street. The minimum allowable sight distances can be seen in Table 1 below:

Table 1 **MaineDOT Sight Distance Requirements**

Posted Speed (MPH)	Sight Distance (Feet)
20	155
25	200
30	250
35	305
40	360
45	425
50	495
55	570
60	645

Based on a field visit, the Portland Public Market Garage sight distance exceeds the minimum 200 feet on Elm Street. However, when exiting the garage on Preble Street, the sight distance is blocked by the existing building. As in most urban areas, in actuality, vehicles pull up further than 10 feet behind the edge of pavement. If existing vehicles pull up to edge of roadway, beyond the impact of the adjacent building, sight lines increase dramatically, because parking is prohibited in this area.

Sight distance along Preble and Elm Street for the proposed parking at 196 Lancaster Street both exceed 400 feet and sight distance along Lancaster Street and Cedar Street for 89 Elm Street parking all exceed 300 feet.

3.D Entrance/Exit Compliance with Design Requirements

Entrances and exits were designed to meet all the criteria specified in the MaineDOT's Chapter 299 Highway Driveway and Entrance Rules.

Attachment 3

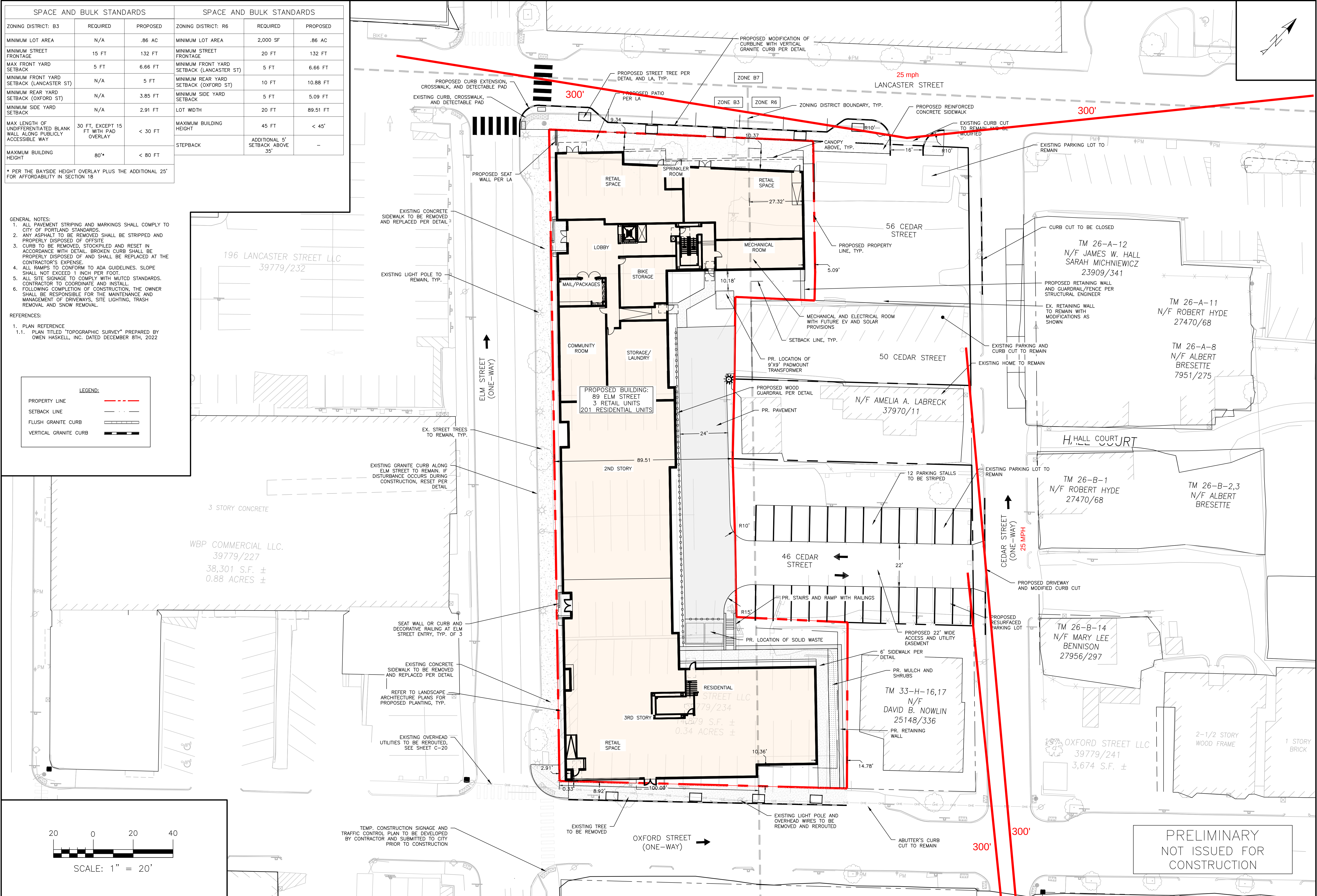
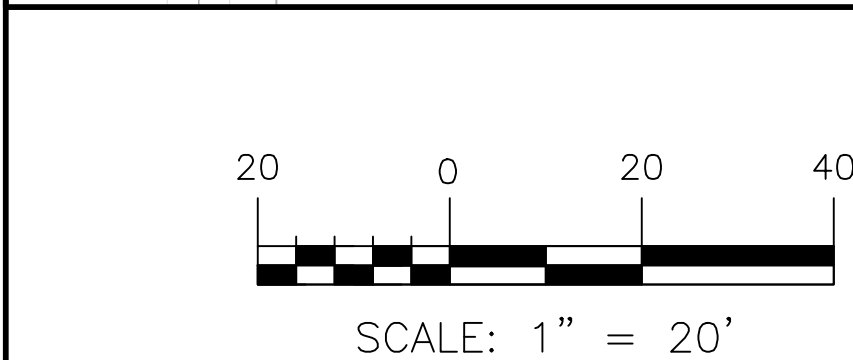
Entrance/Exit Locations

SPACE AND BULK STANDARDS			SPACE AND BULK STANDARDS		
ZONING DISTRICT: B3	REQUIRED	PROPOSED	ZONING DISTRICT: R6	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	.86 AC	MINIMUM LOT AREA	2,000 SF	.86 AC
MINIMUM STREET FRONTAGE	15 FT	132 FT	MINIMUM STREET FRONTAGE	20 FT	132 FT
MAX FRONT YARD SETBACK	5 FT	6.66 FT	MINIMUM FRONT YARD SETBACK (LANCASTER ST)	5 FT	6.66 FT
MINIMUM FRONT YARD SETBACK (LANCASTER ST)	N/A	5 FT	MINIMUM REAR YARD SETBACK (OXFORD ST)	10 FT	10.88 FT
MINIMUM REAR YARD SETBACK (OXFORD ST)	N/A	3.85 FT	MINIMUM SIDE YARD SETBACK	5 FT	5.09 FT
MINIMUM SIDE YARD SETBACK	N/A	2.91 FT	LOT WIDTH	20 FT	89.51 FT
MAX LENGTH OF UNDIFFERENTIATED BLANK WALL ALONG PUBLICLY ACCESSIBLE WAY	30 FT, EXCEPT 15 FT WITH PAD OVERLAY	< 30 FT	MAXIMUM BUILDING HEIGHT	45 FT	< 45'
MAXIMUM BUILDING HEIGHT	80'+	< 80 FT	STEPBACK	ADDITIONAL 5' SETBACK ABOVE 35'	-
* PER THE BAYSIDE HEIGHT OVERLAY PLUS THE ADDITIONAL 25' FOR AFFORDABILITY IN SECTION 18					

- GENERAL NOTES:
- ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
 - ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
 - CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
 - ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1" INCH PER FOOT.
 - ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
 - FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

- REFERENCES:
- PLAN REFERENCE
 - 1.1. PLAN TITLED "TOPOGRAPHIC SURVEY" PREPARED BY OWEN HASKELL, INC. DATED DECEMBER 8TH, 2022

LEGEND:	
PROPERTY LINE	---
SETBACK LINE	- - -
FLUSH GRANITE CURB	=====
VERTICAL GRANITE CURB	



ISSUED FOR

CONCEPT

PRELIM SITE

DATE

WHS

2/4/22

SJL

2/7/23

SITE PLAN

PROJECT NAME

89 ELM STREET REDEVELOPMENT - PORTLAND

CLIENT

TOM WATSON & CO., LLC

188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

DRAWING NAME

ENGINEERING, INC.

ACORN ENGINEERING, INC.

PO BOX 3372, PORTLAND MAINE 04104

(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR UNAUTHORIZED, SHALL BE THE RESPONSIBILITY OF THE USER AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:

1192.2_CIVIL

JN:

1192.2

SCALE:

AS NOTED

DESIGNED BY:

SJL

DRAWN BY:

DNM

CHECKED BY:

WHS

STATE OF MAINE

SAMUEL J. LABEL

PROFESSIONAL ENGINEER

21423

DRAWING NO.

C-10

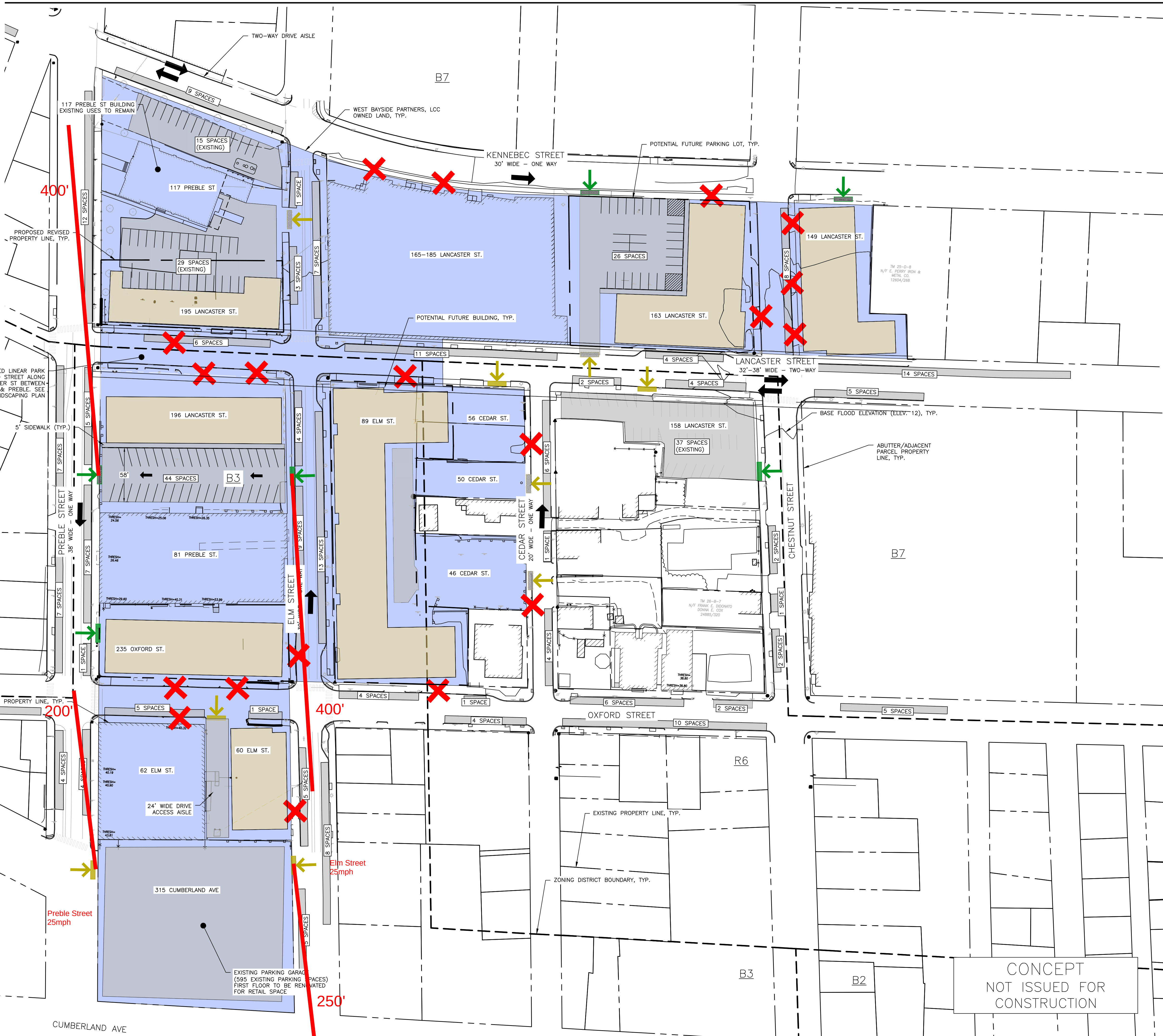
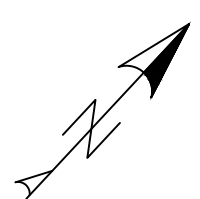
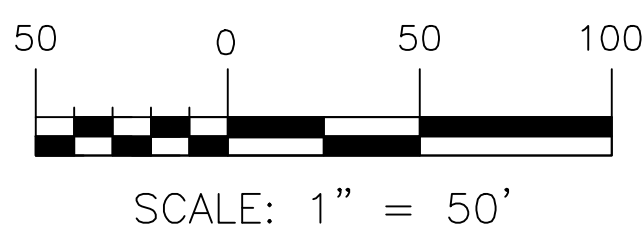
1. EXISTING CONDITIONS PROVIDED BY "TOPOGRAPHIC SURVEY BAYSIDE PARCELS LANCASTER, PREBLE, ELM, CEDAR, CHESTNUT AND OXFORD STREETS, PORTLAND, MAINE" PREPARED FOR BUSH WATSON DATED DECEMBER 6, 2002 BY OWEN HASKELL, INC. UTILITY INFORMATION OBTAINED FROM PORTLAND WATER DISTRICT MAPPING, UTILTY MAPPING, AND THE CITY OF PORTLAND GIS DATA CATALOG.
2. ADDITIONAL EXISTING INFORMATION FROM CAD FILE PROVIDED BY OWEN HASKELL, INC. OF "BOUNDARY & TOPOGRAPHIC SURVEY AT 117 PREBLE STREET, PORTLAND, MAINE" DATED SEPTEMBER 28, 2015,

LEGEND:

PROPOSED BUILDING	
WEST BAYSIDE PARTNERS, LLC OWNED LAND	
PROPOSED PARKING AREA	
PROPOSED CURB CUT	
EXISTING CURB CUT TO REMAIN	
CURB CUT TO BE REMOVED	
ZONING BOUNDARY/ZONE	 B3

PARKING SUMMARY	
	# PARKING SPACES
PRIVATE SPACES	168
PUBLIC SPACES	225
GARAGE SPACES (EX.)	595

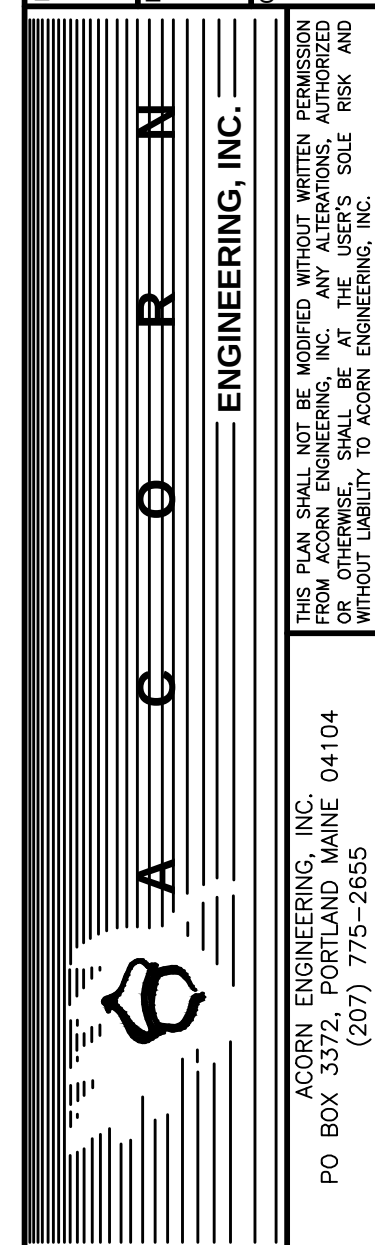
1. ALL BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE RESULT TO CITY OF PORTLAND STANDARD.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
4. CURB TO BE REMOVED, STOCKPILED 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. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

[illegible]

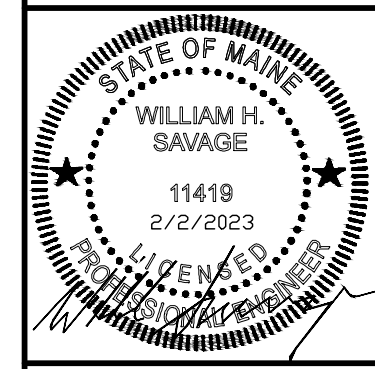
DRAWING NAME: MASTER SITE PLAN

PROJECT NAME: WEST BAYSIDE MASTER DEVELOPMENT PLAN

CLIENT: WEST BAYSIDE PARTNERS, LLC
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04110



FILE:	1093.13_CIVIL
JN:	1093.13
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	ZMS
CHECKED BY:	WHS



DRAWING NO.
C-10

4

Section 4: Title, Right, or Interest

4.A Evidence of Title, Right, or Interest

The proposed development is located on properties owned by the Applicant and identified as the following:

- 60 Elm Street – 033 M012001
- 89 Elm Street – 033 H018, H005, H006, H007
- 196 Lancaster Street – 033 G003, G006
- 315 Cumberland Avenue (Garage) – 033 M004001

Attached are copies of the deeds associated with the property.

Attachment 4

Deeds

Evidence of Right, Title and Interest

See attached deeds showing ownership for the proposed development parcels.



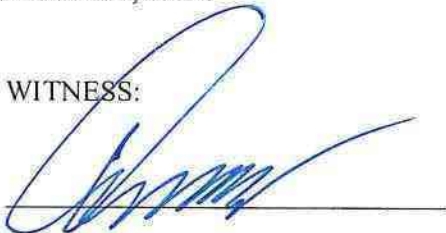
MAINE REAL ESTATE TAX PAID

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

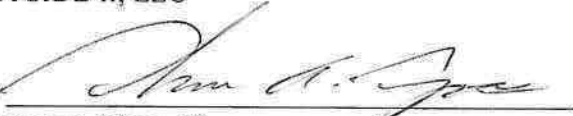
KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE II, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **73 ELM STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside II, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE II, LLC

By 
 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside II, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

Received
Recorded Register of Deeds
Oct 13, 2022 02:29:58P
Cumberland County
Jessica M. Spaulding

EXHIBIT A
(Legal Description, Parcel to 73 Elm Street LLC)

A CERTAIN LOT OR PARCEL OF LAND WITH THE IMPROVEMENTS THEREON SITUATED ON THE NORTHEASTERLY SIDELINE OF ELM STREET AND THE NORTHWESTERLY SIDE OF OXFORD STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE AS SHOWN PLAN TITLED "LAND DIVISION PLAN BAYSIDE II, LLC" MADE FOR RECORD OWNER BAYSIDE II, LLC BY OWEN HASKELL, INC. DATED SEPTEMBER 14, 2022, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE NORTHWESTERLY SIDELINE OF OXFORD STREET AND THE NORTHEASTERLY SIDELINE OF ELM STREET;

THENCE, N 43° 45' 13" W ALONG SAID SIDELINE OF SAID ELM STREET 111.92 FEET; THENCE, THE FOLLOWING COURSES AND DISTANCES THROUGH THE LAND OF THE GRANTOR:

N 46° 08' 15" E A DISTANCE OF 90.10 FEET;

S 43° 54' 25" E A DISTANCE OF 31.26 FEET;

N 49° 53' 31" E A DISTANCE OF 55.81 FEET TO THE WESTERLY CORNER OF LAND NOW OR FORMERLY OF DAVID B. NOWLIN AS DESCRIBED IN DEED BOOK 25148, PAGE 336;

THENCE, S 42° 36' 35" E ALONG THE LAND OF SAID NOWLIN 83.34 FEET TO THE NORTHWESTERLY SIDELINE OF SAID OXFORD STREET;

THENCE, S 48° 38' 53" W ALONG THE SIDELINE OF OXFORD STREET 144.34 FEET TO THE POINT OF BEGINNING, CONTAINING 14,879 S.F. OR 0.34 ACRES. MORE OR LESS.

BEARINGS ARE REFERENCED TO CITY GRID.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 2 CONVEYED TO BAYSIDE II, LLC BY QUITCLAIM DEED OF OCTOBER CORPORATION, DATED JANUARY 26, 2000 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 15298, PAGE 144.

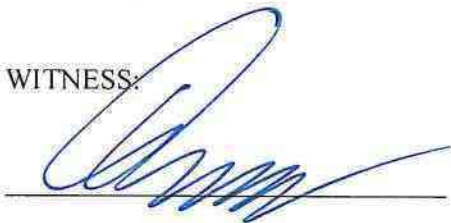
MAINE REAL ESTATE TAX PAID

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE II, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **89 ELM STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

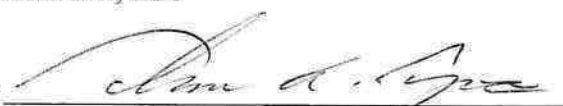
IN WITNESS WHEREOF, the said Bayside II, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE II, LLC

By


 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside II, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

EXHIBIT A
(Legal Description, Parcel 2)

A CERTAIN LOT OR PARCEL OF LAND, WITH THE IMPROVEMENTS THEREON SITUATED ON THE NORTHEASTERLY SIDELINE OF ELM STREET, THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET EAST AND THE SOUTHWESTERLY SIDELINE OF CEDAR STREET AND IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE AS SHOWN ON A PLAN TITLED "LAND DIVISION PLAN BAYSIDE II, LLC" MADE FOR RECORD OWNER BAYSIDE II, LLC BY OWEN HASKELL, INC. DATED SEPTEMBER 14, 2022, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET EAST AND THE NORTHEASTERLY SIDELINE OF ELM STREET;

THENCE, N 49° 39' 27" E ALONG SAID SIDELINE OF LANCASTER STREET EAST 210.57 FEET TO THE SOUTHWESTERLY SIDELINE OF CEDAR STREET;

THENCE, S 43° 29' 51" E ALONG SAID SIDELINE OF CEDAR STREET 40.00 FEET TO THE NORTHEASTERLY CORNER OF LAND NOW OR FORMERLY OF BAYSIDE IV, LLC AS DESCRIBED IN DEED BOOK 35293, PAGE 78;

THENCE, THE FOLLOWING COURSES AND DISTANCES ALONG SAID BAYSIDE IV, LLC LAND:

S 49° 39' 26" W A DISTANCE OF 117.00 FEET;

S 42° 13' 00" E A DISTANCE OF 39.96 FEET;

N 49° 39' 26" E A DISTANCE OF 117.89 FEET TO THE SOUTHWESTERLY SIDELINE OF SAID CEDAR STREET;

THENCE, S 43° 29' 51" E ALONG THE SIDELINE OF CEDAR STREET 39.34 FEET TO THE NORTHERLY CORNER OF LAND NOW OR FORMERLY OF AMELIA A. LABRECK AS DESCRIBED IN DEED BOOK 37970, PAGE 11;

THENCE, BY THE FOLLOWING COURSES AND DISTANCES ALONG SAID LABRECK LAND:

S 48° 42' 12" W A DISTANCE OF 118.73 FEET;

S 42° 13' 00" E A DISTANCE OF 40.00 FEET;

N 48° 41' 30" E A DISTANCE OF 119.62 FEET TO THE SIDELINE OF SAID CEDAR STREET;

THENCE, S 43° 29' 51" E ALONG THE SIDELINE OF CEDAR STREET 80.62 FEET TO THE NORTHERLY CORNER OF LAND NOW OR FORMERLY OF DAVID B. NOWLIN AS DESCRIBED IN DEED BOOK 25148, PAGE 336;

THENCE, S 48° 41' 30" W ALONG SAID NOWLIN LAND 63.30 FEET;

THENCE, THE FOLLOWING COURSES AND DISTANCES THROUGH THE LAND OF THE GRANTOR:

S 49°53'31" W A DISTANCE OF 55.81 FEET;

N 43°54'25" W A DISTANCE OF 31.26 FEET;

S 46°08'15" W A DISTANCE OF 90.10 FEET TO THE NORTHEASTERLY SIDELINE OF SAID ELM STREET;

THENCE, N 43°45'13" W ALONG THE SIDELINE OF ELM STREET 215.15 FEET TO THE POINT OF BEGINNING, CONTAINING 38,462 S.F. OR 0.88 ACRES, MORE OR LESS.

BEARINGS ARE REFERENCED TO CITY GRID.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 2 CONVEYED TO BAYSIDE II, LLC BY QUITCLAIM DEED OF OCTOBER CORPORATION, DATED JANUARY 26, 2000 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 15298, PAGE 144.

Received
Recorded Register of Deeds
Oct 13, 2022 02:30:55P
Cumberland County
Jessica M. Spaulding

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

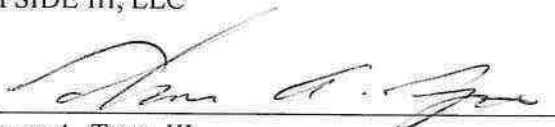
KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE III, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **197 OXFORD STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside III, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE III, LLC

By 
 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside III, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, Parcel 1)

A CERTAIN PARCEL OF LAND, TOGETHER WITH THE IMPROVEMENTS THEREON, SITUATED ON THE NORTHWESTERLY SIDE OF OXFORD STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE, AND SHOWN AS PARCEL 1 ON ALTA/ACSM LAND TITLE SURVEY ON CEDAR STREET, CHESTNUT STREET, ELM STREET AND OXFORD STREET, PORTLAND, MAINE FOR BAYSIDE III, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 42 (THE "PLAN"), BOUNDED AND DESCRIBED AS FOLLOWS:

THENCE S 48° 37' 47" W ALONG THE SIDELINE OF OXFORD STREET 167.19 FEET;

THENCE N 43° 29' 51" W 67.00 FEET;

THENCE N 48° 37' 47" E 35.54 FEET;

THENCE N 00° 14' 40" E 2.72 FEET;

THENCE N 52° 33' 00" E 18.73 FEET;

THENCE N 41° 16' 13" W 3.10 FEET;

THENCE N 49° 06' 44" E 109.65 FEET TO THE SOUTHWESTERLY SIDELINE OF CHESTNUT STREET;

THENCE S 44° 38' 26" E 70.00 FEET TO THE POINT OF BEGINNING.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE PREMISES CONVEYED TO BAYSIDE III, LLC BY QUITCLAIM DEED FROM OCTOBER CORPORATION, DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 193.

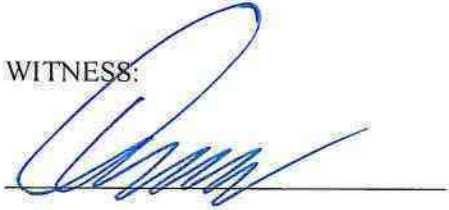
Received
Recorded Register of Deeds
Oct 13, 2022 02:32:29P
Cumberland County
Jessica M. Spaulding

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE IV, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **89 ELM STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside IV, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE IV, LLC

By


 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside IV, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, Parcel 5- 50 Cedar Street)

A CERTAIN LOT OR PARCEL OF LAND WITH ALL THE BUILDINGS THEREON, SITUATED ON THE SOUTHWESTERLY SIDE OF CEDAR STREET, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A STAKE ON THE LINE OF SAID STREET DISTANT TWO HUNDRED FORTY-FOUR AND FOUR TENTHS (244.4) FEET NORTHWESTERLY FROM OXFORD STREET AT THE NORTHERLY CORNER OF LAND SOLD BY THE ADMINISTRATOR OF WILLIAM WEBB'S ESTATE TO JOSIAH M. HASKELL AND RUNNING THENCE NORTHWESTERLY BY SAID CEDAR STREET FORTY (40) FEET TO A STAKE;

THENCE SOUTHWESTERLY ON A LINE PARALLEL WITH THE NORTHWESTERLY SIDE OF SAID HASKELL'S LAND ONE HUNDRED SEVENTEEN (117) FEET, MORE OR LESS, TO THE SOUTHWESTERLY SIDELINE OF LAND OF WHICH THE SAID WEBB DIED SEIZED;

THENCE SOUTHEASTERLY BY SAID SOUTHWESTERLY SIDELINE OF SAID WEBB'S LAND TO MOST WESTERLY CORNER OF SAID HASKELL'S LOT;

THENCE NORTHEASTERLY BY SAID HASKELL'S LAND ONE HUNDRED SEVENTEEN (117) FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

BEING THE SAME PREMISES CONVEYED BY DEED DATED NOVEMBER 16, 2018 FROM 50 CEDAR STREET, LLC, TO BAYSIDE IV, LLC, AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 35293, PAGE 77, AND BY DEED RECORDED IN SAID REGISTRY AT BOOK 35293, PAGE 78.

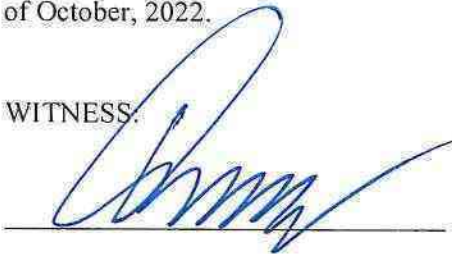
Received
Recorded Register of Deeds
Oct 13, 2022 02:35:36P
Cumberland County
Jessica M. Spaulding

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE IV, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **149 LANCASTER STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside IV, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



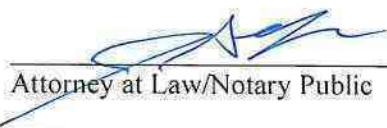
BAYSIDE IV, LLC

By 
 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE _____
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside IV, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, Parcel 1)

A CERTAIN LOT OR PARCEL OF LAND, TOGETHER WITH THE IMPROVEMENTS THEREON, SITUATED ON THE NORTHWESTERLY SIDE OF LANCASTER STREET AND THE NORTHEASTERLY SIDE OF CHESTNUT STREET, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, AND STATE OF MAINE, AND SHOWN AS PARCEL 1 ON ALTA/ACSM LAND TITLE SURVEY ON CEDAR STREET, LANCASTER STREET EAST, CHESTNUT STREET AND OXFORD STREET, PORTLAND, MAINE FOR BAYSIDE IV, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 43 (THE PLAN), BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHEASTERLY SIDE OF SAID CHESTNUT STREET AND THE NORTHWESTERLY SIDE OF LANCASTER STREET;

THENCE BY THE NORTHEASTERLY SIDE OF CHESTNUT STREET N 44° 38' 26" W, A DISTANCE OF 165.33 FEET, TO THE SOUTHEASTERLY SIDE OF KENNEBEC STREET;

THENCE BY THE SOUTHEASTERLY SIDE OF SAID KENNEBEC STREET N 49° 02' 07" E, A DISTANCE OF 84.95 FEET, TO THE NORTHWESTERLY CORNER OF LAND CONVEYED TO E. PERRY IRON AND METAL CO. AS DESCRIBED IN THE DEED RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 12604 PAGE 268;

THENCE BY LAND NOW OR FORMERLY OF SAID E. PERRY IRON AND METAL CO. ON THE FOLLOWING COURSES:

S 40° 57' 53" E, A DISTANCE OF 117.11 FEET;

N 49° 02' 47" E, A DISTANCE OF 40.11 FEET;

S 43° 43' 01" E, A DISTANCE OF 47.93 FEET, TO THE NORTHWESTERLY SIDE OF SAID LANCASTER STREET;

THENCE BY THE NORTHWESTERLY SIDE OF SAID LANCASTER STREET S 49° 02' 07" W, A DISTANCE OF 116.76 FEET TO THE POINT OF BEGINNING.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING THE LAND DESCRIBED AS PARCEL 1 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE IV, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 242.

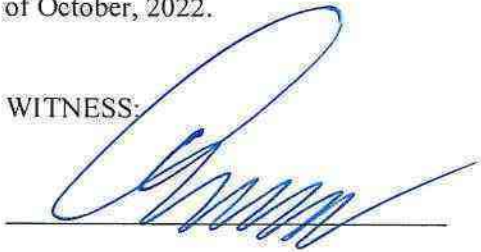
Received
Recorded Register of Deeds
Oct 13, 2022 02:34:34P
Cumberland County
Jessica M. Spaulding

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE IV, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **197 OXFORD STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside IV, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE IV, LLC

By 
 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside IV, LLC.


 Attorney at Law/Notary Public
 Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, Parcel 4)

A CERTAIN PARCEL OF LAND, TOGETHER WITH THE IMPROVEMENTS THEREON, SITUATED ON THE NORTHWESTERLY SIDE OF OXFORD STREET, AND THE NORTHEASTERLY SIDE OF CEDAR STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND STATE OF MAINE AND SHOWN AS PARCEL 4 ON ALTA/ACSM LAND TITLE SURVEY ON CEDAR STREET, LANCASTER STREET EAST, CHESTNUT STREET AND OXFORD STREET, PORTLAND, MAINE FOR BAYSIDE IV, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 43 (THE PLAN), BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHWESTERLY SIDELINE OF OXFORD STREET AND THE NORTHEASTERLY SIDELINE OF CEDAR STREET;

THENCE N 43° 29' 51" W ALONG THE SIDELINE OF CEDAR STREET 64.50 FEET;
THENCE N 48° 37' 47" E 57.00 FEET;
THENCE S 43° 29' 51" E 64.50 FEET TO THE NORTHWESTERLY SIDELINE OF OXFORD STREET;
THENCE S 48° 37' 47" W ALONG SAID SIDELINE 57.00 FEET TO THE POINT OF BEGINNING.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING THE LAND DESCRIBED AS PARCEL 4 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE IV, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 242.

EXHIBIT A
(Legal Description, Parcel 3)

A CERTAIN PARCEL OF LAND, TOGETHER WITH THE IMPROVEMENTS THEREON. SITUATED ON THE SOUTHWESTERLY SIDE OF CHESTNUT STREET AND THE SOUTHEASTERLY SIDE OF HALL'S COURT, SO CALLED, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE AND SHOWN AS PARCEL 3 ON ALTA/ACSM LAND TITLE SURVEY ON CEDAR STREET, LANCASTER STREET EAST, CHESTNUT STREET AND OXFORD STREET, PORTLAND, MAINE FOR BAYSIDE IV, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 43 (THE PLAN), BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE SOUTHWESTERLY SIDELINE OF CHESTNUT STREET AND THE SOUTHEASTERLY SIDELINE OF HALL'S COURT;

THENCE S 44° 38' 26" E ALONG THE SIDELINE OF CHESTNUT STREET 78.04 FEET;
THENCE S 49° 06' 44" W 108.67 FEET;
THENCE S 43° 14' 05" E 39.95 FEET;
THENCE S 41° 16' 13" E 3.10 FEET;
THENCE S 52° 33' 00" W 18.73 FEET;
THENCE S 00° 14' 40" W 2.72 FEET;
THENCE S 48° 37' 47" W 35.54 FEET;
THENCE N 43° 29' 51" W 33.00 FEET;
THENCE S 48° 37' 47" W 57.00 FEET TO THE NORTHEASTERLY SIDELINE OF CEDAR STREET;
THENCE N 43° 29' 51" W ALONG SAID SIDELINE 23.00 FEET;
THENCE N 48° 37' 47" E 113.42 FEET;
THENCE N 43° 14' 05" W 58.51 FEET TO THE SOUTHEASTERLY SIDELINE OF HALL'S COURT;
THENCE ALONG SAID SIDELINE THE FOLLOWING COURSES AND DISTANCES:
N 33° 50' 09" E 19.40 FEET;
N 42° 14' 19" E 19.88 FEET;
N 49° 19' 48" E 68.00 FEET TO THE POINT OF BEGINNING.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING THE LAND DESCRIBED AS PARCEL 3 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE IV, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 242.

Received
Recorded Register of Deeds
Oct 13, 2022 02:33:19P
Cumberland County
Jessica M. Spaulding

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE I, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **60 ELM STREET LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside I, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE I, LLC

By

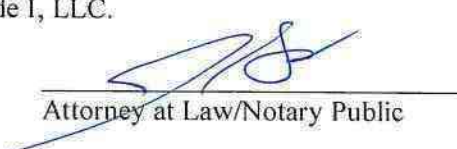


Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside I, LLC.



Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, 60 Elm Street)

A CERTAIN LOT OR PARCEL OF LAND SITUATED ON THE WESTERLY SIDE OF ELM STREET AND SOUTHERLY SIDE OF OXFORD STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, AND STATE OF MAINE, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERLY SIDE OF ELM STREET AND SOUTHERLY SIDE OF OXFORD STREET, THENCE, S 43° 40' 43" E ALONG THE WESTERLY SIDELINE OF ELM STREET A DISTANCE OF 122.92 FEET TO LAND NOW OR FORMERLY OF NORTHEAST INVESTORS, LLC (aka NORTHEAST INVESTORS (MAINE), LLC) AS DESCRIBED IN DEED BOOK 32422, PAGE 197;

THENCE, S 47° 21' 26" W ALONG LAND OF SAID NORTHEAST INVESTORS, LLC A DISTANCE OF 93.70 FEET;

THENCE, N 43° 08' 59" W BY THE NORTHERLY FACE OF THE EXISTING BRICK BUILDING A DISTANCE OF 124.83 FEET TO THE SOUTHERLY SIDELINE OF SAID OXFORD STREET;

THENCE N 48° 33' 13" E ALONG THE SIDELINE OF OXFORD STREET A DISTANCE OF 92.61 FEET TO THE POINT OF BEGINNING, CONTAINING 11,535 S.F. OR 0.26 ACRES, MORE OR LESS.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 1 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE I, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 91.

Received
Recorded Register of Deeds
Oct 13, 2022 02:25:54P
Cumberland County
Jessica M. Spaulding

MAINE REAL ESTATE TAX PAID

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE I, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **196 LANCASTER STREET LLC** a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside I, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE I, LLC

By


 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside I, LLC.


 Attorney at Law/Notary Public

Printed Name **Jason G. Howe, Esq.**
 Bar No. 0004860

Received
Recorded Register of Deeds
Oct 13, 2022 02:28:31P
Cumberland County
Jessica M. Spaulding

EXHIBIT A
(Legal Description, 196 Lancaster Street East)

A CERTAIN PARCEL OF LAND WITH THE BUILDINGS THEREON SITUATED ON SOUTHEASTERLY SIDE OF LANCASTER STREET EAST, THE SOUTHWESTERLY SIDE OF ELM STREET AND THE NORTHEASTERLY SIDE OF PREBLE STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE AS SHOWN PLAN TITLED "LAND DIVISION PLAN BAYSIDE I, LLC" MADE FOR RECORD OWNER BAYSIDE I, LLC BY OWEN HASKELL, INC. DATED SEPTEMBER 14, 2022, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE NORTHEASTERLY SIDELINE OF PREBLE STREET AND THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET EAST;

THENCE, N 49° 39' 27" E ALONG THE SIDELINE OF SAID LANCASTER STREET EAST 199.65 FEET TO THE SOUTHWESTERLY SIDELINE OF ELM STREET;

THENCE, S 43° 45' 13" E ALONG THE SIDELINE OF SAID ELM STREET 134.76 FEET;

THENCE, THE FOLLOWING COURSES AND DISTANCES THROUGH THE LAND OF THE GRANTOR:

S 47° 34' 12" W A DISTANCE OF 93.02 FEET;

S 44° 45' 38" E A DISTANCE OF 7.27 FEET;

S 47° 31' 17" W A DISTANCE OF 109.53 FEET TO THE NORTHEASTERLY SIDELINE OF SAID PREBLE STREET;

THENCE, N 42° 34' 18" W ALONG THE SIDELINE OF PREBLE STREET 149.36 FEET TO THE POINT OF BEGINNING, CONTAINING 28,591 S.F. OR 0.66 ACRES, MORE OR LESS.

BEARINGS ARE REFERENCED TO CITY GRID.

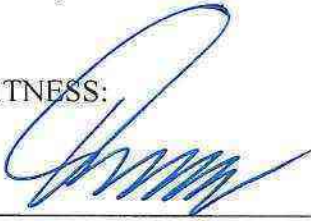
MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 2 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE I, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 91.

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE I, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **WBP COMMERCIAL LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside I, LLC has caused this instrument to be executed by Thomas A Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE I, LLC

By


 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside I, LLC.



Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, 190 Lancaster Street East)

A CERTAIN PARCEL OF LAND WITH THE BUILDINGS THEREON SITUATED ON THE SOUTHWESTERLY SIDE OF ELM STREET, THE NORTHWESTERLY SIDE OF OXFORD STREET AND THE NORTHEASTERLY SIDE PREBLE STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE AS SHOWN PLAN TITLED "LAND DIVISION PLAN BAYSIDE I, LLC" MADE FOR RECORD OWNER BAYSIDE I, LLC BY OWEN HASKELL, INC. DATED SEPTEMBER 14, 2022, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE NORTHEASTERLY SIDELINE OF PREBLE STREET AND THE NORTHWESTERLY SIDELINE OF OXFORD STREET;

THENCE, N 42°34'18" W ALONG THE SIDELINE OF SAID PREBLE STREET 182.30 FEET;

THENCE THE FOLLOWING COURSES AND DISTANCES THROUGH THE LAND OF THE GRANTOR:

N 47° 31' 17" E A DISTANCE OF 109.53 FEET;

N 44° 45' 38" W A DISTANCE OF 7.27 FEET;

N 47° 34' 12" E A DISTANCE OF 93.02 FEET TO THE SOUTHWESTERLY SIDELINE OF ELM STREET;

THENCE, S 43° 45' 13" E ALONG THE SIDELINE OF SAID ELM STREET 193.26 FEET TO THE NORTHWESTERLY SIDELINE OF SAID OXFORD STREET;

THENCE, S 48° 33' 13" W ALONG THE SIDELINE OF OXFORD STREET 206.30 FEET TO THE POINT OF BEGINNING. CONTAINING 38,301 S.F. OR 0.88 ACRES, MORE OR LESS.

BEARINGS ARE REFERENCED TO CITY GRID.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 2 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE I, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 91.

EXHIBIT A
(Legal Description 62 Elm Street)

A CERTAIN LOT OR PARCEL OF LAND, WITH THE BUILDINGS THEREON, SITUATED ON THE EASTERLY SIDE OF PREBLE STREET AND SOUTHERLY SIDE OF OXFORD STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, AND STATE OF MAINE, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY SIDE OF PREBLE STREET AND SOUTHERLY SIDE OF OXFORD STREET, THENCE N 48° 33' 13" E ALONG THE SOUTHERLY SIDE OF OXFORD STREET A DISTANCE OF 114.66 FEET;

THENCE, S 43° 08' 59" E BY THE NORTHERLY FACE OF THE EXISTING BRICK BUILDING A DISTANCE OF 124.83 FEET TO LAND NOW OR FORMERLY OF NORTHERN INVESTORS LLC AS DESCRIBED IN DEED BOOK 32422, PAGE 197;

THENCE, S 47° 21' 26" W ALONG LAND OF SAID NORTHERN INVESTORS LLC AND BY THE FACE OF THE SAID BRICK BUILDING A DISTANCE OF 115.91 FEET TO THE EASTERLY SIDELINE OF SAID PREBLE STREET;

THENCE, N 42° 34' 00" W ALONG THE SIDELINE OF PREBLE STREET A DISTANCE OF 127.22 FEET TO THE POINT OF BEGINNING, CONTAINING 14,526 S.F. OR 0.33 ACRES, MORE OR LESS.

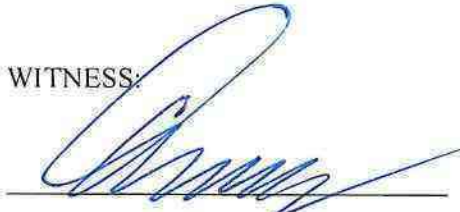
MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING A PORTION OF THE LAND DESCRIBED AS PARCEL 1 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE I, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 91.

DLN: _____
QUITCLAIM DEED WITH COVENANT
Maine Statutory Short Form

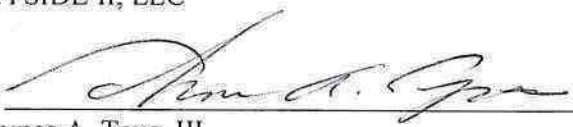
KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE II, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **WBP COMMERCIAL LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside II, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



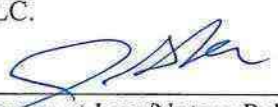
BAYSIDE II, LLC

By 
Thomas A. Toye, III
Its: Sole Member

STATE OF MAINE
COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside II, LLC.



Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, Parcel 1)

A CERTAIN LOT OR PARCEL OF LAND, WITH THE IMPROVEMENTS THEREON, SITUATED IN THE BLOCK BOUNDED BY ELM, KENNEBEC, CHESTNUT AND LANCASTER STREETS, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE AND SHOWN AS PARCEL 1 ON ALTA/ACSM LAND TITLE SURVEY ON KENNEBEC STREET, LANCASTER STREET EAST, ELM STREET, CEDAR STREET AND OXFORD STREET, PORTLAND, MAINE MADE FOR BAYSIDE II, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 41 (THE PLAN), BEING BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION MARKING THE NORTHWESTERLY SIDE OF LANCASTER STREET AND THE NORTHEASTERLY SIDE OF ELM STREET;

THENCE, BY THE NORTHEASTERLY SIDE OF ELM STREET N 43° 46' 33" W, A DISTANCE OF 158.86' TO AN ANGLE IN SAID STREET;

THENCE, N 40° 53' 33" W, A DISTANCE OF 31.49' TO THE SOUTHEASTERLY SIDE OF KENNEBEC STREET, MARKING A NON-TANGENT POINT ON A CURVE, IN SAID STREET;

THENCE, NORTHEASTERLY BY THE SOUTHEASTERLY SIDE OF SAID KENNEBEC STREET AND BY A CURVE TO THE LEFT WHOSE RADIUS IS 695.00', AN ARC DISTANCE OF 210.01', TO A POINT OF TANGENCY;

THENCE CONTINUING BY SAID KENNEBEC STREET N 48° 56' 54" E, A DISTANCE OF 251.30', TO THE SOUTHWESTERLY SIDE OF SAID CHESTNUT STREET;

THENCE BY THE SOUTHWESTERLY SIDE OF SAID CHESTNUT STREET S 44° 38' 26" E, A DISTANCE OF 164.71' TO THE NORTHWESTERLY SIDE OF SAID LANCASTER STREET;

THENCE BY THE NORTHWESTERLY SIDE OF SAID LANCASTER STREET S 49° 39' 27" W, A DISTANCE OF 461.02', TO THE POINT OF BEGINNING.

THE PROPERTY IS SUBJECT TO A NOTICE OF ABANDONED UNDERGROUND OIL STORAGE FACILITY OR TANK NOTICE, DATED APRIL 6, 2011 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 28629, PAGE 238.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING THE SAME LAND DESCRIBED AS PARCEL 1 CONVEYED TO BAYSIDE II, LLC BY QUITCLAIM

DEED OF OCTOBER CORPORATION, DATED JANUARY 26, 2000 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 15298, PAGE 144.

EXHIBIT A
(Legal Description, Parcel 3)

A CERTAIN PARCEL OF LAND, WITH THE OF IMPROVEMENTS THEREON SITUATED ON THE SOUTHEASTERLY SIDE OF LANCASTER STREET, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE AND SHOWN AS PARCEL 3 ON ALTA/ACSM LAND TITLE SURVEY ON KENNEBEC STREET, LANCASTER STREET EAST, ELM STREET, CEDAR STREET AND OXFORD STREET, PORTLAND, MAINE MADE FOR BAYSIDE II, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 41 (THE PLAN), BEING BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET AND THE SOUTHWESTERLY SIDELINE OF CHESTNUT STREET;

THENCE S 44° 38' 26" E ALONG THE SIDELINE OF CHESTNUT STREET 88.08 FEET;
THENCE S 49° 39' 27" W 107.40;
THENCE N 45° 57' 49" W 3.67 FEET;
THENCE S 31° 29' 21" W 4.67 FEET;
THENCE N 43° 29' 51" W 23.77 FEET;
THENCE S 49° 39' 27" W 35.69 FEET;
THENCE N 43° 29' 51" W 28.00 FEET;
THENCE S 49° 39' 27" W 72.00 FEET TO THE NORTHEASTERLY SIDELINE OF CEDAR STREET;
THENCE N 43° 29' 51" W ALONG SAID SIDELINE 34.00 FEET TO THE SOUTHEASTERLY SIDELINE OF LANCASTER STREET;
THENCE N 49° 39' 27" E ALONG SAID SIDELINE 218.00 FEET TO THE POINT OF BEGINNING.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING THE SAME LAND DESCRIBED AS PARCEL 3 CONVEYED TO BAYSIDE II, LLC BY QUITCLAIM DEED OF OCTOBER CORPORATION, DATED JANUARY 26, 2000 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 15298, PAGE 144.

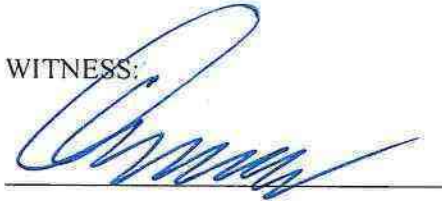
Received
Recorded Register of Deeds
Oct 13, 2022 02:22:36P
Cumberland County
Jessica M. Spaulding

DLN: _____
QUITCLAIM DEED WITH COVENANT
 Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **BAYSIDE IV, LLC**, a Maine limited liability with a principal place of business in Portland, County of Cumberland, State of Maine, for consideration paid, grants to **WBP COMMERCIAL LLC**, a Maine limited liability company with an address of 82 Hanover Street, Portland, Maine 04101, with **QUITCLAIM COVENANT**, the land, together with any buildings and improvements thereon, in Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Bayside IV, LLC has caused this instrument to be executed by Thomas A. Toye, III, its Sole Member thereunto duly authorized as of this 12th day of October, 2022.

WITNESS:



BAYSIDE IV, LLC

By 
 Thomas A. Toye, III
 Its: Sole Member

STATE OF MAINE
 COUNTY OF CUMBERLAND

October 12, 2022

Then personally appeared the above named Thomas A. Toye, III, Sole Member as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Bayside IV, LLC.


 Attorney at Law/Notary Public

Printed Name

Jason G. Howe, Esq.
 Bar No. 0004860

MAINE REAL ESTATE TAX PAID

EXHIBIT A
(Legal Description, Parcel 2)

A CERTAIN PARCEL OF LAND, TOGETHER WITH THE IMPROVEMENTS THEREON, SITUATED ON THE SOUTHWESTERLY SIDE OF CHESTNUT STREET AND THE NORTHWESTERLY SIDE OF HALL'S COURT, SO CALLED, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE AND SHOWN AS PARCEL 2 ON ALTA/ACSM LAND TITLE SURVEY ON CEDAR STREET, LANCASTER STREET EAST, CHESTNUT STREET AND OXFORD STREET, PORTLAND, MAINE FOR BAYSIDE IV, LLC BY OWEN HASKELL, INC., DATED JANUARY 24, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 200, PAGE 43 (THE PLAN), BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE SOUTHWESTERLY SIDELINE OF CHESTNUT STREET AND THE NORTHWESTERLY SIDELINE OF HALL'S COURT;

THENCE S 49° 19' 48" W ALONG THE SIDELINE OF HALL'S COURT 112.65 FEET;

THENCE N 43° 29' 51" W 31.09 FEET;

THENCE N 49° 39' 27" E 112.08 FEET TO THE SOUTHWESTERLY SIDELINE OF CHESTNUT STREET;

THENCE S 44° 38' 26" E 30.48 FEET TO THE POINT OF BEGINNING.

MEANING AND INTENDING TO CONVEY AND HEREBY CONVEYING THE LAND DESCRIBED AS PARCEL 2 IN DEED FROM OCTOBER CORPORATION TO BAYSIDE IV, LLC DATED JANUARY 26, 2000 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 15298, PAGE 242.

Received
Recorded Register of Deeds
Oct 13, 2022 02:21:12P
Cumberland County
Jessica M. Spaulding

5

Section 5: Public or Private Right-of-Way

5.A Public or Private Rights-of-Way

The site is proposed to be accessed as described in Section 3. No additional public or private rights of way are proposed.

6

Section 6: Schedule

6.A Schedule

Phases 1 and 2 are anticipated to be constructed by 2025. The proposed uses are anticipated to be fully occupied in 2026.



To: Jennifer Conley, PE, PTOE

Date: June 28, 2023

Memorandum

Project #: 55678.00

From: Mike Cristiani

Re: West Bayside Redevelopment
Additional Mode Share Data

In order to address the request from the City of Portland to further support the proposed mode shares with field data, additional mode share data has been collected.

Residential Data

VHB has collected data at an additional two residential locations in the area. Originally, VHB collected data at 117 Lofts on Preble Street. Since that time, data was also collected at Back Bay Tower and Hiawatha. Each development is market rate apartments with unbundled parking. Visual following was employed to differentiate pedestrians from people walking to and from on street parking. The resulting trips and mode share percentages are illustrated in Tables 1 to 6 below.

Table 1 AM Back Bay Tower Mode Share

Land Use	Entering Trips			Exiting Trips			Total Trips		
	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips
7:00 to 7:15 AM	3	0	0	1	2	0	4	2	0
7:15 to 7:30 AM	4	0	0	5	6	0	9	6	0
7:30 to 7:45 AM	2	2	0	5	3	0	7	5	0
7:45 to 8:00 AM	1	1	0	6	9	0	7	10	0
8:00 to 8:15 AM	0	1	0	2	7	0	2	8	0
8:15 to 8:30 AM	2	0	0	1	1	0	3	1	0
8:30 to 8:45 AM	2	3	0	0	2	0	2	5	0
8:45 to 9:00 AM	3	1	1	2	3	0	5	4	1
Total	17	8	1	22	33	0	39	41	1
							48%	51%	1%

Source: AM peak hour is based on data collected at Back Bay Tower

Table 2 PM Back Bay Tower Mode Share

Land Use	Entering Trips			Exiting Trips			Total Trips		
	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips
7:00 to 7:15 AM	5	4	0	2	2	0	7	6	0
7:15 to 7:30 AM	2	1	0	3	2	0	5	3	0
7:30 to 7:45 AM	3	5	0	1	3	0	4	8	0
7:45 to 8:00 AM	6	3	0	3	4	1	9	7	1
8:00 to 8:15 AM	6	6	0	5	5	0	11	11	0
8:15 to 8:30 AM	6	1	0	1	4	0	7	5	0
8:30 to 8:45 AM	3	2	0	1	5	0	4	7	0
8:45 to 9:00 AM	<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>0</u>	<u>3</u>	<u>6</u>	<u>1</u>
Total	33	24	1	17	29	0	50	53	2
							48%	50%	2%

Source: PM peak hour is based on data collected at Back Bay Tower

Table 3 AM Hiawatha Mode Share

Land Use	Entering Trips			Exiting Trips			Total Trips		
	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips
7:00 to 7:15 AM	0	2	0	0	1	0	0	3	0
7:15 to 7:30 AM	0	0	0	6	5	0	6	5	0
7:30 to 7:45 AM	3	1	0	15	3	0	18	4	0
7:45 to 8:00 AM	7	1	1	8	4	0	15	5	1
8:00 to 8:15 AM	2	4	0	13	5	0	15	9	0
8:15 to 8:30 AM	0	0	0	4	3	0	4	3	0
8:30 to 8:45 AM	2	3	0	4	4	1	6	7	1
8:45 to 9:00 AM	<u>1</u>	<u>3</u>	<u>0</u>	<u>11</u>	<u>0</u>	<u>0</u>	<u>12</u>	<u>3</u>	<u>0</u>
Total	15	14	1	61	25	1	76	39	2
							65%	33%	2%

Source: AM peak hour is based on data collected at Hiawatha

Table 4 PM Hiawatha Mode Share

Land Use	Entering Trips			Exiting Trips			Total Trips		
	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips
7:00 to 7:15 AM	3	0	0	2	1	0	5	1	0
7:15 to 7:30 AM	6	2	0	7	0	1	13	2	1
7:30 to 7:45 AM	3	1	0	2	2	0	5	3	0
7:45 to 8:00 AM	10	1	0	4	3	0	14	4	0
8:00 to 8:15 AM	8	3	0	9	3	0	17	6	0
8:15 to 8:30 AM	8	4	0	9	1	0	17	5	0
8:30 to 8:45 AM	8	4	0	4	4	2	12	8	2
8:45 to 9:00 AM	<u>5</u>	<u>1</u>	<u>0</u>	<u>6</u>	<u>3</u>	<u>0</u>	<u>11</u>	<u>4</u>	<u>0</u>
Total	51	16	0	43	17	3	94	33	3
							72%	26%	2%

Source: PM peak hour is based on data collected at Hiawatha

Table 5 AM 117 Lofts Mode Share

Land Use	Entering Trips			Exiting Trips			Total Trips		
	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips
7:00 to 7:15 AM	2	0	0	3	1	0	5	1	0
7:15 to 7:30 AM	0	2	0	0	2	0	0	4	0
7:30 to 7:45 AM	0	2	0	2	1	0	2	3	0
7:45 to 8:00 AM	1	0	0	1	0	0	2	0	0
8:00 to 8:15 AM	0	1	0	2	2	0	2	3	0
8:15 to 8:30 AM	0	1	0	0	1	0	0	2	0
8:30 to 8:45 AM	0	1	0	1	1	0	1	2	0
8:45 to 9:00 AM	<u>0</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>1</u>	<u>0</u>
Total	3	8	0	12	8	0	15	16	0
							48%	52%	0%

Source: AM peak hour is based on data collected at 117 Lofts on Preble Street

Table 6 PM 117 Lofts Mode Share

Land Use	Entering Trips			Exiting Trips			Total Trips		
	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips	Pedestrian Trips	Vehicle Trips	Bike Trips
7:00 to 7:15 AM	0	1	0	0	1	0	0	2	0
7:15 to 7:30 AM	0	0	0	0	1	0	0	1	0
7:30 to 7:45 AM	1	1	0	0	0	0	1	1	0
7:45 to 8:00 AM	1	2	0	1	0	0	2	2	0
8:00 to 8:15 AM	4	2	0	1	1	0	5	3	0
8:15 to 8:30 AM	0	0	0	1	1	0	1	1	0
8:30 to 8:45 AM	0	1	0	0	0	0	0	1	0
8:45 to 9:00 AM	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>0</u>
Total	7	8	0	4	4	0	11	12	0
							47%	53%	0%

Source: PM peak hour is based on data collected at 117 Lofts on Preble Street

The mode share data collected was summarized into Table 7. In addition to the summaries of mode shares for AM and PM for each of the developments, the initially used mode share, based on census data for this area, is provided for comparison.

Table 7 Mode Share Comparison

Mode of Transportation		Back Bay Tower Mode Share ¹	Hiawatha Mode Share ²	117 Preble Mode Share ³	Field Collected Residential Average	ACS 2017-2021 Mode Share – Excluding “Worked from home” ⁴
Vehicle	AM	51%	33%	52%	45%	55%
	PM	50%	26%	53%	43%	
Walk	AM	48%	65%	48%	54%	45%
	PM	48%	72%	47%	56%	
Bike	AM	1%	2%	0%	1%	
	PM	2%	2%	0%	1%	

¹Back Bay Tower – 116 Market Rate apartments, parking garage unbundled

²Hiawatha – 139 Market rate apartments, parking garage unbundled

³117 Lofts – 56 Market Rate apartments, surface parking unbundled

⁴US Census Bureau American Community Survey. Census Tract 6, Workers 16 yrs and over

As shown in the tables above, the average mode split observed at 117 Lofts, Back Bay Tower, and The Hiawatha building show approximately **55% pedestrian trips and 45% vehicle trips**. As indicated above, all three buildings offer market rate apartments at various bedroom sizes. Conversely, census data reflected only 45% pedestrian trips and 55% vehicular trips.

There is parking associated with all three locations, Back Bay Tower and The Hiawatha provide unbundled parking in attached parking garages while 117 Lofts offers unbundled surface lot parking. As indicated above, to ensure accurate mode share data for vehicular trips, the data collection reflects observations of pedestrians who walked to and from on street parking as vehicular trips.

Coffee Shop Data

As discussed in a call with Tom Errico, the only additional coffee shop requested for data collection is a facility significantly larger than is proposed at this location, has a large parking supply located on multiple sides of the facility (and is twice as dense as typical on street parking as includes pull in spaces, not parallel). Finally, there are no residential units within a short walking distance. These factors make this site not a comparable location to what is being proposed in a residential building with a significant number of units proposed in the immediate area and no parking provided except typical on street parking.

With the data collected at Coffee Me Up and all three residential developments supporting a vehicular mode share in this area similar, or less than that provided in the census data, that census mode share (55% auto and 45% walking/biking/transit) is appropriate for use on the proposed site.



Planning and Urban Development Department
 Planning Division
 Attn: Zach Powell, Senior Planner
 City of Portland, Maine
 389 Congress Street, 4th Floor
 Portland, ME 04101

July 20, 2023

Subject: Building Division – 89 Elm Street Redevelopment

Zach:

You've asked us to consider providing a +/- 30' gap in the 89 Elm Street building thereby creating two separate buildings. We believe that such a division would have a deleterious effect on the development from both an urban design and programmatic perspective.

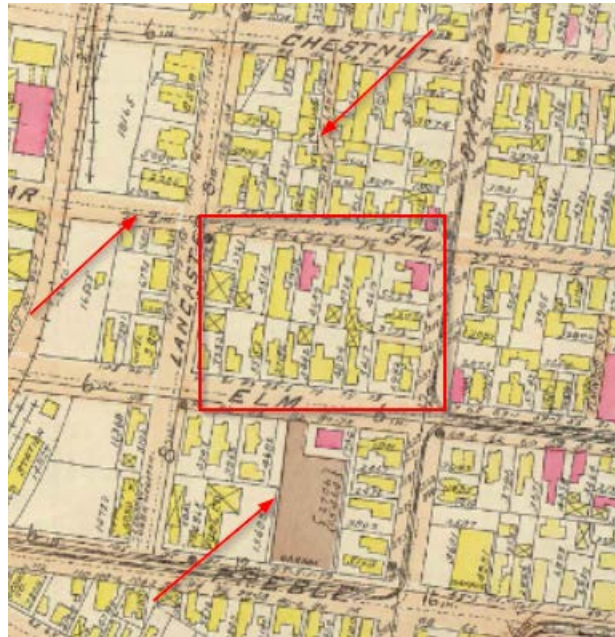
Design Considerations:

Our development conforms to the existing zoning and meets all applicable City design guidelines, including the B-3 Downtown Business Zone design standards, the Multiple Family Standards as well as the design principles of the recently approved Master Development Plan. As a result of the application of these standards, we believe that the proposed development respects, enhances, and is integrated with the existing character of the general pattern of development in downtown Portland.

89 Elm is designed to be built to the Elm Street right-of-way line to maintain maximum separation from Cedar Street. We consciously avoided extending the building to the rear of the Cedar Street lots in an effort to adhere to the existing neighborhood fabric and pattern of fronts and backs. This is a best practice approach to transitioning between scales in a neighborhood context like this. The transition happens at the midblock point rather than across a street, the goal being that streets are lined on both sides with buildings of similar scales and/or character. The way the Cumberland/Parris/Mechanic/Portland block transitions from the Back Bay Tower at Cumberland Avenue to smaller houses at Portland Street is a good precedent for how this strategy functions elsewhere in the neighborhood.

The 89 Elm Street block is a typically scaled block for downtown B-3 zone. It does not cross the threshold into "excessively long" to the point that it would necessitate a mid-block connection (unlike, for example, the Baxter Academy block of Lancaster). The uses along Elm and Cedar are very different and would not benefit from added permeability (in contrast to Elm/Preble connections). The suggested "break" in the 89 Elm Street building would not create a link all the way to Cedar Street but instead terminate in the back yard area of the existing houses and surface parking lots along Cedar Street. As a result, it would not actually create a new public mid-block connection, but instead provide a 24-hour passage to the lots and houses on Cedar Street. Please refer to the 1914 representative image showing how this block never contemplated cross block connectivity for the reasons identified above.





Reference 1914 Richards Atlas Area Map

*Arrows Reference Mid-Block Permeability being preserved and restored

We understand that mid-block permeability can be an important urban design strategy in places where existing blocks are too large and subdivision can achieve an appropriately walkable scale. However, in this location, the existing blocks are generally already scaled to comfortable walking dimensions. Creating a break in the building façade along Elm Street will disrupt the cohesive street wall that is integral to the Master Development Plan principles previously discussed. There are, however, opportunities within the B-7 portion of the Master Development Plan to add/restore mid-block connections where the added permeability ties active uses together or otherwise anticipates pedestrian desire lines. For example, mid-block connections between Preble and Elm would link two streets anticipated to experience significant pedestrian flows and activity as retail and amenities emerge at and along Lancaster Street.



Programmatic Considerations:

Inserting a +/- 30' gap into the proposed building thereby creating two separate buildings would have a number of programmatic implications.

- An additional egress stair would be required as each building needs two remote means of egress.
- Additional elevators would need to be added to each building as the connected corridor would be eliminated between the existing elevators.
- Additional mechanical, electrical and water rooms would need to be added resulting in a loss of 'rentable' space.
- An additional laundry room and bike room would need to be added resulting in a loss of 'rentable' space.

In total, dividing the building into two buildings would result in a loss of approximately 32 residential units. This reduction of +/- 32 units threatens the project's eligibility for Maine Housing tax credits and subsidy. Maine Housing applies a cap on total development costs per unit. Given the current construction cost environment, we were already projecting the single building program to bump up against the maximum allowable total development cost. Dividing the building in two buildings will not realize meaningful cost savings to the project because fixed costs (e.g., site preparation) will not be reduced while certain costs - elevators, mechanical, electrical and water systems - are being duplicated, thereby increasing those line items in the construction budget.

The loss of +/- 32 units also threatens the project's financial feasibility. The +/- 16% reduction in units will translate into a similar reduction in gross revenue without a commensurate reduction in operating expenses. The resulting reduction in net revenue reduces the amount of debt the project can support. Without a significant additional subsidy source to offset the loss of debt, the project will not be feasible.

Most importantly, 32 new rent- and income-restricted units would be lost to Portland at a time when the City is aggressively seeking to grow its supply of affordable housing in alignment with the Comprehensive Plan. Additionally, per article 18 of the land use code, this site's zoning and affordable housing incentives encourage developments similar to that being proposed.

We would like to conclude by acknowledging the work of your department over the past few months. Your review of our initial submissions through the lens of the applicable design standards have led to significant improvements, particularly as to how the building relates to the pedestrian environments on Elm, Lancaster and Oxford streets. We believe that by following your constructive criticism, we have designed a building that both speaks to the downtown neighborhood that we are creating while also respecting the transition to the residential neighborhood to its east. Ultimately, we are excited to deliver 201 affordable residential units at 60% AMI which will be accomplished through one cohesive building that's integrated into the existing neighborhood context and consistent with the goals of the MDP,



We look forward to discussion and feedback specific to how further enhancements of the proposed building could potentially be integrated into the design based upon feedback from City Staff, members of the Planning Board, and the public.

Sincerely,



Ryan Senatore, AIA LEED AP
Principal
Ryan Senatore Architecture



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



Jeffrey Sauser
Senior Associate and Urban Planner
Stantec



Michael Barton, LEED AP
Development Director
Reveler Development



89 ELM - REDESIGN

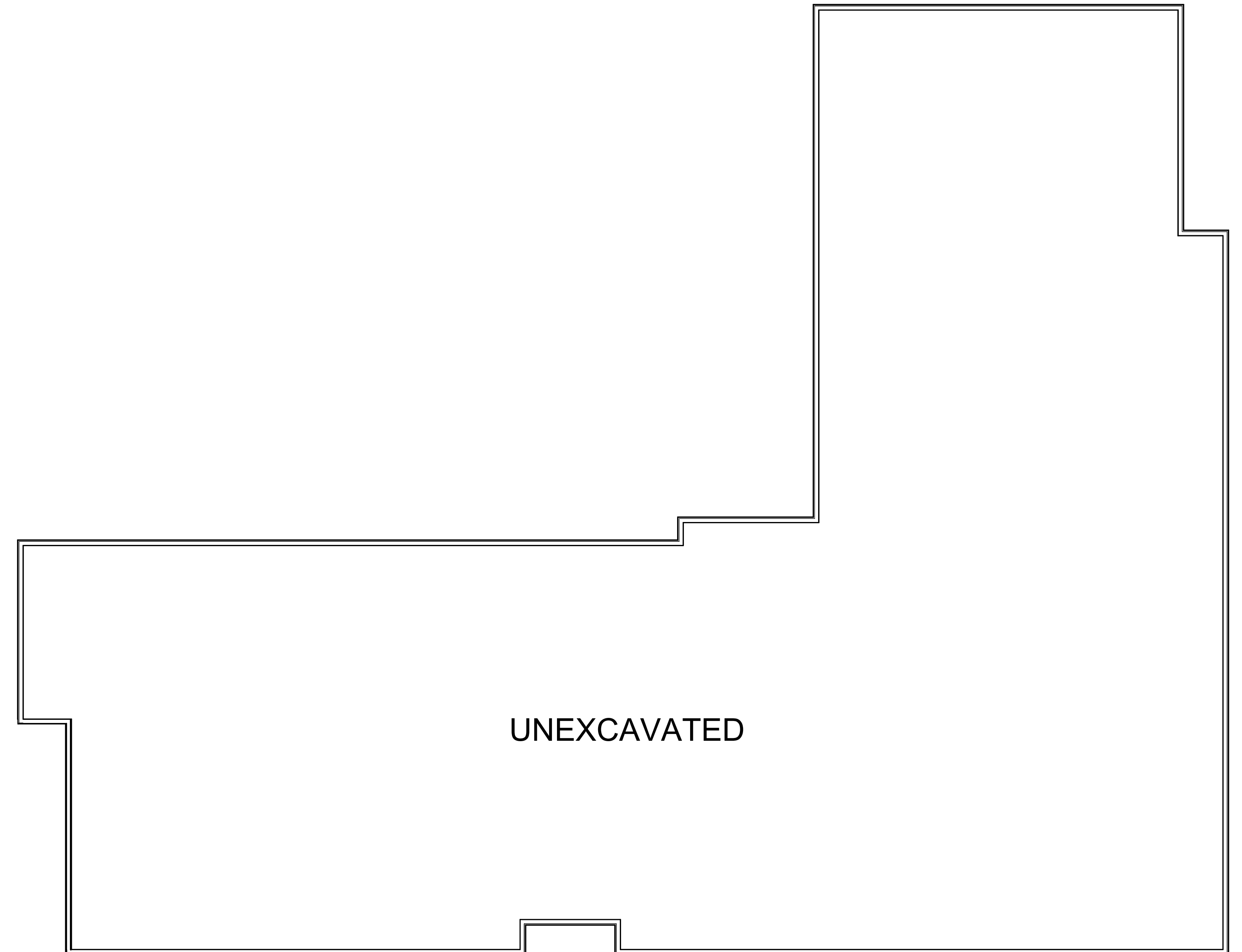
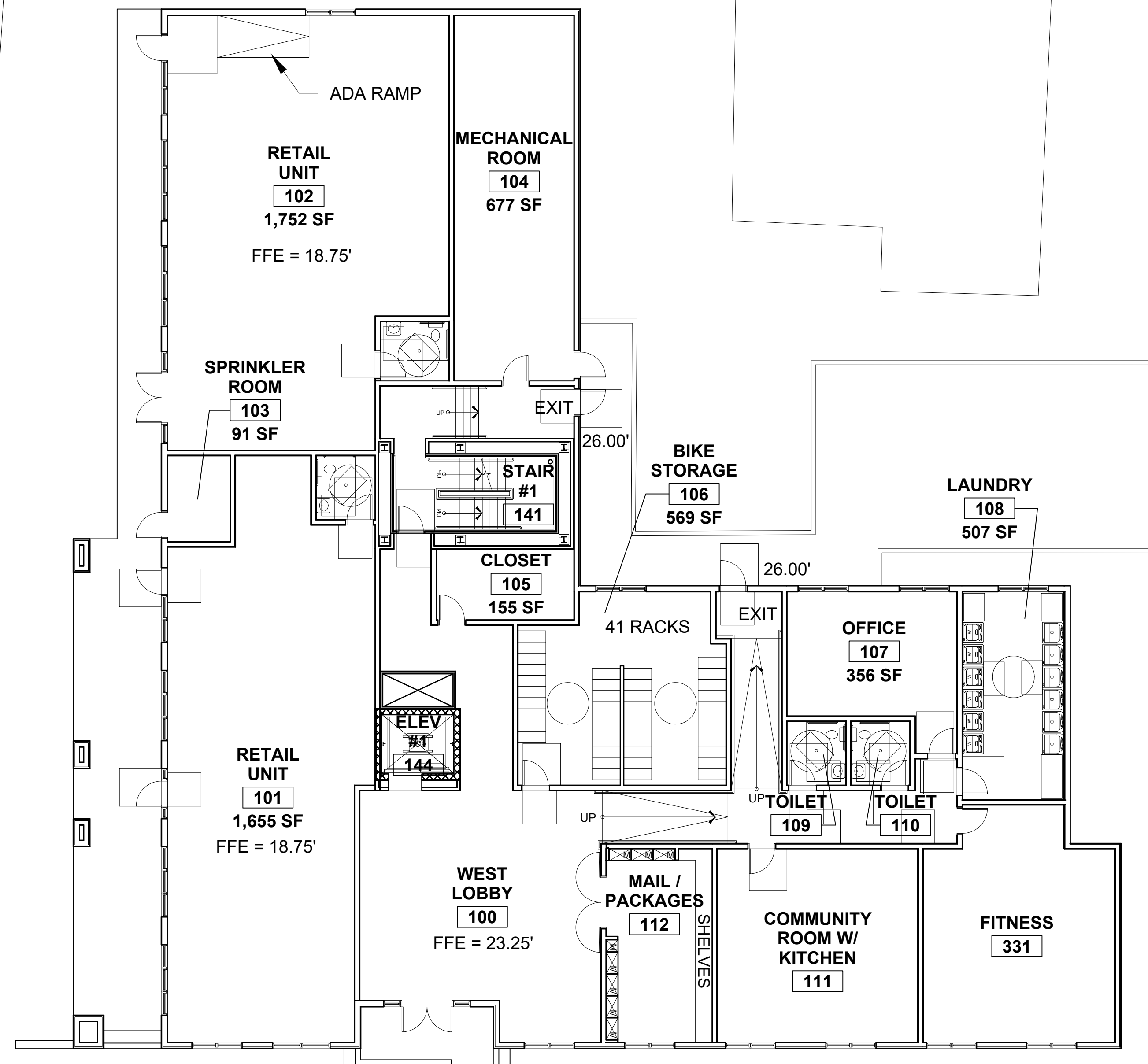
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APARTMENTS

ELM STREET, PORTLAND, MAINE

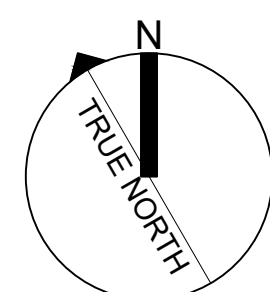
JULY 19, 2023

1



BUILDING #1

BUILDING #2



0 8' 16' 32' 64'

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

APARTMENTS

ELM STREET, PORTLAND, MAINE

JULY 19, 2023

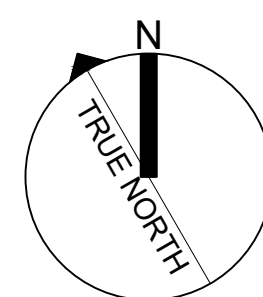
2 STUDIOS
8 (1) BEDS
3 (2) BEDS

2



BUILDING #1

BUILDING #2



PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE ARCHITECTURE

APARTMENTS

ELM STREET, PORTLAND, MAINE

JULY 19, 2023

2 STUDIOS
8 (1) BEDS
3 (2) BEDS

3

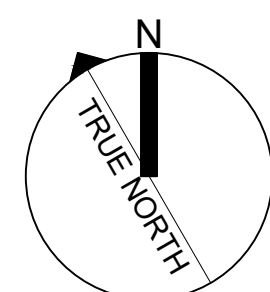
0 STUDIOS
10 (1) BEDS
2 (2) BEDS



BUILDING #1

REMOVED 2 (1) BEDS

BUILDING #2



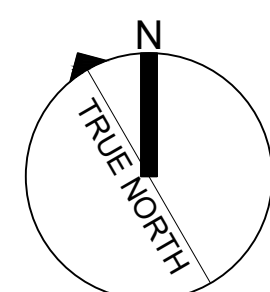
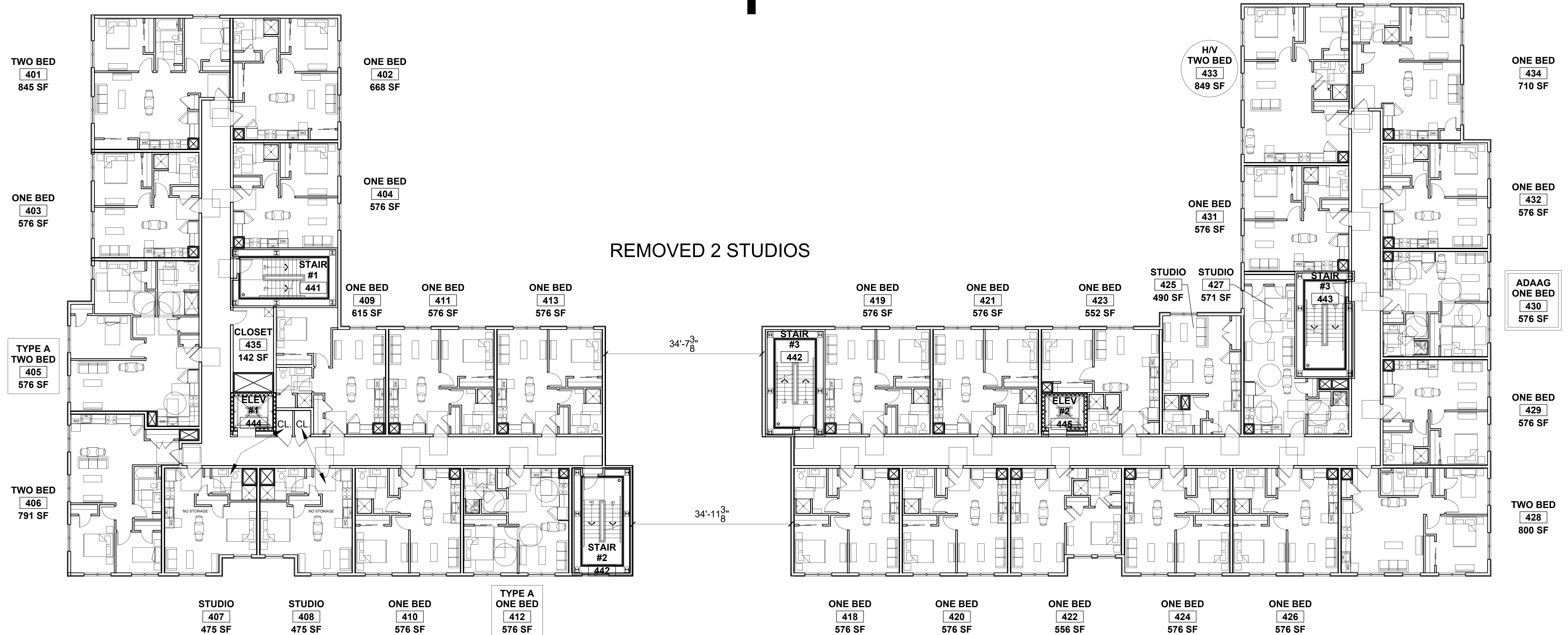
PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

2 STUDIOS
8 (1) BEDS
3 (2) BEDS

2 STUDIOS
13 (1) BEDS
2 (2) BEDS

4



0 8' 16' 32' 64'

BUILDING #1

REMOVED 2 (1) BEDS

BUILDING #2

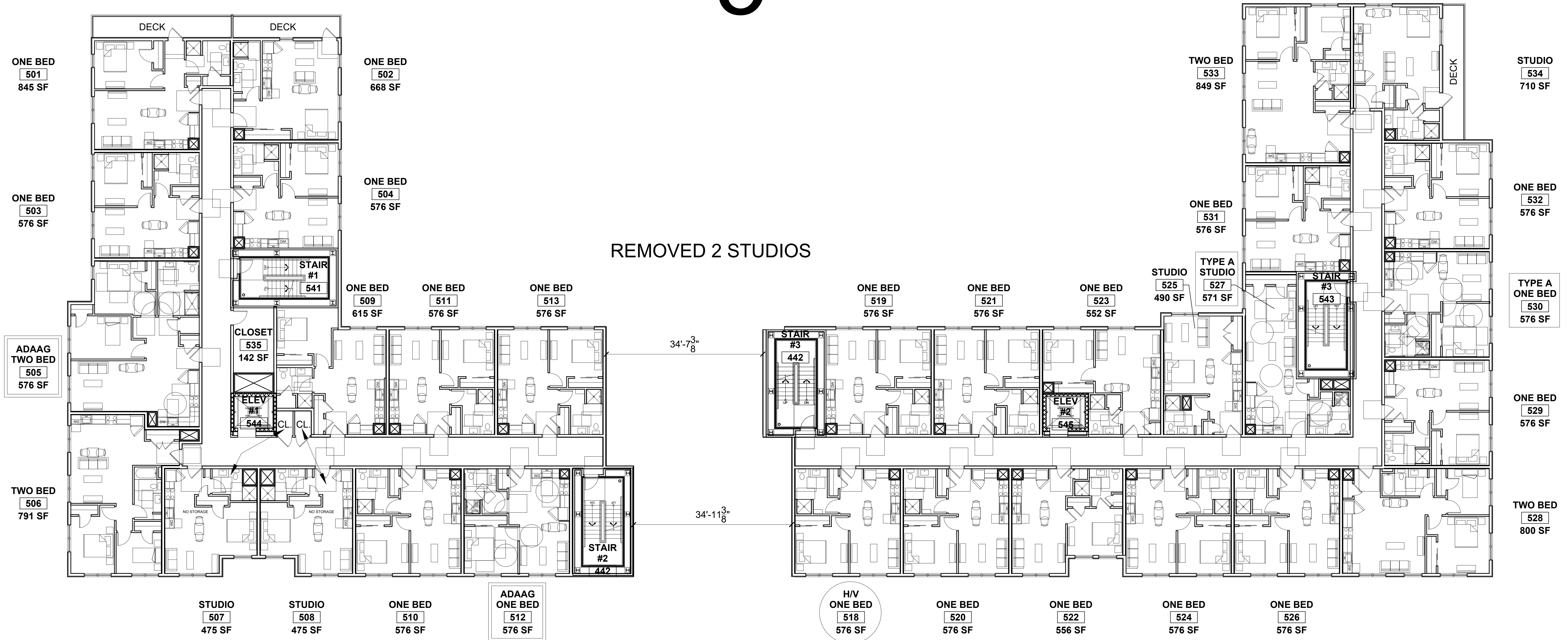
ELM STREET, PORTLAND, MAINE

JULY 19, 2023

2 STUDIOS
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2 (2) BEDS

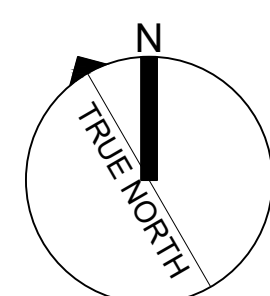
3 STUDIOS
12 (1) BEDS
2 (2) BEDS

5



BUILDING #1

BUILDING #2



REMOVED 2 (1) BEDS

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

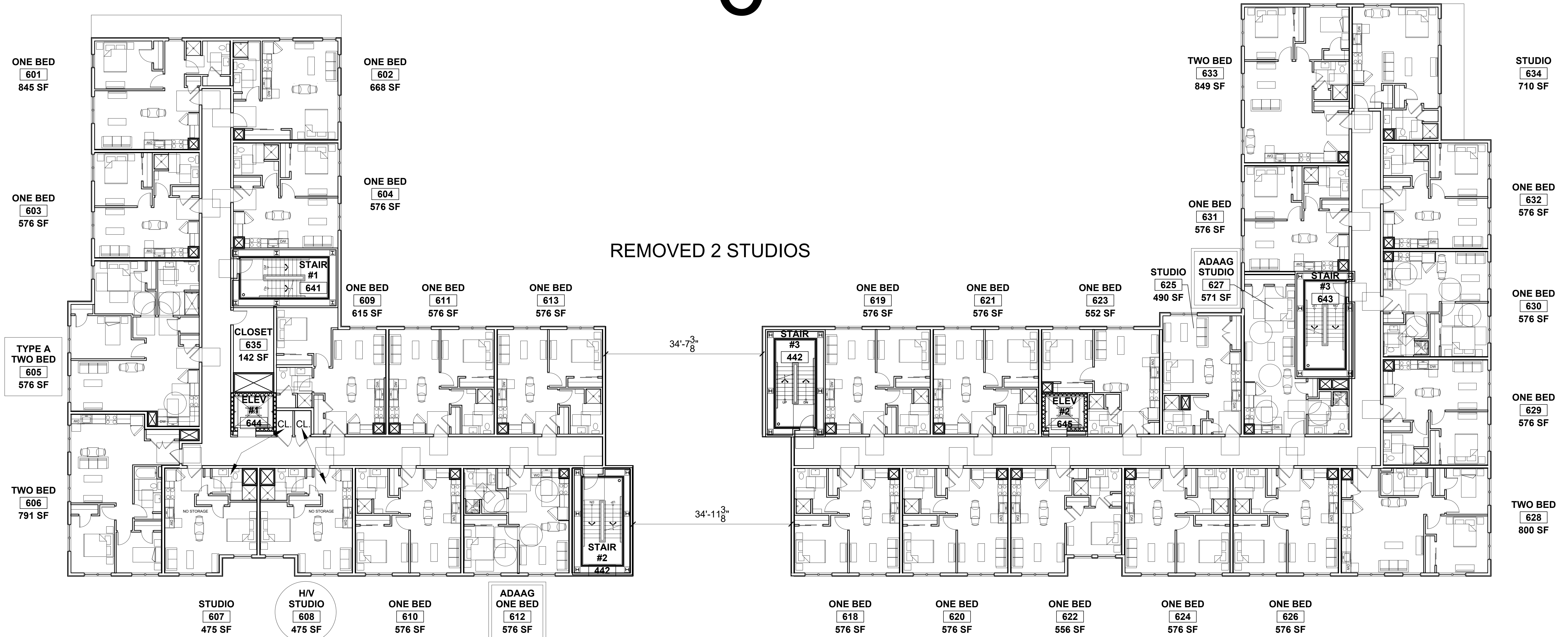
ELM STREET, PORTLAND, MAINE

JULY 19, 2023

2 STUDIOS
9 (1) BEDS
2 (2) BEDS

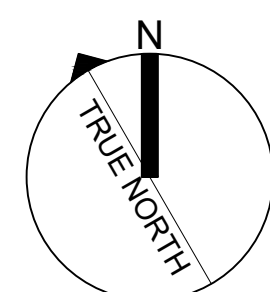
3 STUDIOS
12 (1) BEDS
2 (2) BEDS

6



BUILDING #1

BUILDING #2



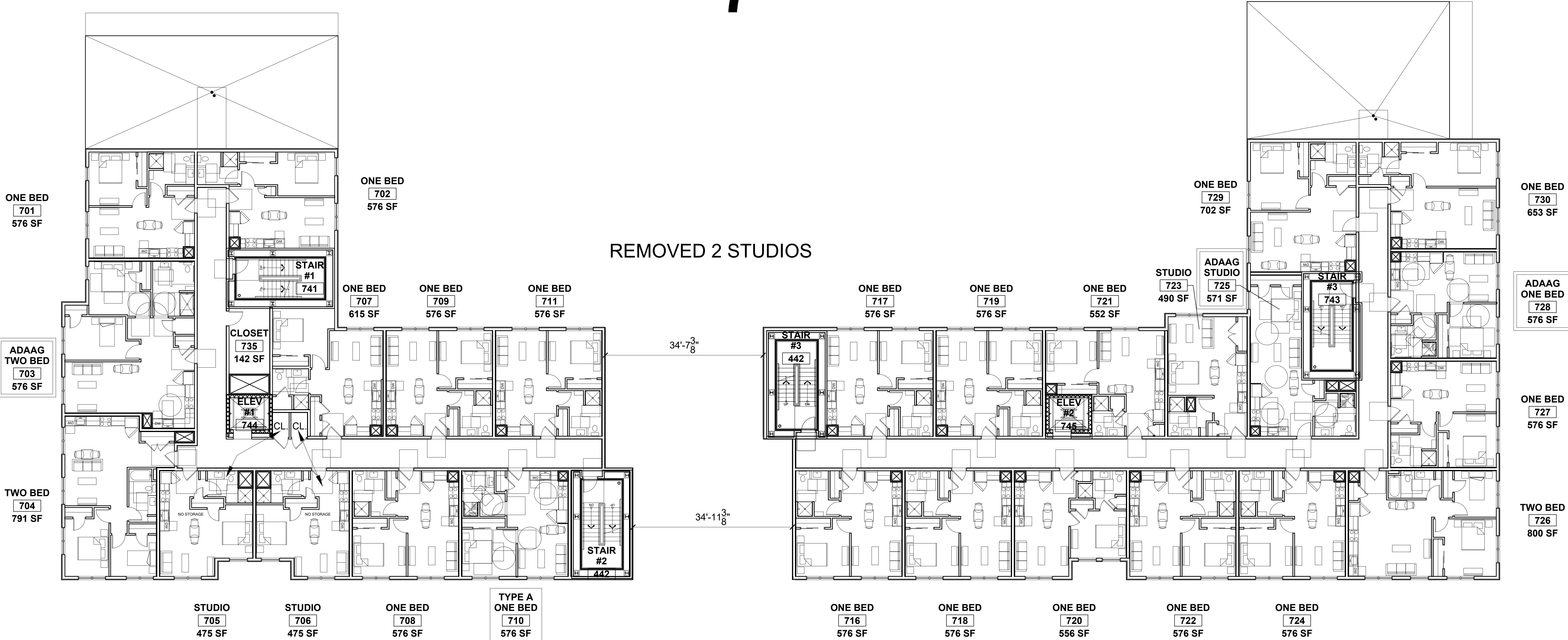
PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

2 STUDIOS
7 (1) BEDS
2 (2) BEDS

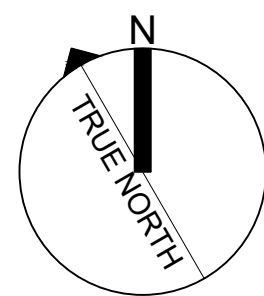
2 STUDIOS
12 (1) BEDS
1 (2) BEDS

7



BUILDING #1

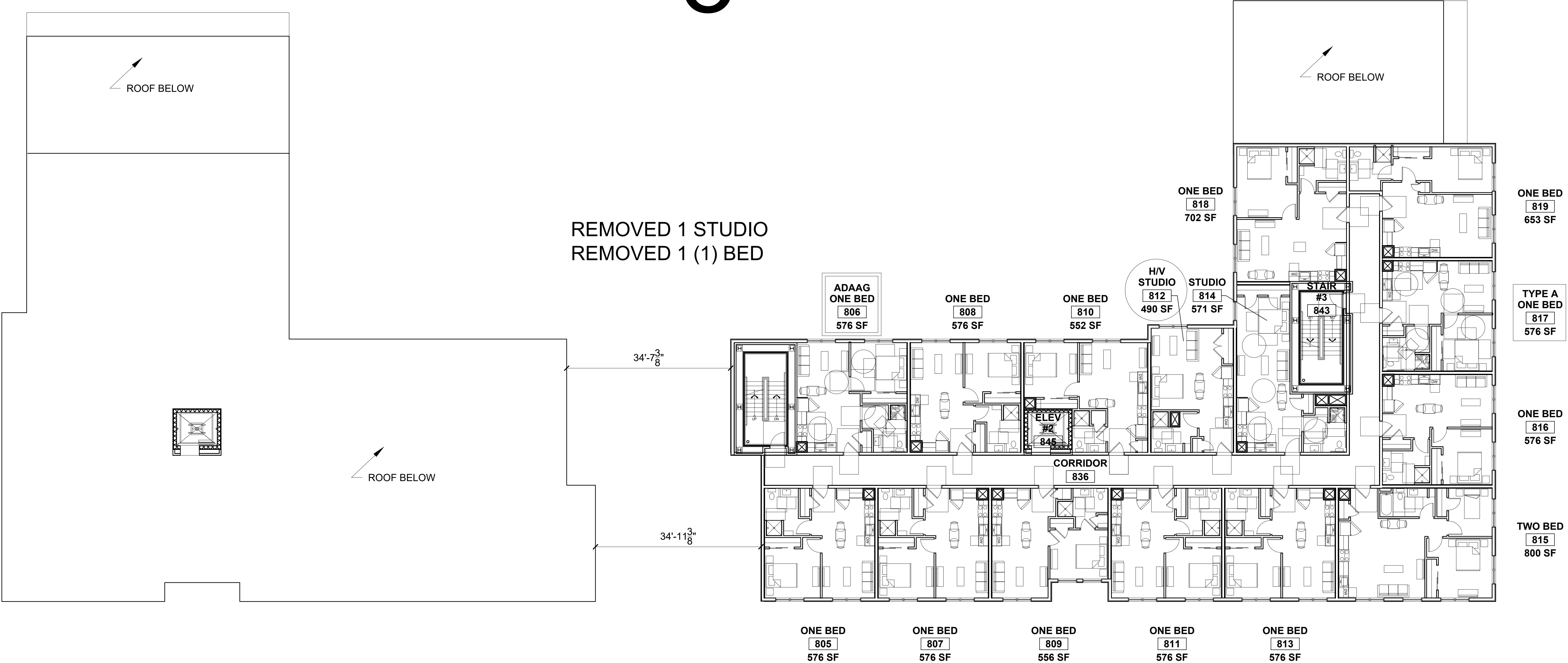
BUILDING #2



PROGRESS PRINT ONLY
Not for Construction

8

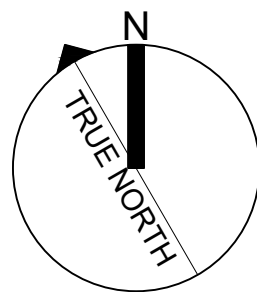
2 STUDIOS
12 (1) BEDS
1 (2) BEDS



BUILDING #1

REMOVED 2 (1) BEDS

BUILDING #2



PROGRESS PRINT ONLY
Not for Construction

Re:89 Elm Street proposal 0 views

 Subscribe ☐


Kristina Minister <krisminister@me.com>

May 1, 2023, 1:54:02 PM (19 hours ago)



to planningboard@portlandmaine.gov

To the Planning Board:

The proposal by Acorn Engineering to construct an eight story mixed-use building with 201 affordable dwelling units at 89 Elm Street is not acceptable. I urge the Planning Board not to approve Acorn's proposal.

Qualifying for governmental programs for affordable housing construction benefits the developers and the builders; economic dwelling segregation negatively impacts the residents of affordable housing and the city of Portland.

Children of the families in segregated low income housing will attend the same schools, skewing the school population to low income students. Numerous studies show that economically mixed school populations favor upward mobility for the economically disadvantaged young.

Perpetuating low income imposes huge costs to government and health care systems, which, in turn, raises taxes. Employers' need for well educated workers remains unfulfilled.

In short, an economically mixed school population benefits the entire population.

I urge the Planning Board to require that all the proposed buildings in Bayside be designed for economically diverse dwellers.

Thank you for considering my plea.

Kristina Minister
75 Chestnut Street, #708
Portland, ME 04101

Kristina Minister, Ph.D.
75 Chestnut St. Unit 708
Portland, ME 04101
[207-415-8274](tel:2074158274)

Public Comment - 89 Elm Street: Portion of Building in R-6 Zone Not Allowed External Inbox

**George Rheault**

to Planning, Christine, Abigail, me

Why is the Planning Board ignoring the plain language of Section 14.3.2(A) and allowing the two ends of 89 Elm Street's "horsesh NOT" language below) by our Land Use Code?

No part of a Master Development Plan can intrude into a R-6 zone. Full stop.

But the Planning Board doesn't seem to care about the rules with respect to this application from Port Properties.

It would be great to see how the practicing attorneys on the Planning Board (David Silk & Brandon Mazer) rationalize this. This w the terms of our Land Use Code acceptable in West Bayside?

14.3.2 Master development plan

- A.** An applicant may elect to submit a master development plan application for a large, multi-phase development program consisting of multiple buildings and site improvements on a site of one acre or more of total land area which is designed as a cohesive and integrated whole. The master development plan option shall not apply in residential zones, except for institutional, multi-family, congregate care, and intermediate, extended, and long-term care uses in the R-5a and R-6a zones.

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.

- CIVIL SITE NOTES:

3. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO ACORN TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP, ERECTION, AND CONSTRUCTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR ACORN'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY ACORN OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. PRIOR TO BACKFILLING, CONCRETE SHALL BE CURED PER STRUCTURAL ENGINEER'S SPECIFICATIONS.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE, IF APPLICABLE.
12. ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
13. ACORN BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND SITE OBSERVATION VISITS DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.
14. EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBPART P OF 29 CRF PART 1926.650--652 (CONSTRUCTION STANDARD FOR EXCAVATIONS).
15. ALL TRENCH PAVEMENT REPAIR SHALL BE COMPLETED WITH THE USE OF A STREET PAYER WITH A SCREED WIDTH CAPABLE OF SPANNING THE FULL WIDTH OF THE TRENCH UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ALL SITE DRAINAGE-RELATED WORK SHALL BE REVIEWED BY ACORN ENGINEERING.
3. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL

1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS; ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.

2. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS FOR PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
3. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A LICENSED PROFESSIONAL LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED STRUCTURE CORNERS.
6. CONTRACTOR TO ENSURE THAT ACCESS, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVEWAYS, AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND AVAILABLE FOR USE AT ALL TIMES.

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF MAJOR SITE PLAN – FROM THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.
3. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A STREET OPENING PERMIT FROM THE CITY OF PORTLAND. ADDITIONALLY, COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS.

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM (MEETS THE REQUIREMENTS WITHIN SECTION 615 OF THE MDOT STANDARD SPECIFICATIONS, MOST RECENT VERSION AND IS FREE OF TRACEABLE AMOUNTS OF CONTAMINANTS) SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY STRIPPED TOPSOIL WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.

2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. DEWATERING SHALL INCLUDE TREATMENT OF SILT THROUGH THE USE OF A DIRTBAG BY ACF ENVIRONMENTAL OR APPROVED EQUIVALENT. FLOWS FROM DEWATERING ACTIVITIES SHALL NOT BE DISCHARGED INTO SANITARY SEWERS. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE ADJACENT LAND OWNERS. PRIOR TO THE CONTRACTOR PRICING THE WORK, THEY SHALL PROVIDE ACORN WITH PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE, THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES WHERE NOT NOTED ON THE GRADING PLAN. SLOPES IDENTIFIED ON THE GRADING PLAN TAKE PRECEDENT. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. CONTRACTOR TO REVIEW EXISTING SOIL CONDITIONS, TEST PITS, AND BORINGS. THERE WILL BE NO ADDITIONAL PAYMENT FOR UNSUITABLE SOILS.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF $N=0.012$ OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, CONTACT ACORN. THE DISTURBED AREA SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER.
10. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER, IF APPLICABLE.

1. DISTURBED AREAS ARE DEFINED AS THOSE SURFACES WHERE EXISTING VEGETATION OR STRUCTURES HAVE BEEN REMOVED, EXPOSING NATIVE SOIL TO THE ELEMENTS.
2. ALL ROUTINE WORK ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.

3. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
4. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
5. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
6. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
7. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.

- CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES, PRIOR TO THE ORDERING OF STRUCTURES.
3. ALL NEW SANITARY MANHOLES SHALL BE VACUUM TESTED AND SHOWN TO PASS PRIOR TO BACKFILLING. TESTING SHALL BE COMPLETED IN ACCORDANCE WITH TECHNICAL REPORT #16 (TR-16): GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS, PREPARED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.
4. SEWER MANHOLES SHALL BE 4' ID UNLESS OTHERWISE STATED ON THE PLANS.
5. CONTRACTOR TO PROVIDE 5.5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
6. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN WITHIN THE PLAN SET.
7. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT DOCUMENT "WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURE", MOST RECENT REVISION.
8. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
9. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
10. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
12. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY PLUMBING, ELECTRICAL, AND MECHANICAL DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
13. COORDINATE EXIT POINT FOR SECONDARY UTILITY SERVICES WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN WITHIN THE UTILITY PLAN.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.
15. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
16. ALL UTILITY PIPES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS OR SAGS IN THE PIPING WILL BE PERMITTED. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED PIPE LINES SHALL BE SUITABLY RESTRAINED WITH THRUST BLOCKS OR RETAINER GLANDS. RETAINER GLANDS ALLOWED FOR DUCTILE IRON PIPE ONLY. PROVIDE ALL BENDS, HORIZONTAL AND VERTICAL, AS REQUIRED TO MEET THE GRADES AND ALIGNMENTS INDICATED ON THE DRAWINGS.
17. ALL WASTEWATER PIPING, EXCLUDING BUILDING DRAINS, AND ALL PRESSURIZED PIPING, TO INCLUDE WATER MAINS, INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE.
18. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS AND ADDITIONAL PIPE AS REQUIRED TO ENSURE A COMPLETE AND PROPERLY FUNCTIONING CONNECTION. CONTRACTOR TO VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. ADAPTERS AND FITTINGS ARE INCIDENTAL TO THE PIPE INSTALLATION.
19. WHENEVER POSSIBLE, WATER LINES SHOULD BE INSTALLED OVER WASTEWATER LINES. A MINIMUM SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER LINE SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A WATER LINE CROSSES UNDER THE WASTEWATER LINE, A FULL LENGTH OF WASTEWATER PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE.
20. THE CONTRACTOR SHALL BE ANTICIPATE THAT THE NATIVE SILT AND CLAY SOILS WILL NOT BE SUITABLE FOR PIPE TRENCH BACKFILL IN PAVED AREAS.
21. GROUNDWATER SHALL BE CONTROLLED TO A LEVEL OF AT LEAST ONE FOOT BELOW SUBGRADE OF THE PIPE OR STRUCTURE. THE CONTRACTOR SHALL MAINTAIN THE LOWERED GROUNDWATER LEVEL UNTIL CONSTRUCTION HAS BEEN COMPLETED TO SUCH AN EXTENT THAT THE STRUCTURES OR PIPES WILL NOT BE FLOATED OR OTHERWISE DAMAGED.
22. EXCAVATION TO SUBRADE IN NATIVE SILT AND CLAY SHALL BE COMPLETED WITH A SMOOTH EDGE BUCKET TO MINIMIZE SUBGRADE DISTURBANCE.
23. ALL ADJUSTMENTS TO FINISHED GRADE ARE TO BE COMPLETED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONFIRM STRUCTURES THAT REQUIRE ADJUSTMENT WITH THE ENGINEER OR OWNERS REPRESENTATIVE PRIOR TO ADJUSTING FRAMES.

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY BE ON SITE:

- ROCK AND CONCRETE FOUNDATIONS
- CONCRETE SLABS, PADS AND BLOCKS
- BITUMINOUS ASPHALT PAVEMENT
- GRANITE, CONCRETE, AND BITUMINOUS CURBING
- CONCRETE AND BLOCK RETAINING WALLS
- GUARDRAILS, FENCE POSTS AND FENCING
- UNDERGROUND AND OVERHEAD UTILITY LINES
- LIGHT POLES AND BASES
- ABOVE AND OR BELOW GROUND FUEL OIL AND PROPANE GAS TANKS
- STORM DRAIN PIPES AND APPURTENANCE STRUCTURES
- OTHER TRASH & MISCELLANEOUS SOLID WASTES

2. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
4. CONTRACTOR TO REFER TO ENVIRONMENTAL REPORTS AND EMPMP PREPARED BY TRC

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE (IF APPLICABLE), ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN .DWG FORMAT AND PAPER, STAMPED "AS-BUILT". IF AUTOCAD CAPABILITY IS NOT AVAILABLE, EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED TOPTOGRAPHIC SURVEY BAYSIDE PARCELS LANCASTER, PREBEL, ELM, CEDAR, CHESTNUT AND OXFORD STREETS, PORTLAND, MAINE BY OWEN HASKELL, INC, DATED 12/8/22.
8. SUBSURFACE DATA HAVE BEEN OBTAINED BY **SUMMIT GEOENGINEERING SERVICES, INC.** AND SHALL BE INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ALSO REVIEW THE REPORT PRIOR TO SUBMITTING A BID.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
10. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
11. NO HOLES, TRENCHES, OR STRUCTURES SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT IN ANY AREA ACCESSIBLE TO THE PUBLIC OR WITHIN THE PUBLIC RIGHT-OF-WAY.
12. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. **THIS SHALL BE COMPLETED AT A MINIMUM FOR STRUCTURES IMMEDIATELY ABUTTING THE SITE.** A COPY OF THE SURVEY SHOULD BE PROVIDED TO THE OWNER. DOCUMENT WITH PICTURES AT A MINIMUM.
13. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH THE ENGINEER, ACORN ENGINEERING INC. (ACORN), IF ANY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL TREES AND SHRUBS ON THE PROJECT WHICH ARE NOT TO BE REMOVED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY TRENCH PAVEMENT THAT HAS EXPERIENCED EXCESSIVE SETTLEMENT, CRACKING, OR OPENING OF JOINTS. REPAIRS MAY INCLUDE OVERLAY. REMOVAL OF WORK MAY BE NECESSARY AFTER THE FINAL ACCEPTANCE OF WORK OR PRIOR TO THE END OF THE WARRANTY PERIOD. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO ACORN TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP, ERECTION, AND CONSTRUCTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR ACORN'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY ACORN OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. PRIOR TO BACKFILLING, CONCRETE SHALL BE CURED PER STRUCTURAL ENGINEER'S SPECIFICATIONS.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE, IF APPLICABLE.
12. ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
13. ACORN BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND SITE OBSERVATION VISITS DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.
14. EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBPART P OF 29 CRF PART 1926.650-.652 (CONSTRUCTION STANDARD FOR EXCAVATIONS).
15. ALL TRENCH PAVEMENT REPAIR SHALL BE COMPLETED WITH THE USE OF A STREET PAYER WITH A SCREED WIDTH CAPABLE OF SPANNING THE FULL WIDTH OF THE TRENCH UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

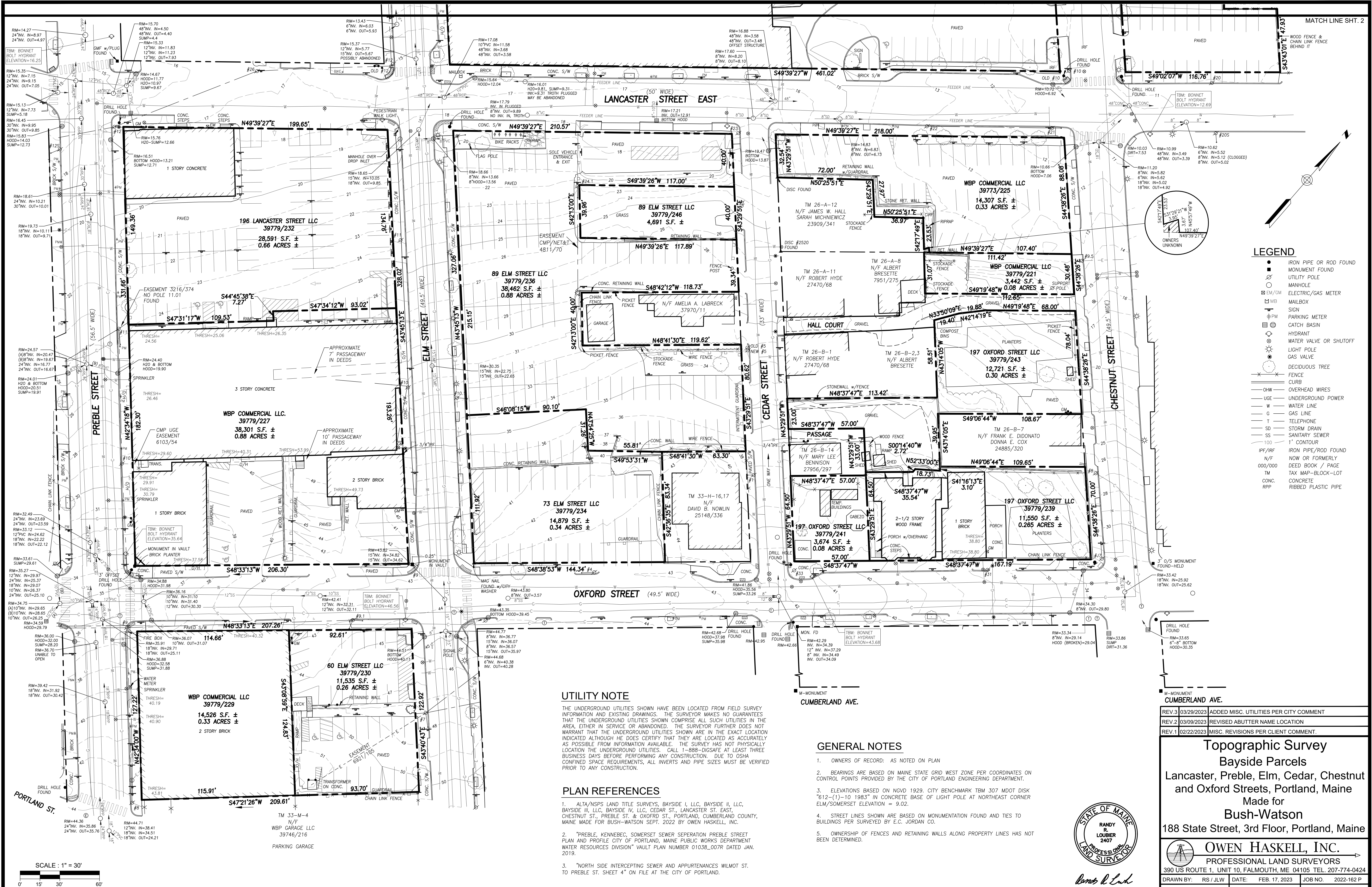
SPECIAL INSPECTION NOTES

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ALL SITE DRAINAGE-RELATED WORK SHALL BE REVIEWED BY ACORN ENGINEERING.
3. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

1. DISTURBED AREAS ARE DEFINED AS THOSE SURFACES WHERE EXISTING VEGETATION OR STRUCTURES HAVE BEEN REMOVED, EXPOSING NATIVE SOIL TO THE ELEMENTS.
2. ALL ROUTINE WORK ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
3. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
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5. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
6. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
7. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

5. UPON A FINDING OF ARCHAEOLOGICAL RESOURCES ON THE SITE, CONSULTATION WITH THE CITY OF PORTLAND'S HISTORIC PRESERVATION PROGRAM AND THE MAINE HISTORIC PRESERVATION COMMISSION IS REQUIRED TO DETERMINE APPROPRIATE NEXT STEPS.

[illegible]



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.

PLAN REFERENCES

1. ALTA/NSPS LAND TITLE SURVEYS, BAYSIDE I, LLC, BAYSIDE II, LLC, BAYSIDE III, LLC, BAYSIDE IV, LLC, CEDAR ST., LANCASTER ST. EAST, CHESTNUT ST., PREBLE ST. & OXFORD ST., PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR BUSH-WATSON SEPT. 2022 BY OWEN HASKELL, INC.

2. "PREBLE, KENNEBEC, SOMERSET SEWER SEPARATION PREBLE STREET PLAN AND PROFILE CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT WATER RESOURCES DIVISION" VULP PLAN NUMBER 01038_007R DATED JAN. 2019.

3. "NORTH SIDE INTERCEPTING SEWER AND APPURTENANCES WILMOT ST. TO PREBLE ST. SHEET 4" ON FILE AT THE CITY OF PORTLAND.

GENERAL NOTES

1. OWNERS OF RECORD: AS NOTED ON PLAN

2. BEARINGS ARE BASED ON MAINE STATE GRID WEST ZONE PER COORDINATES ON CONTROL POINTS PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.

3. ELEVATIONS BASED ON NGVD 1929. CITY BENCHMARK TBM 307 MDT DISK "612-(1)-10 1983" IN CONCRETE BASE OF LIGHT POLE AT NORTHEAST CORNER ELM/SOMERSET ELEVATION = 9.02.

4. STREET LINES SHOWN ARE BASED ON MONUMENTATION FOUND AND TIES TO BUILDINGS PER SURVEYED BY E.C. JORDAN CO.

5. OWNERSHIP OF FENCES AND RETAINING WALLS ALONG PROPERTY LINES HAS NOT BEEN DETERMINED.

REV.3 03/29/2023 ADDED MISC. UTILITIES PER CITY COMMENT

REV.2 03/09/2023 REVISED ABUTTER NAME LOCATION

REV.1 02/22/2023 MISC. REVISIONS PER CLIENT COMMENT.

Topographic Survey

Bayside Parcels

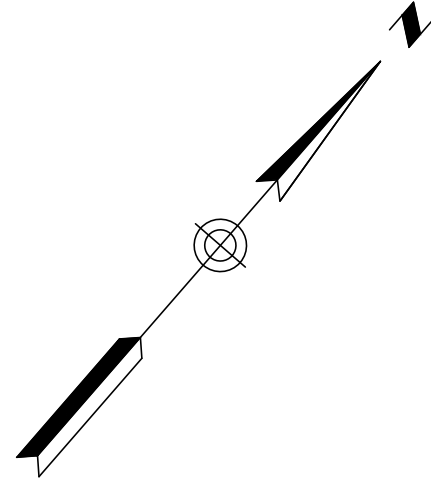
Lancaster, Preble, Elm, Cedar, Chestnut and Oxford Streets, Portland, Maine

Made for

Bush-Watson

188 State Street, 3rd Floor, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424
DRAWN BY: RS/JRL DATE: FEB. 17, 2023 JOB NO. 2022-162 P
CHECKED BY: JRL SCALE: 1" = 30' DRWG. NO. 1



- LEGEND
- IRON PIPE OR ROD FOUND

■

MONUMENT FOUND

○

UTILITY POLE

○

MANHOLE

⊗

ELECTRIC/GAS METER

⊗

MAILBOX

⊗

SIGN

⊗

PARKING METER

⊗

CATCH BASIN

⊗

HYDRANT

⊗

WATER VALVE OR SHUTOFF

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LIGHT POLE

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GAS VALVE

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DECIDUOUS TREE

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OVERHEAD WIRES

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UNDERGROUND POWER

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TELEPHONE

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STORM DRAIN

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SANITARY SEWER

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1" CONTOUR

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IRON PIPE/ROD FOUND

—

NOW OR FORMERLY

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DEED BOOK / PAGE

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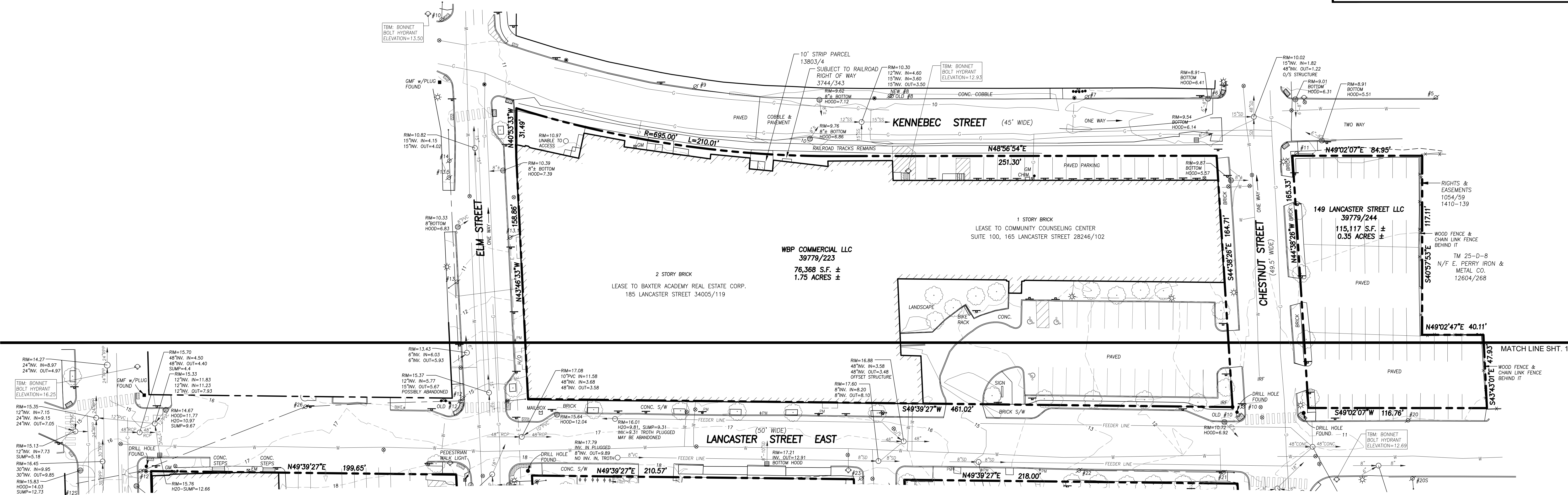
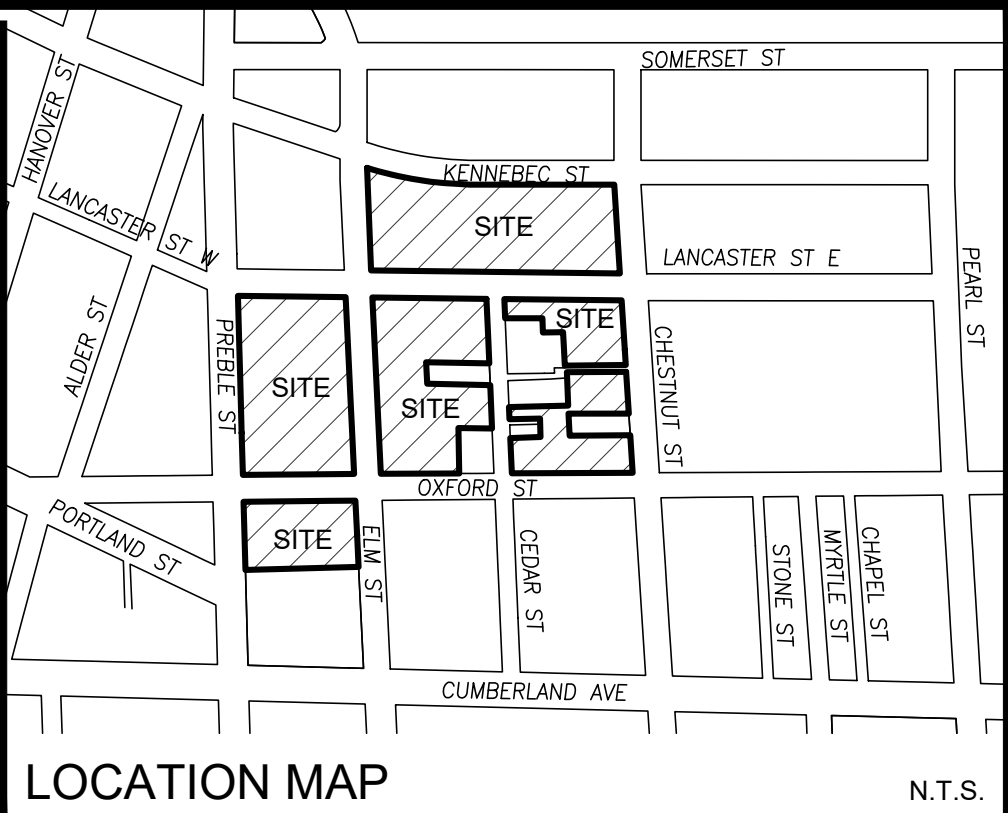
TAX MAP—BLOCK—LOT

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CONC.

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CONCRETE THRESHOLD



UTILITY NOTE

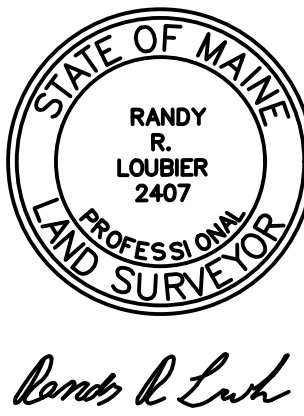
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REV.2 03/09/2023 REVISED ABUTTER NAME LOCATION

REV.1 02/22/2023 MISC. REVISIONS PER CLIENT COMMENT.

Topographic Survey

Bayside Parcels

Lancaster, Preble, Elm, Cedar, Chestnut and Oxford Streets, Portland, Maine

Made for

Bush-Watson

188 State Street, 3rd Floor, 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

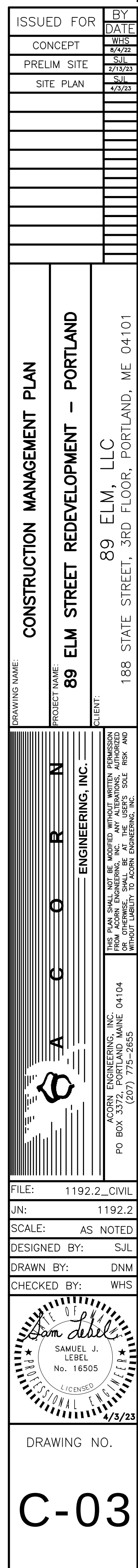
DATE: FEB. 17, 2023

CHECKED BY: RRL

SCALE: 1" = 30'

JOB NO. 2022-162 P

DRWG. NO. 2



SPACE AND BULK STANDARDS		
ZONING DISTRICT: R6	REQUIRED	PROPOSED
MINIMUM LOT AREA	2,000 SF	7,185 SF ¹
MINIMUM LOT AREA PER DWELLING UNIT	725 SF	1,960 SF
MINIMUM STREET FRONTAGE	20 FT	132 FT
MINIMUM FRONT YARD SETBACK (LANCASTER ST)	5 FT	14.40 FT
MINIMUM REAR YARD SETBACK (OXFORD ST)	10 FT	10.40 FT
MINIMUM SIDE YARD SETBACK	5 FT	11.50 FT
LOT WIDTH	20 FT	>20 FT
MAXIMUM BUILDING HEIGHT	45 FT	< 45'
STEPBACK	ADDITIONAL 5' SETBACK ABOVE 35'	ADDITIONAL 5' SETBACK ABOVE 35'

MAXIMUM LOT COVERAGE	60%	40%
MINIMUM LANDSCAPED OPEN SPACE RATIO	20%	38%

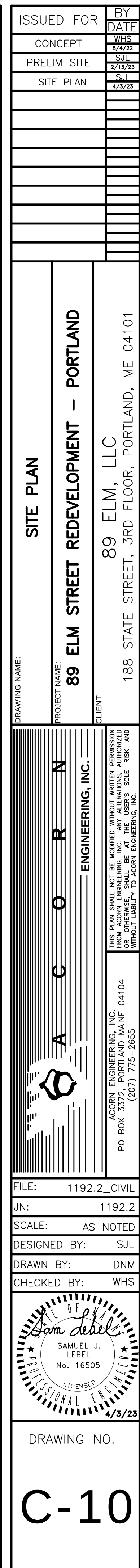
REFERENCES THE AMOUNT OF THE PARCEL THAT FALLS WITHIN
THE R-6 ZONING DISTRICT.

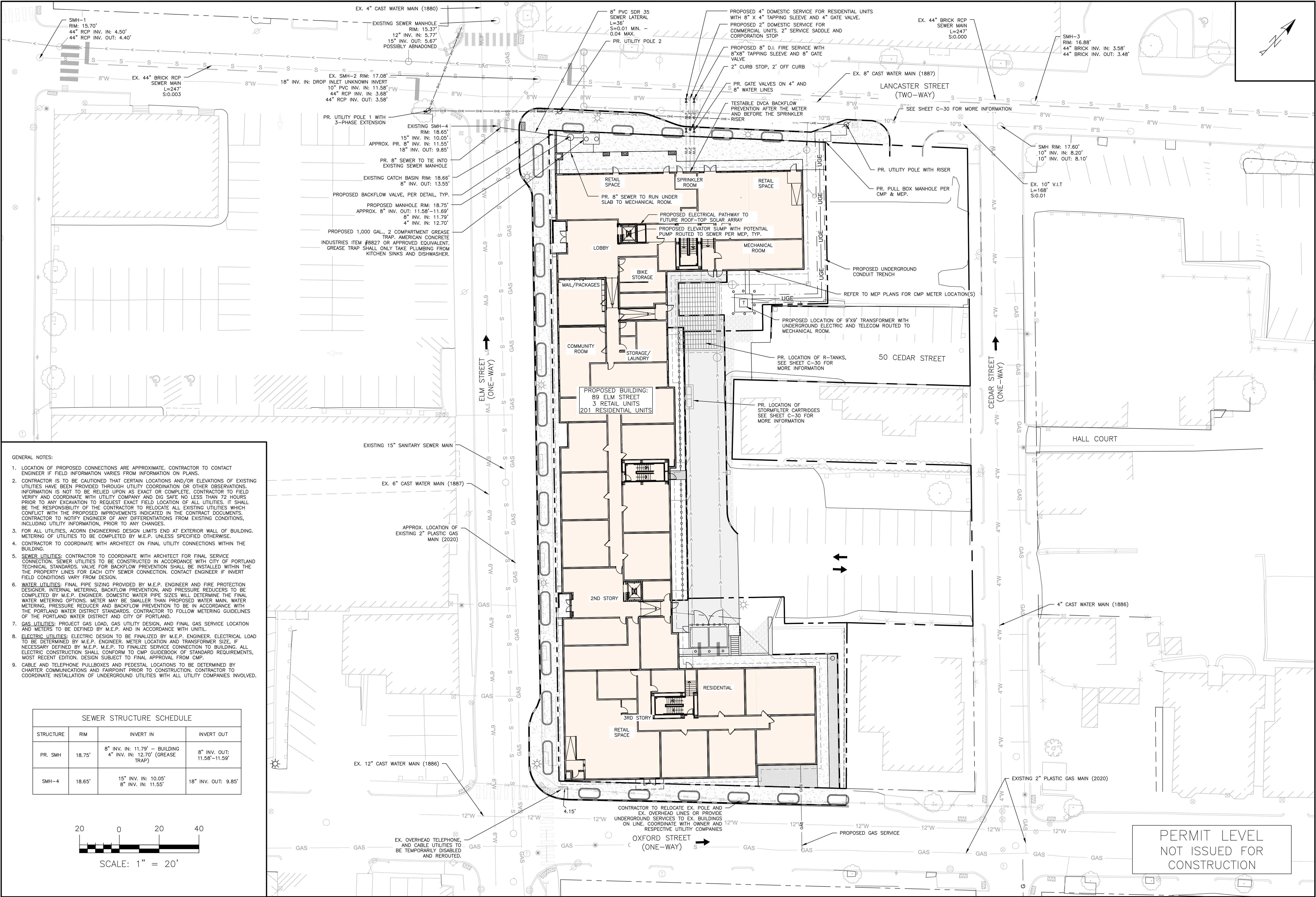
196 LANCASTER STREET LLC

39779/232

28,591 S.F. ±

0.66 ACRES ±





- 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 THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.
 6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
 7. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNIL.
 8. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
 9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.

SEWER STRUCTURE SCHEDULE			
STRUCTURE	RIM	INVERT IN	INVERT OUT
PR. SMH	18.75'	8" INV. IN: 11.79' - BUILDING 4" INV. IN: 12.70' (GREASE TRAP)	8" INV. OUT: 11.58'-11.59'
SMH-4	18.65'	15" INV. IN: 10.05' 8" INV. IN: 11.55'	18" INV. OUT: 9.85'



ISSUED FOR

BY

DATE

CONCERT

WHS

4/2/22

PRELIM SITE

SUL

2/23/23

SITE PLAN

4/5/23

UTILITY PLAN

PROJECT NAME

89 ELM STREET REDEVELOPMENT - PORTLAND

CLIENT

89 ELM, LLC

188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

ENGINEERING, INC.

PO BOX 3372, PORTLAND, MAINE 04104

(207) 755-2555

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED BY THE CLIENT, SHALL BE INDICATED BY A REVISION TABLE AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:

1192.2_CIVIL

JN:

1192.2

SCALE:

AS NOTED

DESIGNED BY:

SUL

DRAWN BY:

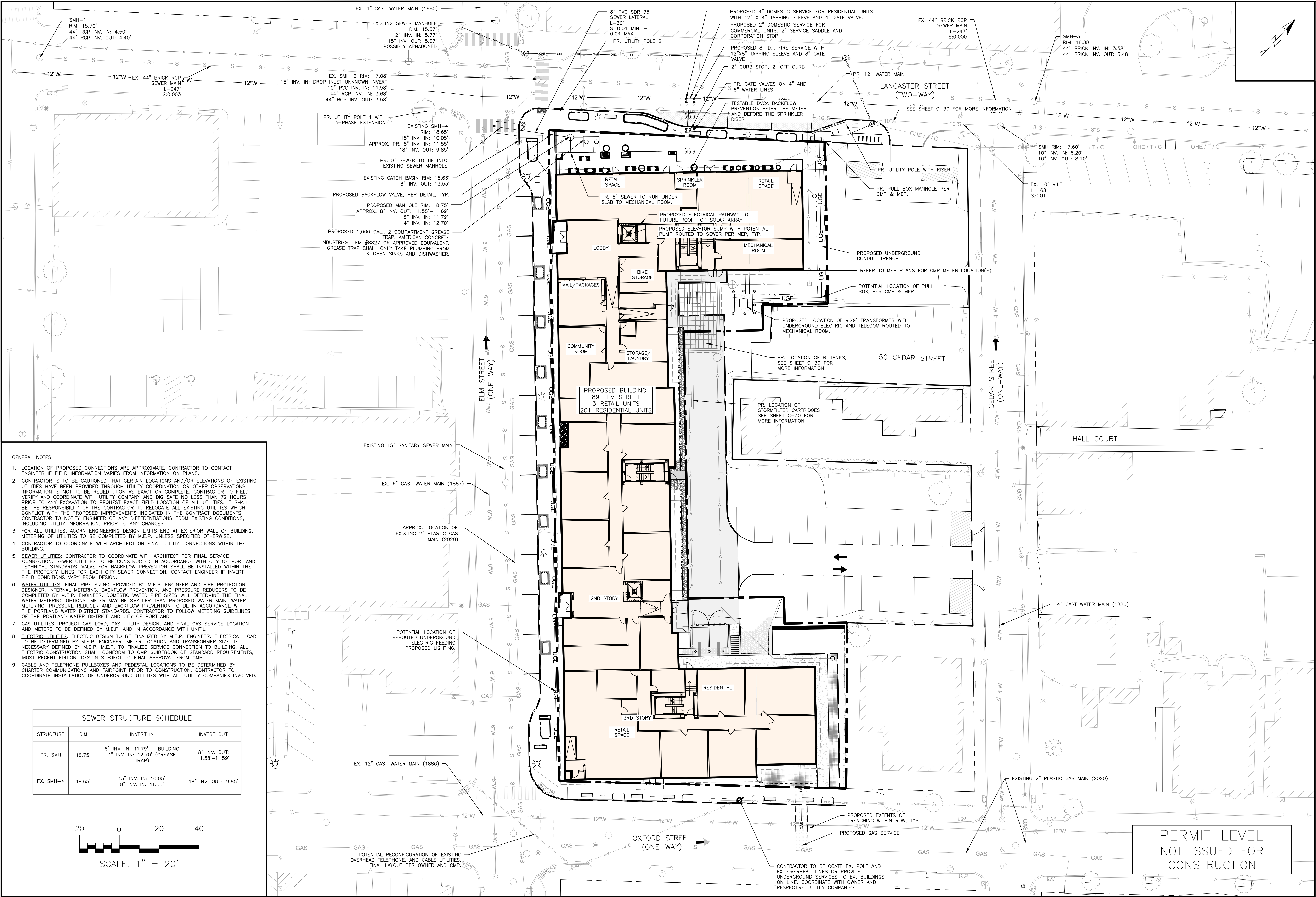
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CHECKED BY:

WHS

DRAWING NO.

C-20



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BY

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CONCERT

WHS

4/2/23

PRELIM SITE

SUL

2/23/23

SITE PLAN

SUL

4/3/23

COMMENT RESPONSE

SUL

6/19/23

UTILITY PLAN

PROJECT NAME

89 ELM STREET REDEVELOPMENT - PORTLAND

CLIENT

89 ELM, LLC

188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

ENGINEERING, INC.

PO BOX 3372, PORTLAND, MAINE 04104

(207) 755-2555

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FILE:

1192.2_CIVIL

JN:

1192.2

SCALE:

AS NOTED

DESIGNED BY:

SUL

DRAWN BY:

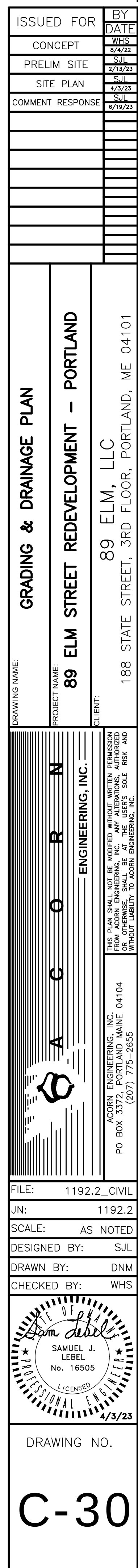
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WHS

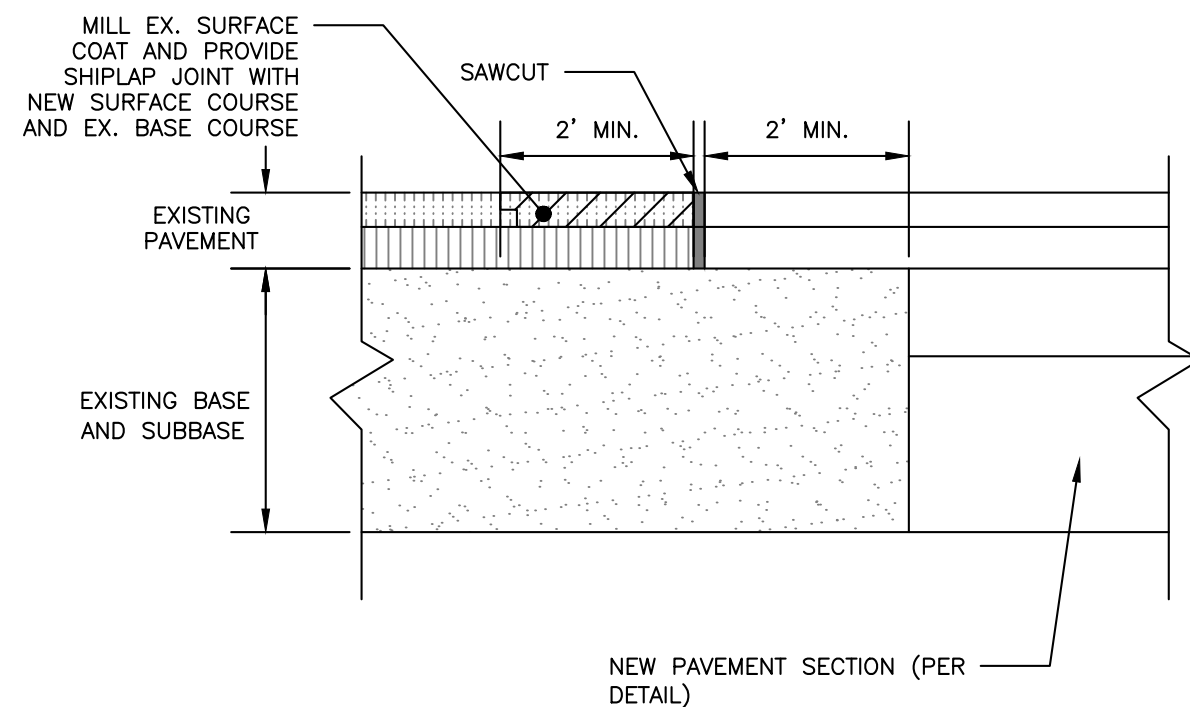
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C-20

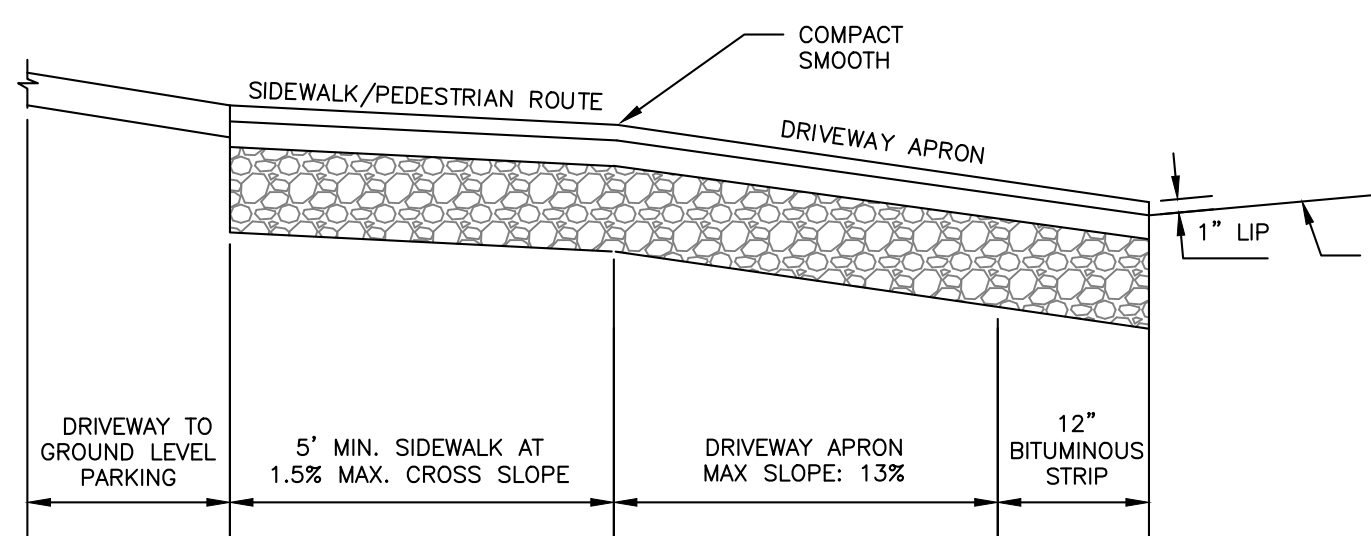


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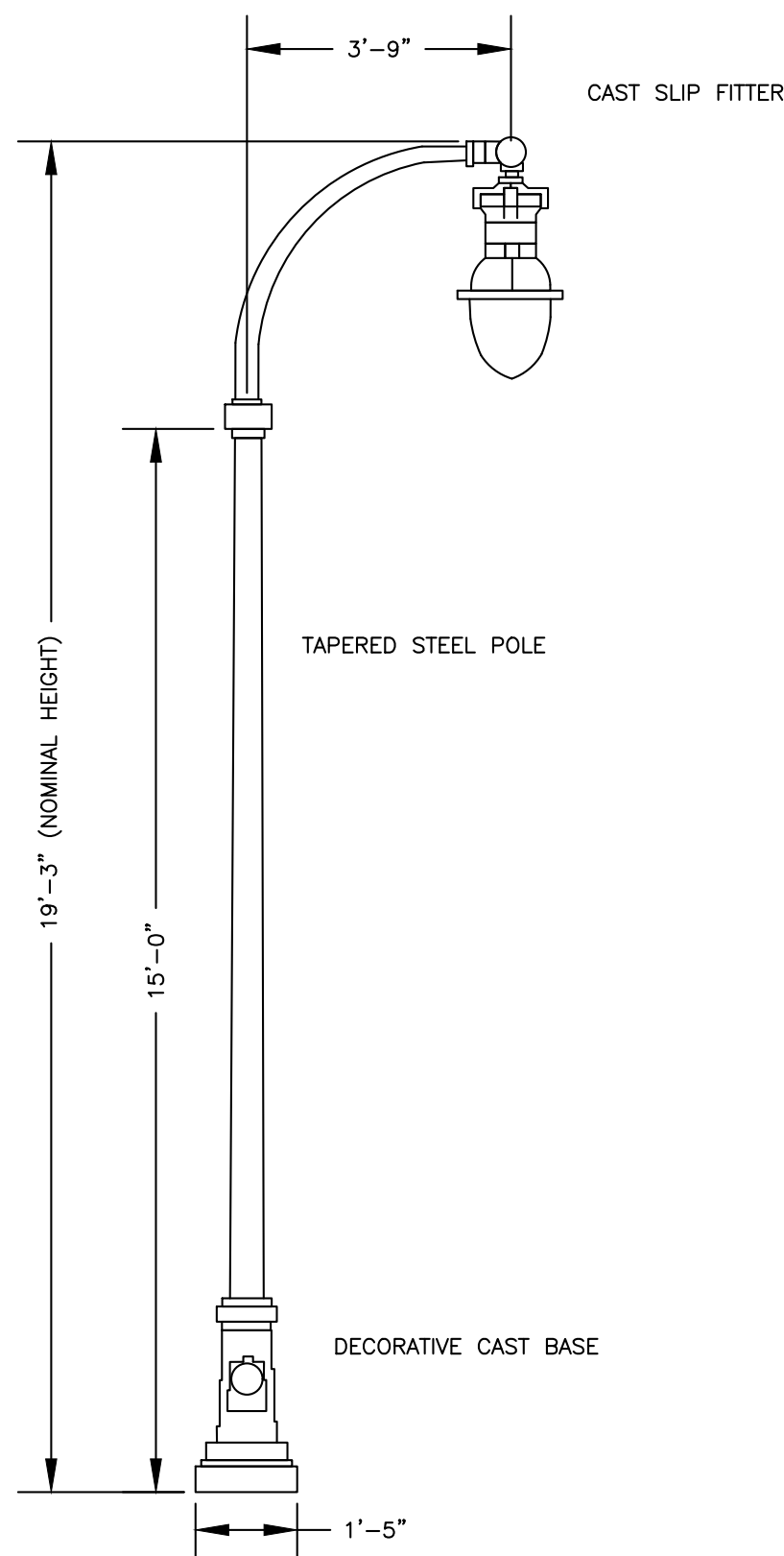
1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. CREATE UNIFORM AND RIGID BUTT JOINT AND APPLY BITUMINOUS TACK COAT AT AN APPLICATION RATE OF 0.10 TO 0.14 GALLONS PER SQUARE YARD PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.



PAVEMENT SAWCUT DETAIL
NOT TO SCALE



DRIVEWAY APRON SECTION
NOT TO SCALE



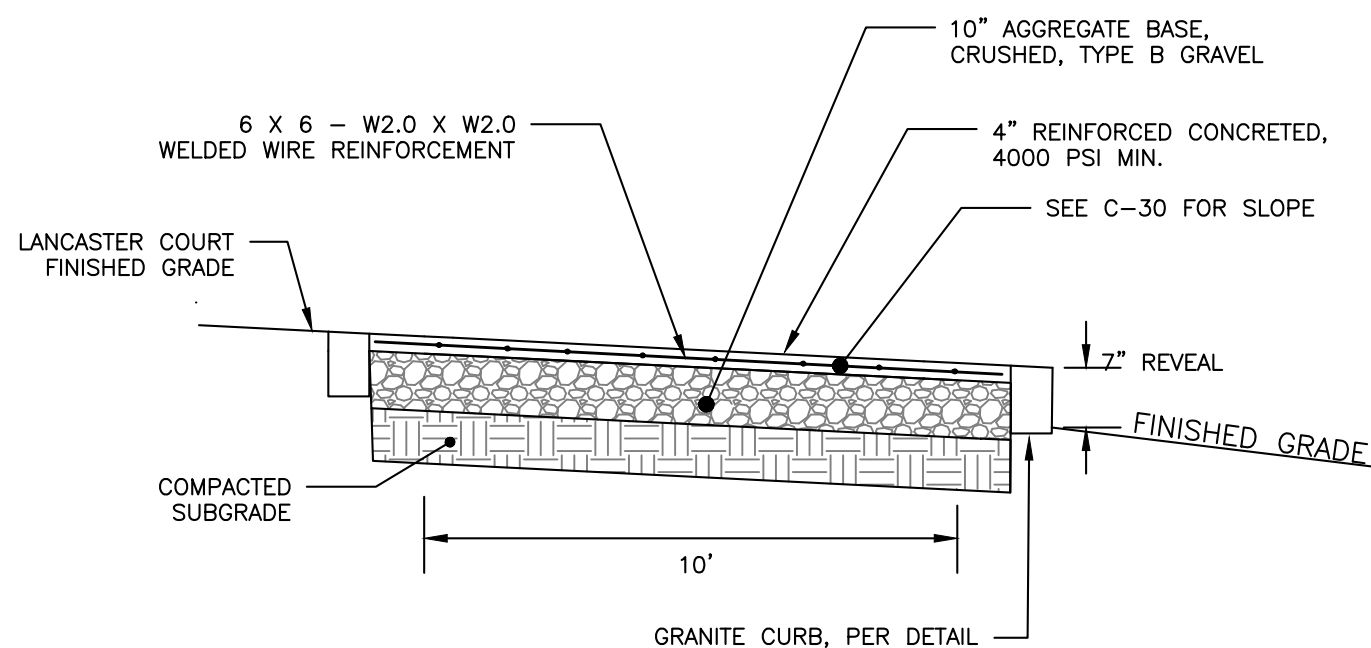
PENINSULA DECORATIVE LIGHTING
NOT TO SCALE

NOTE:

1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
2. CONTRACTOR TO VERIFY EXISTING GOOCH STREET BASE AND SUBBASE MATERIALS AND MATCH EXISTING.
3. PROJECT PROPOSES TO MILL EXISTING PAVEMENT AND INSTALL NEW BITUMINOUS PAVEMENT PER DETAIL. REFER TO APPLICABLE UTILITY CROSS SECTIONS FOR NEW UTILITY INSTALLATION.

THICKNESS OF LAYERS	
STANDARD	LAYERS
1.25"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
4"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B OR A
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

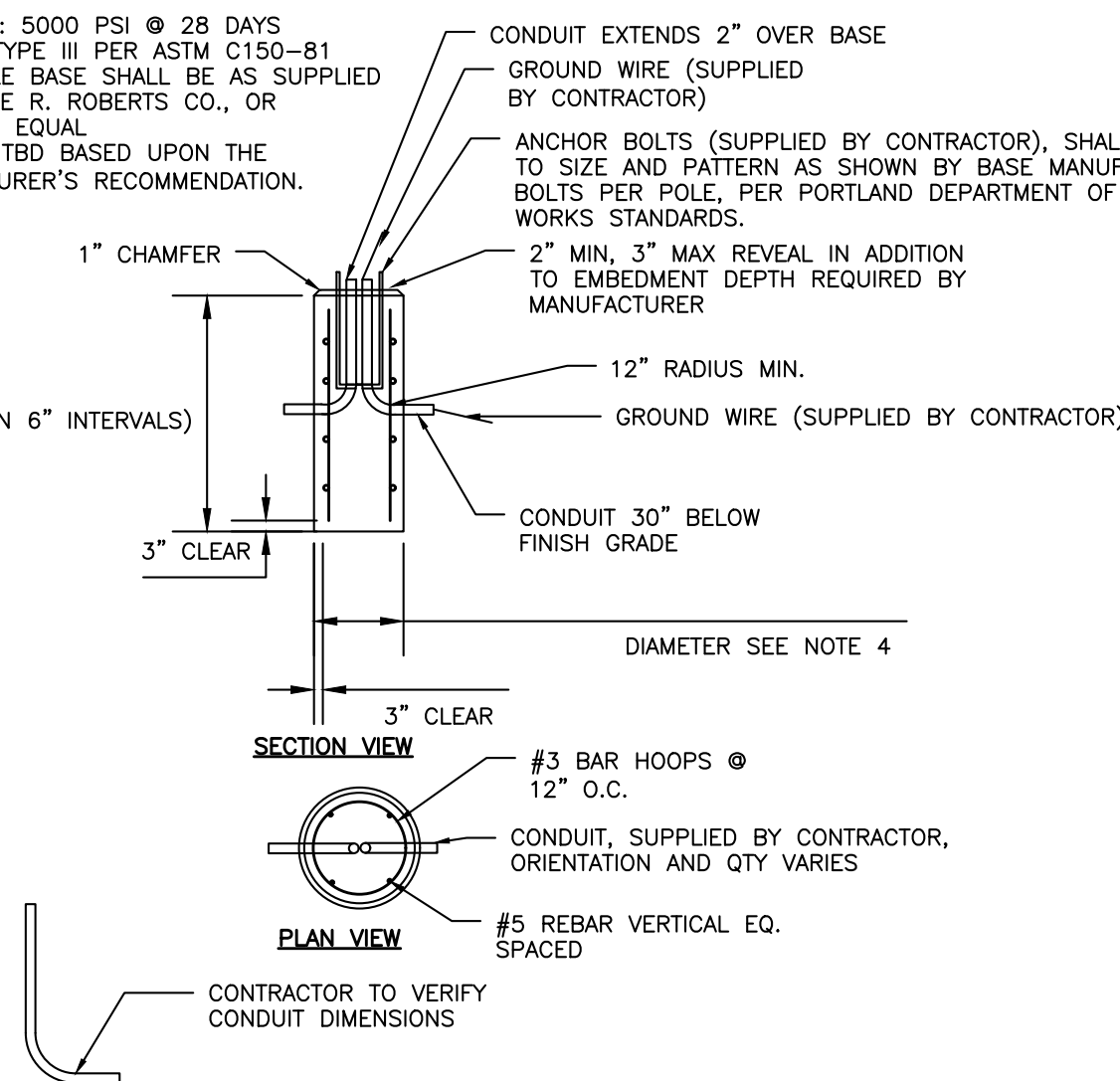
PAVEMENT PROFILE:
NOT TO SCALE



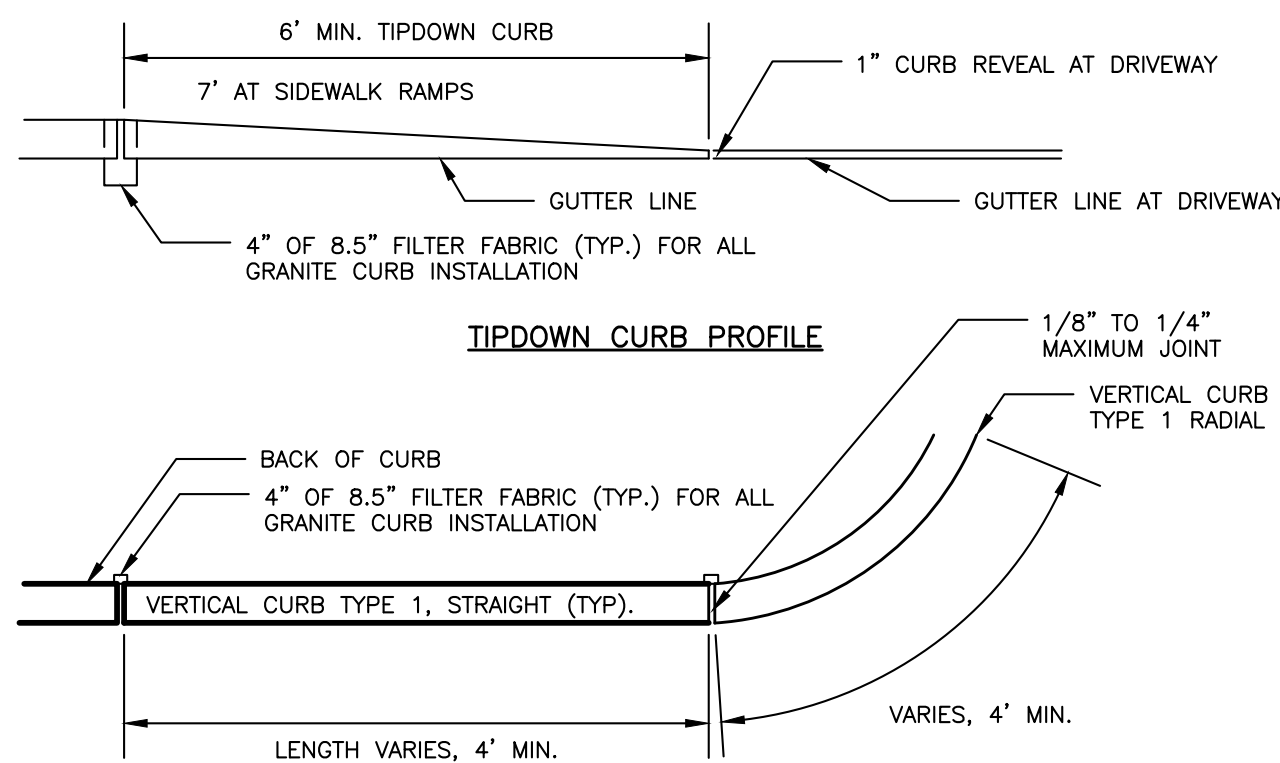
REINFORCED CONCRETE SIDEWALK
NOT TO SCALE

NOTES:

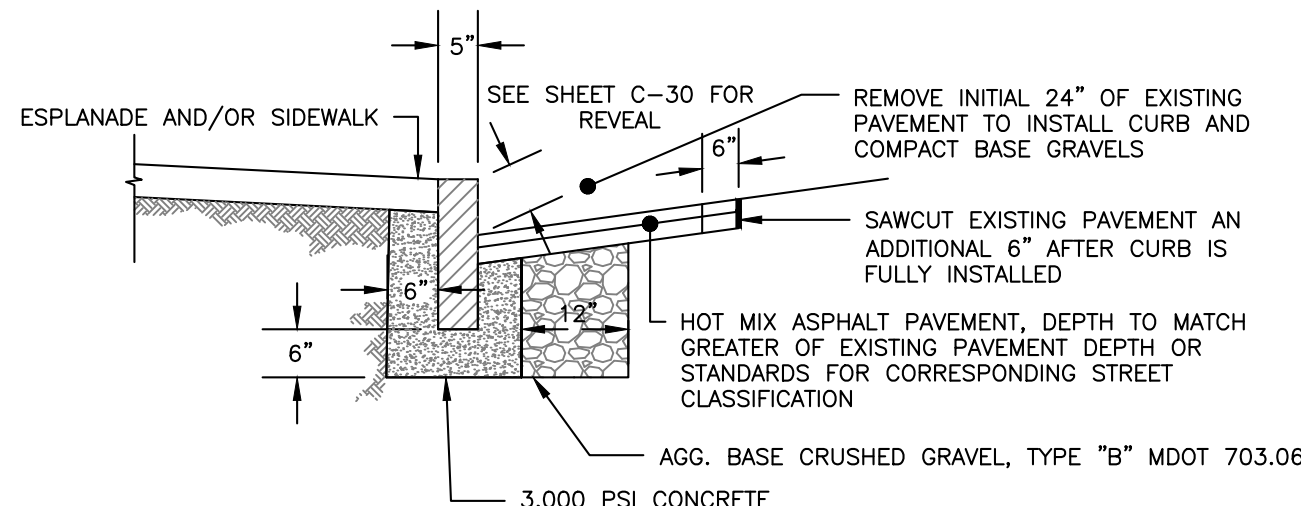
1. CONCRETE: 5000 PSI @ 28 DAYS
2. CEMENT: TYPE III PER ASTM C150-81
3. LIGHT POLE BASE SHALL BE AS SUPPLIED BY GEORGE R. ROBERTS CO., OR APPROVED EQUAL
4. DIAMETER TBD BASED UPON THE MANUFACTURER'S RECOMMENDATION.



LIGHT POLE BASE
NOT TO SCALE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

NOTES:

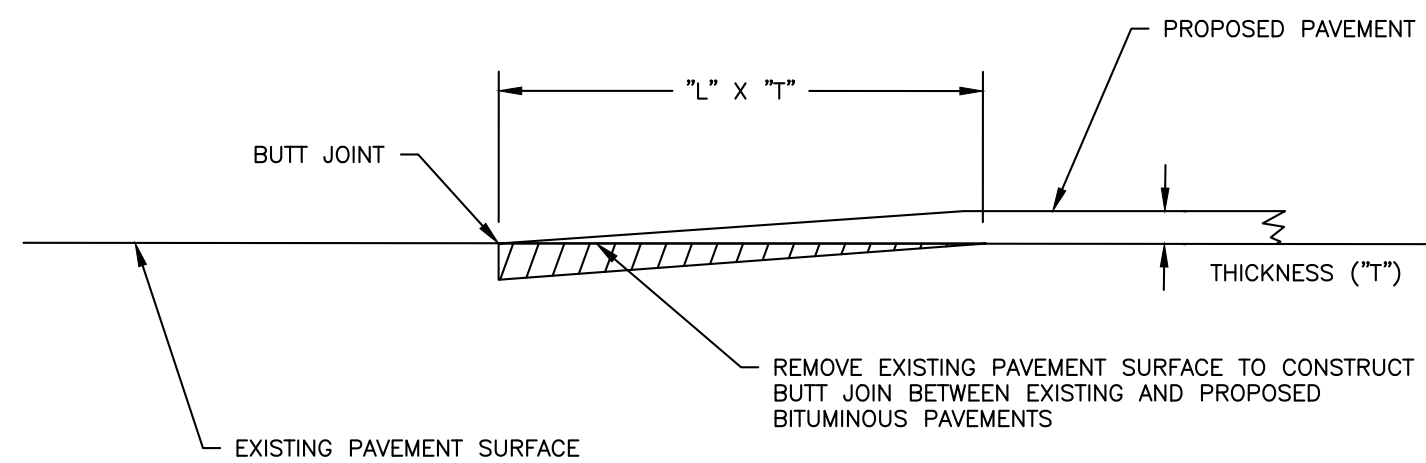
1. CURB SHALL BE RESET IN ACCORDANCE WITH MDOT 609.08 WITH THE EXCEPTION OF CURB SPACING TO BE INSTALLED PER DETAIL.
2. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
3. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10 INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF THE CURB.
4. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
5. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION
IN EXISTING STREETS DETAIL

NOT TO SCALE

NOTES:

1. THE LENGTHS ARE INTENDED FOR PROFILE GRADES OF 2% OR LESS. WHEN PROFILE GRADES ARE GREATER THAN 2% "L" MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WHEN DIRECTED BY THE RESIDENT.
2. WHEN CONSTRUCTING BUTT JOINTS AT INTERSECTIONS OR RAMP "L" SHALL BE 15"/INCH OF THICKNESS UNLESS OTHERWISE DIRECTED BY THE RESIDENT
3. SPECIAL ATTENTION SHALL BE PAID TO CURB SECTION TO ASSURE PROPER DRAINAGE AND THAT THERE ARE NO FLAT AREAS. "L" MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WHEN DIRECTED BY THE RESIDENT.



DESIGN OR POSTED SPEED (MILES/H): 65 55 50 45 40 35 30 25
"L" IN FEET/INCH OF THICKNESS: 65 55 50 45 40 35 30 25

SHIPLAP JOINT OVERLAY
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
CONCEPT	WHS
PRELIM SITE	SJL
SITE PLAN	SJL

SITE DETAILS - 1	PROJECT NAME:	CLIENT:
89 ELM STREET REDEVELOPMENT - PORTLAND	89 ELM, LLC	188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

ACORN ENGINEERING, INC.	ACORN ENGINEERING, INC.
1192.2_CIVIL	1192.2
AS NOTED	DESIGNED BY: SJL
DNM	DRAWN BY:
WHS	CHECKED BY:



DRAWING NO.
C-40

1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. CREATE UNIFORM AND RIGID BUTT JOINT AND APPLY BITUMINOUS TACK COAT AT AN APPLICATION RATE OF 0.10 TO 0.14 GALLONS PER SQUARE YARD PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.

MILL EX. SURFACE
COAT AND PROVIDE
SHIPLAP JOINT WITH
NEW SURFACE COURSE
AND EX. BASE COURSE

SAWCUT

2' MIN.

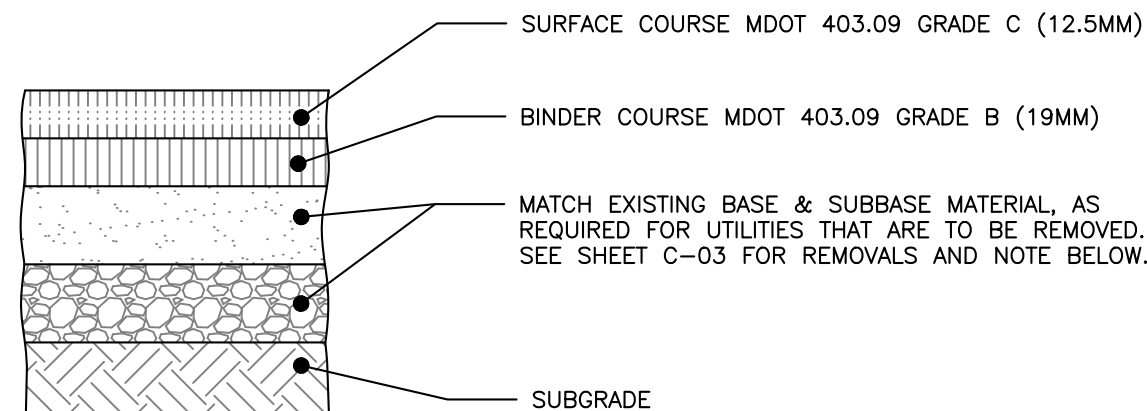
2' MIN.

EXISTING PAVEMENT

EXISTING BASE
AND SUBBASE

This diagram illustrates a cross-section of a concrete repair joint. It shows the 'EXISTING PAVEMENT' layer on top of the 'EXISTING BASE AND SUBBASE'. A 'SAWCUT' is made into the existing pavement, with a minimum width of 2 feet. The joint is prepared with a shiplap joint between the new surface course and the existing base course. The diagram also indicates a 2-foot minimum distance from the sawcut to the edge of the repair area.

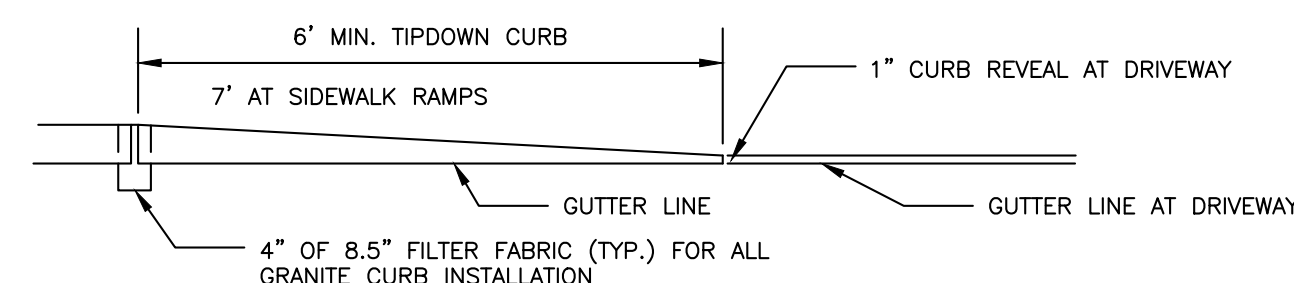
NEW PAVEMENT SECTION (PER —
DETAIL)



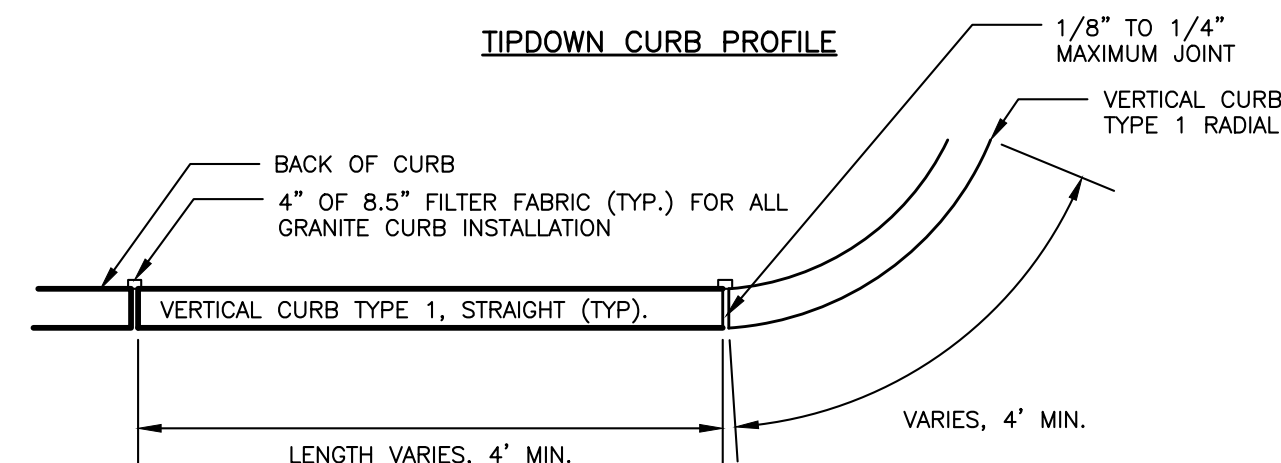
1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
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STANDARD	LAYERS
1.25"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
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4"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B OR A
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

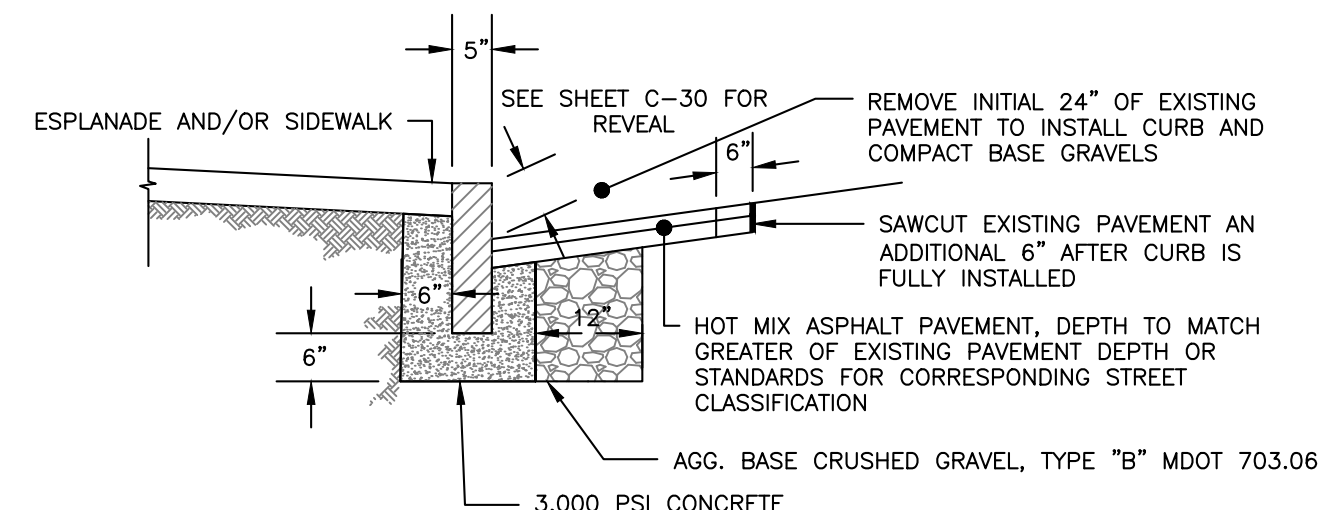
ATE SUBBASE GRAVEL



R FABRIC (TYP.) FOR ALL
STALLATION



TH VARIES, 4' MIN.



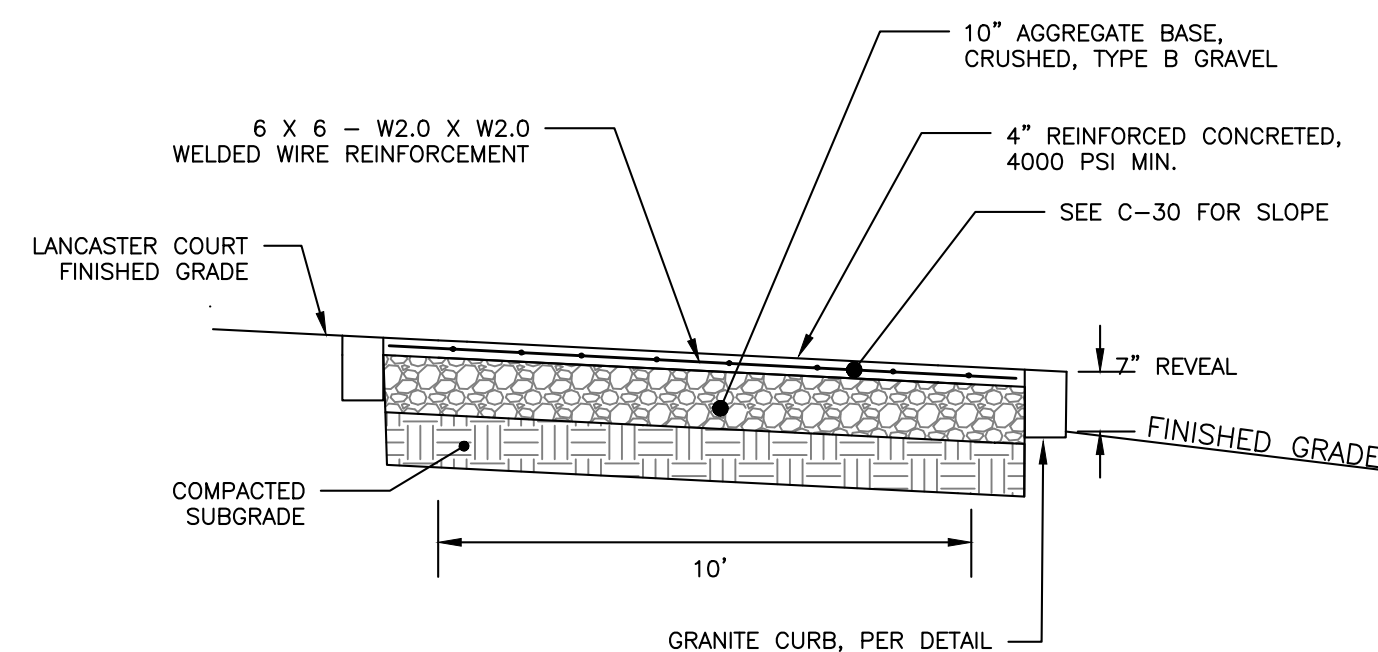
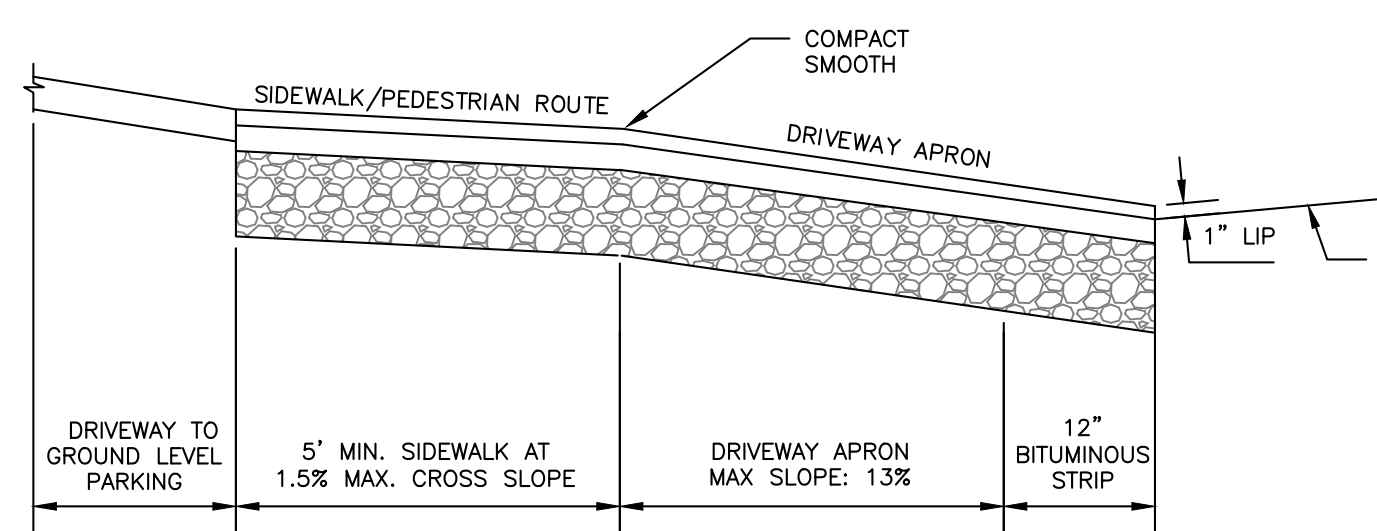
3,000 PSI CONCRETE

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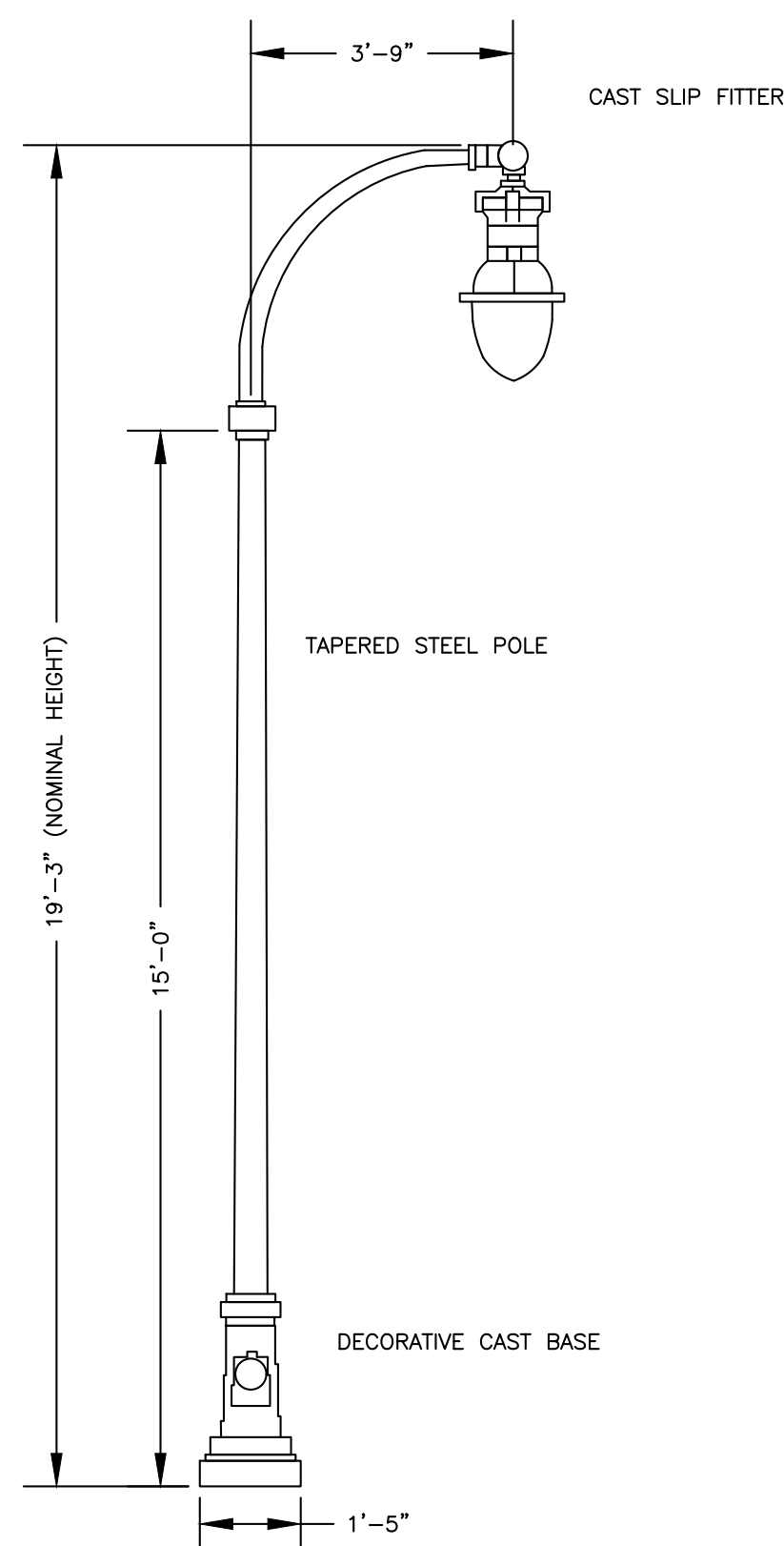
MAY BE USED TO

URB AND T
ING STREET

1. AT A MINIMUM, TESTING SHALL CONSIST OF ENTRAINED AIR AND SLUMP TESTS ON SITE PRIOR TO POURING THE SIDEWALKS. ENTRAINED AIR TESTS SHALL BE DONE IN ACCORDANCE WITH ASHTO 1152. TEST FIRST TWO LOADS AND THE THIRD LOAD THEREAFTER PROVIDED CONSISTENT RESULTS ARE ACHIEVED.
2. WELDED WIRE FABRIC SHALL BE PLACED 2 INCHES ABOVE THE CRUSHED GRAVEL, AND 2 INCHES FROM ALL FINISHED EDGES, EXPANSION JOINTS AND CURBS. ALL FABRIC JOINTS SHALL BE OVERLAPPED A MINIMUM OF 1 FOOT AND BE PROPERLY TIED. IF THE CONTRACTOR ELECTS TO USE REBAR, ONLY 4--GAUGE WILL BE ACCEPTABLE. IF THE CONTRACTOR ELECTS TO USE A PRE--MIXED FIBER REINFORCEMENT SPECIFICATION, IT SHALL BE SUBMITTED AND PRE--APPROVED BY THE ENGINEER PRIOR TO ITS APPLICATION.
3. SLABS SHALL BE PLACED ALTERNATELY IN LENGTHS NOT TO EXCEED 30 FEET OR AS DIRECTED AND SHALL BE SEPARATED BY AN EXPANSION JOINT OF PREFORMED EXPANSION FILLER 1 INCH IN THICKNESS.
4. WHEN CONSTRUCTED ADJACENT TO A BUILDING, RETAINING WALL OR OTHER FIXED STRUCTURE, A 1 INCH THICK PREFORMED JOINT FILLER SHALL BE USED BETWEEN THE SLAB AND THE STRUCTURE.
5. THE SIDEWALK SURFACE SHALL BE SCORED INTO BLOCK UNITS NO GREATER THAN 40 SQUARE FEET AS DIRECTED. THE DEPTH OF THE SCORING SHALL BE AT LEAST ONE QUARTER OF THE THICKNESS OF THE SLAB.
6. ANY MATCHING INTO EXISTING SIDEWALKS SHALL BE DONE SO WITH A CLEAN VERTICAL FACE CONNECTION.
7. THE SURFACE SHALL BE FINISHED TO PRODUCE A SURFACE "BRUSHED" PATTERN, NO PLASTERING OF THE BRUSHING WITH MORTAR SHALL BE PERMITTED. THIS SHALL RESULT IN A BRUSHED, UNIFORM TEXTURE AND COLOR. ALL OUTSIDE EDGES OF THE SLAB AND ALL JOINTS SHALL BE ROUNDED WITH A 3 INCH RADIUS EDGING TOOL.
8. CONCRETE SHALL BE CURED FOR 72 HOURS. CURING SHALL BE BY MEANS OF THOMPSON'S WATER SEAL AS MANUFACTURED BY E.A. THOMPSON CO., INC., MEMPHIS, TENNESSEE, BOILER UNSEED OIL, WHITE PIGMENTED CURING COMPOUND, OR BY OTHER APPROVED METHODS. CONCRETE SIDEWALK TO BE SEALED WITH CONSOLQUED CURE AND WEAR OIL TO PROTECT THE CURE AND WEAR PLACEMENT. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.
9. GENERAL CONTRACTOR TO COLLECT DELIVERY SLIPS AND TRANSFER TO THE OWNER.
10. REFER TO CITY OF PORTLAND CONCRETE SPECIFICATIONS SECTION 608 FOR MORE INFORMATION.



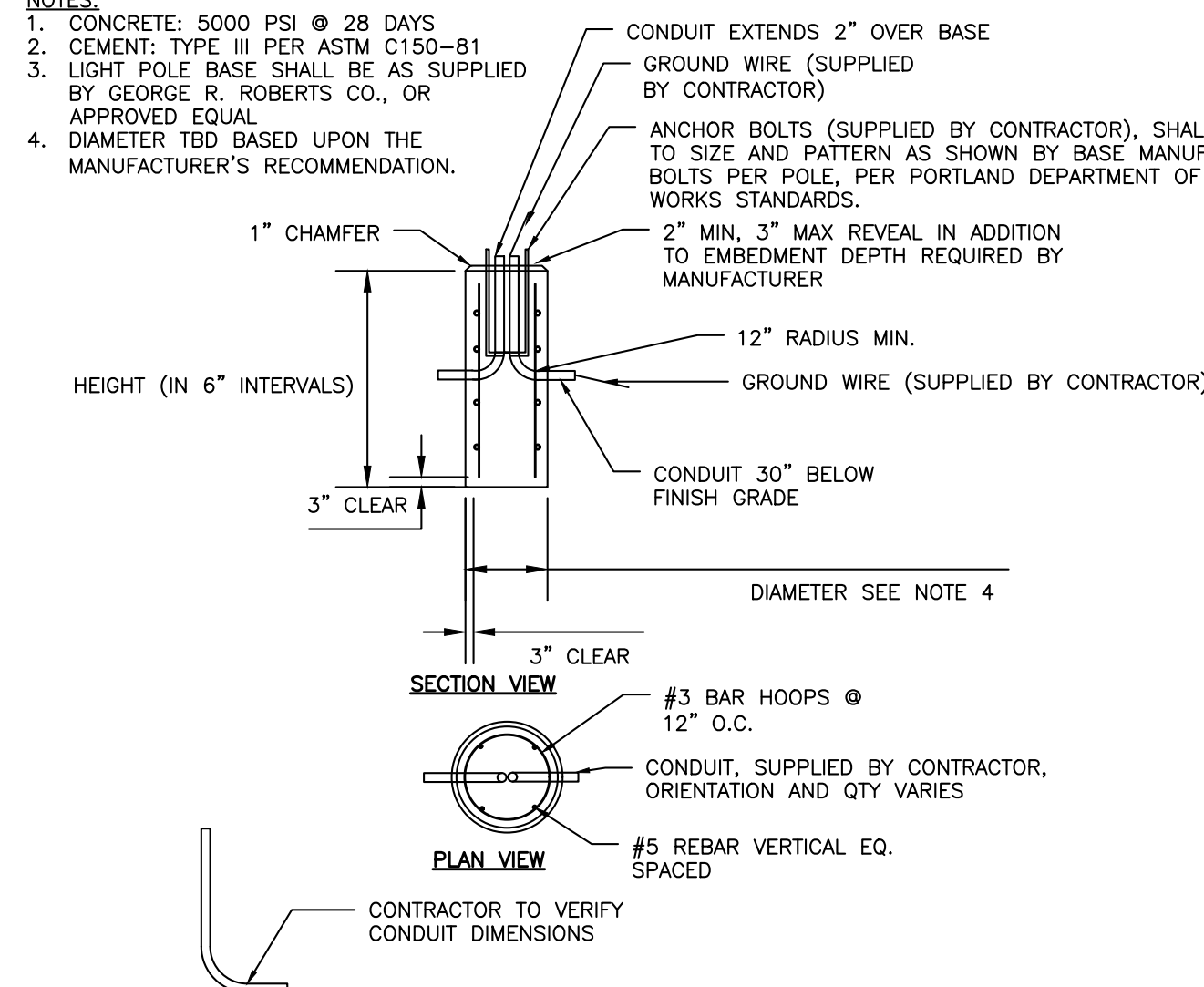
GRANITE CURB, PI



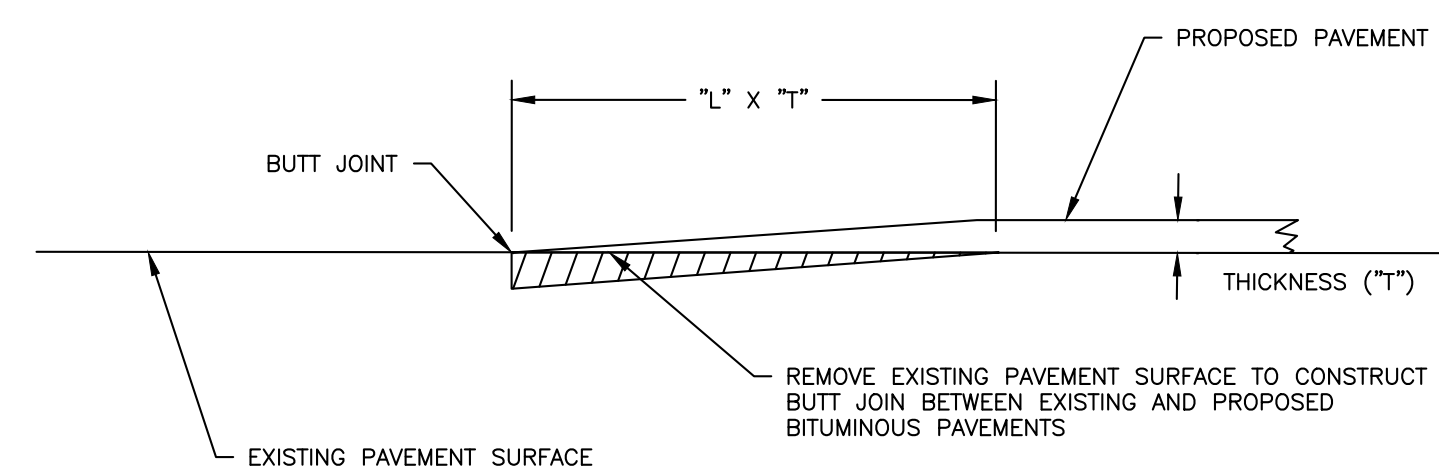
1. **LUMINAIRE**
HOLOPHONE ESPLANADE LED II
MODEL:ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC
OR SPRING CITY COLUMBIA SERIES MODEL
ALMCU-LC80B/EVY X2-30-30-CR3-GR14-LACL6-FLED-CU
PENDANT MOUNT, CAST ALUMINUM HOUSING WITH STAINLESS STEEL
HARDWARE, ROUND REFRACTOR SHALL BE THERMAL
RESISTANT BOROSILICATE GLASS, INTERNAL REFLECTOR AND
PRISMATIC DIFFUSER SHALL PROVIDE ANIES TYPE IV DISTRIBUTION
PATTERN, LED 3000K COLOR TEMPERATURE.
2. **BRACKET ARM**
HOLOPHONE OUC ROADWAY ARM MODEL OUC 6063-T6 OR SPRING
COLUMBIA ARM MODEL AARCLA-1S-51-53-TN2.38/7-00-CU
ALUMINUM CROSSARM WITH A POST-TOP FITTING FOR A 3 1/2" BY
8" TENON. SINGLE ARM 45° ORIENTED 180 DEGREES.
3. **SLIP FITTER**
HOLOPHONE BOSTON HARBOR SERIES MODEL BHLF-200-SCA/AS
2 1/8" O.D. WITH SWIVEL CAST FITTER.
4. **LIGHTING POLE**
HOLOPHONE MODEL CM17CSB-CA-RAL6012
OR SPRING CITY CAMBRIDGE SERIES MODEL
SSSHM-611-70-15.00-TN3-85/80-00-CU
SMOOTH, TAPERED STEEL POLE SMOOTH SHAFT RATED FOR A 90 MPH
WIND LOAD WITH A 1.3 GUST FACTOR. PROVIDE FOUR
HOT-TIPPED GALVANIZED STEEL L-TYPE ANCHOR BOLTS. LIGHTING
POLE SHALL BE HOT TIP GALVANIZED PRIOR TO POWDER COAT
PAINT.
5. **DECORATIVE POLE BASE**
HOLOPHONE CAMBRIDGE SERIES MODEL CM17CSB OR SPRING CITY
CAMBRIDGE SERIES MODEL DWBOMB-17-CU
DECORATIVE, CLAMSHELL CAST ALUMINUM BASE. HARDWARE SHALL BE
STAINLESS STEEL.
6. **DIMENSIONS**
OVERALL HEIGHT = 19' 3"
POLE HEIGHT = 15' 0"
BRACKET ARM = 3' 9"
BASE DIAMETER = 17" to 18"
7. **FINISH**
BLACK (STANDARD)

STREET/SIDEWALK LIGHTING
SPACING:
ONE SIDE: 80'-110' ON CENTER
PLACE IN FURNISHING ZONE OVERHANG TOWARDS STREET; WHERE FIXTURE
CONFLICTS WITH OVERHEAD UTILITIES, MAY BE PLACED ON BACK OF
SIDEWALK.

1. CONCRETE: 5000 PSI @ 28 DAYS
2. CEMENT: TYPE III PER ASTM C150-81
3. LIGHT POLE BASE SHALL BE AS SUPPLIED BY GEORGE R. STELLS CO., OR APPROVED EQUAL.
4. DIAMETER TBD BASED UPON THE MANUFACTURER'S RECOMMENDATION.



1. THE LENGTHS ARE INTENDED FOR PROFILE GRADES OF 2% OR LESS. WHEN PROFILE GRADES ARE GREATER THAN 2% "L" MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WHEN DIRECTED BY THE RESIDENT.
2. WHEN CONSTRUCTING BUTT JOINTS AT INTERSECTIONS OR RAMPS "L" SHALL BE 15" INCH OF THICKNESS UNLESS OTHERWISE DIRECTED BY THE RESIDENT
3. SPECIAL ATTENTION SHALL BE PAID TO CURB SECTION TO ASSURE PROPER DRAINAGE AND THAT THERE ARE NO FLAT AREAS. "L" MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WHEN DIRECTED BY THE RESIDENT.



DESIGN OR POSTED SPEED (MILES/H):	65	55	50	45	40	35	30	25
"L" IN FEET/INCH OF THICKNESS:	65	55	50	45	40	35	30	25

50 45 40 35 30

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
CONCEPT	DATE
PRELIM SITE	WHS
SITE PLAN	8/4/22
COMMENT RESPONSE	SJL
	2/13/23
	SJL
	4/3/23
	SJL
	6/19/23

SITE DETAILS - 1

NAME: 889 ELM STREET REDEVELOPMENT - PORTLAND

89 ELM, LLC

DRAWING NAME:

PROJECT NAME:

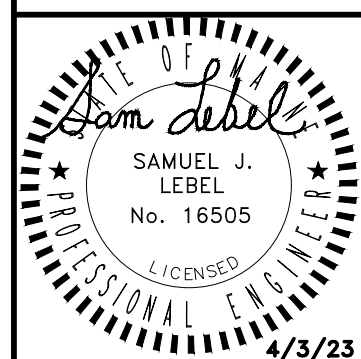
CLIENT:



A C O R N
ENGINEERING, INC.

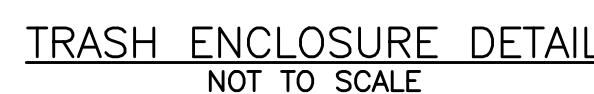
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1192.2_CIVIL
JN:	1192.2
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	DNM
CHECKED BY:	WHS



DRAWING NO.

C-40

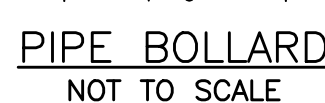


- SIDEWALK RAMP DETECTABLE WARNING PANEL
NOT TO SCALE



- | DESIGN ELEMENT | SLOPE IN DIRECTION OF TRAVEL | CROSS SLOPE |
|----------------|------------------------------|--------------------|
| APPROACH | 8.33% MAX | 2% |
| LANDING | 2% | 2% |
| RAMP | 8.33% MAX | MATCH STREET GRADE |
| SIDEWALK | PER C-30 | 2% |

SIDEWALK RAMP LAYOUT
NOT TO SCALE



- CROSS SECTION VIEW

- BICYCLE RACK INTERIOR
NOT TO SCALE

- BICYCLE RACK DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

SITE DETAILS - 2

PROJECT NAME: 89 ELM STREET REDEVELOPMENT - PORTLAND

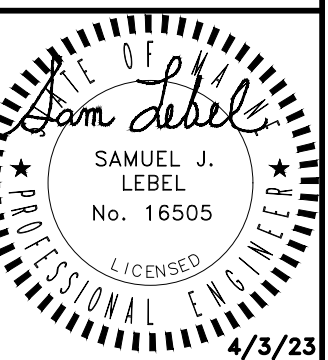
CLIENT: 89 ELM, LLC
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

R N
ENGINEERING, INC. -

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

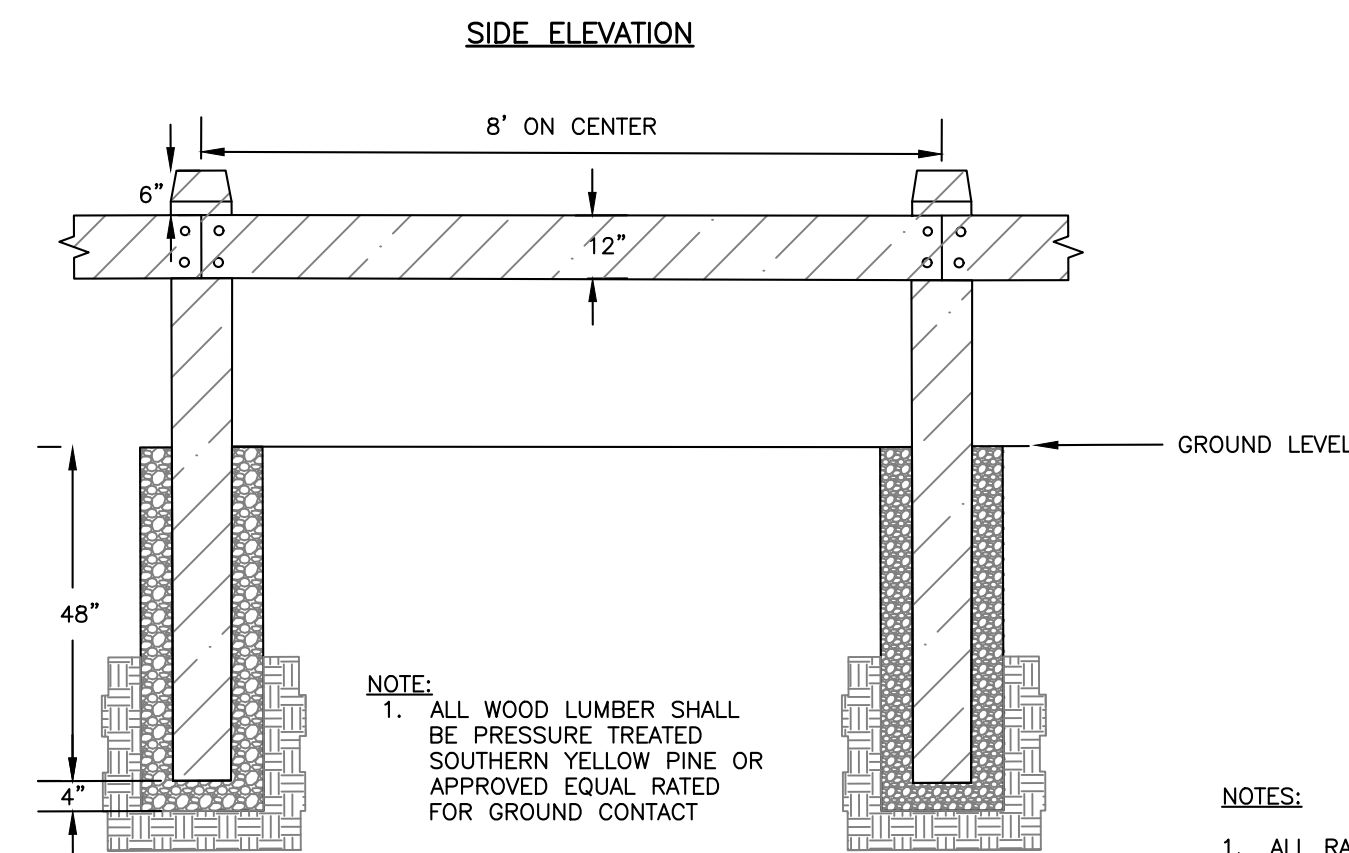
ACORN ENGINEERING, INC.
P.O. BOX 3372, PORTLAND MAINE 04104
(207) 775-2655

E:	1192.2_CIVIL
I:	1192.2
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	DNM
CHECKED BY:	WHS

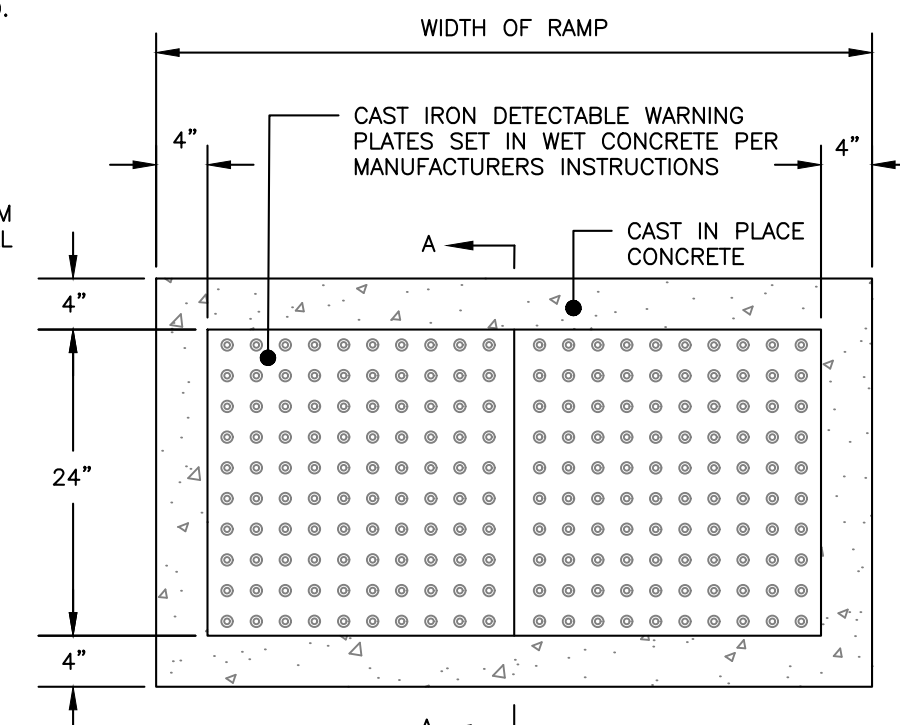
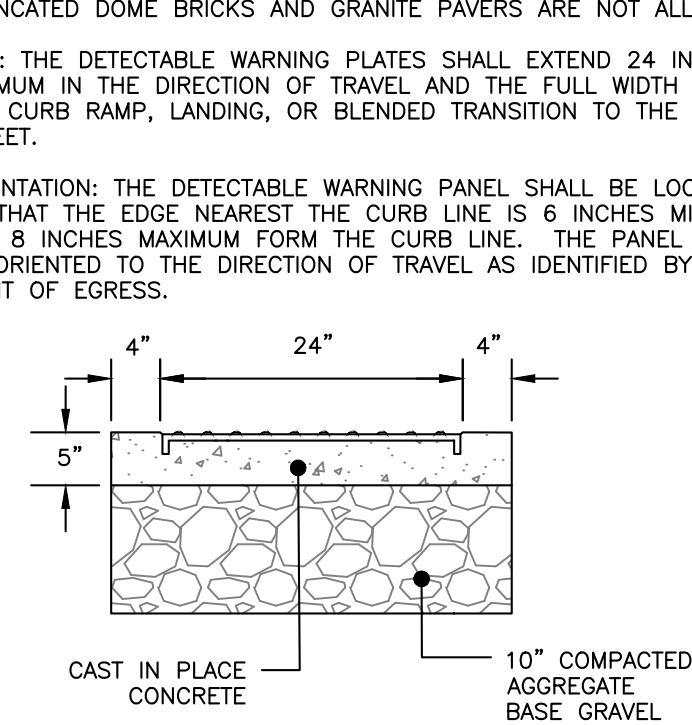


DRAWING NO.

C-41

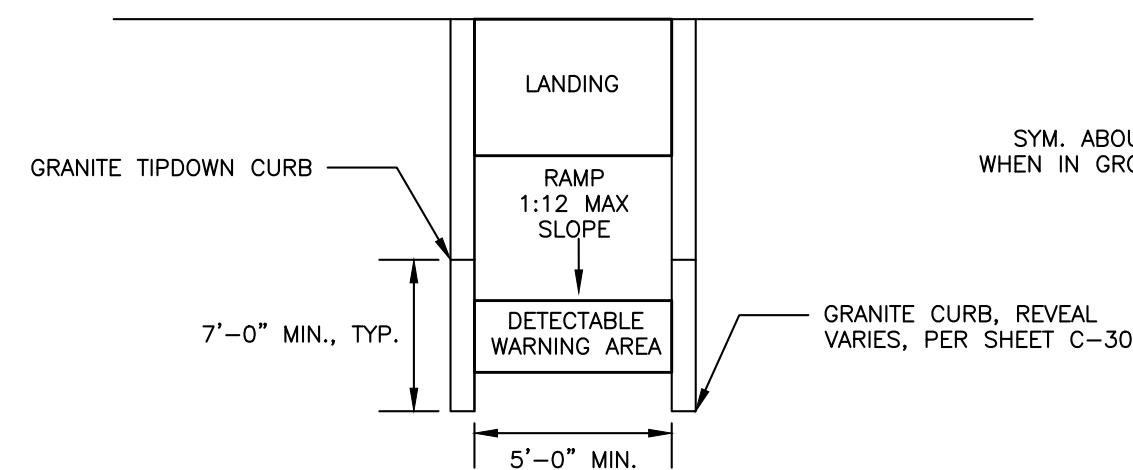


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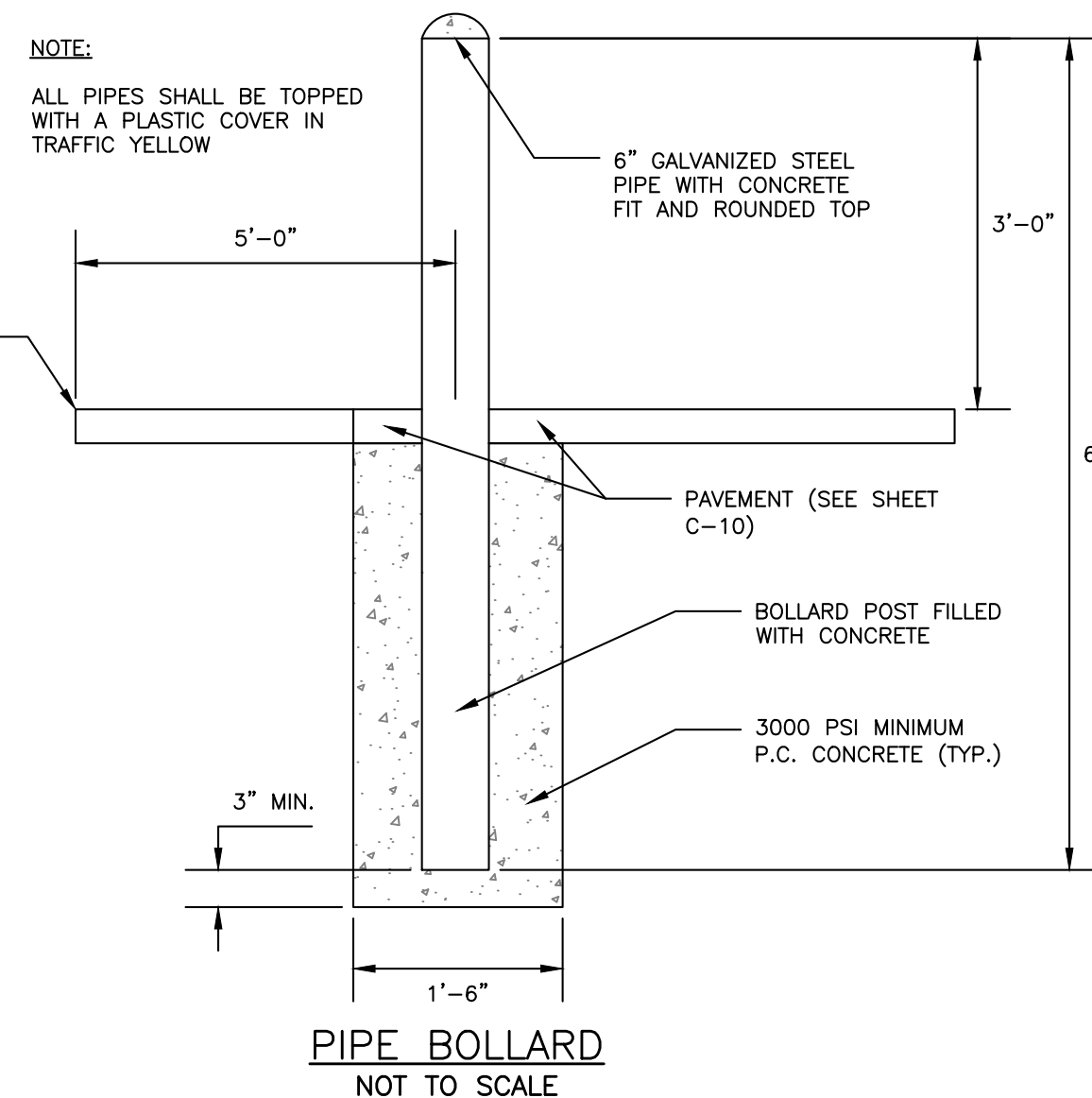
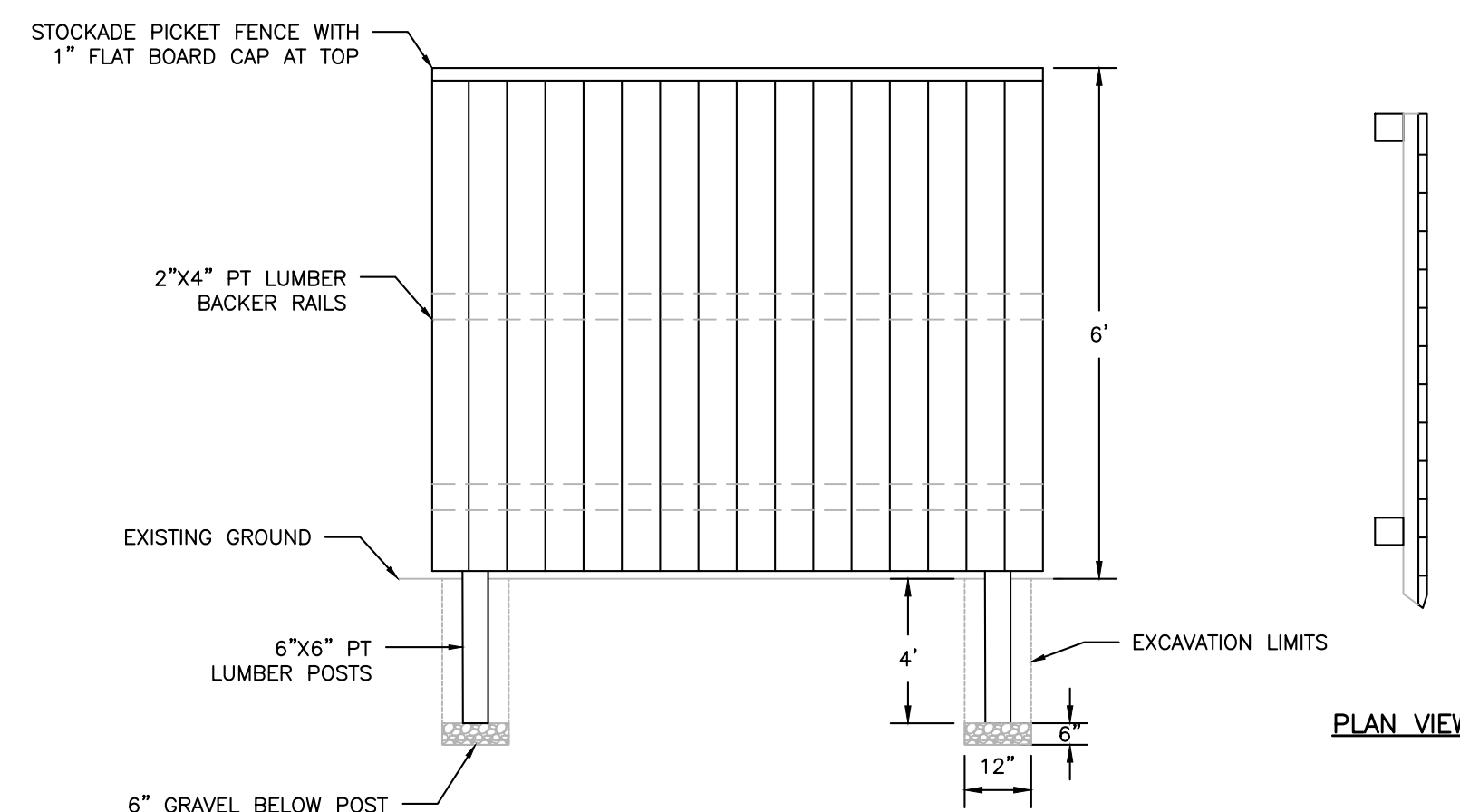
SIDEWALK RAMP DETECTABLE WARNING PANEL
NOT TO SCALE

NOTES:

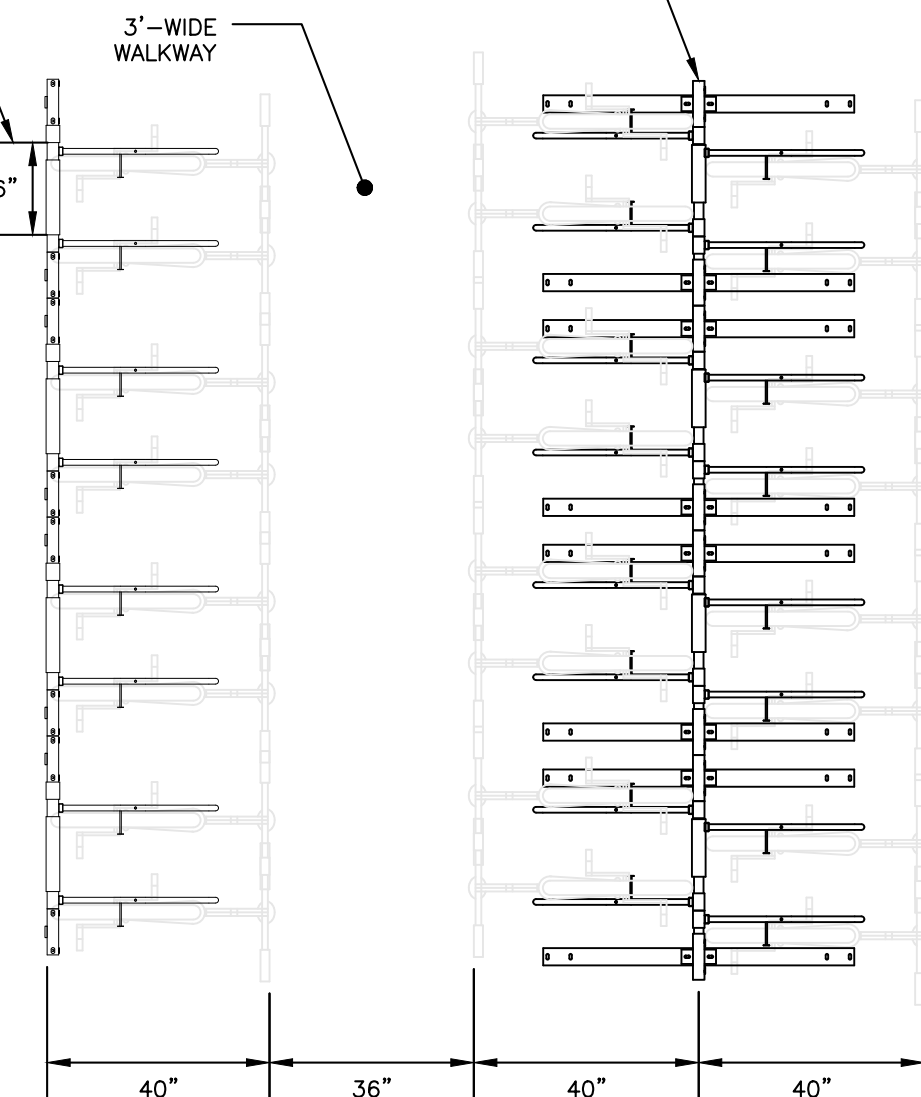
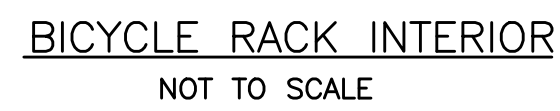
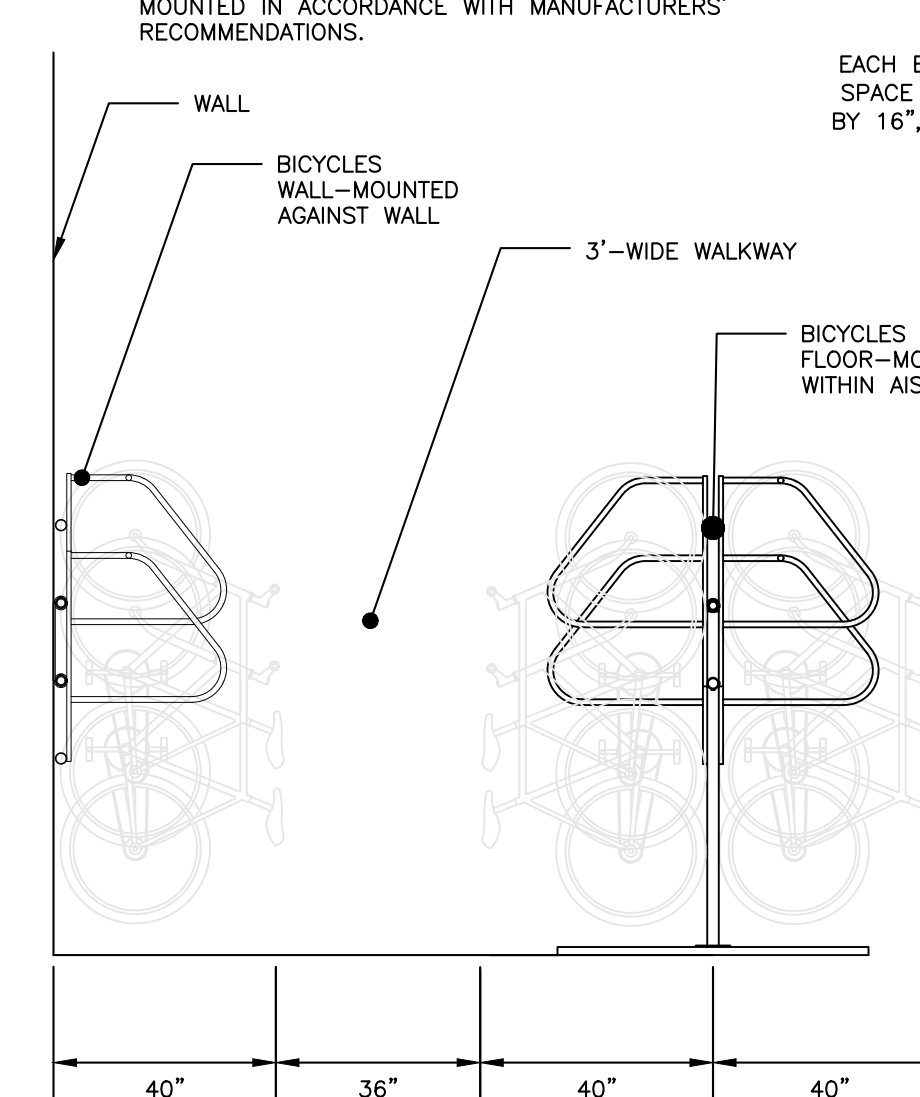


DESIGN ELEMENT	SLOPE IN DIRECTION OF TRAVEL	CROSS SLOPE
APPROACH	8.33% MAX	2%
LANDING	2%	2%
RAMP	8.33% MAX	MATCH STREET GRADE
SIDEWALK	PER C-30	2%

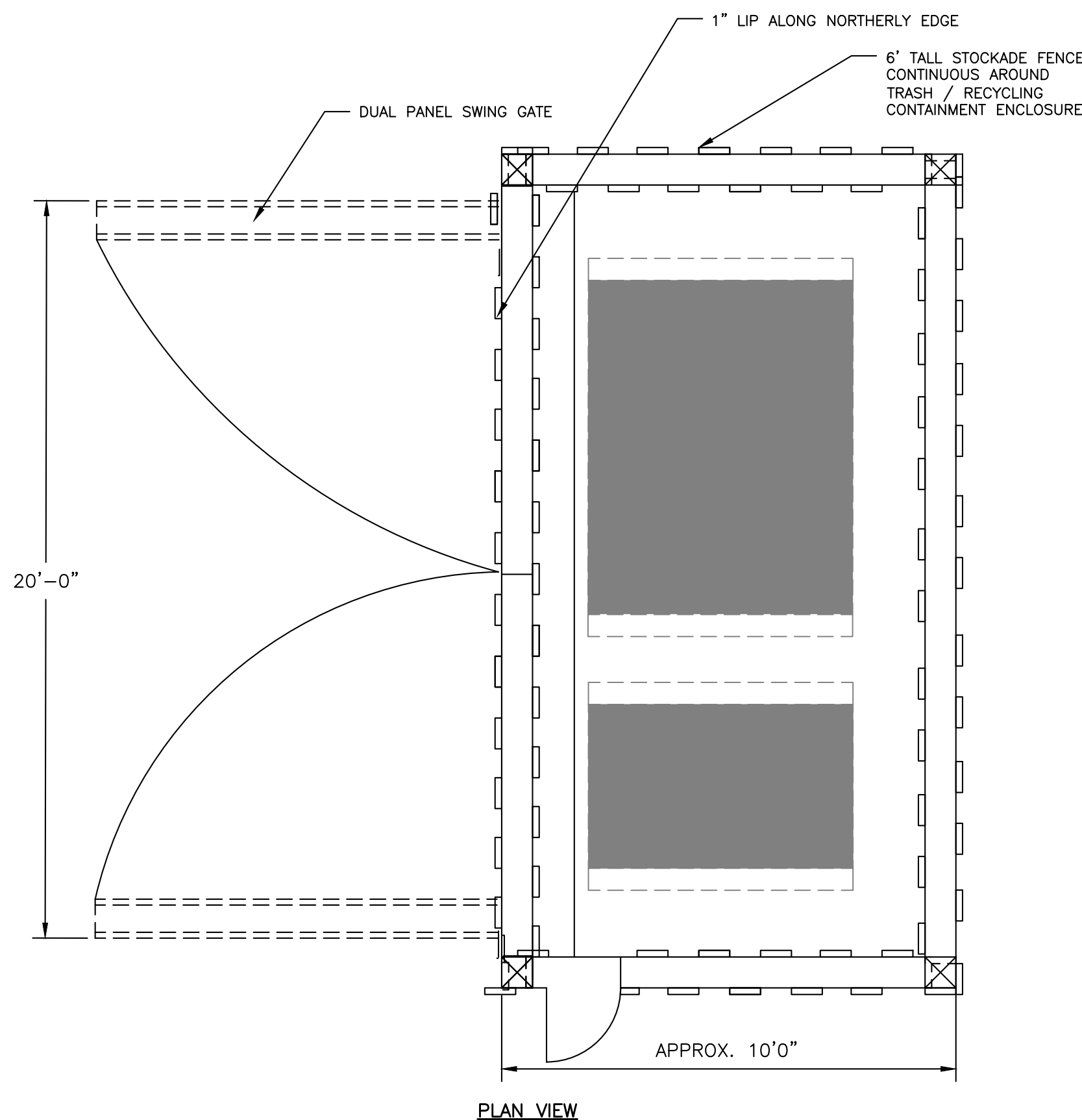
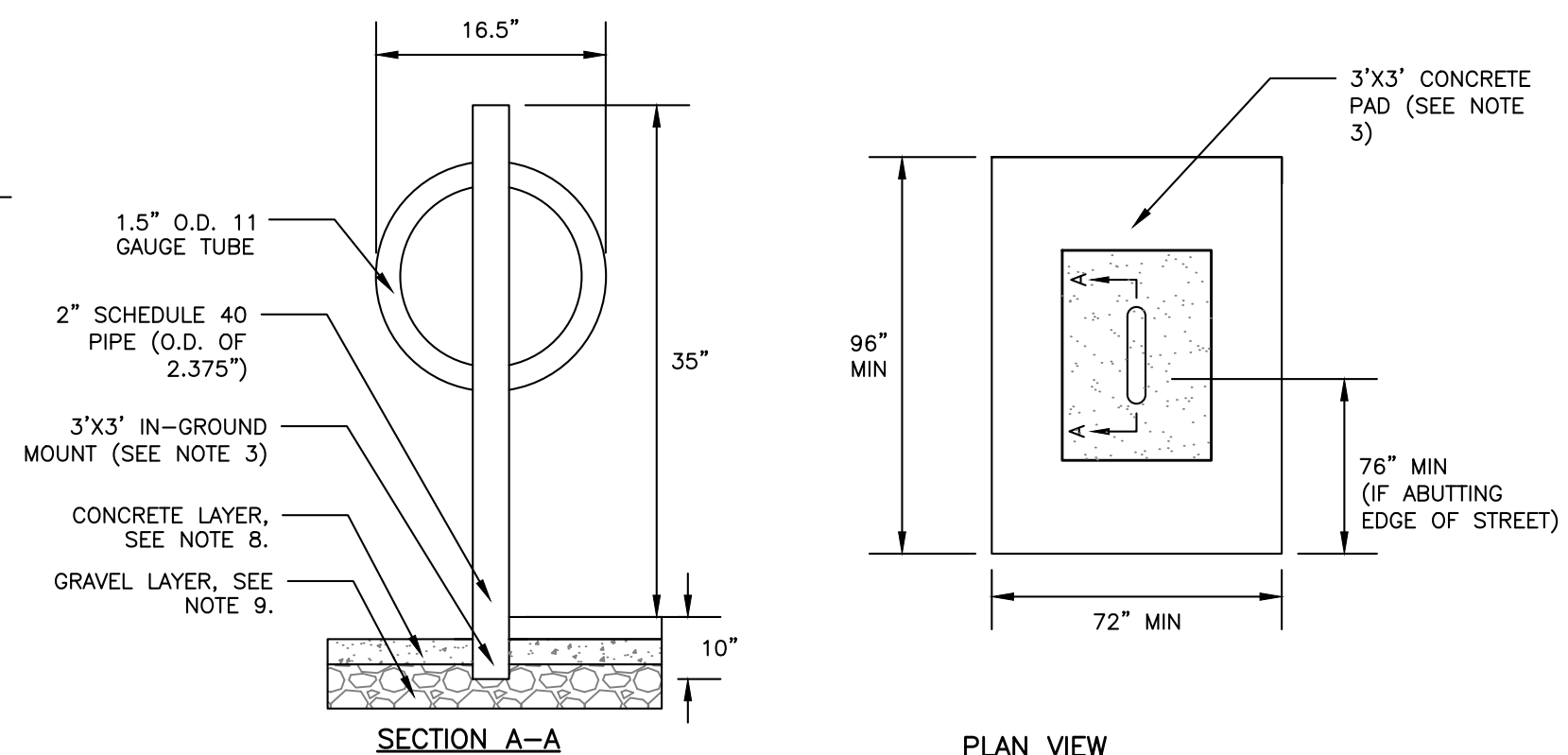
NOTES:



NOTES



NOTES:



PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

[illegible]

DRAWING NAME: SITE DETAILS - 2

PROJECT NAME: 89 ELM STREET REDEVELOPMENT - PORTLAND

CLIENT: 89 ELM, LLC
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

A C O R N
ENGINEERING, INC.



ACORN ENGINEERING, INC.
PO BOX 31000, DALLAS, TEXAS 75231
(214) 775-2655

THIS FARM SHALL NOT BE ACQUIRED BY ANY WRITTEN OFFER OR CONTRACT, AND THE OFFEROR SHALL NOT BE OBLIGATED TO PURCHASE THE FARM UNLESS THE OFFEROR'S COUNTERPARTY SHALL BE AN AFFILIATE OF THE OFFEROR.

FILE:	1192.2_CIVIL
JN:	1192.2
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	DNM
CHECKED BY:	WHS

The seal is circular with a serrated outer edge. Inside the circle, the text "STATE OF OKLAHOMA" is written along the top arc, and "PROFESSIONAL ENGINEER" is written along the bottom arc. In the center, the name "SAMUEL J. LEBEL" is printed above the number "No. 16505". Below the number, the word "LICENSED" is printed. A signature, "Sam Lebel", is written in cursive across the top half of the seal. At the bottom right, outside the seal, the date "4/3/23" is printed.

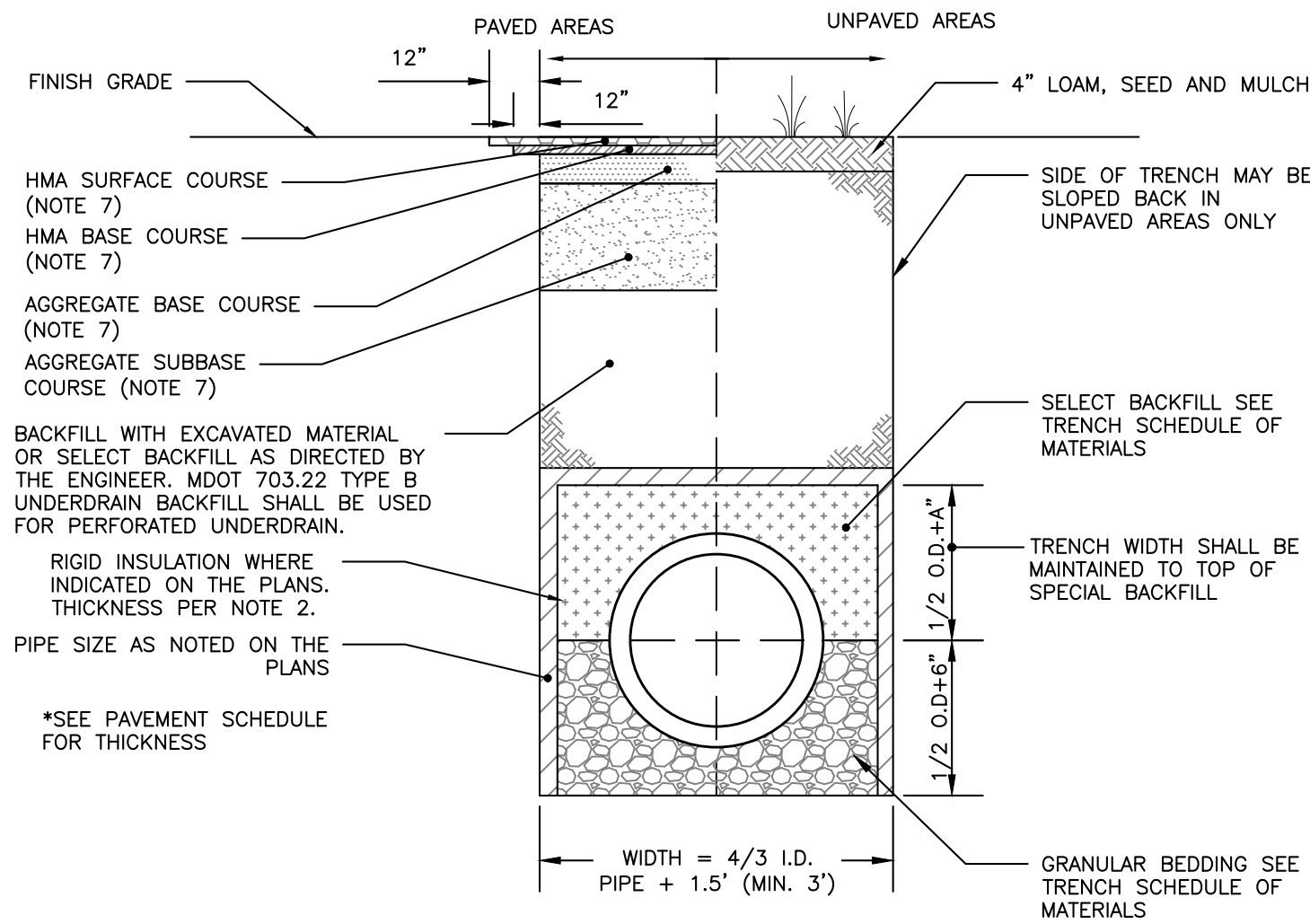
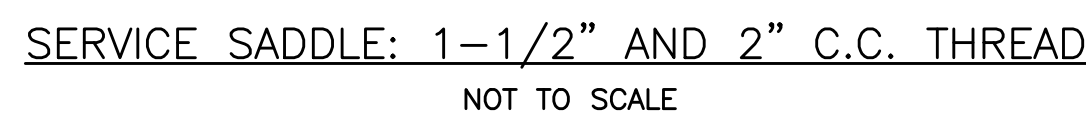
DRAWING NO.

C-41

-
- MINIMUM DEPTH.
- PAVED AREAS
- UNPAVED AREAS
- FINISH GRADE
- 12"
- 6"
- 4" LOAM AND SEED
- HOT BITUMINOUS PAVEMENT GRADING "C"
- HOT BITUMINOUS PAVEMENT GRADING "B"
- AGGREGATE BASE COURSE, CRUSHED, TYPE "B"
- AGGREGATE SUBBASE COURSE, GRAVEL, TYPE "D"
- COMMON BACKFILL FROM TRENCH EXCAVATION (INCIDENTAL) OR GRANULAR BORROW (IF ORDERED)
- 12"
- 3/4" CRUSHED STONE OR SAND (MDOT 703.33 TYPE C)
- 3/4" CRUSHED STONE FOR PIPE BEDDING TO PIPE SPRINGLINE
- RIGID INSULATION IN LOCATIONS INDICATED ON PLAN. SEE NOTE 8 FOR THICKNESS.
- 6"
- PIPE SIZE AS NOTED ON PLANS
- A (4' MIN.)
- | TRENCH | |
|--------------------|--|
| PIPE DIAMETER (IN) | |
| 4 | |
| 6 | |
| 8 | |
| 10 | |
| 12 | |
| 15 | |
| 18 | |
| 24 | |
| 36 | |

TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	5
15	5
18	5
24	6
36	6
48	7

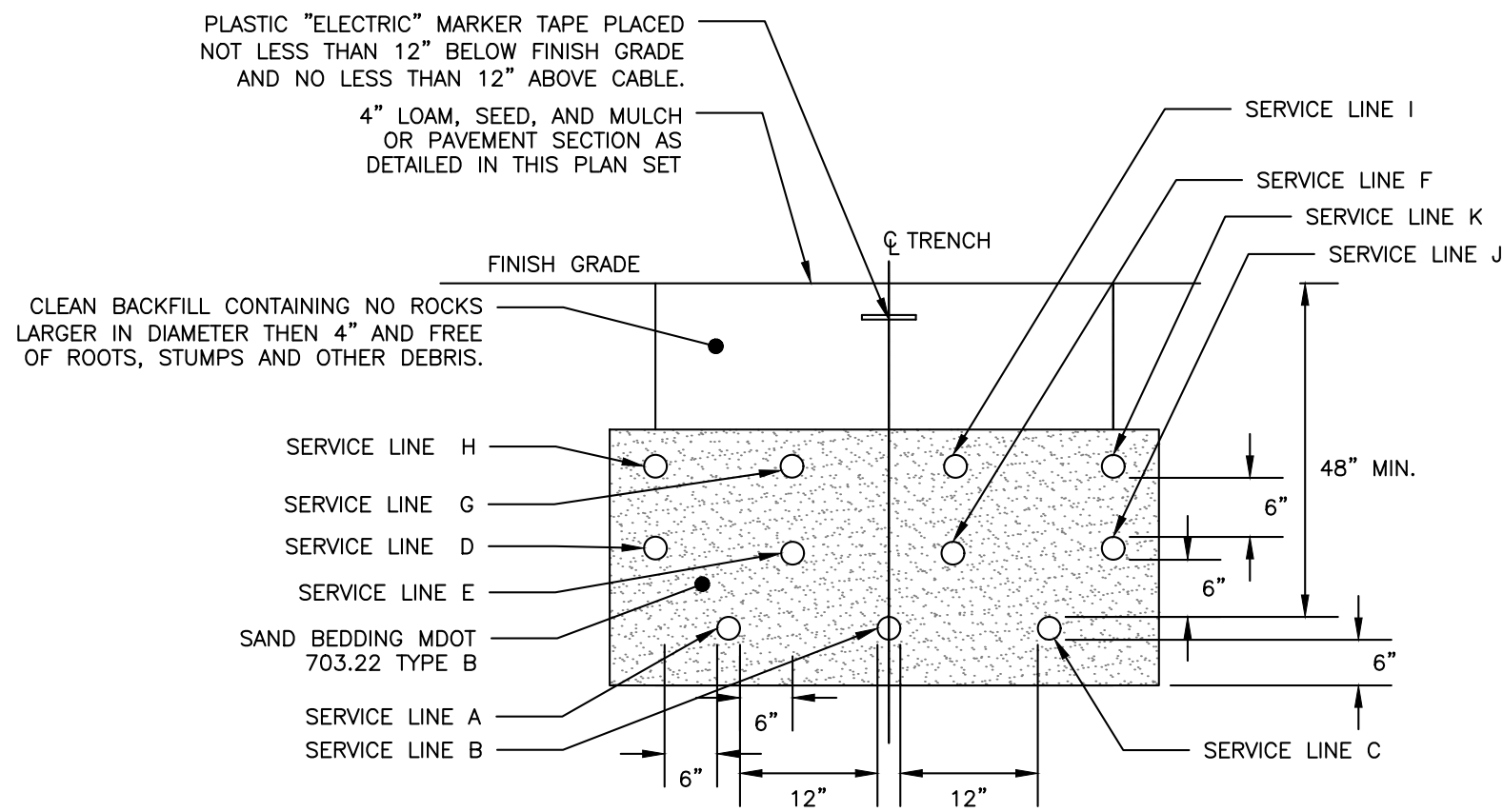
- SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE



- STORM DRAIN AND SEWER TYPICAL TRENCH SECTION
NOT TO SCALE

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

- NOTES:**
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H. STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
 2. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF INSULATION. COVER BETWEEN 4' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
 3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
 4. MINIMUM COVER:
 - 4.1 2'-0" – STORM DRAIN
 - 4.2 5'-0" – SEWER
 5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SEWER TRENCH.
 6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF BIDDIFORD ROR.
 7. THICKNESS AS NOTED BY SURFACE DETAILS.
 8. IF ANY TREES PLANTED WITHIN 10' OF A STORM OR SEWER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMANENT LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.

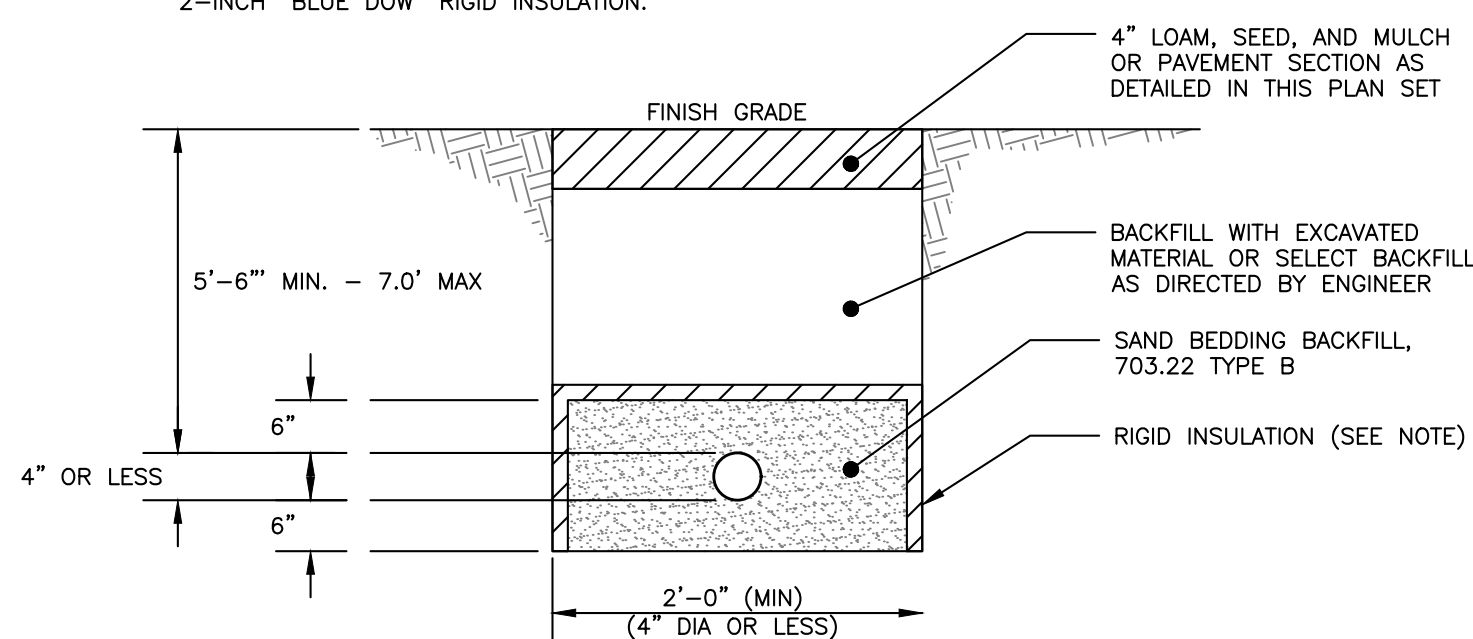


CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
C	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
D	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	—
E	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	—
F	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	—
G	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	—
H	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	—
I	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	—
J	4"	SCHEDULE 40 PVC	SPARE	—
K	4"	SCHEDULE 40 PVC	SPARE	—

- 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. COILS 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.

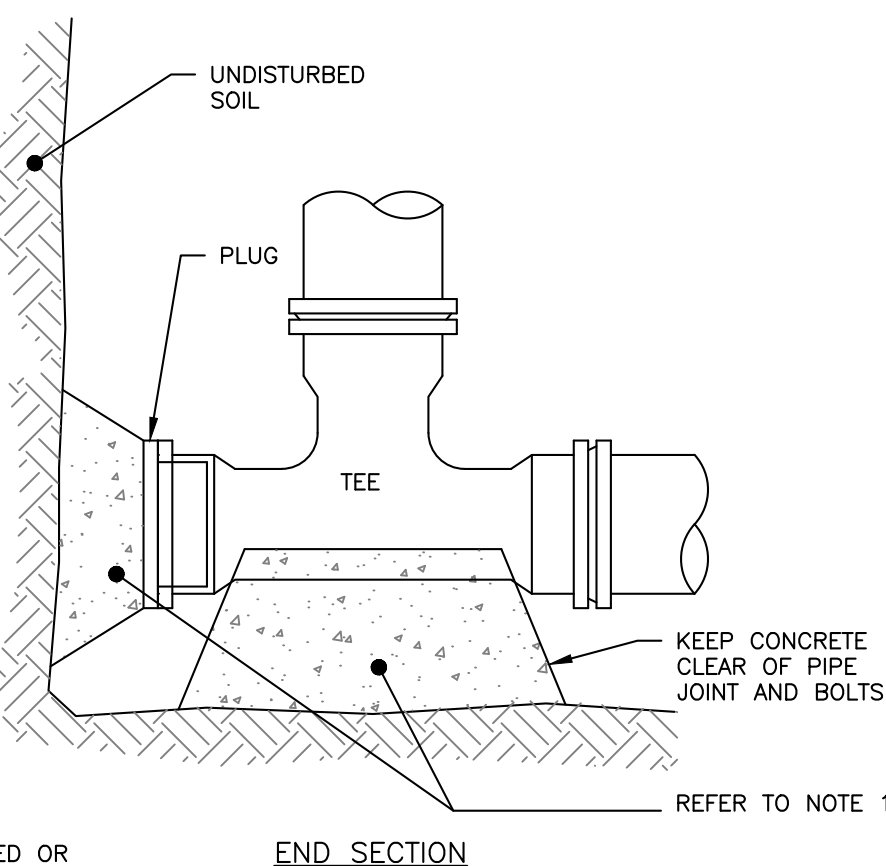
NOTES:

1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MAINE WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'-6" OF COVER IS POSSIBLE ADD TWO LAYERS OF 2-INCH "BLUE DOW" RIGID INSULATION.

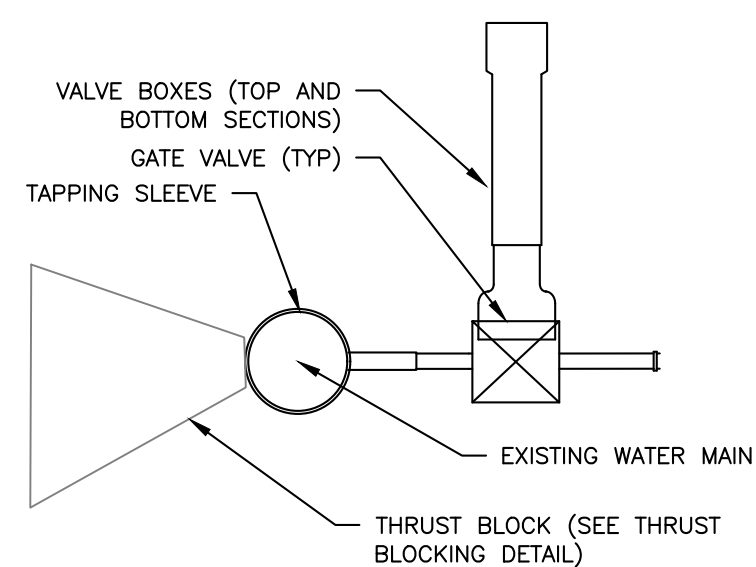


WATER SERVICE TRENCH SECTION DETAIL

NOT TO SCALE



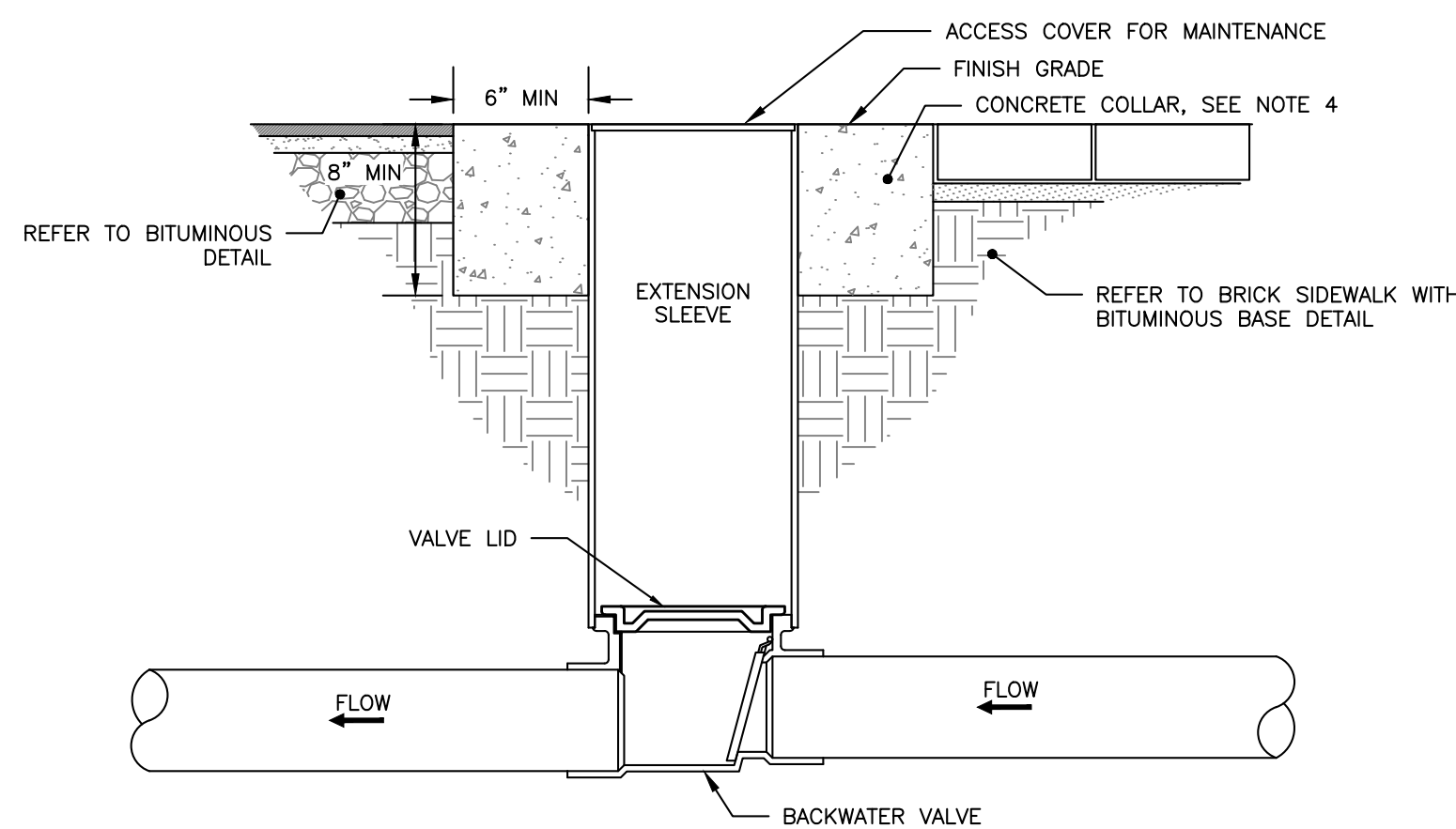
- THRUST BLOCKING: REGULAR BEND
NOT TO SCALE



SIDE VIEW

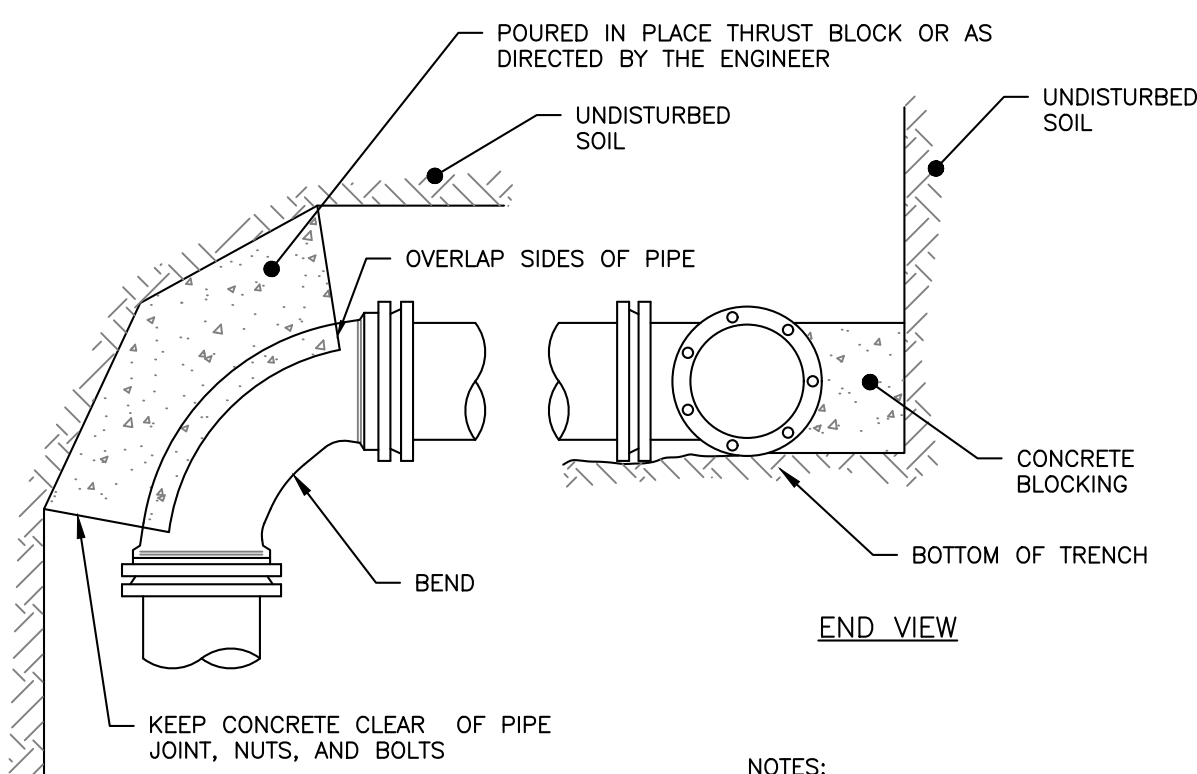
TAPPING SLEEVE AND VALVE

NOT TO SCALE



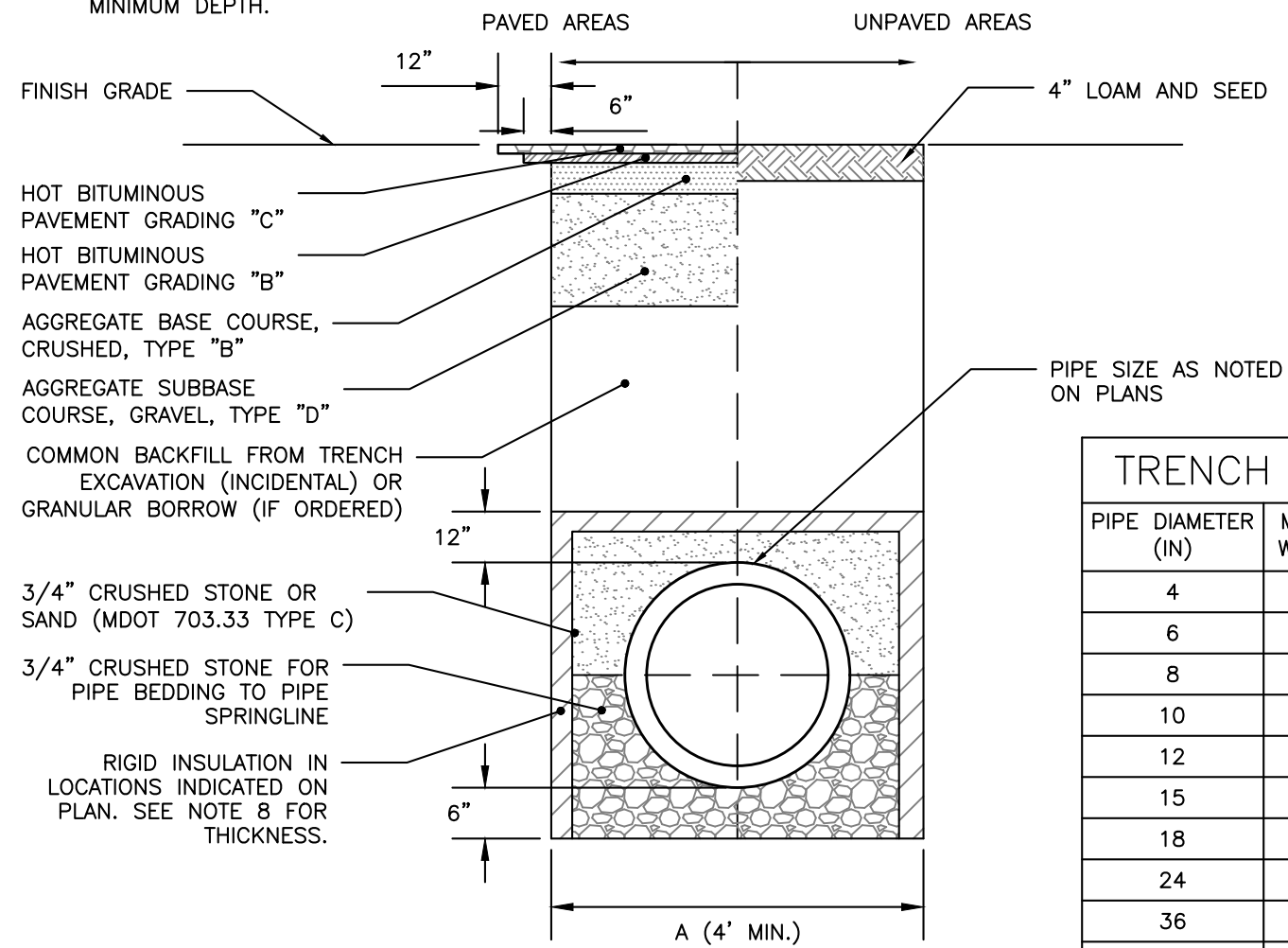
- NOTES:**
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
 2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF BIDDEFORD TECHNICAL MANUAL.
 3. VALVE SHALL BE INSTALLED WITH A VALVE BOX 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

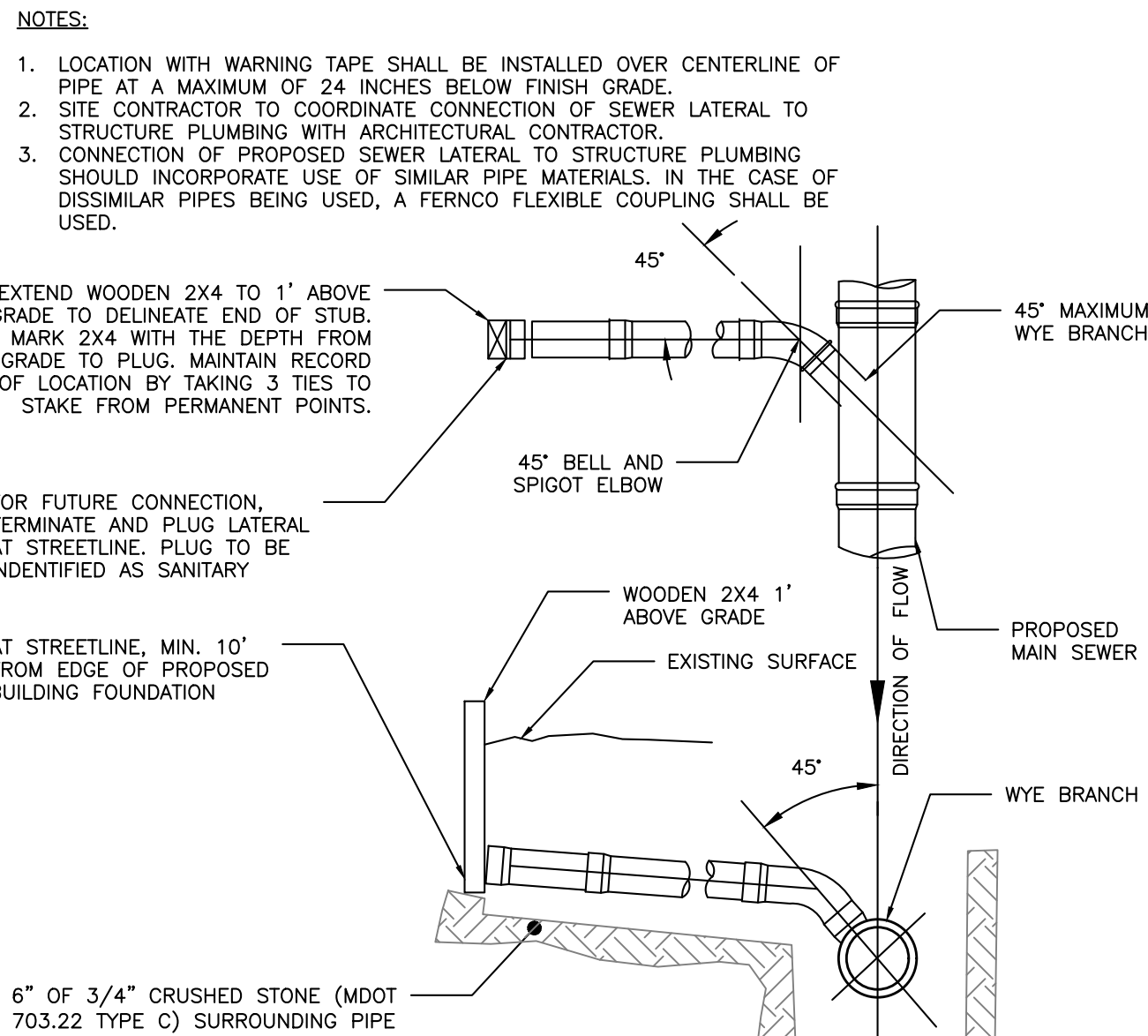


- NOTES:
1. IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER
 2. SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

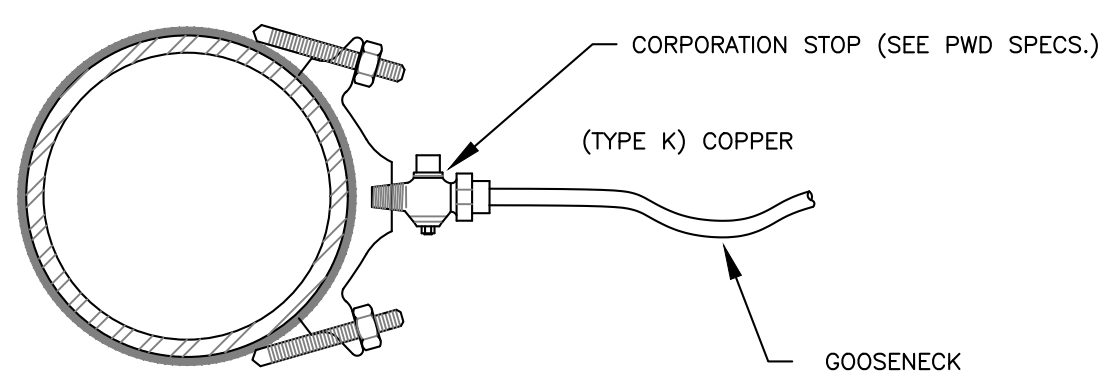
- NOTES:
1. ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
 2. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II-2.
 3. BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 4. WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF.SD) SHALL BE ORIENTED UP.
 5. ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS-46 RATING OR OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL, SECTION 2 - SANITARY SEWER AND STORM DRAIN - PART 2.5.2.
 6. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
 7. THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND ROW. 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.



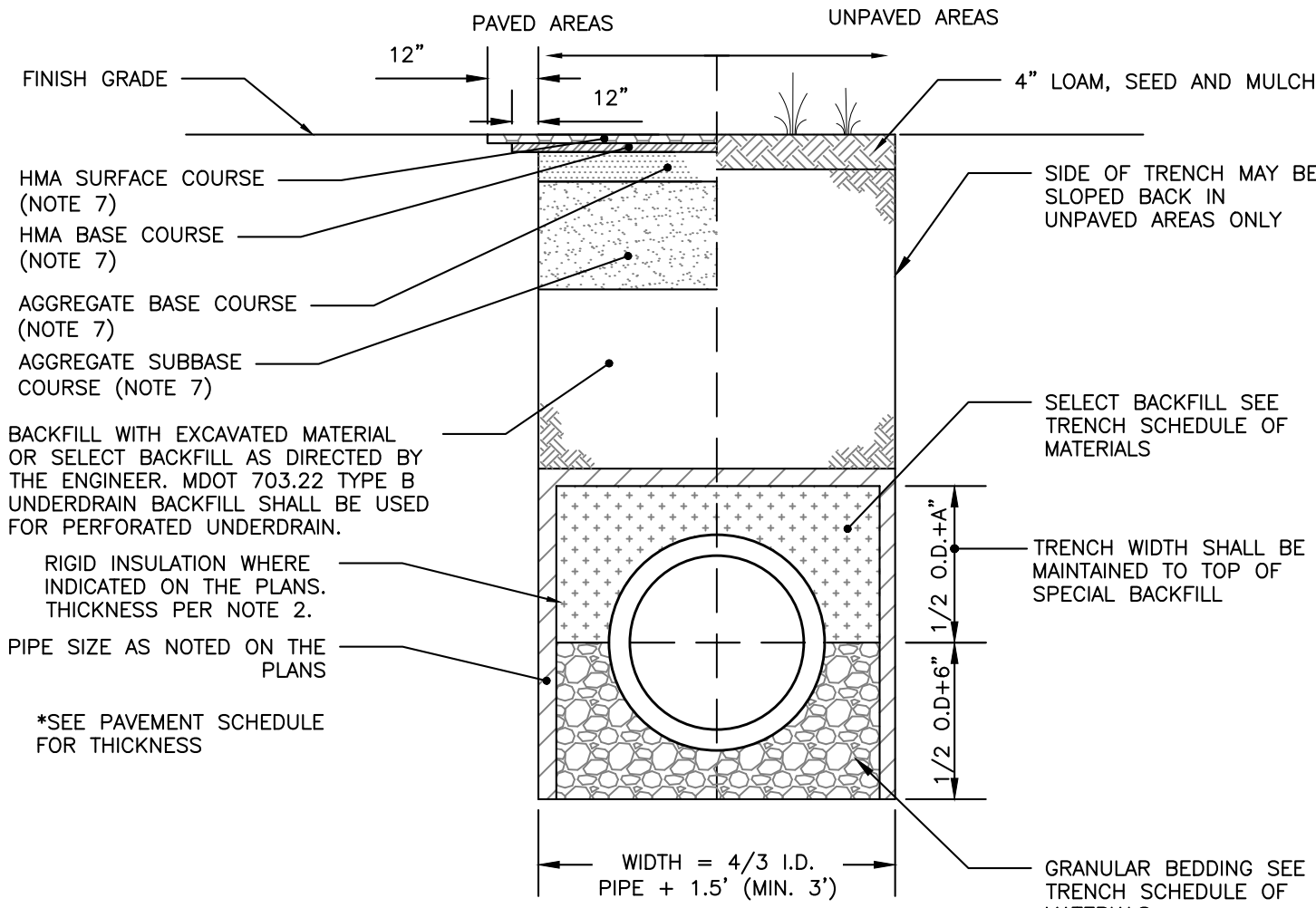
CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL
NOT TO SCALE



SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE



SERVICE SADDLE: 1-1/2" AND 2" C.C. THREAD
NOT TO SCALE

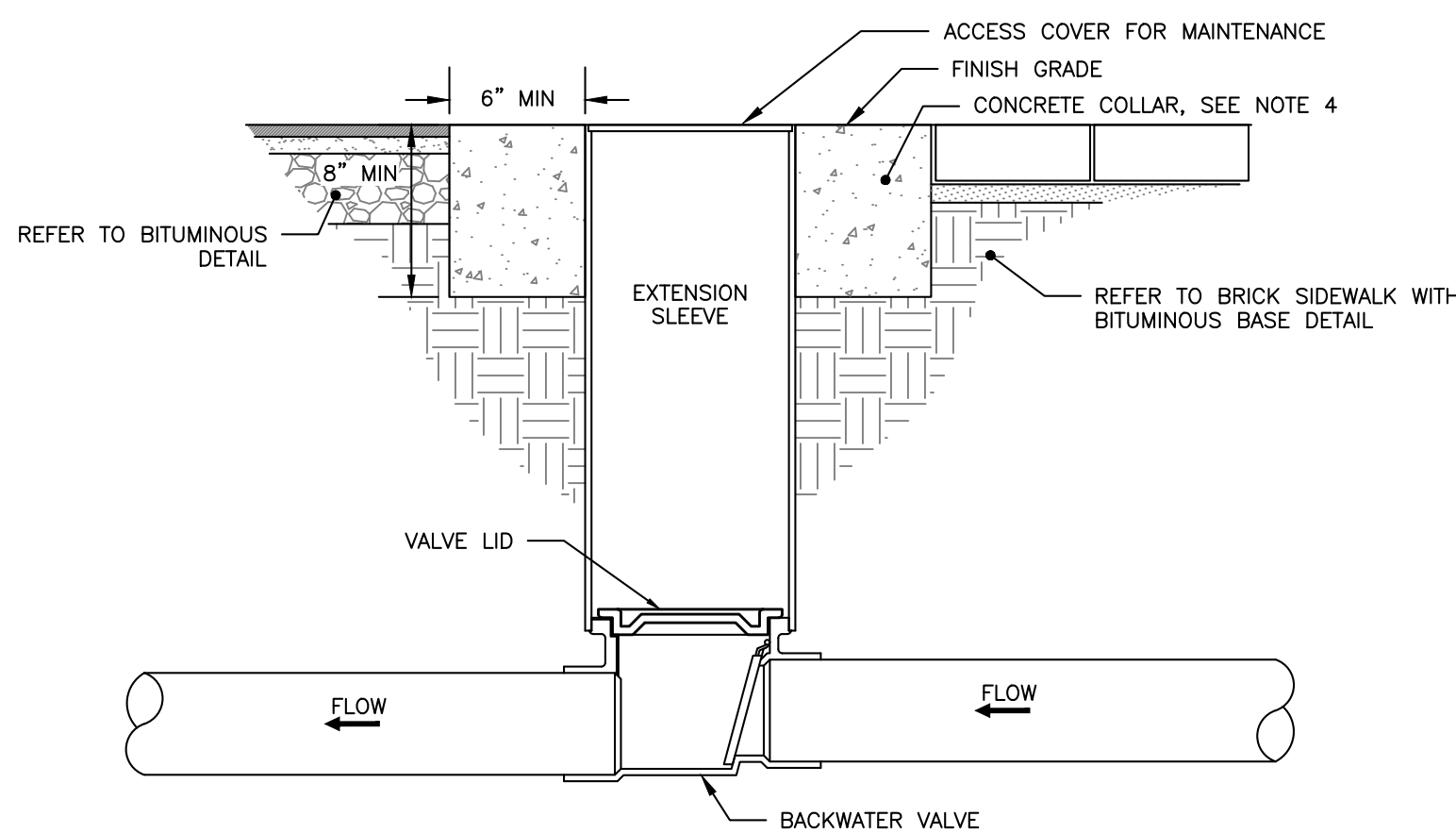


- ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
 - PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
 - PVC RING TYPE SEWER PIPE MEETING ASTM F 789
 - DUCTILE IRON PIPE (DIP)
 - ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
 - ADS SANITITE HP MIN. PS-46

STORM DRAIN AND SEWER TYPICAL TRENCH SECTION
NOT TO SCALE

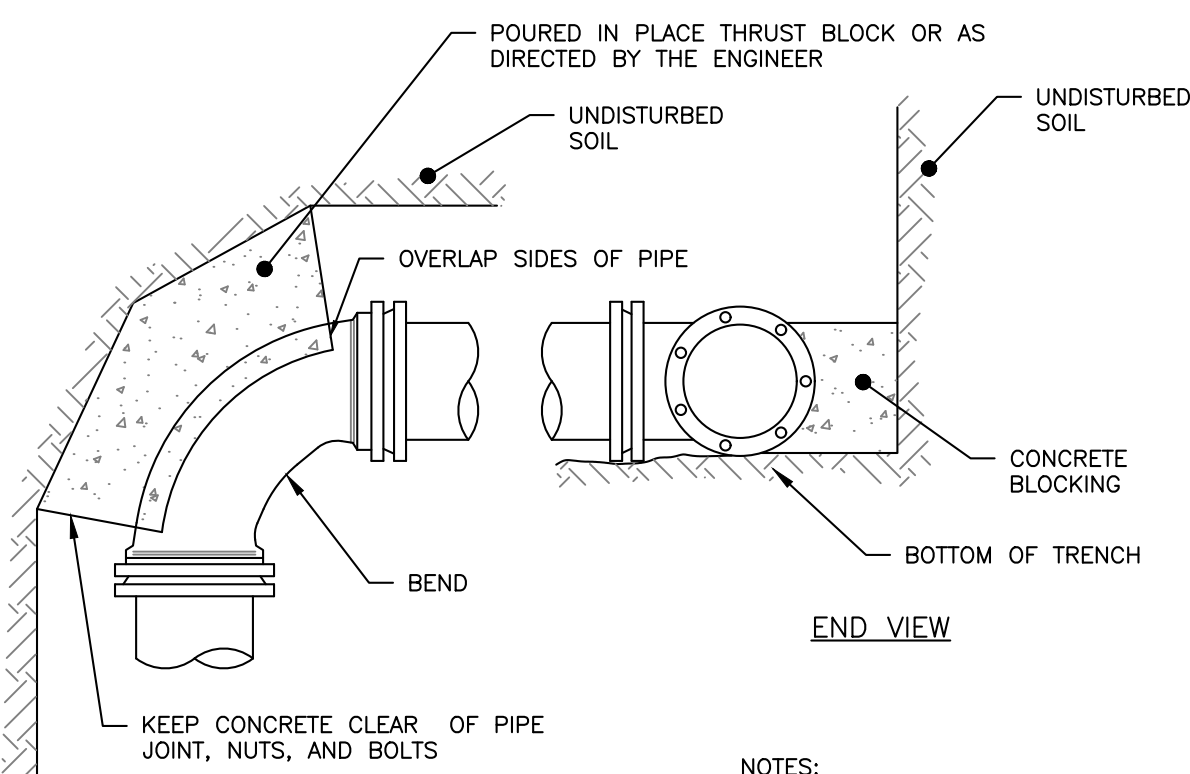
SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL

- NOTES:
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
 2. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
 3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
 4. MINIMUM COVER
 - 4.1. 2'-0" - STORM DRAIN
 - 4.2. 5'-0" - SEWER
 5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
 6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF BIDDEFORD ROW. THICKNESS AS NOTED BY SURFACE DETAILS
 7. ALL PROPOSED TREES PLANTED WITHIN 10' OF A STORM OR SEWER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.



- 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 BIDDEFORD 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.

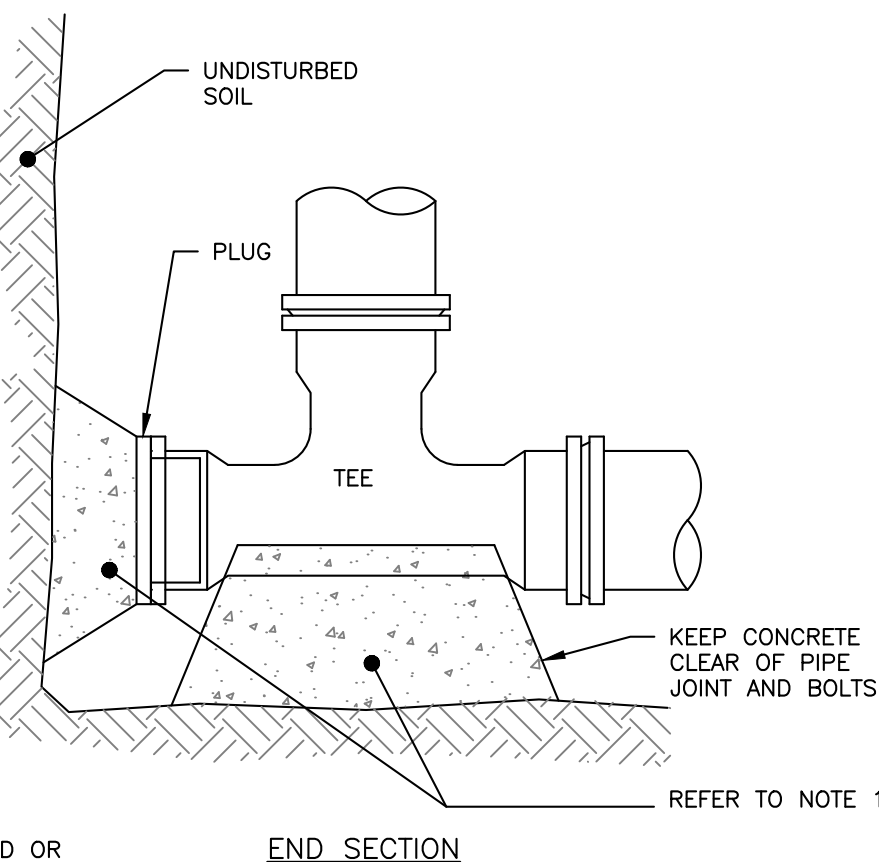
BACKFLOW VALVE ASSEMBLY
NOT TO SCALE



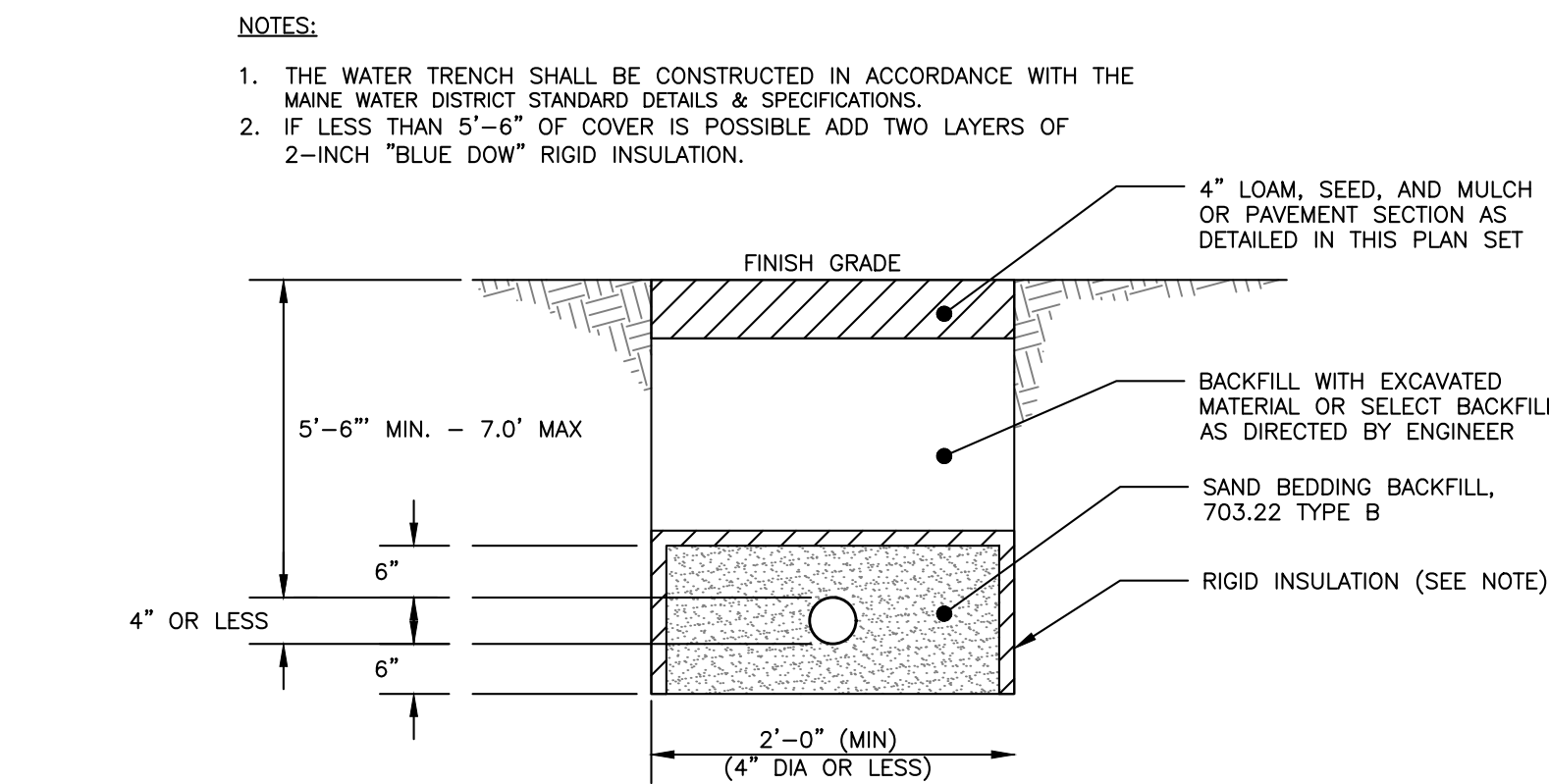
TOP VIEW

- NOTES:
1. IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER
 2. SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

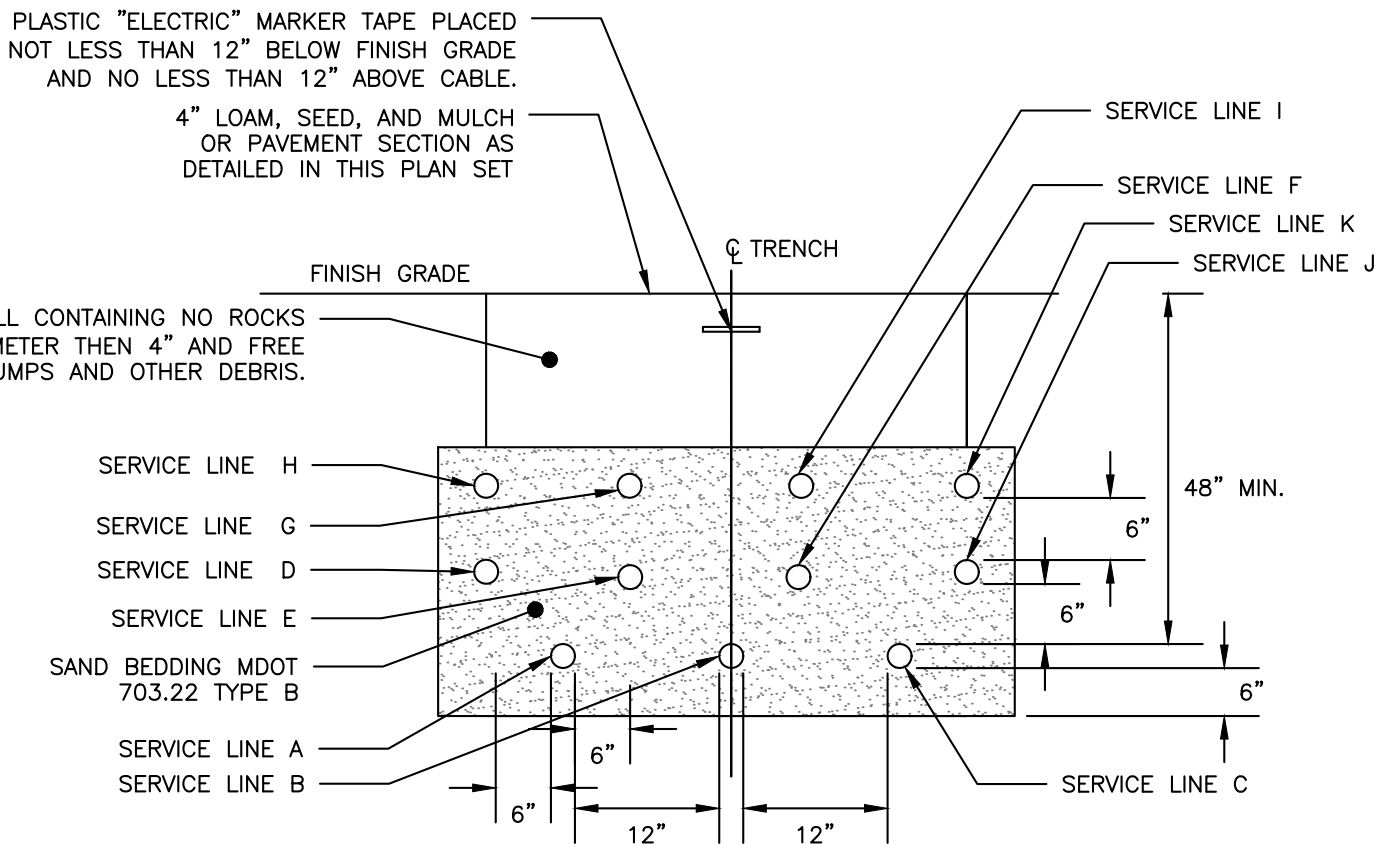
THRUST BLOCKING: REGULAR BEND
NOT TO SCALE



END SECTION



WATER SERVICE TRENCH SECTION DETAIL
NOT TO SCALE



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	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
D	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-
E	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-
F	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-
G	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-
H	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-
I	4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-
J	4"	SCHEDULE 40 PVC	SPARE	-
K	4"	SCHEDULE 40 PVC	SPARE	-

- 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 THE 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.

UTILITY TRENCH - PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE

ISSUED FOR	BY
CONCEPT	WHS
PRELIM SITE	SJL
SITE PLAN	SJL
COMMENT RESPONSE	SJL

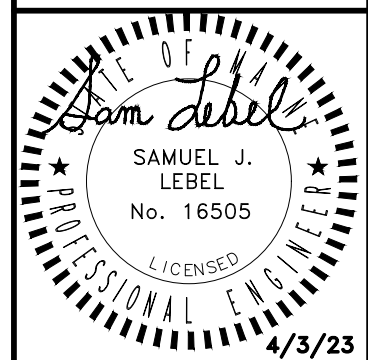
UTILITY DETAILS - 1	
PROJECT NAME:	89 ELM STREET REDEVELOPMENT - PORTLAND
CLIENT:	89 ELM, LLC
	188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

THIS PLAN SHALL NOT BE MOVED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS SHALL BE MADE WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

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

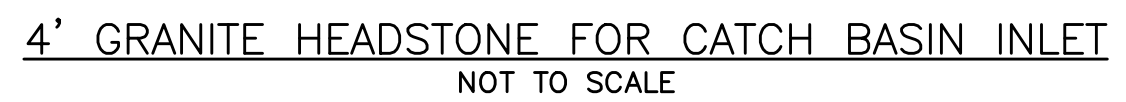
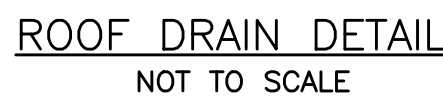
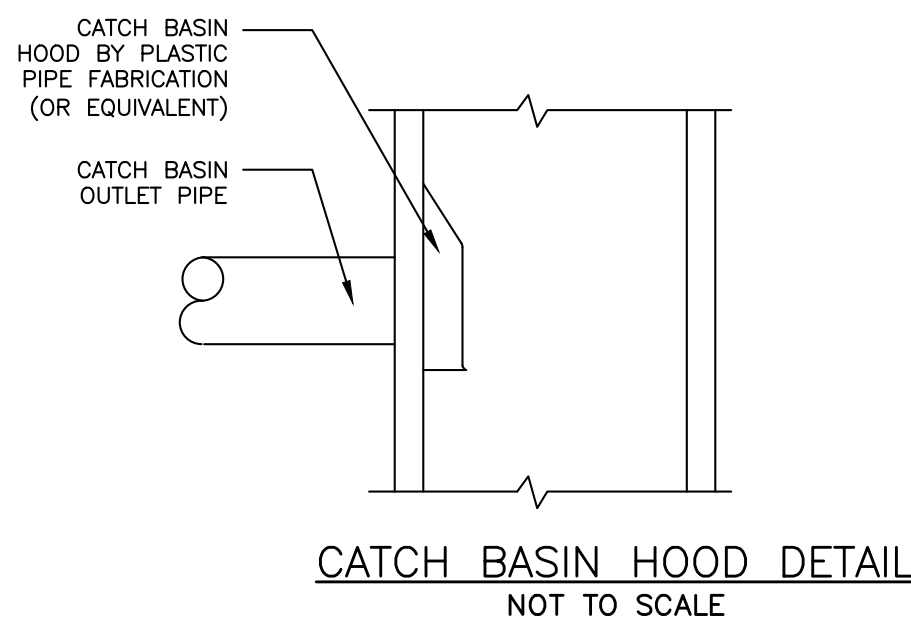
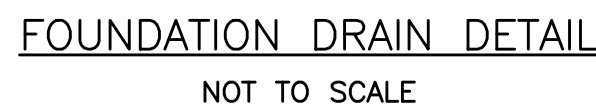
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DESIGNED BY:	SJL
DRAWN BY:	DNM
CHECKED BY:	WHS



DRAWING NO.

C-42

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 SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK-UP 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 DR5A 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.



PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

[illegible]

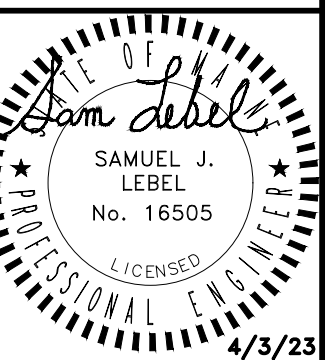
PROJECT NAME: **89 ELM STREET REDEVELOPMENT – PORTLAND**

CLIENT: **89 ELM, LLC**
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101


A C O R N
ENGINEERING, INC.

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

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DESIGNED BY:	SJL
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CHECKED BY:	WHS



DRAWING NO.

C-44

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

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 SOLID 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/RAIN MANHOLE COVERS SHALL HAVE "RAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE EITHER 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 EITHER DR5A 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.

NOTES:

1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.
3. FOUNDATION WALL FOOTINGS SHALL BE CONSTRUCTED TO A MIN. DEPTH OF 4 FT BELOW ADJACENT FINISH GRADE. REFER TO STRUCTURAL ENGINEERS PLANS FOR ADDITIONAL INFORMATION AND MIN. REQUIREMENTS.

SEE GEOTECHNICAL REPORT AND STRUCTURAL PLANS FOR SLAB ON GRADE CONSTRUCTION REQUIREMENTS

FOUNDATION BACKFILL (MDOT SPEC. 703.06, TYPE E)

BUILDING FOUNDATION

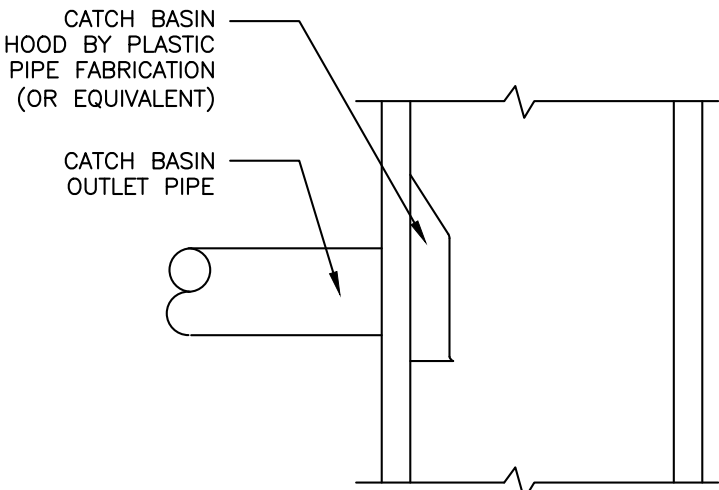
3/4" CRUSHED STONE (MDOT 703.22 TYPE C) WRAPPED IN MIRAFI 140N ON TOP, BOTTOM, AND SIDES

4" SINGLE WALL HDPE PERFORATED FOUNDATION DRAIN WITH SMOOTH INTERIOR. SLOPE TO OUTFALL

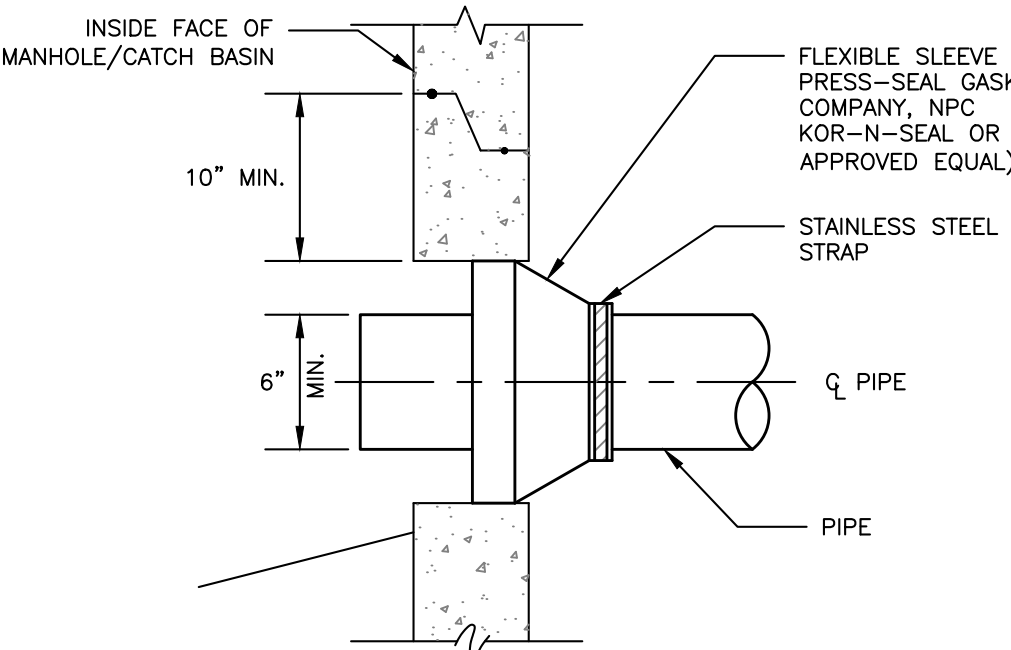
FOUNDATION DRAIN DETAIL
NOT TO SCALE

NOTES:

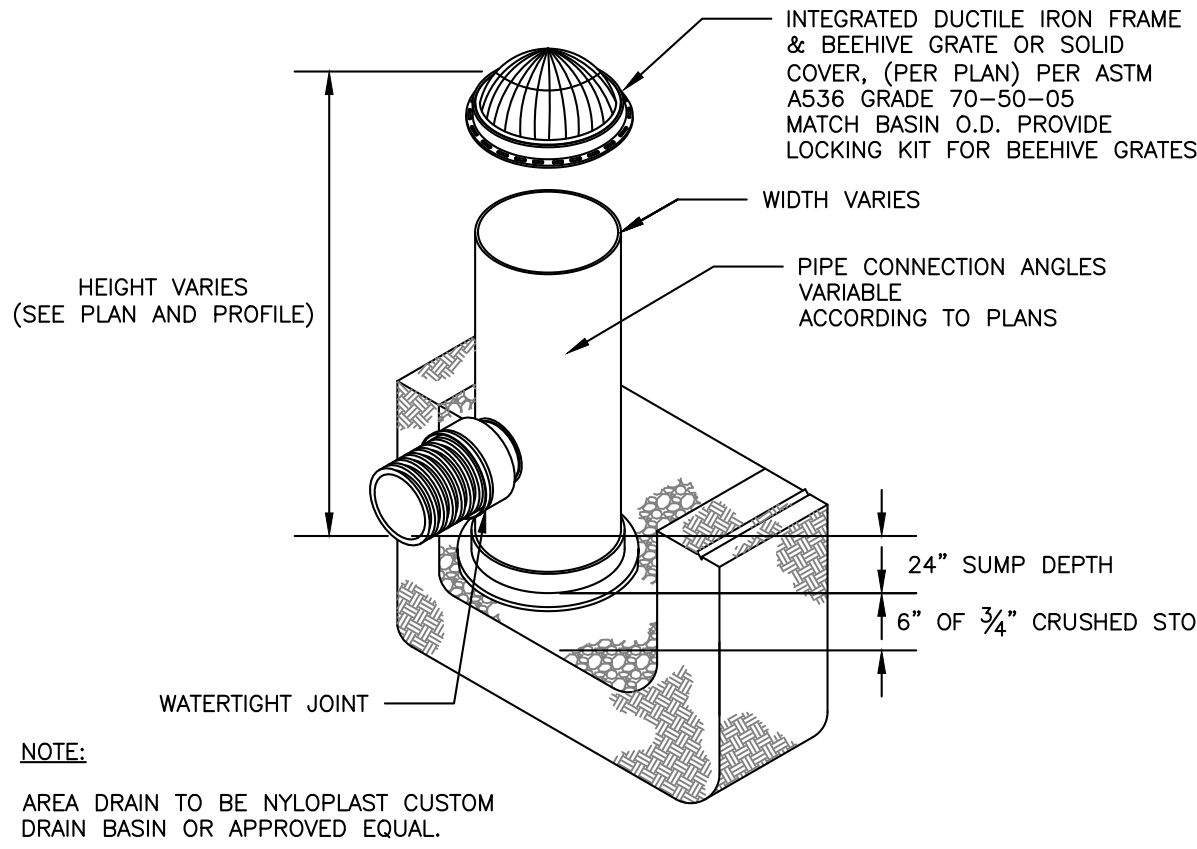
1. INSTALL HOOD ON ALL OUTLETS 24" OR LESS.
2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS.



CATCH BASIN HOOD DETAIL
NOT TO SCALE



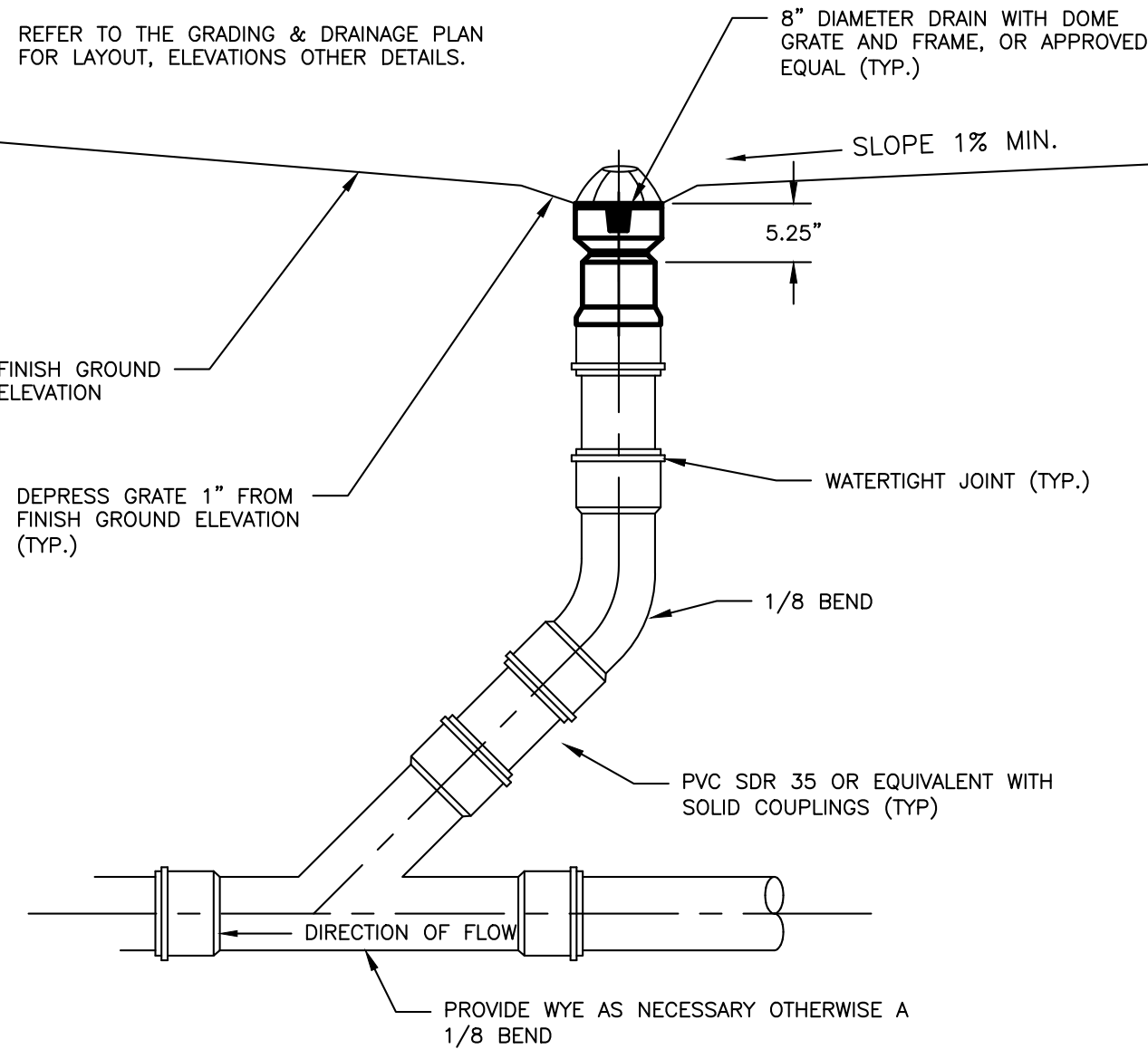
NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL
NOT TO SCALE



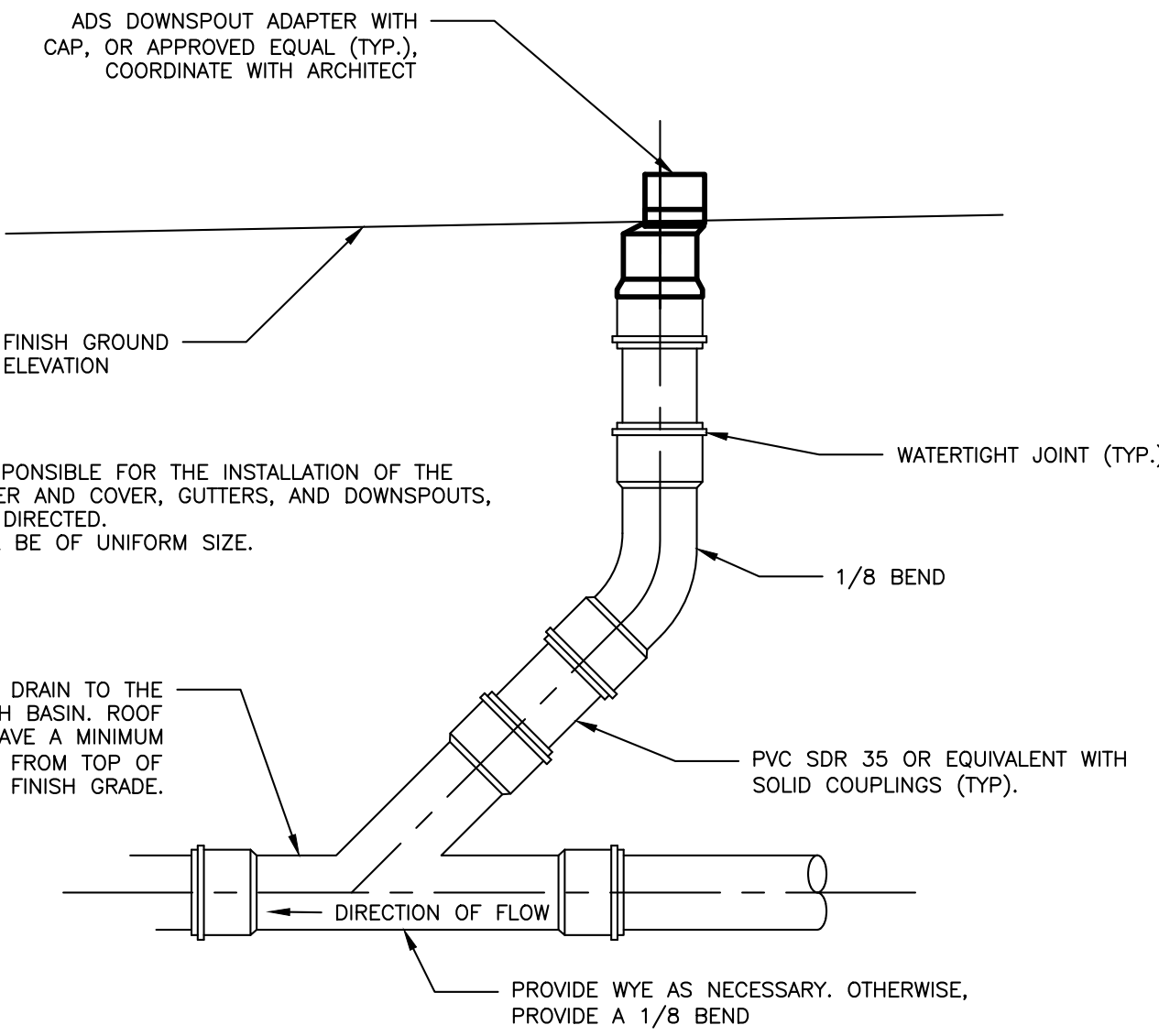
BEEHIVE DRAIN DETAIL
NOT TO SCALE

NOTES:

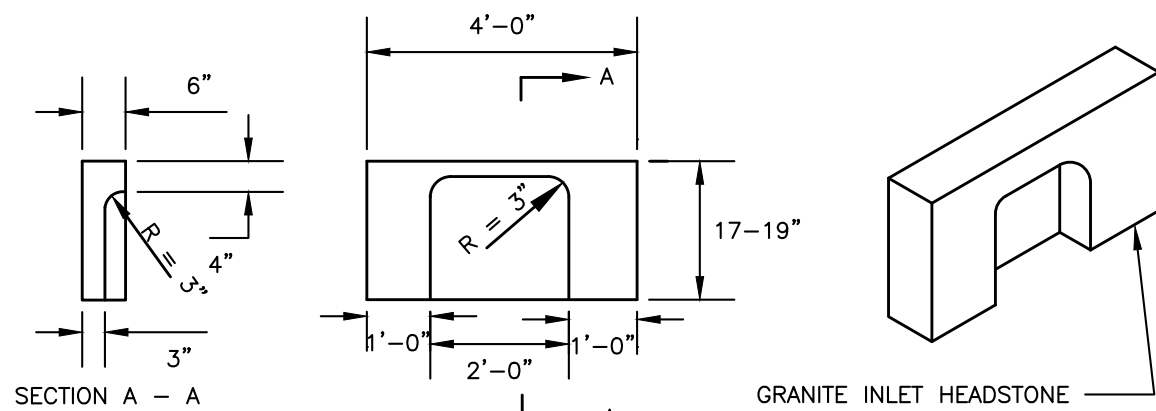
1. REFER TO THE GRADING & DRAINAGE PLAN FOR LAYOUT, ELEVATIONS OTHER DETAILS.



INLINE DRAIN DETAIL WITH BEEHIVE GRATE
NOT TO SCALE

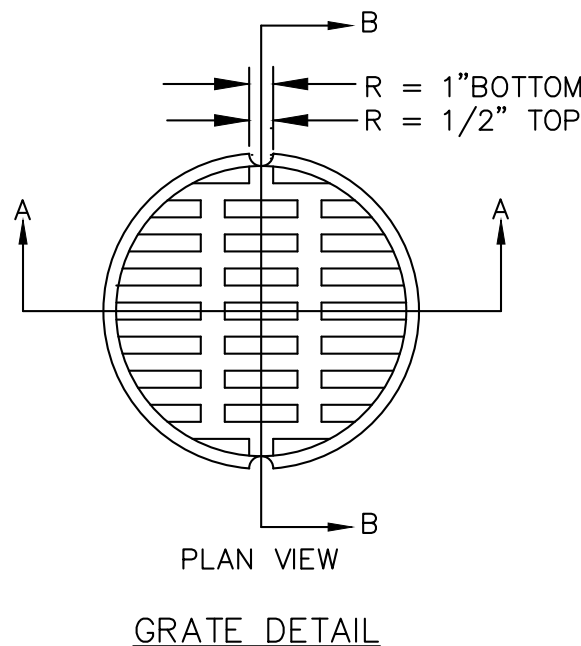
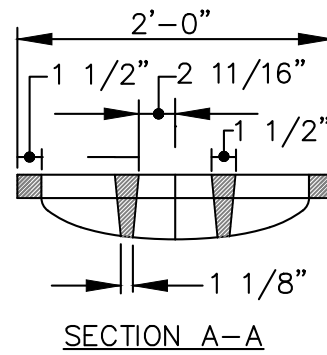


ROOF DRAIN DETAIL
NOT TO SCALE

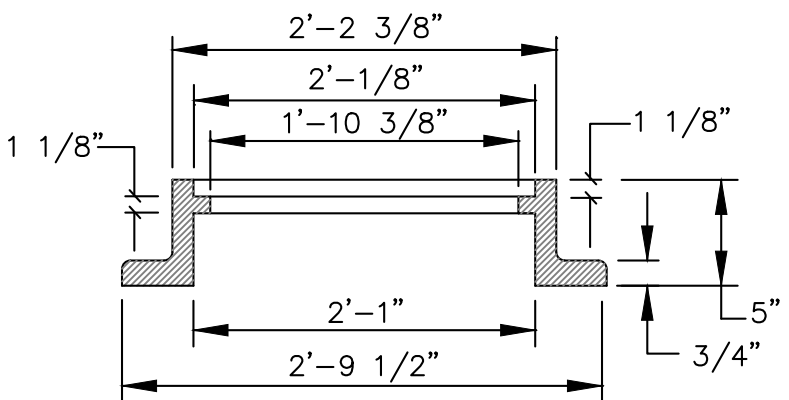


4' GRANITE HEADSTONE FOR CATCH BASIN INLET
NOT TO SCALE

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



GRATE DETAIL



FRAME DETAIL

CIRCULAR CATCH BASIN FRAME & GRATE W/O D-RING
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
CONCEPT	WHS
PRELIM SITE	SJL
SITE PLAN	SJL
COMMENT RESPONSE	WHS

DRAINAGE DETAILS - 1	PROJECT NAME:
89 ELM STREET REDEVELOPMENT - PORTLAND	89 ELM, LLC
	188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101

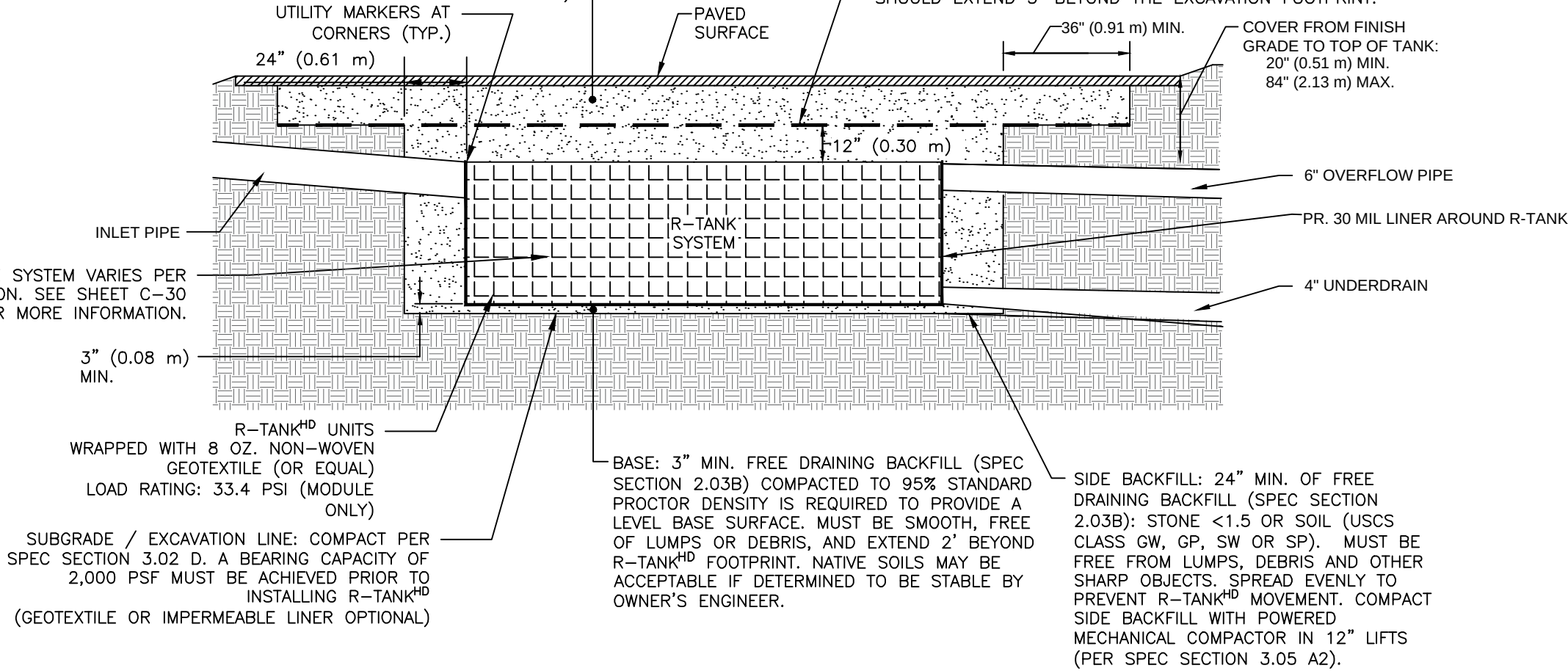
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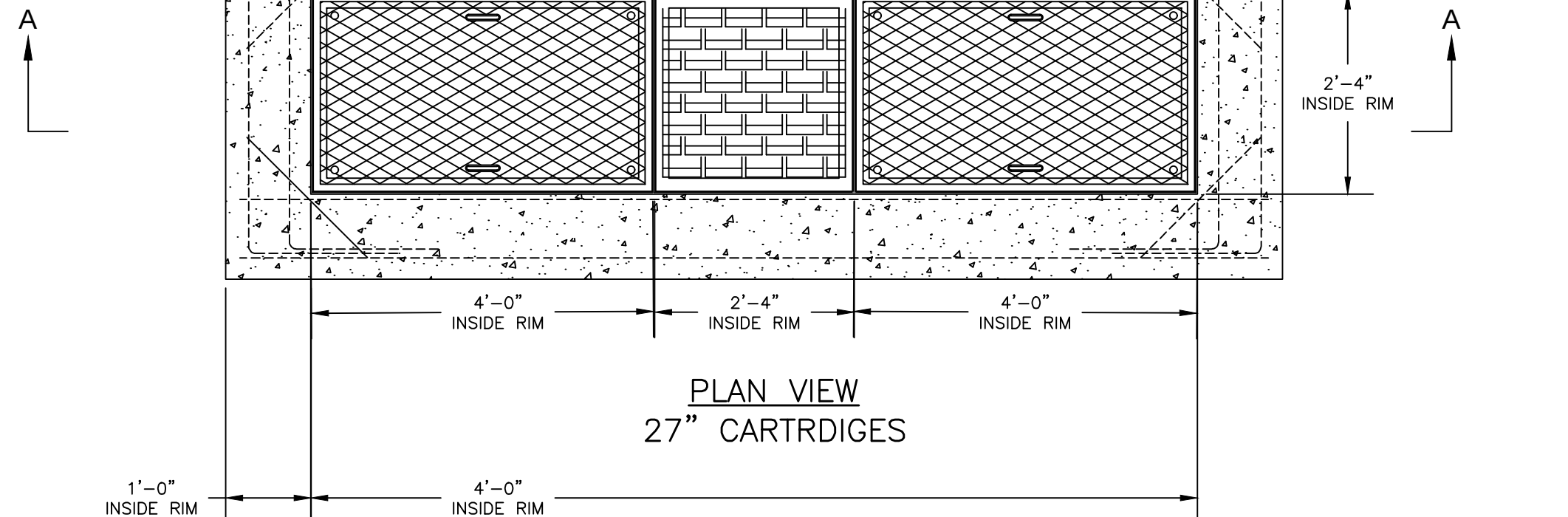


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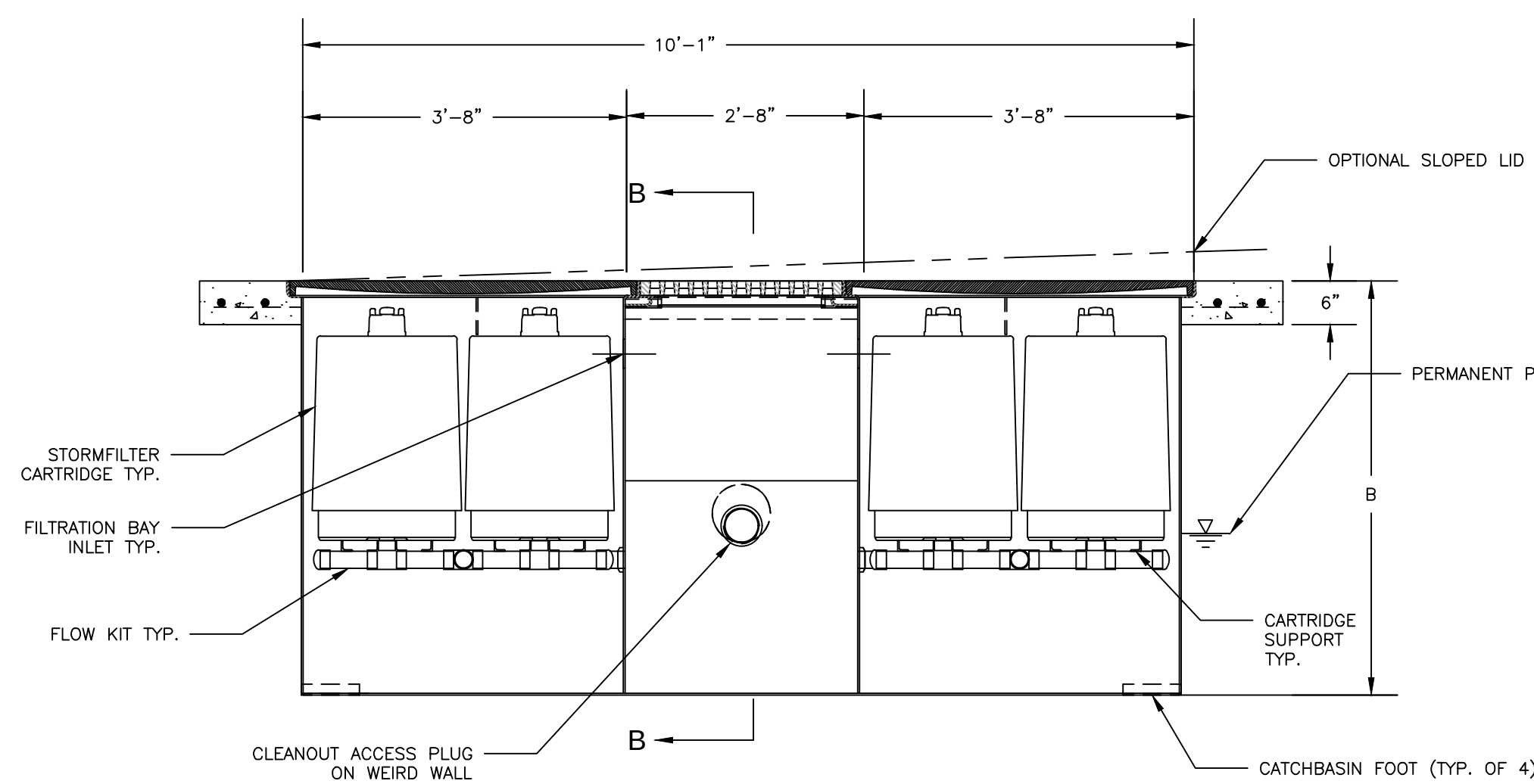
C-44



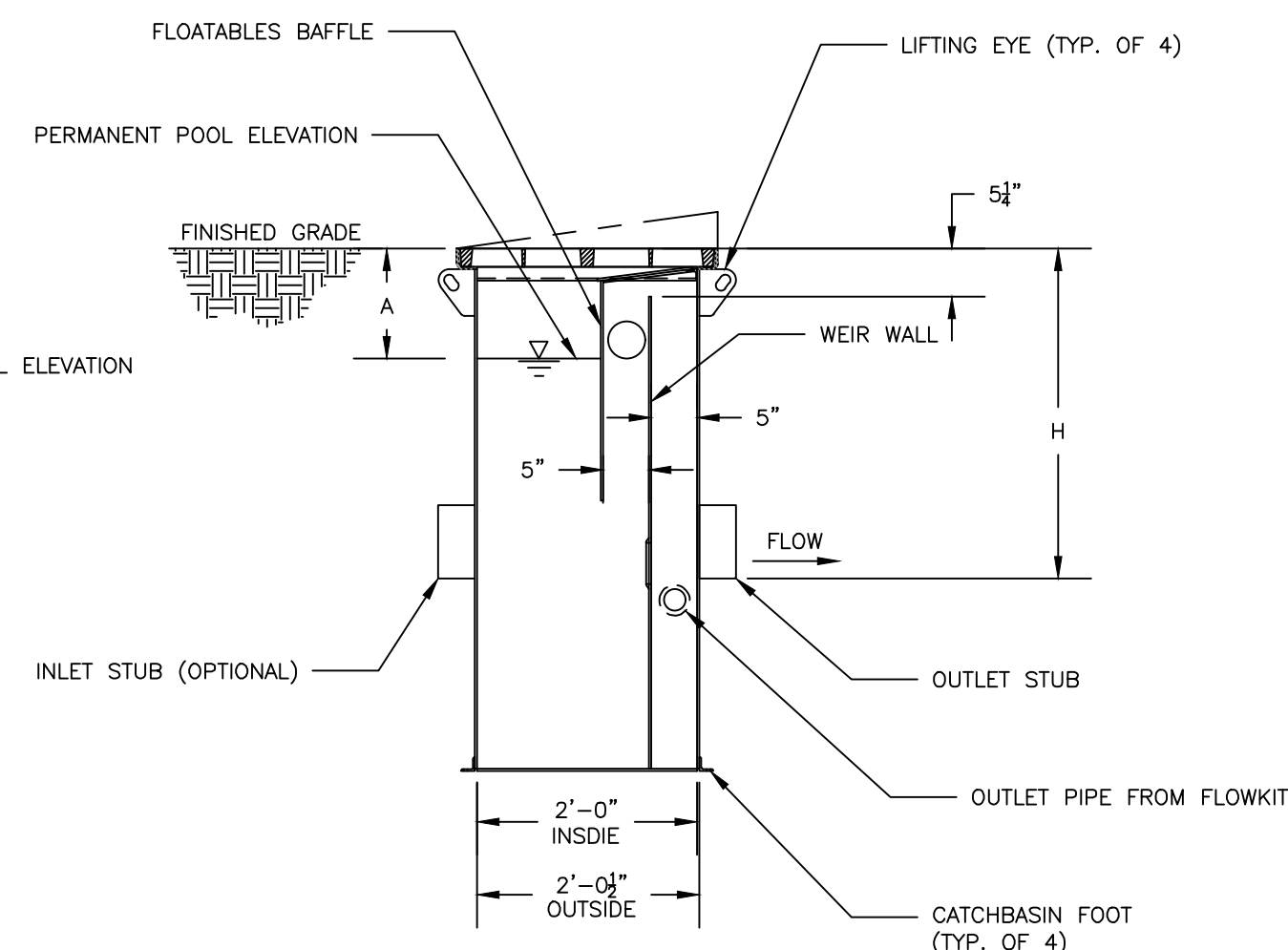
R-TANK SYSTEM DETAIL
NOT TO SCALE



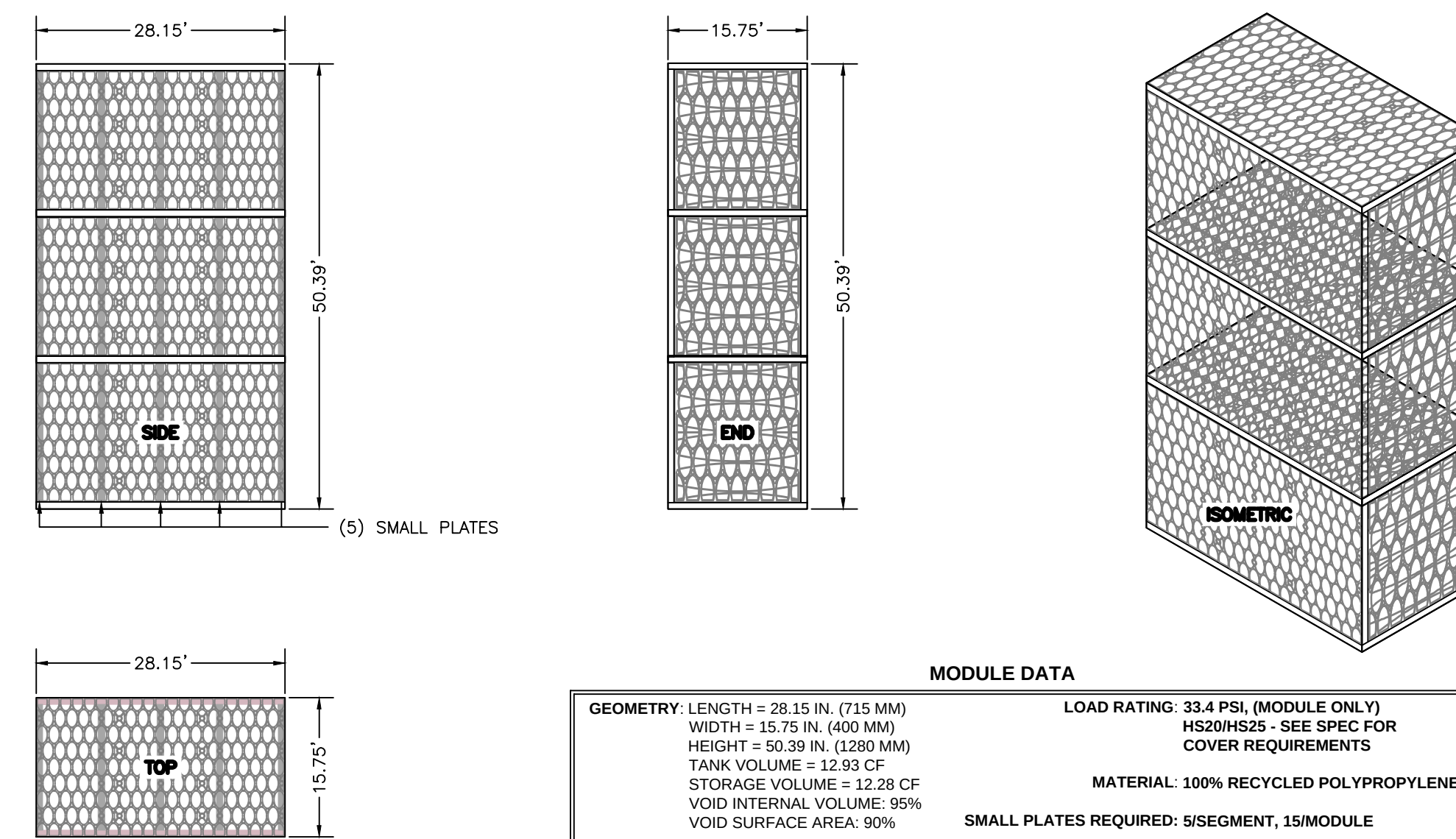
PLAN VIEW
7" CARTRIDGES



SECTION A-A



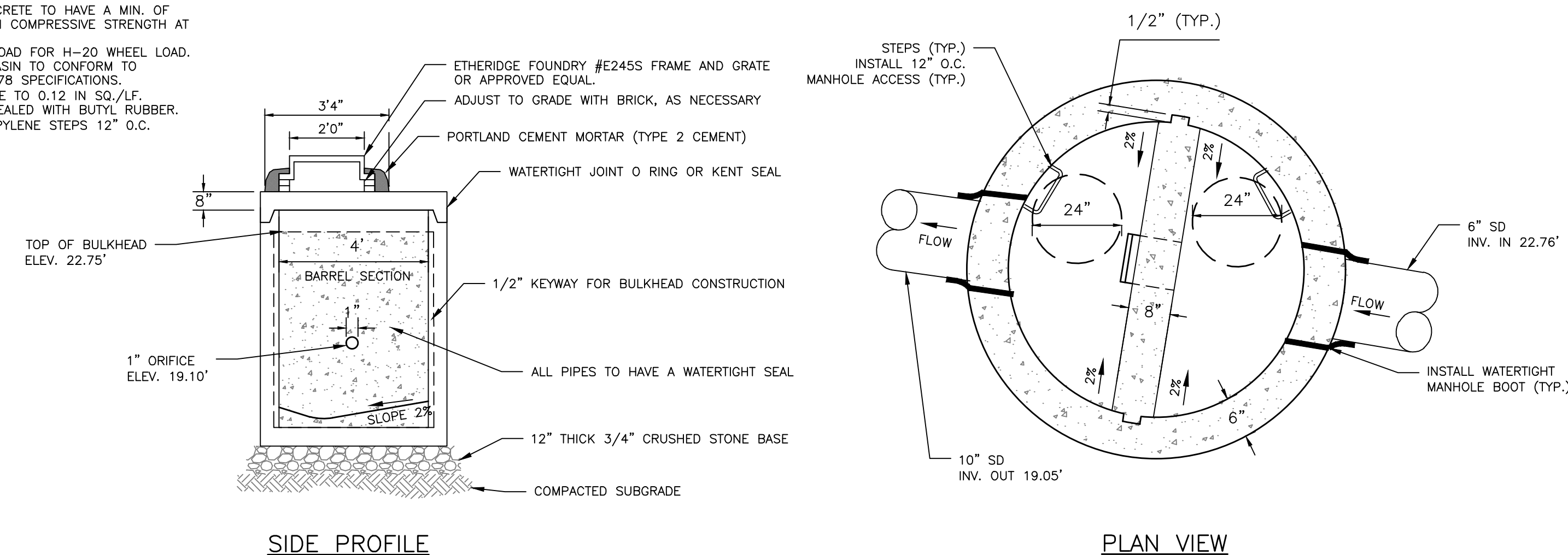
SECTION C-C



MODULE DATA

GEOMETRY: LENGTH = 28.15 IN. (715 MM) WIDTH = 15.75 IN. (400 MM) HEIGHT = 50.39 IN. (1280 MM) TANK VOLUME = 12.93 CF STORAGE VOLUME = 12.28 CF VOID INTERNAL VOLUME: 95% VOID SURFACE AREA: 90%	LOAD RATING: 33.4 PSI, (MODULE ONLY) HS20/HS25 - SEE SPEC FOR COVER REQUIREMENTS MATERIAL: 100% RECYCLED POLYPROPYLENE SMALL PLATES REQUIRED: 5/SEGMENT, 15/MODULE
--	---

R-TANK TRIPLE STACKED-HD MODULAR DETAIL
NOT TO SCALE



SIDE PROFILE

PLAN VIEW

OUTLET CONTROL STRUCTURE
NOT TO SCALE

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 4 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF FOUR CARTRIDGES. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL. PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED. CARTRIDGE SELECTION

CATRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (H)	3.05"			2.3"			3.3"		
SPECIFIC FLOW RATE (GPM/SF)	2 GPM/SF	1.67* GPM/SF	1 GPM/SF	2 GPM/SF	1.67* GPM/SF	1 GPM/SF	2 GPM/SF	1.67* GPM/SF	1 GPM/SF
CARTRIDGE FLOW RATE (GPM)	22.5	18.79	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-9"			3'-9"			4'-9"		
* 1.67 GPM/SF SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB (PSORB) MEDIA ONLY									

* 1.67 GPM/SF SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB (PSORB) MEDIA ONLY

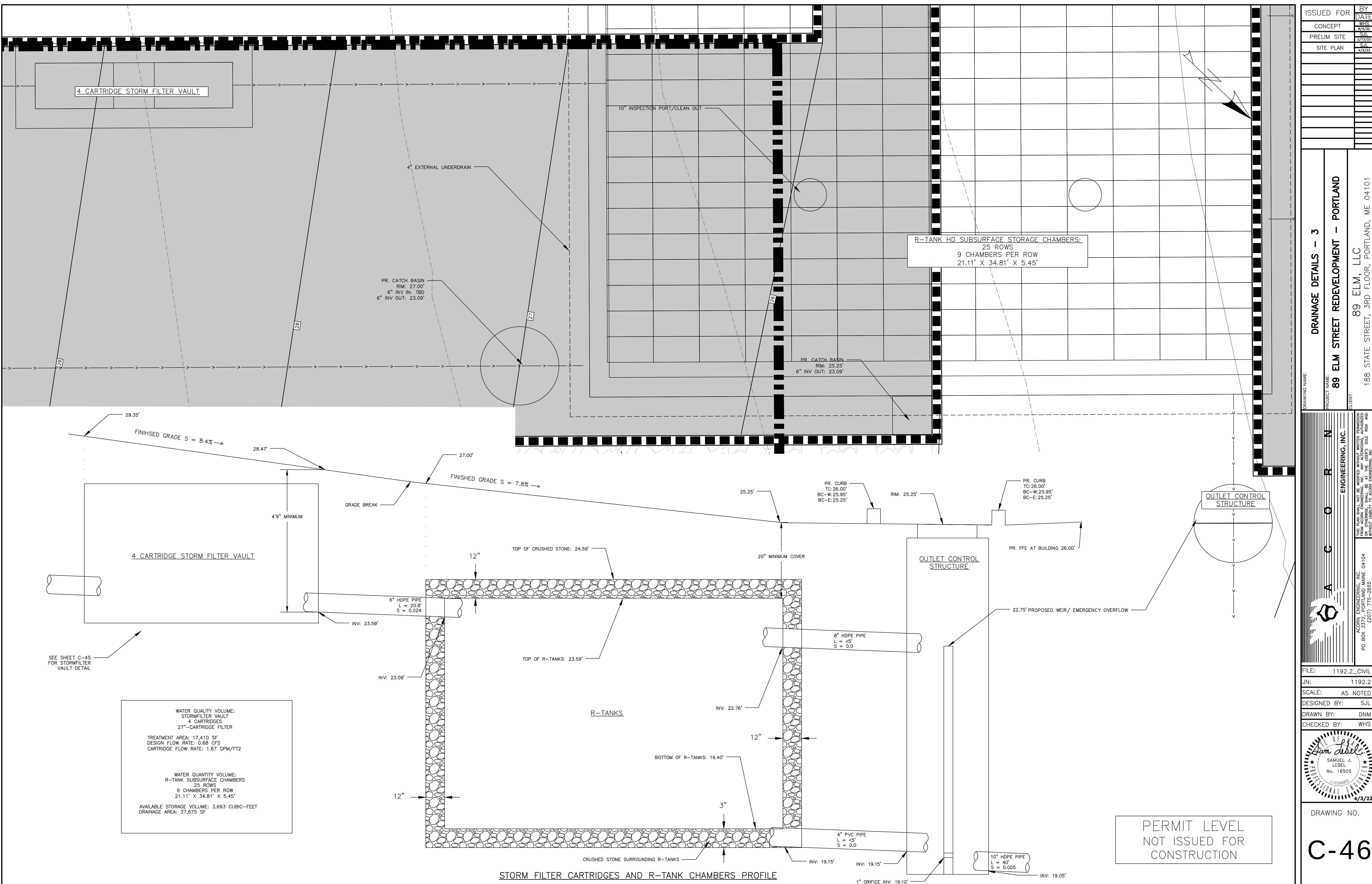
GENERAL NOTES

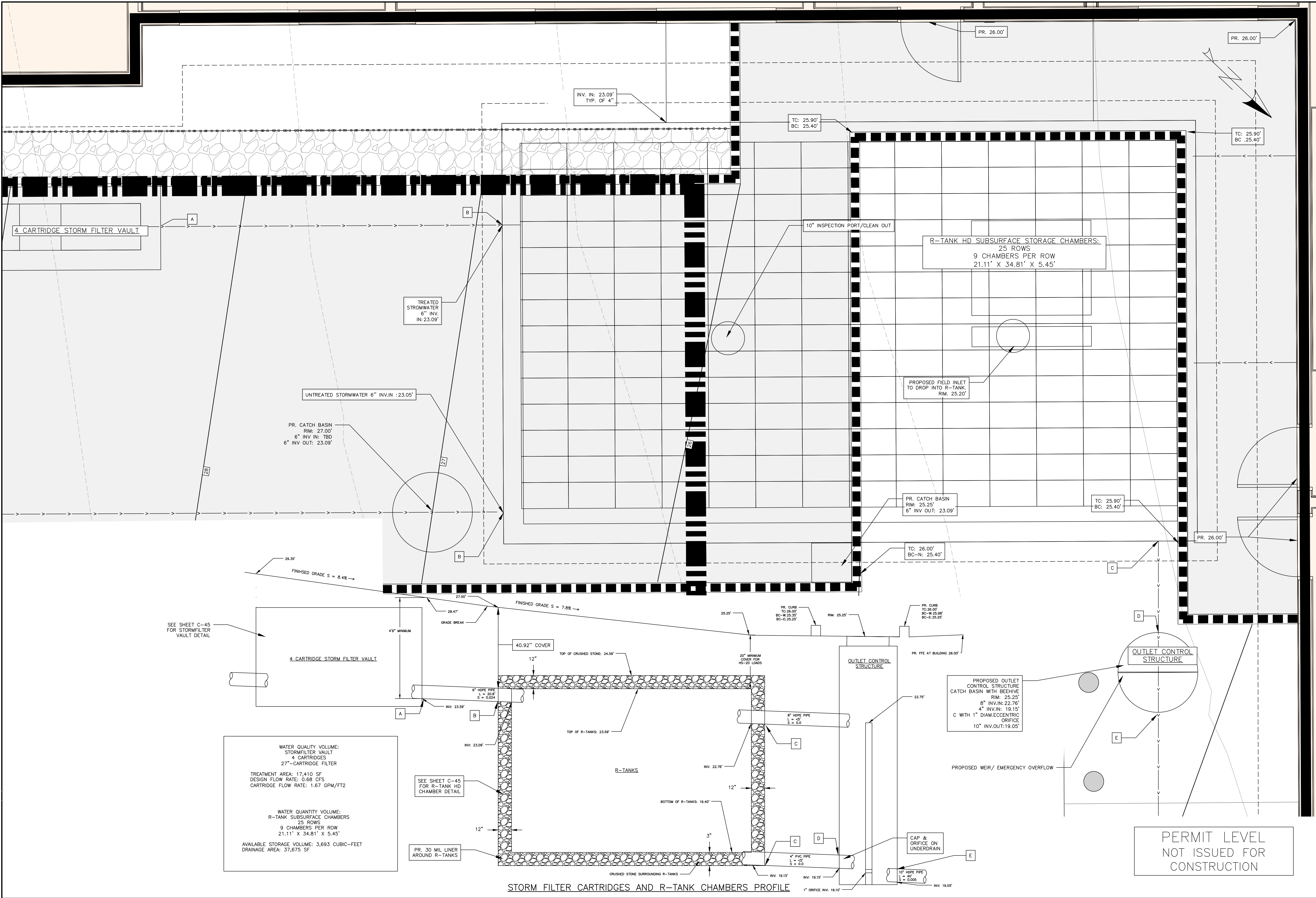
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCH-BASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
3. STORMFILTER CATCH-BASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SCFB.
6. STORMFILTER CATCH-BASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 12 INCHES IN DIAMETER. MAXIMUM INLET STUB IS 12 INCHES IN DIAMETER.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING, TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTIVATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

INSTALLATION NOTES

- INSULATION NOTES
- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION





ISSUED FOR	BY
CONCEPT	WHS
PRELIM SITE	SJL
SITE PLAN	SJL
COMMENT RESPONSE	WHS

DRAWING NAME: DRAINAGE DETAILS - 3	
PROJECT NAME: 89 ELM STREET REDEVELOPMENT - PORTLAND	
CLIENT: 89 ELM, LLC	
188 STATE STREET, 3RD FLOOR, PORTLAND, ME 04101	

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

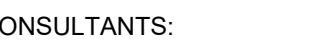
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DESIGNED BY:	SJL
DRAWN BY:	DNM
CHECKED BY:	WHS

SAMUEL J. LEBEL
No. 16505
4/3/23

DRAWING NO.
C-46

APARTMENTS

89 ELM STREET
PORTLAND, MAINE



DATE: // //

PROJECT No. 224

RAWN BY: RR1

CHECKED BY: RJS

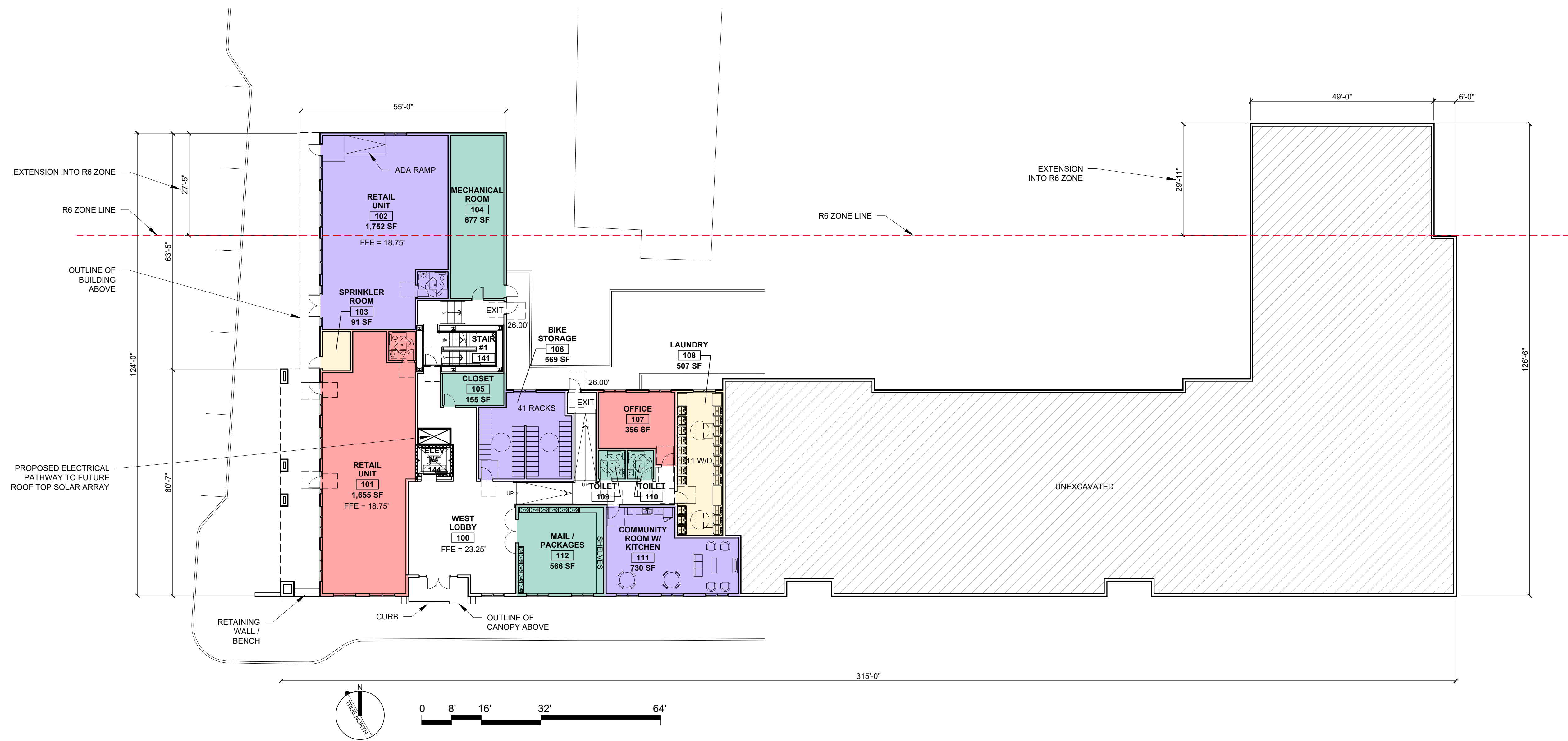
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A1-1

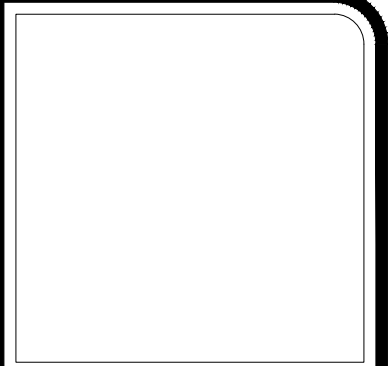


1ST FLOOR

0 UNITS 9,365 SF



1 FIRST FLOOR
1/16" = 1'-0"



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ARCHITECTURE

APARTMENTS
89 ELM STREET
PORTLAND, MAINE



RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
O: 207-747-5159
C: 207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS:
PROGRESS PRINT ONLY
Not for Construction
MAY 16, 2023

DATE:

PROJECT No: 2241

DRAWN BY: RRT

CHECKED BY: RJS

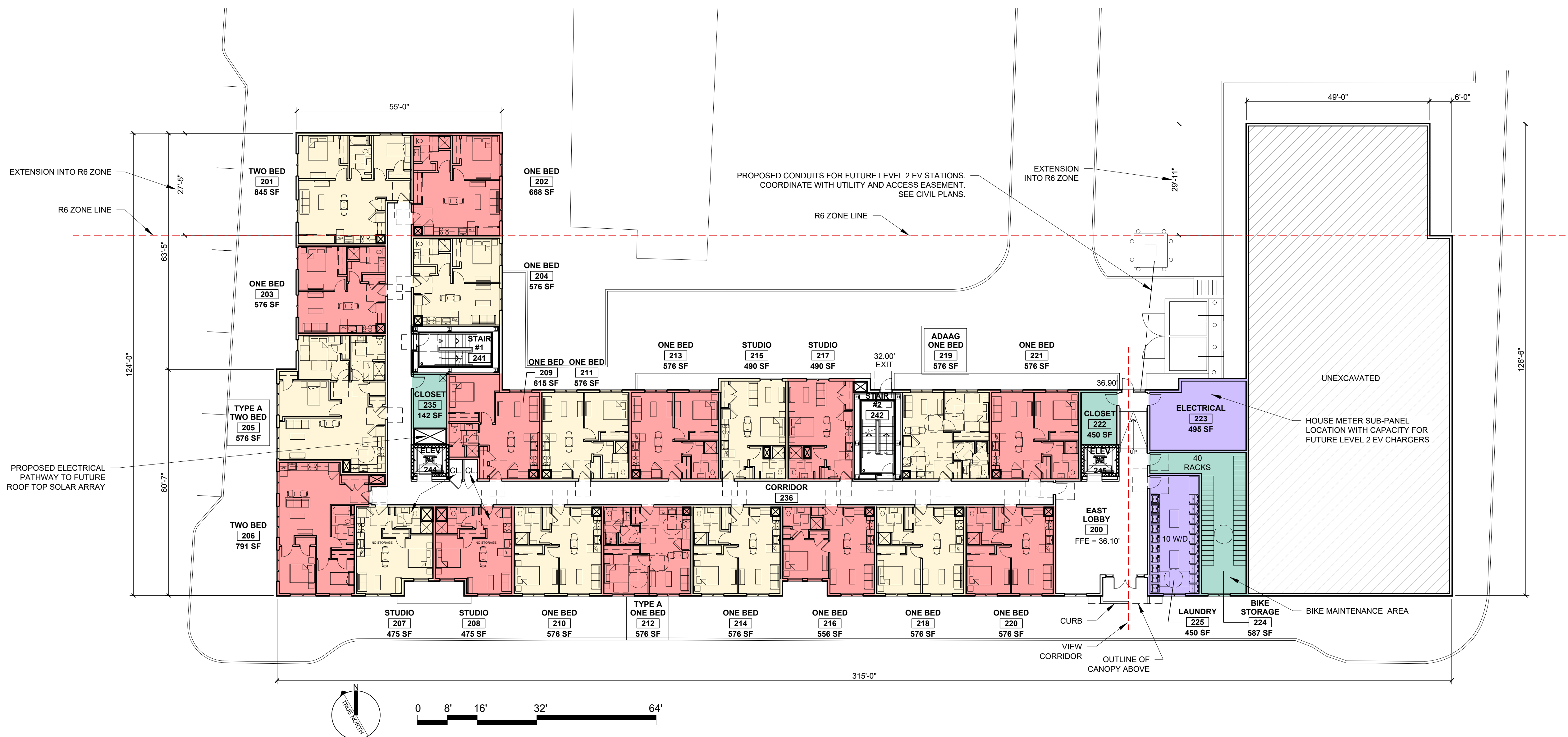
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SHEET TITLE:
FIRST FLOOR
PLAN

A1-1

2ND FLOOR
21 UNITS 18,156 SF

- 4 STUDIO UNITS
14 ONE BEDROOM UNITS
3 TWO BEDROOM UNITS
- (1) TYPE A - ONE BED
(1) ADAAG - ONE BED
(1) TYPE A - TWO BED



1 SECOND FLOOR
1/16" = 1'-0"

APARTMENTS
89 ELM STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
O: 207-747-5159
C: 207-650-6414
senatorearchitecture.com

CONSULTANTS:

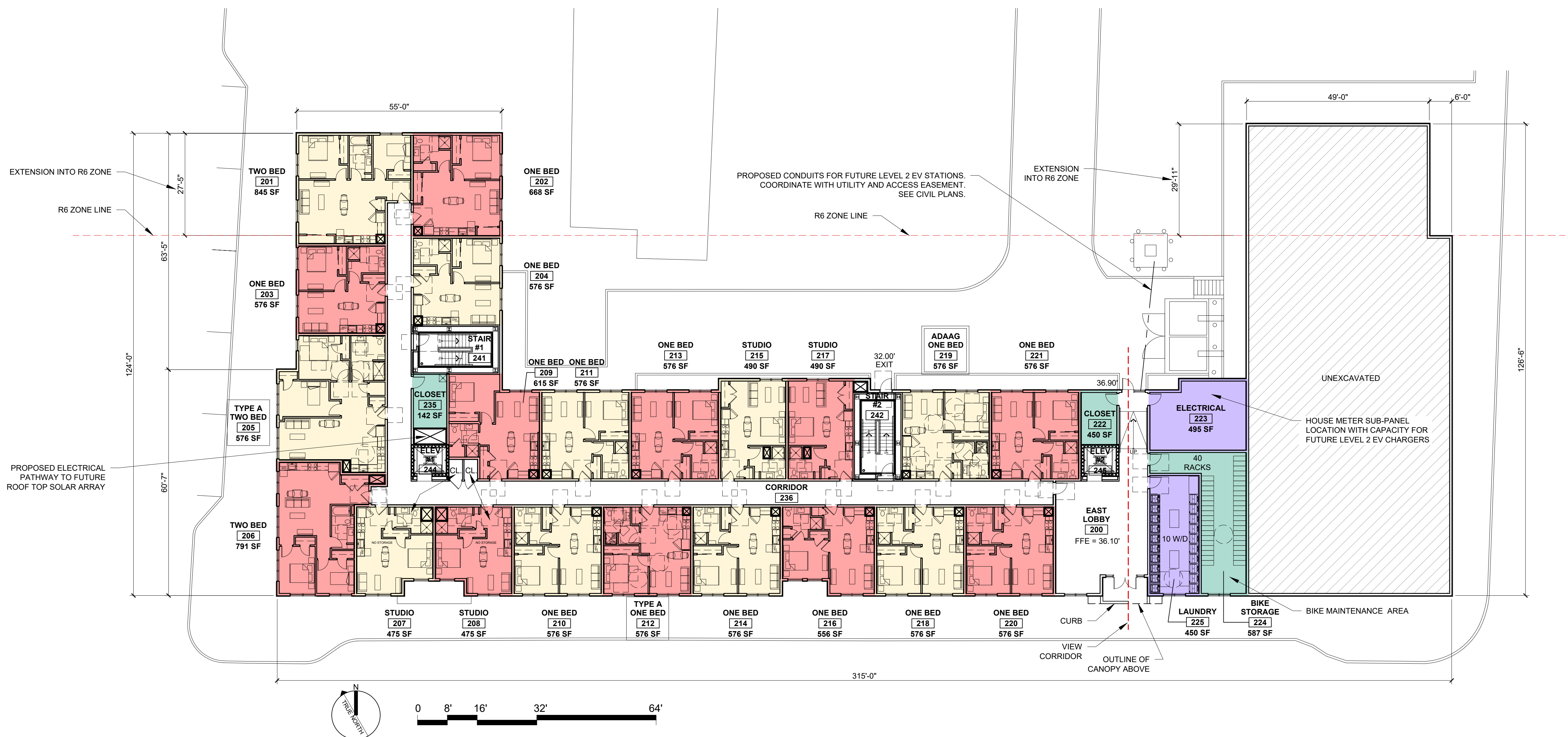
REVISIONS:
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MARCH 31, 2023

DATE:
PROJECT No.: 2241
DRAWN BY: RRT
CHECKED BY: RJS
SCALE: AS NOTED
SHEET TITLE:
SECOND FLOOR
PLAN

A1-2

2ND FLOOR
21 UNITS 18,156 SF

- 4 STUDIO UNITS
14 ONE BEDROOM UNITS
3 TWO BEDROOM UNITS
- (1) TYPE A - ONE BED
(1) ADAAG - ONE BED
(1) TYPE A - TWO BED



1 SECOND FLOOR
1/16" = 1'-0"

APARTMENTS
89 ELM STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
O: 207-747-5159
C: 207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS:
PROGRESS PRINT ONLY
Not for Construction
MAY 16, 2023

DATE:
PROJECT No.: 2241
DRAWN BY: RRT
CHECKED BY: RJS
SCALE: AS NOTED
SHEET TITLE:
SECOND FLOOR
PLAN

A1-2

THIRD FLOOR
29 UNITS 24,882 SF

- 4 STUDIO UNITS
20 ONE BEDROOM UNITS
5 TWO BEDROOM UNITS
- (1) H/V - ONE BED
(1) ADAAG - ONE BED
(1) TYPE A - TWO BED



1 THIRD FLOOR
1/16" = 1'-0"

APARTMENTS
89 ELM STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
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CHECKED BY: RJS
SCALE: AS NOTED
SHEET TITLE:
THIRD FLOOR
PLAN

A1-3

THIRD FLOOR
29 UNITS 24,882 SF

- 4 STUDIO UNITS
20 ONE BEDROOM UNITS
5 TWO BEDROOM UNITS
- (1) H/V - ONE BED
(1) ADAAG - ONE BED
(1) TYPE A - TWO BED



1 THIRD FLOOR
1/16" = 1'-0"

APARTMENTS
89 ELM STREET
PORTLAND, MAINE

RSA
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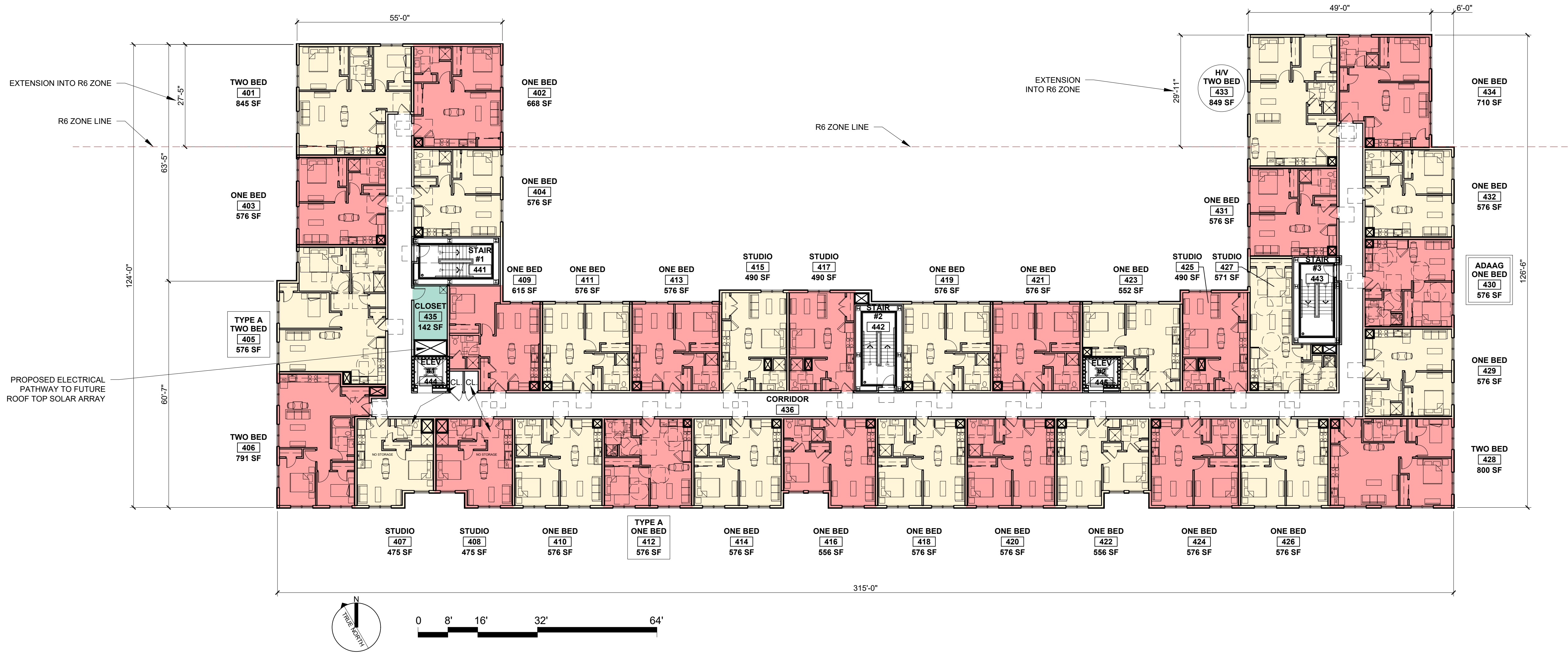
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PROJECT No:	2241
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SCALE:	AS NOTED
SHEET TITLE:	THIRD FLOOR PLAN

A1-3

FOURTH FLOOR
34 UNITS 24,882 SF

- 6 STUDIO UNITS
23 ONE BEDROOM UNITS
5 TWO BEDROOM UNITS
- (1) ADAAG - ONE BED
(1) TYPE A - ONE BED
(1) TYPE A - TWO BED
(1) H/V - TWO BED



1 FOURTH FLOOR
1/16" = 1'-0"

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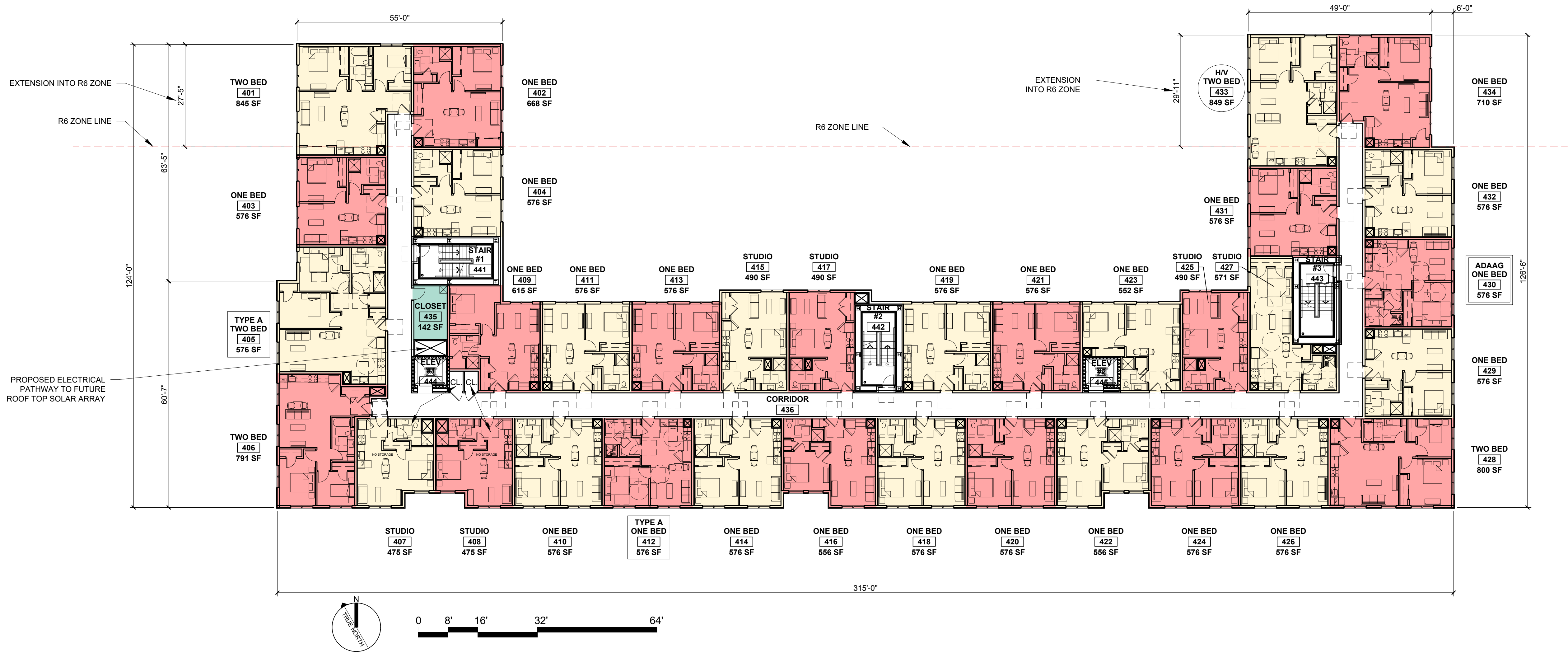
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SCALE: AS NOTED
SHEET TITLE:
FOURTH FLOOR
PLAN

A1-4

FOURTH FLOOR
34 UNITS 24,882 SF

- 6 STUDIO UNITS
23 ONE BEDROOM UNITS
5 TWO BEDROOM UNITS
- (1) ADAAG - ONE BED
(1) TYPE A - ONE BED
(1) TYPE A - TWO BED
(1) H/V - TWO BED



1 FOURTH FLOOR
1/16" = 1'-0"

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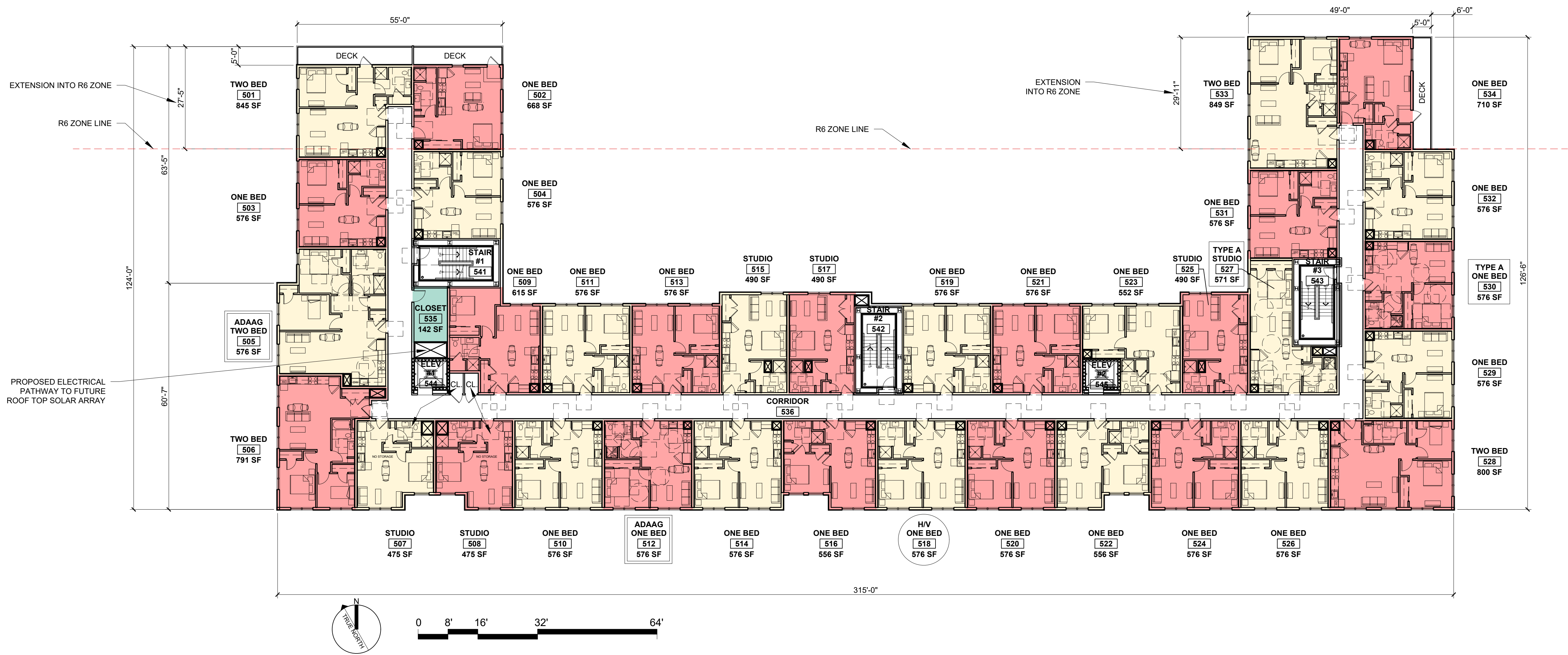
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SCALE: AS NOTED
SHEET TITLE:
FOURTH FLOOR
PLAN

A1-4

FIFTH FLOOR
34 UNITS 24,489 SF

- 7 STUDIO UNITS
22 ONE BEDROOM UNITS
5 TWO BEDROOM UNITS
- (1) TYPE A - STUDIO
(1) TYPE A - ONE BED
(1) ADAAG - ONE BED
(1) H/V - ONE BED
(1) ADAAG - TWO BED



1 FIFTH FLOOR
1/16" = 1'-0"

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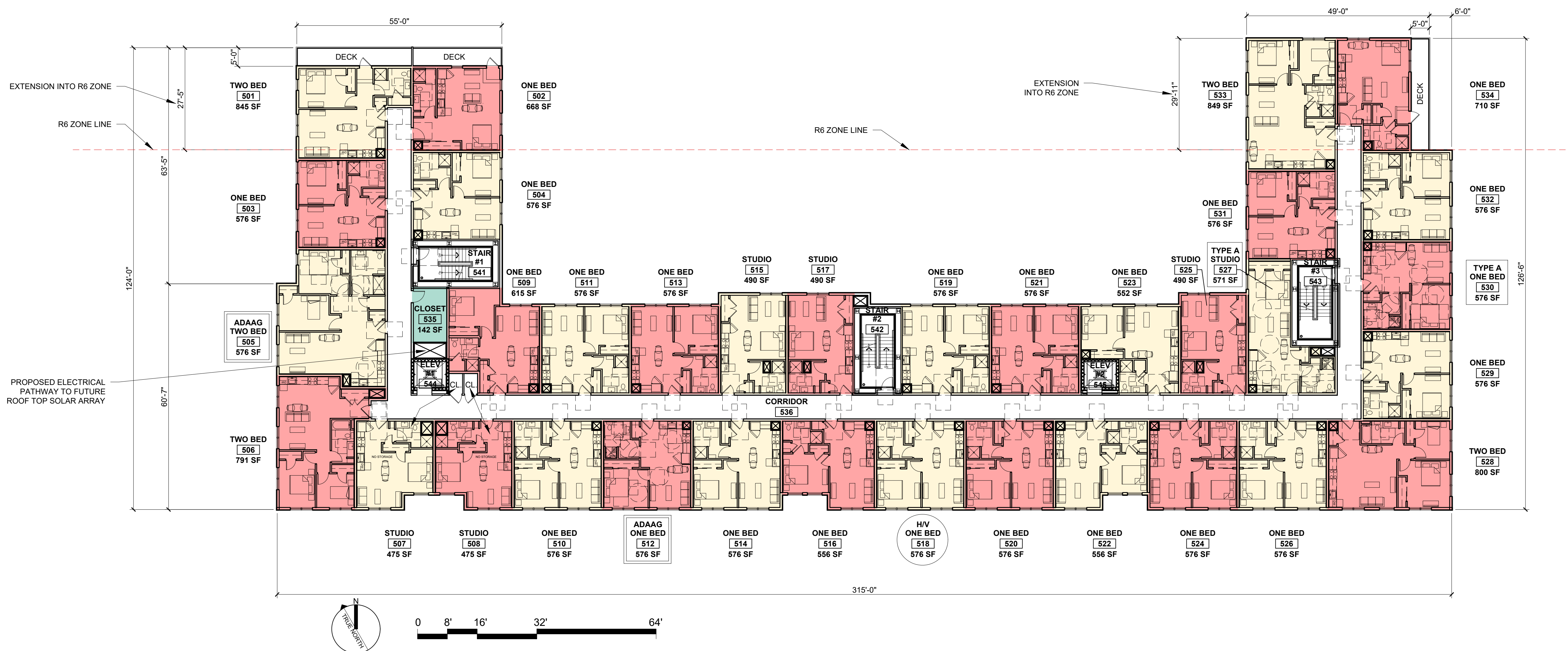
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SCALE: AS NOTED
SHEET TITLE:
FIFTH FLOOR
PLAN

A1-5

FIFTH FLOOR
34 UNITS 24,489 SF

- 7 STUDIO UNITS
22 ONE BEDROOM UNITS
5 TWO BEDROOM UNITS
- (1) TYPE A - STUDIO
(1) TYPE A - ONE BED
(1) ADAAG - ONE BED
(1) H/V - ONE BED
(1) ADAAG - TWO BED



1 FIFTH FLOOR
1/16" = 1'-0"

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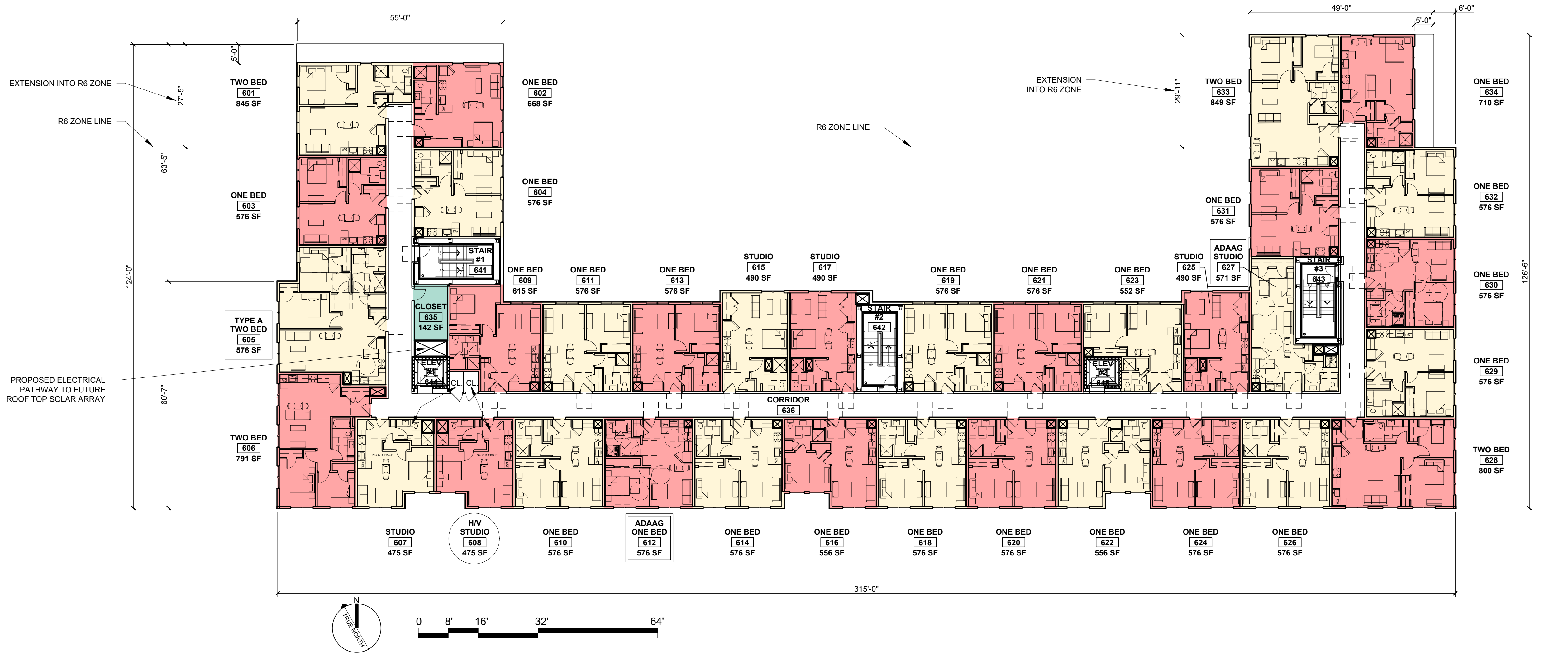
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SCALE: AS NOTED
SHEET TITLE:
FIFTH FLOOR
PLAN

A1-5

6TH FLOOR
34 UNITS 24,489 SF

- 8 STUDIO UNITS
22 ONE BEDROOM UNITS
1 TWO BEDROOM UNITS
- (1) ADAAG - STUDIO
(1) H/V - STUDIO
(1) ADAAG - ONE BED
(1) TYPE A - TWO BED



1 SIXTH FLOOR
1/16" = 1'-0"

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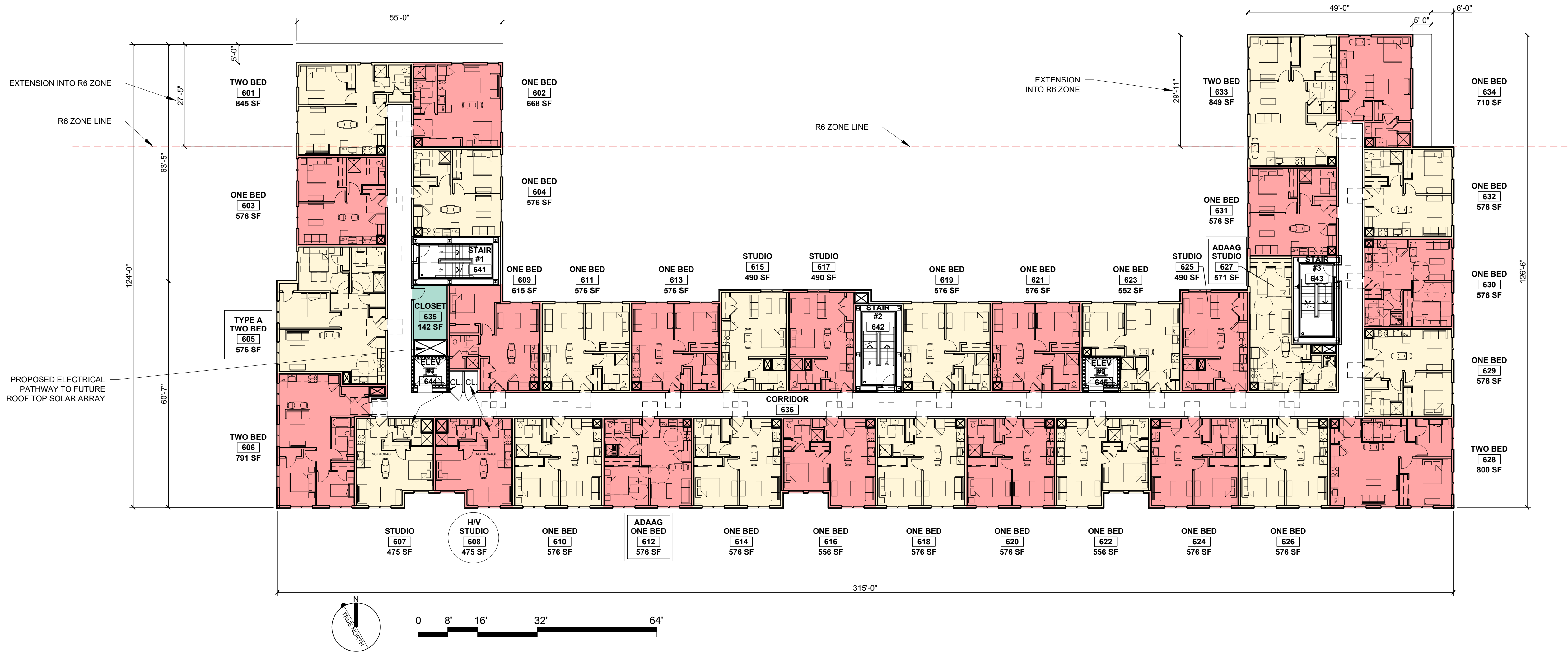
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SCALE: AS NOTED
SHEET TITLE:
SIXTH FLOOR
PLAN

A1-6

6TH FLOOR
34 UNITS 24,489 SF

- 8 STUDIO UNITS
22 ONE BEDROOM UNITS
1 TWO BEDROOM UNITS
- (1) ADAAG - STUDIO
(1) H/V - STUDIO
(1) ADAAG - ONE BED
(1) TYPE A - TWO BED



1 SIXTH FLOOR
1/16" = 1'-0"

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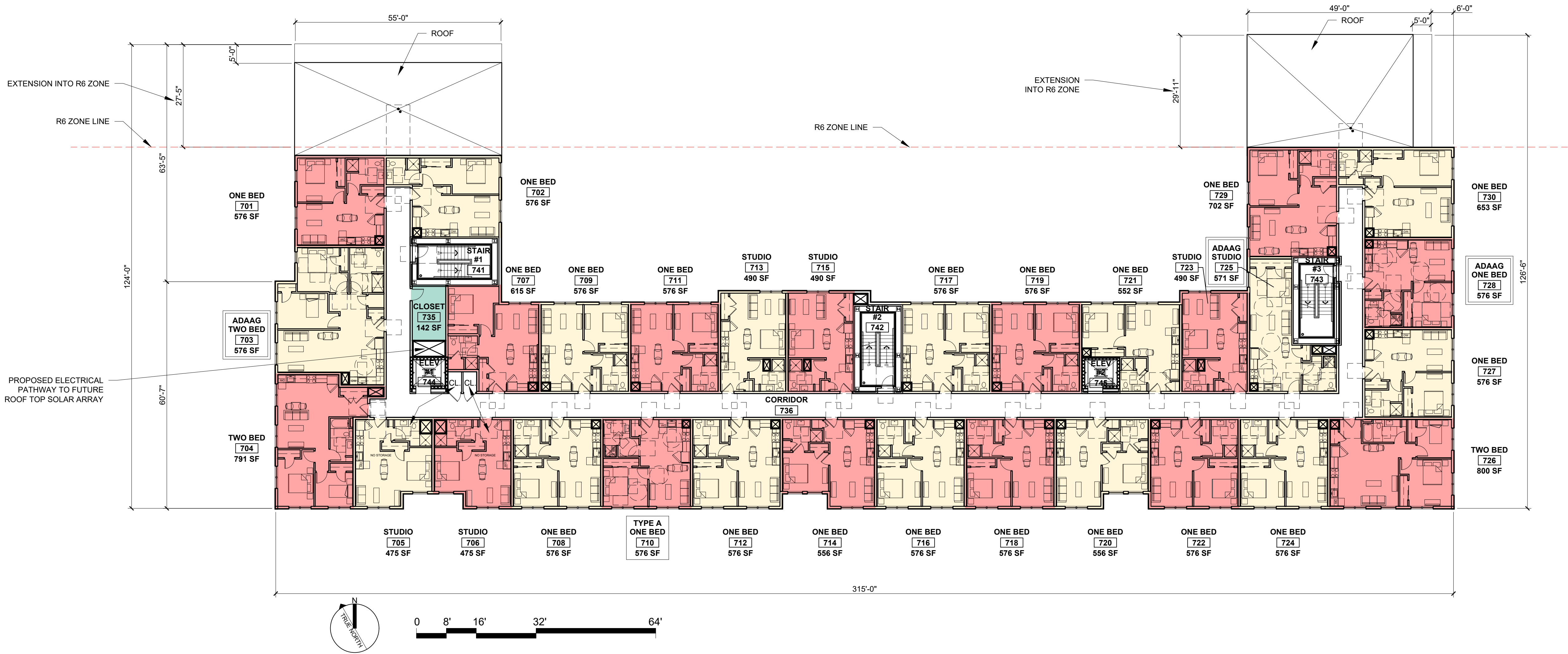
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SHEET TITLE:
SIXTH FLOOR
PLAN

A1-6

7TH FLOOR
30 UNITS 21,801 SF

- 6 STUDIO UNITS
21 ONE BEDROOM UNITS
3 TWO BEDROOM UNITS
- (1) ADAAG - STUDIO
(1) TYPE A - ONE BED
(1) ADAAG - ONE BED
(1) ADAAG - TWO BED



1 SEVENTH FLOOR
1/16" = 1'-0"

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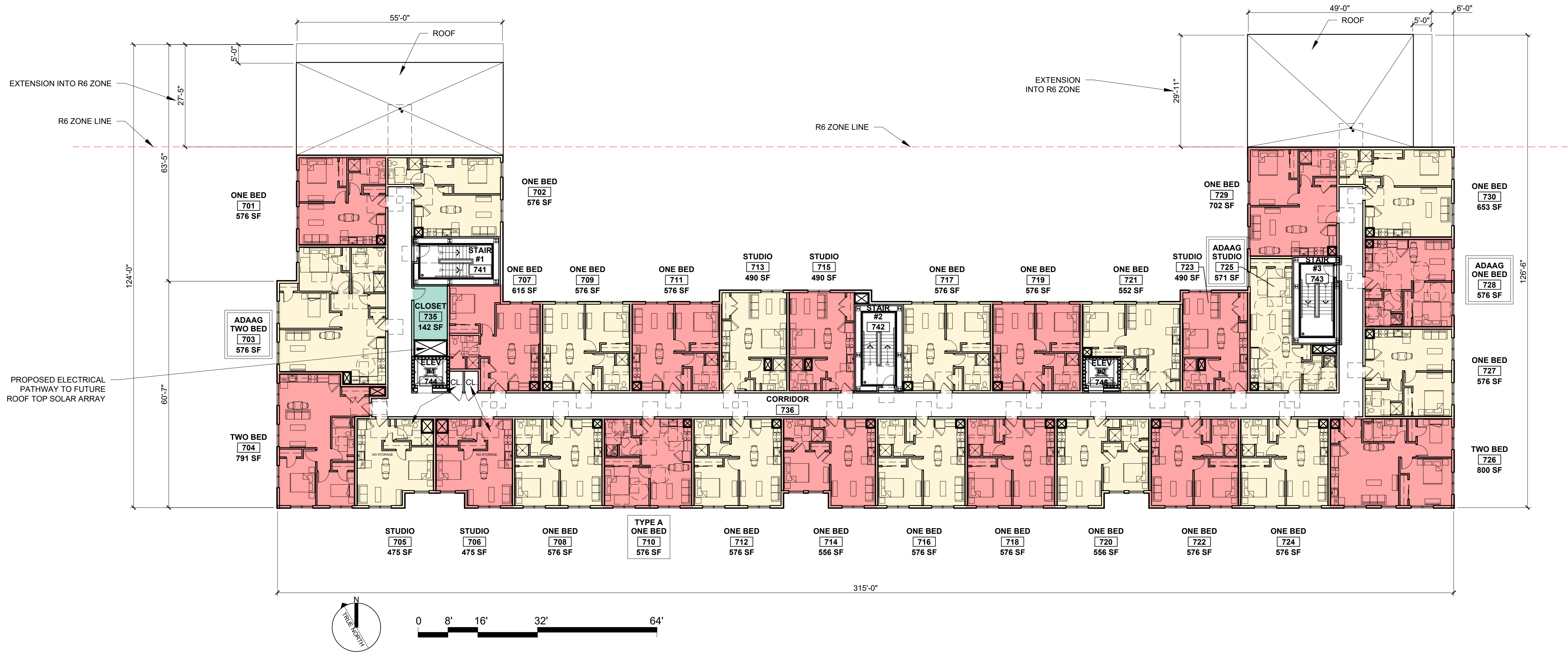
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SCALE: AS NOTED
SHEET TITLE:
SEVENTH FLOOR PLAN

A1-7

7TH FLOOR
30 UNITS 21,801 SF

- 6 STUDIO UNITS
21 ONE BEDROOM UNITS
3 TWO BEDROOM UNITS
- (1) ADAAG - STUDIO
(1) TYPE A - ONE BED
(1) ADAAG - ONE BED
(1) ADAAG - TWO BED



1 SEVENTH FLOOR
1/16" = 1'-0"

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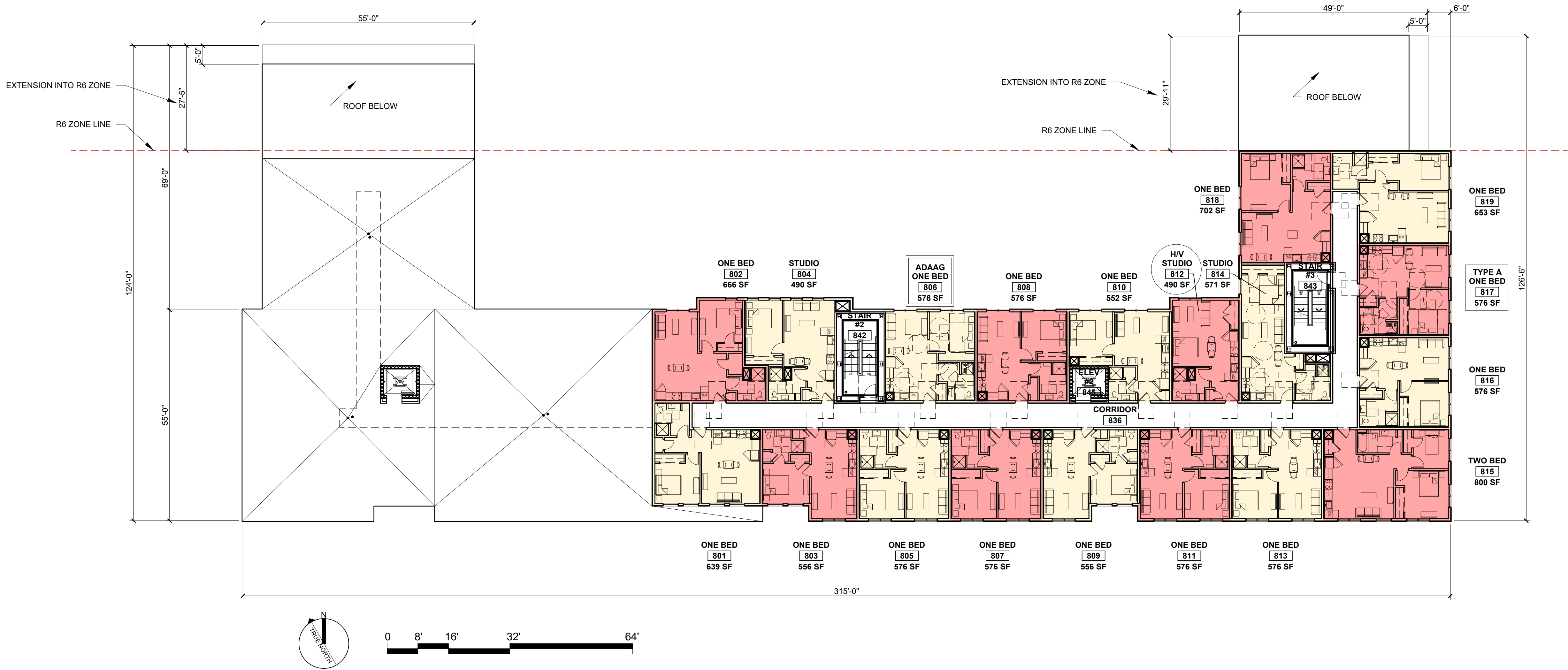
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SHEET TITLE:
SEVENTH
FLOOR PLAN

A1-7

8TH FLOOR
19 UNITS 13,685 SF

- 2 STUDIO UNITS
16 ONE BEDROOM UNITS
1 TWO BEDROOM UNITS
- (1) H/V - STUDIO
(1) TYPE A - ONE BED
(1) ADAAG - ONE BED



1 EIGHTH FLOOR
1/16" = 1'-0"

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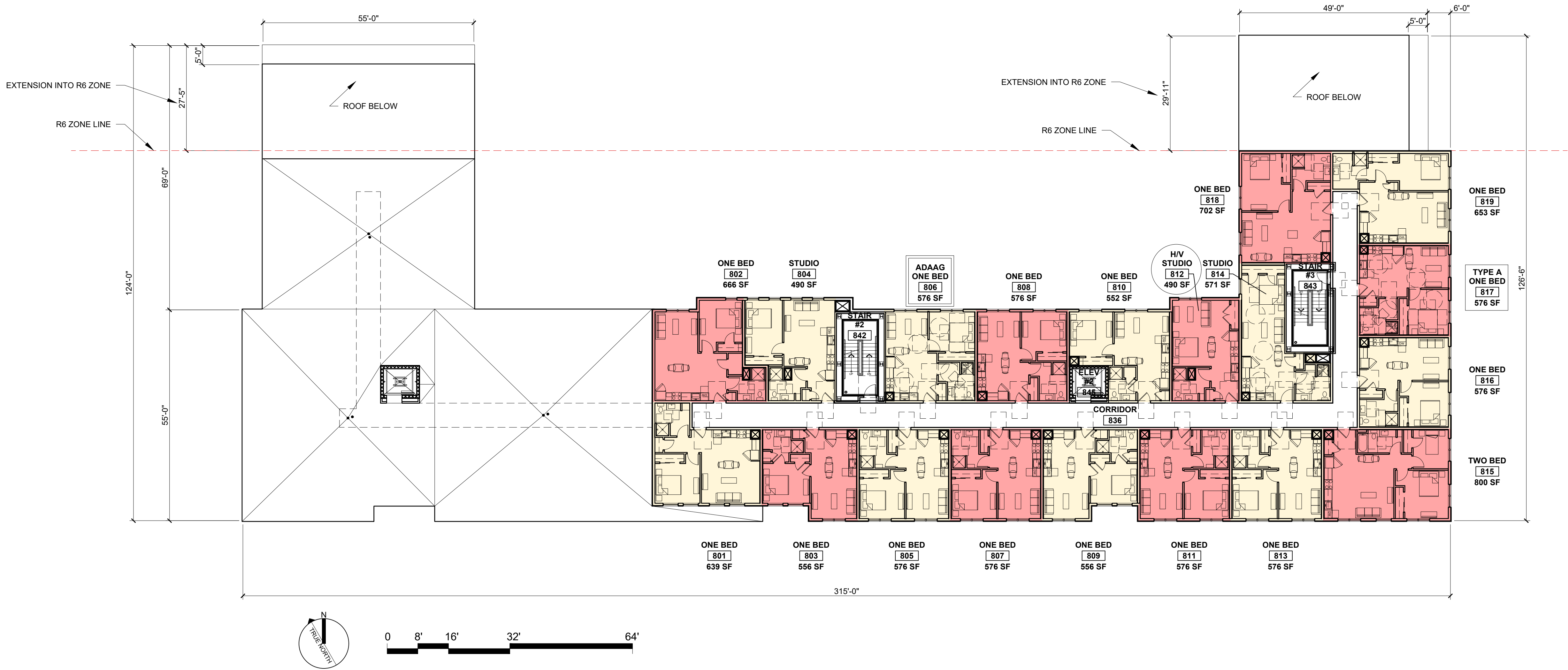
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SHEET TITLE:
EIGHTH FLOOR
PLAN

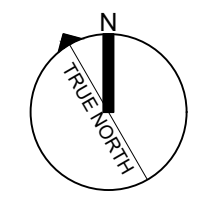
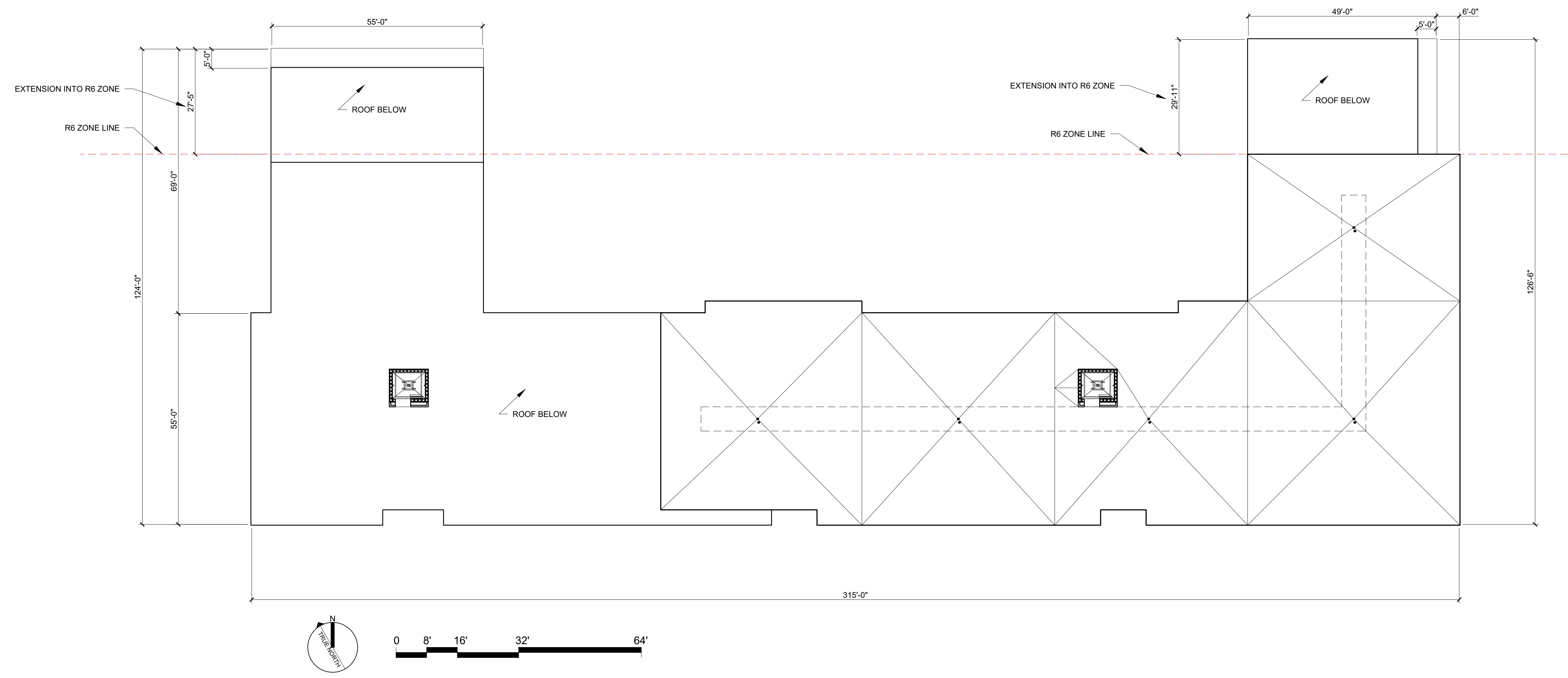
A1-8

8TH FLOOR
19 UNITS 13,685 SF

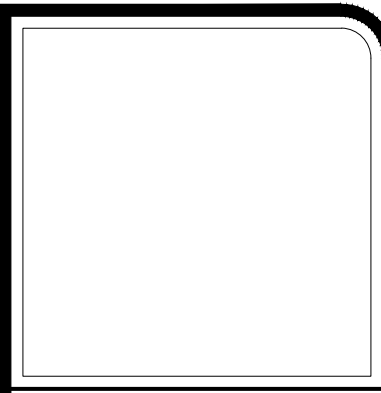
- 2 STUDIO UNITS
16 ONE BEDROOM UNITS
1 TWO BEDROOM UNITS
- (1) H/V - STUDIO
(1) TYPE A - ONE BED
(1) ADAAG - ONE BED



1 EIGHTH FLOOR
1/16" = 1'-0"



1 ROOF PLAN
1/16" = 1'-0"



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SHEET TITLE:

ROOF PLAN

A1-9

TOP OF 8TH FLOOR PARAPET
TOP OF 7TH FLOOR PARAPET
EIGHTH FLOOR
((REF.) ELEV.)
SEVENTH FLOOR
((REF.) ELEV.)
SIXTH FLOOR
((REF.) ELEV.)
FIFTH FLOOR
((REF.) ELEV.)
FOURTH FLOOR
((REF.) ELEV.)
THIRD FLOOR
((REF.) ELEV.) 46.10'
SECOND FLOOR
((REF.) ELEV.) 36.10'
AVG. GRADE = 32.00'
FIRST FLOOR
((REF.) ELEV.) 23.25'
CONDO UNITS
((REF.) ELEV.) 18.75'
LOWEST BUILDING GRADE 17.90'



1 SOUTH ELEVATION (ELM STREET)
1/16" = 1'-0"

TOP OF 8TH FLOOR PARAPET
TOP OF 7TH FLOOR PARAPET
EIGHTH FLOOR
((REF.) ELEV.)
SEVENTH FLOOR
((REF.) ELEV.)
SIXTH FLOOR
((REF.) ELEV.)
FIFTH FLOOR
((REF.) ELEV.)
FOURTH FLOOR
((REF.) ELEV.)
THIRD FLOOR
((REF.) ELEV.) 46.10'
SECOND FLOOR
((REF.) ELEV.) 36.10'
AVG. GRADE = 32.00'
FIRST FLOOR
((REF.) ELEV.) 23.25'
CONDO UNITS
((REF.) ELEV.) 18.75'
LOWEST BUILDING GRADE 17.90'



2 WEST ELEVATION (LANCASTER STREET)
1/16" = 1'-0"

TOP OF 8TH FLOOR PARAPET
TOP OF 7TH FLOOR PARAPET
EIGHTH FLOOR
((REF.) ELEV.)
SEVENTH FLOOR
((REF.) ELEV.)
SIXTH FLOOR
((REF.) ELEV.)
FIFTH FLOOR
((REF.) ELEV.)
FOURTH FLOOR
((REF.) ELEV.)
THIRD FLOOR
((REF.) ELEV.) 46.10'
SECOND FLOOR
((REF.) ELEV.) 36.10'
AVG. GRADE = 32.00'
FIRST FLOOR
((REF.) ELEV.) 23.25'
CONDO UNITS
((REF.) ELEV.) 18.75'
LOWEST BUILDING GRADE 17.90'



3 EAST ELEVATION (OXFORD STREET)
1/16" = 1'-0"

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SHEET TITLE:

ELEVATIONS

A2-0

TOP OF 8TH FLOOR PARAPET
TOP OF 7TH FLOOR PARAPET
EIGHTH FLOOR
((REF.) ELEV.)
SEVENTH FLOOR
((REF.) ELEV.)
SIXTH FLOOR
((REF.) ELEV.)
FIFTH FLOOR
((REF.) ELEV.)
FOURTH FLOOR
((REF.) ELEV.)
THIRD FLOOR
((REF.) ELEV.) 46.10'
SECOND FLOOR
((REF.) ELEV.) 36.10'
AVG. GRADE = 32.00'
FIRST FLOOR
((REF.) ELEV.) 23.25'
CONDO UNITS
((REF.) ELEV.) 18.75'
LOWEST BUILDING GRADE 17.90'

68'-2 3/8"
55'-0"
35'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
12'-10 3/16"
4'-6"



1 SOUTH ELEVATION (ELM STREET)
1/16" = 1'-0"

TOP OF 8TH FLOOR PARAPET
TOP OF 7TH FLOOR PARAPET
EIGHTH FLOOR
((REF.) ELEV.)
SEVENTH FLOOR
((REF.) ELEV.)
SIXTH FLOOR
((REF.) ELEV.)
FIFTH FLOOR
((REF.) ELEV.)
FOURTH FLOOR
((REF.) ELEV.)
THIRD FLOOR
((REF.) ELEV.) 46.10'
SECOND FLOOR
((REF.) ELEV.) 36.10'
AVG. GRADE = 32.00'
FIRST FLOOR
((REF.) ELEV.) 23.25'
CONDO UNITS
((REF.) ELEV.) 18.75'
LOWEST BUILDING GRADE 17.90'

68'-2 3/8"
55'-0"
35'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
12'-10 3/16"
4'-6"



2 WEST ELEVATION (LANCASTER STREET)
1/16" = 1'-0"

TOP OF 8TH FLOOR PARAPET
TOP OF 7TH FLOOR PARAPET
EIGHTH FLOOR
((REF.) ELEV.)
SEVENTH FLOOR
((REF.) ELEV.)
SIXTH FLOOR
((REF.) ELEV.)
FIFTH FLOOR
((REF.) ELEV.)
FOURTH FLOOR
((REF.) ELEV.)
THIRD FLOOR
((REF.) ELEV.) 46.10'
SECOND FLOOR
((REF.) ELEV.) 36.10'
AVG. GRADE = 32.00'
FIRST FLOOR
((REF.) ELEV.) 23.25'
CONDO UNITS
((REF.) ELEV.) 18.75'
LOWEST BUILDING GRADE 17.90'

68'-2 3/8"
55'-0"
35'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
12'-10 3/16"
4'-6"



3 EAST ELEVATION (OXFORD STREET)
1/16" = 1'-0"

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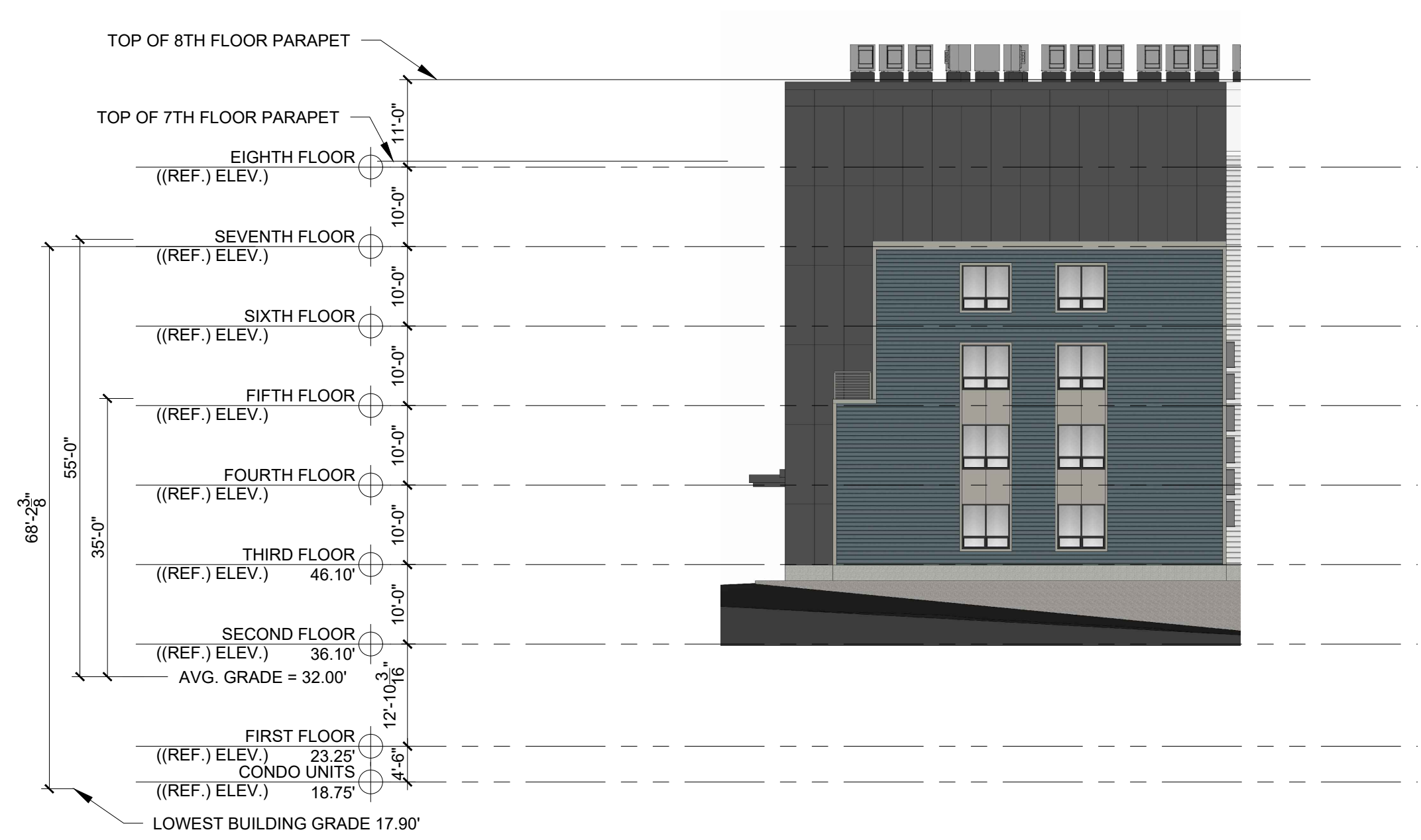
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SHEET TITLE:
ELEVATIONS

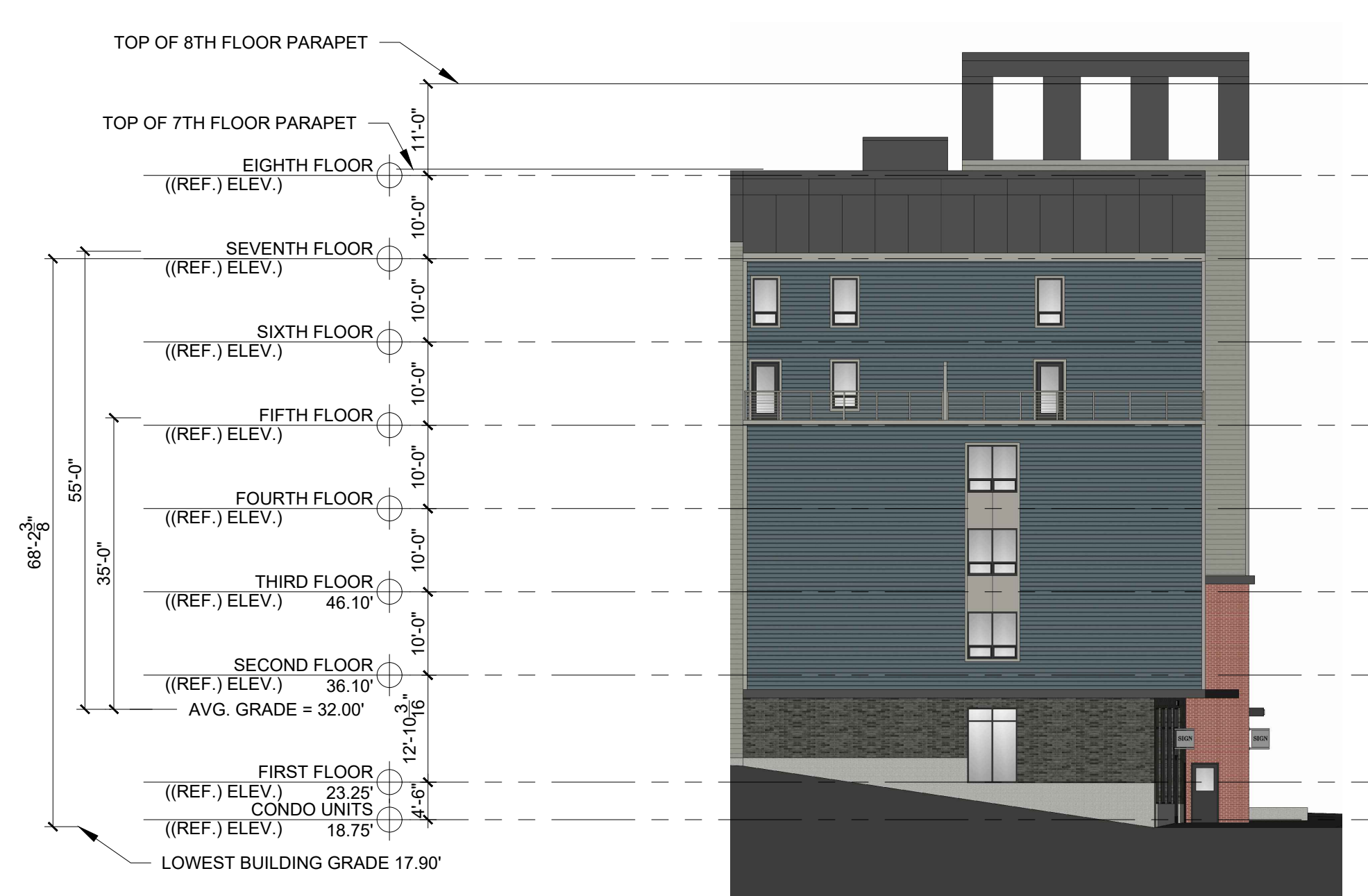
A2-0



1 NORTH ELEVATION
1/16" = 1'-0"



2 NORTH ELEVATION
1/16" = 1'-0"



3 NORTH ELEVATION
1/16" = 1'-0"

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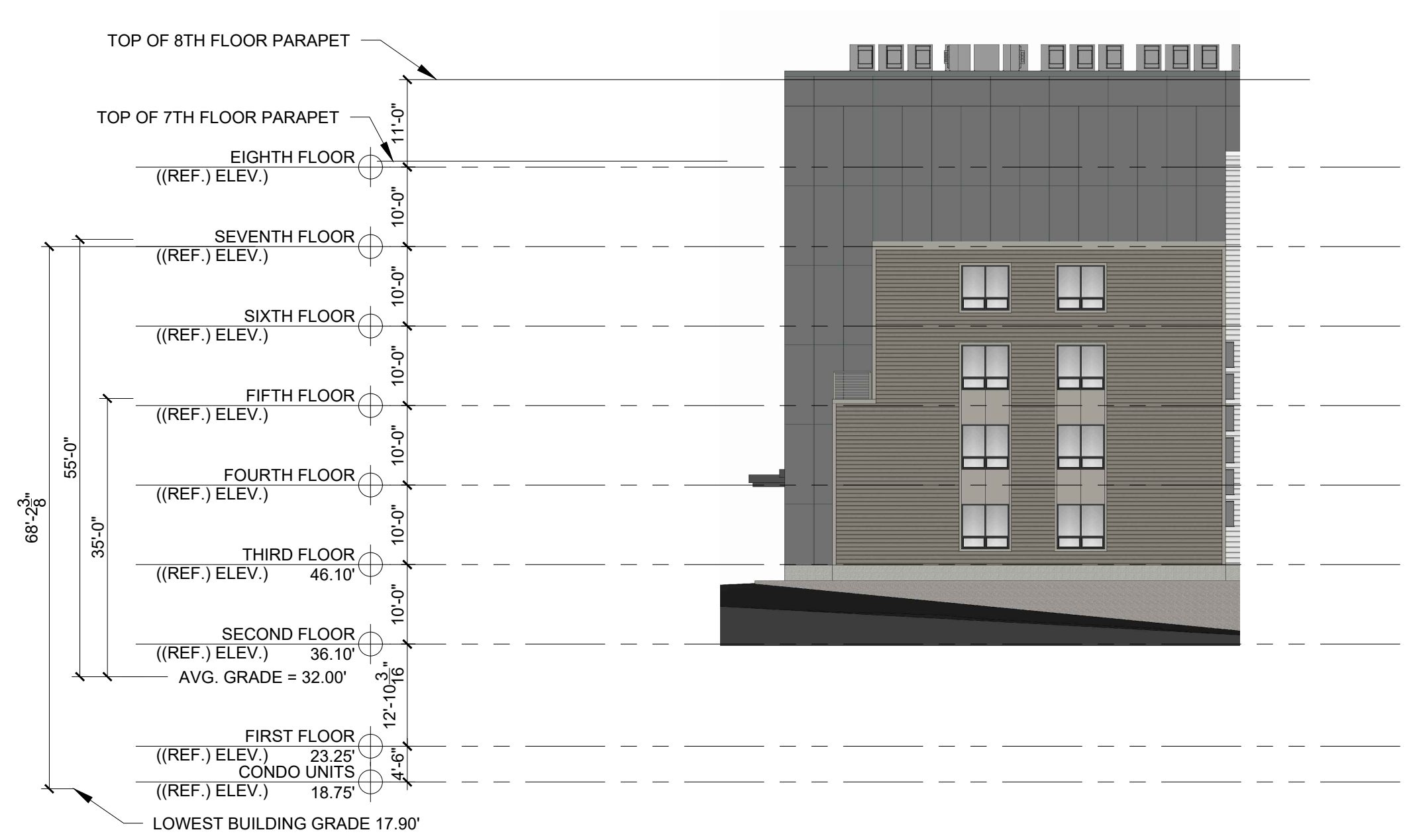
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SCALE: AS NOTED

SHEET TITLE:
ELEVATIONS

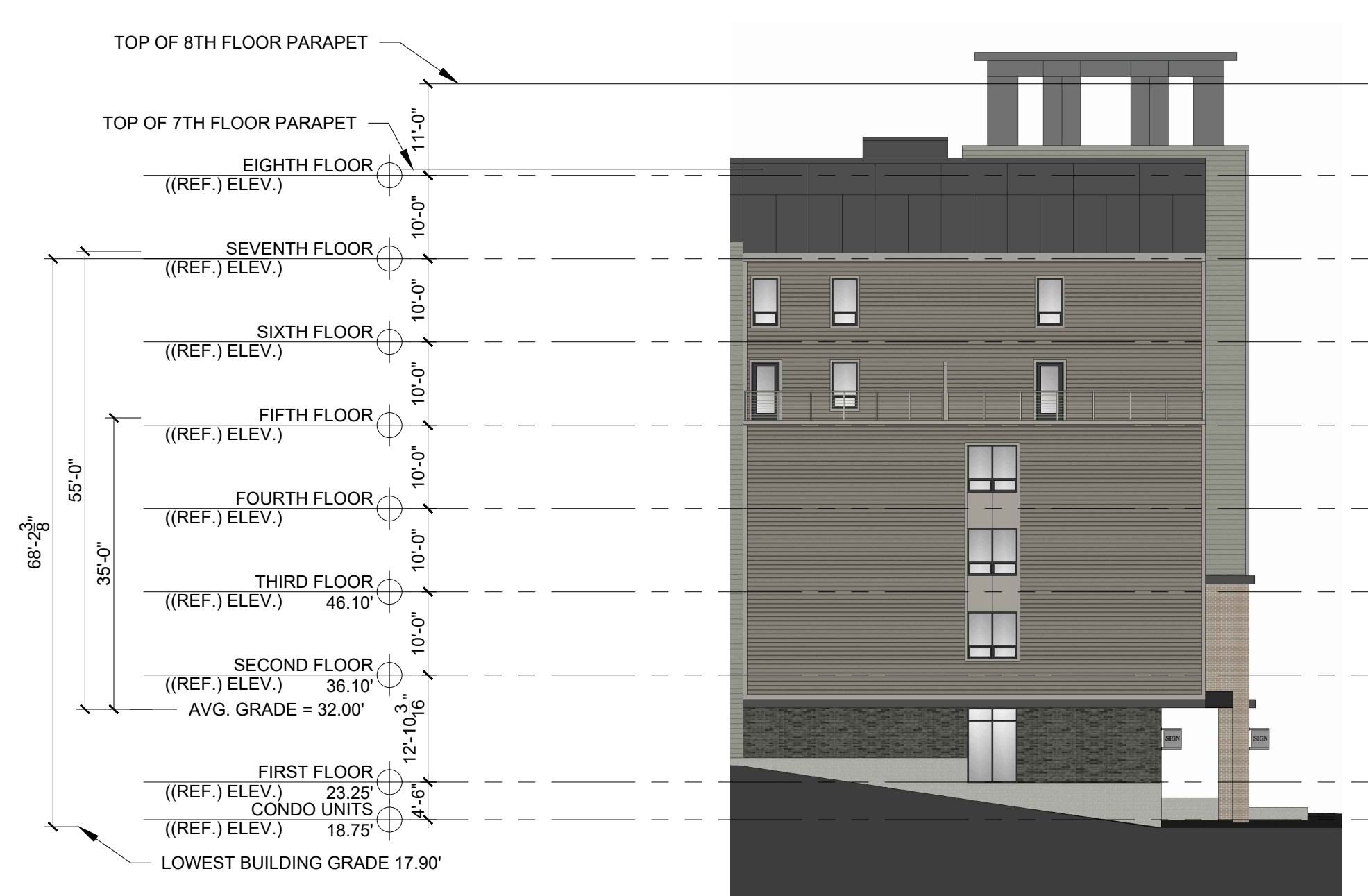
A2-1



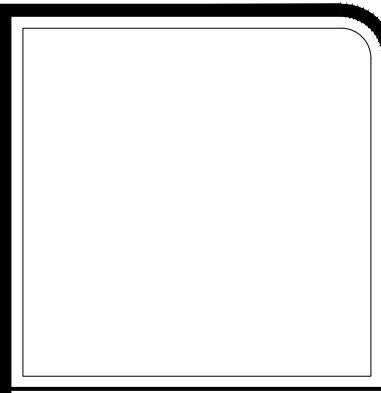
1 NORTH ELEVATION
1/16" = 1'-0"



2 NORTH ELEVATION
1/16" = 1'-0"



3 NORTH ELEVATION
1/16" = 1'-0"



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SHEET TITLE:
ELEVATIONS

A2-1



1 WEST ELEVATION 2 (PARKING AREA)
1/16" = 1'-0"



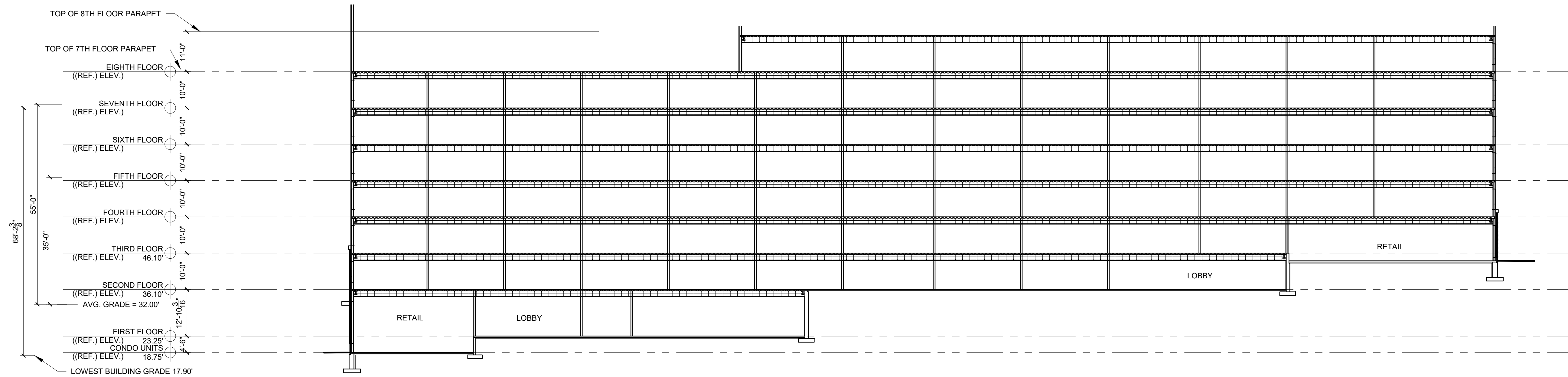
2 EAST ELEVATION 2 (PARKING AREA)
1/16" = 1'-0"



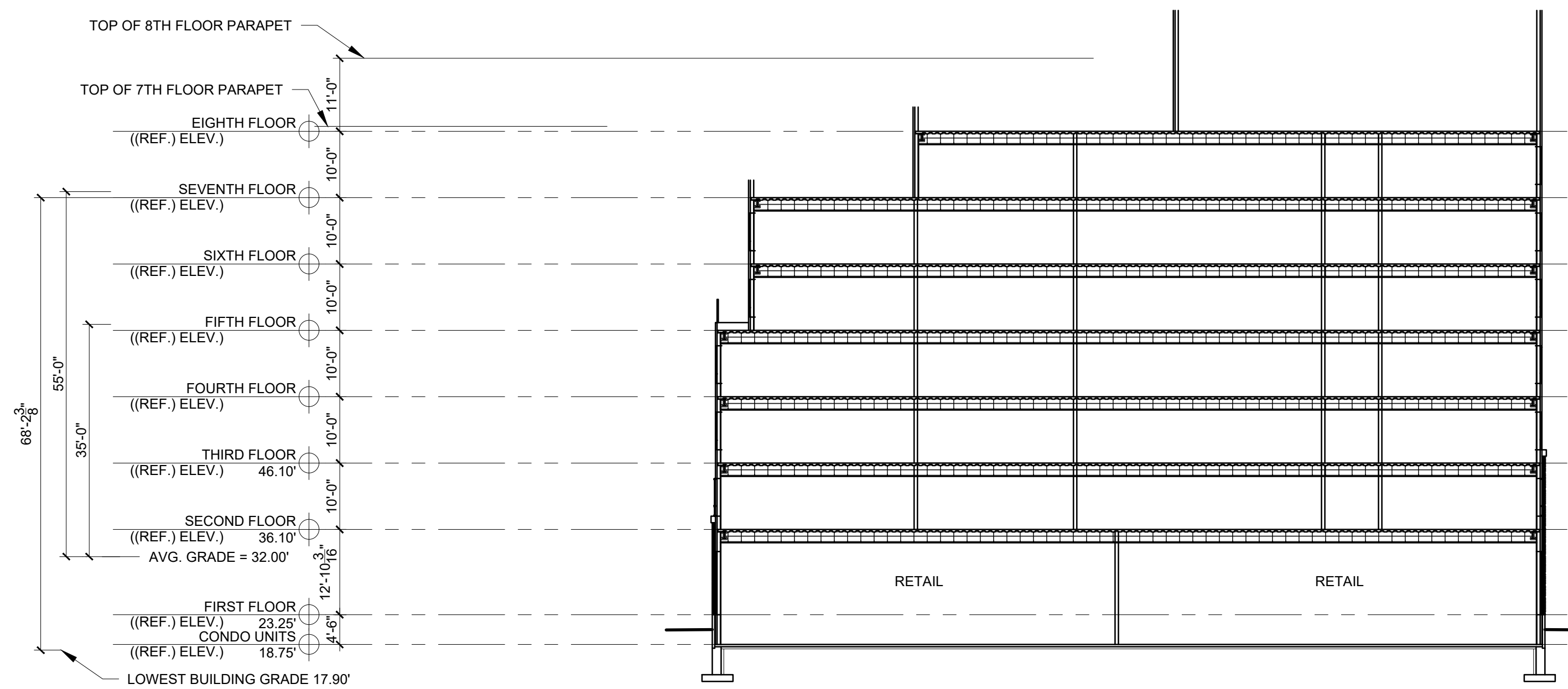
1 WEST ELEVATION 2 (PARKING AREA)
1/16" = 1'-0"



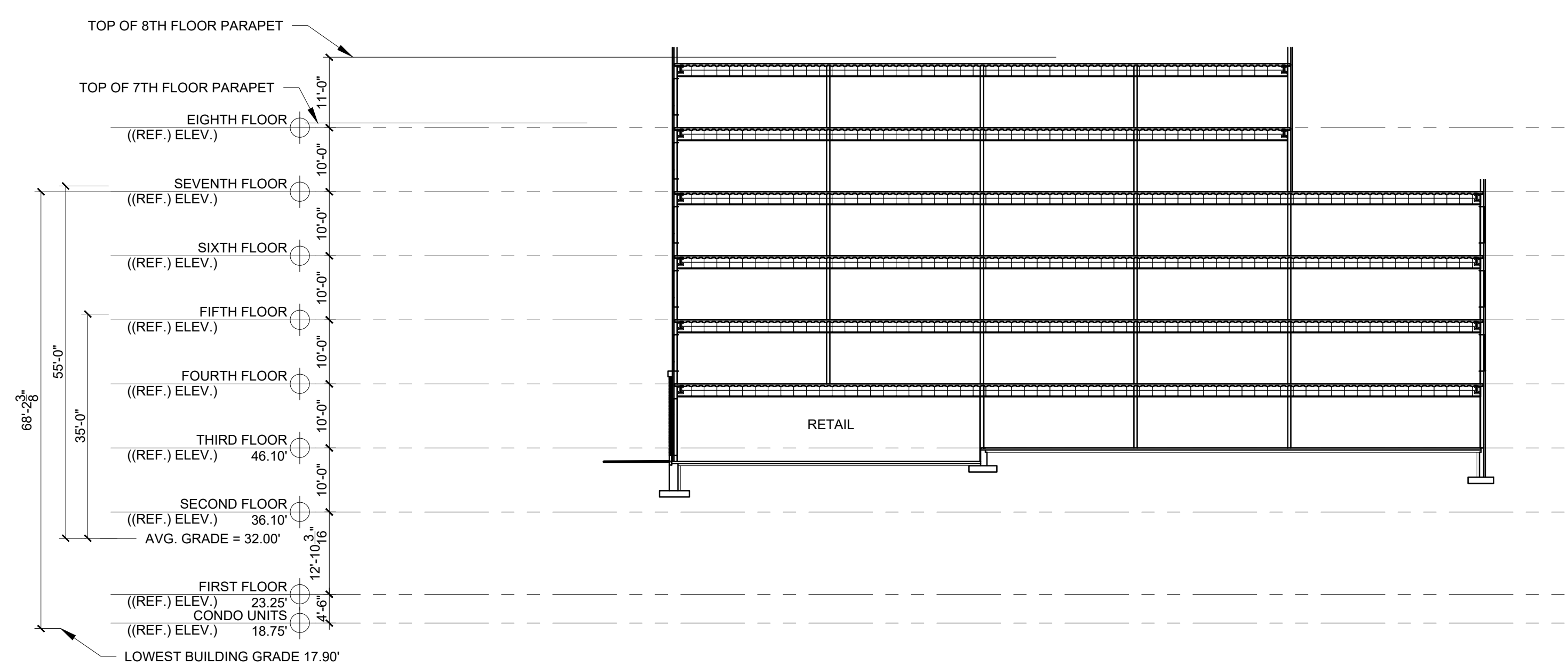
2 EAST ELEVATION 2 (PARKING AREA)
1/16" = 1'-0"



1 ELM STREET SECTION
1/16" = 1'-0"



2 LANCASTER STREET SECTION
1/16" = 1'-0"



3 OXFORD STREET SECTION
1/16" = 1'-0"



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SU IMAGE 1

SU-1



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JUNE 09, 2023

DATE:

PROJECT No. 2241

DRAWN BY: RRT

CHECKED BY: RJS

SCALE: AS NOTED

SHEET TITLE:

SU IMAGE 2

SU-2



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senatorearchitecture.com

CONSULTANTS:

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SU IMAGE 3

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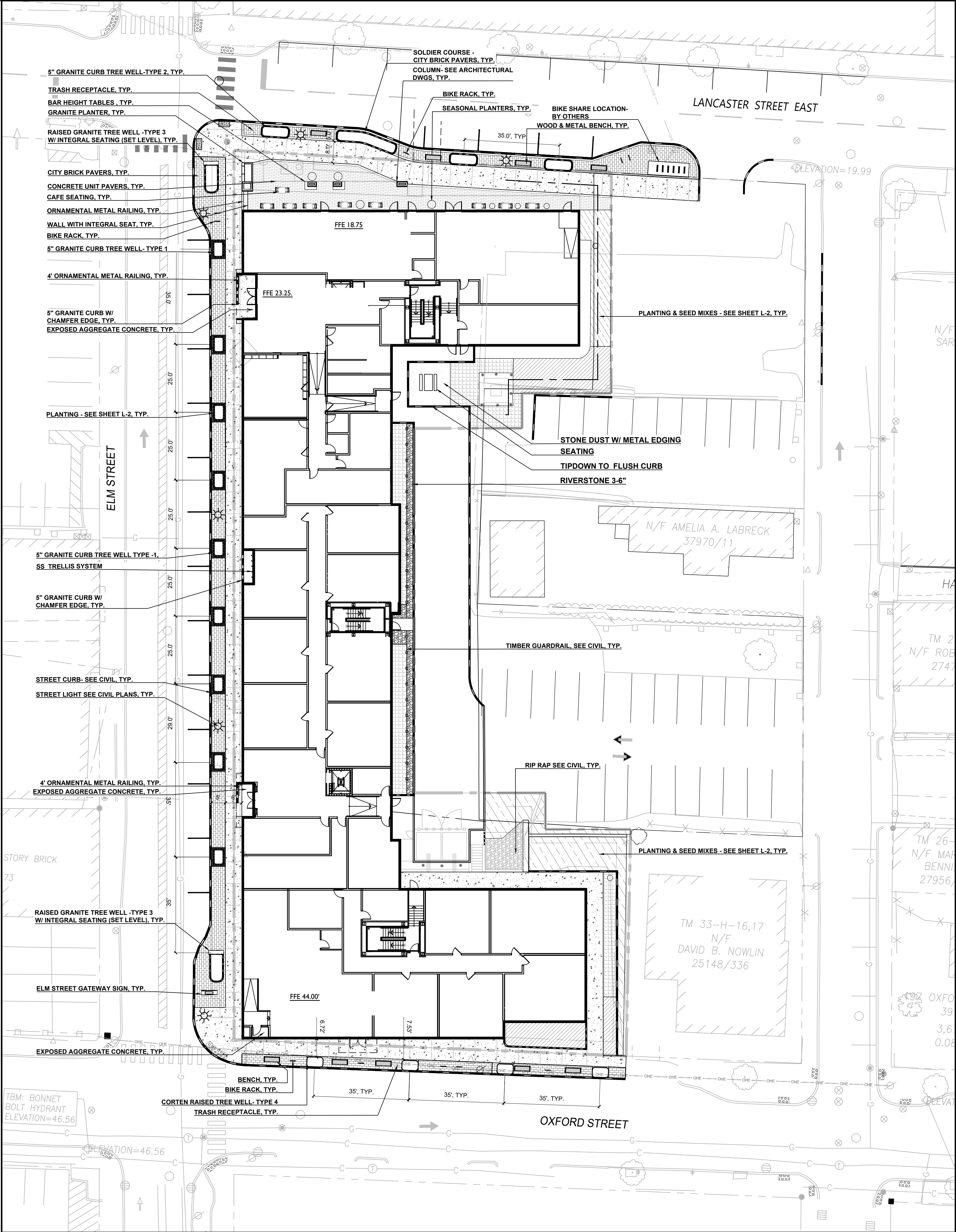
SU-9

GENERAL NOTES

1. THE PLANTING DESIGN IS BASED ON CIVIL ENGINEERING DRAWINGS PRODUCED BY ACORN ENGINEERING. EXISTING BUILDINGS, GRADING, EASEMENTS AND UTILITIES ARE BASED ON SURVEY INFORMATION PROVIDED BY THE OWNER.
2. VERIFY ALL CONDITIONS AT PROJECT SITE AND NOTIFY LANDSCAPE ARCHITECT OF DIMENSIONAL ERRORS, OMISSIONS OR DISCREPANCIES BEFORE BEGINNING WORK.
3. THE LANDSCAPE ARCHITECT ASSUMES NO RESPONSIBILITY FOR THE UTILITIES OR STRUCTURES NOT SHOWN ON THE DRAWINGS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING OVER OR NEAR EXISTING GAS MAINS AND ELECTRICAL LINES. CONTRACTOR IS TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, ABOVE AND BELOW GRADE, PRIOR TO EXCAVATION OR TRENCHING. CALL DIG SAFE AT 1-(800) 452-4699. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS. DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
4. ARCHITECTURAL ELEMENTS ARE SHOWN ON LANDSCAPE PLANS FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL ARCHITECTURAL INFORMATION. NOTIFY OWNER OR OWNER'S REPRESENTATIVE & LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
5. THE LANDSCAPE ARCHITECT IS NOT RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR FOR SAFETY PRECAUTIONS OR PROBLEMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

LAYOUT NOTES

1. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DIRECTION AND RESOLUTION PRIOR TO ANY FURTHER WORK.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANIES PRIOR TO EXCAVATION OF OR INSTALLATION OF ANY PART OF THIS WORK. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. CONTRACTOR SHALL NOTIFY DIG SAFE (1-888-344-7233) PRIOR TO EXCAVATION.
5. CONTRACTOR SHALL AVOID ALL AREAS NOT REQUIRING GRADING. CONTRACTOR SHALL NOT DISTURB THESE AREAS AND SHALL PRESERVE EXISTING VEGETATION.
6. CONTRACTOR SHALL LOAM AND SEED ALL GRADED AND DISTURBED AREAS NOT OTHERWISE IMPROVED.
7. ALL WORK ASSOCIATED WITH THE PROPOSED WATER SERVICE MUST ADHERE TO CITY OF PORTLAND WATER DISTRICT STANDARDS. ALL WORK ASSOCIATED WITH THE PROPOSED SANITARY SEWER LINE MUST ADHERE TO THE CITY OF PORTLAND DEPARTMENT OF WASTEWATER CONTROL STANDARDS.
8. THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR UNDERTAKING THE WORK IN A SAFE AND EFFICIENT MANNER, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY REGULATIONS. ALL WORK AREAS SHALL BE DELINEATED CLEARLY AND FENCED AS APPROPRIATE TO PREVENT UNAUTHORIZED ACCESS. THE SITE SHALL BE LEFT IN A SAFE, ORDERLY AND TIDY MANNER AT THE END OF EACH WORK DAY.
9. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND PERFORM ALL WORK NECESSARY TO REGULATE TRAFFIC IN THE AREA OF THE SITE, AND SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO AND FROM PUBLIC AND PRIVATE PROPERTIES AND RIGHTS OF WAY DURING CONSTRUCTION.
10. PROVIDE EXPANSION JOINTS
11. REQUEST INSPECTION OF FIELD STAKING BY LANDSCAPE ARCHITECT A MINIMUM OF 24 HOURS IN ADVANCE OF PERFORMING ANY WORK UNLESS INDICATED OTHERWISE.



Prepared For:

89 Elm Street, LLC
188 STATE STREET, 3RD FLOOR
PORTLAND, ME 04101

Prepared By:

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31 miller ave.
biddeford, me 04005

Date:

JUNE 19, 2023

Issued For:

COMMENT RESPONSE

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MATERIAL
& LAYOUT PLAN

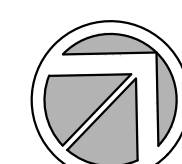
89 Elm
Street

Portland ME 04103

Revisions:



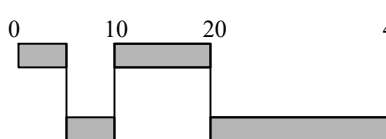
North:



Sheet No.:

L1

Scale: 1" = 20'-0"



PLANTING NOTES

1. LANDSCAPE ARCHITECT TO APPROVE PLANT MATERIAL PRIOR TO DELIVERY TO SITE.
2. PLANT MATERIAL PROVIDED BY THE CONTRACTOR IS TO CONFORM TO THE HIGHEST STANDARD AS ADOPTED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERMEN, INC. (ANSI). PLANT MATERIAL IS TO BE HEALTHY SPECIMENS, FREE FROM DISEASE OR DAMAGE.
3. THE CONTRACTOR IS TO FURNISH PLANTS AND SOD SHOWN ON THE DRAWINGS. PLANTS ARE TO CONFORM WITH THE BOTANICAL IDENTIFICATIONS. PLANTS ARE TO BE SOURCED FROM A NURSERY WITHIN THE SAME CLIMATIC ZONE AS THE SITE LOCATION. NO SUBSTITUTIONS OF PLANT SPECIES ARE PERMITTED WITHOUT PRIOR APPROVAL OF THE OWNER OR OWNER'S REPRESENTATIVE & THE LANDSCAPE ARCHITECT.
4. SUBSTITUTIONS OF PLANT SPECIES SHALL BE A PLANT OF EQUIVALENT OVERALL FORM, HEIGHT AND BRANCHING HABIT, FLOWER, LEAF, FRUIT, COLOR, TIME OF BLOOM & CLIMATIC LOCATION AS APPROVED BY LANDSCAPE ARCHITECT.
5. LOCATE AND VERIFY EXISTING & PROPOSED UTILITY LINE LOCATIONS PRIOR TO STAKING AND REPORT CONFLICTS TO LANDSCAPE ARCHITECT.
6. PLANTING DEMOLITION DEBRIS, GARBAGE, LUMPS OF CONCRETE, STEEL AND OTHER MATERIALS DELETERIOUS TO PLANT'S HEALTH AS DETERMINED BY LANDSCAPE ARCHITECT SHALL BE REMOVED FROM PLANTING AREAS.
7. THE CONTRACTOR IS TO VERIFY SITE LAYOUT & GRADES & INFORM THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES OR CHANGES IN LAYOUT AND/OR GRADING PRIOR TO CONSTRUCTION. NO PLANTING IS TO BE INSTALLED BEFORE ACCEPTANCE OF ROUGH GRADING.
8. ALL PROPOSED TREE LOCATIONS SHALL BE STAKED OR LAID OUT IN THEIR APPROXIMATE LOCATION BY THE CONTRACTOR. THE CONTRACTOR SHALL ADJUST THE LOCATIONS AS REQUESTED BY THE LANDSCAPE ARCHITECT TO ACCOUNT FOR SUBSURFACE UTILITIES AND OTHER FIELD CONDITIONS. FINAL LOCATIONS OF PLANTS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
9. INSTALL PLANTS WITH ROOT FLARES FLUSH WITH FINISHED GRADE. IMMEDIATELY REPLANT PLANTS THAT SETTLE OUT OF PLUMB OR BELOW FINISHED GRADE. PLANT AND STAKES ARE TO BE SET PLUMB UNLESS OTHERWISE NOTED. PLANT UNDER FULL TIME SUPERVISION OF CERTIFIED ARBORIST, NURSERYMAN, OR LICENSED LANDSCAPE ARCHITECT. PROVIDE WRITTEN VERIFICATION OF CERTIFICATION AND/OR LICENSE FOR LANDSCAPE ARCHITECT'S APPROVAL.
10. WATER PLANTS THOROUGHLY AFTER INSTALLATION, A MINIMUM OF TWICE WITHIN THE FIRST 24 HOURS.
11. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN PLANT MATERIALS INCLUDING SOD/SEED AREAS IN A HEALTHY STATE DURING CONSTRUCTION AND DURING REQUIRED WARRANTY PERIODS. ANY DAMAGE TO PLANT MATERIAL DUE TO NEGLECT BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
12. REPAIR DAMAGE DUE TO LANDSCAPE INSTALLATION OPERATIONS INSIDE AND OUTSIDE OF LIMIT OF WORK.
13. SOAK ALL PERENNIALS FOR 24 HOURS PRIOR TO INSTALLATION.
14. A LIST OF PLANTS INCLUDING BOTANICAL NAMES, SIZES, AND SPACING ARE SHOWN ON THE DRAWINGS. QUANTITIES ARE PROVIDED FOR CONTRACTOR'S CONVENIENCE AND ARE TO BE VERIFIED. IN THE EVENT THAT QUANTITIES OR OMISSIONS OCCUR THE PLAN DRAWINGS ARE TO BE FOLLOWED.
15. IRRIGATION: A TEMPORARY UNDERGROUND DRIP AND SPRINKLER IRRIGATION SYSTEM IS TO BE PROVIDED FOR ALL PLANT MATERIAL AND SOD OR SEEDED AREAS.
16. DISTURBED SITE AREAS ARE TO BE DRESSED WITH 6" MIN. OF AMENDED TOPSOIL FOR LAWNS AND 12" MIN. FOR PLANT BEDS. TOPSOIL FOR SEEDED AND/OR SEEDED AREAS IS TO BE TWO PARTS SHARP SAND, ONE PART LOAM AND ONE PART ORGANIC COMPOST.
17. PLANT BEDS ARE TO BE MULCHED TO A DEPTH OF 2" MIN. WITH NATURAL BARK MULCH WITH BARK SIZES NO LARGER THAN 3". PERENNIAL PLANT BEDS ARE TO BE MULCHED WITH BARK SIZES NO MORE THAN 1". TREES IN LAWN AREAS ARE TO HAVE MULCH RINGS OF 5' DIA.
18. TREES ADJACENT TO PEDESTRIAN ROUTES AND WITHIN PARKING ISLANDS ARE TO BE LIMBED TO 6' ABOVE GRADE.

SEED MIX LEGEND

A

SEED MIX#1,
AREA W/ TEMPORARY IRRIGATION;
INSTALL 6" TOPSOIL FOR SEED MIXES
AREAS, TYP.

B

NO MOW SEED MIX#2,
AREA W/ TEMPORARY IRRIGATION;
INSTALL 6" TOPSOIL FOR SEED MIXES
AREAS, TYP.

NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX :
mfg. NEW ENGLAND WETLAND PLANTS
newp.com/catalog/seed-mixes/#wildlife

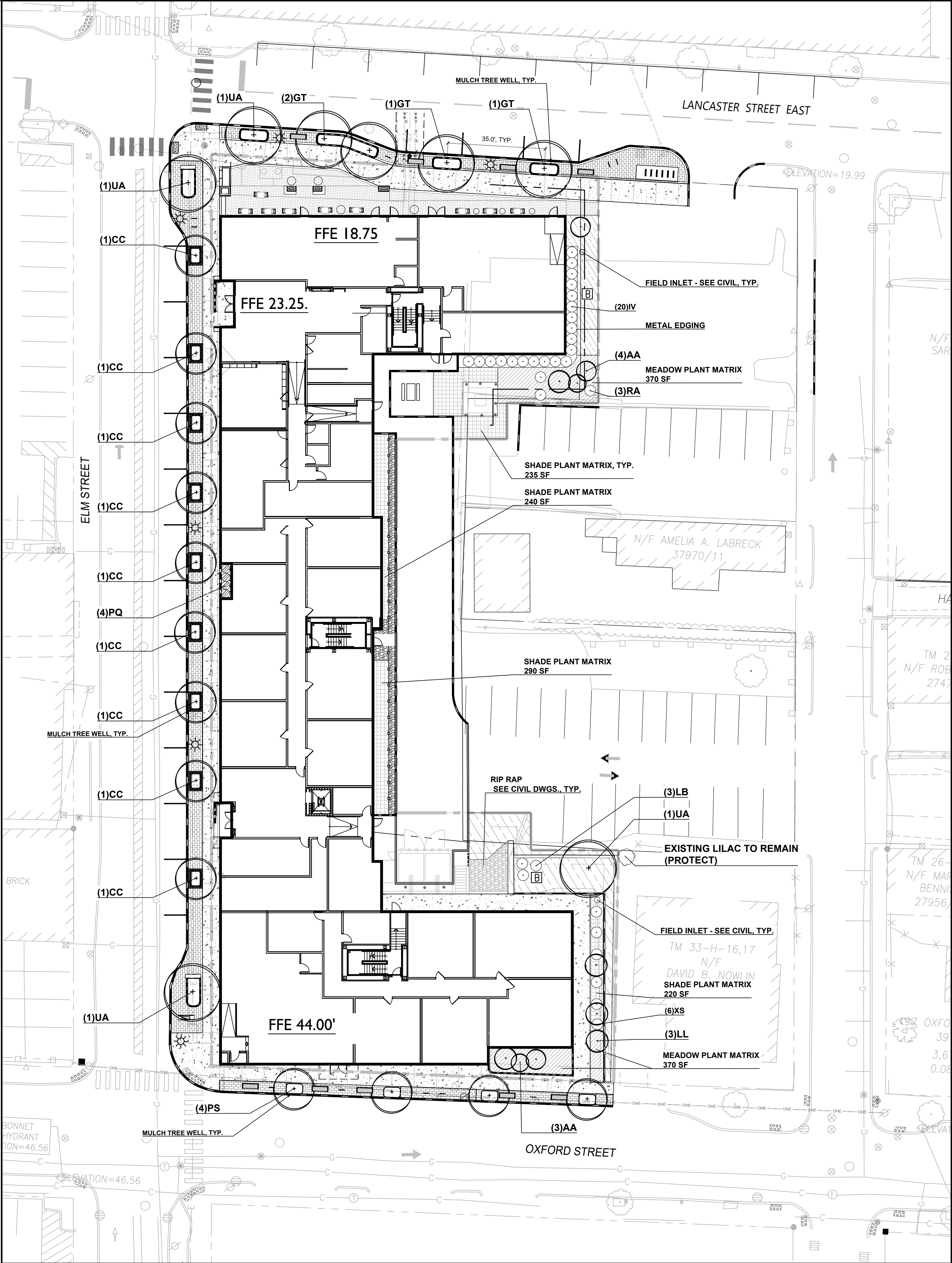
ALISKE CLOVER SEED MIX :
mfg. AMERICAN MEADOW
HTTPS://WWW.AMERICANMEADOWS.COM

PLANTING SCHEDULE

DECIDUOUS TREES						
CODE	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING	NOTES
AA	<i>Amelanchier alnifolia</i> 'Obelisk'	Standing Ovation Serviceberry	7			
CC	<i>Carpinus caroliniana</i> 'Urbidge'	"Rising Fire" American Hornbeam	9	2.5'-3" cal	as shown	
GT	<i>Gladiolus triacanthos inermis</i> 'Street Keeper'	Street Keeper Thornless Honeylocust	4	2.5'-3" cal	as shown	
LSS	<i>Liquidambar styraciflua</i> 'Slender Silhouette'	Liquidambar styraciflua 'Slender Silhouette'	5	3" cal		Single Stem, B&B
SR	<i>Prunus sargentii</i>	Pink Flar Cherry	4	2.5'-3" cal	as shown	
UA	<i>Ulmus x. 'norton'</i>	Accolade Elm	4	2.5'-3" cal	as shown	
Shrubs						
IV	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING	NOTES
LB	<i>Itea virginica</i>	Virginia Sweetspire	20	# 2 CONT.	48" OC	
RM	<i>Lindera benzoin</i>	Spicebush	3	#3 CONT.	8" OC	" "
XS	<i>Rhus "Lo-Gro"</i>	Lo-gro' Sumac	3	# 2 CONT.	48" OC	
	<i>Xanthoxia simplissima</i>	Yellowroot	6	#3 CONT	42" OC	
Plant Matrix: Meadow						
CA	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING	NOTES
CAA	<i>Ceanothus americanus</i>	New Jersey Tea	tbd	#1 CONT.	24" OC	straight native species preferred
RH	<i>Clethra alnifolia</i>	Sweet-pepperbush	tbd	#3 CONT.	36" OC	" "
SS	<i>Rudbeckia hirta</i>	Black-eyed Susan	tbd	#1 CONT.	15" OC	" "
SA	<i>Schizachyrium scoparium</i>	Little Bluestem	tbd	#1 CONT.	15" OC	" "
	<i>Symphoricarum oblongifolium</i>	Aromatic Aster	tbd	#1 CONT.	15" OC	" "
Plant Matrix: Shade						
AC	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING	NOTES
AF	<i>Asarum canadense</i>	Wild ginger	tbd	plug	18" OC	" "
CT	<i>Athyrium filix-femina</i>	Lady Fern	tbd	#1 CONT.	18" OC	" "
DP	<i>Campanula Americana</i>	Tall bellflower	tbd	plug	18" OC	
PA	<i>Dennstaedtia punctilobula</i>	Eastern hay-scented fern	tbd	#1 CONT.	18" OC	
PAC	<i>Packera aurea</i>	Golden groundsel	tbd	PLUG	18" OC	
	<i>Polystichum acrostichoides</i>	Christmas fern	tbd	PLUG	18" OC	straight native species preferred
Vines						
PQ	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING	NOTES
	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	4			

SITE SOIL NOTES

1. CONTRACTOR SHALL COORDINATE WITH OWNER'S REPRESENTATIVE FOR LOCATION OF STOCKPILE AREAS FOR STRIPPED TOPSOIL AND PLANTING SOIL PRODUCTS. CONTRACTOR SHALL ENSURE AREA IS PROTECTED AND CONTAMINATION OR DISTURBANCE OF STORED PRODUCTS IS NOT ALLOWED.
2. CONTRACTOR SHALL ENSURE SUBGRADE IS SCARIFIED PRIOR TO INSTALLING PLANTING SOIL AND BLEND WITH INITIAL LIFT OR PLACEMENT OF PROPOSED PLANTING SOIL.
3. COORDINATE PLACEMENT OF PLANTING SOIL WITH OTHER WORK, ESPECIALLY UTILITIES. PLACEMENT SHOULD OCCUR AFTER INSTALLATION OF ALL HARDSCAPE IMPROVEMENTS, IRRIGATION SYSTEM, UTILITIES, ETC. AND BEFORE INSTALLATION OF PLANTS.



Prepared For:

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188 STATE STREET, 3RD FLOOR
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Prepared By:

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Date:

JUNE 19, 2023

Issued For:

COMMENT RESPONSE

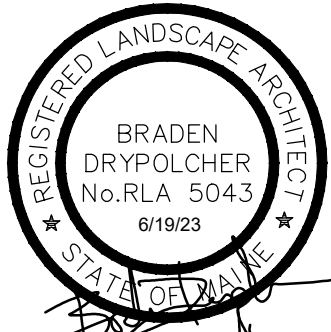
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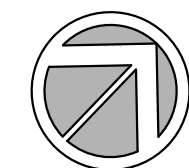
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Portland ME 04103

Revisions:



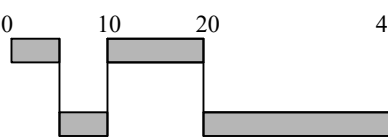
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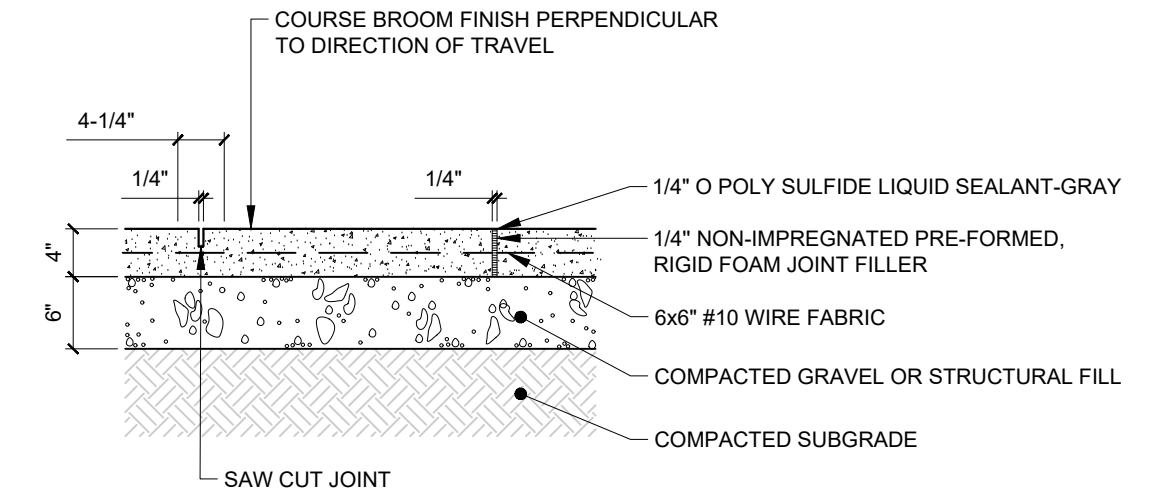


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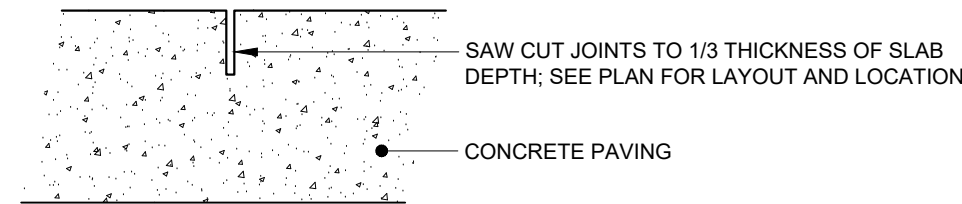
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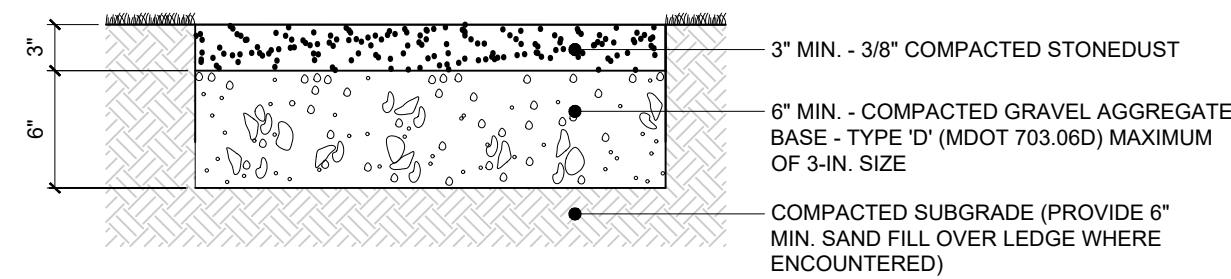
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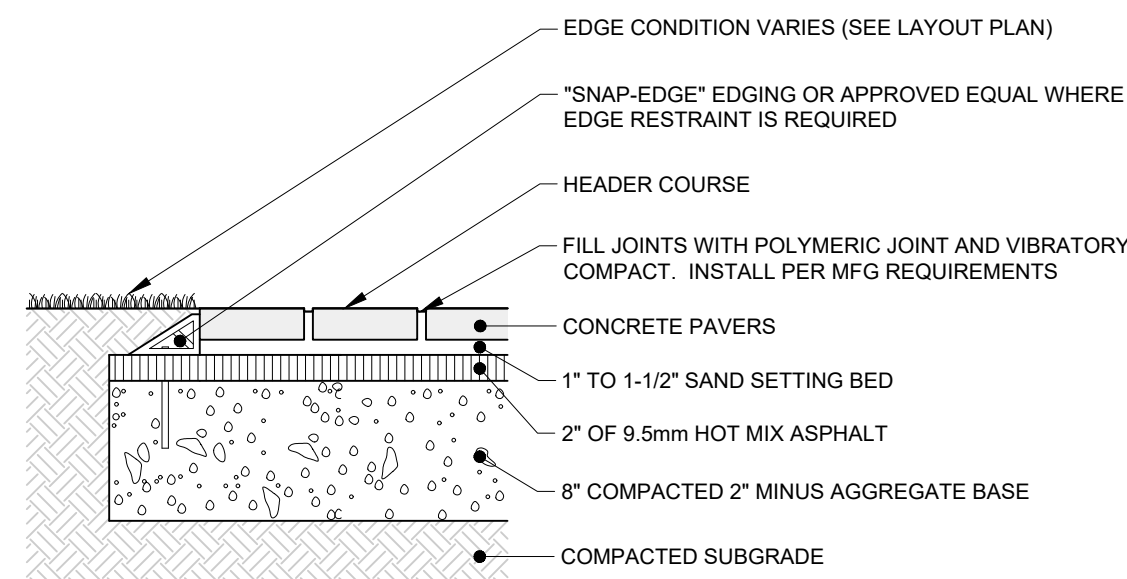
02 CONTROL JOINT

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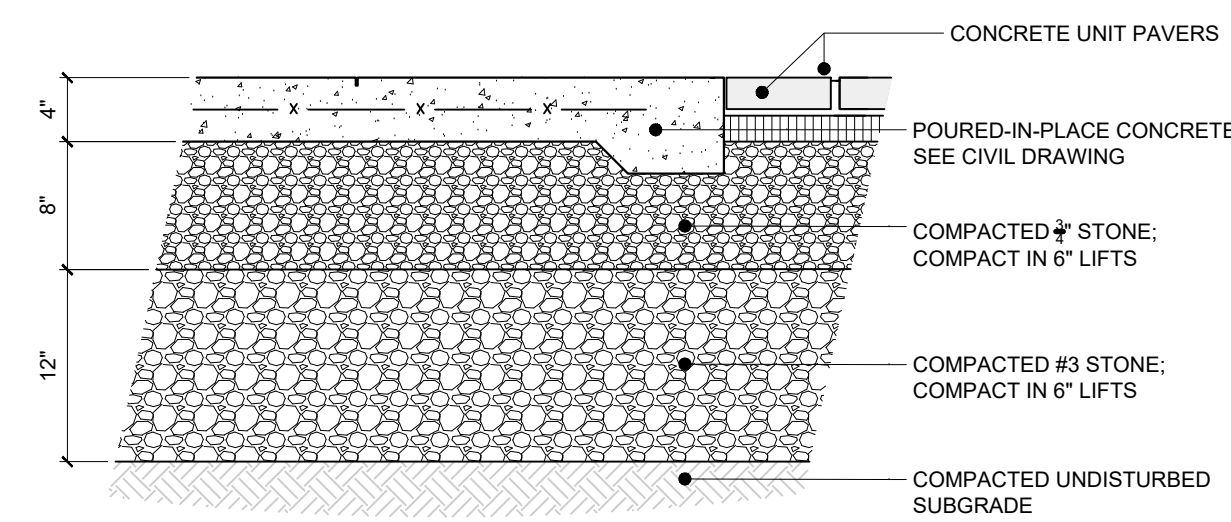
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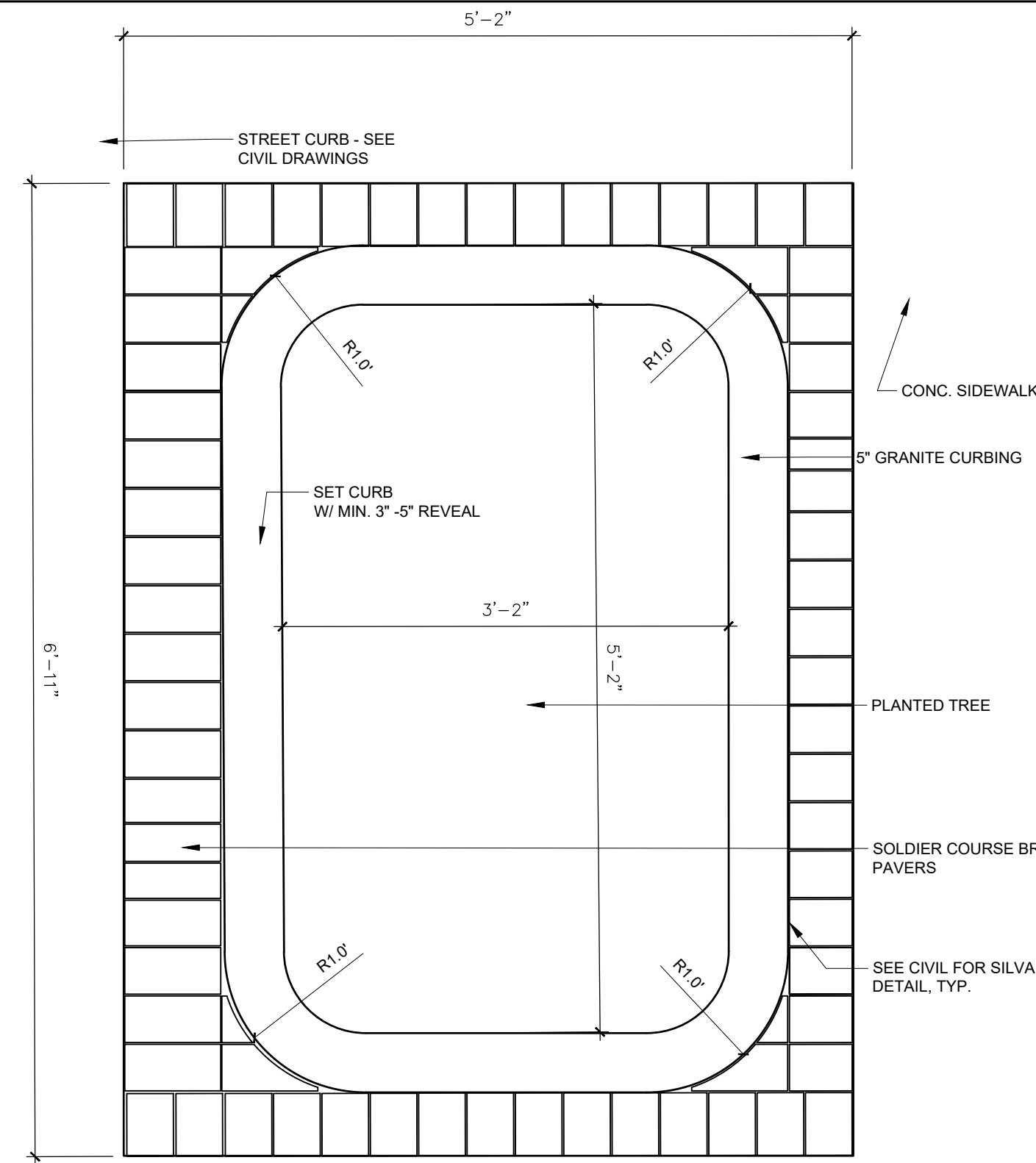
04 CONCRETE PAVERS

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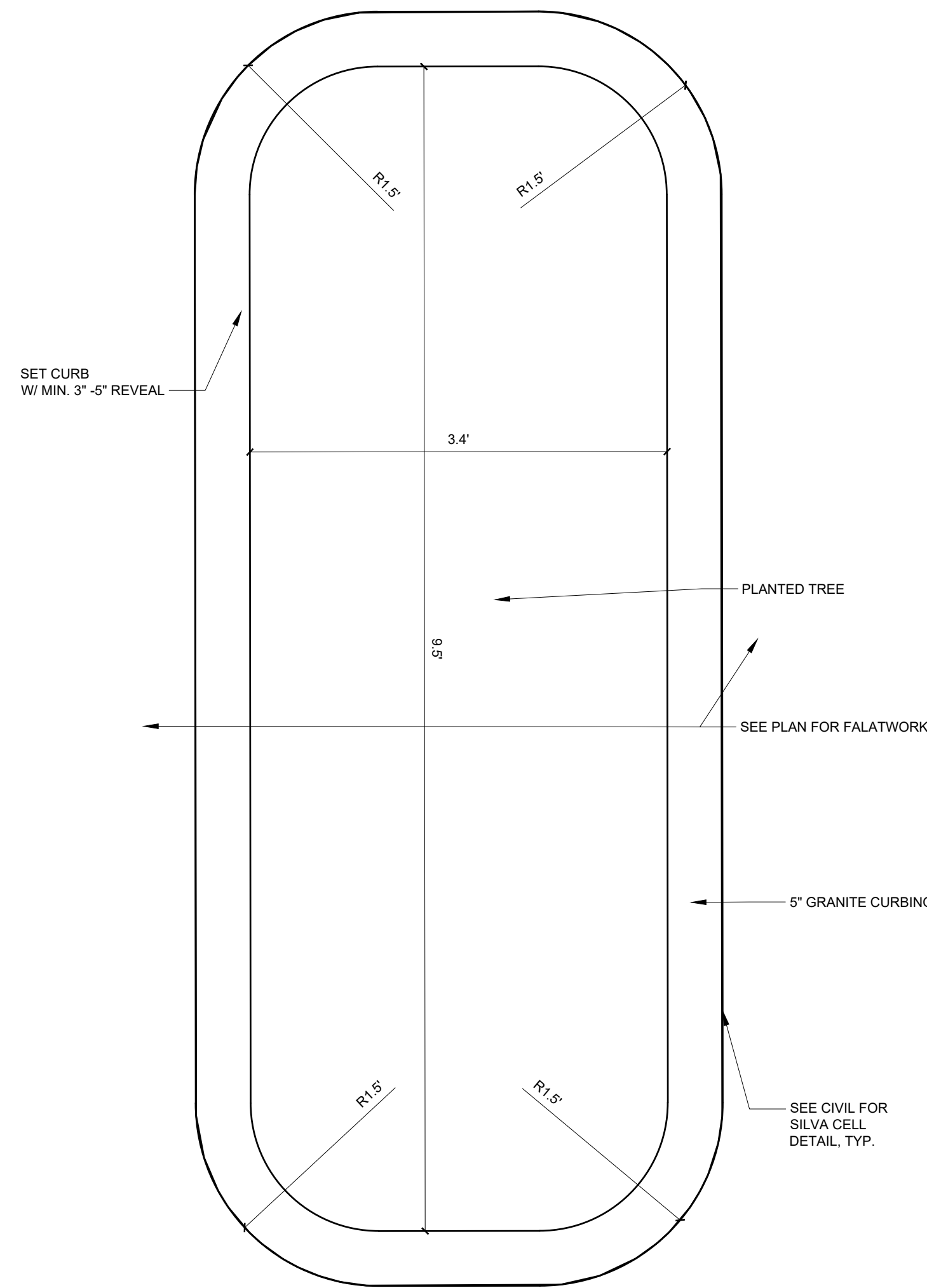
BRICK & CONCRETE PAVING - ADJACENT

SCALE: N.T.S.



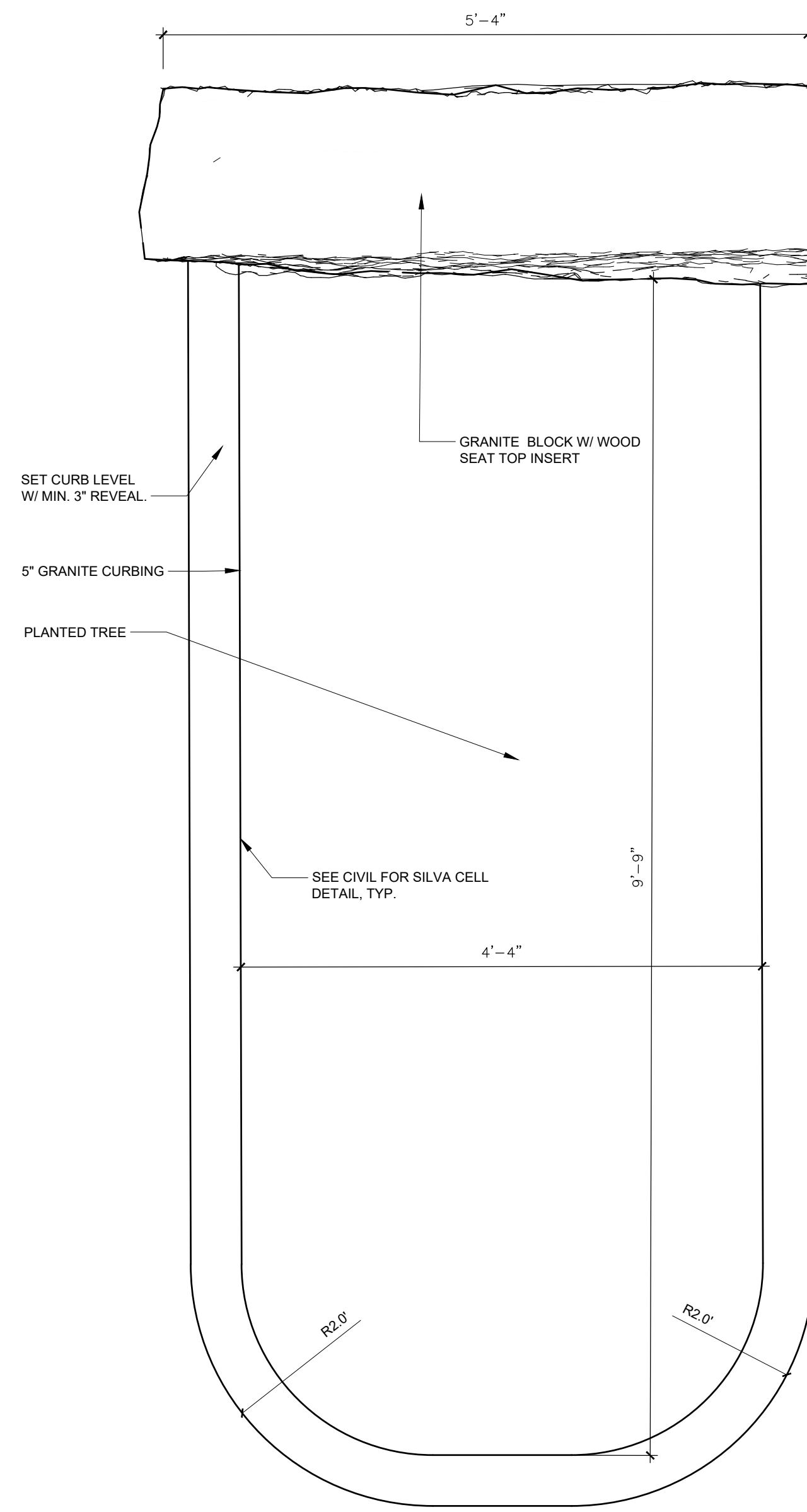
06 TREE WELL TYPE 1

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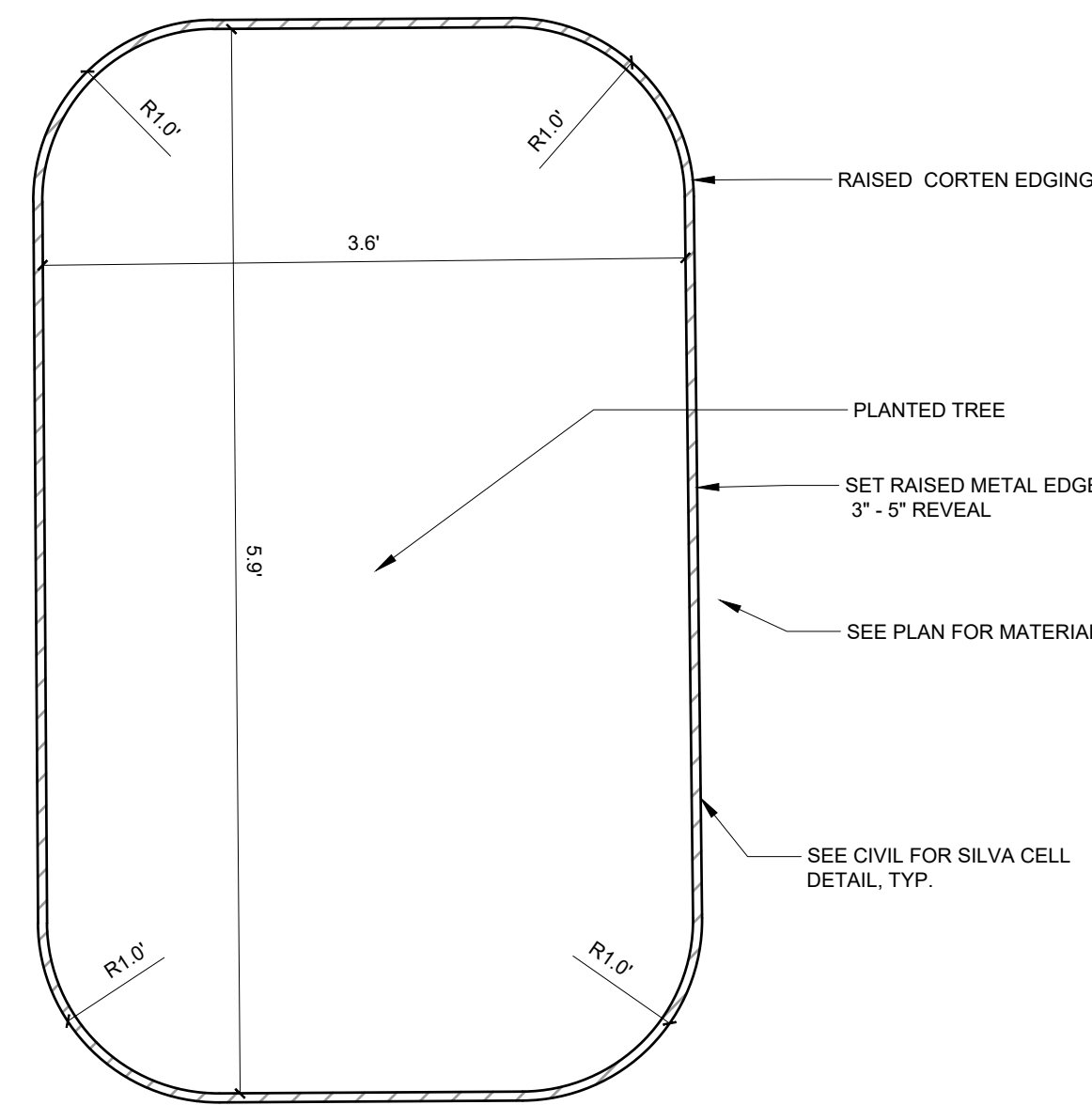
07 TREE WELL TYPE 2

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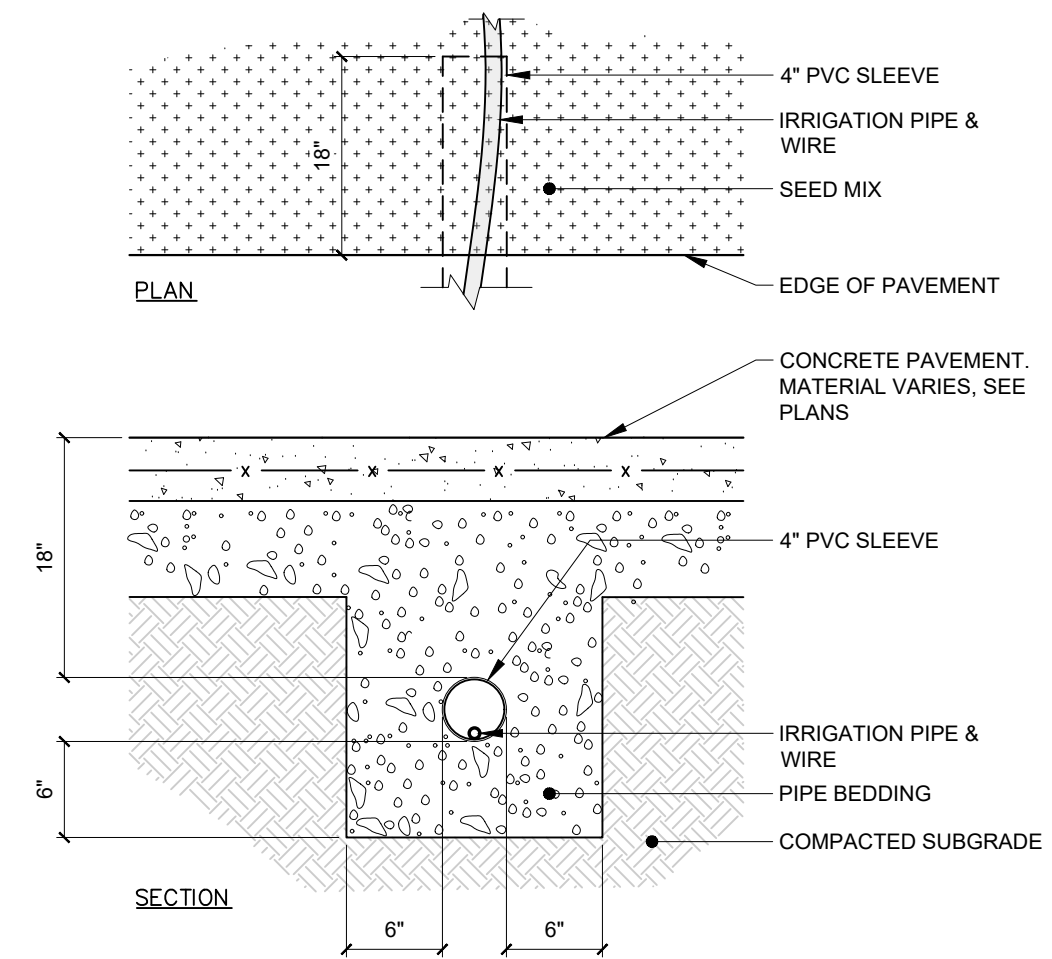
08 TREE WELL TYPE 3

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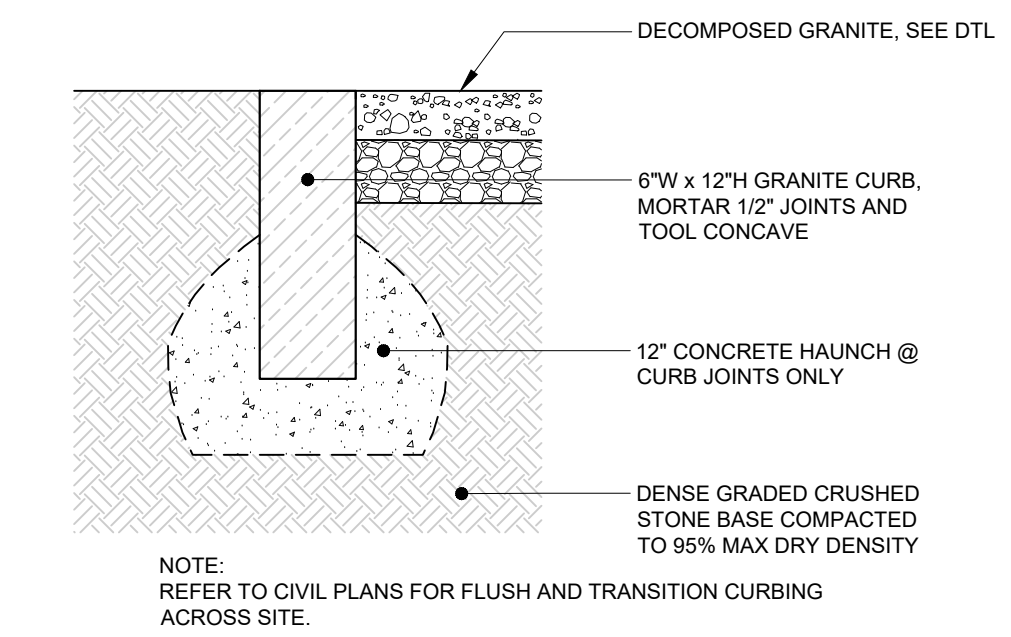
09 TREE WELL TYPE 4

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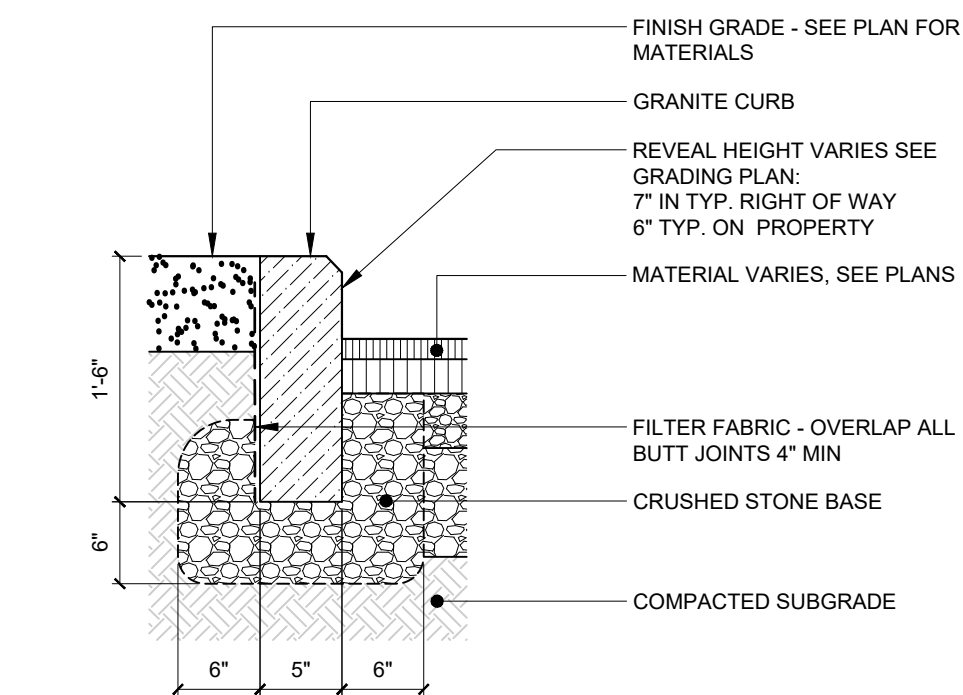
10 IRRIGATION SLEEVE DETAIL

SCALE: N.T.S.



11 GRANITE CURB - FLUSH

SCALE: N.T.S.



12 VERTICAL GRANITE CURB & CHAMFER

SCALE: N.T.S.

Prepared For:

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188 STATE STREET, 3RD FLOOR
PORTLAND, ME 04101

Prepared By:

dry landscape architecture, I.L.C.
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biddeford, me 04005

Date:

JUNE 19, 2023

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COMMENT RESPONSE

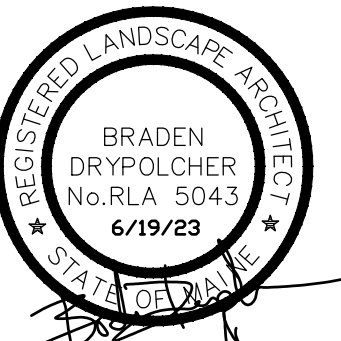
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DETAILS

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Revisions:



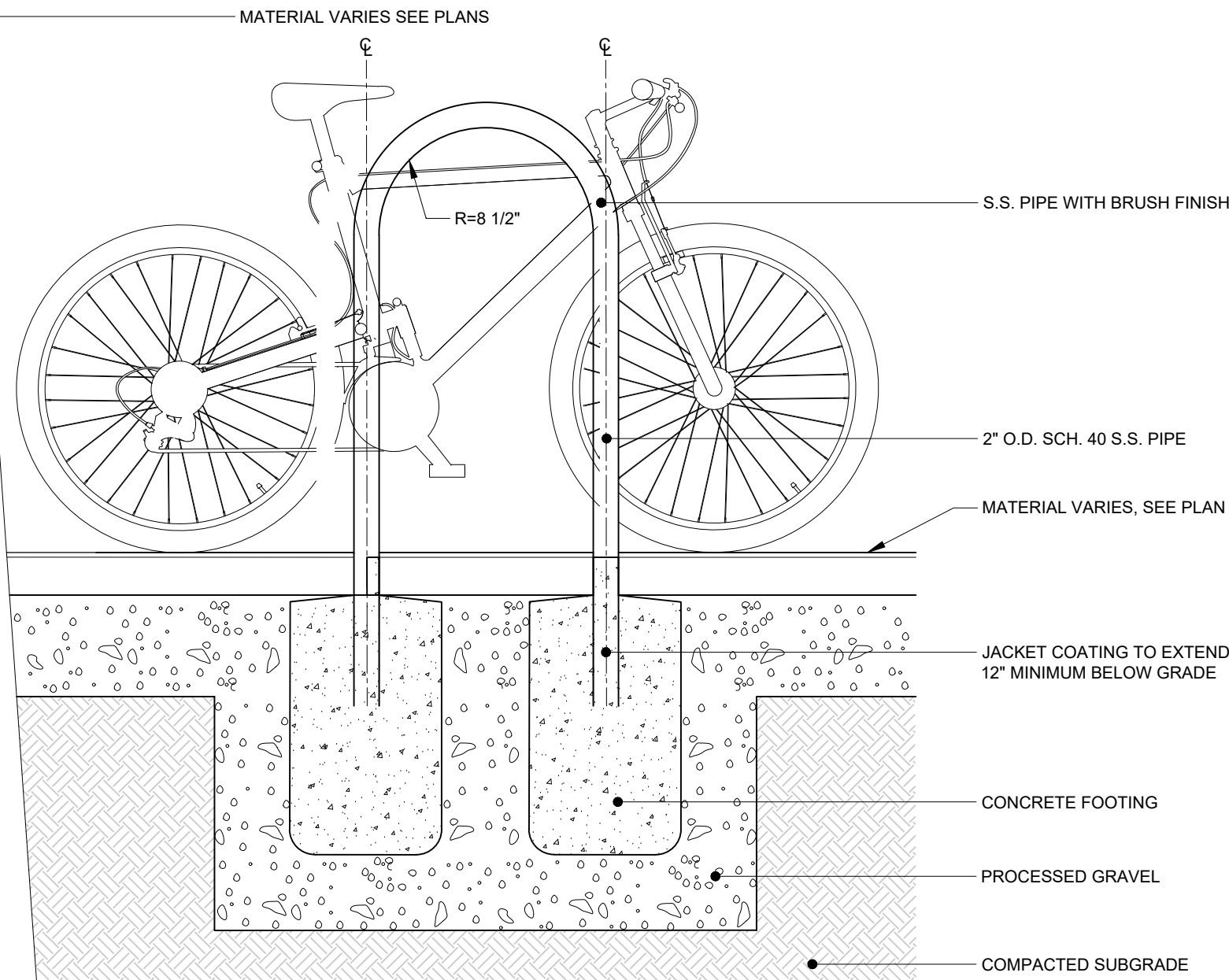
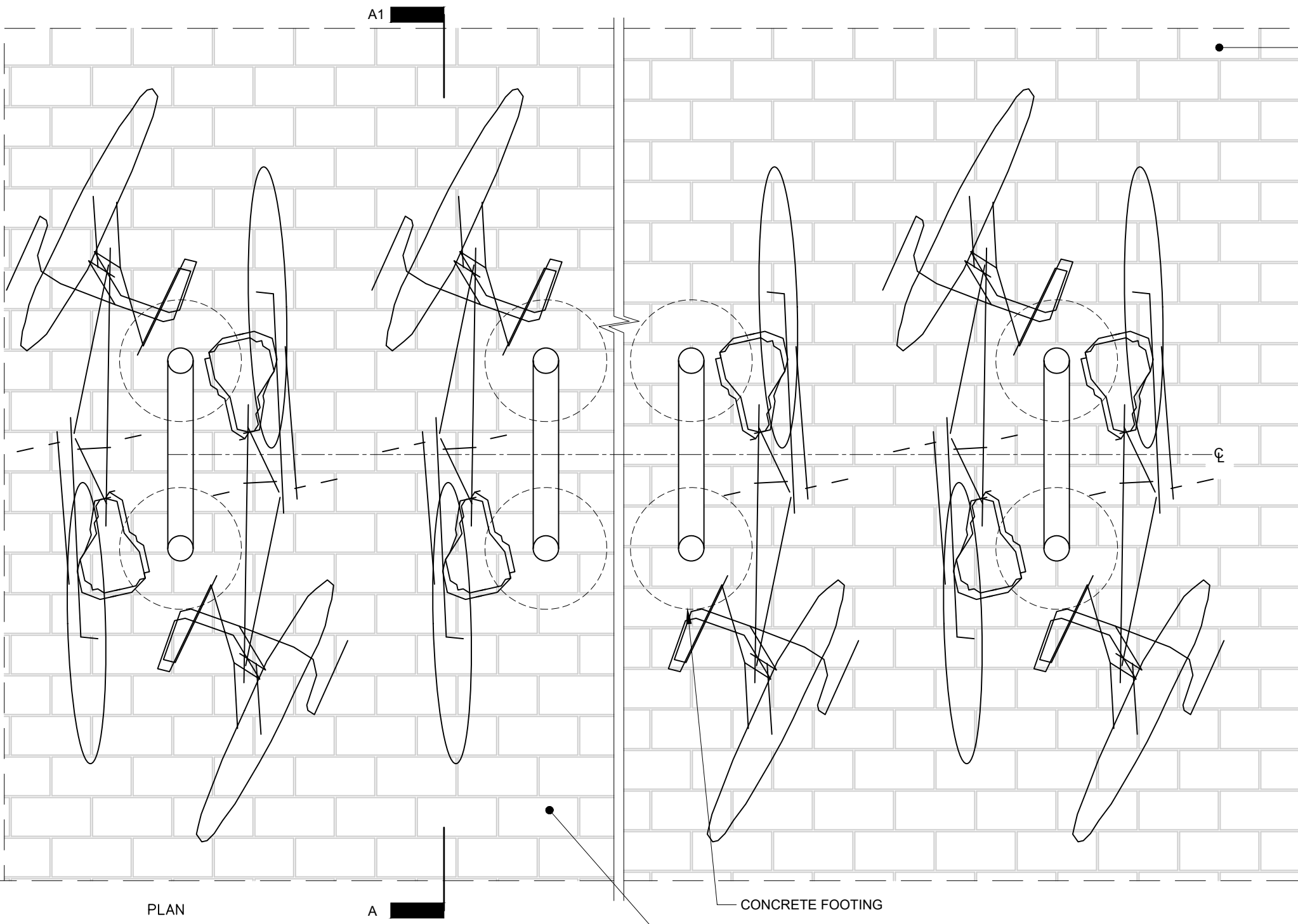
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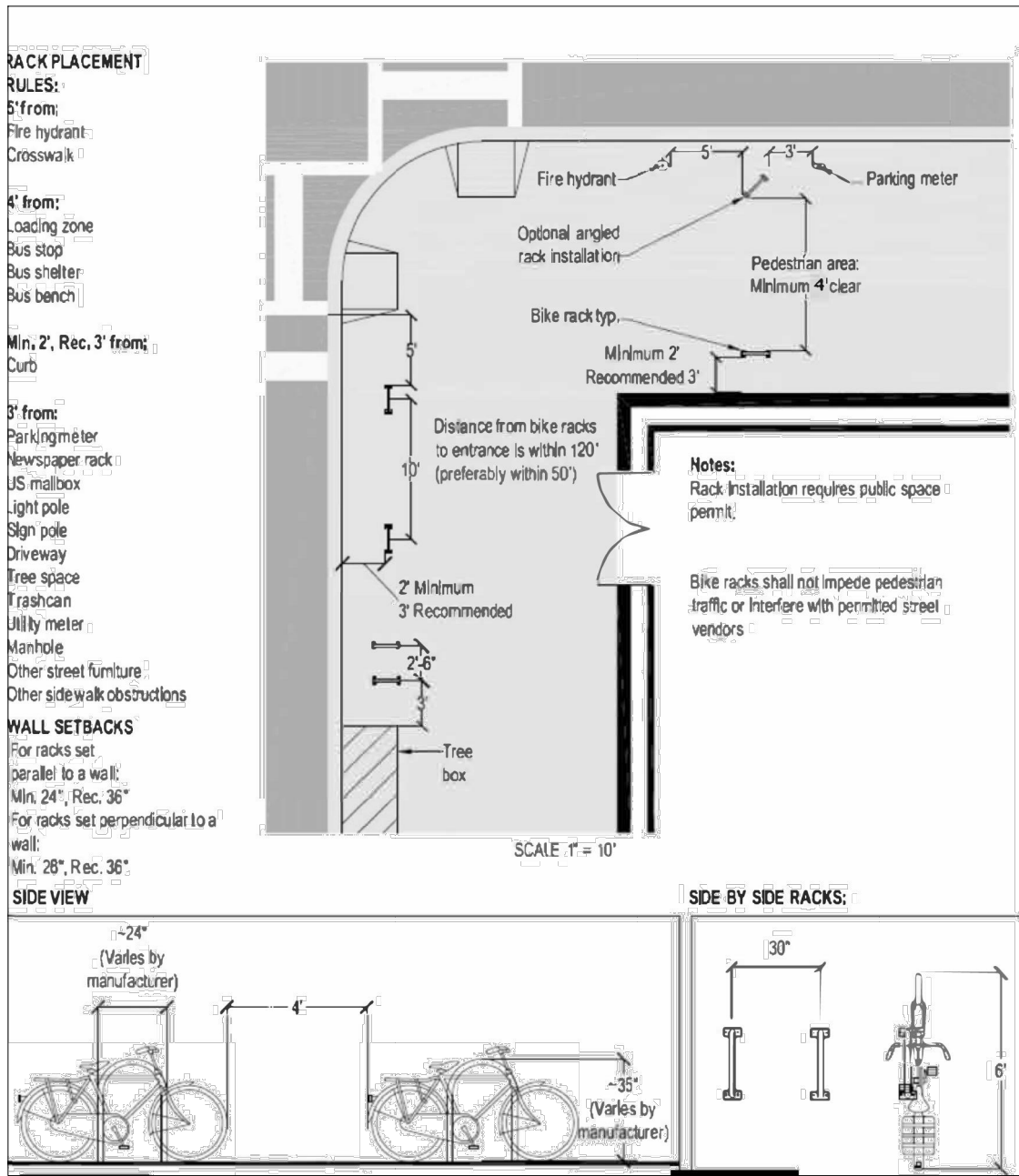
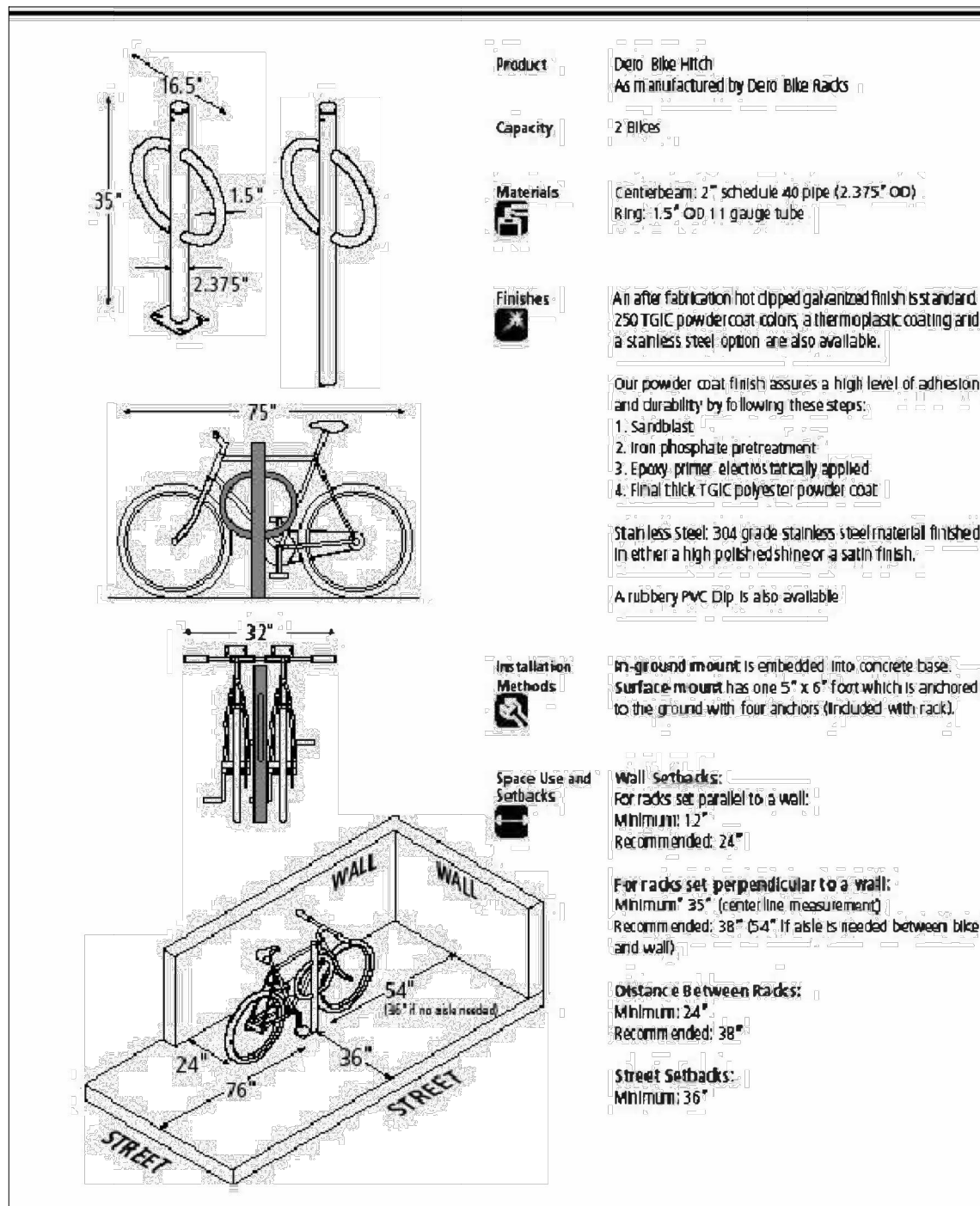
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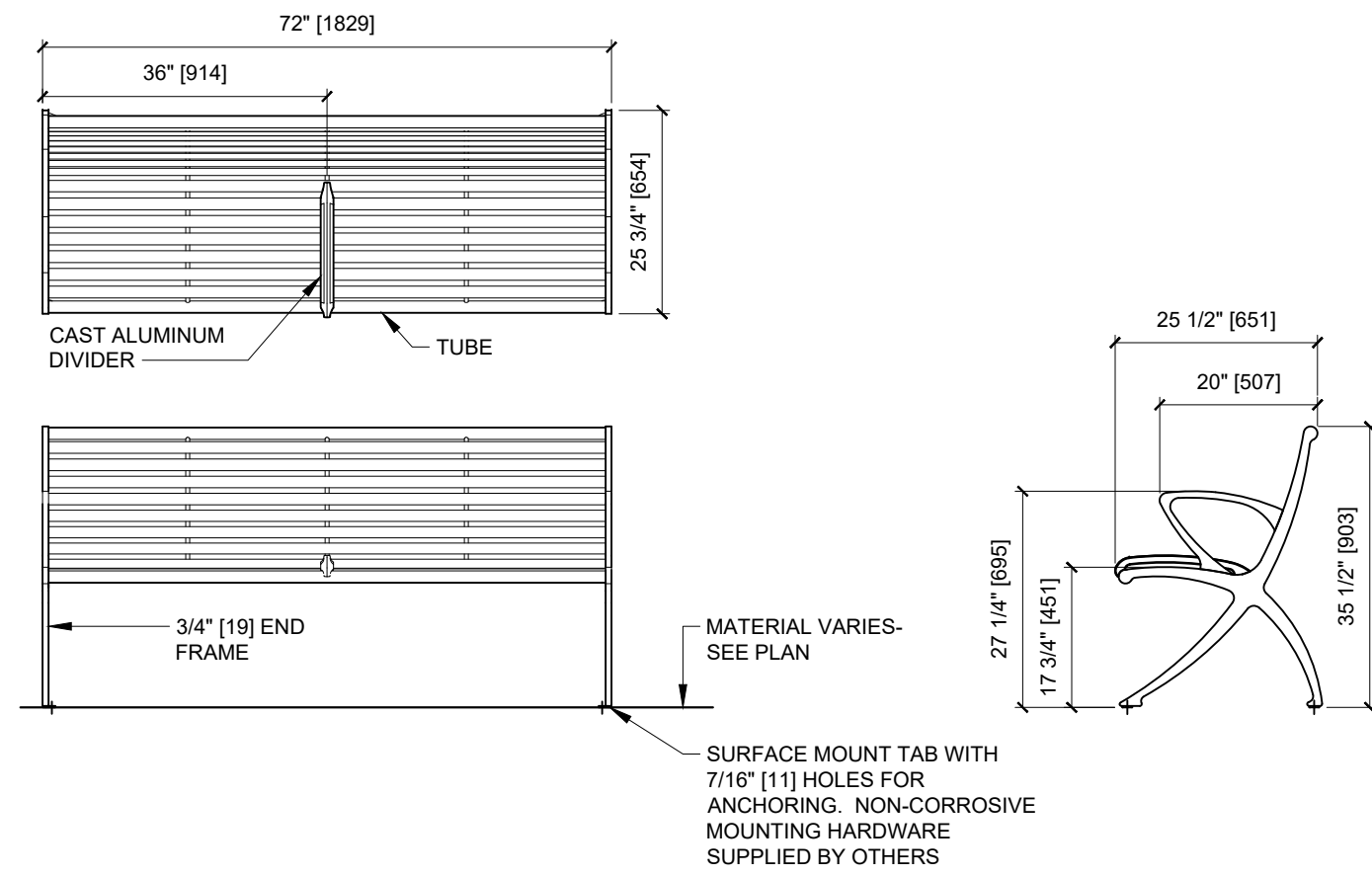


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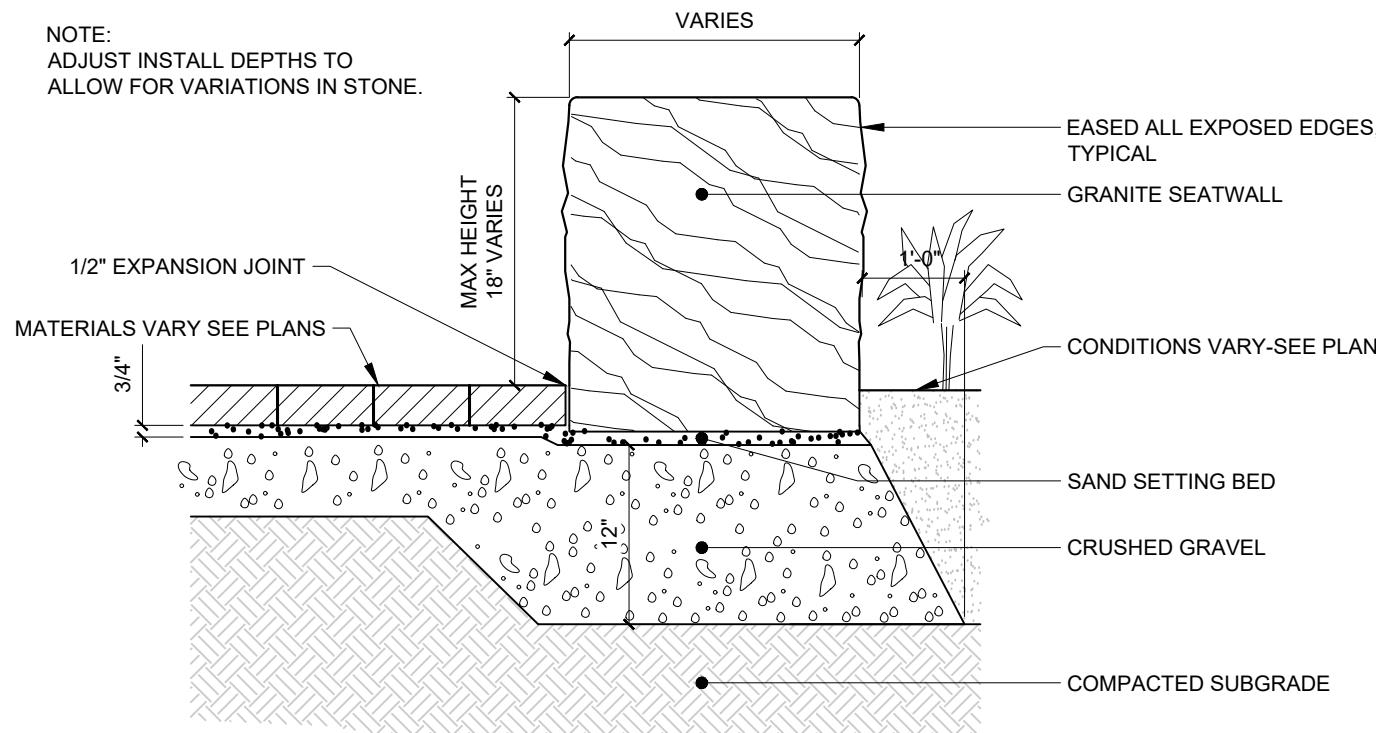
01 BIKE RACK & BIKE PARKING PLACEMENT GUIDE

SCALE: N.T.S.



02 BENCH

SCALE: N.T.S.



03 MONOLITHIC GRANITE BENCH

SCALE: N.T.S.

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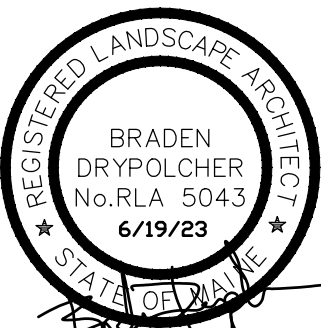
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Portland ME 04103

Revisions:



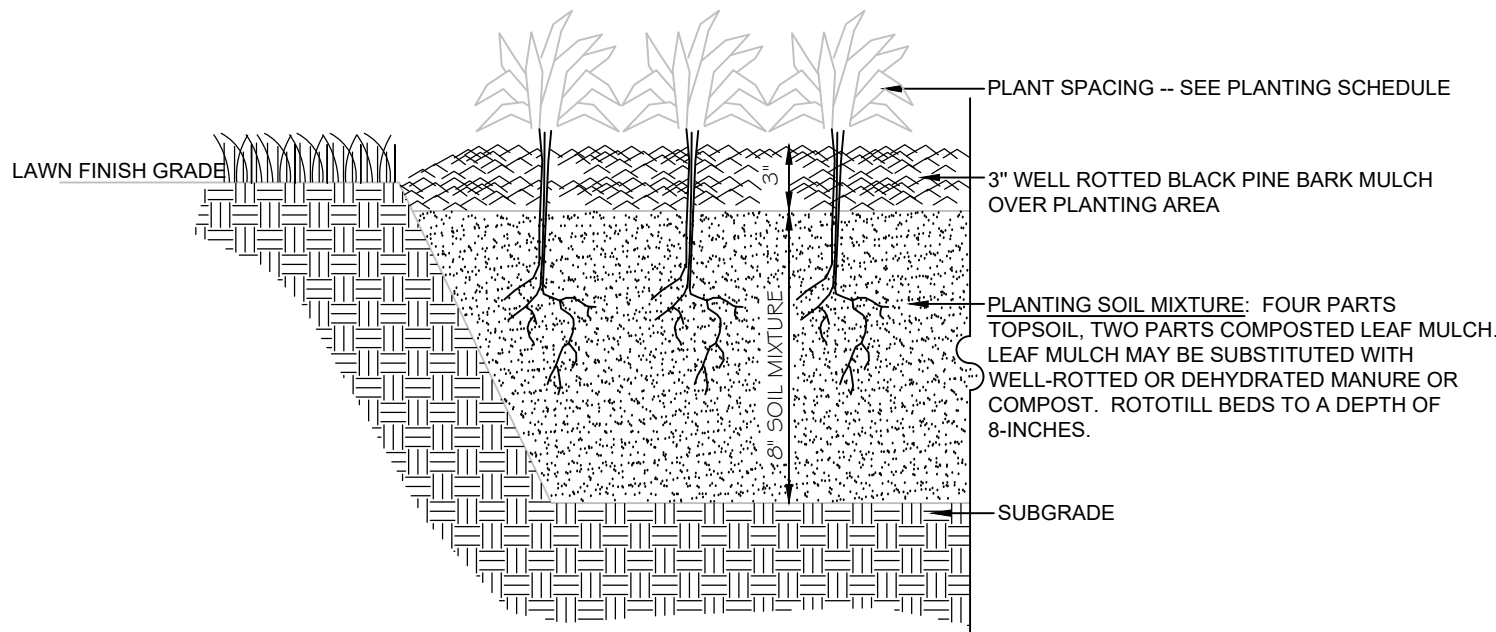
North:

Sheet No.:

L4

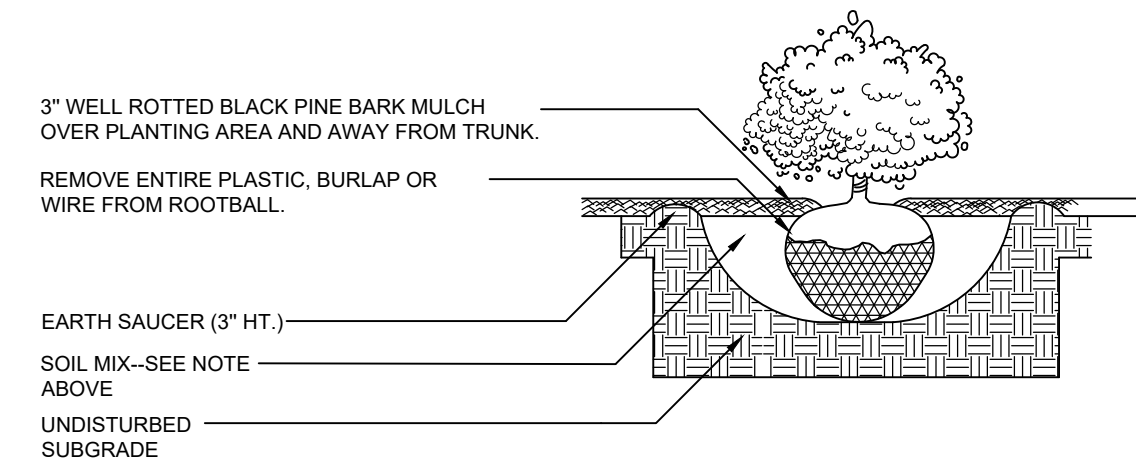
Scale:

AS NOTED



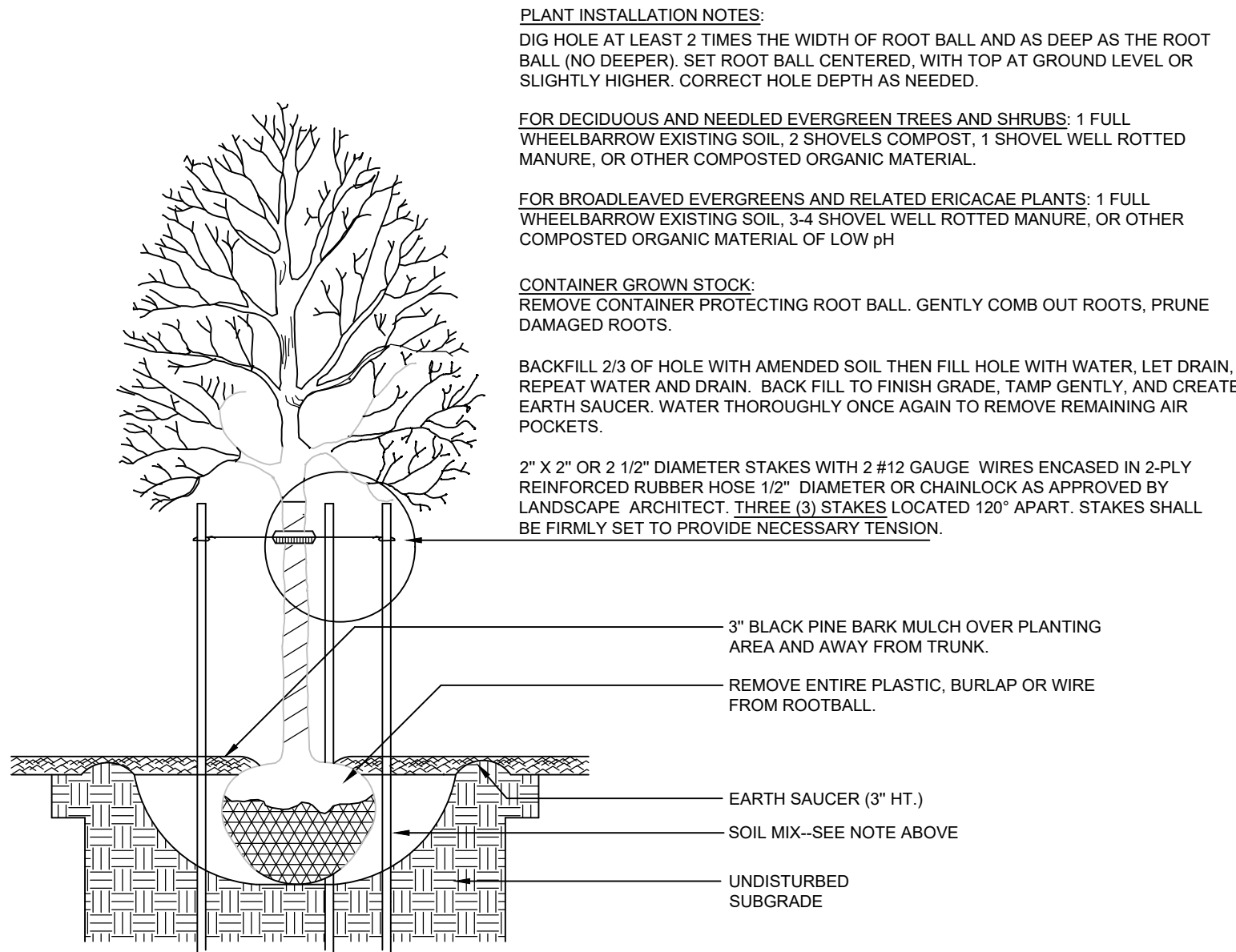
01 PLANTING BED AND MULCH DETAIL

SCALE: N.T.S.



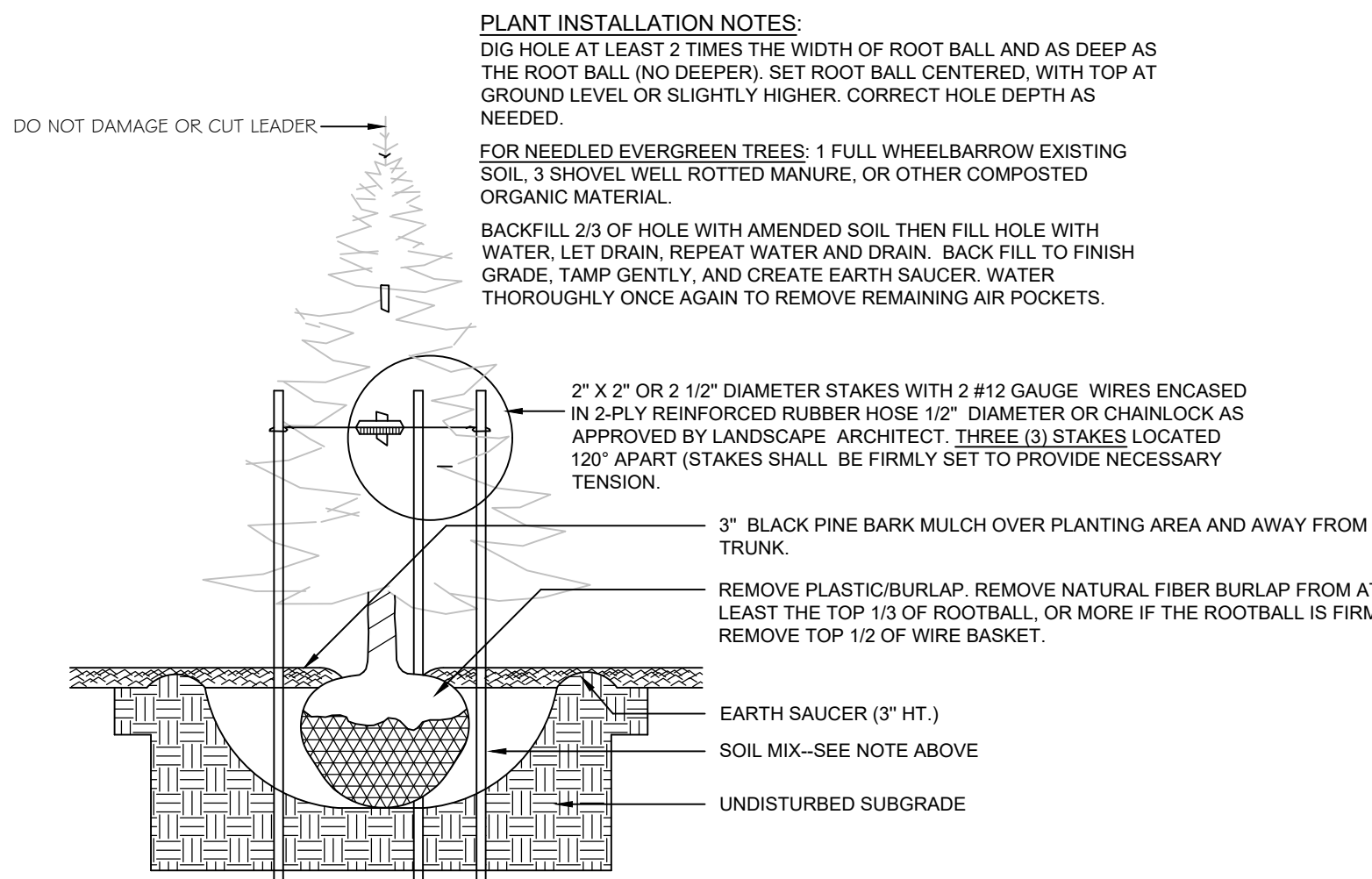
02 SHRUB INSTALLATION

SCALE: N.T.S.



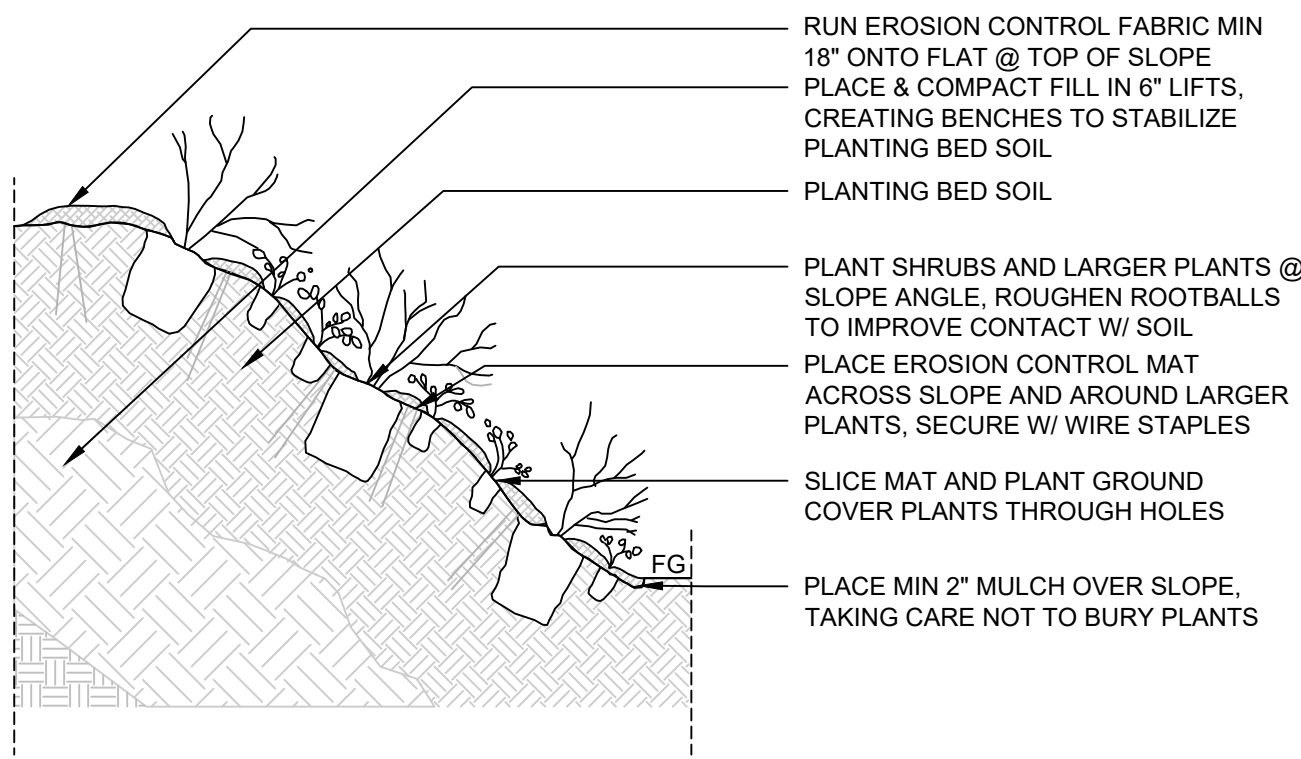
03 DECIDUOUS TREE DETAIL

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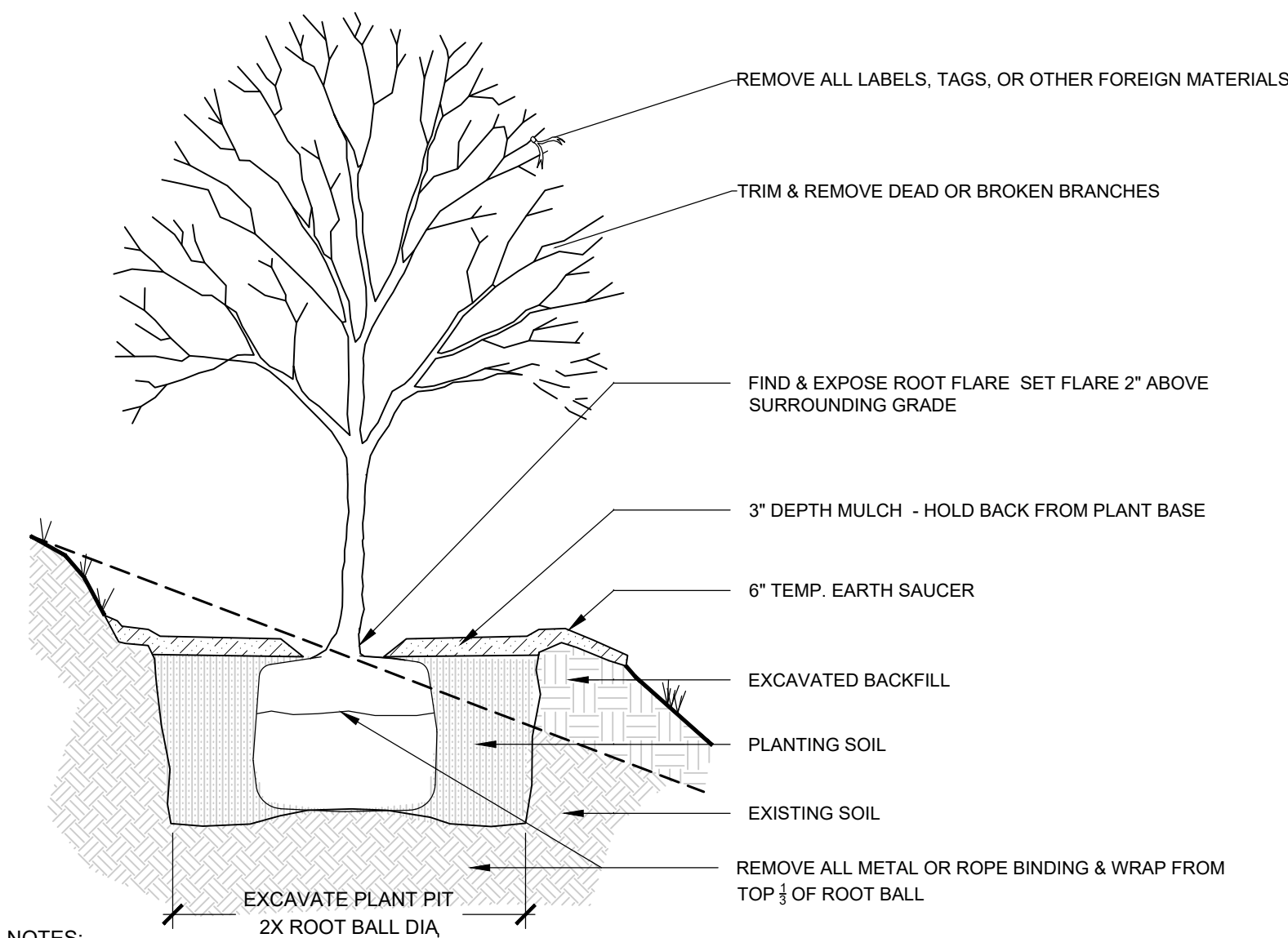
04 CONIFEROUS TREE DETAIL

SCALE: N.T.S.



05 SLOPE PLANTING DEATIL

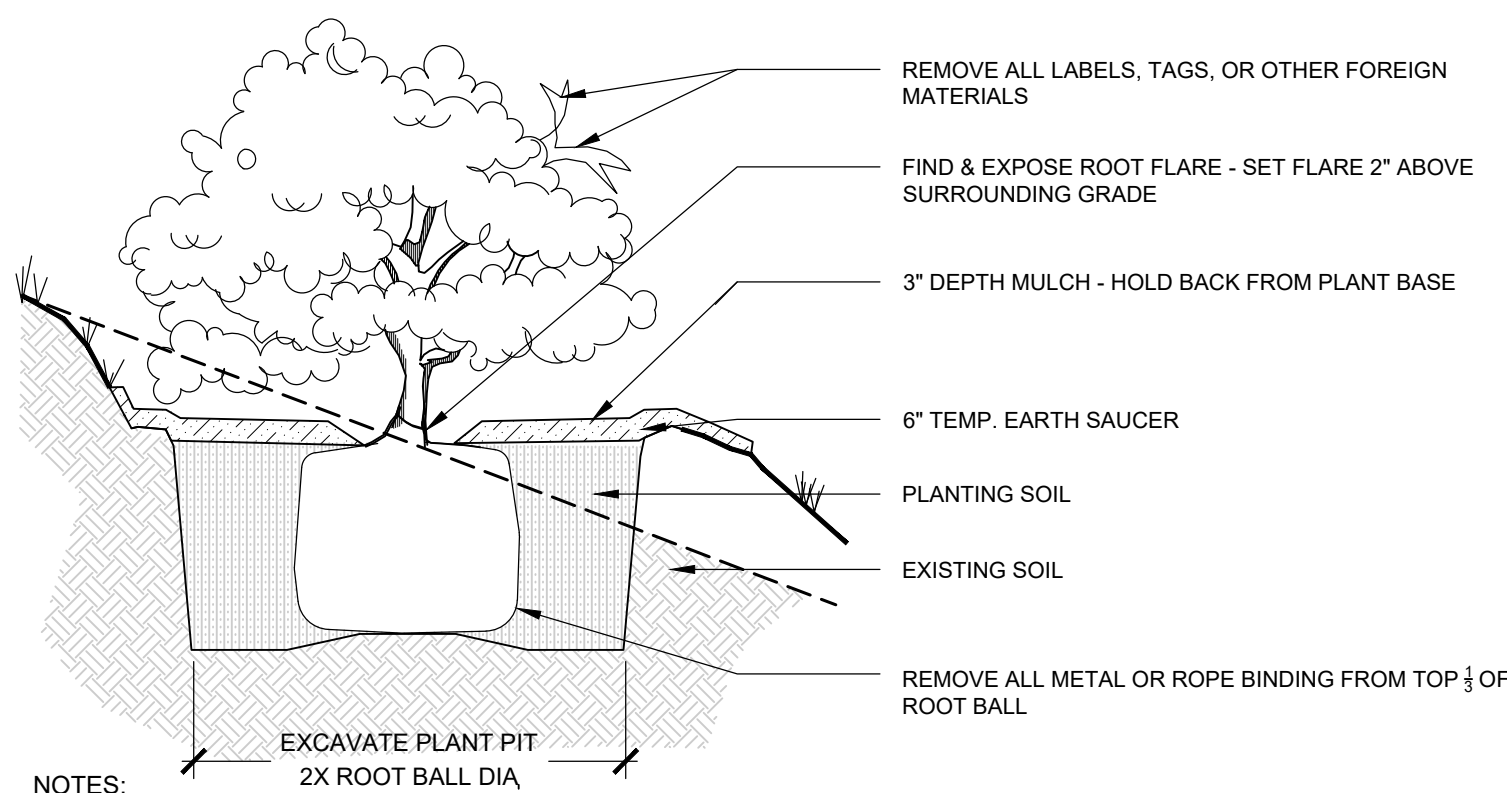
SCALE: N.T.S.



- NOTES:
1. TREE TO BE SET PLUMB.
 2. SECURE TREE AS MAY BE REQUIRED ACCORDING TO TREE SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
 3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

06 TREE PLANTING ON SLOPE

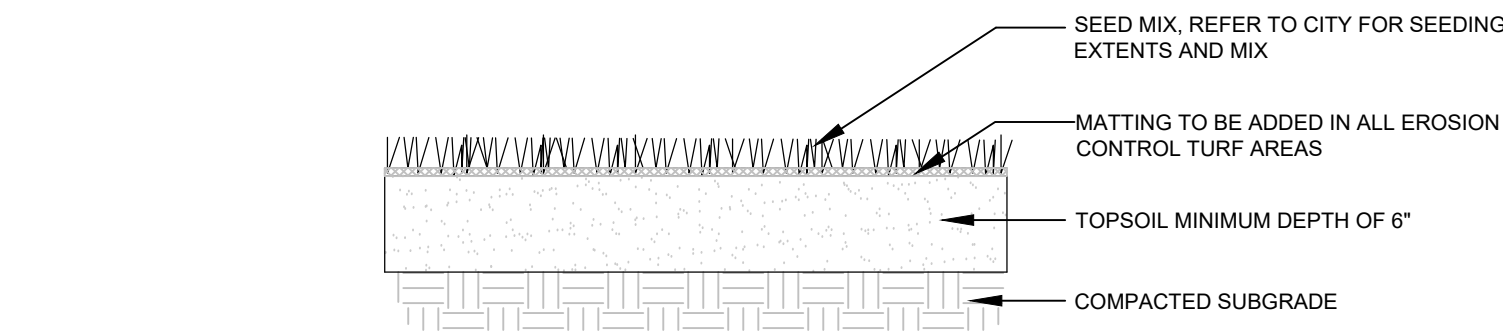
SCALE: N.T.S.



- NOTES:
1. SHRUB TO BE SET PLUMB.
 2. SECURE SHRUB AS MAY BE REQUIRED ACCORDING TO SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
 3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

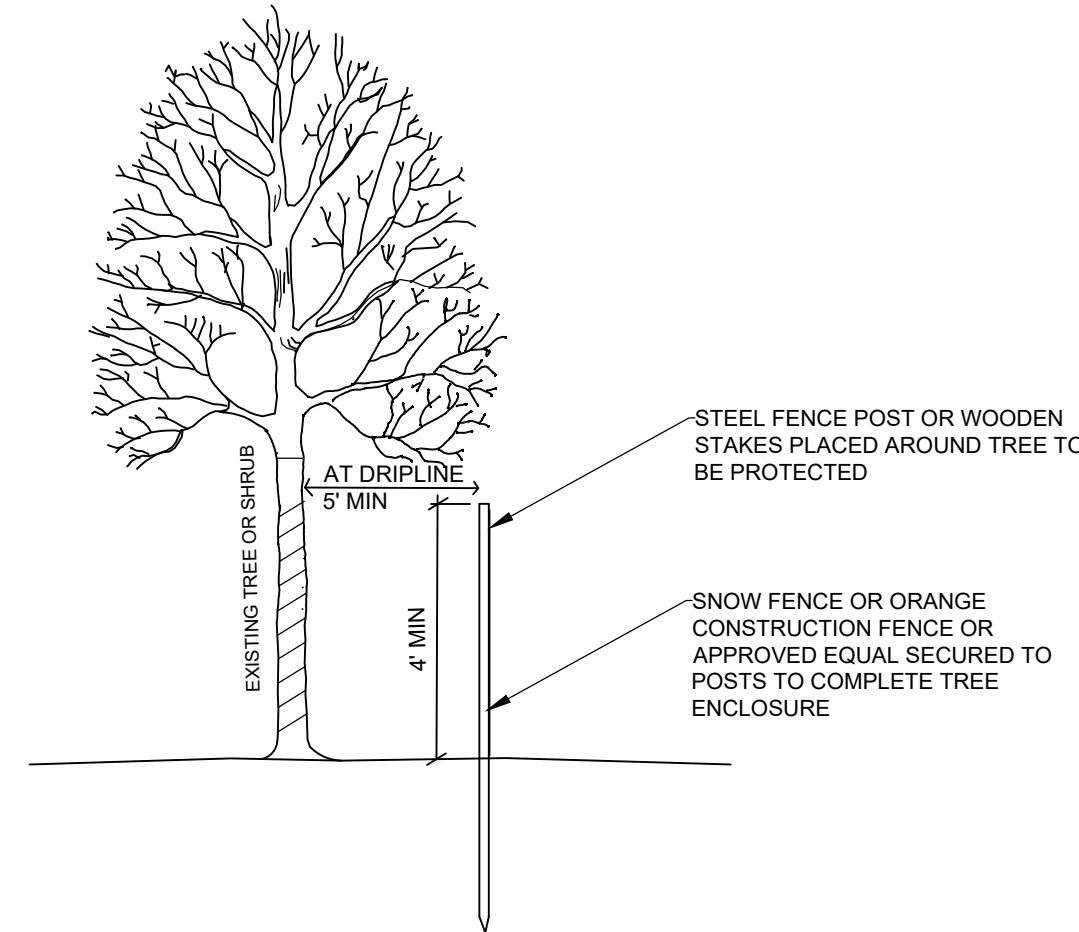
07 SHRUB PLANTING ON SLOPE

SCALE: N.T.S.



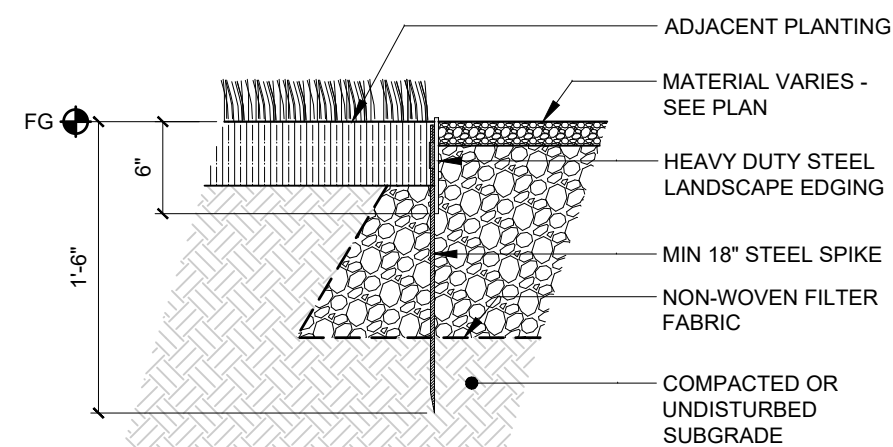
08 LAWN SEED MIX

SCALE: N.T.S.



09 TREE PROTECTION

SCALE: N.T.S.



12 METAL EDGING

SCALE: N.T.S.

Prepared For:

89 Elm Street, LLC
188 STATE STREET, 3RD FLOOR
PORTLAND, ME 04101

Prepared By:

dry landscape architecture, l.l.c
31 miller ave.
biddeford, me 04005

Date:

JUNE 19, 2023

Issued For:

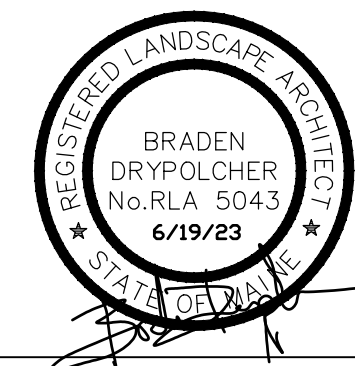
COMMENT RESPONSE

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Title: DETAILS

89 Elm
Street
Portland ME 04103

Revisions:



North:

Sheet No.:

L5

Scale:

AS NOTED



** Note: see architectural sheets for building treatments , material color, and selections*

89 Elm Street
Comment Response - 06.19.2023
Portland, ME



* Note: see architectural sheets for building treatments , material color, and selections

89 Elm Street
 Comment Response - 06.19.2023
 Portland, ME



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89 Elm Street
Comment Response - 06.19.2023
Portland, ME



** Note: see architectural sheets for building treatments , material color, and selections*

Mixed-Use Building
48 Brown Street (25 Casco Street)
Major Site Plan
PL-002468-2023
Ed Gardner, Applicant

Submitted to:	Portland Planning Board	Prepared By:	Maya Balassa
Public Hearing Date:	July 25, 2023	Date:	July 21, 2023

I. INTRODUCTION



Figure 1 Google earth view of project site

Developers Collaborative Predevelopment LLC and Equality Community Limited Partnership have submitted a Major Site Plan application to facilitate the development of a five-story, mixed-use development with a ground level retail space and 54 residential units. A lot split is being proposed as part of this application to create a new lot, separate from the Arts District Parking Garage, with frontage on Casco Street. This application is being referred to the Planning Board for compliance with the City of Portland's Land Use Code Site Plan Standards, Section 14.1.

The Planning and Urban Development Department mailed 158 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the July 15 and 16, 2023 editions of the *Portland Press Herald*.

The Planning Board held a workshop on June 13, 2023.

Applicant: Ed Gardner, Ocean Gate, LLC.
Applicant Gorrell Palmer Consulting Engineers, Stephen Bushey
Representatives:

II. REQUIRED REVIEWS

<i>Review</i>	<i>Applicable Standards</i>
Site Plan	Section 14.6

<i>Waiver Requests</i>	<i>Applicable Standards</i>
The applicant is requesting a drive isle width of 20 ft. Staff Recommendation: Staff support reducing the drive aisle width to 20 feet to accommodate structural support beams.	Technical Manual Section 1.10.2 requires that the minimum two-way drive aisle width be 24 feet.
The applicant is requesting to have a foot candle of 2.3 at the property line. Staff Recommendation: Staff are supportive of allowing for a higher foot-candle along Casco Street due to the downtown location and surrounding uses.	Tech Manual Section 14.3.4 requires that the foot candle at the property line shall not exceed .1.

III. PROJECT DATA

Existing Zoning	B-3, Downtown Entertainment Overlay Zone, Congress Street Historic District
Existing Property Size	38,968 square feet
Proposed Property Size	13,595 square feet
Existing Use	Surface parking lot
Proposed Use	Mixed-use residential and commercial
Proposed Development Program	Mixed-use residential and commercial

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	200 square feet	4,899 square feet	+4,699 square feet
Building Floor Area	200 square feet	43,867 square feet	+43,667 square feet
Impervious Surface Area	13,595 square feet	12,000 square feet	-1,595 square feet
Parking Spaces	25	7	7
Bicycle Parking Spaces	0	4	+4
EV Charging Stations	0	2	+2

IV. BACKGROUND

Ocean Gate, LLC owns 511 Congress Street, the Arts District Parking Garage and 15 Casco Street. The Arts District Parking Garage was approved by the Planning Board in 2017 and was completed in 2019..

V. EXISTING CONDITIONS AND SURROUNDING AREA

The subject property is 38,968 square feet in area and is improved with a public, for pay, surface parking lot with 25 parking spaces and a drive-thru ATM kiosk. The proposed development site currently occupies a portion of parcel 037 Doo4001, which also contains the Arts District Parking Garage. The property is located within the B-3 Downtown Business zone, the Downtown Entertainment Overlay zone and the Congress Street Historic District. North of the site is the Ambassador Apartments at 37 Casco Street and south of the site is the Equality Community Center at 15 Casco Street. The closest bus stop is at the corner of Congress Street and Casco Street, approximately 0.1 miles from the project site.

VI. PREVIOUS WORKSHOPS

This project went to the Planning Board for a workshop on June 13, 2023. The board had several questions and comments concerning the building's front setback and use of the front plaza, the narrow pathway wrapping the building, the drive aisle through the building, and the ADA access to and from the surface parking spaces under the proposed building.

VII. PROPOSED DEVELOPMENT

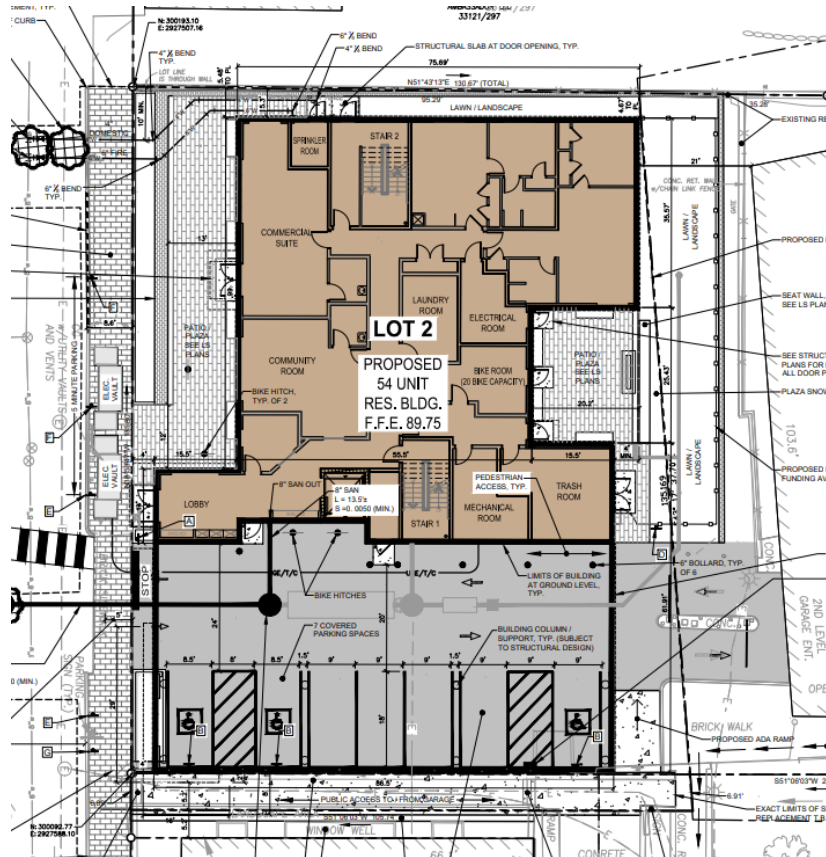


Figure 2 Proposed site and utility plan

The proposed Major Site Plan application would facilitate the development of a five-story, mixed-use commercial and residential building totaling 43,867 square feet, including 54 residential units, which would be developed in part using a Low-Income Housing Tax Credit (LIHTC). There is 673 square feet of commercial space proposed at the ground level, 4,912 square feet dedicated to residential amenities, including a trash room, bike room, community room, and laundry room on the first floor, and 38,400

square feet of residential space on floors two through five. Residential units will consist of 12 studio, 34 one-bedroom, and eight two-bedroom units. The proposed development includes seven covered parking spaces for the Equality Community Center, three of which would be designated as handicap spaces. The building is proposed to be 57 feet in height.

The proposal includes a lot split of parcel 037 Doo4001, which would create a 26,100 square foot parcel for the Arts District Garage and a 13,595 square foot lot for the proposed development, with frontage on Casco Street.

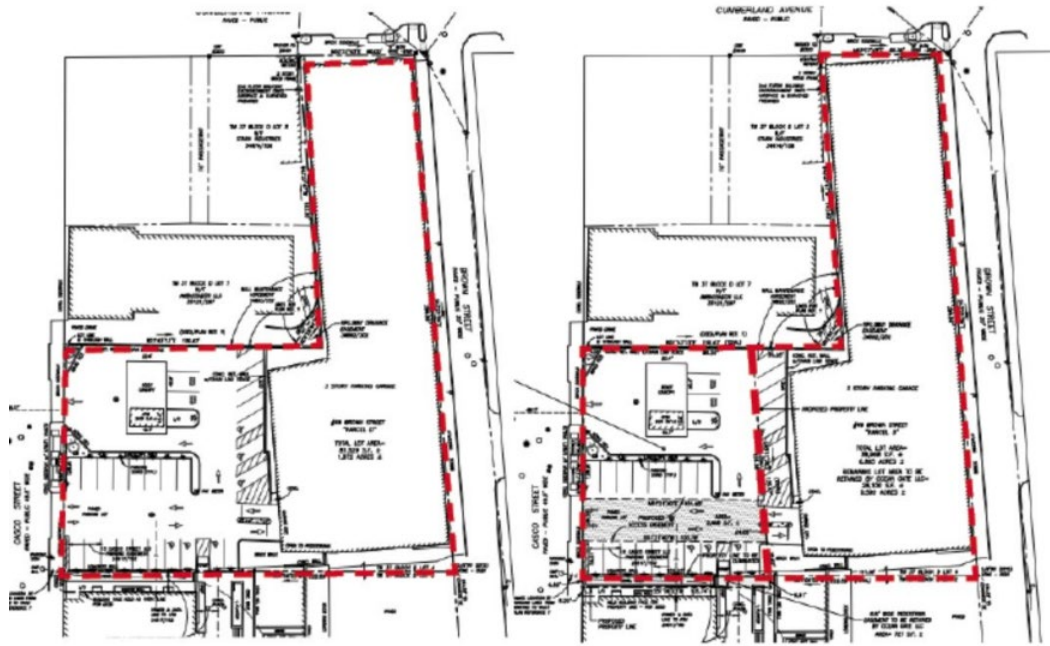


Figure 3 Proposed lot split

INCLUSIONARY ZONING CONDITIONAL USE

The project is exempt from submitting an inclusionary zoning conditional use application as the project is utilizing the Low-Income Housing Tax Credit Program, stated in Section 18.2.3.B of the Land Use Code.

VIII. RIGHT, TITLE, & INTEREST

The site is owned by Ocean Gate, LLC; Right, Title, and Interest is shown with submission of the deed (Attachment B).

IX. FINANCIAL & TECHNICAL CAPACITY

The applicant team includes Ryan Senatore Architects, Gorrill Palmer Consulting Engineers, and Developers Collaborative Predevelopment. The applicant has submitted a letter from NBT Bank to demonstrate financial capacity.

X. ZONING ANALYSIS

The site is located within the B-3 Downtown Business Zone, the Downtown Entertainment Overlay zone and the Congress Street Historic District. Multi-family residential and retail uses are both permitted within the B-3 zone, and the B-3 zone does not explicitly limit residential unit density. Building heights are governed by the Downtown Height Overlay Map. The development site is permitted a maximum building

height of 210 feet with a 90-foot maximum street wall height, after which a 15-foot minimum setback would be required along Casco Street. The proposed building height is 57.25 feet.

The applicant is proposing a 19.5-foot setback for a large portion of the building, where the maximum allowable setback in the B-3 zone is 5 feet. To exceed the maximum front setback the applicant has submitted a narrative to demonstrate compliance with Section 2.B in Appendix 1 and the B-3 Design Standards in the City of Portland Design Manual that provides the standards for increasing setback beyond the dimensional standards. The applicant must demonstrate the following to the Planning Board:

- i. *Provides substantial and viable publicly accessible open space or other amenity at the street level that supports and reinforces pedestrian activity and interest. Such amenities may include without limitation plazas, outdoor eating spaces and cafes, or wider sidewalk circulation areas in locations of substantial pedestrian congestion.*

Applicant response: The setback of the facade provides a viable public space that is accessible to the public, this space is a street level amenity that will add to and support pedestrian activity on Casco Street. The plaza will be adjacent to the first-floor retail space which is proposed to be a cafe space with outdoor seating.

- ii. *Does not substantially detract from the prevailing street wall character by introducing such additional setback at critical building locations such as prominent form defining corners, or create a sense of discontinuity in particularly consistent or continuous settings.*

Applicant response: The setback does not detract from the prevailing street wall character of Casco street, the existing building context and massing steps in and out along the street. The proposed design has a landscape (hardscape wall at the street edge) that is further reinforced with street trees along the street wall edge.

- iii. *Does not detract from existing publicly accessible open space by creating an excessive amount of open space in one (1) area or by diminishing the viability or liveliness of that existing open space.*

Applicant response: The proposed plaza does not detract from existing public space in the neighborhood and does not diminish the viability of nearby public spaces.

- iv. *The area of setback is of high quality and character of design and of acceptable orientation to solar access and wind impact as to be attractive to pedestrian activity.*

Applicant response: The setback provides a plaza that is high quality space which will have wonderful natural light, high quality pavers, plantings and is adjacent to a facade with a high level of transparency to the cafe space.

City staff find the applicant has demonstrated compliance with Section 2.B in Appendix 1 of the Design Manual from the above justification.

XI. SITE PLAN STANDARDS (Section 14.6)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's Site Plan Ordinance, Section 14.6. Staff comments are below.

1. Transportation Standards (Section 14.6.1)

A. Impact on surrounding street systems

The proposed site reduces parking by 18 spaces onsite. As requested by the third-party traffic engineer, the applicant is proposing a crosswalk at the northern corner of Shepley Street across Casco Street to facilitate safe pedestrian movements. A condition of approval has been added to update site plans with the agreed upon crosswalk location with the applicant.

B. Access and circulation

The proposed site plan depicts two separate pedestrian connections between the Arts District Parking Garage and the proposed building at 25 Casco Street and to the sidewalk along the property's frontage. The first connection would be a striped area of pavement extending from the garage ramp to the 25 Casco Street building lobby. The second connection would be provided via an existing, separated pathway that extends between the garage and sidewalk, along the east side of the proposed building. The development would provide several ADA parking spaces, intended for use by the adjacent Equality Community Center (ECC), located at 17 Casco Street. The accessible route between these parking spaces and the ECC would require users to access the existing walkway between 17 and 25 Casco Street via the garage driveway aisle.

Waiver request:

The applicant is requesting a waiver to allow for a 20-foot wide drive aisle through the building for access to the parking garage behind the site. The distance was determined by the required structural bollards. Due to the speed and turnover, the city's third-party traffic engineer is in support of waiving the standard 1.10.2, which requires a 24-foot drive aisle width.

C. Public transit access

The nearest bus stop is at the corner of Congress Street and Casco Street, 500 feet from the site. The site is not located along an existing public transit route and therefore a transit shelter is not required.

D. Parking

Seven parking spaces, including three handicap spaces, are proposed onsite, under the building, which are to be leased to The Equality Community Center. Given that the project is located within a quarter mile of fixed public transit, the project is not required to provide any off-street parking on-site. This exemption requires that a transportation demand management plan (TDM) be provided for projects exceeding 10,000 square feet of floor area, and is detailed within discussion of the following review standard.

Two, Level 2 electric vehicle (EV) parking spaces are proposed, which satisfies the requirement that 20% of proposed spaces be equipped with Level 2 EV chargers.

The applicant is proposing 28 bike parking spaces, which include 20 spaces inside of the building, and 8 outside of the building, which satisfies the City's bicycle parking requirements.

E. Transportation demand management (TDM)

The applicant is utilizing the proximate transit access as justification to not provide parking. The applicant has submitted a TDM. The TDM is still in review; the Transportation Project Manager will work with the applicant to revise the TDM to meet standards. A condition has to added to that affect.

2. **Environmental Quality Standards (Section 14.6.2)**

A. Preservation of significant natural features

The site is an existing surface parking lot with drive -thru ATM kiosk and no significant natural features have been identified.

B. Landscape preservation

As part of this application, one existing tree not subject to landscape preservation or tree replacement requirements, is proposed to be removed. Staff note that the proposed building may adversely impact the vegetation in an existing planting bed along the Equality Community Center façade that abuts this site. In the event that this vegetation needs to be replaced, staff recommend the use of shade tolerant species.

C. Site landscaping and buffers

A landscaping plan has been submitted with landscaping proposed along Casco Street and at the rear of the site. The City has provided several landscaping comments, including species suggestions based on site conditions. The applicant has not resubmitted the landscaping plan to respond to comments at this time. An approved landscaping plan, meeting tech manual standards, as been added as a condition of approval.

Based upon the number of residential units being proposed, the applicant is responsible for providing 54 street trees. The applicant is proposing to plant four new street trees and has chosen to meet the remainder of the requirement by paying into the street tree fund by the amount of \$20,000, at \$400 per tree.

D. Water quality/storm water management/erosion control

The applicant is proposing roof drains that deposit into a 10,000-gallon stormwater detention container to be slowly released into an existing 12-inch drainpipe along Casco Street in response to city staff comments. The application includes erosion and sediment control measures that meet stormwater standards. DPW has provided comments on the revised application materials and stormwater management plan. A condition of approval has been added to ensure that all materials meet stormwater management standards.

3. **Public Infrastructure and Community Safety Standards (Section 14.6.3)**

A. Consistency with City Master Plans

Consistency with the zoning standards of the B-3 Business zone, Downtown Entertainment Overlay zone and Congress Street Historic District will facilitate consistency with Portland's Plan 2030. The addition of housing, including affordable housing in an urban core and proximal to public transportation supports several of Portland's goals, including:

- 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.

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.
- Pursue policies to enable people who work in Portland to have the option to live in Portland.

B. Public safety and fire prevention

The proposed building is meeting public safety and fire prevention standards by proposing the development to be fully sprinkled. The nearest fire hydrant is in front of the Equality Community Center, the abutting property, on Casco Street.

C. Availability and capacity of public utilities

The applicant has submitted wastewater capacity and Portland Water District ability to serve authorization (Attachment P) (Attachment S). The city is still seeking confirmation that the applicant has utility capacity authorization from Central Maine Power. A condition has been added.

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

The project is not anticipated to create adverse massing, ventilation, or wind impacts.

B. Shadows

Not applicable.

C. Snow and ice loading

Snow storage has been identified on the site plans to the compliance of site plan standards.

D. View corridors

Not applicable.

E. Historic resources

The project is simultaneously going through Historic Preservation Board Review since the site is located within the Congress Street Historic District. The project went to the Historic Preservation Board for a workshop on July 5th. The plans have been updated to respond to several design comments brought up at the meeting, including color choices and windows. The project is going to the Historic Preservation Board again in August. Staff have added a condition of approval requiring that the applicant receive a Certificate of Appropriateness from the Historic Preservation Board prior to applying for a building permit.

F. Exterior lighting

A photometric plan has been submitted. The lighting plan proposes lighting around the perimeter of the new building.

Waiver request:

The applicant has submitted a waiver request for the light trespass standard to allow for a maximum foot-candle of 2.3 along Casco Street. The standard restricts the maximum foot-candle at the property line to be .1-foot candles. The applicant is seeking a waiver of the standard 14.3.4 requiring that the foot candle does not exceed .1 along the property line to allow for a maximum foot candle of 2.3 along Casco Street. The city staff are supportive of this waiver due to the downtown location.

G. Noise and vibration

The application is not anticipated to create any noise and vibration impacts.

H. Signage and wayfinding

Signage is permitted through the Permitting Department in the City of Portland.

I. Zoning-related design standards

This site resides in the Congress Street Historic District and will be required to go through Historic Preservation Board Review. The applicant is seeking an increased maximum setback through Section 2.B of Appendix 1 of the Design Manual. Please refer to the zoning analysis.

XII. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting on May 17, 2023 at 5pm. No members of the public attended. There have been two public comments submitted to the city with concerns with the design and with inclusionary zoning applicability.

XIII. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning & Urban Development Department staff recommends that the Planning Board approve the proposed mixed-use development at 48 Brown Street (25 Casco Street).

XIV. PROPOSED MOTIONS

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 July 25 for application #PL-002468-2023 relevant to the Site Plan Standards of the Land Use Code and Portland's Technical and Design Standards, and other regulations, and testimony presented at the Planning Board public hearing:

1. Drive aisle width

The Planning Board [**finds/does not find**] based upon the City's third-party traffic Engineer's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard 1.10.2, which requires that the minimum two-way drive aisle width be 24 feet, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [**waives/does not waive**] the Technical Manual standard Section 1.10.2 to allow for a drive aisle width of 20 feet.

2. Light trespass

The Planning Board [**finds/does not find**] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard 12.3.4, which requires that the foot-candle at the property line not exceed .1, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [**waives/does**

not waive] the Technical Manual standard Section 12.3.4 to allow for foot-candles that exceed 1.0 along the front façade of the building along Casco Street.

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 25, 2023 for application PL-002468-2023 at 48 Brown Street (25 Casco Street) 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 conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall submit an updated landscaping plan in response to city staff comments to be reviewed and approved by the Planning Authority.
2. The applicant shall submit an updated final site plans that includes the proposed location of the crosswalk across Casco Street at the northern sidewalk along Shepley Street for review and approval by the Planning Authority.
3. The applicant shall update materials in response to DPW technical comments (7-20-2023) related to right-of-way improvements and new public infrastructure connections, to be reviewed and approved by the Planning Authority and DPW.
4. The applicant shall provide utility capacity confirmation from Central Maine Power to the Planning Authority.

PRIOR TO ISSUANCE OF A BUILDING PERMIT

5. The applicant shall submit a revised Transportation Demand Management (TDM) Plan for review and approval by the Planning Authority.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

6. The applicant shall contribute to the tree fund in the amount of \$400 per tree for 50 street trees for a total of \$20,000.

XV. ATTACHMENTS

APPLICANT SUBMITTAL

- A. Cover Letter
- B. Major Site Plan Checklist
- C. Deed
- D. Authorization Letter from Ocean Gate
- E. Standards-Environmental
- F. Standards-Public Infrastructure and Community Safety
- G. Standards-Site Design
- H. Standards-Technical Capacity
- I. Standards-Transportation
- J. Zoning Analysis – garage parcel
- K. Zoning Analysis – new bldg. parcel
- L. Neighborhood Meeting

- M. Letter for Wastewater Capacity
- N. Wastewater Capacity Application
- O. Affordable Housing Capacity Letter
- P. Wastewater Capacity Authorization
- Q. Response to Comments Letter 7.3.23
- R. Transportation Demand Management Plan
- S. Portland Water District – Ability to Serve Confirmation

PLANS

- 1. Cover
- 2. General Notes
- 3. Architectural cover sheet
- 4. Casco Street Renderings
- 5. Boundary Survey
- 6. Boundary Survey and Ex Cond Survey
- 7. Casco Street Lot Division Plan
- 8. Lot Division Plan
- 9. Site & Utility Plan
- 10. Existing and Removals Plan
- 11. Grading and Drainage Erosion Plan
- 12. Site and Misc Details
- 13. Site and Misc Details
- 14. Site and Misc Details
- 15. First Floor Code Review Plan
- 16. Code Review Elevation
- 17. Code Review Elevation
- 18. Layout Plan
- 19. Planting Plan
- 20. Site Lighting Plan
- 21. CM Plan
- 22. Concept Design

ATTACHMENTS

- 1. City Staff Comments May 30, 2023
- 2. DPW Comments July 20, 2023

PUBLIC COMMENT

- PC 1. Bollie Bollenback 5-27-2023
- PC 2. Goerge Rheault 7-20-2023
- PC. 3 Goerge Rheault 7-20-2023

Review Criteria:

- Portland's Site Plan Ordinance

GENERAL

- Please submit a photometric plan to show proposed site lighting as well as cutsheets with lighting details.

ZONING

- With the proposed lot split, the applicant will need to get the E-911 address from Public Works for the new building. Please reach out to the assessor's office with the proposed lot split so that they can create the new CBL for the new lot on Casco St.
- Under Table 7-E the maximum front setback is 5'. The lobby and parking garage meet the setback but the majority of the building (66') is 19.5' from Casco Street. It appears part of the second floor has an overhang that might go closer but it is still not meeting front setback requirement.
- To verify the proposed building is meeting height regulations, please provide calculations for the average grade, with average grade lines in the elevations.

TRANSPORTATION

- Please submit a waiver request for the 20-foot parking aisle widths.
- Please note how the four non-handicap parking spaces will be managed.
- Please provide details on delivery and trash removal truck movements to and from the site.
- Sight distance shall be documented for the driveway onto Casco Street.
- The third-party traffic engineer suggests a crosswalk be considered on Casco Street at the Shepley Street intersection.
- It is likely that tenants will park in the Brown Street garage (and there may be pedestrians walking from the garage to Casco Street) and thus a safe pedestrian route shall be provided.
- The site plan should note what type of traffic control is to be proposed at the driveway approach to Casco Street.

WATER QUALITY, STORMWATER, & INFRASTRUCTURE

DPW Transportation

- Please be aware that Casco Street is under moratorium and will require a moratorium repair. The applicant shall get permission from the Department of Public Works prior to any work within the street Right of Way. The applicant will be required to repave the finished surface of the street per the moratorium standards. All pavement cuts in the City ROW shall be repaired per the Minor Excavation Pavement Repair Details (prior to paving the finished surface) found in the [Rules and Regulations for Excavation Activity](#).
- The City's Technical Manual has been recently updated and approved. After reviewing the proposed details for this project it is clear that not all the changes are reflected in this plan set. The applicant shall update all proposed details (Site, Sewer, Stormwater, Landscape, details) to meet the requirements of the recently approved technical manual updates (found on the city's website).
- Details that need to be included or referenced on the site plans are:
 - Vertical Granite Curb
 - Brick Sidewalk with Bituminous Base
 - Brick Driveway Apron with Bituminous Base

- Commercial Driveway Apron
- The applicant shall update the plans to label and or provide spot grades and slopes for the proposed sidewalks and driveway improvements at grade breaks.
- The proposed brick sidewalk cross slope shall not exceed 2% at the property line. If the existing sidewalk grades are not compliant at the property line, then the limits of sidewalk replacement shall be extended to include a 5-foot minimum transition zone from the proposed 2% to the existing sidewalk slope.
- Improvements in the right-of-way shall be dimensioned on the plan view sheets. For example, ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as when a width change.
- The applicant has noted that the existing Granite Curb will be reset in the area adjacent to the vaults. The applicant shall insure that the existing granite is free of any defects such as but not limited to chipping and cracking. Be aware that Public Works may require the use of new granite curb upon inspection of the existing granite curb prior to installation / during construction.
- On the site plan, please note the location of the curb that will be removed and reset per the current City standards.

DPW Water Resources

- The applicant shall update the grading and drainage plan to show proposed stormwater infrastructure onsite and any connections being proposed into the combined sewer system.
- Storm drainage and sanitary sewer flows in this project area drain to the City's combined sewer system located in the Preble Street-Marginal Way CSO #17 sewershed. Lack of wet weather capacity in this combined sewer system results in frequent system wide sanitary sewer overflows, combined sewer overflows and flooding at the Maple Street/Commercial Street intersection. City wide mitigation of combined sewer overflows is required as part of the City's CSO consent decree administered by the EPA and Maine DEP.
- Section 2.2.3 of the City's Technical Manual requires DPW Water Resources approval when rain water is being proposed to discharge into a sewer which conveys sanitary waste. Prior to authorizing a new stormwater connection into the combined sewer, DPW will require that stormwater storage and flow control as listed below be provided based on the lack of wet weather capacity in the combined sewer system.
- The applicant shall provide on-site stormwater detention volume equal to the greater of 1" of rainfall over the entire project redeveloped area being proposed on the parcel or the projected average 24 hour daily sanitary sewer flow each being added to combined sewer system by the project in order for DPW to authorize a new stormwater connection into the Brown Street combined sewer system.
- The maximum permissible stormwater outflow rate into the City's system during the design storm event shall be less than or equal to 0.1 CFS per acre of watershed area draining to the detention system.
- The applicant shall submit a wastewater capacity application to the DPW water resources division for review and approval.
- New connections into the combined sewer system shall be equipped with back flow preventers in accordance with section 2 of the technical manual.

- The applicant shall determine if grease traps are required for the proposed commercial space and update the utility plans to include a grease trap with the proper sizing and configuration if necessary.
- Please provide more details on the grading drainage and erosion control plan
- The Grading Drainage and Erosion Control Plan appears to have most of the relevant layers turned off. Please provide more information on proposed grading and drainage.
- There is an area of covered parking proposed. Any drainage from within this area will need to be directed to an oil water separator to the sewer.
- Please identify snow storage on the site plan.

LANDSCAPING & ENVIRONMENTAL QUALITY

- Applicant proposes a good use of native ground cover and perennial plantings, which are appreciated. Irrigation is strongly encouraged to ensure success and longevity of proposed foundation plantings.
- Site plan / existing conditions plan does not show existing courtyard plantings of abutting property (Equality Community Center). Impact from the proposed taller structure on this abutting property's existing courtyard / walled planting areas, particularly the existing significant tree planting, is of concern. The applicant should consider contribution for replacement costs of tree if new structure's blocking of sunlight, rain or other critical environmental resources contributes to existing trees' decline. Replacement with more shade tolerant species, in the event of existing tree decline / removal, would be recommended.
- Please ensure all planting beds have sufficient distance between utilities and building foundations and massings of plantings is maintained to allow for adequate air circulation and operational function. Likewise ensure walkways, doorways, and important egress / entrance routes are not impeded or encroached by plant growth.
- It is observed that the GT species proposed are given a very narrow planting bed. While linear beds are preferred to narrow and overly constrained tree planters, consider utilizing a bump out at trunk locations where utilities permit, to provide additional soil media and planting area for trees. Bump outs could include partial bed covering to provide a more accessible walkway use over planting bed, and transition into perennial planting area between tree locations. Refer to figure IV-4a in chapter 4 of technical manual for flush tree well covering example in walkway area.
- The proposed single GT species, on lower left plan by parking lot, appears to conflict with facade of structure. Similar comment regarding overly narrow bed size for this tree planting applies.
- XX AM plantings appear to not match plant schedule labeling. Schedule shows "AL" for plant symbology, "AM" is tied to plant leader information. For "AM" species shown across from proposed trash room door, tree is only 2' from walkway edge and would possibly intrude into walk and doorway area. Move tree further into bed to prevent conflict, or replace tree and proposed shrubs with a larger, specimen shrub.
- Gleditsia triacanthos species not shown in planting schedule. Ensure species is a thornless cultivar, consider 'shademaster' or other drought tolerant species. Strongly encourage a less overplanted

tree species, perhaps *Sorbus americana*, or if a taller species is preferred, *Ulmus americana* 'Accolade'.

- For the proposed plant XXPA - Consider more shade tolerant substitute species in proposed location. If form and habit are of primary importance, *Chamaecyparis obtusa* 'Willamette Elegance' might be a suitable cultivar, an abies species, or taxus species if smaller form required. If PA strongly desired by applicant, please be prepared for more shade tolerant replacement species if plant performance is not robust.
- Please provide detail and /or section of proposed fence screening, ensure compliance with section 4.5.7 of Landscaping standards in chapter 4 of technical manual.
- Applicant shall provide payment into street tree fund based on section 4.6.1 and 4.6.4 of chapter 4 of the technical manual and chapter 14.6.2 of Land Use Code. 54 units – 4 trees proposed in the right of way = 50 trees * \$400 per tree = \$20,000



Maya Balassa <mbalassa@portlandmaine.gov>

PL-002468-2023 48 Brown Street (14 Casco St) DPW Comments

2 messages

Janine Ba <janineba@portlandmaine.gov>

Thu, Jul 20, 2023 at 10:58 AM

To: Maya Balassa <mbalassa@portlandmaine.gov>

Cc: Keith Gray <kgray@portlandmaine.gov>, Justin Pellerin <jrp@portlandmaine.gov>, Benjamin Pearson <bnp@portlandmaine.gov>, Lauren Swett <lszett@woodardcurran.com>, Tom Errico <thomas.errico@tylin.com>

Maya,

Below are DPW's comments for PL-002468-2023 48 Brown Street (14 Casco St). If needed They can be completed as a condition of approval. Let me know if you have any questions.

PL-002468-2023

48 Brown Street (14 Casco St)

DPW Development Review Comments

07/20/2023

o DPW Transportation

- **Previous comment:** Please be aware that Casco Street is under moratorium and will require a moratorium repair. The applicant shall get permission from the Department of Public Works prior to any work within the street Right of Way. The applicant will be required to repave the finished surface of the street per the moratorium standards. All pavement cuts in the City ROW shall be repaired per the Minor Excavation Pavement Repair Details (prior to paving the finished surface) found in the Rules and Regulations for Excavation Activity.

Response: Notes have been added to the plans indicating the contractor's responsibility to satisfy the City's moratorium standards.

New comment: Place that note on Sheet C-3.0 in addition to C-2.0.

- **Previous comment:** The applicant shall update the plans to label and or provide spot grades and slopes for the proposed sidewalks and driveway improvements at grade breaks.
- **Response:** The Grading and Drainage plan has been updated.
- **New comment:** The spot grades should reflect the proposed elevation at the grade breaks of what is being constructed.
- The proposed top of curb should have a continuous slope and any fluctuation should be reflected in the curb reveal (min of 5.5" reveal) if the slope of the pavement gutter is not consistent.
- The applicant has provided values that may or may not be elevations but they do not have (or can not see) a point marker displayed on the plans. Without it we can not confirm that the proposed improvements meet our current standard. The font size of what may or may not be elevations is too small to be read on the plans. Provide point markers and increase the font size for these numerical values.
- Radial curb shall be installed on both sides of the driveway.
- A 5 foot accessible path through the driveway apron (at grade with the proposed sidewalk) with a 1.5% cross-slope is noted on the site plan. Note this on the grading plans also.
- It is not clear how the driveway interfaces with the proposed garage door. DPW wants to ensure that during a rain event water will not enter the garage via the driveway due to poor design. Provide sufficient data to show that water that landing in the ROW will drain away from the structure at the garage door.
- The driveway shall not be used as an accessible ramp. The proposed crosswalk shall be moved to the north side of the intersection and a ramp installed pass the existing vaults near the existing driveway that will be closed off.
- **Previous comment:** The proposed brick sidewalk cross slope shall not exceed 2% at the property line. If the existing sidewalk grades are not compliant at the property line, then the limits of sidewalk replacement shall be extended to include a 5-foot minimum transition zone from the proposed 2% to the existing sidewalk slope.
- **Response:** The Grading and drainage plan includes notes to address this comment. The existing sidewalk satisfies this standard, and any reconstruction will be done to maintain these requirements.
- **New comment:** Do not see the notes included on the Grading and Drainage plan that address this comment.
- Add the total ROW width dimension to the plans
- Reminder: CAD files can be obtained upon request.

o DPW Water Resources

- The applicant shall provide details and further information on the proposed 10,000 gallon stormwater storage tank.
- City Code 24-45 requires: (b) In the case of new construction, domestic wastewater systems and stormwater drainage systems shall be kept separated from their connections to the proper city sewers. The plans shall be revised to provide a separate storm drain line running through the site for stormwater runoff being generated by the building roofs and back plaza area, which routes through the proposed 10,000 gallon stormwater tank. DPW would prefer this separate storm drain line be recombined with the sanitary sewer outlet pipe at a junction manhole located in the City right of way just beyond the property line so only one new manhole is required at the connection point into the Casco Street combined sewer line.
- Technical manual standard: 2.2.8. Covered or enclosed parking areas, mechanical rooms, garages (parking areas not exposed to rain and snow) shall direct surface drainage to a sanitary sewer. Storm water from outside of these areas shall be

directed away from the covered area so that additional storm water is not directed to the sewer. Drainage from these areas shall be collected by an Oil/ Grit Separator as shown in Figure II-20 or an approved equal. Stormwater runoff draining into CB-1 shall be redirected to the required separated storm drain pipe. If the intent for CB-1 is to provide surface drainage for the covered parking area, it shall run through an oil water separator as shown on the plans and connect to the required separated sanitary sewer outlet pipe before the system is recombined at the property line.

- Critical inverts for the proposed sewer and stormwater infrastructure are omitted from the drainage and utility plans. These inverts should be added to the plan so it can be understood how the system will function.
- The plan shows a trench drain which appears to be providing drainage for the patio/plaza area located along the Casco Street right of way frontage. It's unclear where stormwater flowing into the trench drain is routed. Further clarification should be provided.

--

Janine Ba
Project Engineer
City of Portland Department of Public Works
[212 Canco Rd. Suite B](#)
Portland, ME 04103
janineba@portlandmaine.gov
Desk: 207-874-8463
Cell: 207-245-2074

Maya Balassa <mbalassa@portlandmaine.gov>
To: Matt Grooms <mgrooms@portlandmaine.gov>, Kevin Kraft <kkraft@portlandmaine.gov>

Thu, Jul 20, 2023 at 4:20 PM

Thank you for your time,
Maya Balassa (she/her)
Planner | Planning & Urban Development Department
389 Congress Street | Portland, Maine
207-874-8718

I acknowledge that I live and work on the traditional land of the Wabanaki People.
[Quoted text hidden]

March 31, 2023

Ms. Christine Grimando -Director

City of Portland Planning & Urban Development
389 Congress Street, 4th Floor
Portland, ME 04101

Subject: 48 Brown Street/Casco Street - Major Site Plan Application
Mixed use development
Applicant: Equality Community Limited Partnership
CBL: 037-D-004

Dear Christine:

On behalf of **Developers Collaborative Predevelopment LLC & Equality Community-Limited Partnership**, Gorrill Palmer is submitting application materials for a Major Site Plan Application, for a new mixed-use LIHTC apartment building on Casco Street. The proposal is to construct a new five-story building to contain a small ground level commercial suite and two dwelling units with 13 dwelling units per floor on the upper floors (54 units total). According to the boundary survey by Owen Haskell, Inc., the existing Brown Street Parking Garage site is 38,968 SF in size. The site presently serves two uses: adjacent Casco Street is a public, for-pay paved parking lot with a former drive-thru ATM facility in the center of the lot, while adjacent Brown Street is a public, for-pay 257 space parking garage, with ground floor access on Brown Street and upper floor access from Casco Street, via the parking lot. The parking garage was approved in 2017 (see Portland Planning Project ID 2017-145). The drive-thru ATM portion of the site has been unused in recent times. As a part of the development, the applicant intends to split the parcel in two; creating a 13,595 SF lot adjacent Casco Street to contain the new building, and the remainder 26,100 SF lot containing the existing Brown Street garage. Lot line adjustments and easement agreements with the adjacent properties at 15 Casco Street and 511 Congress Street (both under common ownership of Ocean Gate LLC) are also proposed. The existing parking garage will remain as it exists today with ground level access from Brown Street and the upper level access from Casco Street. The development includes greater than three dwelling units therefore the proposal qualifies for a Major Site Plan approval from the Planning Board in accordance with Table 14-A of the ReCode. We attended a Pre application meeting with City staff on October 26, 2022. Assisting on the project are Ryan Senatore Architects and ALA Landscape Architects. Owen Haskell Inc is the property surveyor.

Existing Conditions

The existing site is located on Casco Street and contains a public, for-pay paved parking area containing 25 parking spaces, a former drive-thru ATM, and the Brown Street public, for-pay parking garage. The site frontage along Casco Street contains two driveway openings and a couple of short segments of concrete retaining wall – the tallest of which is approximately 3 feet tall. The parking lot portion of the



site is accessed from Casco Street, while the parking garage is accessed both via Brown Street – on the ground floor – and Casco Street – on the upper floors. The Ambassador Apartments lie north of the site and Equality Community Center is south of the site. The 511 Congress Street Office tower is located to the southeast of the site. The site is located in the B-3 zone as identified below.



Fig 1: Zoning Excerpt

According to City records, underground utilities in Casco Street includes water, gas, and sewer. Underground power and communications lines are located in the sidewalk on the development side of Casco Street. The proposed building will occupy nearly all of the lot and contain street level access along the Casco Street sidewalk. Separate entries to the Commercial suite and the residential space will be provided. The residential space will also have entry access at the rear of the building – where there will be a small landscaped area between the proposed building and the existing parking garage. The construction will require coordination with the abutting building owners at 37 Casco Street (Ambassador Apartments), 511 Congress Street, and 15 Casco Street (Equality Community Center). The construction will involve reconstruction of brick sidewalk along Casco Street, a new sidewalk

on the east side, and repaving of some of the site and the adjacent alleyway. Portions of Casco Street may also require restoration due to proposed utility connections.

Nearby land uses include residential units in the building to the north, the Equality Community Center and other retail and commercial spaces to the south and west, and a parking garage to the east. We understand that a change of use to residential is also being pursued for the 511 Congress Street building.



Fig 2: Existing Street View from the intersection of Casco Street and Shepley Street

Proposed Development

The proposed building will involve a tenant mix as follows:

Level	Tenant/Use	Area (SF)	Land Use category
1	Commercial Suite	673 SF	Retail or commercial
1	Residential/support	4,912 SF	Two Res units/trash room/bike room/community room/laundry and support spaces
2 thru 5	Residential	9,600 SF+/- per floor	Residential 3 studio units 8 one-bedroom units 2 two-bedroom units
	Total	43,867 SF +/-	

Preliminary floor plans and site renderings accompany this submission.

Traffic/parking

The site has been previously developed as a for pay public parking lot for up to 25 vehicles. The parking will be eliminated as part of the project except for 7 covered spaces adjacent the Equality Community Center that will remain along the parking garage entrance off Casco Street. Tenants of the building will be required to secure parking in nearby parking facilities including, but not limited to; the adjacent Brown Street garage, or the Monument Square garage. Commercial Suite visitors will use nearby on-street parking or the garages as is typical for the downtown area. The project is not expected to generate substantial new traffic above the existing traffic generated by the parking lot. Tenants at the



adjacent building east of the site will continue to be able to use the alleyway for access to their building. The owner is coordinating for the continuation of access and related use benefitting their sites.

Utilities

The proposed project will involve new utility connections that are described as follows:

- The building will be sprinkled and contain a domestic water service, both to be extended from an 8" water main in Casco Street. The Fire Dept connection will be located along the south side of the building.
- A domestic sewer connection is proposed to tie into an existing 15" sewer line in Casco Street.
- The building may be served by Natural gas coming from nearby, although the MEP design has not been advanced enough to make a determination on gas need. All HVAC equipment will be roof top mounted and screened.
- There is underground power in Casco Street. The design team is currently coordinating with CMP and the communications providers on these services.

Consistency with Master Plan

On Portland's Future Land Use Plan, Casco Street remains located Mixed Use/Commercial/Office zone and is located near an enhanced Priority Corridor (Congress Street). Priority Corridors are "*major arterials that often see heavy vehicular traffic, but also have the capacity to improve mobility by capitalizing on their potential for increased walking, bicycling, and transit use. Priority corridors can also serve as areas of additional mixed-use, higher density growth to take advantage of the transit benefits and services that well-designed, diverse corridors can offer.*" Located near Congress Street, the site is within a downtown area that is maintaining a robust level of activity and development. This site is an ideal location for a building with ground level retail and residential above. We believe the proposed uses go hand in hand as complimentary uses to the surrounding businesses and land use as envisioned in the Comprehensive plan and current zoning.

In accordance with the Major Site plan General Document Checklist, we offer the following information:

General Documents

1. **Project Description** – New mixed use building construction with greater than three dwelling units, located in the B-3 zoning District. See description above.
2. **Completed Checklist** – See upload to Eplan.
3. **Evidence of Right, Title and Interest.** The site is owned by Ocean Gate, LLC per Deed recorded at the CCRD Book 31452, page 305, a copy of which is attached to this submission document. Additional agreements pertaining to shared access will be made part of the RTI upload to Eplan.



4. **Zoning Assessment** – see attached. Located in B-3 zone.
5. **Site plan Standards Assessment** – see attached and information below.
6. **Summary of Existing and/or proposed easements or covenants** – The applicant is proposing an access easement through the property to maintain access from Casco Street to the second floor of the adjacent parking garage. The proposed ground level easement will actually pass underneath the upper floors of the proposed building – which will be supported by columns. A pedestrian access easement will also be provided across the sidewalk that will be removed and reconstructed along the east side of the property.
7. **Waiver Request** – none requested.
8. **Evidence of financial and Technical Capacity** – The applicant has retained Ryan Senatore Architects, Gorrill Palmer Consulting Engineers, and Developers Collaborative Predevelopment to assist with the design and construction of the proposed project. A letter from NBT Bank affirming their interest in underwriting the project accompanies this application.

Transportation

9. **Impact on Surrounding Street system** – The impact to the surrounding street system is expected to be minor based on historic street conditions and land use surrounding the site. The activity involves redevelopment of an existing parking lot with less onsite parking provided in the proposed condition than the existing. The site use is not expected to create or aggravate any existing or proposed hazard or safety concern on Casco Street as the sidewalk conditions are relatively robust and accommodating. The site access conditions are consistent with the neighboring sites on both sides of the street.
10. **Access and Circulation** – The first floor of the building is to be accessible to foot traffic from all four sides with ample access for emergency vehicles from Casco Street. The elevator will be sized to allow for a stretcher and emergency personnel. The building entrances off the Casco Street sidewalk will be flush to existing grade. The proposed finish floor elevation will be 89.75' (NGVD29). An existing sidewalk on the north side of the Equality Community Center at 15 Casco Street will be removed and reconstructed as part of the building construction. ADA access routes to 511 Congress and 15 Casco street at the rear of those buildings will also be maintained.
11. **Public transit** – There are no METRO routes on Casco Street however the nearest bus stop is just east of the intersection of Casco Street and Congress Street and is within 500 feet of the site.
12. **Off-Street Parking** – Onsite parking is provided on the ground level, beneath the upper floors of the proposed building. Six spaces are provided adjacent the existing Equality Community Center. Access is also to be maintained via an easement to the adjacent Brown Street parking garage. Dero Bike Hitches will be provided on the site. Snow removal from the parking area is not a concern as the parking spaces and access easement are covered by the upper floors of the building.
13. **Transportation Demand Management** – Not applicable



Environmental

14. **Preservation of Significant Natural Features** – Not applicable
15. **Landscape Preservation** – There is one existing street tree and a small, landscaped island within the existing parking lot that will be removed as a part of the construction of the building. The applicant is proposing landscaped area along the Casco Street frontage. This area is to be planted with native, approved trees. The perimeter of the building will also be modified from the existing paved condition to become landscaping in the form of grass or similar planting approach. This new, proposed landscaped area will be considerably larger than the existing landscaped area on site.
16. **Site landscaping and Buffers** – As mentioned above, the applicant is proposing a landscaped area along the Casco Street frontage and around the building perimeter. The area is to be planted with approved trees, shrubs, and grasses. This landscaped area is to be considerably larger than the existing non-impermeable area on the site. No heritage or feature trees exist on the site, and none are proposed.
17. **Water Quality, Stormwater Management and Erosion control** – Save for a couple small parking lot islands, the site is fully paved/concrete in the current condition. The majority of the surface will change to roof top, while some will be converted to landscaped area. The roof drains will tie into the existing drainage system consisting of a 12" drainpipe along the Casco Street frontage. There is no expected change in overall site drainage however, the elimination of parking will improve water quality. Typical erosion control measures including stabilized construction entrance and sediment sacks at nearby catch basins will be employed during the construction to minimize sediment transport into the drainage systems.

Public Infrastructure and Safety

18. **Consistency with City Master Plans** – See Above
19. **Public Safety and Fire Prevention** – The new building will have a full sprinkler system and Fire Department Connection along the Casco Street Façade. The nearest fire hydrant is located on Casco Street, in front of the neighboring Equality Community Center, less than one hundred feet from the proposed building.
20. **Availability and Adequacy of Public Utilities** – see above.

Site Design

21. **Massing, Ventilations and Wind Impact** – not applicable – See Architectural renderings for further information on the building.
22. **Shadows** – Not applicable



23. **Snow and Ice Loading** – the building is primarily a flat roof. Snow and Ice will not fall onto adjacent properties.
24. **View Corridors** – Not applicable
25. **Historic Resources** Not applicable
26. **Exterior Lighting** – The applicant proposes some building mounted fixtures to satisfy safety and security needs around the site. There are existing cobra head street lights on the existing utility poles on Casco Street, opposite the property.
27. **Noise and Vibration** – Not applicable- rooftop equipment will be screened and dampened as necessary to satisfy City noise and vibration standards.
28. **Signage and Wayfinding** – All signage to be permitted separately by the applicant.
29. **Zone Related Design Standards** – The development satisfies ReCode 14.6.4.I.1.a for the B-3 where the design shall support the development of a dense, Mixed-use neighborhood with an attractive, safe, and convenient street-level pedestrian environment.

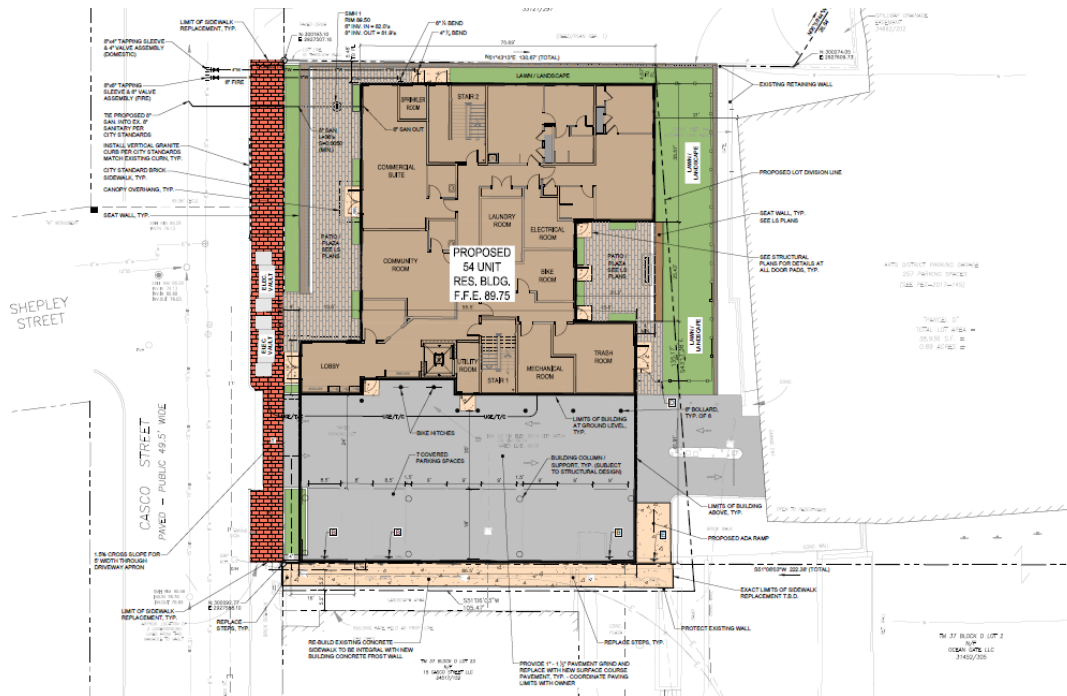


Fig 3 Proposed Site plan – Casco Street



Fig 4 – Rendering from Casco Street – looking East



Fig 5 – Rendering from Casco Street NE



We trust the supporting application materials are acceptable and we look forward to the Planning Authority's prompt review and scheduling of a workshop with the Planning Board.

Sincerely,

GORRILL-PALMER

Stephen Bushey, PE

Senior Associate

Phone: 207-772-2515 x286

sbushey@gorrillpalmer.com

Attachments

c: Ed Gardner, Equality Community LP
Laura Reading, DC Predevelopment LLC

U:\4043 54 Unit Apartment Casco Street - Portland\IP Applications\Local\2023.03.31 app_15 Casco_site plan_Cover Letter

CITY OF PORTLAND
Planning & Urban Development Department

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

☒ Yes	☐ NA	Project Description Cover letter with detailed project description
☒ Yes	☐ NA	Completed Checklist (this document)
☒ Yes	☐ NA	Evidence of 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 (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
☒ Yes	☐ 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
☒ Yes	☐ 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
☒ Yes	☐ NA	Waiver Requests (see Waiver Table) Written request for waiver describing request and compliance with applicable waiver standards
☒ 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

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)

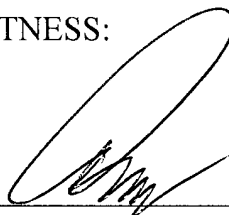
• Location of fire hydrants • Location of solid waste management receptacles • Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable • Location of proposed easements and rights-of-way, including dimensions • Please utilize color-coding and/or hatches and 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

QUITCLAIM DEED WITH COVENANT
Maine Statutory Short Form

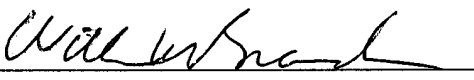
KNOW ALL PERSONS BY THESE PRESENTS THAT **511 PLAZA LIMITED PARTNERSHIP**, a Maine limited partnership having an address at 21 Technology Drive, Suite 6, West Lebanon, New Hampshire 03784, for consideration paid, grants to **OCEAN GATE, LLC**, a Maine limited liability company with a place of business at 151 Newbury Street, Portland, Maine 04101 with **QUITCLAIM COVENANTS**, the land, together with any improvements thereon, situated in the City of Portland, County of Cumberland, and State of Maine more particularly described in **Exhibit A-1 and Exhibit A-2** attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said 511 PLAZA LIMITED PARTNERSHIP has caused this instrument to be signed and sealed this 18th day of April, 2014.

WITNESS:



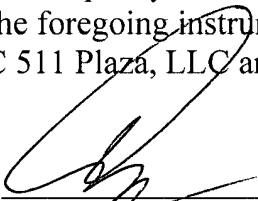
511 Plaza Limited Partnership
By. BBBC 511 Plaza, LLC
Its General Partner

By: 
Name: William Braucher
Its: Manager

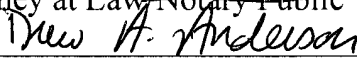
STATE OF MAINE
COUNTY OF CUMBERLAND

April 18, 2014

Then personally appeared the above named William Braucher, in his said capacity as Manager of BBBC 511 Plaza, LLC, in its capacity as General Partner of 511 Plaza Limited Partnership and acknowledged the foregoing instrument to be his free act and deed, the free act and deed of said BBBC 511 Plaza, LLC and free act and deed of 511 Plaza Limited Partnership, before me.



Attorney at Law/Notary Public



Printed Name

MAINE REAL ESTATE TAX PAID

EXHIBIT A-1511 Congress Street, Portland, Maine

A certain lot or parcel of land, with any buildings or improvements thereon, situated at the westerly corner of Congress and Brown Streets in the City of Portland, County of Cumberland and State of Maine, being bounded and described as follows:

BEGINNING at a point where the southwesterly side of Brown Street intersects the northwesterly side of Congress Street, which point is also the most easterly corner of land conveyed by W. H. Clifford Company to Maine Savings Bank by deed dated July 21, 1972, and recorded in the Cumberland County Registry of Deeds in Book 3271, Page 139; thence by said Congress Street South $59^{\circ} 24' 30''$ West, one hundred eighty-five and ninety-three hundredths (185.93) feet to the most easterly corner of land owned by the Maine Charitable Mechanics Association; thence by said land of Maine Charitable Mechanics Association by the follow courses and distances: North $23^{\circ} 58'$ West, forty-two and fifty hundredths (42.50) feet to a point; thence North $66^{\circ} 02'$ East, four and thirty-three hundredths (4.33) feet to a point; thence North $23^{\circ} 58'$ West, fifty-six and eighty-six hundredths (56.86) feet to the most northerly corner of said land of Maine Charitable Mechanics Association; thence South $65^{\circ} 52'$ West, sixty and forty hundredths (60.40) feet to the easterly side of Casco Street; thence North $23^{\circ} 51'$ West by the easterly side of Casco Street, twenty-six and ninety-six hundredths (26.96) feet to the southerly corner of the existing, or formerly existing, Maine Savings Bank Building; thence around the perimeter of the existing, or formerly existing, Maine Savings Bank Building by the following courses and distances:

North $66^{\circ} 09'$ East, seventy-five and seventy-five hundredths (75.75) feet to a corner in said Building; thence North $23^{\circ} 51'$ West, seventy-nine and ninety-five hundredths (79.95) feet to another corner in said Building; thence North $66^{\circ} 09'$ East, four and fifty hundredths (4.50) feet to another corner in said Building; thence North $23^{\circ} 51'$ West, fourteen and twenty-two hundredths (14.22) feet to another corner in said Building; thence South $66^{\circ} 09'$ West, four and fifty hundredths (4.50) feet to another corner in said Building; thence North $23^{\circ} 51'$ West, twenty-two and eighty-seven hundredths (22.87) feet to another corner in said Building; thence South $66^{\circ} 09'$ West, seventy-five and seventy-five hundredths (75.75) feet by the northwesterly line of said Building, and said line extended, to the easterly side of Casco Street; thence by the easterly side of Casco Street North $23^{\circ} 51'$ West, twelve and nine hundredths (12.09) feet to a point and other land of the successors or assigns of Maine Savings Bank; thence by said other land formerly of Maine Savings Bank North $66^{\circ} 09'$ East two hundred twenty-two and fifty-nine hundredths (222.59) feet to the westerly side of Brown Street; thence by the westerly side of Brown Street South $28^{\circ} 20' 29''$ East, two hundred thirty-four and five hundredths (234.05) feet to the intersection of the westerly side of Brown Street with the northerly side of Congress Street

and the point of beginning.

Together with the benefit of and subject to the easements as described in the Quitclaim Deed With Covenant from 511 Plaza Limited Partnership to 15 Casco Street, LLC, dated October 19, 2006 and recorded in said Registry of Deeds in Book 24517, Page 152.

Together with easements and rights granted to Maine Charitable Mechanics' Association as set forth or referred to in an indenture dated February 26, 1910, by and between Maine Charitable Mechanics' Association and John S. Russell, et al. recorded in said Registry of Deeds in Book 852, Page 191, as modified and amended by Agreement dated July 31, 1973 between Maine Charitable Mechanics' Association and Maine Savings Bank dated July 31, 1973, and recorded at said Registry of Deeds in Book 3439, Page 245, and as may be affected by Easement Deed granted to Northern Utilities, Inc. dated July 13, 1995, and recorded at said Registry of Deeds in Book 12012, Page 115, subject to rights of others to also use such easement.

Being a portion of the premises conveyed to 511 Plaza Limited Partnership by Quitclaim Deed With Covenant from Spring Street Limited Partnership dated June 2, 2005 and recorded in said Registry of Deeds in Book 22717, Page 79.

EXHIBIT A-2

Surface Parking Lots, Portland, Maine

The following described parcels of land shown on Plans entitled "ALTA/ACSM Land Title Survey on Casco Street, Shepley Street and Oak Street, Portland, Maine" made for C.B. Richard Ellis by Owen Haskell, Inc. dated October 21, 2002, last revised November 12, 2002, Sheets 1 of 2 and 2 of 2, recorded in the Cumberland County Registry of Deeds in Plan Book 203, Pages 11 and 12; and "ALTA/ACSM Land Title Survey Portland, Maine, Maine Savings Plaza" made for C.B. Richard Ellis by Owen Haskell, Inc., last revised October 23, 2002, original plan dated June 27, 1973 and made by H.I. & E.C. Jordan Surveyors."

Parcel "B & C" - the Oak-Shepley Lot and the Shepley-Casco Lot

A certain lot or parcel of land located on the southeasterly side of Shepley Street, the northeasterly side of Oak Street and the southwesterly side of Casco Street, in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

BEGINNING at a point at the intersection of the southeasterly side of Shepley Street with the northeasterly side of Oak Street;

Thence N 58° 34' 13" E, along the southeasterly side of said Shepley Street, 290.00 feet to the intersection of the southeasterly side of said Shepley Street with the southwesterly side of Casco Street;

Thence S 23° 51' 00" E, along with southwesterly side of Casco Street, 54.39 feet to the northerly corner of land now or formerly owned by John J. Quirk and Sally L. Quirk as described in Book 11794, Page 306;

Thence S 66° 06' 44" W, along land of said Quirk, 68.20 feet to a point;

Thence S 30° 25' 49" E, along land of said Quirk, 35.19 feet to a point;

Thence S 58° 31' 12" W, along land of said Quirk, also along the northwesterly line of land now or formerly of Survey Properties, Inc. as described in Book 11113, Page 126, 122.49 feet to a 5/8 inch rebar set on the northeasterly line of land now or formerly of Henry D. Audesse et al. as described in Book 7686, Page 334;

Thence N 30° 39' 41" W, along land of said Audesse, 14.64 feet to a 5/8 inch rebar set;

Thence S 57° 06' 52" W, along land of said Audesse, 93.52 feet to a 5/8 inch rebar set on the northeasterly side of said Oak Street;

Thence N 30° 25' 49" W, along the northeasterly side of said Oak Street, 68.00 feet to the point

of beginning.

Grantor specifically excludes from the limited warranty covenants (quitclaim with covenants) contained in this deed with respect to so much of the above-described Oak-Shepley Lot and Shepley-Casco Lot as is shown on said ALTA/ACSM Land Title Survey dated October 21, 2002 and last revised November 12, 2002, Sheet 1 of 2 as "Gore" and "Building Encroachment".

Parcel D – the 354-358 Cumberland Avenue Lot and the 48-72 Brown Street Lower Level and Upper Level Lots

A certain lot or parcel of land located on the southeasterly side of Cumberland Avenue, southwesterly side of Brown Street, and the northeasterly side of Casco Street, in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

BEGINNING at the intersection of the southeasterly side of Cumberland Avenue with the southwesterly side of Brown Street;

Thence S 28° 19' 02" E, along the southwesterly side of Brown Street, 294.48 feet to a 5/8 inch rebar set on the northwesterly line of land now or formerly of the October Corporation as described in Book 12007, Page 156 (being the 511 Congress Street Parcel hereinabove described);

Thence S 66° 09' 00" W, along said 511 Congress Street Parcel, 222.59 feet to the northwesterly side of Casco Street;

Thence N 23° 51' 00" W, along the northeasterly side of Casco Street, 129.28 feet to the southerly corner of land now or formerly of John J. Quirk and Sally L. Quirk as described in Book 4798, Page 12;

Thence N 66° 56' 23" E, along land of said Quirk, 130.93 feet to a point;

Thence N 5° 14' 53" E, along land of said Quirk, 28.02 feet to a point;

Thence N 28° 12' 53" W, along land of said Quirk, also along land now or formerly of Cumby Corporation as described in Book 10797, Page 147, 141.49 feet to the southeasterly side of said Cumberland Avenue;

Thence N 65° 40' 30" E, along the southeasterly side of said Cumberland Avenue, 66.00 feet to the point of beginning.

Being a portion of the premises conveyed to 511 Plaza Limited Partnership by Quitclaim Deed With Covenant from Spring Street Limited Partnership dated June 2, 2005 and recorded in said Registry of Deeds in Book 22717, Page 79.

S:\B\BRAW36\Gardner P&S\Closing Documents\Deed.doc

Ocean Gate, LLC
511 Congress Street
Portland, ME 04101

April 12, 2023

Ms. Christine Grimando, Director
City of Portland Planning & Urban Development
389 Congress Street, 4th Floor
Portland, ME 04101

Re: 48 Brown Street

Dear Christine:

As the Manager of Ocean Gate, LLC, the current property owner of the above-referenced property, I am writing to confirm that Equality Community Limited Partnership is authorized to submit a Major Site Plan Application for a mixed-use development on a portion of the 48 Brown Street lot which is identified as "Land to be conveyed to Equality Community Center" on the attached Lot Division Plan.

Please feel free to contact me at 207-415-4493 or ed@gardnerregroup.com if you need any additional information.

Sincerely,



Ed Gardner
Manager of Ocean Gate, LLC

ENVIRONMENTAL

14.6.2 (A) Preservation of Significant Natural Features – Not applicable

14.6.2 (B) Landscape Preservation

– There is one existing street tree and a small landscaped island within the existing parking lot that will be removed as a part of the construction of the building. The applicant is proposing landscaped area along the Casco Street frontage and around the building perimeter. This area is to be planted with native, approved trees and grass. This new, proposed landscaped area will be considerably larger than the existing landscaped area on site.



14.6.2 (C) Site landscaping and Buffers – As mentioned above, the applicant is proposing a landscaped area along the Casco Street frontage. The area is to be planted with approved trees, shrubs, and grasses. This landscaped area is to be considerably larger than the existing non-impervious area on the site. No heritage or feature trees exist on the site, and none are proposed.





Streetview towards Commercial Suite patio from Casco St Sidewalk

14.6.2 (D) Water Quality, Stormwater Management and Erosion control – Save for a couple small parking lot islands, the site is fully paved/concrete in the current condition. The majority of the surface will change to roof top, while some will be converted to landscaped area. The roof drains will tie into the existing drainage system consisting of a 12” drain pipe along the Casco Street frontage. There is no expected change in overall site drainage however, the elimination of parking will improve water quality. Typical erosion control measures including stabilized construction entrance and sediment sacks at nearby catch basins will be employed during the construction to minimize sediment transport into the drainage systems.

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY

14.6.3.A Consistency with City Master Plans – On Portland’s Future Land Use Plan, Casco Street is located within Mixed Use/Commercial/Office zone and is located near an enhanced Priority Corridor (Congress Street). Priority Corridors are “*major arterials that often see heavy vehicular traffic, but also have the capacity to improve mobility by capitalizing on their potential for increased walking, bicycling, and transit use. Priority corridors can also serve as areas of additional mixed-use, higher density growth to take advantage of the transit benefits and services that well-designed, diverse corridors can offer.*” Located near Congress Street, the site is within a downtown area that is maintaining a robust level of activity and development. This site is an ideal location for a building with ground level commercial suite and residential above. We believe the proposed infill building and uses go hand in hand as complimentary uses to the surrounding businesses and land use an envisioned in the Comprehensive plan and current zoning.



Aerial Image of surrounding vicinity

14.6.3 (B) Public Safety and Fire Prevention – The new building will have a full sprinkler system and Fire Department Connection along the Casco Street Façade. The nearest fire hydrant is located on Casco Street, in front of the neighboring Equality Community Center, less than one hundred feet from the proposed building.

14.6.3 (C) Availability and Adequacy of Public Utilities – The proposed project will involve new utility connections that are described as follows:

- The building will be sprinkled and contain a domestic water service, both to be extended from an 8" water main in Casco Street. The Fire Dept connection will be located along the south side of the building.
- A domestic sewer connection is proposed to tie into an existing 15" sewer line in Casco Street.
- The building may be served by Natural gas coming from Casco Street.
- There is underground power in Casco Street. The design team is currently coordinating with CMP and the communications providers on these services.

SITE DESIGN

14.6.4 (A) Massing, Ventilations and Wind Impact – not applicable – See architectural elevations and renderings for further information on the building.

14.6.4 (B) Shadows – Not applicable

14.6.4 (C) Snow and Ice Loading – the building is primarily a flat roof. Snow and Ice will not fall onto adjacent properties.

14.6.4 (D) View Corridors – Not applicable

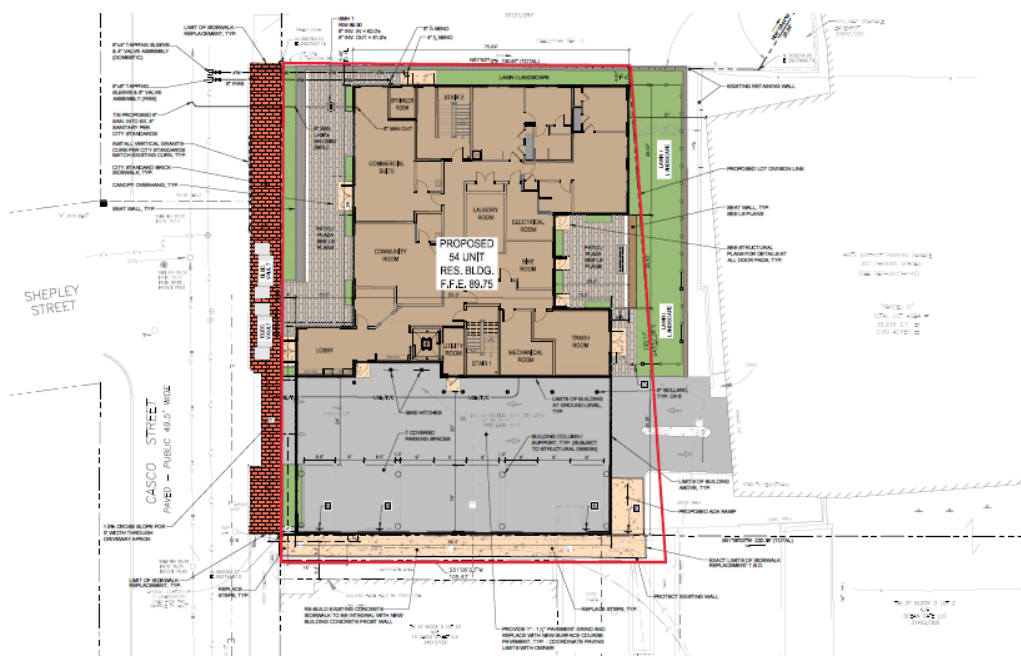
14.6.4 (E) Historic Resources – Not applicable.

14.6.4 (F) Exterior Lighting – The applicant proposes wall mount lighting for safety and security and the door entrances. All lighting will be full cut off and dark sky complaint.

14.6.4 (G) Noise and Vibration – Not applicable- roof top equipment will be screened and dampened as necessary to satisfy City noise and vibration standards.

14.6.4 (H) Signage and Wayfinding – All tenant signage to be permitted separately by the applicant.

14.6.4 (I) Zone Related Design Standards – The development satisfies ReCode 14.6.4.I.1.a for the B-3 where the design shall support the development of a dense, Mixed-use neighborhood with an attractive, safe, and convenient street-level pedestrian environment. The site is also within the Downtown Entertainment Overlay, however the provisions within the DEOZ are not applicable to the proposed use.



Proposed Site plan – Casco Street

TECHNICAL CAPABILITY

The applicant has retained a highly qualified team of professionals to undertake planning, permitting and design tasks on this project. Services will be provided by the following companies and their respective team leaders:

<i>Civil Engineer</i>	Stephen Bushey, P.E. Gorrill-Palmer Consulting Engineers 300 Southborough Drive, Suite 200 South Portland, Maine 04106 (207) 772-2515 sbushey@gorrillpalmer.com
<i>Architect</i>	Ryan Senatore Ryan Senatore Architecture 500 Congress Street, Suite 2 Portland, ME 04101 Ryan Senatore <ryan@senatorearchitecture.com>
<i>Surveyor</i>	Owen Haskell, Inc Samuel D Glidden, PLS 390 US Route 1 Falmouth, ME 04105 Sam Glidden <sglidden@owenhaskell.com>
<i>Geotechnical</i>	Summit Geoengineering Bill Peterlein PE 210 Maine Avenue Farmingdale, Maine 04344 bpeterlein@summitgeoeng.com
<i>Development Manager</i>	DC Predevelopment LLC Laura Reading 631 Stevens Ave Suite 203 Portland, ME 04103 Laura Reading - DC Pre <reading.lauraj@gmail.com>

The team of consultants retained by developer has expertise and experience in the design of similar commercial projects. Resumes of key personnel for development team can be provided upon request.

The Applicant team also has significant experience in the design, permitting, development and management of large institutional projects as evidenced by various projects throughout the City including Stevens Square and the Nathan Clifford School.

TRANSPORTATION

14.6.1(A) Impact on Surrounding Street system – No significant impact is predicted for the proposed development. The activity consists of redevelopment of an existing parking lot resulting in less onsite traffic and parking in the proposed condition than the existing. The site use is not expected to create or aggravate any existing or proposed hazard or safety concern on Casco Street as sidewalk conditions are ample to allow pedestrian movement to nearby streets and activities. The site access conditions are consistent with the neighboring sites on both sides of the street. The activity is considered an urban infill development that's consistent with City goals and objectives.

14.6.1(B) Access and Circulation – The first floor of the building is to be accessible from all four sides with ample access for emergency vehicles and site tenants. The elevator will be sized to allow for a stretcher and emergency personnel. The building entrances off the Casco Street sidewalk will be flush to existing grade. The existing sidewalk along the west side of the Equality Community Center at 15 Casco Street will be reconstructed to maintain an access route from Casco Street to entrances at both 15 Casco and the rear of the 511 Congress Street tower. ADA access will also be maintained from the Brown Street Garage to all of the buildings.

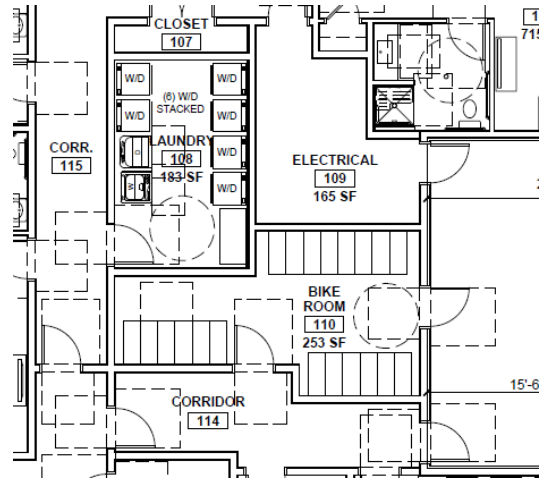


Equality Community Apartments Casco Street

14.6.1(C) Public transit – Not applicable. The nearest bus stop is just east of the intersection of Casco Street and Congress Street less than 500 feet distance.

- 14.6.1(D) Off-Street Parking** – Onsite parking is provided on the ground level, beneath the upper floors of the proposed building. Seven spaces including 3 ADA spaces are provided adjacent the existing Equality Community Center – within the previously described parking easement. Access is also to be maintained via easement to the adjacent Brown Street parking garage. At least six Dero Bike Hitches will be provided

on the site to support the interior bike room in the building. Snow removal from the parking area is not a concern as the parking spaces and access easement are covered by the upper floors of the building.



14.6.1 (E) **Traffic Demand Management** - Not applicable

Transportation Demand Management – Not applicable



ZONING ANALYSIS Relevant Zone(s) B-3 - #48 Brown St

All Projects:

	Required	Proposed
Lot Size	-	26,100
Area Per Dwelling Unit	-	
Minimum Street Frontage	15 ft	295 ft
Front Yard Minimum		
Front Yard Maximum	5 ft	1.5 ft
Rear Yard		
Yard Right		
Yard Left		
Side Street Setback		
Step Back		
Maximum Lot Coverage	100%	100%
Minimum Lot Coverage		
Maximum Height	65 ft	65 ft
Open Space		
Maximum Impervious Area	100%	100%
Pavement Setback		
Floor Area Ratio		
Off Street Parking Spaces	0	257 sp
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):			



ZONING ANALYSIS Relevant Zone(s) B-3 - #48 Brown St

All Projects:

	Required	Proposed
Lot Size	-	26,100
Area Per Dwelling Unit	-	
Minimum Street Frontage	15 ft	295 ft
Front Yard Minimum		
Front Yard Maximum	5 ft	1.5 ft
Rear Yard		
Yard Right		
Yard Left		
Side Street Setback		
Step Back		
Maximum Lot Coverage	100%	100%
Minimum Lot Coverage		
Maximum Height	65 ft	65 ft
Open Space		
Maximum Impervious Area	100%	100%
Pavement Setback		
Floor Area Ratio		
Off Street Parking Spaces	0	257 sp
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)

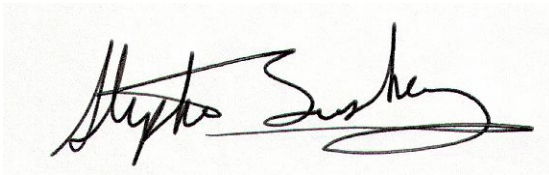
	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

I, Stephen Bushey, of Gorrill Palmer, hereby certify that a Neighborhood Meeting was held on Thursday, May 17, 2023 at 5:00 P.M. via Zoom Videoconference for the proposed 54 unit LIHTC housing development at 48 Brown Street in Portland, ME.

I also certify that on April 27, 2023 (which is at least ten (10) days prior to the Neighborhood Meeting) invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1,000 feet of a proposed industrial subdivision or industrial zone change.
2. Residents on the "interested parties" list.

Signed,



Stephen Bushey, Sr. Associate

May 22, 2023

Date

Attached to this certification are:

1. Copy of the Invitation Sent
2. Meeting Minutes

April 27, 2023

Dear Neighbor:

Please join Developers Collaborative Predevelopment LLC and Equality Community LP, for a Neighborhood Meeting via Zoom to discuss their proposed 54-unit affordable residential housing development in a new five story building at **48 Brown Street**, in Portland, ME. The Planning Authority project ID is PL-002468-2023. The proposed project includes a 9,500 SF footprint, 5-story building within the existing surface parking lot, situated with access from Casco Street. The site is part of the existing Brown Street parking garage property. Pursuant to the City of Portland's COVID guidelines, this meeting is to be held by video conference.

Meeting Location: Join Zoom Meeting

<https://us02web.zoom.us/j/84859776247?pwd=ZGdaQjFrUWswcUNJeVBtbTh0NzJ2dz09>

Meeting ID: 848 5977 6247

Passcode: 941007

One tap mobile

+19292056099,,84859776247#,,,941007# US (New York)

+13017158592,,84859776247#,,,941007# US (Washington DC)

Meeting ID: 848 5977 6247

Passcode: 941007

Find your local number: <https://us02web.zoom.us/j/84859776247?pwd=ZGdaQjFrUWswcUNJeVBtbTh0NzJ2dz09>

Meeting Date: May 17, 2023

Meeting Time: 5:00 PM – 5:30 PM

The City Code requires that property owners within 500 feet (except notices must be sent to property owners within 1,000 feet for industrial zoning map amendments and industrial subdivisions) of the proposed development and residents on an “interested parties list”, be invited to participate in a neighborhood meeting. We will take attendance and submit a sign-in sheet to the Planning Board. The meeting will last no more than 30 – 45 minutes. If you have any questions, please feel free to contact Stephen Bushey 207.772.2515 x286.

Sincerely,

GORRILL PALMER

Stephen Bushey, PE
Senior Associate
sbushey@gorrillpalmer.com

Note: Under Section 14-32(Q) and 14-525 of the City Code of Ordinances, an applicant for a Major Site plan development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within three weeks of submitting a preliminary application or two weeks of submitting a final site plan application, if a preliminary plan was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street, Portland, ME 04101.

U:\4043 54 Unit Apartment Casco Street - Portland\G\Butters\Neighborhood meeting notice 2023.04.27

NEIGHBORHOOD MEETING MINUTES

Project: 48 Brown Street - New LIHTC housing
Equality Community LP

Date: May 17, 2023 – 5:00 PM to 5:20 PM

Location: Zoom Video Conference

Attendees: Steve Bushey - Gorrill Palmer
Ed Gardner – Equality Community LP (Applicant)
Ryan Senatore – Architect
Laura Reading – DC Predevelopment
Matt Dubois – ECC
Dale McCormick – ECC
Carolyn Thomas – ECC

In accordance with the City of Portland Planning Board Requirements, a Neighborhood Meeting was held to discuss the proposed development at 48 Brown Street in Portland, ME. The meeting was held on Wednesday, May 17, 2023, at 5:00 PM via Zoom Conferencing. Steve Bushey, PE, representative from Gorrill Palmer and members of the development team were available via Zoom from 5:00 PM–5:20 PM.

There were no members of the public who attended.

Attendees: List Above

U:\4043 54 Unit Apartment Casco Street - Portland\G Abutters\min_meeting_48 Brown 2023.05.17.docx

May 19, 2023

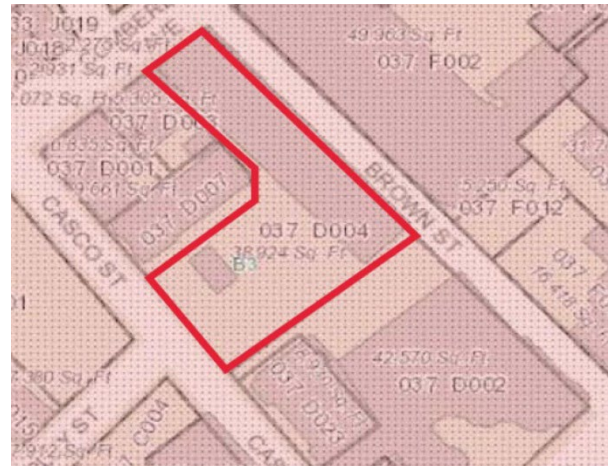
Mr. Brad Roland, PE

City of Portland Public Works
212 Canco Road -Suite B
Portland, Maine 04103

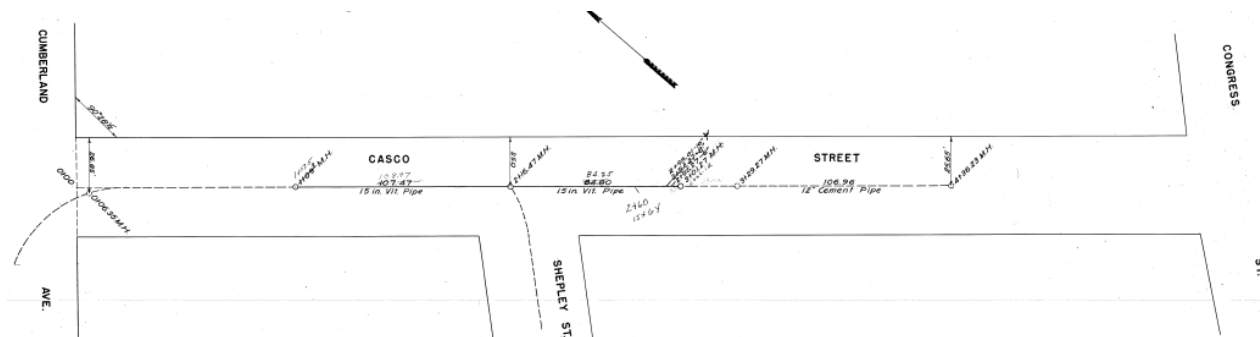
**Subject: 48 Brown Street
Mixed Use development with 54 residential units
Request for Ability to Serve Letter**

Dear Brad:

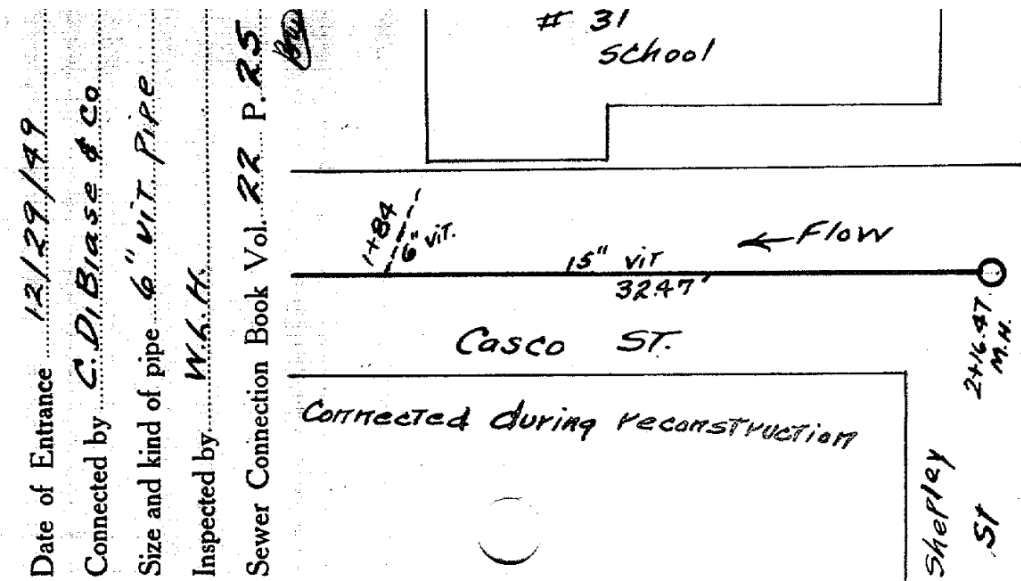
Equality Community LP (Applicant) has retained Gorrill Palmer to prepare plans and permit applications for the proposed development of a new 5 story, 54-unit affordable housing project on land just south of the existing parking garage at 48 Brown Street. A parcel division will create a new lot on which the building will be placed. The building will replace an existing parking lot and defunct bank drive-thru structure. According to the boundary survey by Owen Haskell the site will be 13,595 SF (0.312 acres) in size. The project site is located on the City of Portland's Tax Map 37 block D lot 004.



We would like to verify the City's wastewater division has ability to provide wastewater capacity for the project and to determine any impact fees. We understand there is an existing 15" sanitary main on Casco Street. The two images below show information from various City records. This includes a sewer service card from 1949 indicating a 6" service line to a school that may have formerly occupied the site. We expect to provide a new sanitary manhole at the main line connection, and our next round of plans will reflect the installation of a manhole at the main line connection.



City Archive 00628_009_001



The projected water use/wastewater disposal, for the space is summarized below using the State of Maine Subsurface Wastewater Disposal Rules and typical City of Portland information:

Flow Demand		
Use	Design Flow (GPD)	Peak Daily Design Flow (GPD)
12 Studio	90 gpd/bedrooms	5,580 gpd
34 one bedroom	12 gpd/employee	60 gpd
8 Two Bedroom		Total = 5,640 gpd
5 employees in Commercial Suite (no public restroom)		

Based on this amount of flow, we trust that the existing wastewater systems have adequate capacity to serve this project. We have submitted a Major Site Plan Application to City Planning Staff and we would appreciate your confirmation of site conditions. If you have any questions on the information submitted, please contact our office.

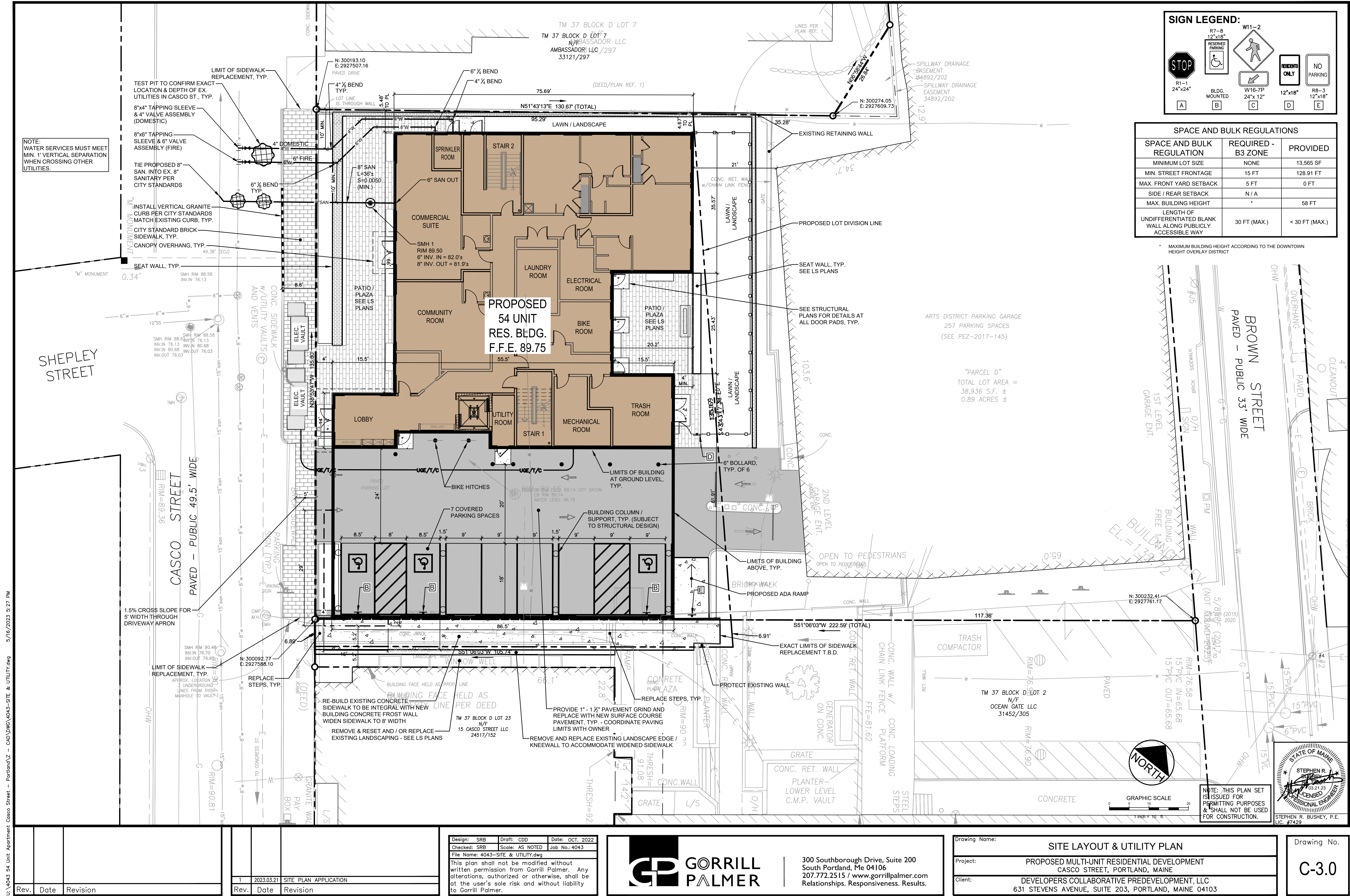
Regards,

GORRILL PALMER

Stephen R. Bushey, P.E.
Senior Associate
Phone: (207) 772-2515
sbushey@gorrillpalmer.com

C: uploaded to EPlan

U:\4043 54 Unit Apartment Casco Street - Portland\H Utilities\Wastewater\48 Brown Street abs_ww_roland_05.19.2023 final



U:\4043 54 Unit Apartment Casco Street - Portland\Z - CAD\DWG\4043-SITE & UTILITY.dwg 5/16/2023 5:27 PM

Rev.	Date	Revision
1	2023.03.21	SITE PLAN APPLICATION

Design: SRR	Draft: CDD	Date: OCT. 2022
Checked: SRR	Scale: AS NOTED	Job No.: 4043
File Name: 4043-SITE & UTILITY.dwg		
This plan shall not be modified without written permission from Gorriil Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Gorriil Palmer.		



GORRIIL PALMER

300 Southborough Drive, Suite 200
South Portland, Me 04106
207.772.2515 / www.gorriilpalmer.com
Relationships. Responsiveness. Results.

Drawing Name: **SITE LAYOUT & UTILITY PLAN**

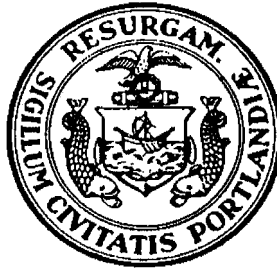
Project: **PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT CASCO STREET, PORTLAND, MAINE**

Client: **DEVELOPERS COLLABORATIVE PREDEVELOPMENT, LLC**
631 STEVENS AVENUE, SUITE 203, PORTLAND, MAINE 04103

Drawing No. **C-3.0**

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
212 Canco Road Suite B
Portland, Maine 04103-2991



Bradley Roland, P.E.
Water Resources Division

Date: May 18 2023

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

Site Address: 48 Brown Street - new apartment building

Chart Block Lot Number: Tax Map 37/Lot D004

Proposed Use: Grd floor Comm and 54 Residential Units

Previous Use: parking lot

Existing Sanitary Flows: unknown GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

Site Category

Commercial (see part 4 below)	☐
Industrial (complete part 5 below)	☐
Governmental	☐
Residential	☒
Other (specify)	☐

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

2. Please, Submit Contact Information.

City Planner's Name: Austin Torres Davis Phone: _____

Owner/Developer Name: Equality Community LP Attn: Ed Gardner

Owner/Developer Address: 15 Casco Street, Portland Maine 04101

Phone: _____ Fax: _____ E-mail: ed@gardnerregroup.com

Engineering Consultant Name: Stephen Bushey, P.E.

Engineering Consultant Address: Gorrill Palmer 300 Southborough Drive - Suite #200, So. Portland, ME 04106

Phone: 207-772-2515 Fax: _____ E-mail: sbushey@gorrillpalmer.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: 5,640 GPD

Peaking Factor/ Peak Times: Not Applicable

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) XSUBSURFACE WASTEWATER DISPOSAL RULES

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: Not Applicable

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: Not Applicable 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.

54 units or 62 bedrooms at 90 gpd/bed =
5,580 gpd plus 5 employees at 12 gpd =
60 gpd total = 5,640 gpd

February 2, 2023

RE: Equality Community Center 54 Unit Affordable Housing Project, Casco Street, Portland

To Whom It May Concern:

Please accept this letter as validation that Developers Collaborative Predevelopment, LLC has an existing relationship with NBT Bank, NA and has brought this project and potential need to our attention. Pending full underwriting and formal approval of Equality Community Limited Partnership's request, we are supportive of this project and believe that they have the ability to source all projected project costs.

Sincerely,



Mark Y. Schaub
Vice President, Senior Commercial Relationship Manager
NBT Bank, National Association

Date: May 30, 2023

Re: Wastewater Capacity Authorization

Address: 48 Brown Street

Applicant: Equality Community LP

Planner: Maya Balassa

Estimate of Anticipated Wastewater Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow to Remain				
Vacant				
Proposed Flow				
Employees at place of employment with no showers	# Employees	5	12 GPD/Employee	60
Multiple Family Dwelling Units	Studio	12	120	1440
Multiple Family Dwelling Units	1-Bedroom	34	120	4080
Multiple Family Dwelling Units	2-Bedroom	8	180	1440
Net Change				+ 7,020
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Comments:

The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

However, storm drainage and sanitary sewer flows in this project area drain to the City's combined sewer system. Lack of wet weather capacity results in frequent system wide combined sewer overflows. City wide mitigation of combined sewer overflows is required as part of the City's CSO consent decree administered by the EPA and Maine DEP.

Section 2.2.3 of the City's Technical Manual requires DPW Water Resources approval when rain water is being proposed to discharge into a sewer which conveys sanitary waste. Prior to authorizing a new stormwater connection into the combined sewer, DPW will require that the applicant provide an on-site stormwater detention volume equal to the greater of: 1" of rainfall over the entire project redeveloped area being proposed on the parcel, or the projected average 24 hour daily sanitary sewer flow being added to the combined sewer system by the project.

You are also reminded that new connections into the combined sewer system shall be equipped with backflow prevention in accordance with Section 2.6.10 of the City's Technical Manual

If the City can be of further assistance, please contact me at all 874-8840 or brad@portlandmaine.gov

Sincerely,

A handwritten signature in dark ink, reading "Bradley A. Roland", is displayed on a light gray rectangular background.

Bradley A. Roland, P.E.,
Senior Project Engineer

July 3, 2023

Ms. Maya Balassa, Planner

Planning & Urban Development Department
389 Congress Street
Portland, Maine 04101

**Subject: Major Site Plan, Master Development Plan Amendment
Project ID – PL-002468-2023
Equality Community LP Applicant
Letter of Response #1– Response to Staff comments**

Dear Maya:

On behalf of **Equality Community LP/Developers Collaborative LLC (Applicant)**, our office is pleased to provide the following responses to staff review comments provided within an email and memo dated May 30, 2023, as well as comments from the Planning Board at their June 13, 2023, workshop meeting. For ease of review, we have repeated all of the staff comments in *italics* and provide our responses in **bold** as follows:

General Comments

- Please submit a photometric plan to show proposed site lighting as well as cutsheets with lighting details.*

Response: Swaney Lighting of Scarborough has completed a photometric plan to include lighting fixtures as contained in Attachment A to this letter. The fixtures are mostly wall mounted with several bollards also included.

Comments from Zoning Administration

- With the proposed lot split, the applicant will need to get the E-911 address from Public Works for the new building. Please reach out to the assessor's office with the proposed lot split so that they can create the new CBL for the new lot on Casco St.*

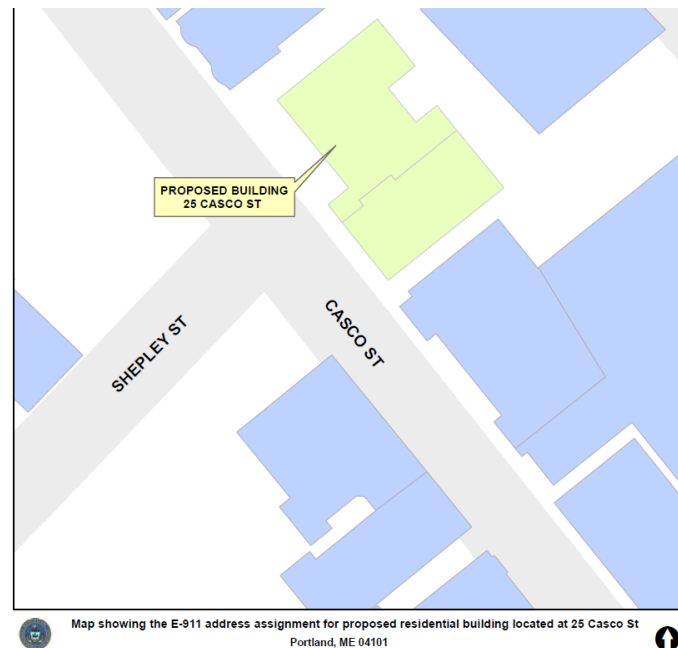


Figure 1



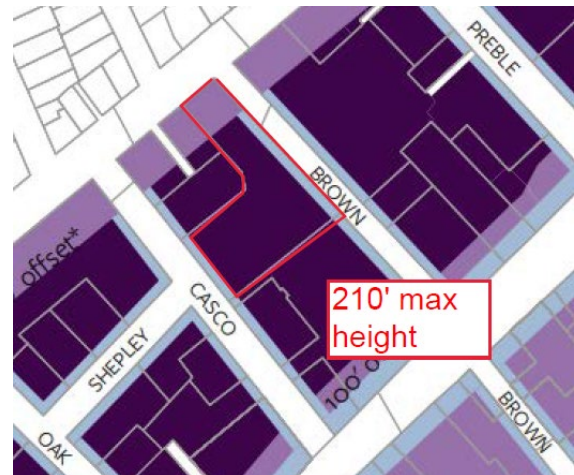
Response: The DPW staff have emailed this office on June 14, 2023, indicating the street address will be 25 Casco Street, as evidenced by Figure 1 on the previous page.

2. Under Table 7-E the maximum front setback is 5'. The lobby and parking garage meet the setback, but the majority of the building (66') is 19.5' from Casco Street. It appears part of the second floor has an overhang that might go closer, but it is still not meeting front setback requirement.

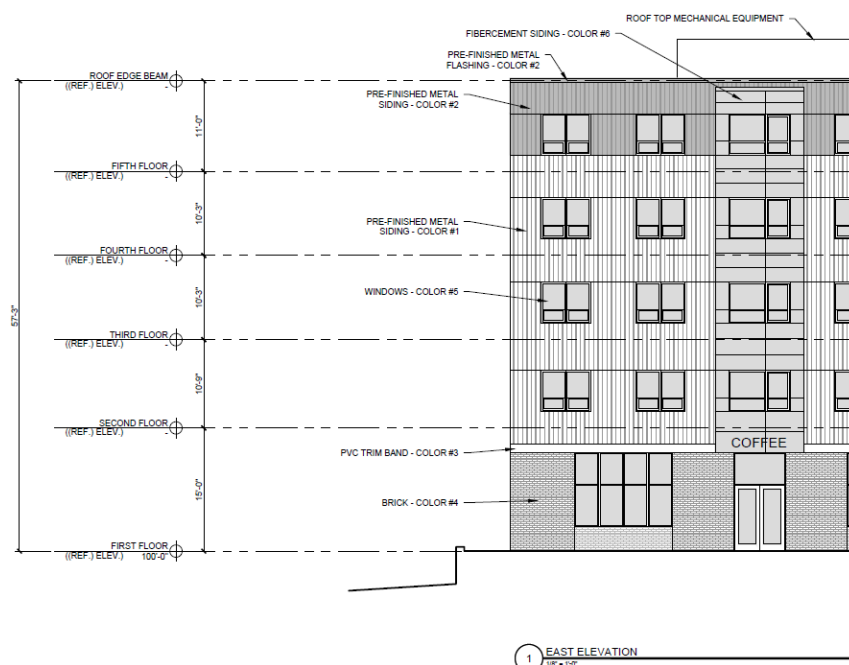
Response: Attachment B to this letter contains a narrative from Ryan Senatore Architects related to the request for an increased setback.

3. To verify the proposed building is meeting height regulations, please provide calculations for the average grade, with average grade lines in the elevations.

Response: The façade elevation below from Senatore Architects depicts the building height at 57'-3". The allowable height per the downtown overlay map is 210' therefore by inspection we conclude that the building height is well within the allowable code provision. The Historic Committee will also review the building height as part of their review.



Downtown Height Overlay map





Transportation Comments from Department of Public Works

- 1. Please submit a waiver request for the 20-foot parking aisle widths.*

Response: The applicant requests a waiver of Section 1.10.3 of the Technical Manual calling for a 24-foot drive aisle, to allow for the 20-foot aisle width of the driveway passing through the building and into the parking garage. This width is needed to allow for several bollards that will be installed to protect one or more door openings into the aisle. Based on the low speed of the access we foresee no issues with this request.

- 2. Please note how the four non-handicap parking spaces will be managed.*

Response: There will be seven spaces off the drive passing thru the building and the regular spaces will be signed for use by the adjacent Equality Community Center during business hours from 9 am to 5 pm on a first come, first served basis and for use by tenants at all other times. The handicap spaces will be allowed for use by both the tenants of the building and the ECC, on a first come first served basis.

- 3. Please provide details on delivery and trash removal truck movements to and from the site.*

Response: A trash room containing wheelable totes for waste and recycling, will be provided off the interior drive and the trash/recycling removal contractor will be required to wheel out totes from the trash room to the street line, where they will be emptied into the trash removal vehicle. Trash/recycling removal will be performed by a private waste hauler on a weekly or as needed basis. The trash vehicle will park on Casco Street in front of the site in the 5 min. loading/unloading zone near the front entry.

- 4. Sight distance shall be documented for the driveway onto Casco Street.*

Response: The speed limit on Casco Street is understood to be 25 mph. Parking is allowed on both sides of the street with no parking allowed near the intersections. The sight distance at the existing driveway looking left and right exceeds 200 feet in both directions.

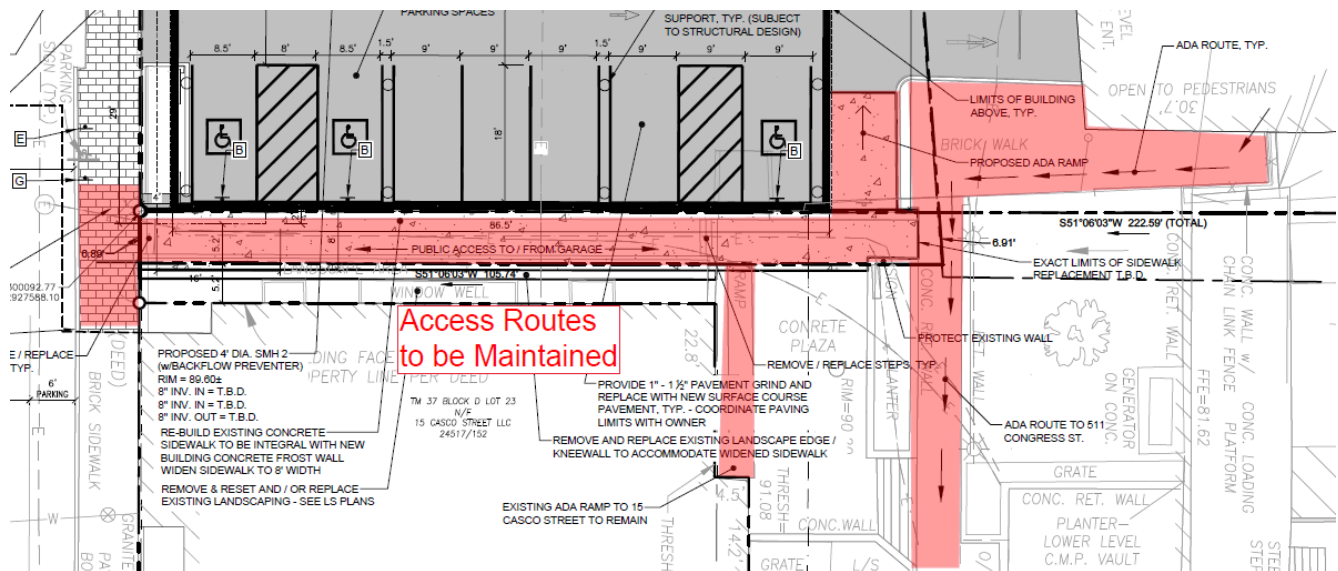
- 5. The third-party traffic engineer suggests a crosswalk be considered on Casco Street at the Shepley Street intersection.*

Response: The updated plans include a proposed crosswalk from the site driveway to the existing curb ramp at the corner of Casco and Shepley Streets.



6. *It is likely that tenants will park in the Brown Street garage (and there may be pedestrians walking from the garage to Casco Street) and thus a safe pedestrian route should be provided.*

Response: The existing pedestrian route to/from Casco Street to the parking garage will be maintained. The route will be temporarily disrupted during construction however the sidewalk is to be replaced to allow continued access upon the completion of construction.



7. *The site plan should note what type of traffic control is to be proposed at the driveway approach to Casco Street.*

Response: A stop bar and stop sign will control traffic movement exiting the parking garage onto Casco Street.

Water Quality, Stormwater, & Infrastructure DPW

8. *Please be aware that Casco Street is under moratorium and will require a moratorium repair. The applicant shall get permission from the Department of Public Works prior to any work within the street Right of Way. The applicant will be required to repave the finished surface of the street per the moratorium standards. All pavement cuts in the City ROW shall be repaired per the Minor Excavation Pavement Repair Details (prior to paving the finished surface) found in the Rules and Regulations for Excavation Activity..*

Response: Notes have been added to the plans indicating the contractor's responsibility to satisfy the City's moratorium standards.



9. *The City's Technical Manual has been recently updated and approved. After reviewing the proposed details for this project, it is clear that not all the changes are reflected in this plan set. The applicant shall update all proposed details (Site, Sewer, Stormwater, Landscape, details) to meet the requirements of the recently approved technical manual updates (found on the city's website).*

Response: The details contained in the plan set have been updated per the latest Technical Manual information, to the best of our understanding.

10. *Details that need to be included or referenced on the site plans are:*

- o *Vertical Granite Curb*
- o *Brick Sidewalk with Bituminous Base*
- o *Brick Driveway Apron with Bituminous Base*
- o *Commercial Driveway Apron*

Response: See previous response.

11. *The applicant shall update the plans to label and or provide spot grades and slopes for the proposed sidewalks and driveway improvements at grade breaks.*

Response: The Grading and Drainage plan has been updated.

12. *The proposed brick sidewalk cross slope shall not exceed 2% at the property line. If the existing sidewalk grades are not compliant at the property line, then the limits of sidewalk replacement shall be extended to include a 5-foot minimum transition zone from the proposed 2% to the existing sidewalk slope.*

Response: The Grading and drainage plan includes notes to address this comment. The existing sidewalk satisfies this standard, and any reconstruction will be done to maintain these requirements.

13. *Improvements in the right-of-way shall be dimensioned on the plan view sheets. For example, ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as when a width change.*

Response: See the updated Site plan for additional dimensional information that has been added to the plan.

14. *The applicant has noted that the existing Granite Curb will be reset in the area adjacent to the vaults. The applicant shall insure that the existing granite is free of any defects such as but not limited to chipping and cracking. Be aware that Public Works may require the use of new granite curb upon inspection of the existing granite curb prior to installation / during construction.*

Response: A note has been added to the plan requiring any reuse and/or replacement of granite curbing as may required by DPW during construction.



15. *On the site plan, please note the location of the curb that will be removed and reset per the current City standards.*

Response: The existing conditions and removals plan and the Site Plan have been updated to include clarity as to remove/reset curbing limits.

DPW Water Resources

16. *The applicant shall update the grading and drainage plan to show proposed stormwater infrastructure onsite and any connections being proposed into the combined sewer system.*

Response: The grading and drainage plan has been updated to include drainage collection and storage on the site.

17. *Storm drainage and sanitary sewer flows in this project area drain to the City's combined sewer system located in the Preble Street-Marginal Way CSO #17 sewershed. Lack of wet weather capacity in this combined sewer system results in frequent system wide sanitary sewer overflows, combined sewer overflows and flooding at the Maple Street/Commercial Street intersection. City wide mitigation of combined sewer overflows is required as part of the City's CSO consent decree administered by the EPA and Maine DEP.*

Response: See response below:

18. *Section 2.2.3 of the City's Technical Manual requires DPW Water Resources approval when rainwater is being proposed to discharge into a sewer which conveys sanitary waste. Prior to authorizing a new stormwater connection into the combined sewer, DPW will require that stormwater storage and flow control as listed below be provided based on the lack of wet weather capacity in the combined sewer system.*

Response: See Response below:

19. *The applicant shall provide on-site stormwater detention volume equal to the greater of 1" of rainfall over the entire project redeveloped area being proposed on the parcel or the projected average 24 hour daily sanitary sewer flow each being added to combined sewer system by the project in order for DPW to authorize a new stormwater connection into the Brown Street combined sewer system.*

Response: The project's daily wastewater flow is calculated to be 7,020 gpd. The volume of runoff for a 1" rainfall over the 13,595 SF redeveloped area is 8,474 gallons. The drainage plan has been updated to show a 10,000 gal below grade storage tank will be used to capture roof and site drainage runoff, prior to connection into the site sanitary waste line that will connect to the combined sewer line in the street.



20. The maximum permissible stormwater outflow rate into the City's system during the design storm event shall be less than or equal to 0.1 CFS per acre of watershed area draining to the detention system.

Response: The discharge rate for the 10,000-gal storage tank will be 14 gallons per minute based on the following:

- Site size 13,595 SF or 0.31 acre
- 1 CFS = 448.83 Gals per minute or 0.1 CFS = 44.83 gpm/acre
- $44.83 \times 0.31 = 13.89$ gpm

An orifice control will be provided on the outlet end of the 10,000-gal storage tank to control the normal release of the stored water volume. A bypass control will allow runoff diversion for higher rainfall events exceeding the 1" design flow.

21. The applicant shall submit a wastewater capacity application to the DPW water resources division for review and approval.

Response: The DPW issued a Wastewater Capacity Authorization on May 30, 2023. A Determination letter from PWD has been requested and will be uploaded to EPlan upon receipt.

22. New connections into the combined sewer system shall be equipped with back flow preventers in accordance with section 2 of the technical manual.

Response: A backflow preventer will be included within the onsite manhole structure connecting the sewer and drainage to the City's street system.

23. The applicant shall determine if grease traps are required for the proposed commercial space and update the utility plans to include a grease trap with the proper sizing and configuration if necessary.

Response: The applicant does not plan for any food service facility that might require a grease trap at part of their interior plumbing at this time. Any food served will be prepackaged or related to café style production with no oven or fryer cooking occurring.

24. Please provide more details on the grading drainage and erosion control plan.

Response: The grading and Drainage plan has been updated to include some minor erosion control measures, given the overall stabilized nature of the site and relatively small size. Temporary sediment barriers will be provided at any nearby catch basins or the proposed onsite structures once they are installed.



25. The Grading Drainage and Erosion Control Plan appears to have most of the relevant layers turned off. Please provide more information on proposed grading and drainage.

Response: The grading and drainage plan has now been updated for this plan submission.

26. There is an area of covered parking proposed. Any drainage from within this area will need to be directed to an oil water separator to the sewer.

Response: An oil-water separator is now shown on the grading and drainage plan. The OWS will be downstream of a new catch basin in the drive aisle. It's expected that water collected in the CB will be limited as that area will be primarily under the roof cover of the building.

27. Please identify snow storage on the site plan.

Response: Snow storage on the site is very limited since most of the developed area will be under the building roof footprint. Minor storage of manually removed snow in the patio areas can be placed in the landscaped areas.

Landscaping & Environmental Quality

28. Applicant proposes a good use of native ground cover and perennial plantings, which are appreciated. Irrigation is strongly encouraged to ensure success and longevity of proposed foundation plantings.

Response: The applicant is considering irrigation and/or water reuse from the storage tank, subject to funding availability.

29. Site plan / existing conditions plan does not show existing courtyard plantings of abutting property (Equality Community Center). Impact from the proposed taller structure on this abutting property's existing courtyard / walled planting areas, particularly the existing significant tree planting, is of concern. The applicant should consider contribution for replacement costs of trees if new structure's blocking of sunlight, rain or other critical environmental resources contributes to existing trees' decline. Replacement with more shade tolerant species, in the event of existing tree decline / removal, would be recommended.

Response: Aceto Landscape Architects are currently completing responses to this comment and the remaining comments below and their reply will be uploaded and emailed to the planning Department upon receipt later this week.

30. Please ensure all planting beds have sufficient distance between utilities and building foundations and massings of plantings is maintained to allow for adequate air circulation and operational function.



Likewise, ensure walkways, doorways, and important egress / entrance routes are not impeded or encroached by plant growth.

Response: See upcoming ALA reply.

31. It is observed that the GT species proposed are given a very narrow planting bed. While linear beds are preferred to narrow and overly constrained tree planters, consider utilizing a bump out at trunk locations where utilities permit, to provide additional soil media and planting area for trees. Bump outs could include partial bed covering to provide a more accessible walkway use over planting bed, and transition into perennial planting area between tree locations. Refer to figure IV-4a in chapter 4 of technical manual for flush tree well covering example in walkway area.

Response: See upcoming ALA reply.

32. The proposed single GT species, on the lower left plan by parking lot, appears to conflict with facade of structure. Similar comment regarding overly narrow bed size for this tree planting applies.

Response: See upcoming ALA reply.

33. XX AM plantings appear to not match plant schedule labeling. Schedule shows "AL" for plant symbology, "AM" is tied to plant leader information. For "AM" species shown across from proposed trash room door, tree is only 2' from walkway edge and would possibly intrude into walk and doorway area. Move tree further into bed to prevent conflict, or replace tree and proposed shrubs with a larger, specimen shrub.

Response: See upcoming ALA reply.

34. Gleditsia triacanthos species not shown in planting schedule. Ensure species is a thornless cultivar, consider 'shademaster' or other drought tolerant species. Strongly encourage a less overplanted tree species, perhaps Sorbus americana, or if a taller species is preferred, Ulmus americana 'Accolade'.

Response: See upcoming ALA reply.

35. For the proposed plant XXPA - Consider more shade tolerant substitute species in proposed location. If form and habit are of primary importance, Chamaecyparis obtusa 'Willamette Elegance' might be a suitable cultivar; an abies species, or taxus species if smaller form required. If PA strongly desired by applicant, please be prepared for more shade tolerant replacement species if plant performance is not robust.

Response: See upcoming ALA reply.

36. Please provide detail and /or section of proposed fence screening, ensure compliance with section 4.5.7 of Landscaping standards in chapter 4 of technical manual.



Response: See upcoming ALA reply.

*37. Applicant shall provide payment into street tree fund based on section 4.6.1 and 4.6.4 of chapter 4 of the technical manual and chapter 14.6.2 of Land Use Code. 54 units – 4 trees proposed in the right of way = 50 trees * \$400 per tree = \$20,000*

Response: The applicant is amenable to payment of the tree fund fee prior to the issuance of a building permit and as a condition of approval.

We look forward to the Planning Board Public Hearing later this month and a possible approval action. Please find the attached information for your records.

Sincerely,

GORRILL-PALMER

Stephen Bushey, PE

Senior Associate

Phone: 207-772-2515 x286

sbushey@gorrillpalmer.com

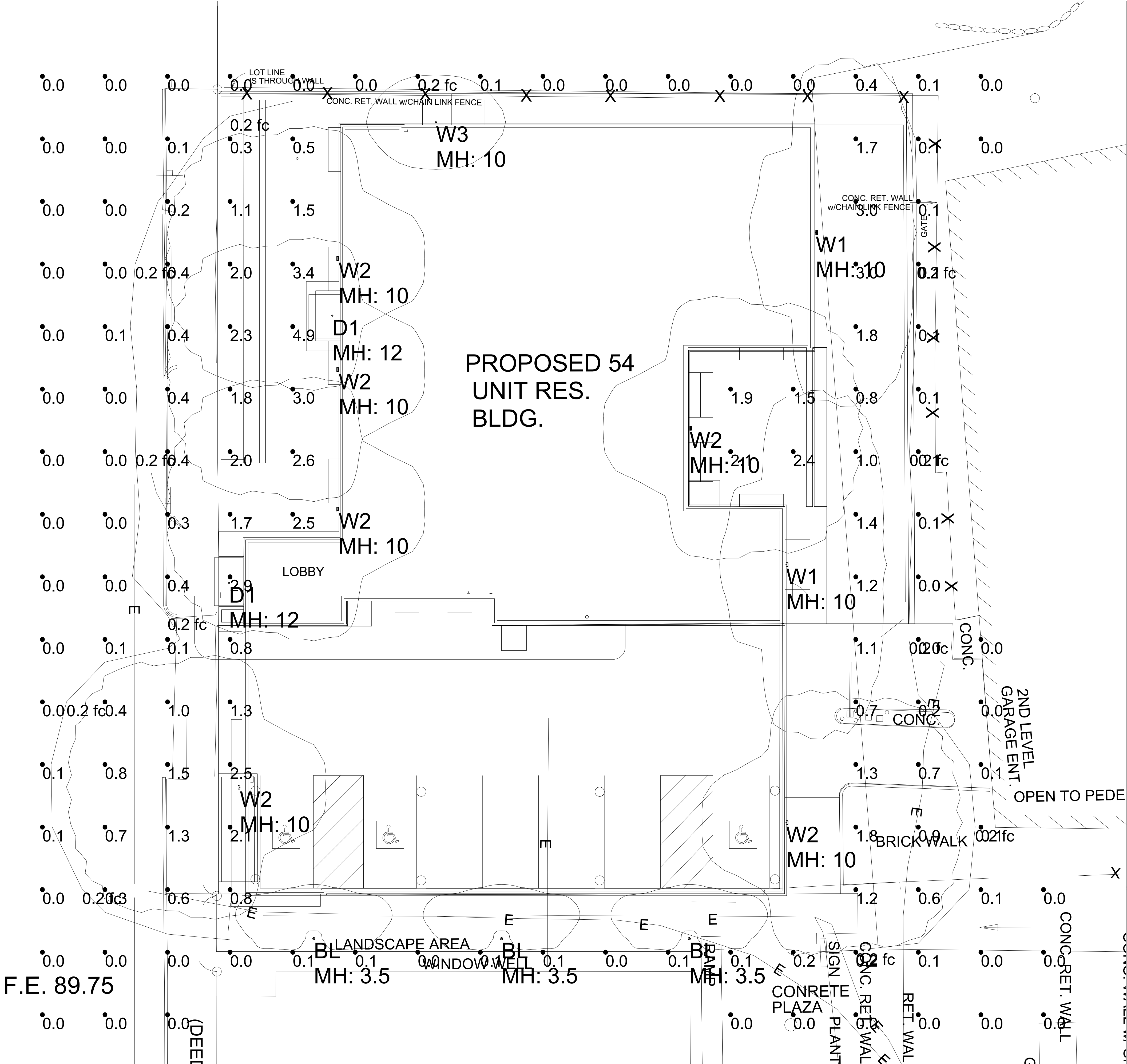
Attachments:

c: Ed Gardner, Equality Community LP
Laura Reading DC
Ryan Senatore, Architect

U:\4043 54 Unit Apartment Casco Street - Portland\IP Applications\Local\Major site plan\LOR #1 2023.06.19\LOR#1_balassa_07.03.23



Attachment A



- NOTES:
- 1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
 - 2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
 - 3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
 - 4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
 - 5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
 - 6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
 - 7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
site	0.60	4.9	0.0	N.A.	N.A.

Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description	Mounting Height
BL	3	684	0.900	14	PA7R-NU3HS-12L-010-3K7	3.5
D1	2	636	0.850	7.8	LTR-3RD-H-SL06L-DM1 LTR-3RD-T-SL30K8XWS	12
W1	2	1638	0.900	17.26	CY1-15-4K7-1-2-R	10
W2	6	1668	0.900	17.32	CY1-15-3K7-1-4-R	10
W3	1	890	0.860	13	CK-LED-TR-X99-SP-13-3000K prorated to 3000k	10

CASCO STREET
PORTLAND, ME
SITE LIGHTING LAYOUT

GENERATED FOR:
CORRILL PALMER
SCALE: NOT TO SCALE

SWANEY LIGHTING ASSOCIATES, INC.

NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. INFORMATION CONCERNING THE OPERATION OF UNITS INDICATED, THIS DRAWING IS TO BE CONFIDENTIAL. THIS DRAWING IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED INFORMATION CONCERNING THE OPERATION OF UNITS INDICATED. THIS DRAWING IS TO BE AS EXPLICITLY AUTHORIZED BY SWANEY LIGHTING ASSOCIATES. NO PART OF THIS DRAWING IS TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF SWANEY LIGHTING ASSOCIATES. NOTICE: THE INTENT OF THIS LIGHTING LAYOUT IS TO SUGGEST THE BEST UTILIZATION OF LIGHTING FIXTURES. IT IS THE RESPONSIBILITY OF THE MANUFACTURER TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE. FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.

DATE: 6/15/2023
Page 1 of 1
site ltr 6-15-23 AGI
GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

FEATURES

- IDA Dark Sky Compliant, No Up-light configuration
- Elegant form factor blended with Performance Optics
- Integral NEMA 3R Enclosure
- Dual receptacle power panel
- PA System capability
- Bluetooth® enabled RGBW accent



CONTROL TECHNOLOGY



SPECIFICATIONS

CONSTRUCTION

HOUSING:

- Castings are low copper aluminum alloy die-cast
- Gaskets are molded silicone to prevent harmful ingress to the lamp and driver compartments
- IP65 rated

SHAFT:

- Aluminum shaft(s) is .125" thick extruded aluminum 6061 alloy
- Concrete shaft(s) conforms to current specifications for "Portland Cement." ASTM C150, Type I or II. Aggregates shall meet current requirements of "Specifications for Concrete Aggregates," ASTM C33. Water shall be clean and free from deleterious amounts of silt, oil, acids, alkalies or organic materials. Wire for reinforcement shall conform to ASTM A185. Steel for lugs and plates shall conform to ASTM A36, or A283 grade D
- Concrete shaft(s) is medium sand-blasted with anti-graffiti sealer and material color shall be integral to the concrete mix
- Concrete shaft(s) is cured to allow for completion of the hydration process, and result in a 28 day compressive strength of not less than 4,500 psi
- Concrete shaft(s) is cast from fiberglass molds used to insure uniform parts. Mold parting lines maybe slightly visible in finished parts

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB)
- Optical lenses are clear injection molded PMMA acrylic
- U0 configurations have an optically clear flat tempered glass lens, all other configurations have either an optically clear or high transmission diffused acrylic lens

INSTALLATION

- Aluminum shaft configurations will have four 3/8" x 10" x 2" zinc plated L-hook anchor bolts shall to be installed with an included template. Nuts and washers are provided to level and secure the mounting plate to the anchor bolts
- Aluminum shaft configurations will have a mounting plate and be able to be rotated 20° in either direction during installation for aiming adjustment
- Concrete shaft configurations will have four steel mounting tabs for installation on four 1/2" x 10" + 2" zinc electroplated L-hook anchor bolts. Each anchor bolt is supplied with two nuts, two washers, and a rigid pressed board template
- Concrete shaft configurations are palletized with adequate hold-downs to prevent load movement in transit
- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

Pavilion™



RELATED PRODUCTS

Pavilion Square Pavilion Round Impact Rated

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed
- High voltage configurations, 208-277, 347/480. Driver is Underwriters Laboratories listed
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers are 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 is 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

(Specifications continued on page 3)

KEY DATA	
Lumen Range	397-2350
Wattage Range	14-22
Efficacy Range (LPW)	29-108
Reported Life (Hours)	L70/60,000

ORDERING GUIDE

Example: PA7R-FT-NU-1-12L-010-5K7-24A-BLS-UNV-EM

CATALOG #

HOUSING

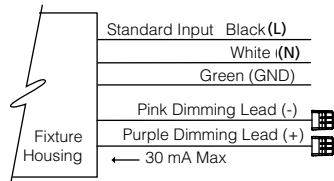
PA7R							
Model	Top	Optics		Distribution		Light Engine ¹³	
PA7R	Pavilion 7" Ø Round	FT	Flat Top	NU	No Up-light	12L-010-AMB ¹¹	14W, Monochromatic Amber
	CT ¹	Crowned Top		CH	Clear Horizontal Lens	12L-010-3K7	14W (1000 nominal lm), 3000K, 70 CRI
				CL ²	Clear Vertical Lens	12L-010-4K7	14W (1000 nominal lm), 4000K, 70 CRI
				DL ^{2,3}	Diffuse Vertical Lens	12L-010-5K7	14W (1000 nominal lm), 5000K, 70 CRI
				LV	Louvers	12L-020-AMB ¹¹	22W, Monochromatic Amber
				GC	Grille with clear vertical lens	12L-020-3K7	22W (2000 nominal lm), 3000K, 70 CRI
				GD ³	Grille with diffuse vertical lens	12L-020-4K7	22W (2000 nominal lm), 4000K, 70 CRI
						12L-020-5K7	22W (2000 nominal lm), 5000K, 70 CRI
Consult factory for other CCTs (2700K - 6500K) and CRIs (80, 90 CRI)							

Body		Fixture Finish		Control Options		Voltage		Options			
24A	24" OAH, Aluminum	BLS	Black Gloss Smooth	MW ⁶	Motion sensing (50% dim, 100% output upon detection)	UNV	120-277V	EM ⁸	Battery Backup		
42A	42" OAH, Aluminum	BLT	Black Matte Textured	NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	120 ⁷	120V	LR ⁹	Luminous Accent		
42BR-C	42" OAH, Brown Concrete	DBS	Dark Bronze Gloss Smooth			277 ⁷	208-277V	SF ¹⁰	Single Fuse		
42CH-C	42" OAH, Charcoal Concrete	DBT	Dark Bronze Matte Textured			347 ⁷	347V	DF ¹⁰	Double Fuse		
42NG-C	42" OAH, Natural Gray Concrete					480 ⁷	480V				
42WH-C	42" OAH, White Concrete	GTT	Graphite Matte Textured								
42A-ROP ⁴	42" OAH, Aluminum + Dual Receptacle Outlet Panel and Cover	LGS	Light Grey Gloss Smooth								
42A-ROP-L ⁴	42" OAH, Aluminum + Dual Receptacle Outlet Panel and Locking Cover	LGT	Light Grey Matte Textured								
42A-2GEB	42" OAH, Aluminum + Integral Recessed 2 Gang Electrical Box	PSS	Platinum Silver Gloss Smooth								
42A-SG3	42" OAH, Aluminum + Speaker Grille Enclosure for 3" Ø speaker	VGT	Verde Green Matte Textured								
44A	44" Non-Impact Resistant OAH, Aluminum	WHS	White Gloss Smooth								
44A-ROP	44" Non-Impact Resistant OAH, Aluminum + Dual Receptacle Outlet Panel and Cover	WHT	White Matte Textured								
44A-ROP-L	44" Non-Impact Resistant OAH, Aluminum + Dual Receptacle Outlet Panel and Locking Cover	Color Option									
44A-2GEB	44" Non-Impact Resistant OAH, Aluminum + Integral Recessed 2 Gang Electrical Box	CC ¹²	Custom Color								
44A-SG3	44" Non-Impact Resistant OAH, Aluminum + Speaker Grille Enclosure for 3" Ø speaker										
For Impact Rated 44" OAH Round Pavilion											

- 1 Adds .6 / 15mm to OAH (over all height).
- 2 CL and DL configurations shall be IK04
- 3 Only Available with 1 Type I or 5 Type V distributions only.
- 4 For GFCI/USB limited voltage to 120VAC only.
- 6 24"Ø typical coverage area, not available with CH.
- 7 Dedicated input voltage, required for MW Motions sensing.
- 8 0°C min starting temperature, 90+ minute run time, output equivalent to 12L-010-#K7
- 9 Adds +5 watts and 1" / 254mm to overall height.
- 10 SF for 120, 277 and 347 input voltage, DF for 208, 240 and 480 input voltage.
- 11 Turtle friendly
- 12 Consult factory for custom color, marine and corrosive finish options
- 13 5-step MacAdam Ellipse Binning standard. Consult factory for 3-step MacAdam Ellipse Binning.

CONTROLS

- Standard fixtures dimming range shall be from 10% to 100% and be compatible with 0-10V, user-defined, control devices



- Optional motion sensor shall be capable of detecting motion 360° around the bollard. When no motion is detected for the specified time, the sensor wattage to factory preset level, reducing the light level accordingly. When motion is detected by the sensor, the bollard shall return to full wattage and full light output. Please contact KIM Lighting if project requirements vary from standard configuration

WIRELESS CONTROLS

BLUETOOTH®:

- The Integral module shall enable the adjustment of the Luminous Accent to dim or change color to the desired setting when paired with RGBW Remote App via cellular/tablet device
- The integral module shall be compatible with Bluetooth Low Energy (BLE) or Bluetooth® Smart mobile devices operating on iOS8 or Android Gingerbread operating systems or newer
- Mobile App, dimming range from 0% to 100% through the use of RGBW app (available on IOS and Android)
- Color selection and adjustment
- Camera function for color matching
- Intensity slider for dimming/ramping up
- Save and rename up to 10 presets
- Group and rename fixtures
- Fixture is password protected, refer to instructions to set unique password

DMX:

- 6 wires: Red (DMX+), Brown (DMX-), Yellow (DMX Ground), Black (Line Voltage), White (common), and Green (Ground)
- Single DMX universe with six slots/addresses of virtual control which are pre-programmed at the factory:
 - DMX slot/address 1 = red
 - DMX slot/address 2 = green
 - DMX slot/address 3 = blue
 - DMX slot/address 4 = white
- Fully DMX RDM compatible
- Mobile App specification in additional information section

NX

- Luminaires enabled with NX Lighting Controls wireless radios create an intelligent mesh network with the interior controls. Groups are dimmed via an astronomical time clock and schedules can be updated at any time with the Bluetooth® commissioning app. Contact factory for more information

OPTIONAL BACKUP BATTERY

- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for 0°C ambient environments

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
- IP65 rated
- IEC 66262 Mechanical Impact Code IK10

- IDA approved, 3000K and warmer CCTs only
- RoHS compliant

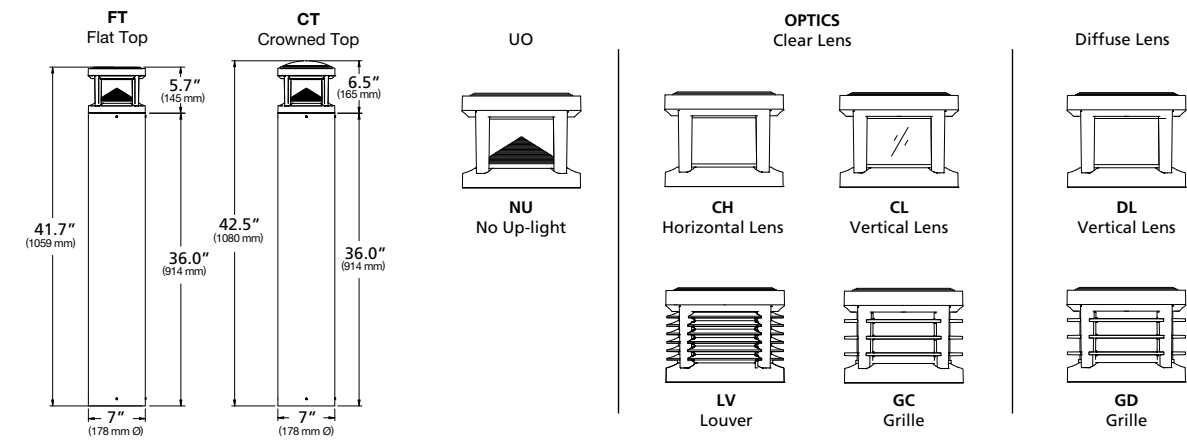
WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information



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DIMENSIONS



DELIVERED LUMENS

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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	
550mA	12L	22	2,000	NU UO Optics	1	1044	0	0	0	48	1136	0	0	0	52	1164	0	0	0	54
					2	1199	0	0	0	55	1305	0	0	0	60	1336	0	0	0	62
					3	1128	0	0	1	52	1228	0	0	1	57	1257	0	0	1	58
					3HS	953	0	0	0	44	1037	0	0	0	48	1062	0	0	1	49
					4	1362	0	0	0	63	1482	0	0	1	68	1518	0	0	1	70
					5	1265	1	0	0	58	1377	1	0	0	63	1410	1	0	0	65
				CH Clear Horizontal Lens	1	1778	0	3	1	82	1935	0	3	1	89	1981	0	3	1	91
					2	1711	1	3	1	79	1862	1	3	1	86	1906	1	3	1	88
					3	1643	1	3	1	76	1788	1	3	1	82	1831	1	3	1	84
					3HS	1443	0	3	1	66	1570	0	3	1	72	1608	0	3	1	74
					4	1731	0	3	1	80	1884	0	3	1	87	1929	0	3	1	89
					5	1841	1	3	1	85	2003	1	3	1	92	2051	1	3	1	95
				CL Clear Vertical Lens	1	1852	0	4	1	85	2016	1	4	1	93	2064	1	4	1	95
					2	1984	1	3	1	91	2159	1	3	1	99	2211	1	3	1	102
					3	2062	1	3	1	95	2244	1	3	1	103	2298	1	3	1	106
					3HS	1665	0	3	1	77	1811	0	3	1	83	1855	0	3	1	85
					4	2055	0	3	1	95	2236	1	3	1	103	2290	1	3	1	106
					5	2109	1	3	1	97	2295	1	3	1	106	2350	1	3	1	108

DELIVERED LUMENS (CONTINUED)

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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	
550mA	12L	22	2,000	DL Diffused Vertical Lens	1	1639	1	3	2	76	1783	1	3	2	82	1826	1	3	2	84
					5	1721	1	3	2	79	1873	1	3	2	86	1918	1	3	2	88
				LV External Louvers	1	746	0	3	1	34	811	1	3	1	37	831	1	3	1	38
					2	814	1	3	1	37	885	1	3	1	41	907	1	3	1	42
					3	838	1	3	1	39	912	1	3	1	42	934	1	3	1	43
					3HS	605	0	3	1	28	658	0	3	1	30	674	0	3	1	31
					4	879	0	3	1	41	956	1	3	1	44	979	1	3	1	45
					5	888	1	3	1	41	966	1	3	1	45	989	1	3	1	46
				GC Grill with Clear Lens	1	1038	0	3	1	48	1130	0	3	1	52	1157	0	3	1	53
					2	1021	0	3	1	47	1111	1	3	1	51	1138	1	3	1	52
					3	1024	0	3	1	47	1114	1	3	1	51	1141	1	3	1	53
					3HS	854	0	3	1	39	930	0	3	1	43	952	0	3	1	44
					4	1109	0	3	1	51	1207	0	3	1	56	1236	0	3	1	57
					5	1037	1	3	1	48	1128	1	3	1	52	1155	1	3	1	53
				GD Grill with Diffused Lens	1	1036	0	3	1	48	1127	1	3	2	52	1154	1	3	2	53
					5	953	1	3	1	44	1037	1	3	1	48	1062	1	3	1	49

DELIVERED LUMENS (CONTINUED)

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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	
350mA	12L	14	1,000	NU U0 Optics	1	749	0	0	0	54	815	0	0	0	59	835	0	0	0	60
					2	860	0	0	0	62	936	0	0	0	67	958	0	0	0	69
					3	809	0	0	0	58	881	0	0	0	63	902	0	0	0	65
					3HS	684	0	0	0	49	744	0	0	0	53	762	0	0	0	55
					4	977	0	0	0	70	1063	0	0	0	76	1089	0	0	0	78
					5	908	1	0	0	65	988	1	0	0	71	1011	1	0	0	73
				CH Clear Horizontal Lens	1	1184	0	3	1	85	1288	0	3	1	92	1319	0	3	1	95
					2	1139	0	3	1	82	1239	0	3	1	89	1269	0	3	1	91
					3	1094	0	3	1	79	1190	0	3	1	85	1219	0	3	1	87
					3HS	960	0	3	1	69	1045	0	3	1	75	1070	0	3	1	77
					4	1152	0	3	1	83	1254	0	3	1	90	1284	0	3	1	92
					5	1225	1	3	1	88	1333	1	3	1	96	1365	1	3	1	98
				CL Clear Vertical Lens	1	1146	0	3	1	82	1247	0	3	1	90	1277	0	3	1	92
					2	1228	0	3	1	88	1336	1	3	1	96	1368	1	3	1	98
					3	1276	0	3	1	92	1389	1	3	1	100	1422	1	3	1	102
					3HS	1030	0	3	1	74	1121	0	3	1	80	1148	0	3	1	82
					4	1272	0	3	1	91	1384	0	3	1	99	1417	0	3	1	102
					5	1305	1	3	1	94	1420	1	3	1	102	1454	1	3	1	104
				DL Diffused Vertical Lens	1	1086	0	3	1	78	1182	0	3	1	85	1210	0	3	1	87
					5	1141	1	3	1	82	1241	1	3	1	89	1271	1	3	1	91

DELIVERED LUMENS (CONTINUED)

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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	
350mA	12L	14	1,000	LV External Louvers	1	489	0	3	1	35	533	0	3	1	38	545	0	3	1	39
					2	534	0	3	1	38	581	0	3	1	42	595	0	3	1	43
					3	550	0	3	1	40	599	0	3	1	43	613	0	3	1	44
					3HS	397	0	3	1	29	432	0	3	1	31	442	0	3	1	32
					4	577	0	3	1	41	628	0	3	1	45	643	0	3	1	46
					5	583	1	3	1	42	634	1	3	1	46	649	1	3	1	47
				GC Grill with Clear Lens	1	843	0	3	1	61	917	0	3	1	66	939	0	3	1	67
					2	829	0	3	1	60	903	0	3	1	65	924	0	3	1	66
					3	831	0	3	1	60	905	0	3	1	65	926	0	3	1	67
					3HS	694	0	3	1	50	755	0	3	1	54	773	0	3	1	56
					4	901	0	3	1	65	980	0	3	1	70	1004	0	3	1	72
					5	842	1	3	1	60	916	1	3	1	66	938	1	3	1	67
				GD Grill with Diffused Lens	1	728	0	3	1	52	792	0	3	1	57	811	0	3	1	58
					5	782	1	3	1	56	851	1	3	1	61	872	1	3	1	63

PA7R

BOLLARD

PHOTOMETRY

PA7R-CH1-12L-020-4K7

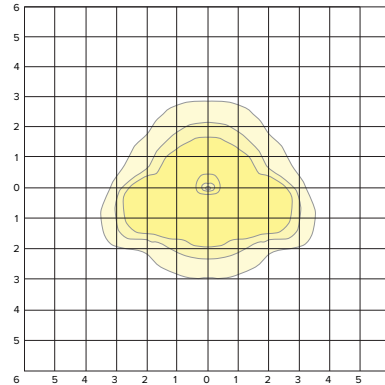
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1935
Watts	22
Efficacy	88.0
IES Type	II
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1132	81.8%
Downward House Side	251	18.1%
Downward Total	1384	71%
Upward Street Side	348	63%
Upward House Side	205	37%
Upward Total	553	29%
Total Flux	1937	100%

ISOFOOT CANDLE PLOT



PA7R-CH2-12L-020-4K7

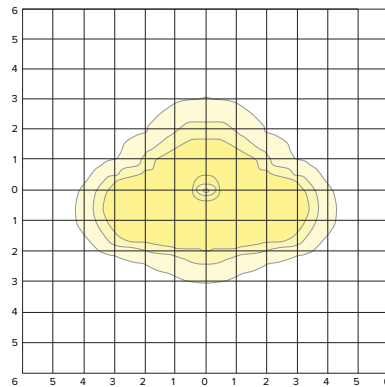
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1862
Watts	22
Efficacy	85.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1176	78.7%
Downward House Side	319	21.3%
Downward Total	1494	80%
Upward Street Side	220	60%
Upward House Side	149	40%
Upward Total	369	20%
Total Flux	1863	100%

ISOFOOT CANDLE PLOT



PA7R-CH3-12L-020-4K7

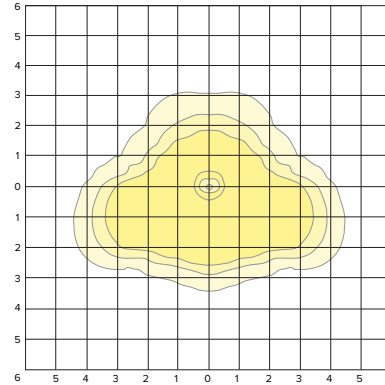
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1788
Watts	21.76
Efficacy	82.0
IES Type	III
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1184	80.3%
Downward House Side	290	19.7%
Downward Total	1474	82%
Upward Street Side	185	59%
Upward House Side	130	41%
Upward Total	315	18%
Total Flux	1789	100%

ISOFOOT CANDLE PLOT



PA7R

BOLLARD

PHOTOMETRY

PA7R-CH3HS-12L-020-4K7

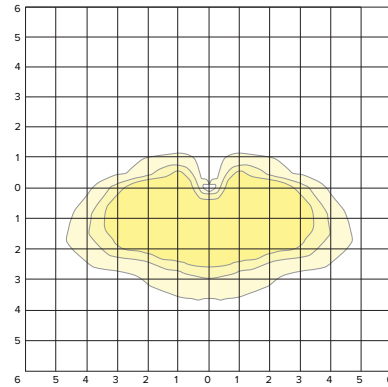
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1570
Watts	21.64
Efficacy	73.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1187	92.0%
Downward House Side	103	8.0%
Downward Total	1290	82%
Upward Street Side	230	82%
Upward House Side	51	18%
Upward Total	282	18%
Total Flux	1571	100%

ISOFOOT CANDLE PLOT



PA7R-CH4-12L-020-4K7

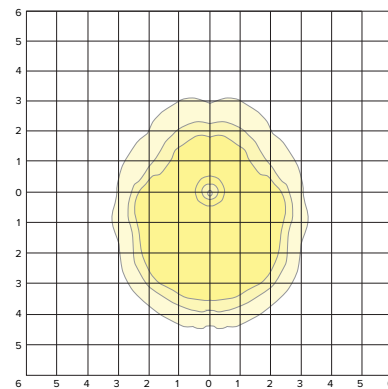
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1884
Watts	21.73
Efficacy	87.0
IES Type	IV
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1316	84.0%
Downward House Side	250	16.0%
Downward Total	1566	83%
Upward Street Side	184	58%
Upward House Side	136	42%
Upward Total	319	17%
Total Flux	1885	100%

ISOFOOT CANDLE PLOT



PA7R-CH5-12L-020-4K7

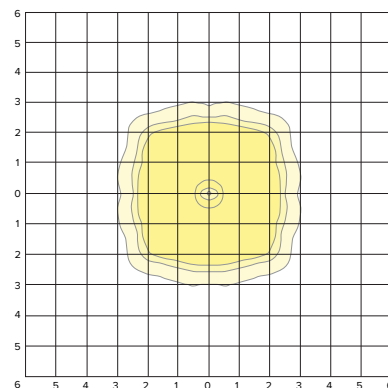
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2003
Watts	21.73
Efficacy	92.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	825	50.0%
Downward House Side	825	50.0%
Downward Total	1650	82%
Upward Street Side	177	50%
Upward House Side	177	50%
Upward Total	354	18%
Total Flux	2004	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-CL1-12L-020-4K7

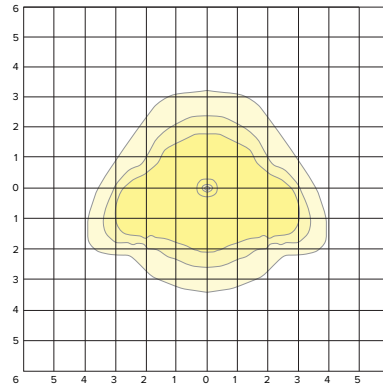
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2016
Watts	21.7
Efficacy	93.0
IES Type	II
BUG Rating	B1-U4-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1078	77.5%
Downward House Side	312	22.5%
Downward Total	1390	69%
Upward Street Side	373	59%
Upward House Side	254	41%
Upward Total	627	31%
Total Flux	2017	100%

ISOFOOT CANDLE PLOT



PA7R-CL2-12L-020-4K7

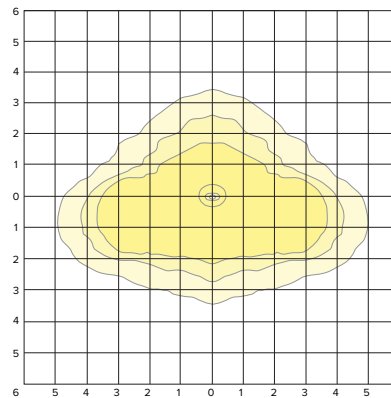
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2159
Watts	21.69
Efficacy	100.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1325	77.5%
Downward House Side	384	22.5%
Downward Total	1709	79%
Upward Street Side	258	57%
Upward House Side	193	43%
Upward Total	451	21%
Total Flux	2160	100%

ISOFOOT CANDLE PLOT



PA7R-CL3-12L-020-4K7

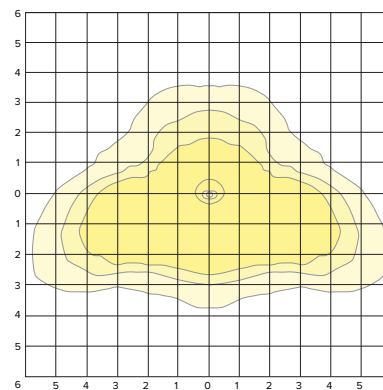
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2244
Watts	21.72
Efficacy	103.0
IES Type	III
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1472	80.0%
Downward House Side	367	20.0%
Downward Total	1839	82%
Upward Street Side	231	57%
Upward House Side	175	43%
Upward Total	406	18%
Total Flux	2245	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-CL3HS-12L-020-4K7

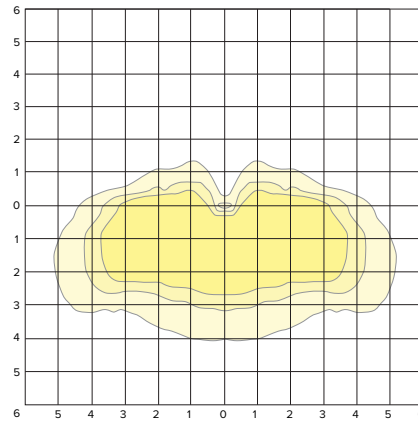
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1811
Watts	21.7
Efficacy	83.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1361	92.0%
Downward House Side	118	8.0%
Downward Total	1479	82%
Upward Street Side	277	83%
Upward House Side	56	17%
Upward Total	334	18%
Total Flux	1812	100%

ISOFOOT CANDLE PLOT



PA7R-CL4-12L-020-4K7

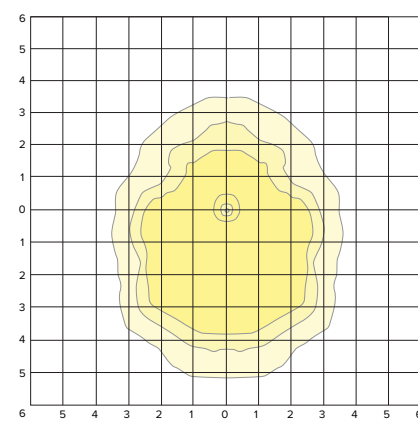
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2236
Watts	21.71
Efficacy	103.0
IES Type	IV
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1552	84.9%
Downward House Side	275	15.0%
Downward Total	1827	82%
Upward Street Side	230	56%
Upward House Side	180	44%
Upward Total	410	18%
Total Flux	2237	100%

ISOFOOT CANDLE PLOT



PA7R-CL5-12L-020-4K7

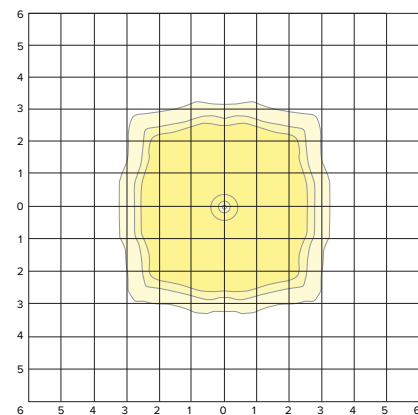
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2296
Watts	21.75
Efficacy	106.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	937	50.0%
Downward House Side	937	50.0%
Downward Total	1874	82%
Upward Street Side	211	50%
Upward House Side	211	50%
Upward Total	422	18%
Total Flux	2296	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-DL1-12L-020-4K7

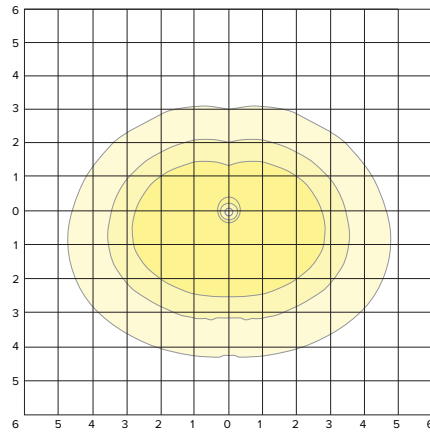
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1783
Watts	21.74
Efficacy	82.0
IES Type	IV
BUG Rating	B1-U3-G2
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	746	66.2%
Downward House Side	381	33.8%
Downward Total	1127	63%
Upward Street Side	408	62%
Upward House Side	248	38%
Upward Total	657	37%
Total Flux	1784	100%

ISOFOOT CANDLE PLOT



PA7R-DL5-12L-020-4K7

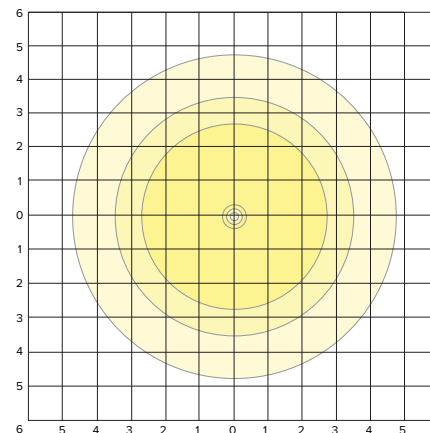
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1873
Watts	21.75
Efficacy	86.0
IES Type	VS
BUG Rating	B1-U3-G2
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	656	50.0%
Downward House Side	656	50.0%
Downward Total	1313	70%
Upward Street Side	281	50%
Upward House Side	281	50%
Upward Total	561	30%
Total Flux	1874	100%

ISOFOOT CANDLE PLOT



PA7R-GC1-12L-020-4K7

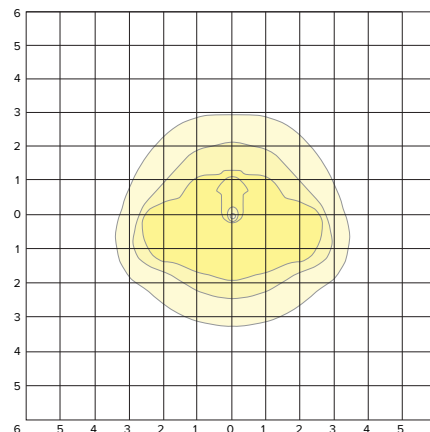
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1130
Watts	21.73
Efficacy	52.0
IES Type	II
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	434	67.6%
Downward House Side	208	32.4%
Downward Total	642	57%
Upward Street Side	298	61%
Upward House Side	191	39%
Upward Total	489	43%
Total Flux	1131	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-GC2-12L-020-4K7

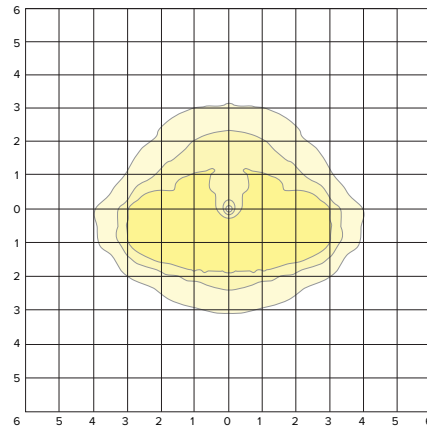
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1111
Watts	21.59
Efficacy	51.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	488	68.3%
Downward House Side	227	31.7%
Downward Total	715	64%
Upward Street Side	238	60%
Upward House Side	159	40%
Upward Total	397	36%
Total Flux	1112	100%

ISOFOOT CANDLE PLOT



PA7R-GC3-12L-020-4K7

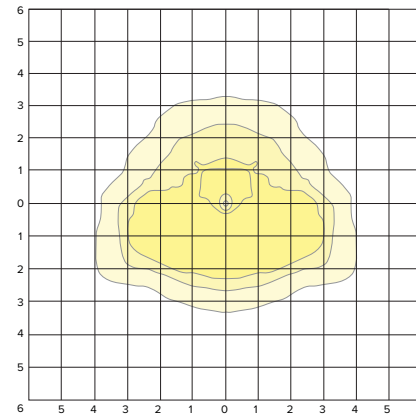
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1114
Watts	21.7
Efficacy	51.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	513	69.8%
Downward House Side	221	30.1%
Downward Total	735	66%
Upward Street Side	234	62%
Upward House Side	146	38%
Upward Total	380	34%
Total Flux	1114	100%

ISOFOOT CANDLE PLOT



PA7R-GC3HS-12L-020-4K7

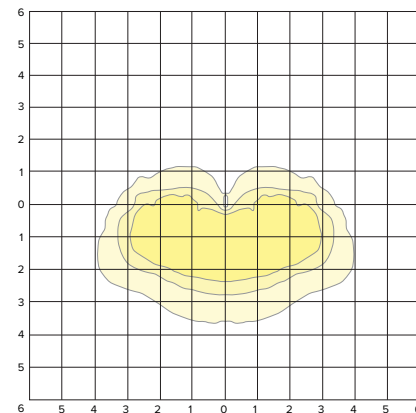
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	930
Watts	21.59
Efficacy	43.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	533	87.1%
Downward House Side	79	12.8%
Downward Total	612	66%
Upward Street Side	265	83%
Upward House Side	54	17%
Upward Total	319	34%
Total Flux	931	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-GC4-12L-020-4K7

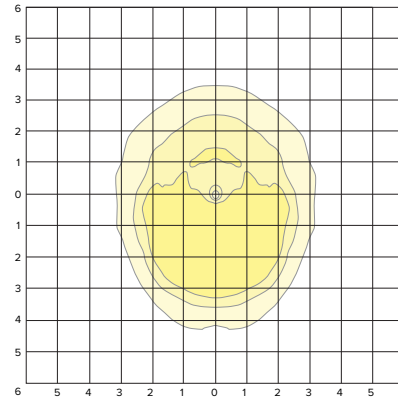
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1207
Watts	21.59
Efficacy	56.0
IES Type	IV
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	591	74.2%
Downward House Side	205	25.8%
Downward Total	796	66%
Upward Street Side	267	65%
Upward House Side	146	35%
Upward Total	412	34%
Total Flux	1208	100%

ISOFOOT CANDLE PLOT



PA7R-GC5-12L-020-4K7

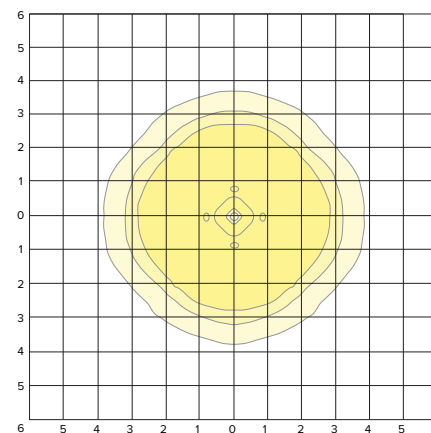
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1128
Watts	21.59
Efficacy	52.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	382	50.0%
Downward House Side	382	50.0%
Downward Total	764	68%
Upward Street Side	183	50%
Upward House Side	183	50%
Upward Total	365	32%
Total Flux	1129	100%

ISOFOOT CANDLE PLOT



PA7R-GD1-12L-020-4K7

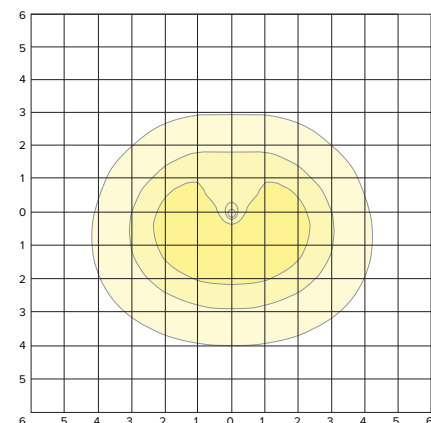
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1127
Watts	21.71
Efficacy	51.9
IES Type	IV
BUG Rating	B1-U3-G2
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	407	62.8%
Downward House Side	241	37.2%
Downward Total	648	57%
Upward Street Side	287	60%
Upward House Side	193	40%
Upward Total	479	43%
Total Flux	1127	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-GD5-12L-020-4K7

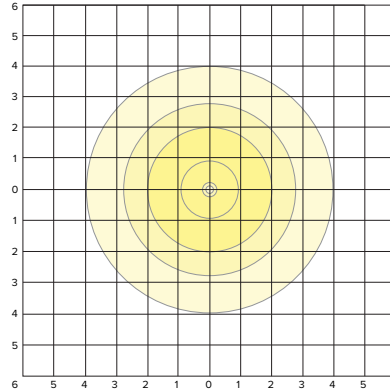
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1037
Watts	21.6
Efficacy	48.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	309	50.0%
Downward House Side	309	50.0%
Downward Total	618	60%
Upward Street Side	210	50%
Upward House Side	210	50%
Upward Total	420	40%
Total Flux	1038	100%

ISOFOOT CANDLE PLOT



PA7R-LV1-12L-020-4K7

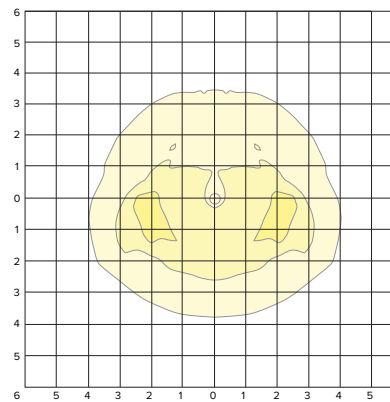
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	811
Watts	21.73
Efficacy	37.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	303	57.7%
Downward House Side	222	42.2%
Downward Total	526	65%
Upward Street Side	160	56%
Upward House Side	126	44%
Upward Total	286	35%
Total Flux	812	100%

ISOFOOT CANDLE PLOT



PA7R-LV2-12L-020-4K7

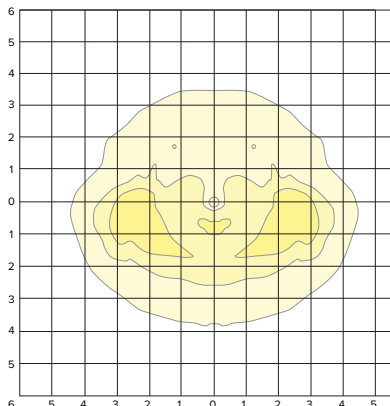
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	885
Watts	21.68
Efficacy	41.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	378	61.9%
Downward House Side	233	38.1%
Downward Total	611	69%
Upward Street Side	158	58%
Upward House Side	116	42%
Upward Total	274	31%
Total Flux	885	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-LV3-12L-020-4K7

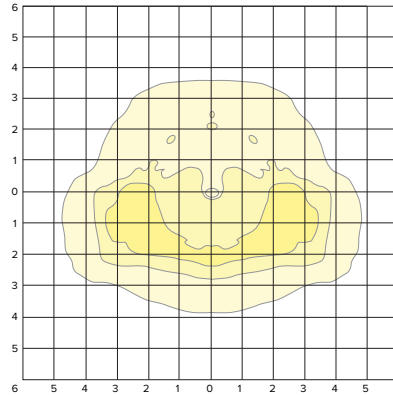
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	912
Watts	21.69
Efficacy	42.0
IES Type	III
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	414	63.7%
Downward House Side	233	35.8%
Downward Total	650	71%
Upward Street Side	154	59%
Upward House Side	109	41%
Upward Total	263	29%
Total Flux	913	100%

ISOFOOT CANDLE PLOT



PA7R-LV3HS-12L-020-4K7

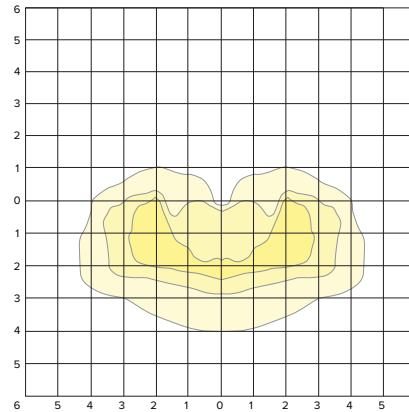
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	658
Watts	21.69
Efficacy	30.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	383	82.5%
Downward House Side	81	17.5%
Downward Total	464	71%
Upward Street Side	155	80%
Upward House Side	39	20%
Upward Total	194	29%
Total Flux	658	100%

ISOFOOT CANDLE PLOT



PA7R-LV4-12L-020-4K7

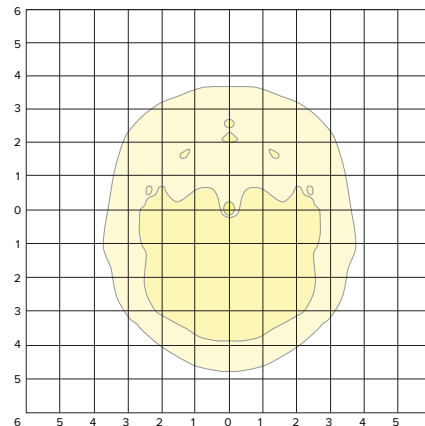
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	956
Watts	21.69
Efficacy	44.0
IES Type	IV
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	454	67.5%
Downward House Side	219	32.5%
Downward Total	673	70%
Upward Street Side	176	62%
Upward House Side	107	38%
Upward Total	283	30%
Total Flux	956	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-LV5-12L-020-4K7

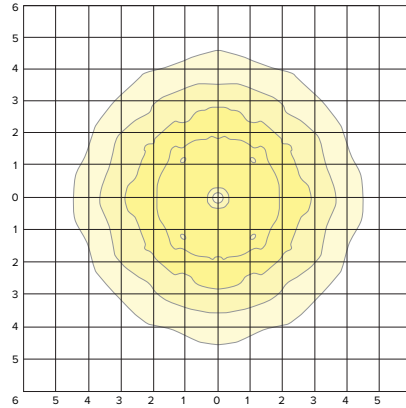
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	966
Watts	21.7
Efficacy	45.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	354	50.0%
Downward House Side	354	50.0%
Downward Total	708	73%
Upward Street Side	129	50%
Upward House Side	129	50%
Upward Total	259	27%
Total Flux	967	100%

ISOFOOT CANDLE PLOT



PA7R-NU1-12L-020-4K7

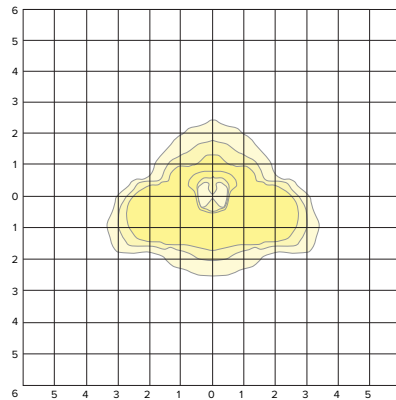
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1136
Watts	21.75
Efficacy	52.0
IES Type	I
BUG Rating	B0-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	986	86.7%
Downward House Side	151	13.3%
Downward Total	1137	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1137	100%

ISOFOOT CANDLE PLOT



PA7R-NU2-12L-020-4K7

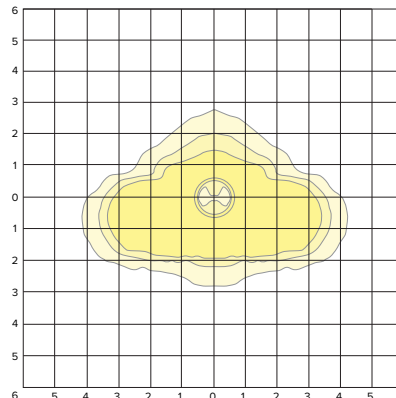
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1305
Watts	21.74
Efficacy	60.0
IES Type	II
BUG Rating	B0-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1073	82.2%
Downward House Side	233	17.8%
Downward Total	1306	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1306	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

PA7R-NU3-12L-020-4K7

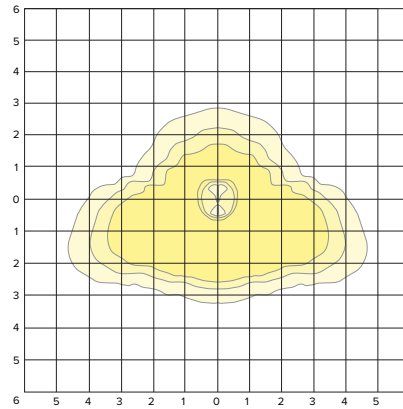
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1228
Watts	21.76
Efficacy	56.0
IES Type	III
BUG Rating	B0-U0-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1035	84.3%
Downward House Side	194	15.8%
Downward Total	1228	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1228	100%

ISOFOOT CANDLE PLOT



PA7R-NU3HS-12L-020-4K7

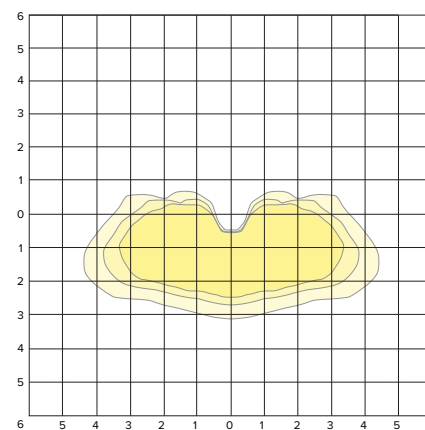
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1037
Watts	21.74
Efficacy	48.0
IES Type	III
BUG Rating	B0-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	987	95.1%
Downward House Side	51	4.9%
Downward Total	1038	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1038	100%

ISOFOOT CANDLE PLOT



PA7R-NU4-12L-020-4K7

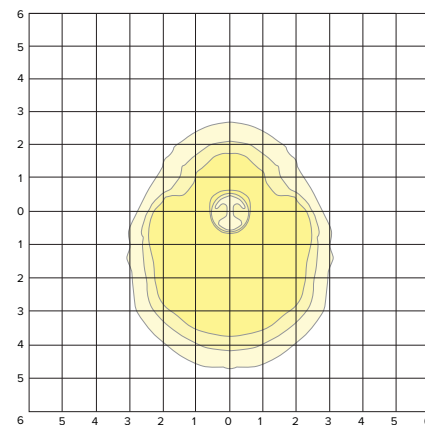
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1482
Watts	21.67
Efficacy	68.0
IES Type	IV
BUG Rating	B0-U0-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1318	88.9%
Downward House Side	164	11.1%
Downward Total	1483	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1483	100%

ISOFOOT CANDLE PLOT



PA7R

BOLLARD

PHOTOMETRY(CONTINUED)

PA7R-NU5-12L-020-4K7

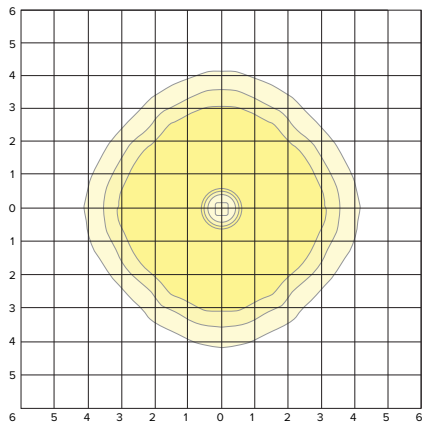
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1377
Watts	21.68
Efficacy	63.0
IES Type	VS
BUG Rating	B1-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

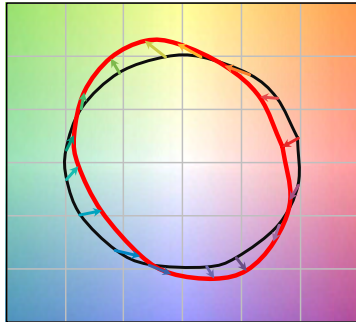
Zone	Lumens	% Luminaire
Downward Street Side	689	50.0%
Downward House Side	689	50.0%
Downward Total	1377	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1377	100%

ISOFOOT CANDLE PLOT



TM-30 DATA

COLOR VECTOR GRAPHIC

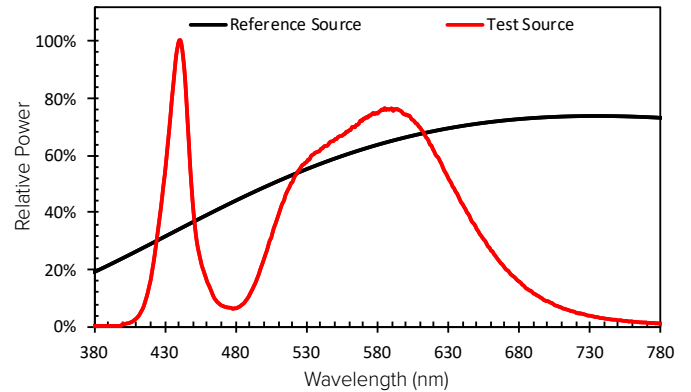


— Reference Illuminant — Test Source

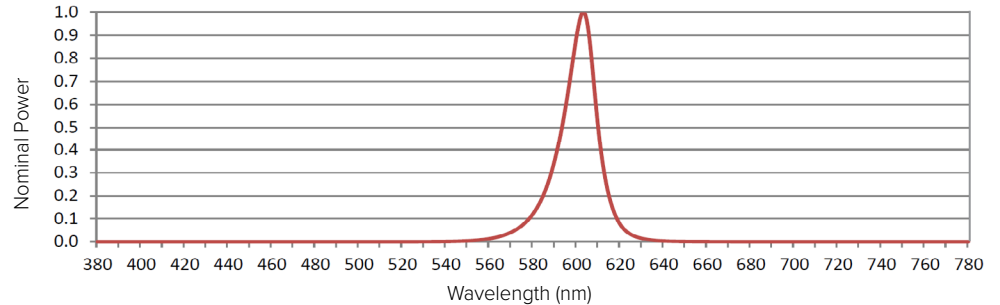
TEST SOURCE

R _f	68
R _a	99
CCT(K)	3947
D _{uv}	0.0004
x	0.3831
y	0.3793
CIE R _a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



AMBER SPECTRAL POWER DISTRIBUTION



ELECTRICAL DATA

Electrical												Dimming					
# LED	System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
12	22	550mA	120-480	50/60	0.18	0.11	0.09	0.08	0.06	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
	14	350mA			0.12	0.07	0.06	0.05	0.04	0.03							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C) & (40°C / 104°C)						
Hours	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	98%	97%	95%	90%	60khrs

CRI Lumen Multiplier 80 and 90 CRI		
CCT	80 CRI	90 CRI
2700K	0.859	0.655
3000K	0.9119	0.7033
3500K	0.906	0.732
4000K	0.8941	0.734
5000K	0.879	0.7712
Scaling factor of 5000K 70CRI lumen packages		

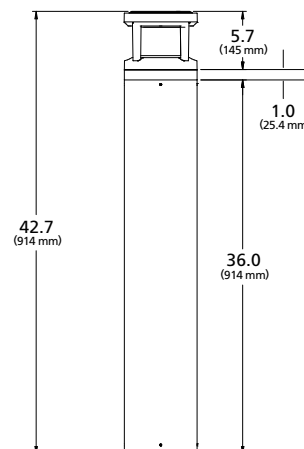
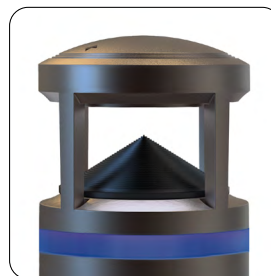
ADDITIONAL INFORMATION

LUMINOUS ACCENT:

- The Luminous Accent option adds an additional 1" / 25.4mm to the overall fixture height and may be controlled via wired DMX RDM or Bluetooth® wireless. The Luminous Accent shall be IK08.

RGBW REMOTE APP

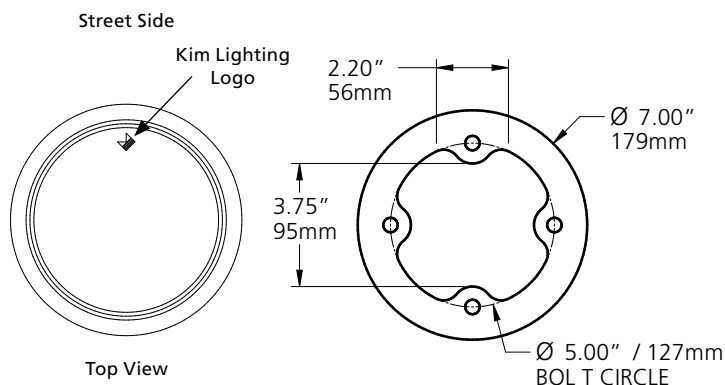
- The RGBW Remote application may be downloaded free of charge from the Apple App Store or Google Play.
- Color selection and adjustment.
- Camera function for color matching.
- Intensity slider for dimming/ramping up.
- Save and rename up to 10 presets.
- Group and rename fixtures.
- Fixture is password protected, refer to instructions to set unique password.



MOUNTING

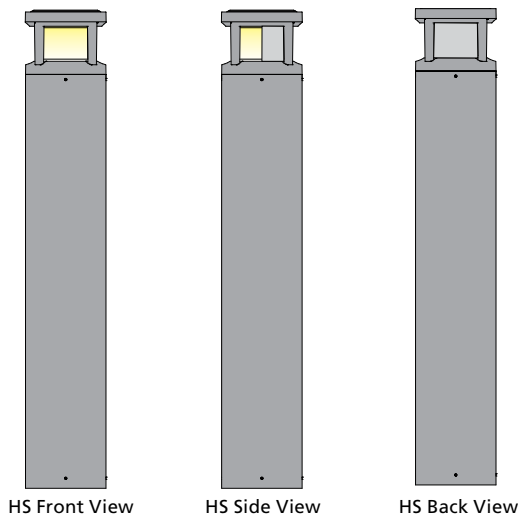
ALUMINUM BODY

- Once attached to base mounting plate, fixture may be rotated 20° in either direction and secured with set screws at base of the bollard body. KIM Lighting logo indicates 'street side' output.



SHIELDING

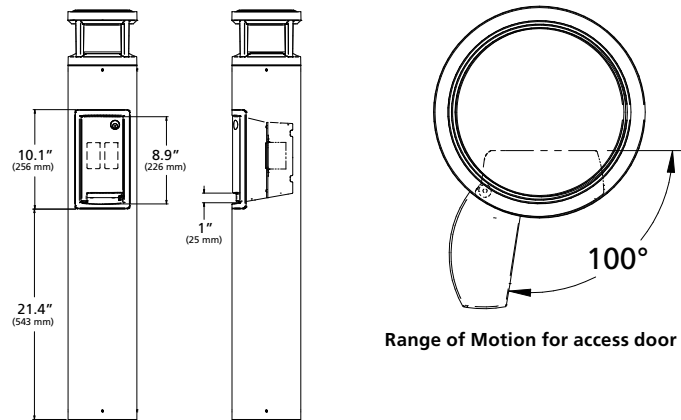
- HS configurations feature factory installed 180° shield(s) that may also be installed in the field for any Optic configuration.



ADDITIONAL INFORMATION (CONTINUED)

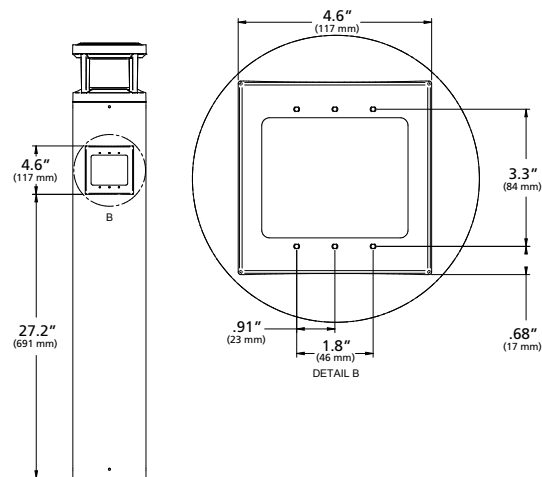
RECEPTACLE OUTLET PANEL

- The Receptacle outlet panel shall be NEMA 3R rated for wet location(s) while in use and shall be compatible with any single receptacle outlet device with standard mounting holes. Door shall be self-closing. Tamper resistant lock must be specified at time of order. Devices and device wiring by others.



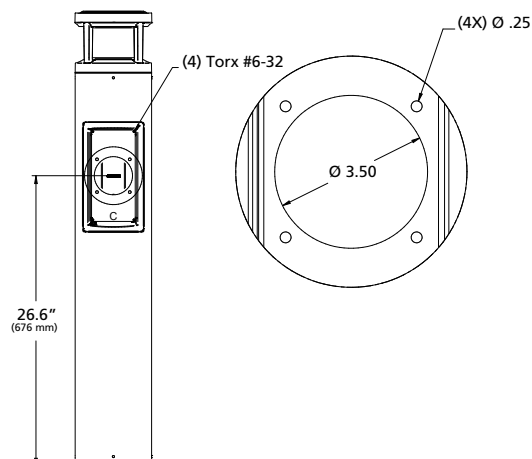
INTEGRAL ELECTRICAL BOX

- The integral 2 Gang electrical box shall be 3" deep and have standard mounting holes for installing either a single receptacle outlet device or a pair of single receptacle outlet device. Devices, device wiring, device hardware and bezel by others.



SPEAKER GRILLE ENCLOSURE

- The speaker grille enclosure shall accommodate a 3"Ø marine grade speaker rated for outdoor use. Grille shall be secured with (4) Torx # screws for accessibility. Mounting provisions as shown. Speaker, mounting bracket/hardware and wiring by others.



FEATURES

- Integral Battery Backup Option
- 360° Light Distribution
- RGBW or Static White Luminous Front Option
- Multiple Fascia Options and Finishes
- 4G Vibration Tested



CONTROL TECHNOLOGY



SPECIFICATIONS

CONSTRUCTION

- Main housing shroud is made of fabricated 5052-H32 aluminum alloy
- Housing mounting interface has a stamped silicone gasket
- Luminaire housing is free of any visible heat fins, hardware or fasteners
- Bracketry and hardware is stainless steel
- Luminaire finish 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 meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance

LED/OPTICS

- LEDs are mounted to a metal printed circuit board assembly (MCPCB) with a uniform conformal coating over the panel surface and electrical features
- Optical lenses is clear injection molded PMMA acrylic
- Optical array is recessed in order to shield each LED optic across the length of the aperture
- Optical array is sealed for IP66 rating
- Secondary lens is impact resistant 5/32" tempered glass

INSTALLATION

- JUNCTION BOX: Standard with zinc-plated, quick-mount junction box plate that mounts directly to 4" J-Box
- Mounting plate features a one-piece EPDM gasket on back side of plate to firmly seal fixture to wall surface, forbidding entry of moisture and particulates

INSTALLATION (CONTINUED)

- Fixture attaches by two Allen-head hidden fasteners for tamper resistance
- Optional mounting arrangements utilize a die-cast mounting adaptor to allow for surface conduit and through branch wiring
- Housing is able to hang freely in an open service position for inspection of internal wire connections. Once in service position, the housing shall be able to be removed for service by lifting the assembly up off the rear mounting plate and disconnecting the wiring plugs
- Driver assembly is mounted to a prewired internal tray with quick disconnects for removal

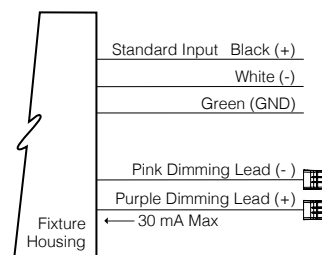
ELECTRICAL

- Drivers are in direct contact with the die-cast aluminum housing across the entire surface area of the widest face for maximum thermal transfer
- "Thermal Shield", primary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers 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
- Luminaires 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 are 0-10V dimming control with a dimming range of 100%-10%. Drivers are U.L. listed. All luminaires shall accept 120-277 volt input and have integral surge protection. "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components

CYPHER™



Cypher Small



ELECTRICAL (CONTINUED)

- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for -20°C ambient environments
- Luminaire are 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

CONTROLS

- Button photocontrol for dusk to dawn energy savings
- PC12 for 120V, PC20 for 208V, PC24 for 240V, PC27 for 277V
- Photocell 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. Photocell adapter shall include an internal twist lock receptacle. Photocell by others

continued on page 3

KEY DATA	
LUMEN RANGE	1,353–2,752
WATTAGE RANGE	17–26
EFFICACY RANGE (LPW)	75–116
WEIGHT	Refer to page 5

ORDERING GUIDE

Example: CY1-15-3K7-1-2D-UNV-BLS-F-RGBW-FPP-PCU-SF

CATALOG #

Series-Output (Base)	CCT-CRI	Model (Light Engine) ¹	Main Distribution (Down)	Secondary Distribution (Up, Sides)	Voltage
CY1-15 15W, 1500 nominal lumens	27K8 2700K, 80CRI	1 DownLight Only	1 IES Type I	1 IES Type I	UNV 120-277V
CY1-25 25W, 2500 nominal lumens	3K7 3000K, 70CRI	2 50/50 Down/Up, Down/Up distributions must match	2 IES Type II	2 IES Type II	
	3K8 3000K, 80CRI	3 90/10 Down/Up	3 IES Type III	3 IES Type III	
	4K7 4000K, 70CRI	4 25/25/25/25 Spit, Down/Up/ Side Distributions must match	4 IES Type IV	4 IES Type IV	
	4K8 4000K, 80CRI	5 70/10/10/10 Spit, Top/Side distributions must match	SP 15° Spot/Column	SP 15° Spot/Column	
	5K7 5000K, 70CRI		WG 60° Wall Graze	WG 60° Wall Graze	
			1D Type 1 Diffused	PB ² Pencil Beam	
			2D Type 2 Diffused	1D Type 1 Diffused	
			3D Type 3 Diffused	2D Type 2 Diffused	
			4D Type 4 Diffused	3D Type 3 Diffused	
				4D Type 4 Diffused	

Base Housing Finish	Fascia Form ¹	Luminous Front ⁴	Fascia Panel ⁵	Control Options	Options
BLS Black Gloss Smooth	F Flat	Blank Standard None	FPP Full Panel Painted	PCU Universal Button Photocell (120-277V)	EM ⁷ Battery Backup Unit -20° C
BLT Black Matte Textured	R Radius/Curved	RGBW RGBW Luminous Front	FPS Full Panel Stainless Steel		SF Single Fuse (120, 277)
DBS Dark Bronze Gloss Smooth	T Triangle/Wedge	LFSW Static White Luminous Front	FPC Full Panel Copper		DF Double Fuse (208, 240)
DBT Dark Bronze Matte Textured	E Rounded/Edge		OPP ⁶ Open Panel Painted		SCB Surface Conduit Box
GTT Graphite Matte Textured	C Circle/Curved		OPS ⁶ Open Panel Stainless Steel		
LGS Light Gray Gloss Smooth	CB Cylinder Balanced		OPC ⁶ Open Panel Copper		
LGT Light Gray Matte Textured	CT Cylinder Tall		4PP ⁶ 4-Square Panel Painted		
PSS Platinum Silver Gloss Smooth	CBM ⁸ Custom Building Material Mount Ghost Fascia		4PS ⁶ 4-Square Panel Stainless Steel		
VGT Verde Green Matte Textured			4PC ⁶ 4-Square Panel Copper		
WHS White Gloss Smooth			PPP Perforated Panel Painted		
WHT White Matte Textured			PPS Perforated Panel Stainless Steel		
Color Options			PPC Perforated Panel Copper		
CC ³ Custom Color					

Notes:

- Consult factory for custom distributions. See Distribution Matrix on page 4 restrictions
- PB distribution is available for 90/10 and 70/10/10/10 models only. Not all combinations are recommended. See Distribution Matrix on page 2 for restrictions.
- Consult factory for custom color, marine and corrosive finish
- RGBW and LFSW luminous fronts are only available with open, four square and perforated fascia panels
- Flat and Radius Fascia forms only. Painted panels by default match base housing finish/color. Consult factory for custom panel finishes.
- Luminous front is required to select the Open Panel and 4-Square Panel fascia panels.
- Battery Backup not available with Triangle and Rounded Edge Fascia Forms.
- Custom Building Material Mount Ghost Fascia option allows the Cypher to blend seamlessly into the building architecture by matching the finish of the architectural background. See page 5 for dimensions and contact factory for additional information.

SPECIFICATIONS (CONTINUED)

CONTROL (CONTINUED)

- Each fixture comes equipment with a dual control driver that supports Bluetooth® operation of individual fixtures or DMX control of an entire system of fixtures.

Bluetooth®:

- Free Bluetooth® Apps are available for Apple iOS and Google Android mobile devices and are downloadable via the Internet at Apple App Store or Google Play.
- Modular wiring harness in the service area provides user access to the dimming circuitry via DMX.

DMX:

- Fully DMX/RDM Compatible
- Utilizes 4 DMX Channels per fixture

DMX MAP

- Start Address – Red
- Start Address +1 – Green
- Start Address +2 – Blue
- Start Address +3 – White

DMX Addressing is performed by using a compatible RDM handheld unit or via the Bluetooth® App.

- Performed by using a compatible RDM handheld unit or via the Bluetooth® App

DMX WIRING COLOR CODE

- Red Wire – DMX +
- Brown Wire – DMX-
- Yellow Wire – Shield/Ground
- DMX termination must be achieved by adding a DMX terminator to the last fixture in a Daisy-Chain. Fixture does not auto terminate.
- Kim Lighting is proud to offer the Pharos Architectural Controls DMX Controllers and Touch screens. See Pharos Spec Sheet for more details.

See the [Pharos® Spec Sheet](#) for more details.

MOBILE APP:

- Mobile App specification in additional information section.
- Mobile App. dimming range from 0% to 100% through the use of Current RGBW app (available on IOS and Android).
- Color selection and adjustment.
- Camera function for color matching.
- Intensity slider for dimming/ramping up.
- Save and rename up to 10 presets.
- Group and rename fixtures.
- Fixture is password protected, refer to instructions to set unique password.

CERTIFICATIONS

- Luminaire is listed with UL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250
- IP66 rated assembly
- IDA approved, 3000K and warmer CCTs only
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- ANSI C136.31-2010 4G Vibration tested and compliant
- Complies with "Americans with Disabilities Act" or "ADA" on select versions for low mounting height applications (fixtures extend maximum of 4 inches from wall for mounting heights of 80 inches or less)
- 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

WARRANTY

- 5 year warranty



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DISTRIBUTION MATRIX

FASCIA FORM	DISTRIBUTION				
	Down Only	50 Down/50 Up	90 Down/10 Up	25/25/25/25 Split	70 Down 10/10/10 Split
	1	2	3	4	5
Window/Options Flat* F	I, II, III, IV, SP, WG	I, II, III, IV, SP, WG	I, II, III, IV, SP, WG	SP/WG SP/WG SP/WG	SP/WG/PB SP/WG/PB I, II, III, IV, SP, WG
Window/Options Radius Curve R	SP/WG	SP/WG SP/WG	SP/WG/PB SP/WG	SP/WG SP/WG SP/WG	SP/WG/PB SP/WG/PB I, II, III, IV, SP, WG
Cylinder Balanced CB	SP/WG	SP/WG SP/WG	SP/WG/PB SP/WG	SP/WG SP/WG SP/WG	SP/WG/PB SP/WG/PB SP/WG
Cylinder Tall CT	I, II, III, IV, SP, WG	SP/WG SP/WG	SP/WG/PB I, II, III, IV, SP, WG	SP/WG SP/WG SP/WG	SP/WG/PB SP/WG/PB I, II, III, IV, SP, WG
Triangle Wedge* T	I, II, III, IV, SP, WG	I, II, III, IV, SP, WG	SP/WG/PB I, II, III, IV, SP, WG		
Rounded Edge* E	I, II, III, IV, SP, WG	I, II, III, IV, SP, WG	SP/WG/PB I, II, III, IV, SP, WG		
Circle/ Curved C	SP, WG	SP, WG SP, WG	SP/WG/PB SP, WG		
Ghost CBM	I, II, III, IV, SP, WG	I, II, III, IV, SP, WG	SP/WG/PB I, II, III, IV, SP, WG	SP/WG SP/WG SP/WG	SP/WG/PB SP/WG/PB I, II, III, IV, SP, WG

* ADA compliant for use in low mounting height applications (80 inches or less)

2 Down/Up distributions must match

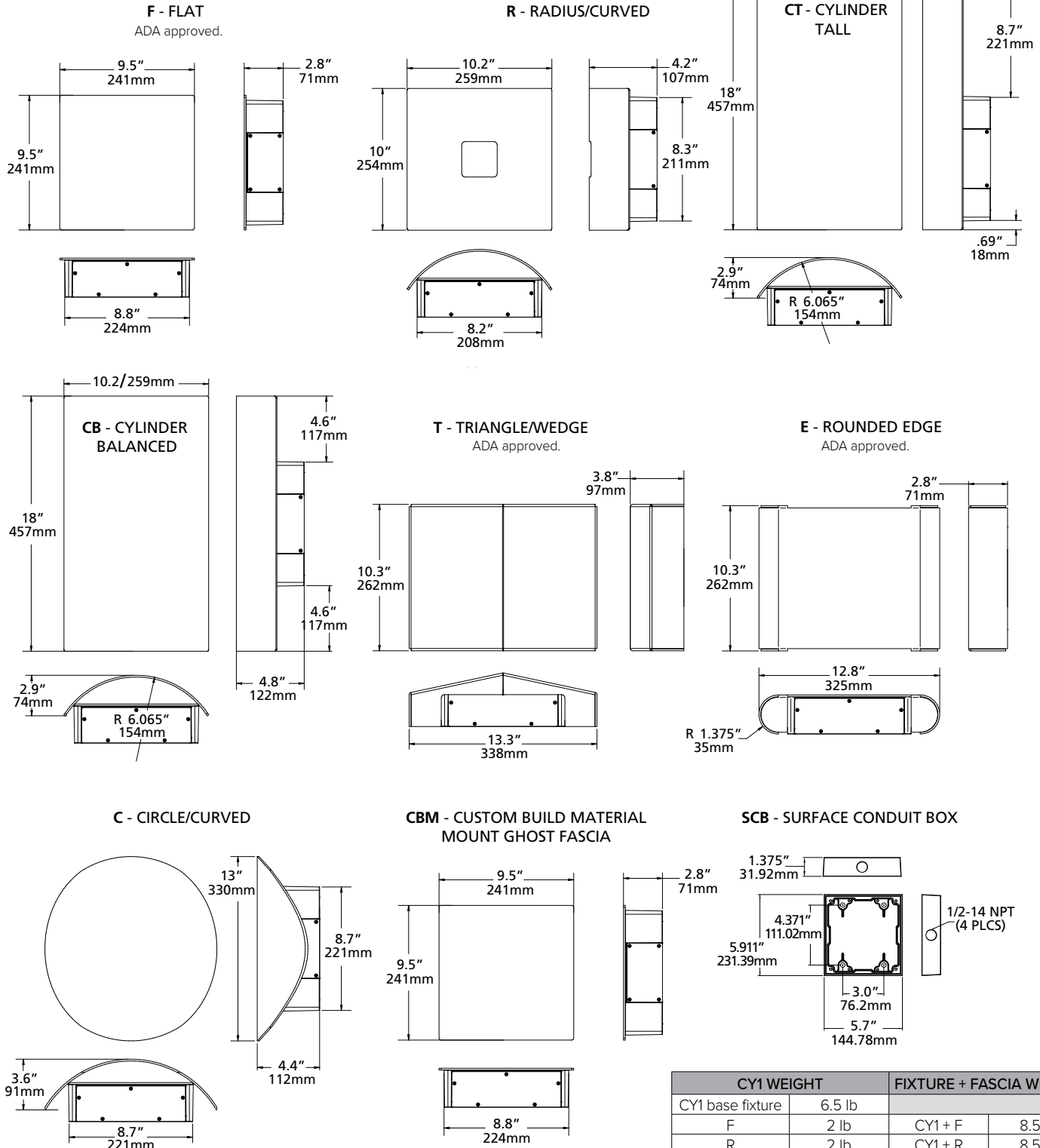
4 Down/Up/Side distributions must match

5 Top/Side distributions must match

Contact factory for custom distributions

Dimensions available on page 5

DIMENSIONS



CY1 WEIGHT		FIXTURE + FASCIA WEIGHT	
CY1 base fixture	6.5 lb		
F	2 lb	CY1 + F	8.5 lb
R	2 lb	CY1 + R	8.5 lb
CB	3 lb	CY1 + CB	9.5 lb
CT	3 lb	CY1 + CT	9.5 lb
T	3 lb	CY1 + T	9.5 lb
E	3 lb	CY1 + E	9.5 lb
C	2 lb	CY1 + C	8.5 lb

DELIVERED LUMENS

Nominal Output (Lm)	System Watts	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
			Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)
				B	U	G			B	U	G			B	U	G	
1,500	17	Type 1	1825	0	0	0	107	1928	0	0	0	113	1923	0	0	0	113
		Type 2	1638	0	0	0	96	1730	0	0	0	102	1726	0	0	0	102
		Type 3	1661	0	0	1	98	1755	0	0	1	103	1750	0	0	1	100
		Type 4	1668	0	0	0	98	1762	0	0	0	104	1757	0	0	0	103
		Wall Graze	1871	1	0	0	110	1976	1	0	0	116	1971	1	0	0	114
		Spot/Column	1701	2	0	0	100	1797	2	0	0	106	1792	2	0	0	103
		Type 1 Diffused	1547	1	0	0	91	1634	1	0	0	96	1629	1	0	0	96
		Type 2 Diffused	1493	1	0	0	88	1577	1	0	0	93	1573	1	0	1	93
		Type 3 Diffused	1353	1	0	0	80	1429	1	0	0	84	1425	1	0	0	84
2,500	26	Type 4 Diffused	1521	1	0	0	89	1607	1	0	0	95	1602	1	0	1	94
		Type 1	2390	0	0	0	92	2524	0	0	0	97	2517	0	0	0	96
		Type 2	2120	1	0	1	82	2239	1	0	1	86	2233	1	0	1	85
		Type 3	2117	1	0	1	80	2236	1	0	1	85	2229	1	0	1	85
		Type 4	2201	1	0	1	85	2325	1	0	1	89	2319	1	0	1	88
		Wall Graze	2605	2	0	0	100	2752	2	0	0	106	2744	2	0	0	104
		Spot/Column	2346	2	0	0	90	2478	2	0	0	95	2471	2	0	0	94
		Type 1 Diffused	2225	1	0	1	86	2350	1	0	1	90	2344	1	0	1	89
		Type 2 Diffused	1958	1	0	1	75	2068	1	0	1	80	2062	1	0	1	79
		Type 3 Diffused	1946	1	0	1	75	2056	1	0	1	79	2050	1	0	1	78
		Type 4 Diffused	2016	1	0	1	78	2129	1	0	1	82	2123	1	0	1	80

ELECTRICAL CHARACTERISTICS

LUMEN PACKAGE	SYSTEM WATTAGE (W)	LINE VOLTAGE		INPUT				MIN. POWER FACTOR	MAX THD (%)	DIMMING RANGE	SOURCE/SINK CURRENT (mA)		ABSOLUTE VOLTAGE RANGE ON 0-10V (+) PURPLE	
		VAC	HZ	120	208	240	277				MIN.	MAX.	MIN.	MAX.
1,500	17	120	50/60	0.1			0.1	>0.9	20	10% to 100%	0 mA	1 mA	0V	10V
2,500	26			0.2			0.1							

TM-21 LIFETIME CALCULATION (500mA)

LUMEN PACKAGE	AMBIENT ENVIRONMENT °C	PROJECTED LUMEN MAINTENANCE (KHRS)					REPORTED L70
		15	25	50	60 (TM-21)	100	
2,500	25	98%	97%	94%	92%	87%	>60Khrs.
	40	95%	93%	89%	87%	80%	

DATE:

PROJECT:

TYPE:

CATALOG NUMBER LOGIC:



*Accommodates up to 2 lens/shielding media.

**120V only.

CATALOG NUMBER LOGIC

Example: CK - LED - TR - x98 - SP - BZW - 9 - 11 - A - INC - 120

MATERIAL

Aluminum

SERIES

CK - Catskill

SOURCE

LED - Chip on Board (COB) Technology

HOUSING

TR - Integral Driver

LED TYPE

x98 - 13W/2700K/80CRI	x101 - 13W/2700K/90CRI	✓
x99 - 13W/3000K/80CRI	x102 - 13W/3000K/90CRI	✓
x103 - 13W/3500K/80CRI	x104 - 13W/3500K/90CRI	✓
x100 - 13W/4000K/80CRI	x121 - 13W/4000K/90CRI	✓
x122 - 21W/2700K/80CRI	x126 - 21W/2700K/90CRI	✓
x123 - 21W/3000K/80CRI	x127 - 21W/3000K/90CRI	✓
x124 - 21W/3500K/80CRI	x128 - 21W/3500K/90CRI	✓
x125 - 21W/4000K/80CRI	x129 - 21W/4000K/90CRI	✓

OPTICS

SP - Spot (17°) FL - Flood (45°) WFL - Wide Flood (55°)

FINISH (See page 2 for full-color swatches)

Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)

Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WIR) *

Also available in RAL Finishes

LENS TYPE*

9 - Clear (Standard)

12 - Soft Focus 13 - Rectilinear

SHIELDING*

11 - Honeycomb Baffle

CAP STYLE

A - 45°

B - 90°

C - Flush

D - 45° Less Weephole (Downward Aiming Only)

E - 90° Less Weephole (Downward Aiming Only)

CONTROL

ELV - Dimming Driver (For use with Electronic Low Voltage Dimmer)**

INC - Dimming Driver (For use with Incandescent Dimmer)**

010 - 0-10V Dimming Driver (Dimming ≤3-100%)

INPUT VOLTAGE

120 - 120 VAC

277 - 277 VAC



TITLE 24, JA8 COMPLIANT

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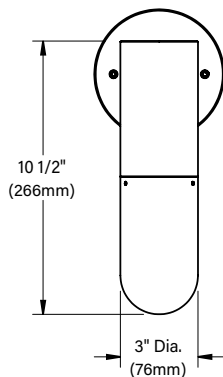
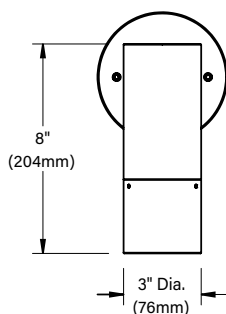
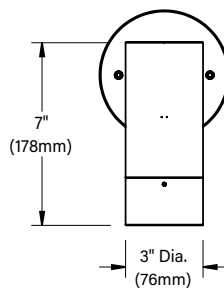
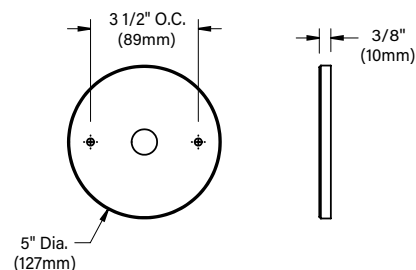
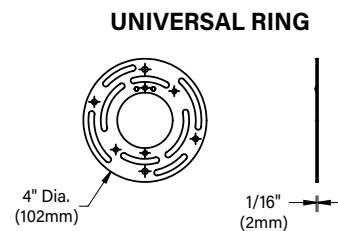
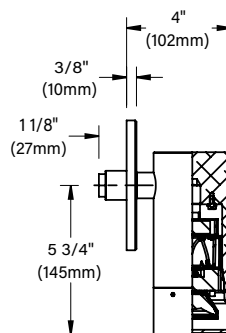
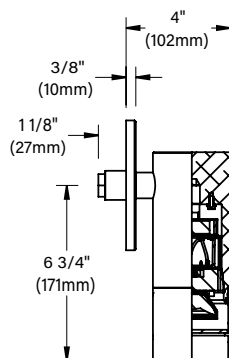
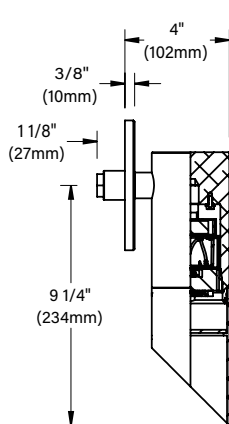
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12/06/2022 SKU-1371
SUB-2822-00

DATE:

PROJECT:

TYPE:

**"A/D" CAP****"B/E" CAP****"C" CAP****CANOPY DETAIL****UNIVERSAL RING****STANDARD FINISHES**

[Click Here](#) to view larger, full-color swatches of all available finishes on our website.

PREMIUM FINISHES**B-K LIGHTING****MADE IN THE USA**559.438.5800 | INFO@BKLIGHTING.COM | BKLIGHTING.COM

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12/06/2022 SKU-1371
SUB-2822-00

DATE:	PROJECT:	TYPE:
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Accessories (Configure separately)

Drivers (Configure separately)

SPECIFICATIONS

ELECTRICAL	WATTAGE	13W or 21W LED
	LED	COB technology and modular design with electrical quick disconnects allow for easy field upgrade and maintenance. LM-80 certified. Title 24, JA8 compliant options available. Minimum 50,000 hour rated life at 70% of initial lumens (L70).
	COLOR MANAGEMENT	COB technology delivers natural white light. Exact color point conformity exceeds ANSI C78.377 standard. Module exceeds 80 CRI (RA>80, R9.16). Color point uniformity 2 SDCM color control for 2700K-4000K CCT.
	WIRING	INC/ELV Wiring: 3 Wire, 18GA, Stranded, XLPE, 125°C, 300V, UL3265 rated wire 0-10 Wiring: 5 Wire, 16GA, Stranded, TPE, 105°C, 300V, SJTOW, Cable Master, SJTOW-165-BLK-GVCC
	DRIVER	Incandescent/ELV Control Option Driver: Dimming driver for use with standard incandescent or electronic low voltage dimmers (10-100% range), 120VAC only. 0-10 Control Option Driver: Dimming driver for use with standard 0-10V dimmers (≤3-100% dim. range), 120-277VAC. With [1] 440mA (13W) / 700mA (21W). 50/60Hz. >0.9 Power Factor, (INC/ELV)10.0A/(0-10) <250mA in-rush current, .20%THD (nominal at 120VAC full load). Output over-voltage, overcurrent, and short circuit protection with auto recovery. Class 2 power supply; FCC47CFR Part 15 Compliant Class B (120VAC)/Class A (277VAC).
PHYSICAL	MATERIALS	Furnished in copper-free aluminum (6061-T6).
	BODY	Unibody design with enclosed, water-proof wireway and integral heat sink is fully machined from solid billet. Anti-condensation and corrosion vent equalizes fixture pressure and eliminates potential for damage to internal components.
	CAP	Fully machined and accommodates two (2) lens or louver media.
	LENS	Shock-resistant, tempered, 1/8" thick soda lime glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment.
	INSTALLATION	5" dia., machined canopy with stainless steel universal mounting ring permits mounting to 4" octagonal junction box (by others).
	OPTICS	Interchangeable optics permit changes in the field.
	HARDWARE	Tamper-resistant, stainless steel hardware. 360HD hardware is additionally black oxide treated for corrosion resistance.
	FINISH	StarGuard, our 15-stage chromate-free process, cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating, and is RoHS compliant.
	WARRANTY	5-year limited warranty.
	CERTIFICATION & LISTING	UL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHS compliant components. Suitable for indoor or outdoor use. IP66 Rated. Made in the USA with sustainable processes.



TITLE 24, JA8



RoHS



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12/06/2022 SKU-1371
SUB-2822-00

LAMP & DRIVER DATA (page 1 of 2)

DATE: PROJECT: TYPE:

DRIVER ELECTRICAL DATA

Type	AC Input Range	Frequency Hz	Power Factor At Full Load (Efficiency)	THD	InRush Current	Operating Current	Operation Ambient Temperature	Dimmer Type	Dimmer Range
Integral	120VAC	50/60	> 0.9	20%	10A	440mA (13W)/700mA (21W)	-30° C ~ 70°C	TRIAC/ELV	1-100%
Integral	105-300VAC	50/60	> 0.9	20%	<250mA	440mA (13W)/700mA (21W)	-30° C ~ 90°C	0-10	≤3-100%

LM79 DATA

OPTICAL DATA

BK No.	CCT (Typ.)	CRI (Typ.)	Input Watts (Typ.)	L70 Data	Angle	CBCP	Del. Lumens	Muliplier
x98	2700	80	13	50,000	17	6,480	829	0.92
x98	2700	80	13	50,000	45	1,773	1,041	0.92
x98	2700	80	13	50,000	55	1,478	1,180	0.92
x99	3000	80	13	50,000	17	6,796	869	0.96
x99	3000	80	13	50,000	45	1,860	1,091	0.96
x99	3000	80	13	50,000	55	1,550	1,237	0.96
x103	3500	80	13	50,000	17	6,685	855	0.95
x103	3500	80	13	50,000	45	1,829	1,074	0.95
x103	3500	80	13	50,000	55	1,525	1,217	0.95
x100	4000	80	13	50,000	17	7,059	903	1.00
x100	4000	80	13	50,000	45	1,931	1,134	1.00
x100	4000	80	13	50,000	55	1,610	1,285	1.00
x101	2700	90	13	50,000	17	4,486	574	0.69
x101	2700	90	13	50,000	45	1,228	720	0.69
x101	2700	90	13	50,000	55	1,023	817	0.69
x102	3000	90	13	50,000	17	4,936	631	0.73
x102	3000	90	13	50,000	45	1,350	793	0.73
x102	3000	90	13	50,000	55	1,126	899	0.73
x104	3500	90	13	50,000	17	4,775	611	0.71
x104	3500	90	13	50,000	45	1,307	767	0.71
x104	3500	90	13	50,000	55	1,089	869	0.71
x121	4000	90	13	50,000	17	5,324	681	0.75
x121	4000	90	13	50,000	45	1,457	855	0.75
x121	4000	90	13	50,000	55	1,214	969	0.75
x122	2700	80	21	50,000	17	9,040	1,208	0.87
x122	2700	80	21	50,000	45	2,437	1,359	0.87
x122	2700	80	21	50,000	55	1,876	1,416	0.87
x123	3000	80	21	50,000	17	10,030	1,341	0.96
x123	3000	80	21	50,000	45	2,704	1,508	0.96
x123	3000	80	21	50,000	55	2,082	1,571	0.96
x124	3500	80	21	50,000	17	8,496	1,136	0.81
x124	3500	80	21	50,000	45	2,290	1,277	0.81
x124	3500	80	21	50,000	55	1,763	1,331	0.81
x125	4000	80	21	50,000	17	10,431	1,394	1.00
x125	4000	80	21	50,000	45	2,812	1,568	1.00
x125	4000	80	21	50,000	55	2,165	1,634	1.00

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LAMP & DRIVER DATA (page 2 of 2)

DATE:

PROJECT:

TYPE:

LM79 DATA				OPTICAL DATA				
BK No.	CCT (Typ.)	CRI (Typ.)	Input Watts (Typ.)	L70 Data	Angle	CBCP	Del. Lumens	Muliplier
x126	2700	90	21	50,000	17	6,120	818	0.68
x126	2700	90	21	50,000	45	1,650	920	0.68
x126	2700	90	21	50,000	55	1,270	959	0.68
x127	3000	90	21	50,000	17	7,535	1,007	0.75
x127	3000	90	21	50,000	45	2,031	1,133	0.75
x127	3000	90	21	50,000	55	1,564	1,180	0.75
x128	3500	90	21	50,000	17	5,406	723	0.64
x128	3500	90	21	50,000	45	1,457	813	0.64
x128	3500	90	21	50,000	55	1,225	847	0.64
x129	4000	90	21	50,000	17	8,148	1,089	0.78
x129	4000	90	21	50,000	45	2,196	1,225	0.78
x129	4000	90	21	50,000	55	1,691	1,277	0.78

OPTICS	
Optic	Angle
Spot w/ 13 Accy	16 x 50
Spot	17°
Flood	45°
Wide Flood	55°

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Attachment B

June 20, 2023

Maya Balassa
Planner
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: Casco Street Apartments - Setback Narrative

Maya,

We are requesting an increased setback for a portion of the facade along Casco Street. Per section 7.5.5.F.4 of the Design Manual the proposed design meets these requirements as follows:

- The setback of the facade provides a viable public space that is accessible to the public, this space is a street level amenity that will add to and support pedestrian activity on Casco Street. The plaza will be adjacent to the first floor retail space which is proposed to be a cafe space with outdoor seating.
- The setback does not detract from the prevailing street wall character of Casco street, the existing building context and massing steps in and out along the street. The proposed design has a landscape (hardscape wall at the street edge) that is further reinforced with street trees along the street wall edge.
- The proposed plaza does not detract from existing public space in the neighborhood and does not diminish the viability of nearby public spaces.
- The setback provides a plaza that is high quality space which will have wonderful natural light, high quality pavers, plantings and is adjacent to a facade with a high level of transparency to the cafe space.

Sincerely,



Ryan Senatore, AIA LEED AP

Principal

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

25 Casco Street

Transportation Demand Management Plan

In accordance with Section 17.3 of the Technical Manual the following information is provided,

Project Description: The development at 25 Casco Street involves a five-story mixed use development. The ground floor will contain a single small commercial suite and two living units and floors 2-5 will each contain 13 apartment units for a total of fifty-four (54) affordable residential units. The property is currently a private “Pay for” parking lot that will be discontinued upon the commencement of construction. The site is within the B-3 zoning district and parking is not specifically required. There are no new parking spaces to be used by residents or commercial tenants although some existing spaces will be restored upon the completion of construction, at ground level within the building area. This TDM has been prepared to qualify for the transit-proximate categorical exemption specified in Table 19-8 of the Land Use Code.

Part 17.3.1 Transportation Narrative

The proposed development benefits from proximity to nearby transit services including the Portland METRO Route 1 Congress Street and Route 8 Peninsula Loop that traverses along Congress and is less than ¼ mile distance from the site. The site is also within ¼ mile walking distance of Monument Square and the METRO transfer center hub at that location. The site development includes fifty-four residential units, and each unit occupant will need to secure parking as needed in nearby parking facilities. Nearby parking garages include the Brown Street Garage (adjacent), Monument Square Garage (300 LF), Elm Street Garage (1,500 LF), and Portland Public Market garage (1,100 LF). The Commercial Suite tenant and visitors will have use of on street parking on Casco Street and within multiple “pay for” parking lots within surrounding streets.

Residents will have access to various pedestrian and bicycle routes in the project vicinity including the Bayside trail that extends to the Portland Transportation Center as well as the East End Trail that connects to Back Cove and points beyond. METRO Transit service also links to the METRO Breez service at Congress Street and that offers service to Yarmouth, Freeport, and Brunswick.



METRO Route 8



METRO Route 1

The development will include signage in the common ground level residential corridor identifying nearby public transit locations as well as mapping for pedestrian/bicycle routes on the peninsula. The mapping will also identify nearby parking structures within ½ mile of the development site. It is assumed that residents will quickly familiarize themselves with nearby parking and access routes for their use and enjoyment. There will be a bike room in the building for storage of up to 20 bikes and an additional 4 bike hitches outside for another 8 bikes.

As the development will displace approximately 18 parking spaces, it will reduce traffic volumes directly to the site. Some offsetting traffic generation is expected due to the development land use, however this is not expected to significantly impact the surrounding street system or vehicular and pedestrian access conditions. By developing the proposed building, it is expected that vehicular use of the Brown Street Garage may increase.

17.3.2 Identify a TDM Coordinator

Given the small size of the development a designated TDM coordinator is not proposed. The applicant and their property management team will be responsible for building maintenance as well as to assure that site features including bike racks are maintained and available. The applicant owns multiple properties on the Peninsula and the Portland area in general, and is therefore very familiar with the requirements for maintenance, working with City officials and related issues.

Parts 17.3.3 thru 17.3.6

The project's future trip generation is expected to be less than 10 vehicles per peak hour for the residential and less than 10 trips for the small commercial suite occupant of the ground level retail space. The ground level space will not be occupied by a sit-down restaurant or similar tenant. The commercial tenant will be much like other retailers in the Old Port that rely on existing foot traffic and visitors including tourists and residents alike. Due to the small impact of traffic associated with the development, targets for TDM traffic reductions and related TDM objectives are quite minor. It's simply expected that this infill development will blend harmoniously within the surrounding Congress Street/downtown activities and land use and may benefit from the general proximity of transit, parking, and multi-modal transportation options available on the Portland Peninsula.



Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

July 6, 2023

Stephen Bushey
Gorrill Palmer
300 Southborough Drive
Suite 200
Scarborough, ME 04106

Re: 25 Casco St, PO
Ability to Serve with PWD Water

Dear Mr. Bushey:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on May 3, 2023. Based on the information provided per the approved-as-noted plans dated July 6, 2023, 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 and is valid for eighteen (18) months after the date of issue. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 4-inch DI domestic service with a 1.5-inch meter may be installed from the water main in Casco Street. The service should enter through the property's frontage on Casco Street at least 10-feet from any side property lines. An approved testable double-check backflow prevention device must be installed on the service line directly after the meter prior to service activation.
- A new 6-inch DI fire service may be installed from the water main in Casco Street. The service should enter through the property's frontage on Casco Street at least 10-feet from any side property lines. An approved testable double-check backflow prevention device must be installed on the service line directly before the sprinkler riser prior to service activation.
- The Portland Water District acknowledges all occupants of a multi-unit building as customers of the District. As such, all tenants of the building must be able to access the water meter. The method of access to the meter by the tenants is at the discretion of the owner of the building, provided that the tenants can freely access the meter in accordance with the Portland Water District Terms & Conditions.
- 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.
- The Portland Water District does not manage sewer collection in this area.

Prior to construction, the owner or contractor will need to complete a Service Application and pay all necessary fees for each proposed service. When the project is ready for construction, an Application for each service can be requested by contacting the MEANS Group at MEANS@pwd.org or 207-774-5961 ext. 3199. Once a completed Application has been submitted with payment, please allow seven (7) days for processing.

Existing Site Service

According to District records, the project site does not currently have existing water service. It is the District's understanding the project site is a future parcel known as 25 Casco Street to be created by the division of the existing parcel known as 48 Brown Street.

Water System Characteristics

According to District records, there is an 8-inch diameter DI water main in Casco Street and a public fire hydrant located approximately 150 feet from the site. The estimated static pressure in the area is 77 psi.

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

48 Brown Street 1 view

Subscribe ☐

bollie3@maine.rr.com <bollie3@maine.rr.c...
to planningboard@portlandmaine.gov

May 27, 2023, 2:24:21 PM (2 days
ago)



Good afternoon.

After looking at the plans, I have the following comments and opinions:

1. Too many colors and different finishes on front of building. Way too busy for me; it also dates the building since so many recent product and new stuff look very similar. The green, mustard and rust colors don't excite me.
2. Community Room is a good idea.
3. Need a screen or wall on the roof to hide the heat pump units. Otherwise, looks messy. A wall will also help to keep the coils clean, reducing the cleaning frequency.

Are these condos or apartment rentals?

Regards,

Bollie Bollenbach

(owner of 104 Oak Street building)

George Rheault <george.rheault@gmail.com>

10:00 AM (1 hour ago)



to Planning Board, Maya Balassa, Christine Grimando

Planning staff continue to ignore the plain language of our Land Use Code (as well as our Planning Board members, which includes active members of the Maine Bar) with respect to how to apply the "inclusionary zoning" requirements of Section 18.2.3 (city ordinance tasked with "ensuring workforce housing").

Part (B) of Section 18.2.3 is very straightforward:

"B. Applicability. This subsection ***SHALL APPLY*** to development projects that create ten or more net new dwelling units for rent or for sale through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a nonresidential use to residential use, or any combination of these elements, ***WITH THE EXCEPTION*** that 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, ***SHALL BE*** considered ***EXEMPT***. *[emphasis added]*

For some strange reason, the Planning staff continue to refuse to acknowledge that this language makes a LIHTC project like 25 Casco Street categorically exempt under the above language.

The language of Part (B) was deliberately included in the ReCODE PHASE 1 revisions approved by our City Council in November 2020 (which were proposed unilaterally by Planning staff outside of any referendum or City Council pressure). See attachment.

The applicant has been very clear that the project is an affordable housing initiative transparently seeking public financing requiring affordability restrictions INCLUDING tax increment financing (request currently pending before the City Council, with the second reading of it expected to be heard at its next meeting in August - see below for specific agenda information) as well as MaineHousing's 9% LIHTC program. There is no question therefore that it is explicitly EXEMPT from the application of Section 18.2.3 (and not because it is meeting the 25% IZ requirement by virtue of the affordability restrictions baked into the public financing requirements).

- **Order 6-23/24** Designating the 25 Casco Street Affordable Housing Development and Tax Increment Financing District and Adopting the Municipal Development 12 Program for the District ***First Read Only***
- **Order 7-23/24** Approving the Credit Enhancement Agreement with Equality Community LP ***First Read Only***

Yet, this is how the staff memo during the June 13th workshop characterized this project with respect to the IZ compliance (completely ignoring the second half of Part (B)):

A. INCLUSIONARY ZONING CONDITIONAL USE (Section 18.2.3)

The proposed development has been reviewed by Staff for conformance with the standards of Portland's Land Use Code. Staff comments are listed below.

1. Ensuring Workforce Housing

Projects proposing 10 or more new residential units are required by Article 18.2.3, minimum of 25% of all units as workforce housing. The applicant is proposing to provide workforce housing units on-site. The proposed number of units meets the 25% inclusion requirement.

The analysis is NOT that this project "meets the 25% inclusionary zoning requirement"; it is that it is categorically exempt under our Land Use Code and the IZ conditional use requirement is irrelevant to this project. This qualitative difference may not matter to some, but it is an important distinction, especially since Planning staff during ReCode Phase 1 thought it was important to create the exemption language.

So, please stop muddling this point as it is very confusing to the public and perhaps even to the applicant.



OVERVIEW OF RECODE EDITS (11/12/20)

Article	ReCode Section/Subsection/ Other	Existing Code Reference (if relevant)	Change
18 Housing	18	Article III, Div. 29, 30 and 31, Article VII, and Article XII	Consolidated housing-related ordinances, including housing replacement, housing trust fund, condominium conversion, and relocation of displaced residents.
	18	Article III, Div. 29, 30 and 31 and Article VII	Relocated general definitions (e.g. 'low income household,' 'low income unit for rent') to Article 3.
	18	Article III, Div. 29	Integrated definitions with specific applications into text (e.g. 'loss of dwelling unit,' 'dwelling unit,' 'hotel project,' 'tenant,' 'developer.').
	18.1.3, 18.2.5	Article III, Divs. 29 & 30	Eliminated effective date/retroactive clauses that are no longer applicable (e.g. reference to effective date of exemptions clause in housing replacement, retroactive clause for hotel IZ).
	18.1.4	Article III, Div. 29	Modified references to administrative authorization review for housing replacement to align with changes in site plan.
	18.2.3	Article III, Div. 30	Added language to explicitly exempt projects that are otherwise required to include affordability restrictions from IZ provisions.
	18.2.4	Article III, Div. 30	Clarified language regarding dimensional bonuses available to IZ projects.
	18.2.5	Article III, Div. 30	Updated hotel references to align with revised hotel-related terms in Article 6.
	18.3.2	Article III, Div. 31	Added in-lieu fees as source for Housing Trust Fund.
	18.5.4	Article XII	Incorporated Council-adopted payment provisions into text.

George Rheault <george.rheault@gmail.com>

10:16 AM (1 hour ago)



to Planning Board, Maya Balassa, Christine Grimando

See below. I am forwarding my June 2023 comments before the City Council's Housing & Economic Development Committee as they are pertinent to the Planning Board review of this application.

A few points to highlight:

1.) The original ANEW Development concept for this site at least showed us the new building with some sense of its impact on the adjacent Ambassador apartments (37 Casco Street). It is amazing that the Planning staff and Planning Board are so uninterested in the LEFT side of the building's impacts yet so intently curious about its impacts on the RIGHT side of the new building.

2.) This project helps highlight how hypocritical our Planning Board is with respect to artificial restrictions on housing production in our community. While they rail regularly about the 25% IZ requirement enacted by referendum in November 2020 as inhibiting large-scale housing creation, they are completely silent (publicly and behind the scenes with legislators, both state and local) about the cost caps at the Maine State Housing Authority that make it virtually impossible to take advantage of expansive zoning even when it is available such as the case here for this site location.

Are all these unused "air rights" transferable to another site nearby? Is the illusion that Portland allows tall buildings going to continue to be promoted when in fact, except in the case of politically savvy operators like Redfern, it is virtually impossible to do much beyond 5 stories after running the gauntlet of historic preservation, stormwater requirements, made-up zoning impediments and building code hindrances, all of which add costs that make it infeasible for many projects to pencil out unless they get lucrative LIHTC deals.

3.) The mess of 25 Casco Street should be a case study to directly inform ReCode Phase II. Instead ReCode Phase II is already set up to fail our community because our community is addicted to having a veto right over any conceivable project that is not a single-family home, just in case someone important wants to stop it (it doesn't matter if someone unimportant wants to stop it - they will be ignored). And what we end up with are a handful of new housing opportunities every 3-5 years, value-engineered as bland, "I guess it is better (barely) than a parking lot" compromises and containing residents whose limited incomes afford them little ability to add greatly to the life of downtown and instead often inhibit downtown vitality because of the lack of social services available to them to overcome the existing conditions they arrive with and their often alarming social disconnection accumulated up to this point in their lives.

But at least Kevin Bunker gets a pay day!

----- Forwarded message -----

From: **George Rheault** <george.rheault@gmail.com>

Date: Mon, Jun 19, 2023 at 11:59 AM

Subject: Public Comment - 15 Casco Street TIF Request: Once Again Portland is Subsidizing Under-Building

To: <edd@portlandmaine.gov>, Pious Ali <pali@portlandmaine.gov>, Roberto Rodríguez <rrodriguez@portlandmaine.gov>, Regina Phillips <rphillips@portlandmaine.gov>, Mark Dion <mdion@portlandmaine.gov>

Cc: Kate Snyder <ksnyder@portlandmaine.gov>, April Fournier <afournier@portlandmaine.gov>, Anna Trevororrow <atrevorrow@portlandmaine.gov>, Victoria Pelletier <vpelletier@portlandmaine.gov>, Andrew Zarro <Azarro@portlandmaine.gov>

1. POSTPONE ACTION

The HECD Committee should postpone action on the request for an Affordable Housing TIF for the 18 Casco Street project.

2. CLARIFY DEVELOPER TEAM & PROJECT HISTORY

To begin with, the actual developer here is not being correctly identified: Developers Collaborative (DC) is the "boots-on-the-ground" developer here and the main beneficiary of the funds flow here (including the all-important developer's fee and possible ongoing management/tax compliance fees).

DC is of course the alter ego of Kevin Bunker & Family famous for his political connections to Portland City Hall, meticulously cultivated over many years, and always available to give cover to our City Council when they badly need press releases to look like they are doing something when in reality they are mostly sitting on their hands (regarding the housing crisis among many other things).

ANew Development, a/k/a Ethan Boxer Macomber, was initially in the driver's seat here, but apparently Mr. Boxer Macomber has either given up completely or is still somehow involved but taking second chair to Team Bunker. See the bottom of this email for some (apparently now dated) information about ANew's involvement in 18 Casco Street that is available at this link: <https://www.anew-development.com/Properties/equality-community-center/> The role of ANew, and their architect partner, should be clarified - are they still involved here or not - and why others are stepping into their shoes and why (particularly if those entities cannot see a path forward here, the public deserves a full understanding why others CAN make this project work and how City Hall is helping to grease the wheels here). Ed Gardner, the owner of the overall parcel prior to subdivision (511 Congress Street office complex, Arts District Garage, and 18 Casco Street bank ATM drive-thru & parking lot) also stands to benefit here and that should be drawn out before the public is asked to provide a massive subsidy here.

Finally, who EXACTLY stands behind the management entity named in the project details: "C&C Realty Management" and what is their experience with long term management of low-income housing tax credit communities and why should the City Council entrust them with the ongoing management of this TIF project?

3. WHY SHOULD THE CITY WASTE A CITY SUBSIDY ON A BUILDING THAT IS ONLY USING 27.3% OF THE ALLOWED HEIGHT FOR THIS ZONE?

Planning Board materials noted this structure is planned to be 57.25 feet, despite being in a zone that would allow a building as tall as 210 feet.

Why should the public PAY to underbuild this parcel so severely? This is FAR WORSE than the under-building at 83 Middle Street, where the City also PAID to get LESS HOUSING.

Instead the City should invite representatives of MaineHousing to the Committee to explain why LIHTC projects cannot do more with sites like these and why we should NOT waste city subsidies on such opportunities.

EQUALITY COMMUNITY CENTER



In 2016, five distinct Portland-based, LGBTQ+ oriented non-profits came together under one roof to form a safe and collaborative work place for organizations providing services to the LGBTQ+ community. This new collaborative, **The Equality Community Center (ECC)**, is currently housed in an office space leased by the ECC at 511 Congress Street in Portland. Current participating ECC organizations currently include Equality Maine, GLSEN, Sage Maine, PFLAG, and Maine TransNet, and Pride Portland

The initial coming together of these organizations represents the first stage of the Equality Community Center's long-term vision to develop and own a commercial property where the ECC can strengthen and expand its service to the LGBTQ+ community. To that end, the next stage in the evolution of the Equality Community Center will be the development of a newly constructed, mixed-use building in downtown Portland (the "Project"). The ECC is currently working with Portland-based real estate developer Anew Development and the architecture firm of **Bild Architecture** to advance the ECC Building Project.

A highly viable project site has been secured in the vicinity of 23-25 Casco Street and a preliminary Project design concept has been created. The Project concept is a 5-story, approximately 40,000 square foot building. The ground floor houses Center and retail space, approximately 20 parking spaces, and lobbies and other spaces ancillary to upper floor uses. The 2nd floor has been designed as flex office spaces to house the existing organizations of the ECC as well as other area non-profits operating in the civil rights and social justice arena. Finally, floors 3-5 will house between 27 and 30 residential apartments allowing the ECC to serve the housing needs of the communities they serve.

The total development cost of the ECC Building Project is estimated at \$10MM. The ECC and Anew will finance the Project using a combination of private bank financing, owner equity raised through a

Highlights

Mixed-Use; Retail, Offices
Housing
Arts District, Portland, Ma
New Construction
Total Development Cost e
\$16MM

community capital campaign, and private investment capital which may be enhanced by the Project being structured as a qualified Opportunity Zone fund.

Construction is targeted to commence in the Spring of 2021 and wrap up in the Spring of 2022.

U:\4043 54 Unit Apartment Casco Street - Portland\Z - CAD\DWG\4043-COVER.dwg 6/16/2023 4:21 PM

PROJECT PARCEL SITE		
ZONING: B3 DOWNTOWN ZONING DISTRICT		
PORTLAND TAX ASSESSOR'S MAP AND LOT NUMBERS		
MAP	BLOCK	LOT
37	D	004

OWNER:
Ocean Gate LLC
511 CONGRESS STREET
PORTLAND, ME 04101
ATTN: EDMUND GARDNER

APPLICANT:
Developers Collaborative Predevelopment, LLC
631 STEVENS AVENUE, SUITE 203
PORTLAND, ME 04103
ATTN: KEVIN BUNKER / LAURA READING

CO-APPLICANT:
Equality Community Limited Partnership
15 CASCO STREET
PORTLAND, ME 04101
ATTN: ED GARDNER, CHAIR

C.C.R.D. BOOK 31452, PAGE 305

REFERENCE PLAN:
1. "BOUNDARY SURVEY AND LOT SPLIT ON CASCO STREET, CUMBERLAND STREET, & BROWN STREET, PORTLAND, MAINE, MADE FOR ANEW DEVELOPMENT, 17 CHESTNUT STREET, PORTLAND, MAINE 04101", BY OWEN HASKELL, INC., DATE JANUARY 14, 2020.

INDEX

C-1.0	COVER SHEET
C-1.1	GENERAL NOTES & LEGEND
C-1.2	BOUNDARY & EXISTING CONDITIONS SURVEY (BY OWEN HASKELL)
C-1.3	LOT DIVISION PLAN
C-2.0	EXISTING CONDITIONS & REMOVALS PLAN
C-3.0	SITE LAYOUT & UTILITY PLAN
C-4.0	GRADING, DRAINAGE & EROSION CONTROL PLAN
C-5.0	SITE & MISCELLANEOUS DETAILS
C-5.1	SITE & MISCELLANEOUS DETAILS
C-5.2	SITE & MISCELLANEOUS DETAILS
C-6.0	SITE SECTIONS
L-1.0	LANDSCAPE PLAN (ACETO LANDSCAPE ARCHITECTS)
P-1.0	SITE LIGHTING / PHOTOMETRICS PLAN (SWANEY LIGHTING)

Stephen R. Bushey

I HEREBY ACKNOWLEDGE THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MAINE AND THAT I AM COMPETENT TO PREPARE THIS DOCUMENT.

UTILITIES

WATER:
PORTLAND WATER DISTRICT
225 DOUGLASS STREET
P.O. BOX 3553
PORTLAND, MAINE 04104
207.761.8310
CONTACT: ROBERT BARTELS
rbartels@pwd.org

SEWER:
CITY OF PORTLAND
PUBLIC SERVICES DIVISION
212 CANCO ROAD
PORTLAND, MAINE 04103
207.874.8840
CONTACT: KEITH GRAY / BRAD ROLAND

ELECTRIC:
CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, MAINE 04103
207.842.2367
CONTACT: JAMIE COUGH / PAUL DUPERRE

TELEPHONE:
CONSOLIDATED COMMUNICATIONS
5 DAVIS HILL FARM ROAD
PORTLAND, MAINE 04103
207.797.1866
CONTACT: PATRICK MORRISON

NATURAL GAS:
NORTHERN UTILITIES / UNITIL
376 RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE 04103
207.541.2536
CONTACT: BRIDGET HARMON
harmon@unitil.com

CABLE TV:
TIME WARNER CABLE / SPECTRUM
115 JOHNSON ROAD
PORTLAND, MAINE 04102
207.253.2324
CONTACT: MARK PELLETIER

DIG SAFE:
CALL BEFORE YOU DIG
DIAL 811 (AT LEAST 72 HRS IN ADVANCE)

LOCAL
MAJOR SITE PLAN APPLICATION

BUILDING AND DEMOLITION PERMITS

STREET OPENING PERMIT

PERMITS / APPROVALS

GOVERNING BODY
CITY OF PORTLAND PLANNING AUTHORITY
CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101
207.874.8719
CONTACT: MATT GROOMS / MAYA BALASSA

CITY OF PORTLAND CODE ENFORCEMENT OFFICE
CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101
207.874.8703

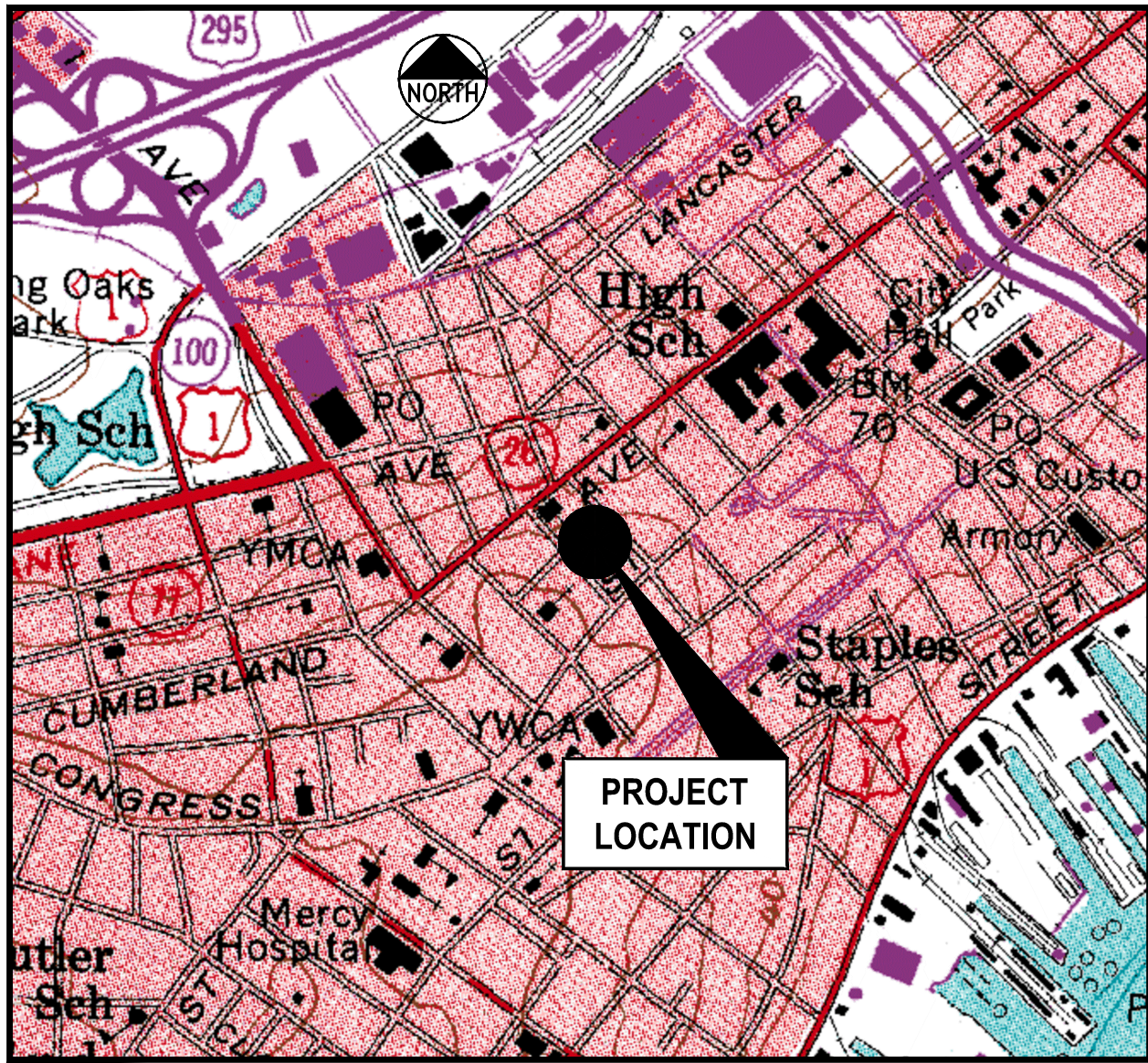
CITY OF PORTLAND PUBLIC SERVICES DIVISION
212 CANCO ROAD
PORTLAND, MAINE 04103
207.874.8801

STATUS
FINAL PLAN SUBMISSION: JUNE 19, 2023

TO BE FILED PRIOR TO CONSTRUCTION BY CONTRACTOR

TO BE FILED PRIOR TO CONSTRUCTION BY CONTRACTOR

ALL PERMITS ARE ANTICIPATED TO HAVE CONDITIONS ATTENDANT WITH THEIR APPROVAL. THE CONTRACTOR SHALL REVIEW ALL PERMITS AND THE CONDITIONS ATTENDANT WITH APPROVALS PRIOR TO THE START OF THE WORK. UNLESS OTHERWISE STIPULATED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO COMPLY AND FULFILL ALL CONDITIONS OF APPROVAL.



LOCATION MAP
N.T.S.

CONSULTANT LIST

CIVIL ENGINEER:
Gorrill Palmer Consulting Engineers, Inc.
300 SOUTHBOROUGH DRIVE, SUITE 200
SOUTH PORTLAND, MAINE 04106
207.772.2515
ATTN: STEVE BUSHEY
sbushy@gorrillpalmer.com

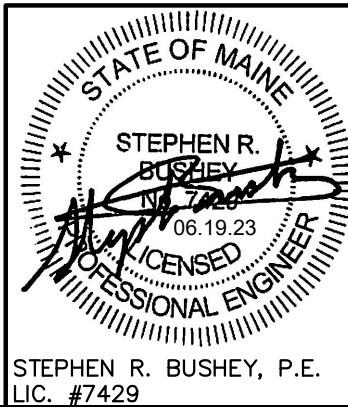
SURVEYOR:
Owen Haskell, Inc.
390 U.S. ROUTE 1, UNIT 10
FALMOUTH, ME 04105
207.774.0424
ATTN: SAMUEL D. GLIDDEN, P.L.S.
www.owenhaskell.com

GEOTECHNICAL:
Summit Geoengineering Services
210 MAINE AVENUE
FARMINGDALE, ME 04344
207.576.3313
ATTN: BILL PETERLEIN, P.E.
bpeterlein@summitgeoeng.com

BUILDING ARCHITECT:
Ryan Senatore Architecture
500 CONGRESS STREET, 2nd FLOOR
PORTLAND, ME 04101
207.650.6414
ATTN: RYAN SENATORE, AIA, LEED-AP
ryan@senatorearchitecture.com

LANDSCAPE ARCHITECT:
ALA Aceto Landscape Architects
424 FORE STREET, #3B
PORTLAND, ME 04101
207.221.3390
ATTN: NICK ACETO
ca@acelola.com

LIGHTING:
Swaney Lighting Associates, Inc.
15 PLEASANT HILL ROAD, #2
SCARBOROUGH, ME 04074
207.883.7100, ext. 142
ATTN: STEVE WEATHERBIE
Steve@swaneylighting.com



NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

Rev.	Date	Revision

Rev.	Date	Revision
2	2023.06.19	FINAL SITE PLAN SUBMISSION
1	2023.03.21	SITE PLAN APPLICATION

Design: SRB	Draft: CDD	Date: OCT. 2022
Checked: SRB	Scale: AS NOTED	Job No.: 4043
File Name: 4043-COVER.dwg		
This plan shall not be modified without written permission from Gorrill Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Gorrill Palmer.		



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300 Southborough Drive, Suite 200
South Portland, Me 04106
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Drawing Name:	COVER SHEET
Project:	PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT 25 CASCO STREET, PORTLAND, MAINE
Client:	DEVELOPERS COLLABORATIVE PREDEVELOPMENT, LLC 631 STEVENS AVENUE, SUITE 203, PORTLAND, MAINE 04103

Drawing No.
C-1.0

GENERAL NOTES

1. IN ADDITION TO THESE PLANS AND NOTES, THE CONTRACTOR SHALL REFER TO THE PROJECT MANUAL OR MOST CURRENT MAINE DEPARTMENT OF TRANSPORTATION (MAINE DOT) SPECIFICATIONS FOR CONSTRUCTION SPECIFICATIONS AND BIDDING PROCEDURES.
2. THIS PROJECT WILL BE SUBJECT TO THE TERMS AND CONDITIONS OF ALL PERMITS ISSUED BY LOCAL UTILITY COMPANIES AND THE CITY OF PORTLAND.
3. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF THE ENTRANCE, PAVING, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY ENTRANCE POINTS. ENTRANCES IN MOST LOCATIONS REQUIRE STRUCTURAL SLABS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR INFORMATION ON THE STRUCTURAL SLAB ENTRANCES.
4. ALL REQUIRED AND NECESSARY INSPECTIONS AND OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSIONS AND THE FINAL SERVICE CONNECTIONS.
5. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS, AT ITS SOLE COST.
6. MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE TO THE APPLICANT AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR THE CITY, AT NO ADDITIONAL COST TO THE OWNER.
7. ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED UPON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
8. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE PROJECT SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SHALL APPLY AT NO EXTRA COST TO THE OWNER.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS THROUGHOUT THE PROJECT AND PROVIDING THE OWNER WITH A SET OF ELECTRONIC FINAL RECORD DRAWINGS WHEN THE PROJECT IS COMPLETE.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AND ALL ADJACENT PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN SAFE VEHICLE AND PEDESTRIAN ACCESS THROUGH OUT THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACT OR CHANGES TO SITE ACCESS CONDITIONS, SIDEWALK AND / OR STREET CLOSINGS.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF THE SITE PLAN REVIEW PERMIT FROM THE CITY OF PORTLAND WHICH WILL BE MADE A PART OF THE CONTRACT BID DOCUMENTS. THE CONSTRUCTION WILL BE GOVERNED BY THE ZONING ORDINANCES WHICH ARE AVAILABLE FOR VIEWING AT THE OFFICE OF THE ENGINEER OR THE MUNICIPAL OFFICE.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE-REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

SITE LAYOUT NOTES

1. BITUMINOUS CONCRETE CURB, SLIPFORM CONCRETE CURB AND GRANITE CURB SHALL MEET THE REQUIREMENTS OF MDOT 702.001, 703.07 AND 609.04.
2. ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB OR THE FACE OF THE BUILDING.
3. EXCEPT WHERE INDICATED OTHERWISE, THE PAVEMENT IS TO BE STANDARD DUTY PAVEMENT.
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & STANDARDS OF THE MAINE DEPARTMENT OF TRANSPORTATION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITIONS AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.

GRADING & DRAINAGE NOTES:

1. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N = 0.012 OR LESS.
2. AN "AS-BUILT" CERTIFICATION AND PLANS OF THE STORMWATER DRAINAGE SYSTEM IS REQUIRED PRIOR TO THE OWNER ACCEPTING ANY BUILDINGS AND PROPERTY. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ANY DEVIATION FROM THE PLANS MAY DELAY THE ACCEPTANCE OF THE PROJECT, WITH CONTRACTOR RESPONSIBLE FOR ANY ASSOCIATED COSTS.
3. A DETAILED O&M MANUAL FOR STORMWATER MANAGEMENT SYSTEMS IS (WILL BE) FILED WITH THE CITY OF PORTLAND DURING THE PERMIT REVIEW PROCESS. A SPECIFIC MANUAL HAS BEEN PREPARED FOR O&M OF THE DRAINAGE SYSTEM.
4. SEE EXISTING CONDITIONS FOR BENCHMARK INFORMATION.
5. SEE GRADING, DRAINAGE AND EROSION/SEDIMENT CONTROL FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
6. ALL DISTURBED AREAS NOT TO BE PAVED, GRAVELED, SODDED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. **COMPACTION REQUIREMENTS:**
- | LOCATION | MINIMUM COMPACTION* |
|---|---------------------|
| SUBBASE AND BASE GRAVEL BELOW PAVED OR CONCRETE AREAS | 95% |
| SUBGRADE FILL BELOW PAVED AREAS | 90% |
| TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL | 95% |
| BELOW LOAM AND SEED AREAS | 90% |
| STRUCTURAL FILL WITHIN PROPOSED BUILDING AREA | 95% |
| SELECT FILL ADJACENT BUILDING FOUNDATIONS, EXTERIOR FOUNDATIONS | 95% |
- AND WITHIN 8 INCHES OF THE SLAB-ON-GRADE
- *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM-D-1557.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND EXIT RAMPS ADJACENT TO THE BUILDING AND ALONG NEW CURBED AREAS.
10. PROVIDE STABILIZATION OR SEPARATION GEOTEXTILE FABRIC OVER UNSTABLE SOILS AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND IN ACCORDANCE WITH THE FINAL GEOTECHNICAL RECOMMENDATIONS.
11. NATIVE SOILS RANGE FROM SANDY TO SILTY. CARE MUST BE EXERCISED TO LIMIT DISTURBANCE OF THE BEARING SOILS. THE NATIVE SILTY SOILS SHOULD NOT BE PROOF-ROLLED. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, DISTURBED AREAS SHOULD BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO EXTRA EXPENSE TO THE OWNER. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.

LOCAL APPROVALS, WAIVERS AND VARIANCES

THE CONSTRUCTION PLANS ARE TO BE SUBMITTED TO THE CITY OF PORTLAND FOR THEIR REVIEW, APPROVAL AND RECORDS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

PENDING SITE PLAN CONDITIONS OF APPROVAL - TO BE ADDED UPON RECEIPT OF APPROVALS

STANDARD CONDITIONS OF APPROVAL

1. **DEVELOP SITE ACCORDING TO PLAN:** THE SITE SHALL BE DEVELOPED AND MAINTAINED AS DEPICTED ON THE SITE PLAN AND IN THE WRITTEN SUBMISSION OF THE APPLICANT. MODIFICATION OF ANY APPROVED SITE PLAN OR ALTERATION OF A PARCEL WHICH WAS THE SUBJECT OF SITE PLAN APPROVAL AFTER MAY 20, 1974, SHALL REQUIRE THE PRIOR APPROVAL OF A REVISED SITE PLAN BY THE PLANNING BOARD OR PLANNING AUTHORITY PURSUANT TO THE TERMS OF CHAPTER 14, LAND USE, OF THE PORTLAND CITY CODE.
2. **SEPARATE BUILDING PERMITS ARE REQUIRED:** THIS APPROVAL DOES NOT CONSTITUTE APPROVAL OF BUILDING PLANS, WHICH MUST BE REVIEWED AND APPROVED BY THE CITY OF PORTLAND'S INSPECTION DIVISION.
3. **SITE PLAN EXPIRATION:** THE SITE PLAN APPROVAL WILL BE DEEMED TO HAVE EXPIRED UNLESS WORK HAS COMMENCED WITHIN ONE (1) YEAR OF THE APPROVAL OR WITHIN A TIME PERIOD UP TO THREE (3) YEARS FROM THE APPROVAL DATE AS AGREED UPON IN WRITING BY THE CITY AND THE APPLICANT. REQUESTS TO EXTEND APPROVALS MUST BE RECEIVED BEFORE THE ONE (1) YEAR EXPIRATION DATE.
4. **PERFORMANCE GUARANTEE AND INSPECTION FEES:** A PERFORMANCE GUARANTEE COVERING THE SITE IMPROVEMENTS, INSPECTION FEE PAYMENT OF 2.0% OF THE GUARANTEE AMOUNT AND SEVEN (7) FINAL SETS OF PLANS MUST BE SUBMITTED TO AND APPROVED BY THE PLANNING DIVISION AND PUBLIC SERVICES DEPARTMENT PRIOR TO THE RELEASE OF A BUILDING PERMIT, STREET OPENING PERMIT OR CERTIFICATE OF OCCUPANCY FOR SITE PLANS. IF YOU NEED TO MAKE ANY MODIFICATIONS TO THE APPROVED PLANS, YOU MUST SUBMIT A REVISED SITE PLAN APPLICATION FOR STAFF REVIEW AND APPROVAL.

5. **DEFECT GUARANTEE:** A DEFECT GUARANTEE, CONSISTING OF 10% OF THE PERFORMANCE GUARANTEE, MUST BE POSTED BEFORE THE PERFORMANCE GUARANTEE WILL BE RELEASED.
6. **PRECONSTRUCTION MEETING:** PRIOR TO THE RELEASE OF A BUILDING PERMIT OR SITE CONSTRUCTION, A PRE-CONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE. THIS MEETING WILL BE HELD WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC SERVICE'S REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE DEVELOPMENT REVIEW COORDINATOR WILL CONFIRM THAT THE CONTRACTOR IS WORKING FROM THE APPROVED SITE PLAN. THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRE-CONSTRUCTION MEETING (IF APPLICABLE).
7. **DEPARTMENT OF PUBLIC SERVICES PERMITS:** IF WORK WILL OCCUR WITHIN THE PUBLIC RIGHT-OF-WAY SUCH AS UTILITIES, CURB, SIDEWALK AND DRIVEWAY CONSTRUCTION, A STREET OPENING PERMIT(S) IS REQUIRED FOR YOUR SITE. PLEASE CONTACT CAROL MERRITT AT 874-8300, EXT. 8828. (ONLY EXCAVATORS LICENSED BY THE CITY OF PORTLAND ARE ELIGIBLE.)
8. **AS-BUILT FINAL PLANS:** FINAL SETS OF AS-BUILT PLANS SHALL BE SUBMITTED DIGITALLY TO THE PLANNING DIVISION, ON A CD OR DVD, IN AUTOCAD FORMAT (*.DWG), RELEASE AUTOCAD 2005 OR GREATER.
9. **STORMWATER MANAGEMENT:** THAT THE DEVELOPER/ CONTRACTOR/ SUBCONTRACTOR MUST COMPLY WITH CONDITIONS OF THE CONSTRUCTION STORMWATER MANAGEMENT PLAN AND SEDIMENT & EROSION CONTROL PLAN BASED ON CITY STANDARDS AND STATE GUIDELINES; THAT THE OWNER/OPERATOR OF THE APPROVED STORMWATER MANAGEMENT SYSTEM AND ALL ASSIGNS SHALL COMPLY WITH THE CONDITIONS OF CHAPTER 32 STORMWATER INCLUDING ARTICLE III, POST-CONSTRUCTION STORMWATER MANAGEMENT, WHICH SPECIFIES THE ANNUAL INSPECTIONS AND REPORTING REQUIREMENTS; AND THAT A MAINTENANCE AGREEMENT FOR THE STORMWATER DRAINAGE SYSTEM, AS ATTACHED, OR IN SUBSTANTIALLY THE SAME FORM WITH ANY CHANGES TO BE APPROVED BY CORPORATION COUNSEL, SHALL BE SUBMITTED AND SIGNED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY WITH A COPY TO THE DEPARTMENT OF PUBLIC SERVICES.

UTILITY NOTES

1. ALL REQUIRED UTILITIES SERVING THE PROJECT SHALL BE COORDINATED AND CONSTRUCTED BY THE SITE CONTRACTOR TO WITHIN 5 FEET OF THE BUILDINGS, AT A LOCATION COORDINATED WITH THE MEP CONTRACTOR(S) AND THE BUILDING PLANS. SITE WORK WITHIN 5 FEET OF UNDERSLAB UTILITIES SHALL CONSIST OF TRENCHING AND BACKFILLING. ACTUAL UTILITY INSTALLATION SHALL BE BY THE MEP CONTRACTOR. ALL REQUIRED CONNECTION FEES SHALL BE PAID BY THE GENERAL CONTRACTOR.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF AND/OR RELOCATION OF OVERHEAD AND UNDERGROUND TELEPHONE WITH FAIRPOINT COMMUNICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUITS, PULL WIRES, TRENCHING AND BACKFILLING NECESSARY TO COMPLETE THE WORK.
3. ALL SANITARY SEWER WORK SHALL MEET THE STANDARDS OF THE MAINE STATE PLUMBING CODE AND CITY OF PORTLAND PUBLIC SERVICES DIVISION. CONNECTIONS TO EXISTING SEWER SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF PORTLAND PUBLIC SERVICES DIVISION RECOMMENDATIONS AND REGULATIONS.
4. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRIC SERVICE WITH CENTRAL MAINE POWER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCHING, CONDUIT AND BACKFILLING ASSOCIATED WITH UNDERGROUND POWER, COMMUNICATIONS AND CABLE.
5. COORDINATE ALL OTHER UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY. ALL UTILITY WORK SHALL CONFORM TO THE STANDARDS OF THE UTILITY COMPANY AND PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT, AT NO EXTRA EXPENSE TO THE OWNER.
6. THE LOCATIONS OF THE NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE SERVING UTILITY COMPANY, PROJECT ARCHITECTS AND MEP DESIGNERS.
7. UNDERGROUND ELECTRICAL, CONDUIT MATERIAL AND INSTALLATION SHALL CONFORM TO CENTRAL MAINE POWER STANDARDS AND PROJECT SPECIFICATIONS, WHICH EVER IS MORE STRINGENT. WORK ADJACENT TO THE UNE SHALL BE MONITORED BY CENTRAL MAINE POWER.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OR WORK TO FINISH GRADE.
9. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
10. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO COMPLETION OF THE PROJECT.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL, AT NO EXTRA EXPENSE TO THE OWNER.
12. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18 INCH OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS.

EROSION CONTROL NOTES:

1. PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES, GRADING LIMITS SHALL BE STAKED BY THE CONTRACTOR BASED ON THE LIMITS OF GRADING SHOWN ON THE DRAWINGS AND ACCEPTED BY THE OWNER'S REPRESENTATIVE IN THE FIELD. AFTER THE GRADING LIMITS HAVE BEEN ACCEPTED, THE CONTRACTOR SHALL INSTALL THE PERIMETER SILT FENCE, SEDIMENT BARRIERS AND THE CONSTRUCTION ENTRANCE ASSOCIATED WITH THE PROJECT.
2. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCHED AS SOON AS POSSIBLE. TEMPORARY/PERMANENT SEED MIXTURES SHALL CONFORM TO THE SEEDING PLAN CONTAINED IN THE EROSION CONTROL PROJECT PREPARED FOR THIS PROJECT.
3. PRIOR TO PAVING OR GRAVEL PLACEMENT, THE CONTRACTOR SHALL REMOVE SILT FROM ALL STORM LINES AND APPURTANCES.
4. SILT BARRIERS SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES SHOWN ON THE EROSION CONTROL DETAIL SHEET.
5. THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCES AS IT BECOMES SATURATED WITH MUD TO ENSURE THAT IT FUNCTIONS TO CAPTURE MUD FROM THE TIRES OF CONSTRUCTION VEHICLES DURING CONSTRUCTION. THE PURPOSE OF THE CONSTRUCTION ENTRANCE IS TO KEEP ADJACENT STREETS CLEAR OF DIRT AND MUD. SWEEPING OF THE ROADWAYS SHALL BE PERFORMED BY THE CONTRACTOR ON AN AS NEEDED BASIS, BUT AT A MINIMUM ONCE A WEEK.
6. SILT REMOVED FROM AROUND INLETS AND BEHIND THE SILT FENCES SHALL BE PLACED ON A TOPSOIL STOCKPILE AND MIXED INTO TOPSOIL FOR USE IN LANDSCAPING OPERATIONS.
7. LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE WHICH CAUSE THE LEAST PRACTICAL UNPROTECTED DENUDED AREAS ON THE SITE DURING CONSTRUCTION.
8. THE CONTRACTOR IS CAUTIONED THAT FAILURE TO COMPLY WITH THE SEQUENCE OF CONSTRUCTION, EROSION/SEDIMENT CONTROL PLAN, AND OTHER PERMIT REQUIREMENTS MAY RESULT IN MONETARY PENALTIES AS ENFORCED BY THE MEDEP OR LOCAL AGENCIES. THE CONTRACTOR SHALL BE ASSESSED ALL SUCH PENALTIES AT NO COST TO THE OWNER OR PERMITTEE.
9. A FULL EROSION/SEDIMENTATION CONTROL PLAN ACCOMPANIES THIS DRAWING SET AND IS ALSO CONTAINED IN THE DIV 312513 SPECIFICATIONS.
10. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS AS SHOWN AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
11. INSPECT EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH RAIN STORM OF 0.25 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE FILTER EFFICIENCY. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 OF THE STRUCTURE HEIGHT.
12. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES, CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, 2014".

EXISTING

- IRON PIPE OR ROD FND
- MONUMENT FOUND
- ⊗ GAS VALVE
- ⊗ WATER VALVE
- ⊘ UTILITY POLE
- ☀ LIGHT POLE
- DMH DRAINAGE MANHOLE
- EMH ELECTRIC MANHOLE
- SMH SEWER MANHOLE
- ⊖ CATCH BASIN
- EDGE OF PAVEMENT
- ==== CURB
- ohw OVERHEAD WIRES
- E — UNDERGROUND ELECTRIC
- T — TELEPHONE
- W — WATER LINE
- G — GAS LINE
- 15" ssn SANITARY SEWER
- SD — STORM DRAIN
- - - 15' 1' CONTOUR
- × 15.23 SPOT ELEVATION
- TREE
- ~~~~~ TREE LINE OR LIMIT OF CLEARING
- ▨ BUILDING
- ===== RETAINING WALL/WOOD TILES
- - - - - PROPERTY LINE
- . - . - . EASEMENT LINE
- ⊙ TEST BORING

PROPOSED

- ♿ BARRIER FREE SYMBOL
- SIGN
- ⊖ SIGN LABEL
- ▬ BUILDING / BUILDING ACCESS
- ▬ VERTICAL GRANITE CURB
- ⊖ CB CATCH BASIN
- ▬ [22] CONTOUR LABEL
- DMH DRAIN MANHOLE
- 1' 2' 2:1 SLOPE DESIGNATION
- 18.73 SPOT GRADE
- 28.58 TW
16.20 BW SPOT GRADE AT RETAINING WALL
(TW = TOP WALL / BW = BOTTOM WALL)
- 10" UD UNDERDRAIN
- 12" SD
L = 188'
S = 0.005 STORM DRAIN
- ⊖ CURB STOP
- HYDRANT
- ☀ LIGHT POLE WITH FIXTURE(S)
- ⊖ SMH SANITARY SEWER MANHOLE
- ⊖ TEST PIT
- ⊘ UTILITY POLE
- ⊖ VALVE
- 6" SAN SANITARY SEWER
- W DOMESTIC/ FIRE WATER MAIN
- 2"G GAS MAIN
- UGE/T/C UNDERGROUND ELECTRIC

U:\4043 54 Unit Apartment Casco Street - Portland\Z - CAD\DWG\4043-GEN NOTES.dwg 6/15/2023 9:15 AM

U:\4043 54 Unit Apartment Casco Street - Portland\Z - CAD\DWG\4043-GEN NOTES.dwg

Rev.	Date	Revision

Rev.	Date	Revision
2	2023.06.19	FINAL SITE PLAN SUBMISSION
1	2023.03.21	SITE PLAN APPLICATION

Design: SRB	Draft: CDD	Date: OCT. 2022
Checked: SRB	Scale: AS NOTED	Job No.: 4043
File Name: 4043-GEN NOTES.dwg		
This plan shall not be modified without written permission from Gorrill Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Gorrill Palmer.		

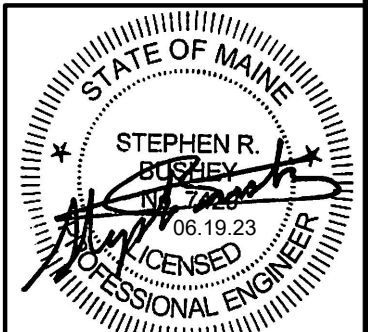


GORRILL PALMER

300 Southborough Drive, Suite 200
South Portland, Me 04106
207.772.2515 / www.gorrillpalmer.com
Relationships. Responsiveness. Results.

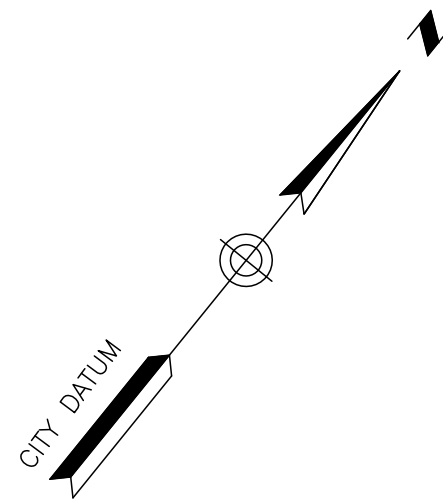
Drawing Name:	GENERAL NOTES & LEGEND
Project:	PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT 25 CASCO STREET, PORTLAND, MAINE
Client:	DEVELOPERS COLLABORATIVE PREDEVELOPMENT, LLC 631 STEVENS AVENUE, SUITE 203, PORTLAND, MAINE 04103

Drawing No.
C-1.1



NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

STEPHEN R. BUSHEY, P.E.
LIC. #7429



CITY POINT L-757-34-111
M MON - HELD 2015 LOCATION
(MONUMENT DISTURBED-2017)

OAK STREET

CUMBERLAND AVENUE
PAVED - PUBLIC

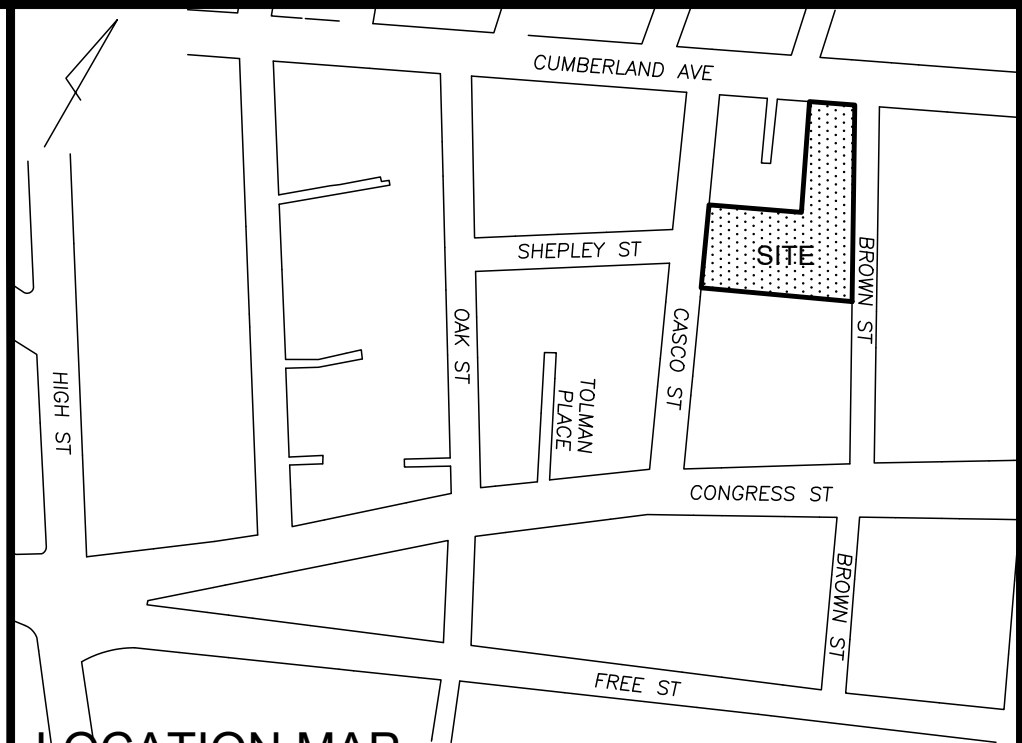
TM 37 BLOCK D LOT 3
N/F
STARK INDUSTRIES
34474/106

TM 37 BLOCK D LOT 7
N/F
AMBASSADOR LLC
33121/297

#48 BROWN STREET
"PARCEL D"
TOTAL LOT AREA=
81,529 S.F. ±
1.872 ACRES ±

TM 37 BLOCK D LOT 23
N/F
EQUALITY COMMUNITY CENTER
37999/47

#511 CONGRESS ST.
TM 37 BLOCK D LOT 2
OTHER LAND OF OCEAN GATE LLC



LEGEND

- | | |
|----------------------------|----------------------------------|
| ● IRON PIPE OR ROD FOUND | —X—X— FENCE |
| ○ MONUMENT FOUND | —C—C— STONEWALL |
| ○ CAPPED IRON ROD SET | —C—C— CURB |
| ○ UTILITY POLE | —OHW— OVERHEAD WIRES |
| ○ MANHOLE | —IPF/IRF— IRON PIPE OR ROD FOUND |
| ⊗ EM/GM ELECTRIC/GAS METER | —N/F— NOW OR FORMERLY |
| ⊕ SIGN | 000/000 DEED BOOK / PAGE |
| ⊕ CATCH BASIN | |
| ⊕ HYDRANT | |
| ⊕ WATER VALVE OR SHUTOFF | |
| ⊕ LIGHT POLE | |
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| ⊕ CONIFEROUS TREE | |

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GENERAL NOTES

1. OWNER OF RECORD: OCEAN GATE LLC
CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 31452 PAGE 305
TAX MAP 37 BLOCK D LOT 4
2. BEARINGS ARE BASED ON MAGNETIC STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE, NAD83 BASED ON CITY CONTROL POINTS:

T124-11-1087	T124-12-1096
N: 300446.78	N: 299913.92
E: 2927558.71	E: 2926805.42

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.

Samuel D. Gudden
SAMUEL D. GUDDEN, PLS #2520

3/17/2023
DATE



Boundary Survey
Casco Street, Portland, Maine
Made for
Equality Community
Limited Partnership
15 Casco Street, Portland, Maine

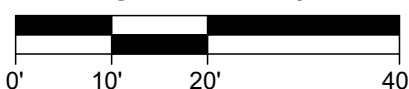


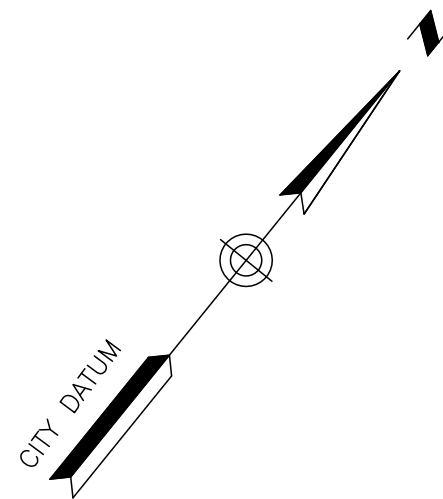
OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS

390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: JLW	DATE: MARCH 17, 2023	JOB NO. 2023-032 P
CHECKED BY: SDG	SCALE: 1" = 20'	DRWG. NO. 1

SCALE: 1" = 20'





CITY POINT L-757-34-111
M MON - HELD 2015 LOCATION
(MONUMENT DISTURBED-2017)

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CUMBERLAND AVENUE
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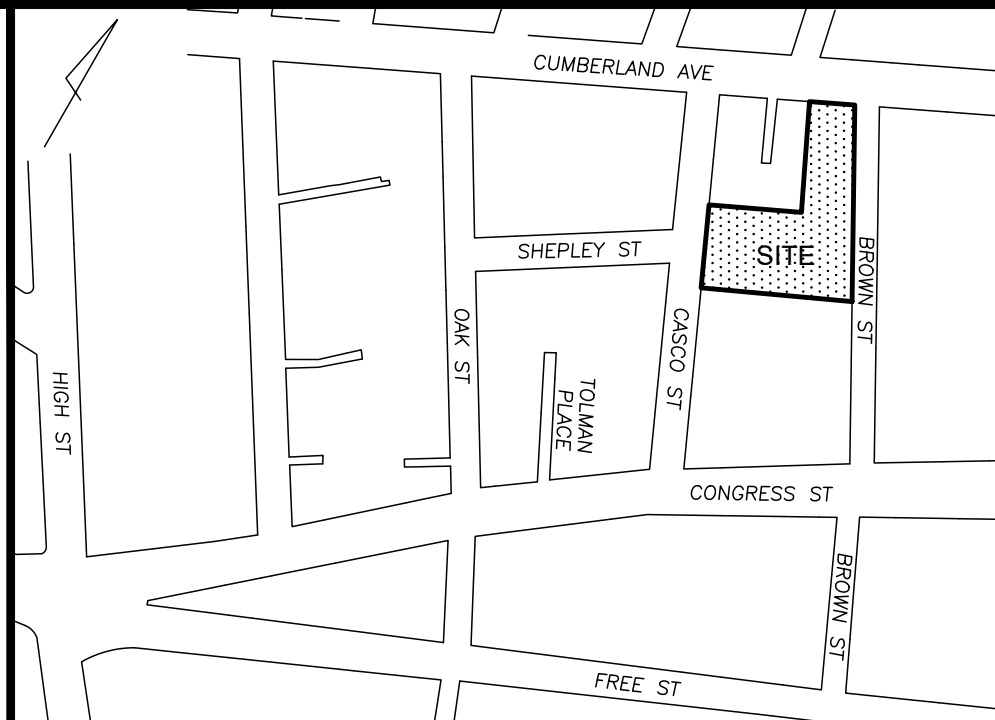
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N/F
EQUALITY COMMUNITY CENTER
37999/47

#511 CONGRESS ST.
TM 37 BLOCK D LOT 2
OTHER LAND OF OCEAN GATE LLC



LOCATION MAP

N.T.S.

LEGEND

●	IRON PIPE OR ROD FOUND	—X—X	FENCE
○	MONUMENT FOUND	—C—C	STONEWALL
○	CAPPED IRON ROD SET	—C—C	CURB
○	UTILITY POLE	—OHW—	OVERHEAD WIRES
○	MANHOLE	—IPF/IRF—	IRON PIPE OR ROD FOUND
⊗	ELECTRIC/GAS METER	—N/F—	NOW OR FORMERLY
+	SIGN	000/000	DEED BOOK / PAGE
⊗	CATCH BASIN		
⊗	HYDRANT		
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GENERAL NOTES

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CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 31452 PAGE 305
TAX MAP 37 BLOCK D LOT 4
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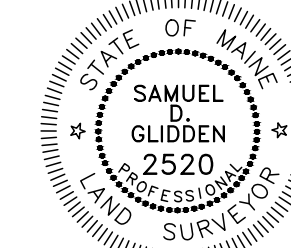
T124-11-1087	T124-12-1096
N: 300446.78	N: 299913.92
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Samuel D. Gudden
SAMUEL D. GUDDEN, PLS #2520

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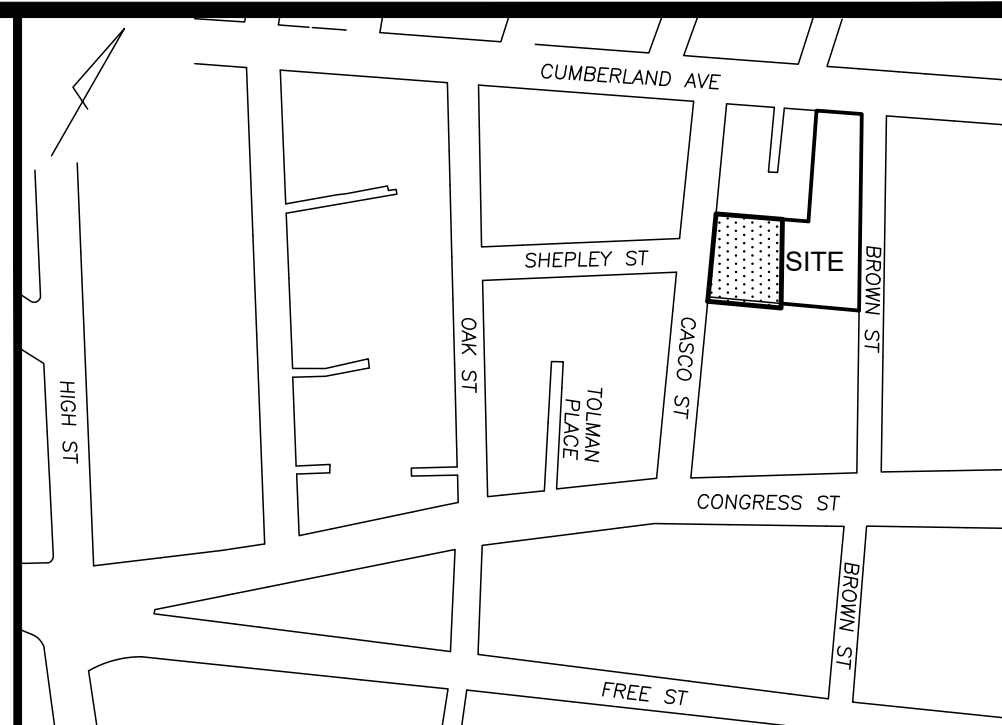


OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS

390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: JLW	DATE: MARCH 17, 2023	JOB NO. 2023-032 P
CHECKED BY: SDG	SCALE: 1" = 20'	DRWG. NO. 1

C-1.2



LOCATION MAP

N.T.S.

LEGEND

- | | | | |
|---------|------------------------|---------|------------------------|
| ● | IRON PIPE OR ROD FOUND | ✕ | FENCE |
| ■ | MONUMENT FOUND | □□□□ | STONEWALL |
| ○ | CAPPED IRON ROD SET | ===== | CURB |
| ⊗ | UTILITY POLE | — OHW — | OVERHEAD WIRES |
| ○ | MANHOLE | IPF/IRF | IRON PIPE OR ROD FOUND |
| ⊗ EM/GM | ELECTRIC/GAS METER | N/F | NOW OR FORMERLY |
| — | SIGN | 000/000 | DEED BOOK / PAGE |
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GENERAL NOTES

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TAX MAP 37 BLOCK D LOT 4
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	T124-11-1087		T124-12-1096
N:	300446.78	N:	299913.92
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SAMUEL D. GLIDDEN, PLS #2520

DATE _____

Lot Division Plan
Casco Street, Portland, Maine
Made for
Equality Community
Limited Partnership
15 Casco Street, Portland, Maine

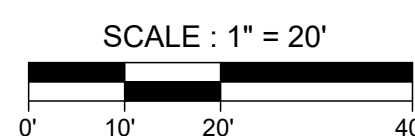


OWEN HASKELL, INC.

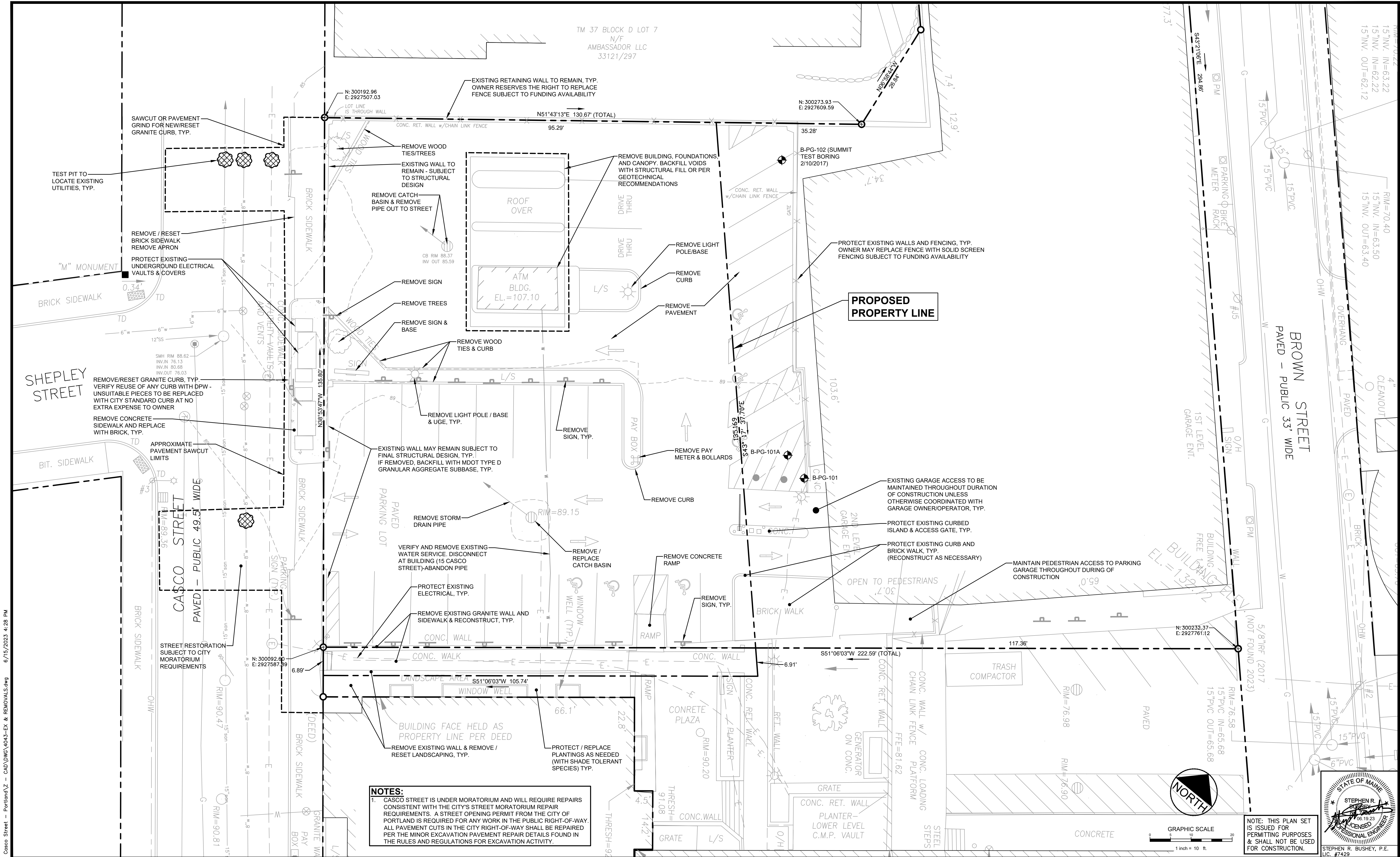
 PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: JLW	DATE: MAR. 24, 2023	JOB NO. 2023-0
CHECKED BY: SDG	SCALE: 1" = 20'	DRWG. NO. 1

C-1.3



* MAXIMUM BUILDING HEIGHT ACCORDING TO THE DOWNTOWN HEIGHT OVERLAY DISTRICT
** SEE WAIVER REQUEST FOR PLAZA AREA



U:\4043 54 Unit Apartment Casco Street - Portland\Z - CAD\DWG\4043-EX & REMOVALS.dwg 6/15/2023 4:28 PM

Rev.	Date	Revision

Rev.	Date	Revision
2	2023.06.19	FINAL SITE PLAN SUBMISSION
1	2023.03.21	SITE PLAN APPLICATION

Design: SRR	Draft: CDD	Date: OCT. 2022
Checked: SRR	Scale: AS NOTED	Job No.: 4043
File Name: 4043-EX & REMOVALS.dwg		
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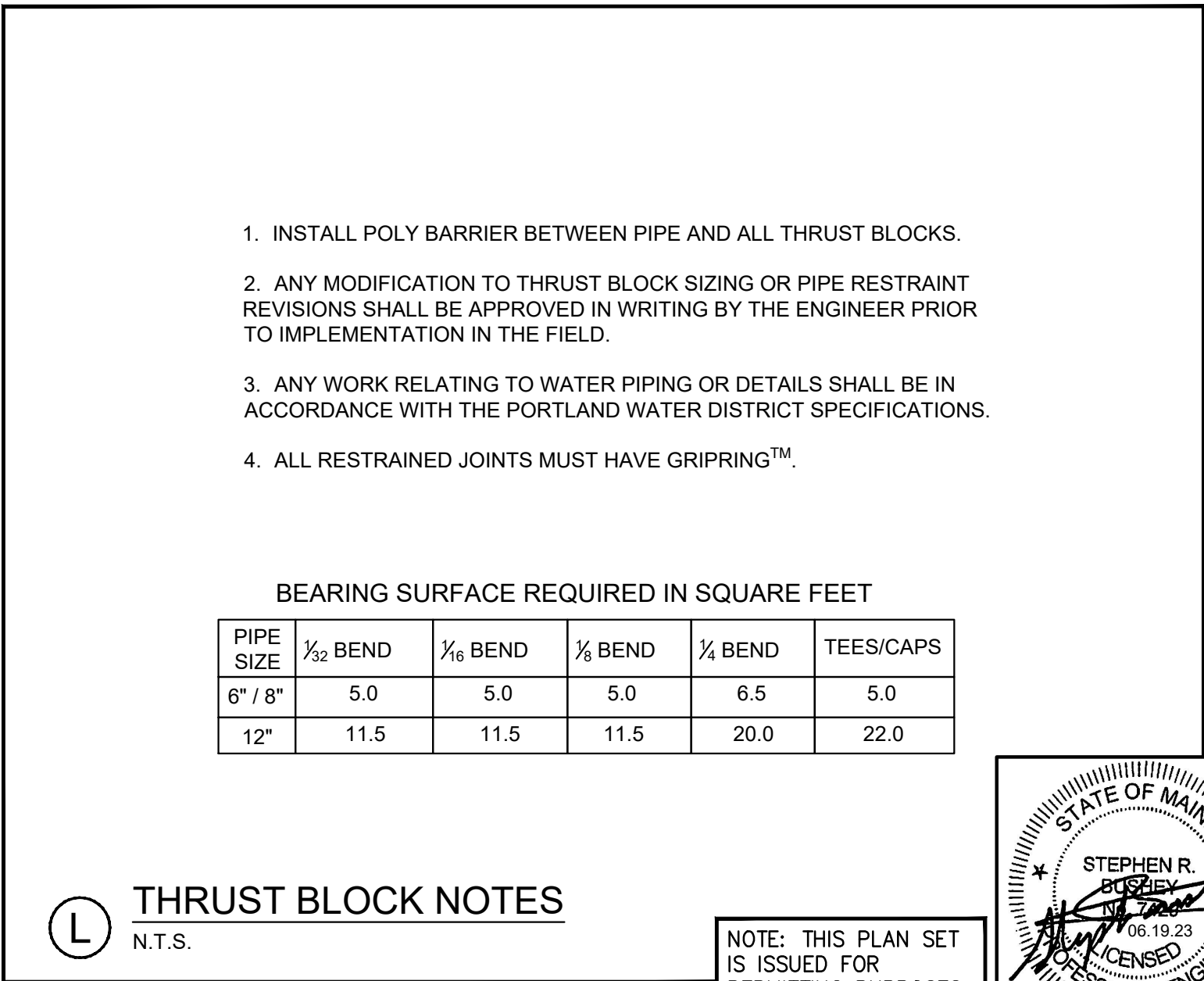
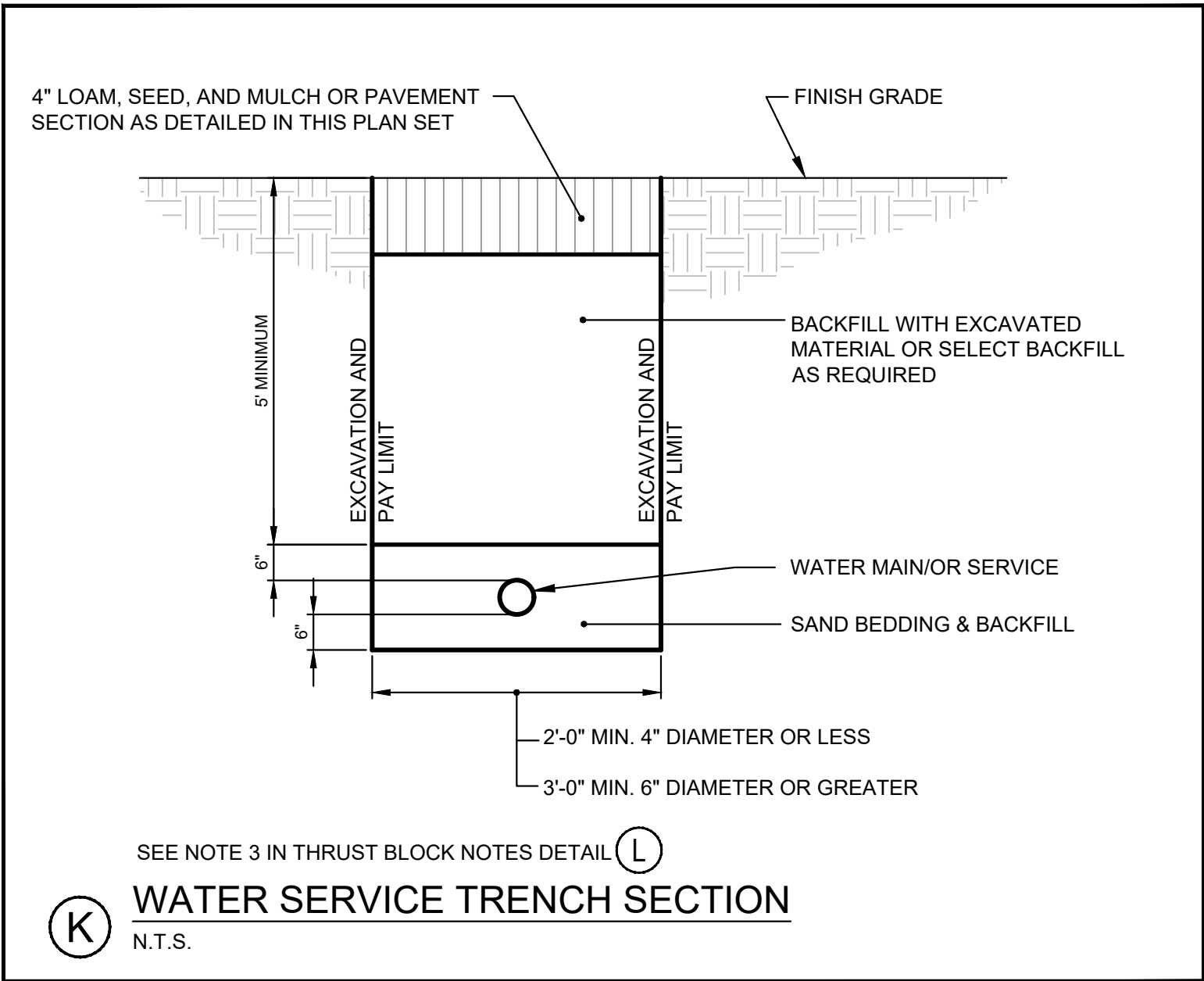
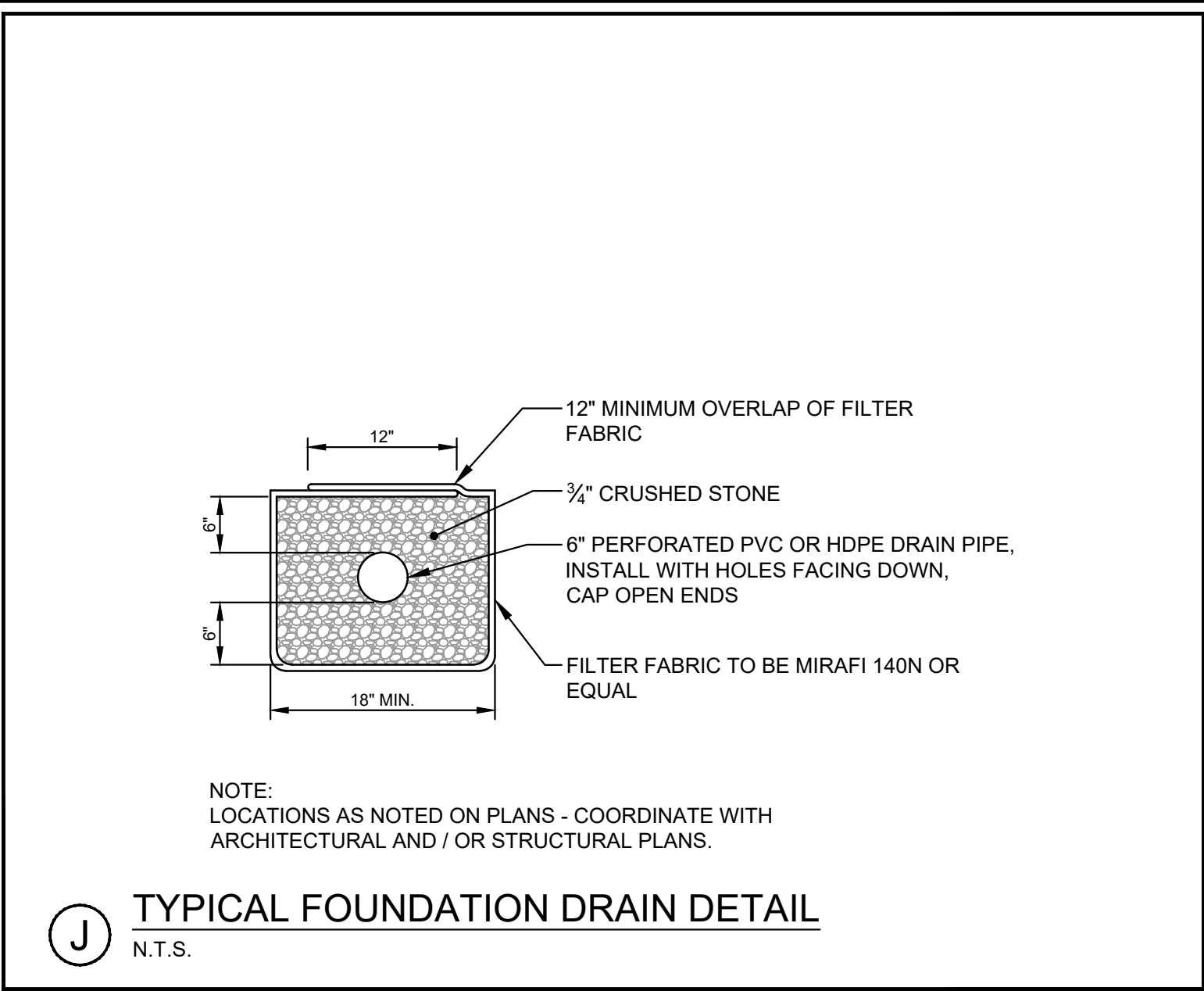
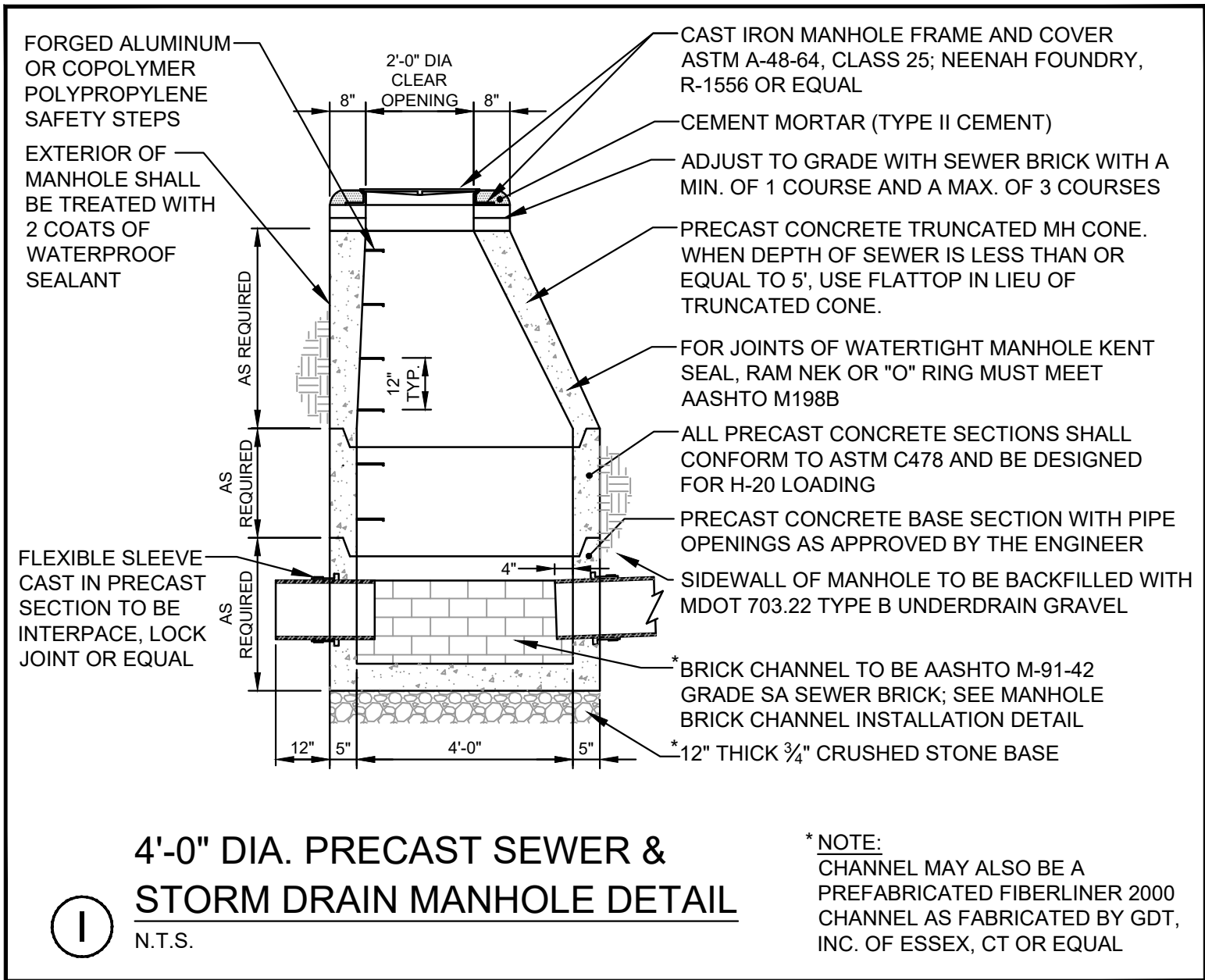
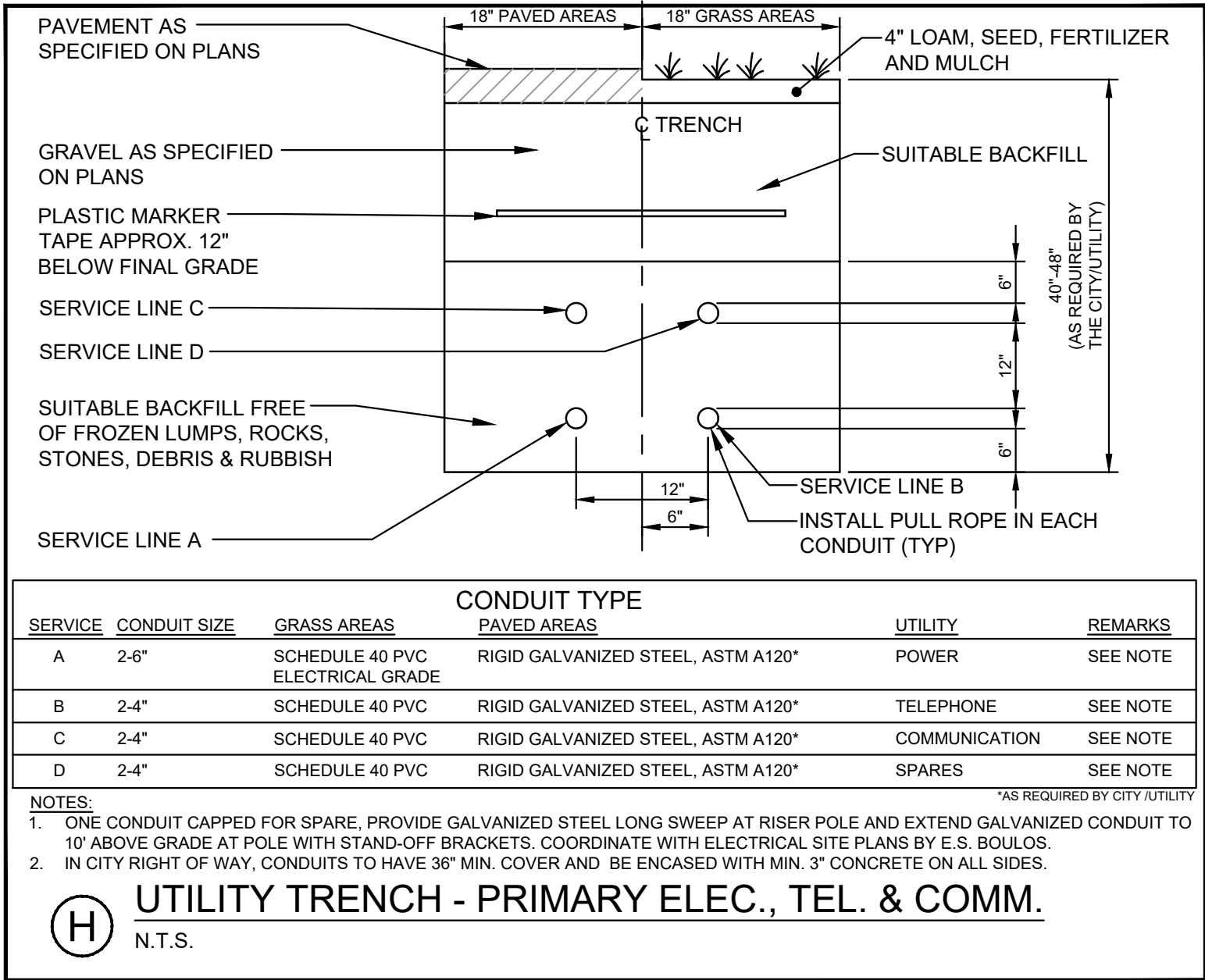
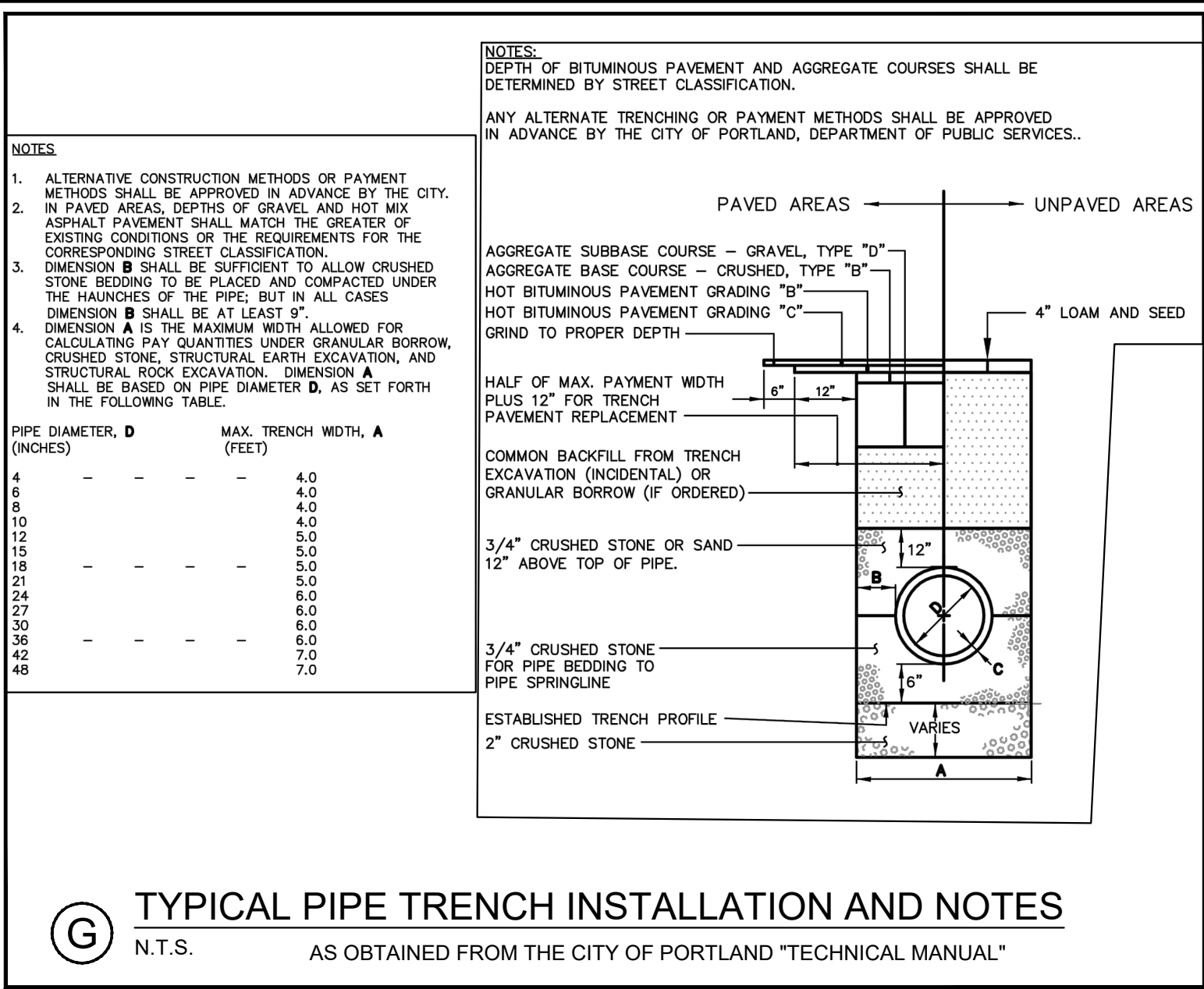
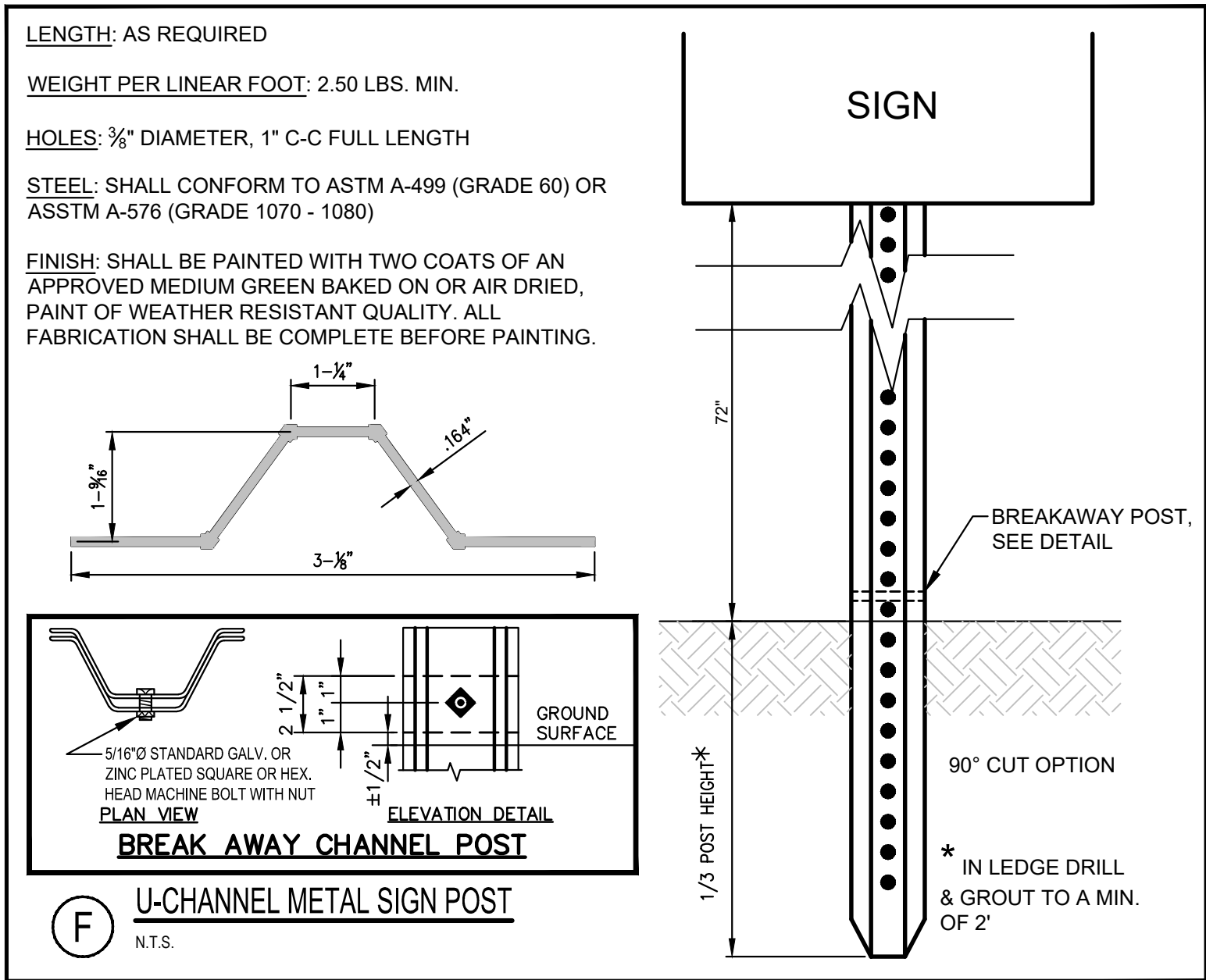
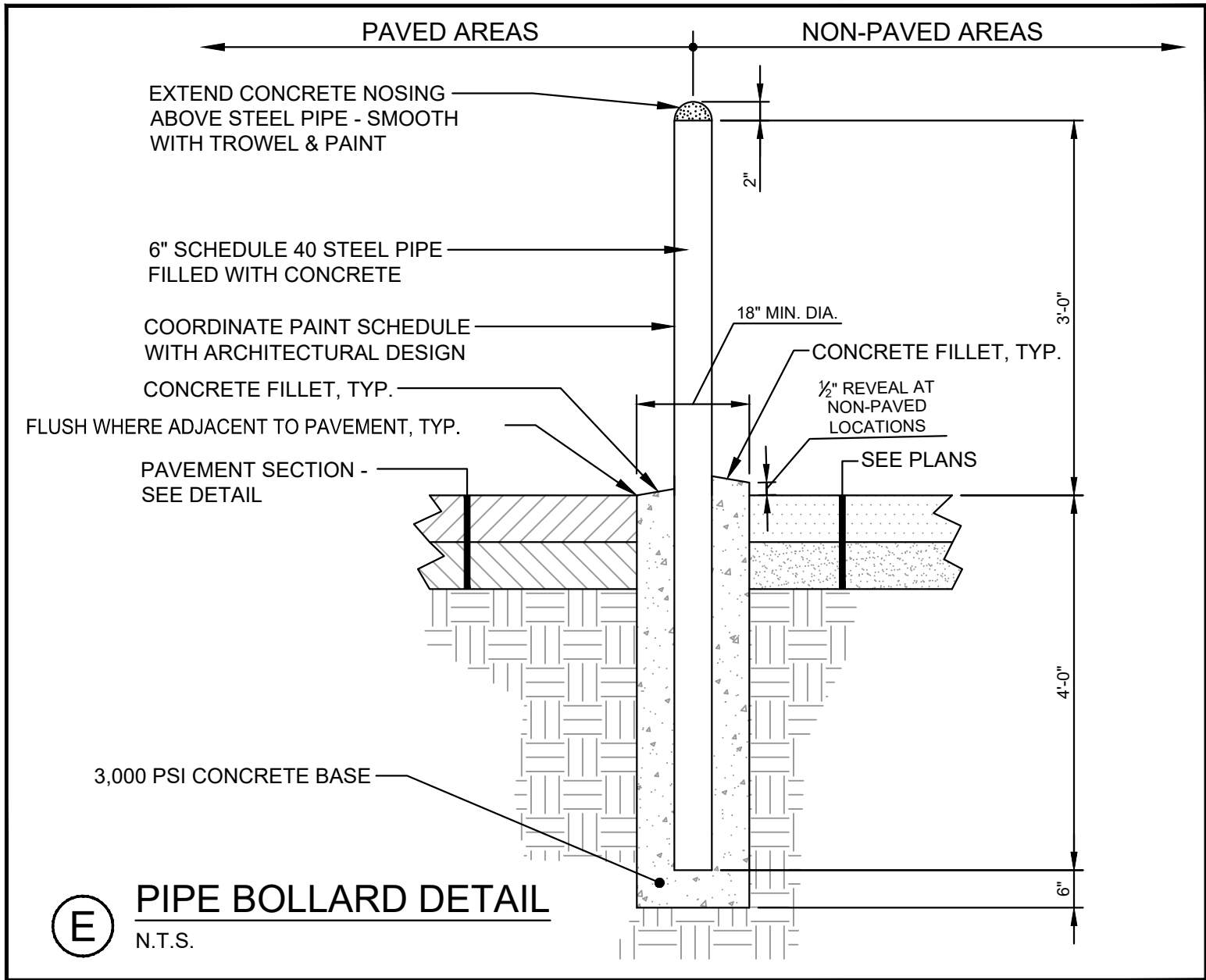
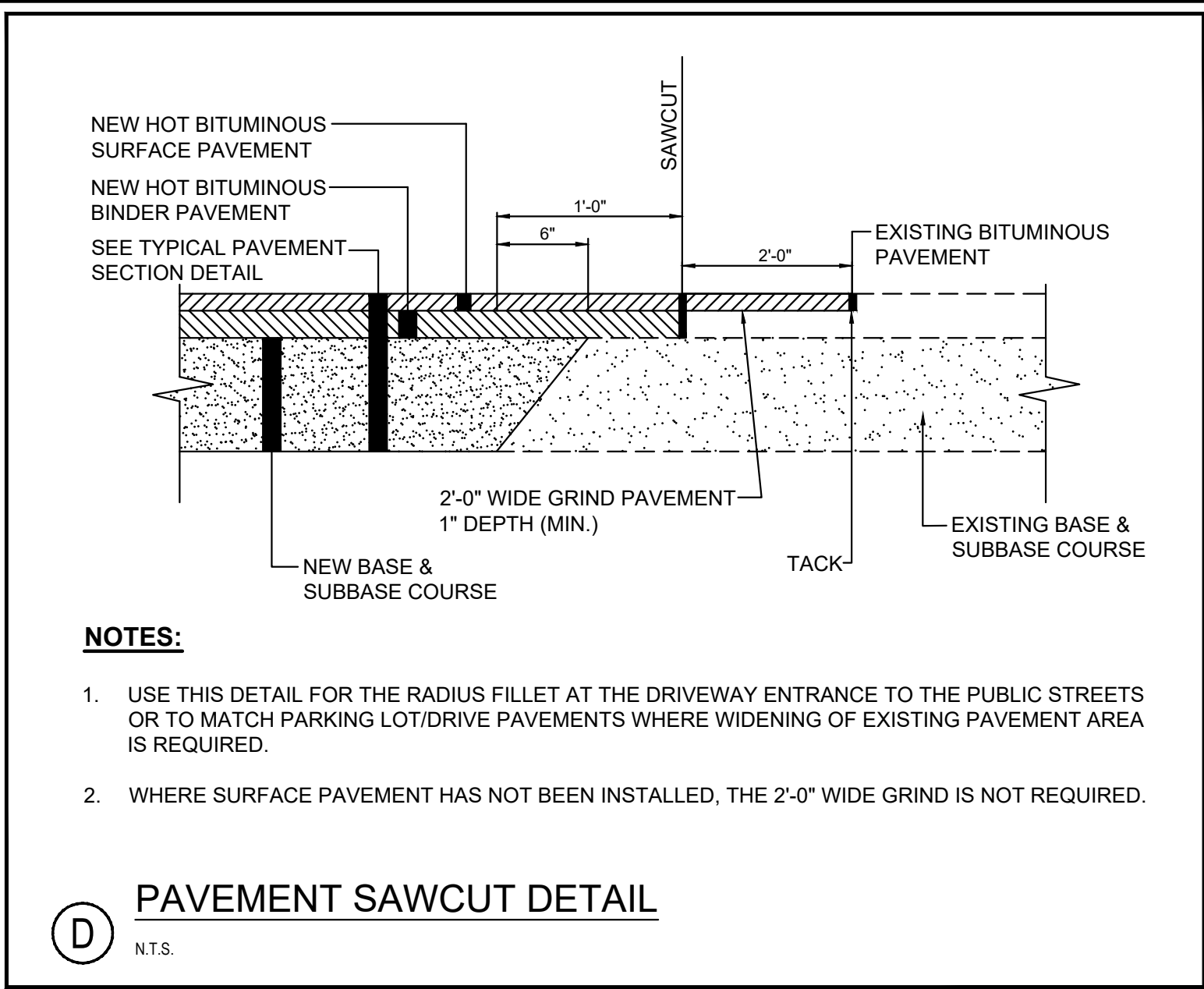
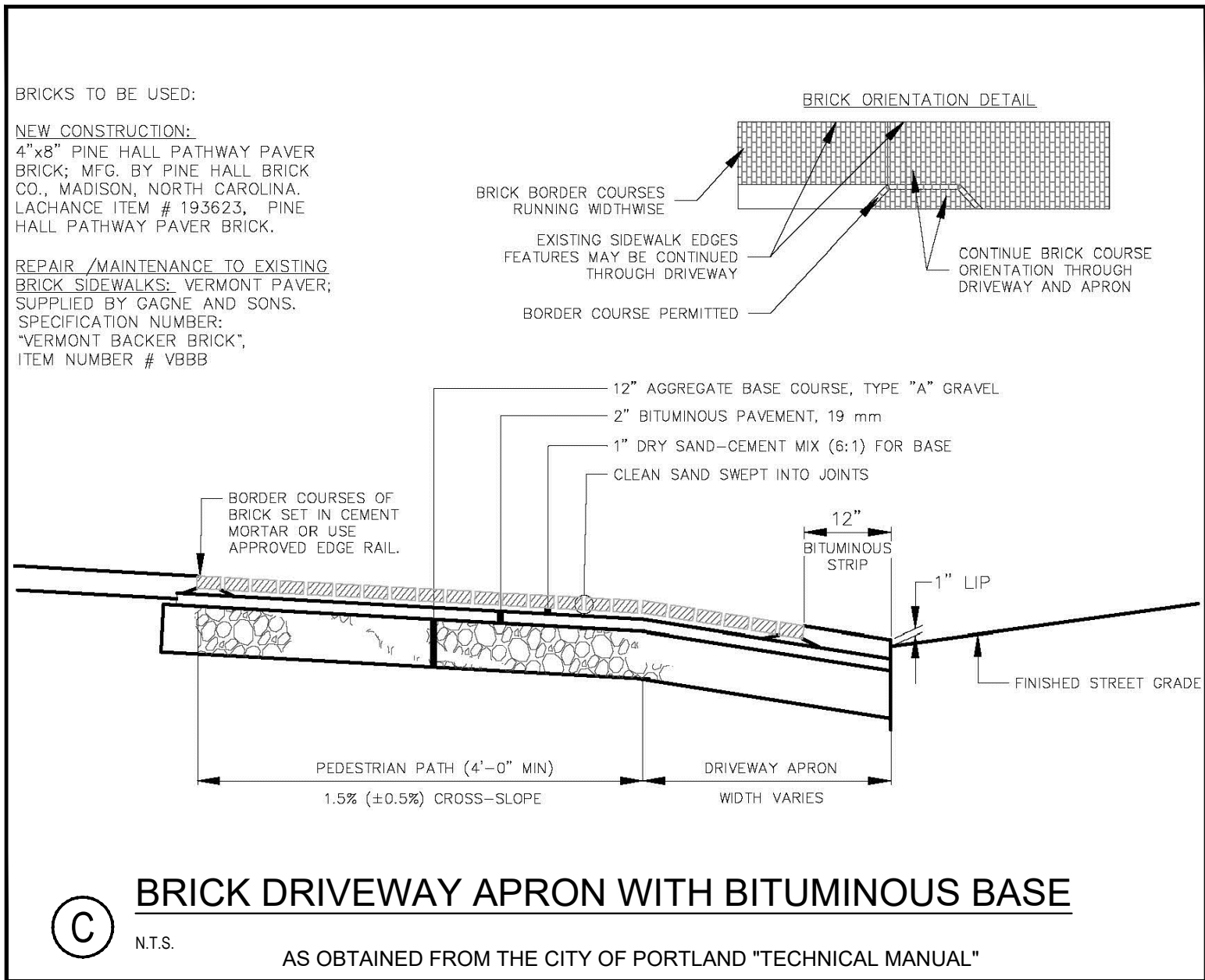
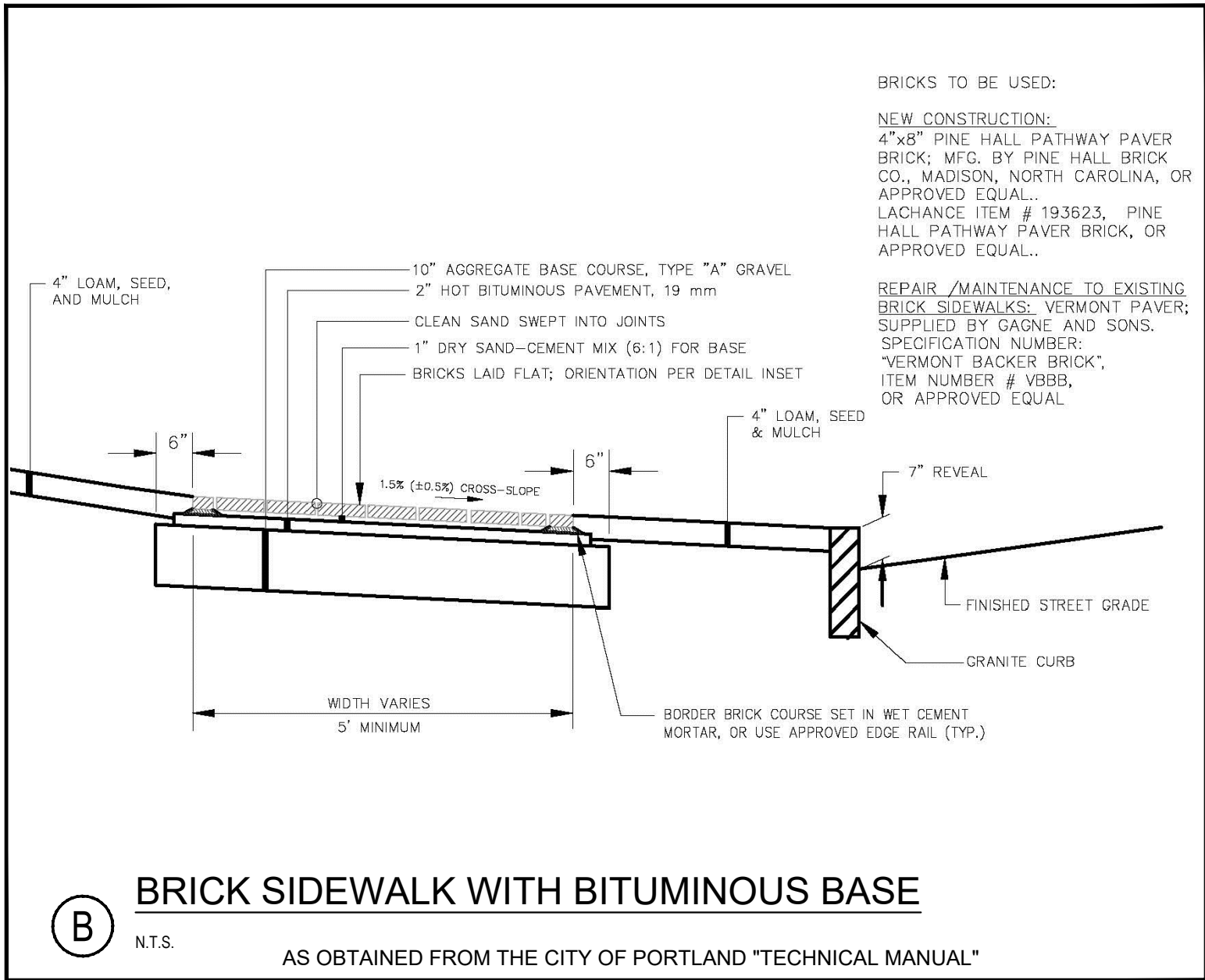
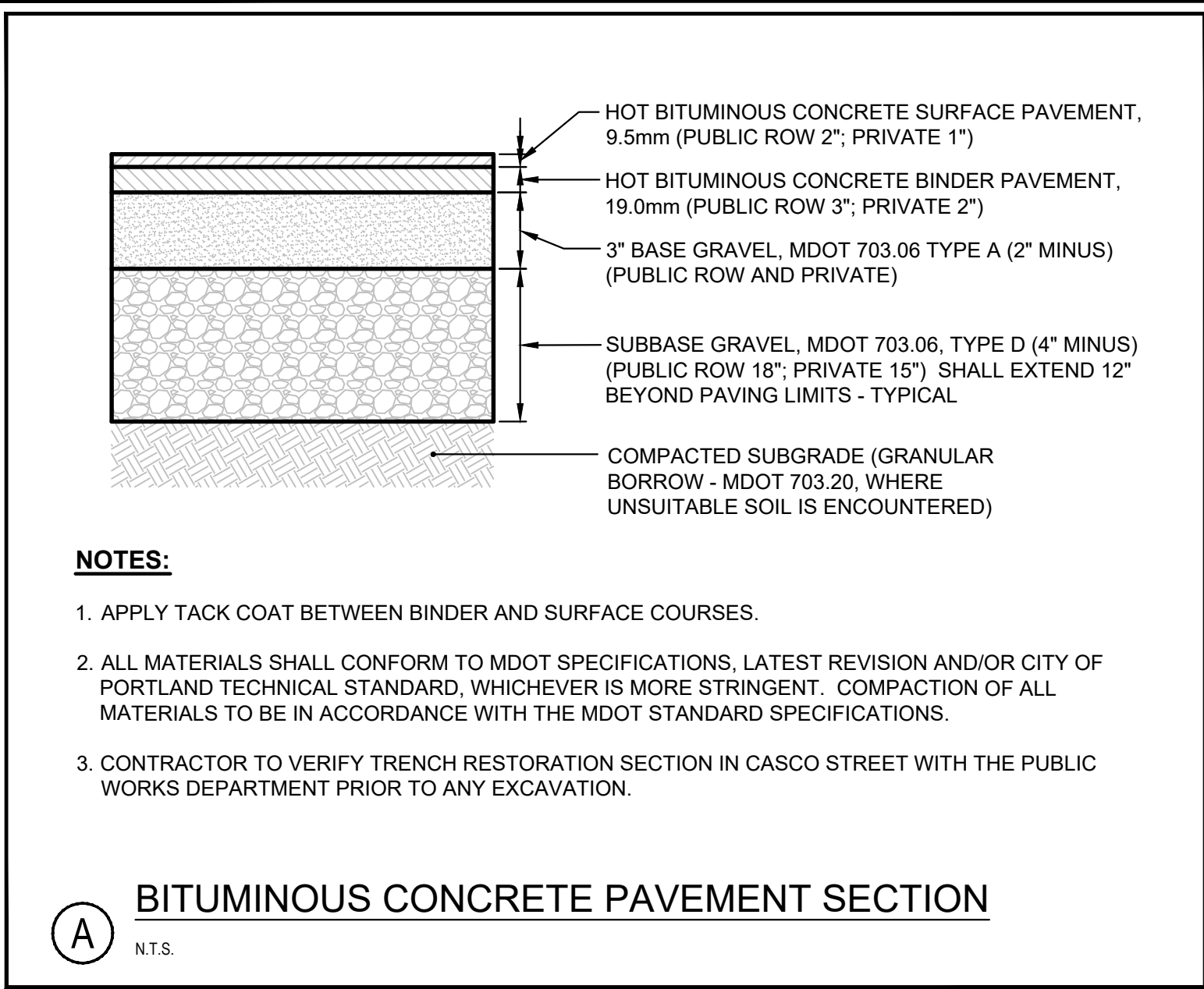
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South Portland, Me 04106
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Relationships. Responsiveness. Results.

Drawing Name:	EXISTING CONDITIONS & REMOVALS PLAN
Project:	PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT 25 CASCO STREET, PORTLAND, MAINE
Client:	DEVELOPERS COLLABORATIVE PREDEVELOPMENT, LLC 631 STEVENS AVENUE, SUITE 203, PORTLAND, MAINE 04103

Drawing No.
C-2.0

U:\4043 54 Unit Apartment Casco Street - Portland\XZ - CAD\DWG\4043-DETAILS.dwg 6/16/2023 4:23 PM



Rev.	Date	Revision
2	2023.06.19	FINAL SITE PLAN SUBMISSION
1	2023.03.21	SITE PLAN APPLICATION

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File Name: 4043-DETAILS.dwg		
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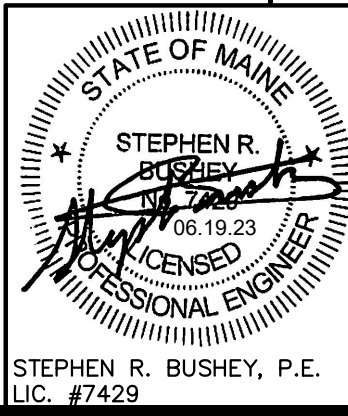
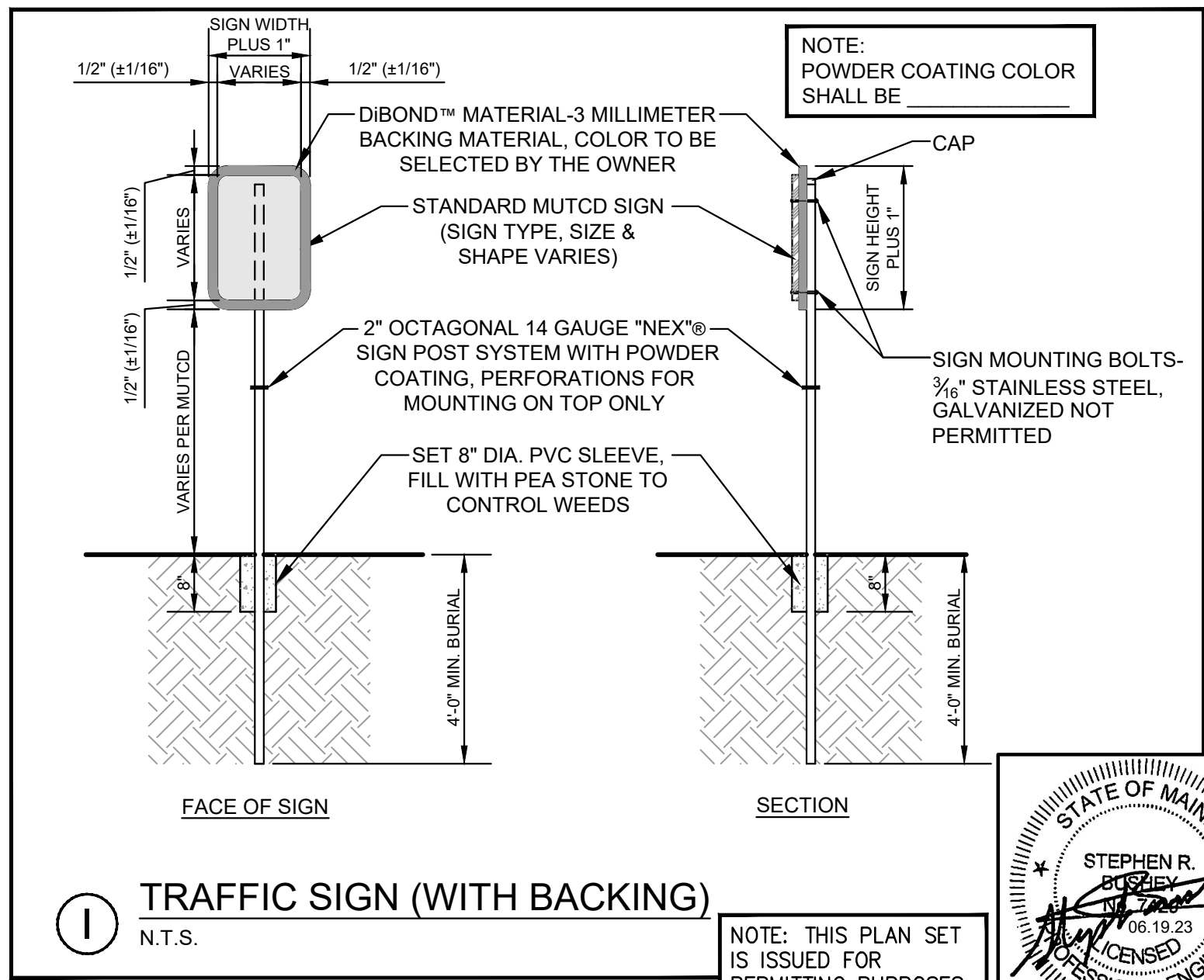
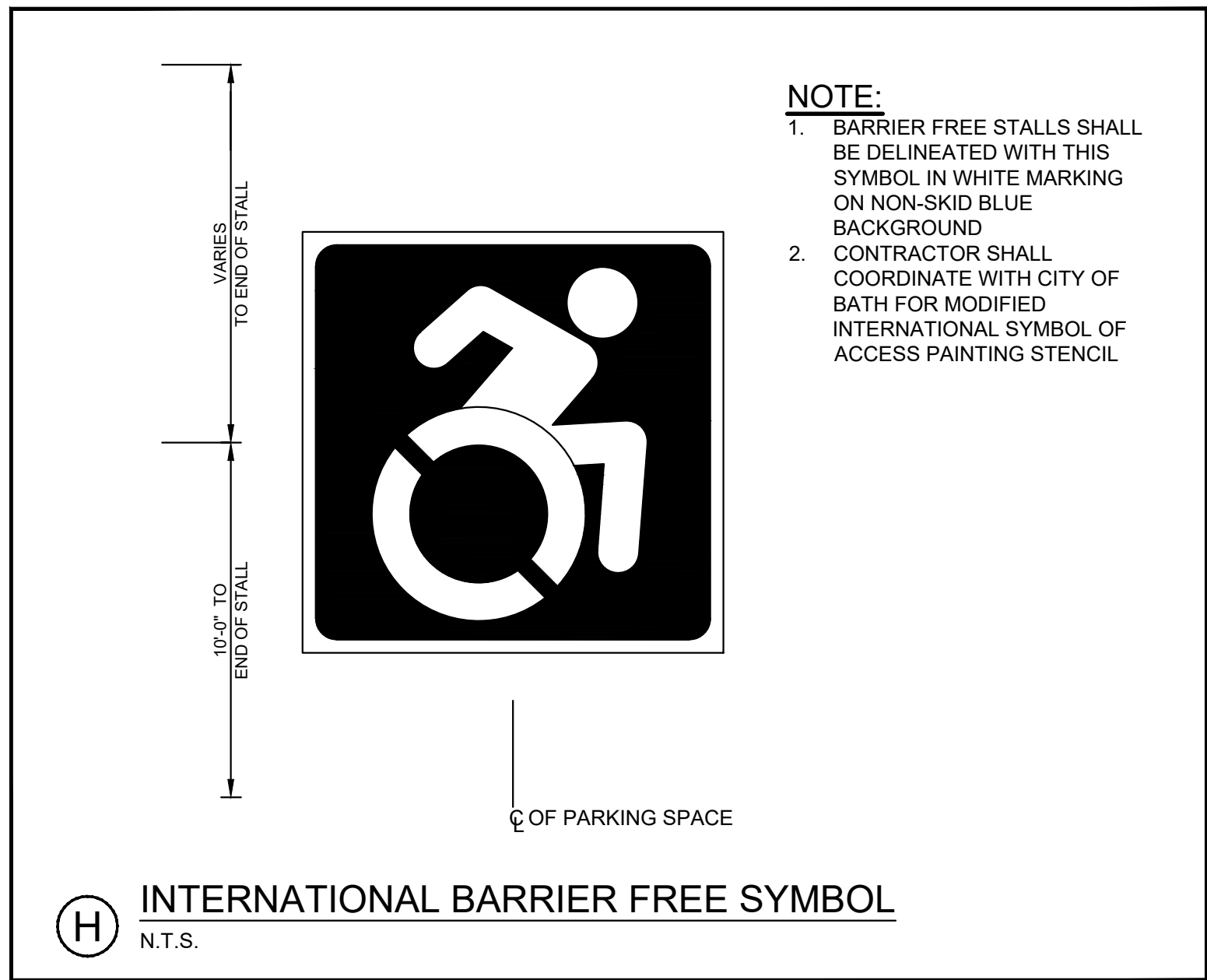
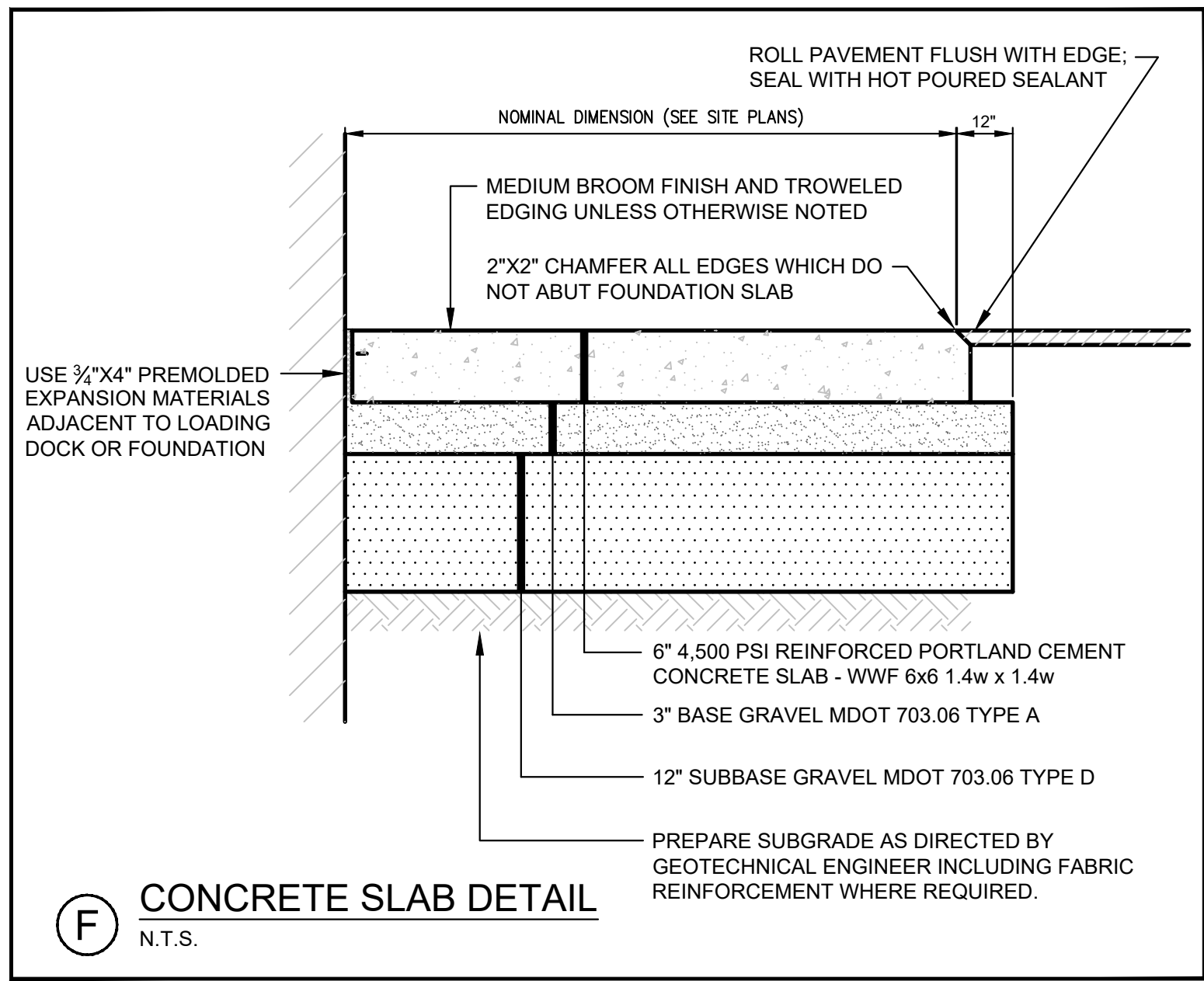
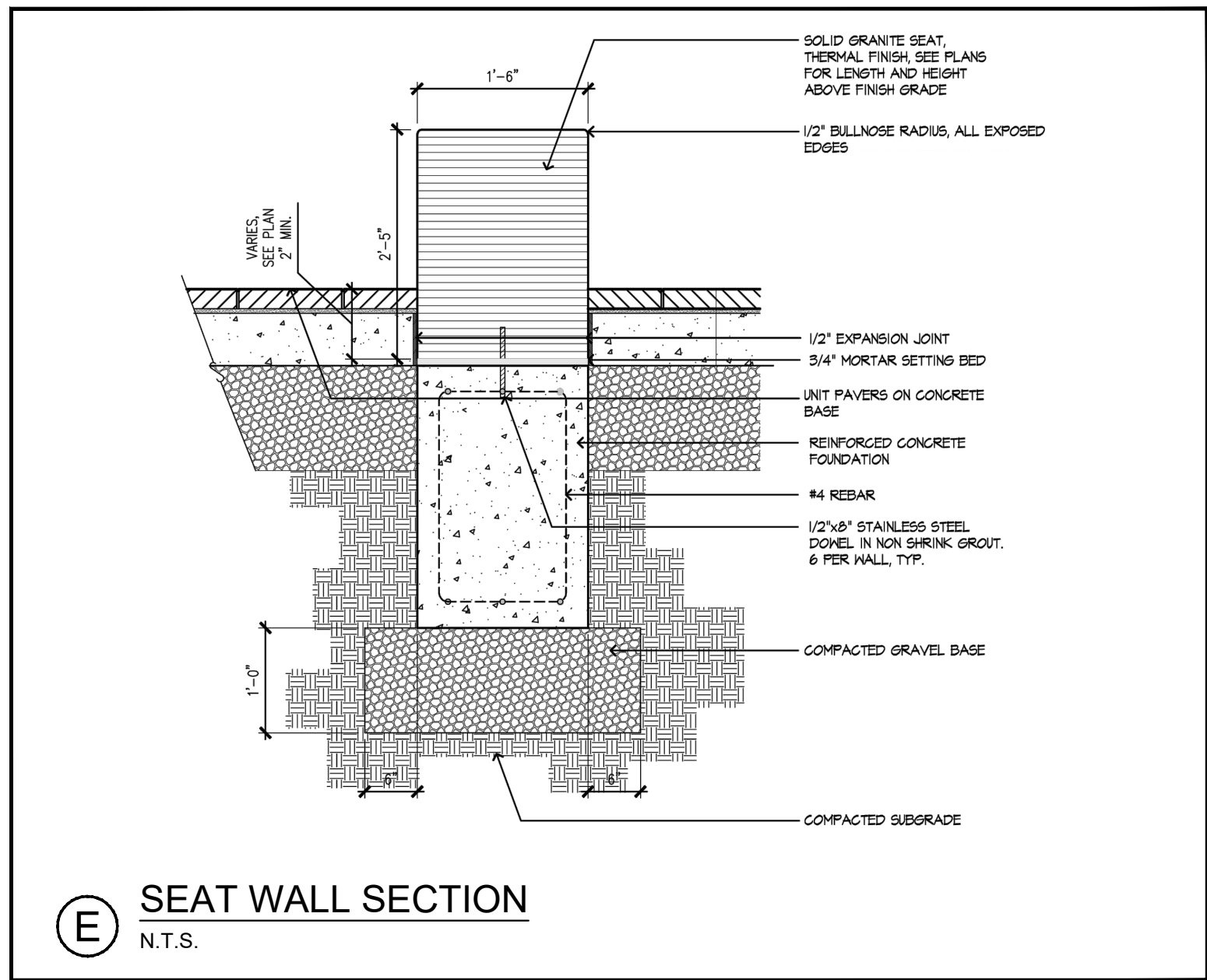
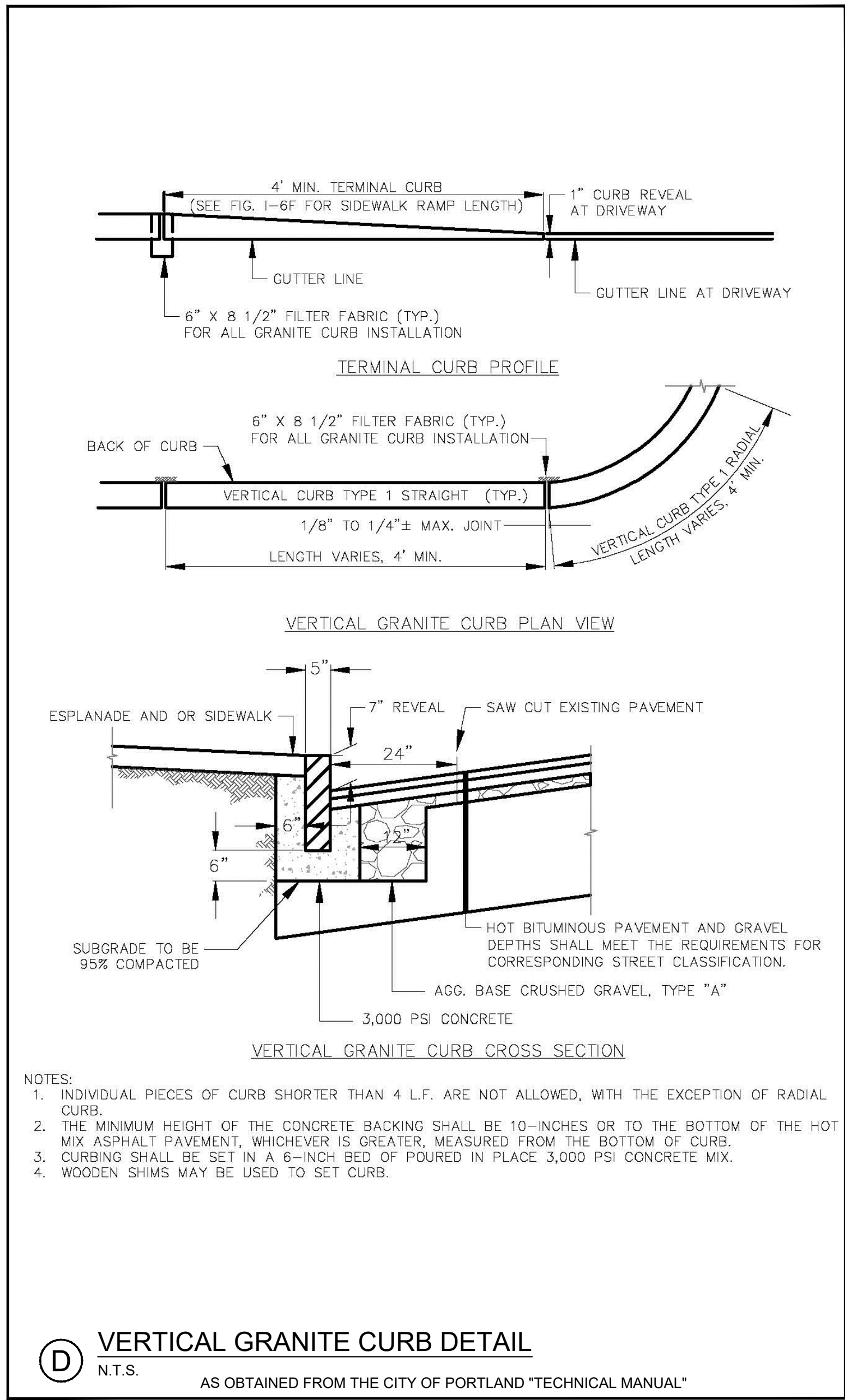
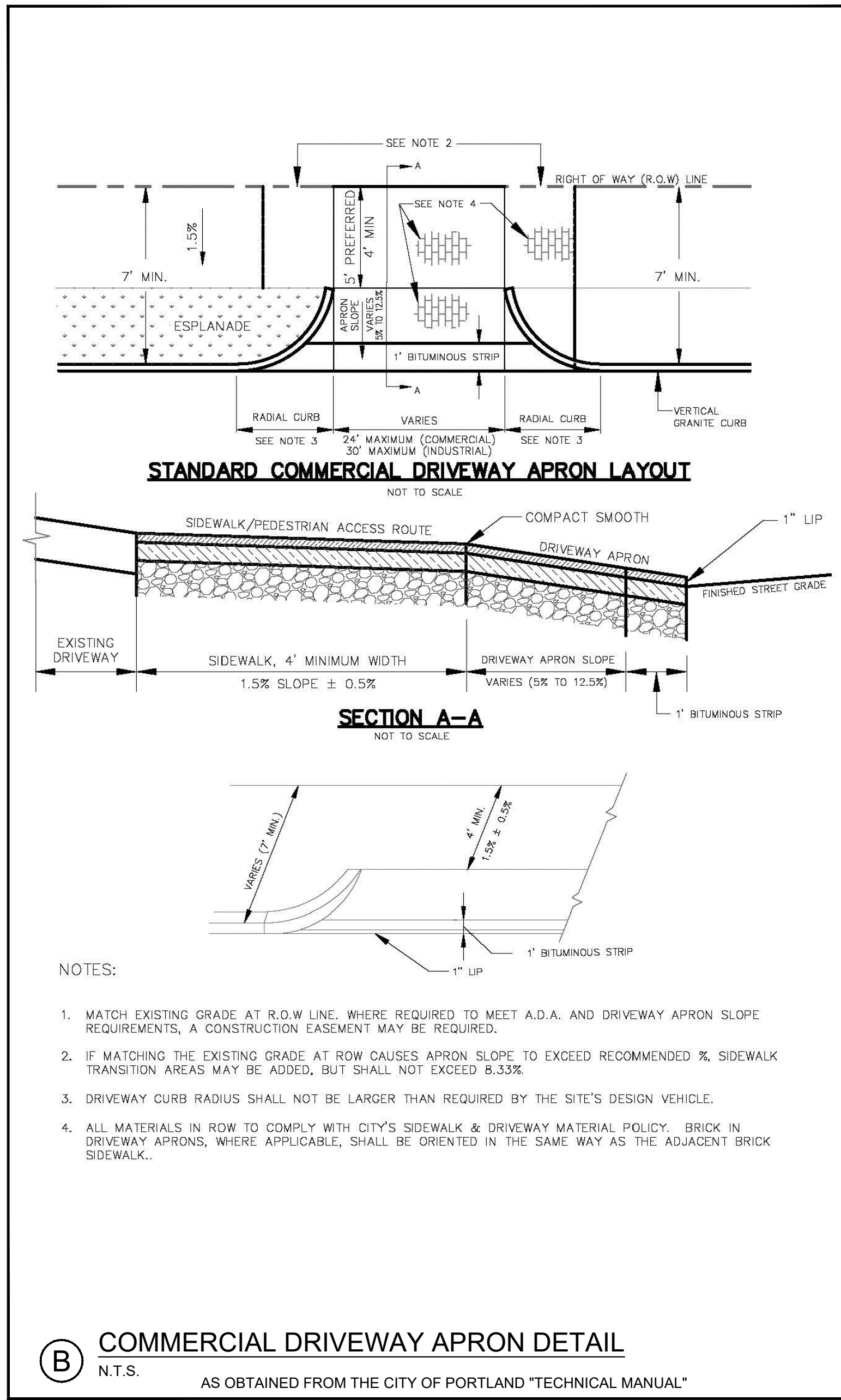
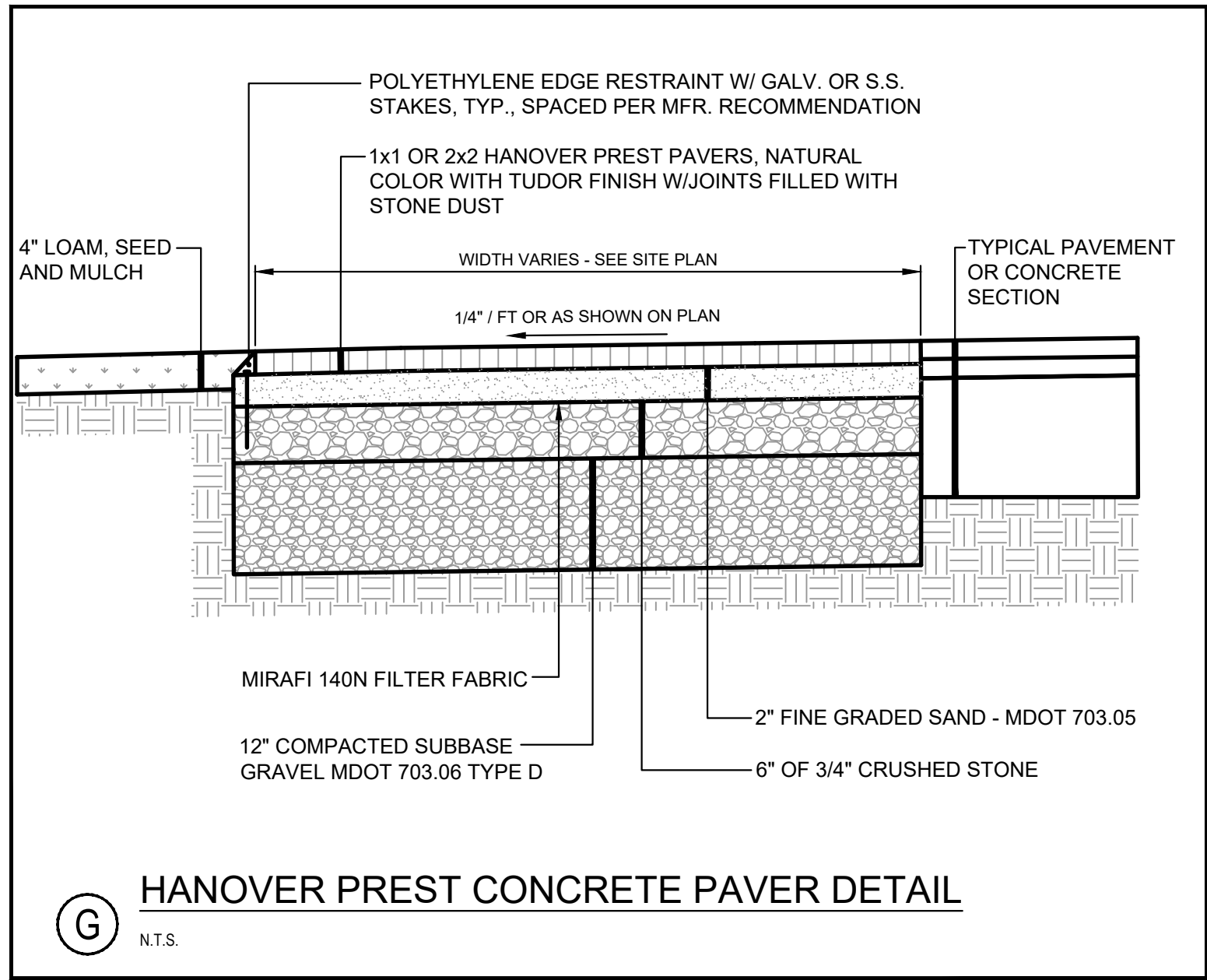
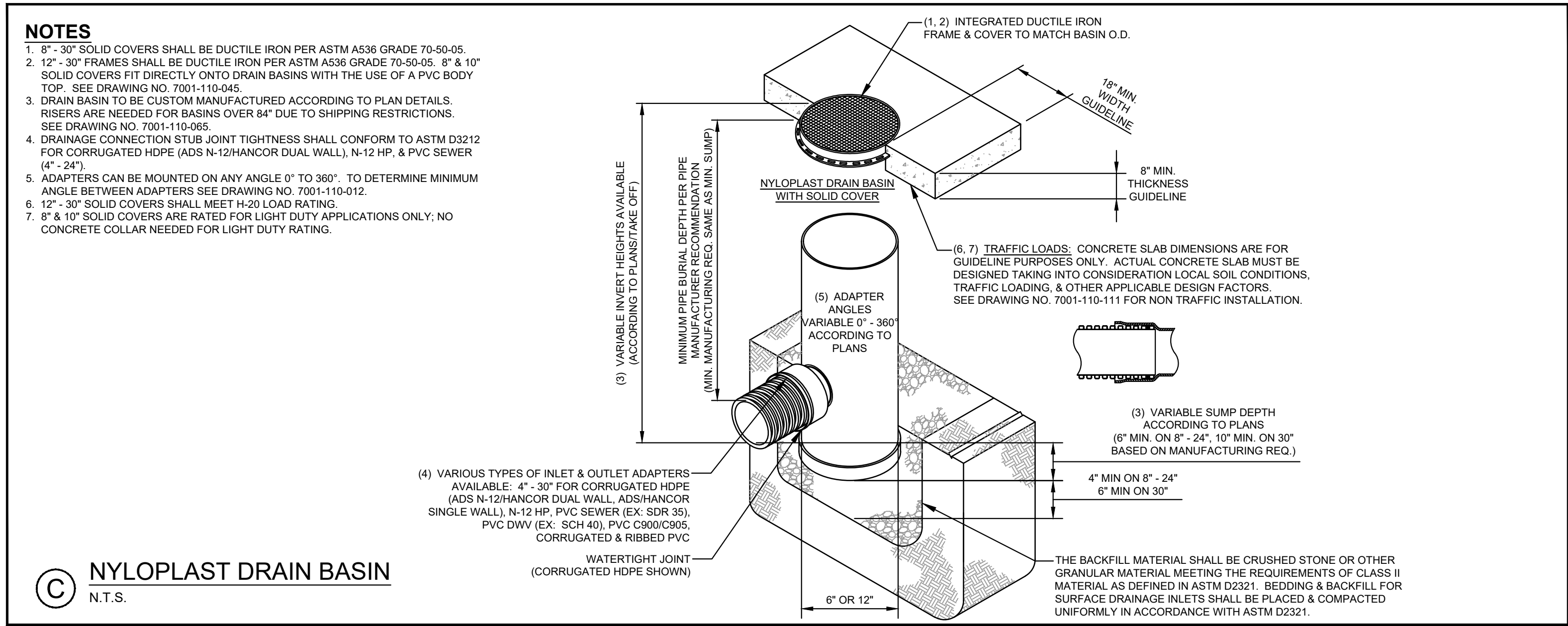
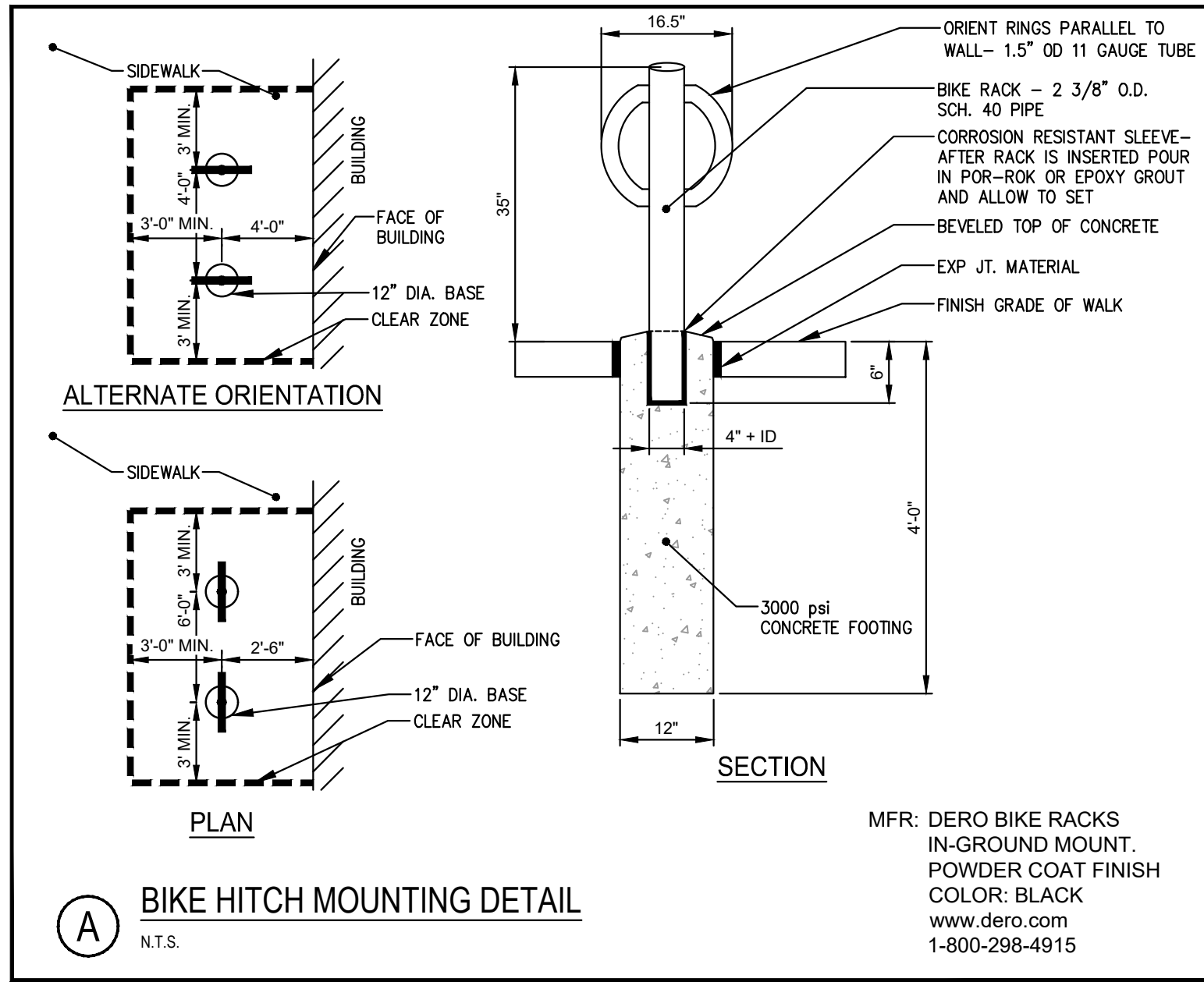


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Drawing Name:	SITE & MISCELLANEOUS DETAILS
Project:	PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT 25 CASCO STREET, PORTLAND, MAINE
Client:	DEVELOPERS COLLABORATIVE PREDEVELOPMENT, LLC 631 STEVENS AVENUE, SUITE 203, PORTLAND, MAINE 04103

Drawing No.	C-5.0
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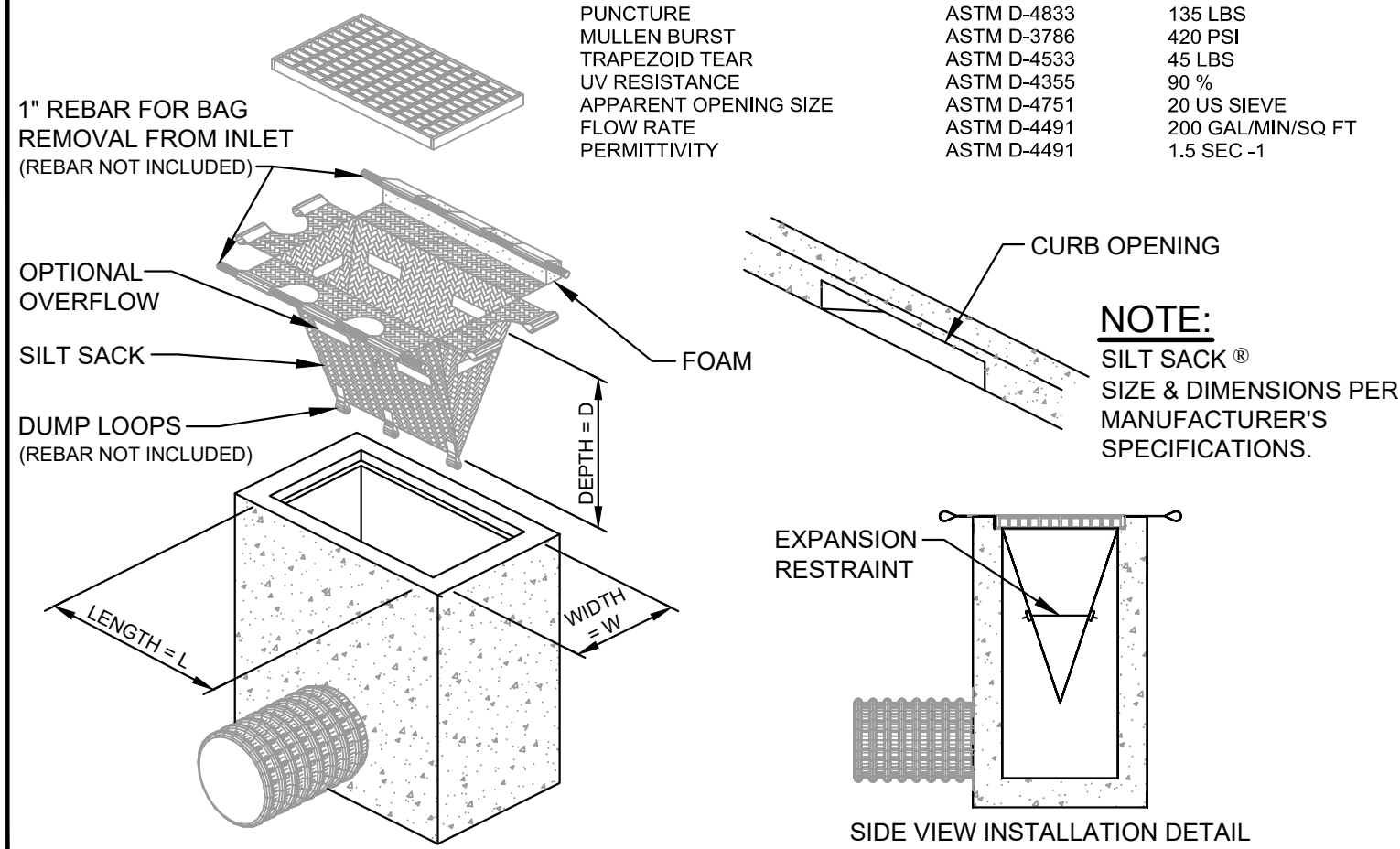
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Project:	PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT 25 CASCO STREET, PORTLAND, MAINE
Client:	DEVELOPERS COLLABORATIVE PREDEVELOPMENT, LLC 631 STEVENS AVENUE, SUITE 203, PORTLAND, MAINE 04103

Drawing No.	C-5.1
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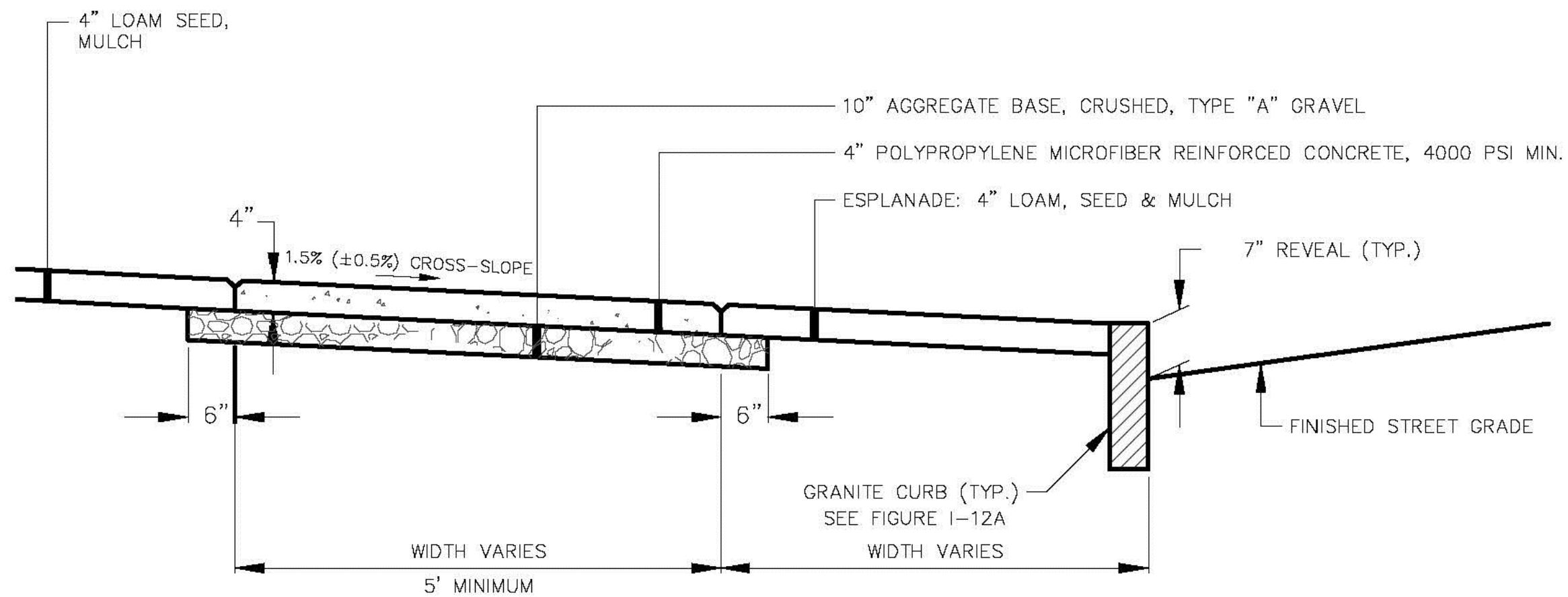
U:\4043 54 Unit Apartment Casco Street - Portland\Z - CAD\DWG\4043-DETAILS.dwg 6/16/2023 4:22 PM

NOTE: THE SILT SACK® WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HIGH-FLOW SILT SACK® (FOR USE IN LOW POINTS/SAGS)		
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1



(A) SILT SACK® DETAIL & SPECIFICATIONS
N.T.S.

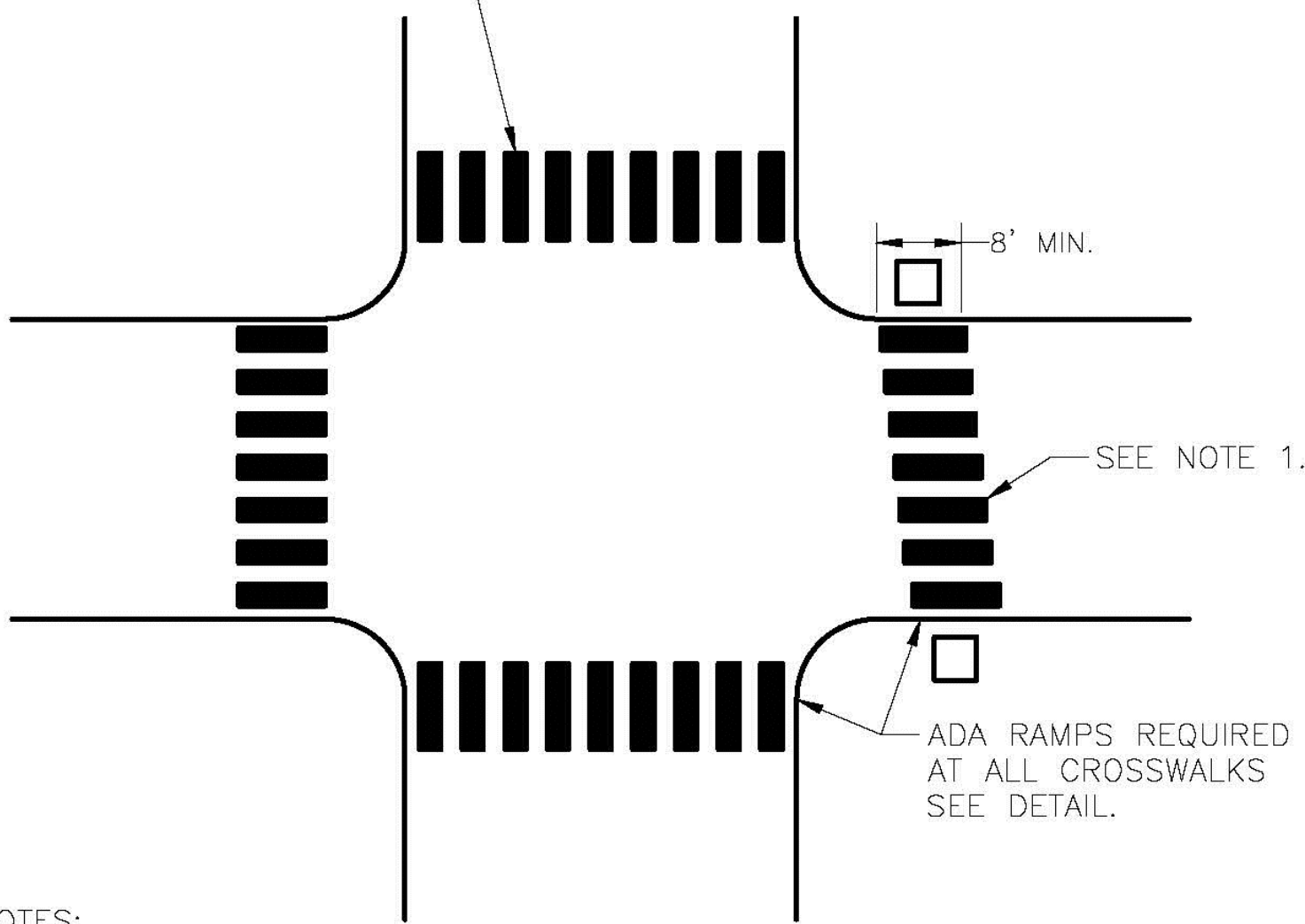


NOTE:
CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDECK SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.

(C) REINFORCED CONCRETE SIDEWALK DETAIL
N.T.S.

AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"

24" WHITE LINES, 4' ON CENTER (TYP.)



NOTES:

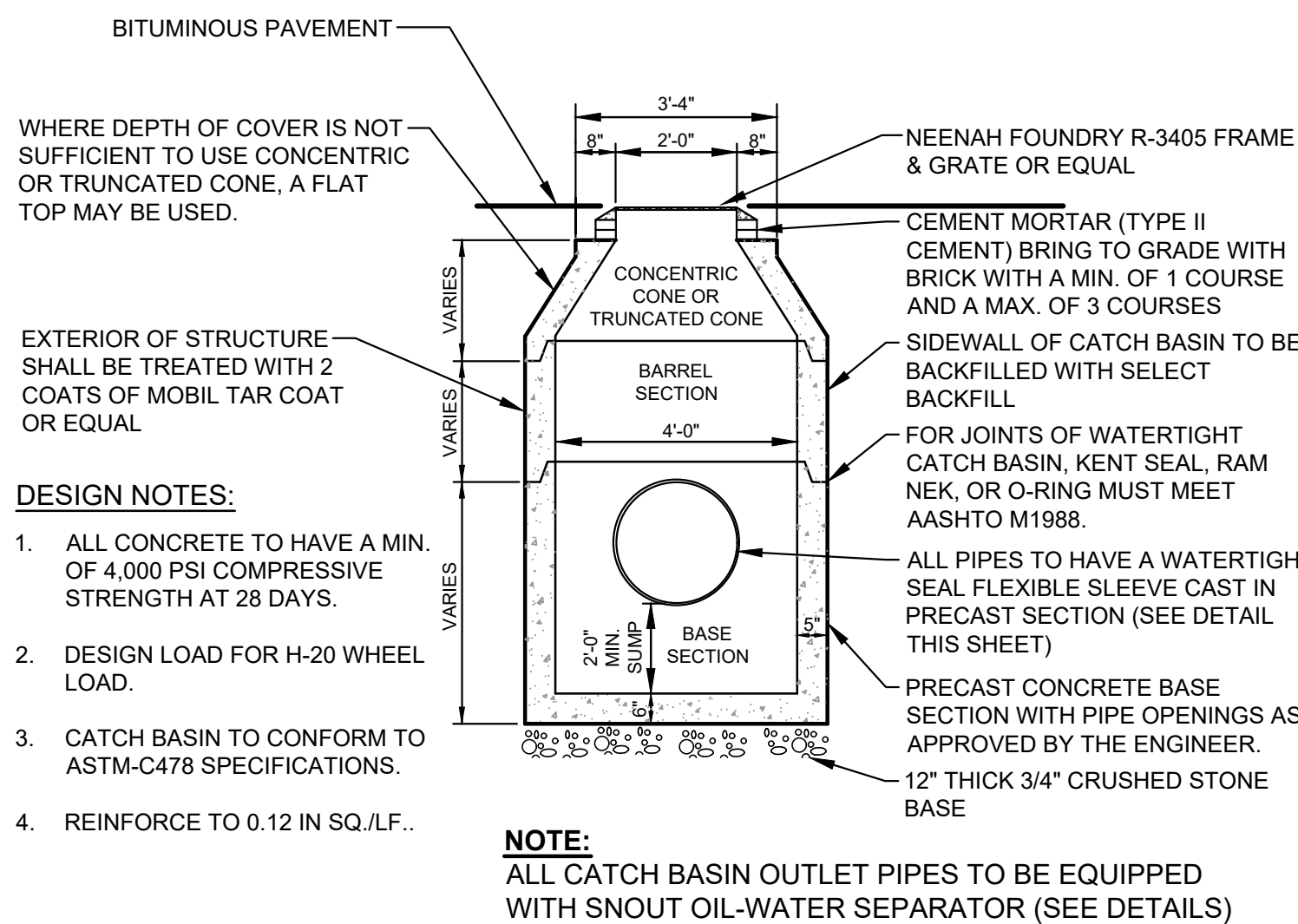
- 1.) CROSSWALK BLOCKS SHALL BE STAGGERED AND REMAIN PARALLEL TO THE ROADWAY CENTERLINE AT SKEWED CROSSING LOCATIONS.
- 2.) CROSSWALK MARKINGS LOCATED ON ARTERIAL STREETS SHALL BE APPLIED WITH A THERMOPLASTIC MATERIAL (OR APPROVED EQUAL) MEETING ALL MANUFACTURER AND MUTCD REQUIREMENTS.
- 3.) THE ESTABLISHMENT PERIOD FOR CROSSWALK MARKINGS SHALL BE BASED ON MANUFACTURER'S SPECIFICATIONS AND SHALL AT A MINIMUM MEET MAINE DOT STANDARD SPECIFICATION 627.07 ESTABLISHMENT PERIOD REQUIREMENTS.

CROSSWALK MARKINGS

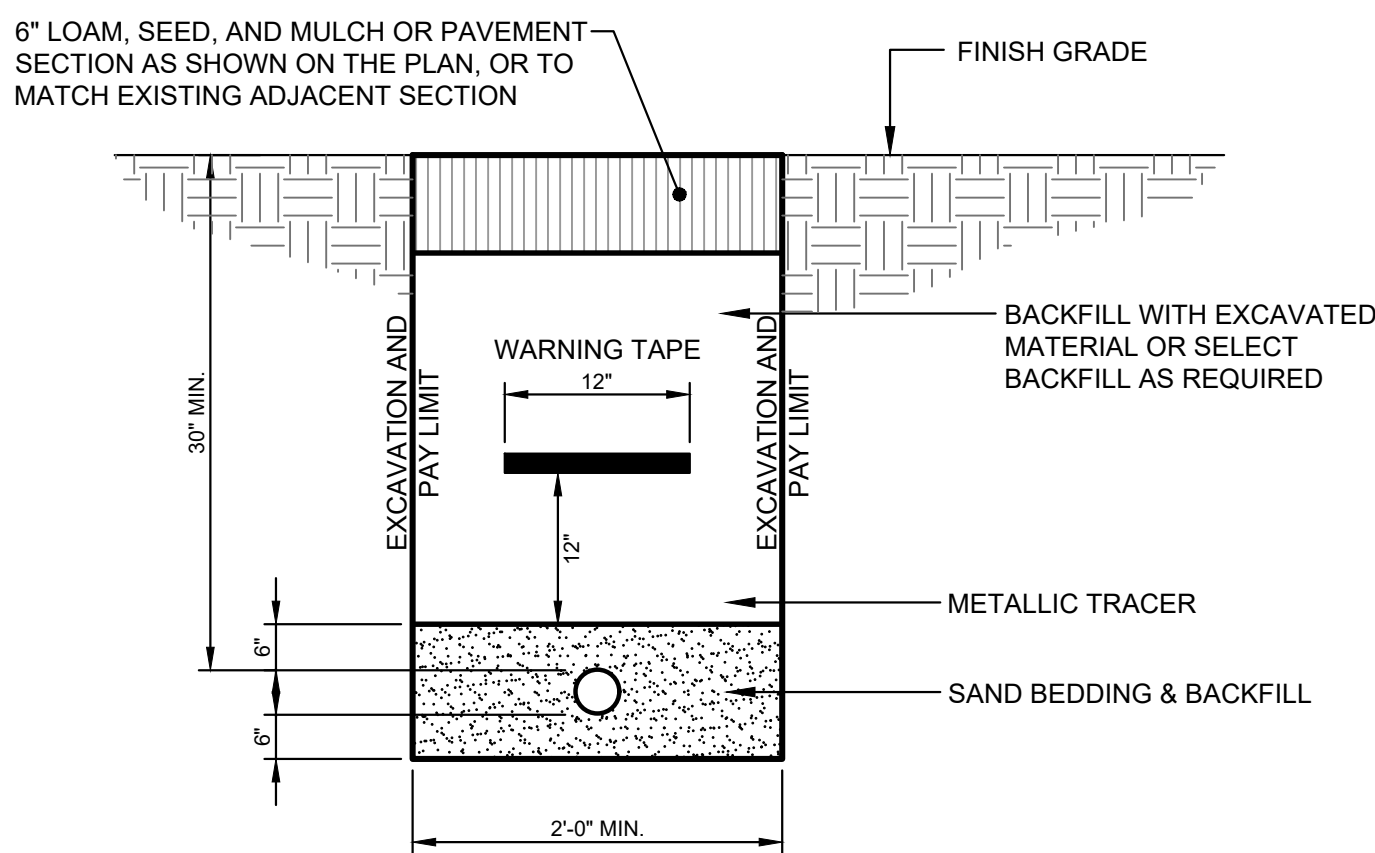
NOT TO SCALE

(B) TYPICAL CROSSWALK MARKINGS
N.T.S.

AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"

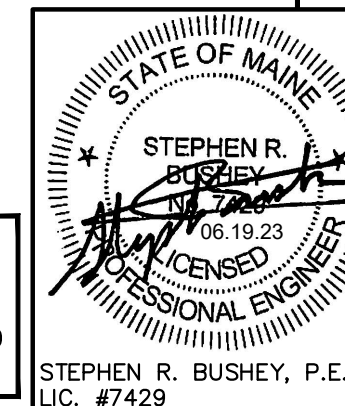


(D) 4'-0" PRECAST CATCH BASIN DETAIL
N.T.S.



NOTE:
GAS LINE TO BE INSTALLED BY OTHERS. GAS LINE INSTALLATION TO BE COORDINATED WITH THE LOCAL GAS UTILITY COMPANY, AND SHALL COMPLY WITH ITS STANDARDS. SITE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION AND BACKFILL OF THE GAS LINE AND PLACEMENT OF THE WARNING TAPES AND TRACER.

(F) GAS SERVICE TRENCH SECTION
N.T.S.



NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

STEPHEN R. BUSHEY, P.E.
LIC. #7429

Design: SRB	Draft: CDD	Date: OCT. 2022
Checked: SRB	Scale: AS NOTED	Job No.: 4043
File Name: 4043-DETAILS.dwg		

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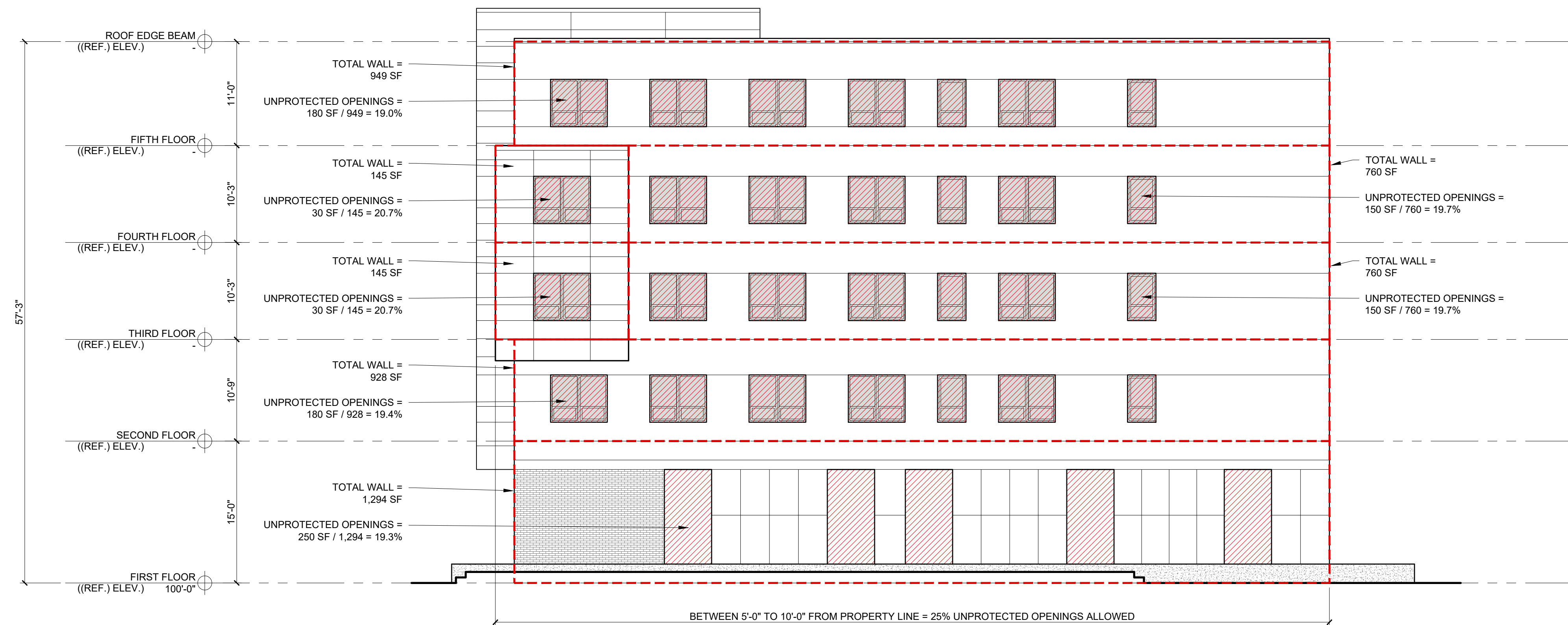


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Drawing No.

C-5.2



1 SOUTH ELEVATION CODE REVIEW
1/8" = 1'-0"

APARTMENTS
CASCO STREET
PORTLAND, MAINE



RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
O: 207-747-5159
C: 207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS

DATE:

PROJECT No. 2236

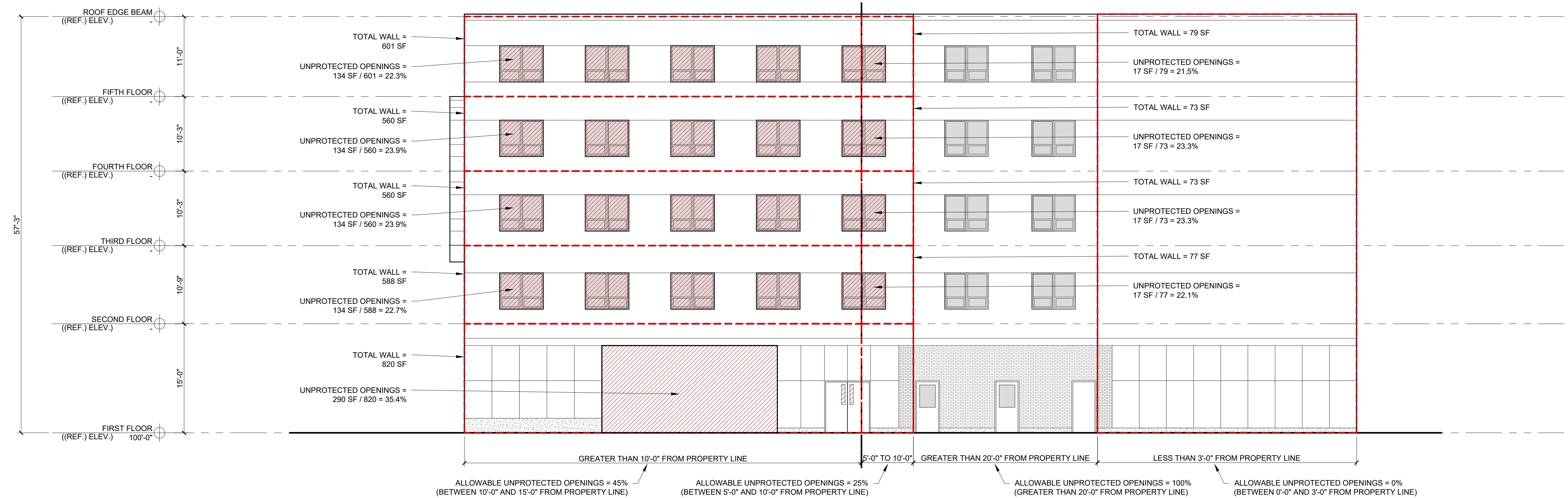
DRAWN BY: RRT, RJS

CHECKED BY: RJS

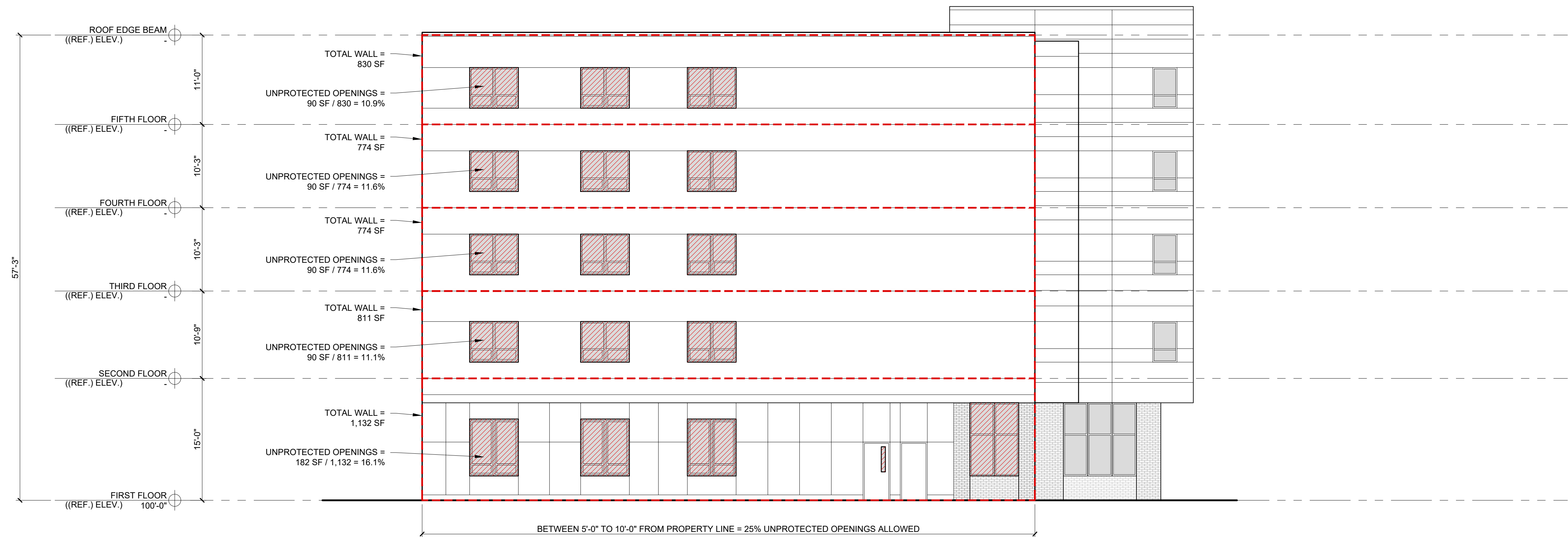
SCALE: AS NOTED

SHEET TITLE:
CODE REVIEW
ELEVATIONS

G2-0



1 EAST ELEVATION CODE REVIEW
1/4" = 1'-0"



2 NORTH ELEVATION CODE REVIEW
1/4" = 1'-0"

ALA

ACETO LANDSCAPE ARCHITECTS
207.221.3390 | ACETOLA.COM

SEAL

PROJECT TITLE

CASCO ST
15 CASCO ST
PORTLAND, ME

PREPARED FOR

DEVELOPER'S COLLABORATIVE
631 STEVENS AVE
PORTLAND, ME
207-772-7673

REVISIONS

DATE

ISSUE DATE

APRIL 14, 2023

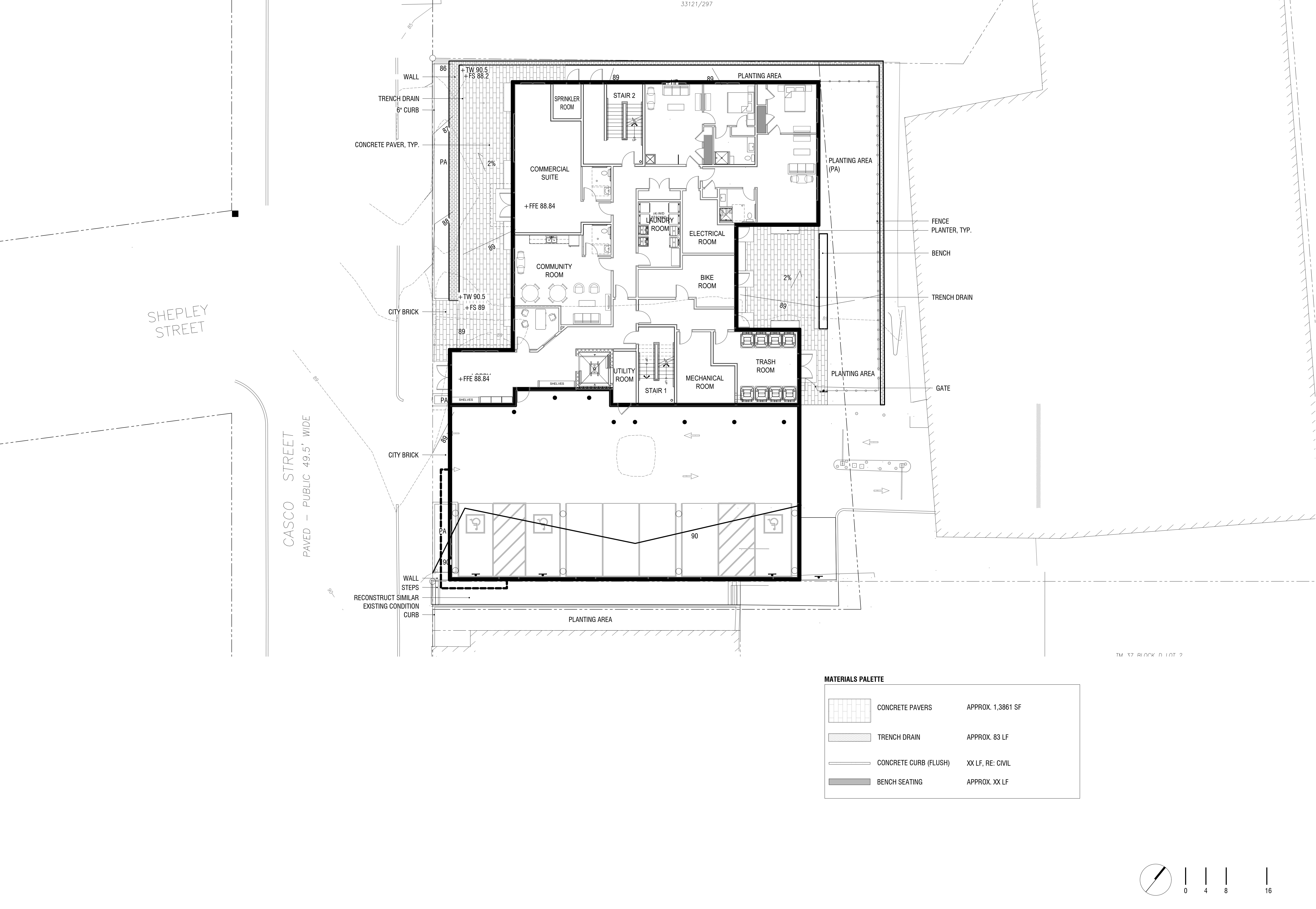
SHEET TITLE

LAYOUT PLAN

SHEET INFORMATION

L 1-00

NOT FOR CONSTRUCTION

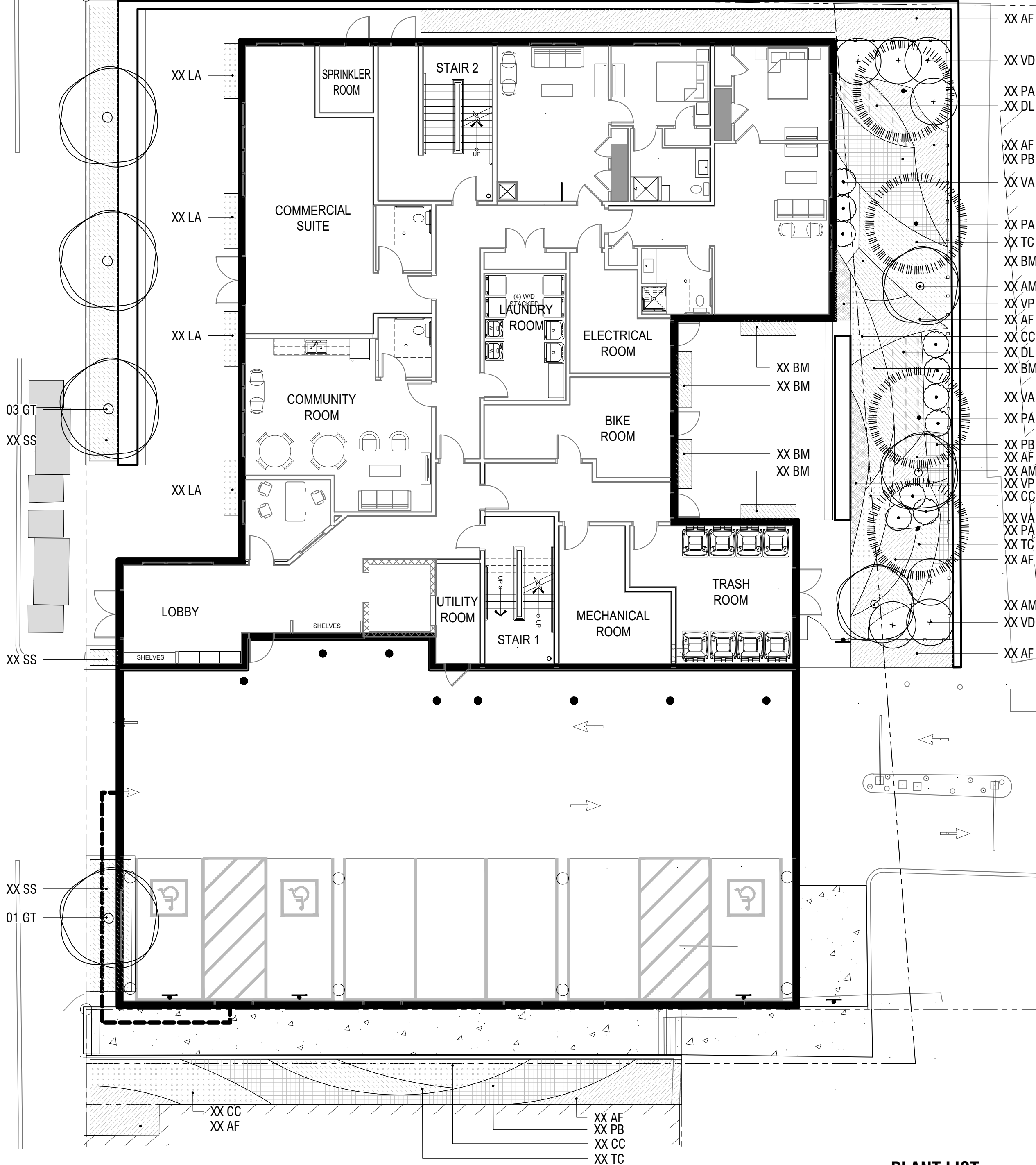


33121/297

SHEPLEY STREET

CASCO STREET
PAVED - PUBLIC 49.5' WIDE

BROWN STREET
PAVED - PUBLIC 33' WIDE



PLANT LIST

SYMB. BOTANICAL NAME COMMON NAME QTY. SIZE SPACING

TREES - DECIDUOUS

AL AMELANCHIER LAEVIS ALLEGHENY SERVICEBERRY XX 2.5" CAL. MIN. PER PLAN
GT GLEDITSIA TRICANTHOS VAR. INERMIS THORNLESS HONEYLOCUST 'SHADEMASTER' XX 2.5" CAL. MIN. PER PLAN

TREES - CONIFEROUS

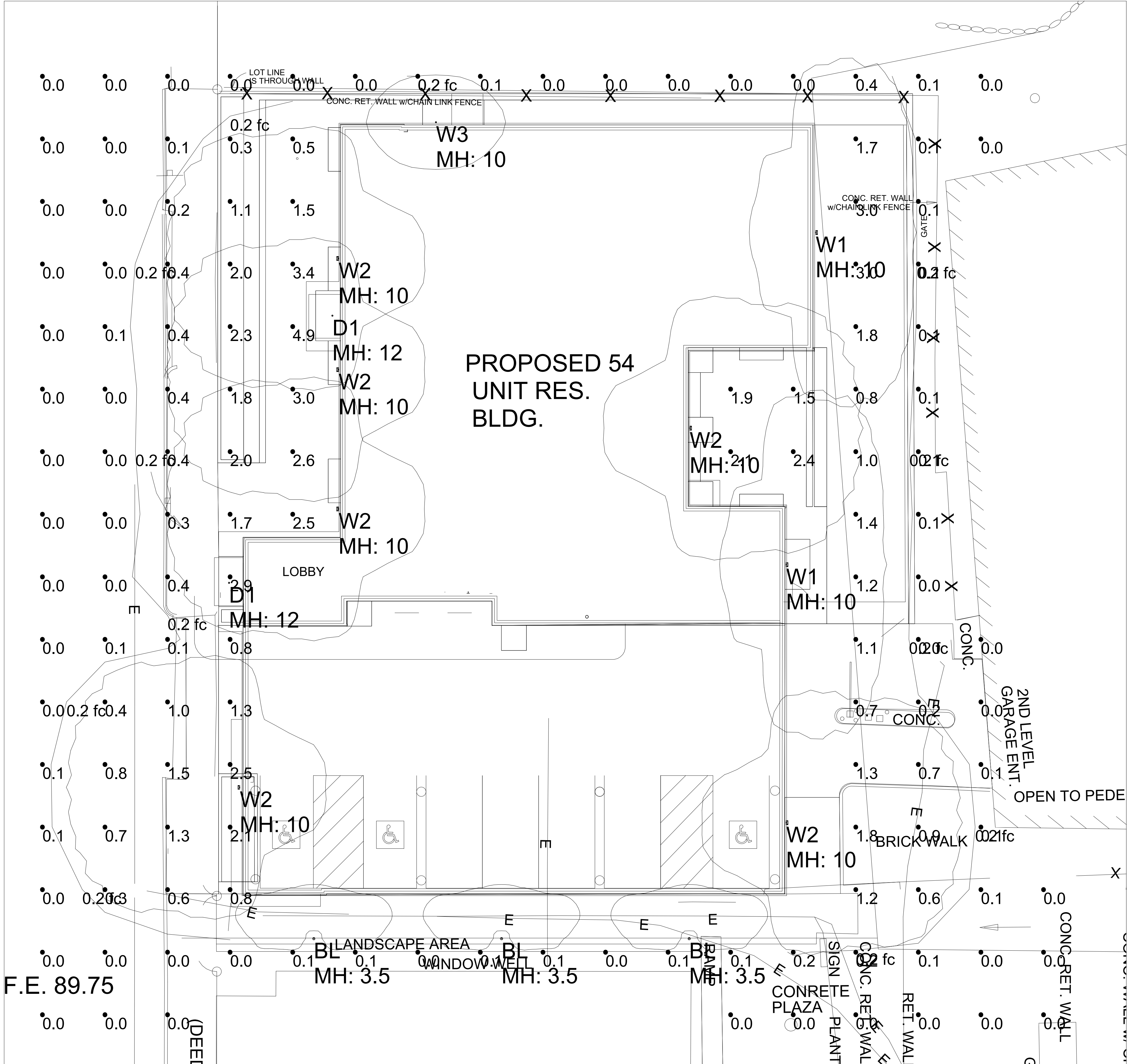
PA PICEA ABIES 'PENDULA' WEeping NORWAY SPRUCE XX 2.5" CAL. MIN. PER PLAN

SHRUBS

VA VIBURNUM ACERIFOLIUM MAPLELEAF VIBURNUM XX #1 PER PLAN
VD VIBURNUM DENTATUM ARROWWOOD VIBURNUM XX #1 PER PLAN

PERENNIALS

AF ATHYRIUM FILIX-FEMINA LADY FERN XX #1 24" O.C.
BM BRUNNERA MACROPHYLLA SIBERIAN BUGLOSS XX #1 18" O.C.
CC CORNUS CANADENSIS CREEPING DOGWOOD XX #1 12" O.C.
DL DICEENTRA 'LUXURIANT' FERN-LEAF BLEEDING HEART XX #1 20" O.C.
LA LAVANDULA ANGUSTIFOLIA ENGLISH LAVENDER XX #1 12" O.C.
PB POLYGONATUM BIFLORUM SMOOTH SOLOMON'S SEAL XX #1 12" O.C.
SS SCHIZACHYRIUM SCOPARIUM LITTLE BLUESTEM XX #1 18" O.C.
TC TIARELLA CORDIFOLIA FOAM FLOWER XX #1 18" O.C.
VP VIOLA PUBESCENS DOWNY YELLOW VIOLET XX #1 12" O.C.



PLAN VIEW

- NOTES:
- 1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
 - 2) CALCULATIONS MAY OR MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
 - 3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
 - 4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
 - 5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
 - 6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
 - 7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
site	0.60	4.9	0.0	N.A.	N.A.

Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description	Mounting Height
BL	3	684	0.900	14	PA7R-NU3HS-12L-010-3K7	3.5
D1	2	636	0.850	7.8	LTR-3RD-H-SL06L-DM1 LTR-3RD-T-SL30K8XWS	12
W1	2	1638	0.900	17.26	CY1-15-4K7-1-2-R	10
W2	6	1668	0.900	17.32	CY1-15-3K7-1-4-R	10
W3	1	890	0.860	13	CK-LED-TR-X99-SP-13-3000K prorated to 3000k	10

CASCO STREET
PORTLAND, ME
SITE LIGHTING LAYOUT

GENERATED FOR:
CORRILL PALMER
SCALE: NOT TO SCALE

SWANEY LIGHTING ASSOCIATES, INC.

Page 1 of 1
Date: 6/15/2023
GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com
site ltr 6-15-23 AGI

NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM SWANEY LIGHTING ASSOCIATES. THIS DRAWING IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED INFORMATION CONCERNING THE OPERATION OF UNITS INDICATED. THIS DRAWING IS TO BE USED AS A GUIDE ONLY AND IS NOT TO BE USED AS A BASIS FOR ANY OTHER PURPOSE. ANY VARIATION IN PERFORMANCE FROM THE PERFORMANCE SHOWN IN THESE FILES IS NOT THE RESPONSIBILITY OF THE MANUFACTURER. IT'S USE FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.



Prepared For: Portland Department of Planning & Urban Development Department

Project Owner: Equality Community LP

Construction Manager: To be determined

This document and its subsequent attachments comprise the Construction Management Plan being submitted to the Portland Department of Planning & Urban Development Department for the new 54 unit LIHTC 5 -story, residential apartment building on Casco Street. This plan is being submitted by Gorrill Palmer Consulting Engineers on behalf of the Owner. The Plan is subject to modification by the selected contractor. The purpose of the Construction Management plan is to identify, mitigate and plan for all potential impacts throughout the duration of construction. The Contractor will ensure that the safety of the public and the surrounding communities are a top priority.

The Casco Street Development consists of 5,585 SF floorplate, 5-Story, Steel Framed Building with 63 units of housing on floors 1 thru 5. The completion of the project is currently anticipated for July 2025.

This CM plan will be continually updated as the project progresses to meet the needs of the project, community, and the City of Portland. The Contractors' main objective is to deliver the project successfully with zero safety accidents or incidents, by means of communication and teamwork.

A. Construction Management Principles

The impact of this project during construction will be minimized via the following management practices and principals:

- As articulated on the attached plan (Exhibit A), the Construction Zone will be secured with a combination of jersey barriers, fencing and gates along Casco Street as well as the other sides of this site. These barriers will prevent any access into the site from public.

- All construction activities will be performed within the limits of the site fence to ensure public is never exposed to any risks caused by construction activities. The sidewalk along Casco Street, adjacent to the building will be closed for the duration of the project until completion. One entrance will be maintained into and out of the site.
- Pedestrians on Casco Street will be rerouted to the south side of the street around the limits of the project. The two existing crosswalks at the intersections of the corners of Congress Street and Cumberland Avenue will be utilized to reroute pedestrians across Casco Street.
- Proper signage will be utilized to inform pedestrians of the change in travel conditions.
- All storefronts along Casco Street will remain fully accessible to the public throughout construction.
- All deliveries will be scheduled and coordinated to ensure there is minimal off-site queuing required.
- All construction activities will occur within the sound ordinance times.

B. Development Review of Construction Management Plan

The contractor will develop a comprehensive management plan that will be in place for the duration of the construction timeline (or until permanent/final measures are installed and can be utilized).

These are depicted on Exhibit A.

Each contractor member will complete a job specific safety orientation prior to starting work activities. At no point will the public have access to the project site within the fenced limits.

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

All fees, building permit fee and guarantees will be paid/issued prior to the commencement of construction. All street opening permits will be applied for by the selected site contractor upon award and in hand prior to opening the street for work.

There is no blasting or pile driving anticipated for this project.

D. Construction Administration and Communication

The contact person for all construction activities for the project will be:

General Superintendent TBD

Due to the proximity to occupied buildings and the number of anticipated deliveries, community

outreach and communication will be required throughout construction to keep the public and neighboring businesses informed of our plan.

Signage will be posted onsite with additional emergency contact information for the selected Superintendent that will be the site contact for the project. An Emergency Call Log will be developed and distributed to the project team (to include subcontractors).

Quarterly reporting and updating of our Construction Management Plan will be required to update the city and community of the following activities:

1. Construction schedule updates
2. Material deliveries, including notice of any oversized loads that may impact public traffic
3. Requests for upcoming off-hours work including weekends and holidays
4. Notice of any upcoming activities that may produce strong noise, vibration or dust that could adversely affect the neighboring communities
5. Requests for any street openings or public sidewalk work to be completed as part of the construction contract

E. Construction Schedule

The project is expected to commence immediately upon permit issuance (May of 2024) and be completed no more than 14 months post commencement of work. The anticipated completion date is July of 2025.

Construction work hours will be in accordance with section 17-18.

Specifically, work hours will be limited to Monday – Friday 7:00am -7:00pm. Should Saturday work be required, the use of heavy equipment will be kept within the time constraints of 8:00am to 4:00pm.

Final Schedule to be provided by the select

F. Security & Public Safety

Please refer to Exhibit A for the site fencing/gates, traffic, and pedestrian routing plan, which will be

utilized for the duration of the project. If required by the city, Knox Box Pad Locks will be installed at each gate for fire department emergency access.

The fire safety program on-site will consist of the following:

1. Fire extinguishers will be placed throughout the construction site for the duration of the project.
2. On site fuel storage will be limited but will be required throughout construction. A free-standing, 30-minute fire-rated enclosure will be provided for this safe and secure storage.
3. During construction, our Means of Egress will have at least two permanent stairs. Temporary signage will be installed to clearly indicate these egress methods.
4. Good Housekeeping – The Contractor will provide dumpsters for the removal of debris from the site. All subcontractors are responsible for the daily clean-up of their work areas. Additionally, the Contractors will have laborers to assist with this daily clean-up. Daily safety walks by the Construction Superintendent will be utilized to ensure that all working floors are equipped with an inspected fire extinguisher and a clear means of egress in the event of an emergency.
5. Any personnel (whether working or visiting the site) will go through our safety orientation that will include our emergency evacuation plan.

G. Construction Permitting and Traffic Control Plans

The construction will be near pedestrian right of ways and will interact with public traffic throughout the duration of the project. There will be little to no lay down area for materials on-site. Deliveries will be scheduled in advance and planned for accordingly. We will stay in constant communication with the City and the neighboring businesses to keep them informed of our upcoming construction activities / deliveries with the intent to minimize impacts to all surrounding Streets.

This project includes new utilities that will require new taps/tie-ins within the public ROW. All street opening permits will be applied for and approved prior to start of utility work in the street.

H. Site Management and Controls

The General Contractor will adopt the following site management and maintenance activities through the duration of the project:

1. Trash and debris will be contained within the project fencing and changed out on a regular basis.
2. A stabilized construction entrance will be installed at the gate locations and maintained by the selected sitework contractor. Street cleaning will be reviewed daily and cleaned as required to remove dirt/debris caused by the construction efforts
3. Noise will comply with City Ordinances.
4. If needed, water will be used to control dust during the sitework activities of the project. We do not anticipate any other activities that will require dust control measures.
5. Onsite snow removal will be handled by the General Contractor.

I. Erosion Control and Preservation of Trees

We will comply with the approved erosion and sedimentation control plan.

J. Construction Staging Area

Exhibit A of this document is the site logistics plan for the project. An offsite marshalling area may be needed during the erection of the steel structure, concrete placements, and the exterior siding system due to the limited area on site. Once all these subcontractors are procured, we will have further review and update this plan accordingly.

K. Parking During Construction

Off-site parking is required. Employee parking will be provided by employers utilizing legal parking methods. It will be discussed in the Subcontract agreements that no street parking will be allowed during work hours to leave available for the local businesses. Subcontractors can utilize the public lot off Marginal Way.

L. Special Measures as Necessary

This is a 5-story steel building that will be erected utilizing a small 80-Ton RT Crane. Once an erector / crane has been selected, the contractor will further review and discuss with the City to update this plan if needed. Should we encounter any groundwater, dewatering will be handled by the sitework contractor. This can be further discussed with the Contractor at the Preconstruction meeting for specific details.

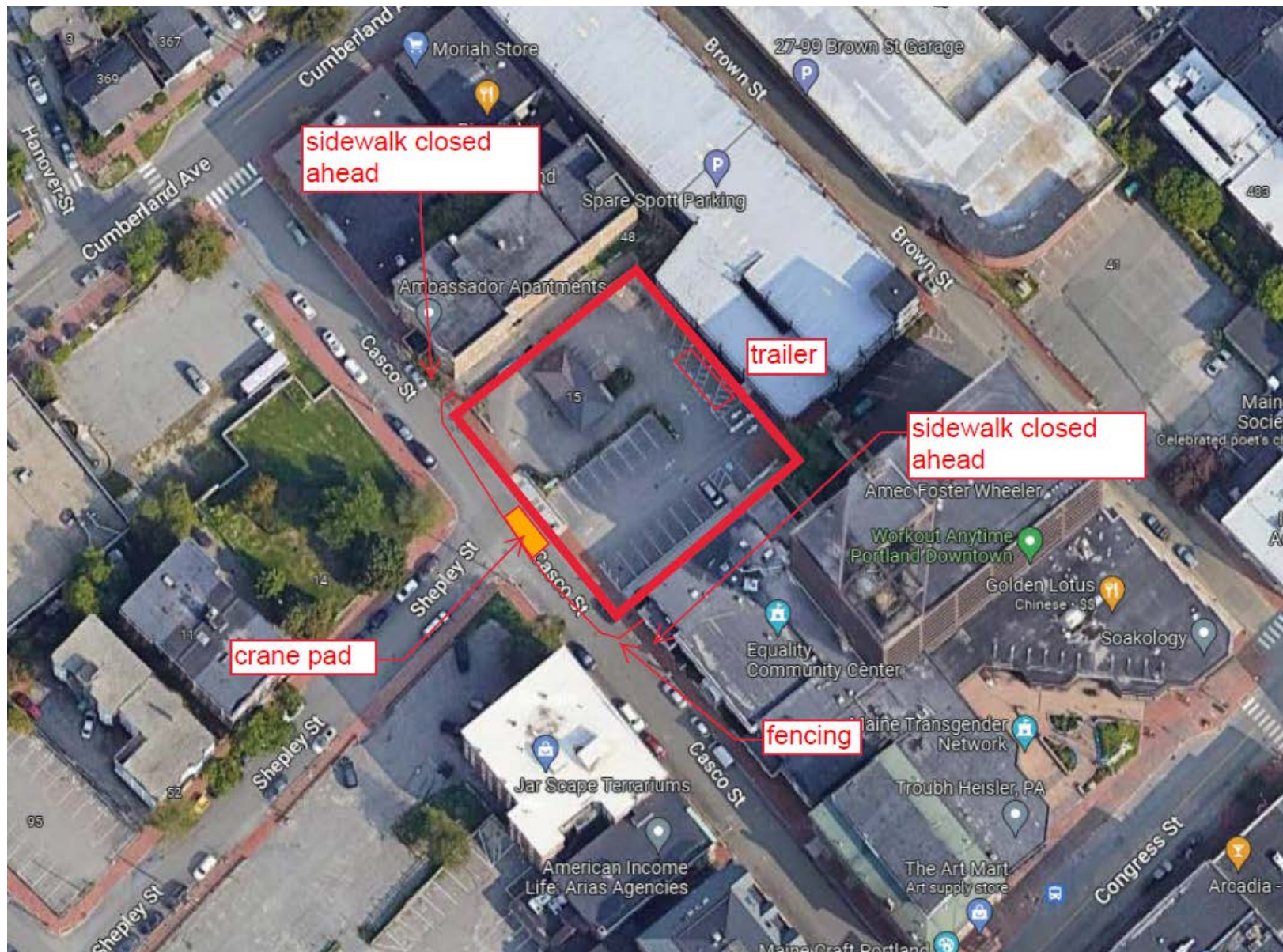
M. Project truck routing

All truck deliveries will be routed as stated below:

Incoming- US Highway I-295 exit 7 off I-295 onto Franklin Street, and then right onto Cumberland Avenue. The gate entrance will be located at the front of the project, which will be on the right-hand side for incoming deliveries.

Outgoing- Leave site, turn right and head north on Cumberland Avenue to Franklin Arterial and follow back to US Highway I-295.

Casco Street
Sidewalk/Lane Occupancy/Temporary
Pedestrian Access Plan



Signage at Construction Gates

Deliveries

Due to the confined nature of the site, we will implement a Just In Time Delivery system to minimize onsite material storage.

ATTENTION
ALL VENDORS, VISITORS,
and DELIVERIES
MUST CHECK IN
AT CONSTRUCTION
MANAGERS OFFICE

NO UNAUTHORIZED PERSONNEL
BEYOND THIS POINT
ALL VISITORS
MUST SIGN IN AT
CONSTRUCTION MANAGEMENT OFFICE

NOTICE
THIS IS A TOBACCO FREE SITE
Use and Possession of Any
Tobacco Products is Strictly
Prohibited

NOTICE
Hard Hats,
Safety Glasses and
Hard Toed Boots
REQUIRED BEYOND
THIS POINT

**NO
TRESPASSING**
AUTHORIZED
PERSONNEL ONLY
VIOLATORS
WILL BE
PROSECUTED

**CONSTRUCTION
VEHICLES
ENTERING/
EXITING**

AFFORDABLE APARTMENTS
CASCO STREET, PORTLAND, MAINE

JULY 17, 2023

54 UNITS

- 12 STUDIO
- 34 ONE BED
- 8 TWO BED

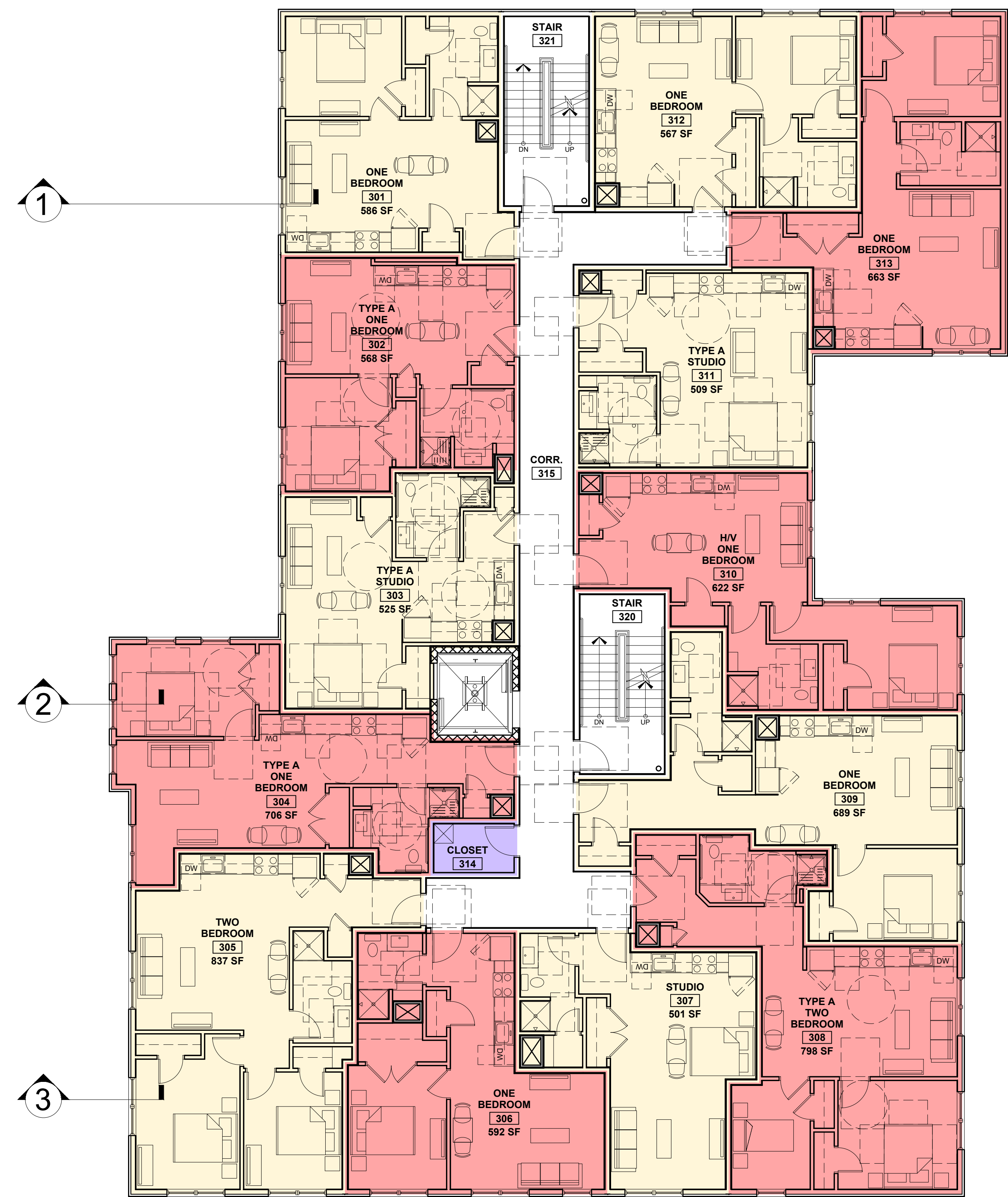


AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

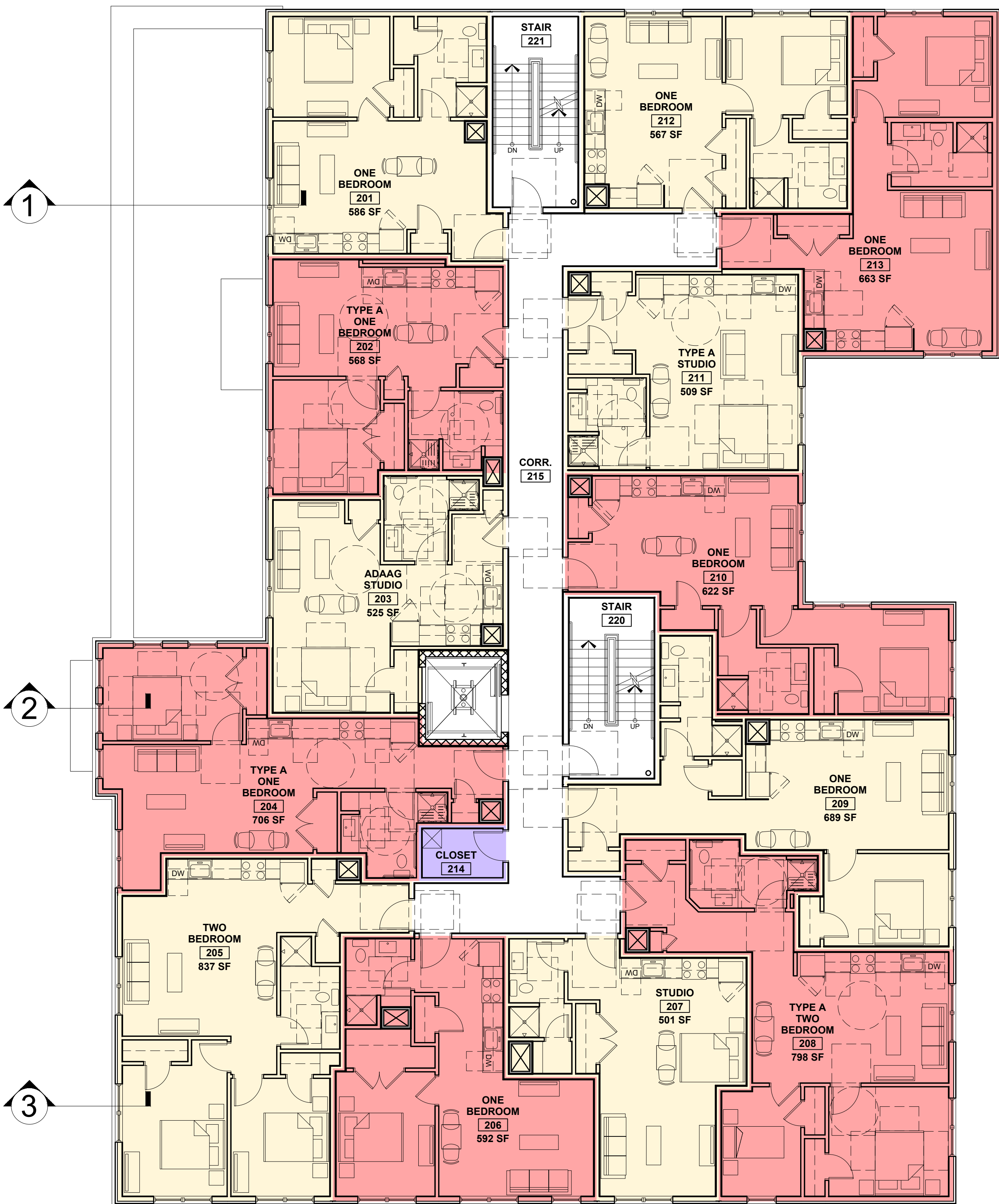
JULY 17, 2023

THIRD FLOOR



1 THIRD FLOOR PLAN
1/8" = 1'-0"

SECOND FLOOR



1 SECOND FLOOR PLAN
1/8" = 1'-0"

RYAN SENATORE ARCHITECTURE

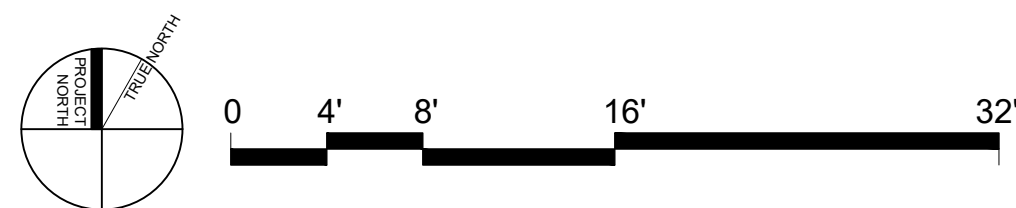
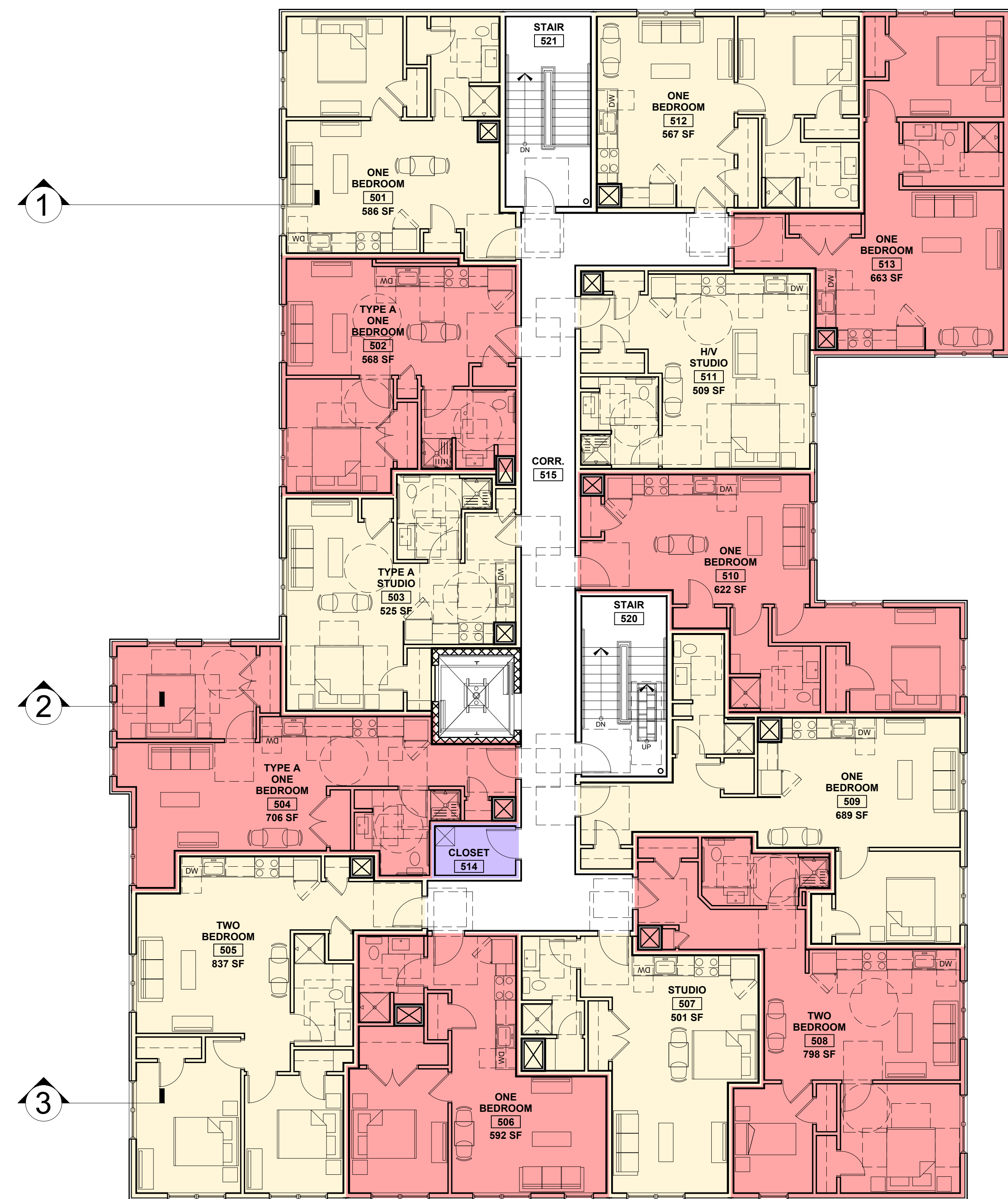
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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

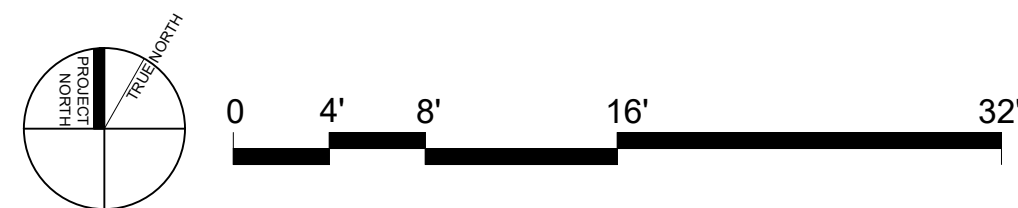
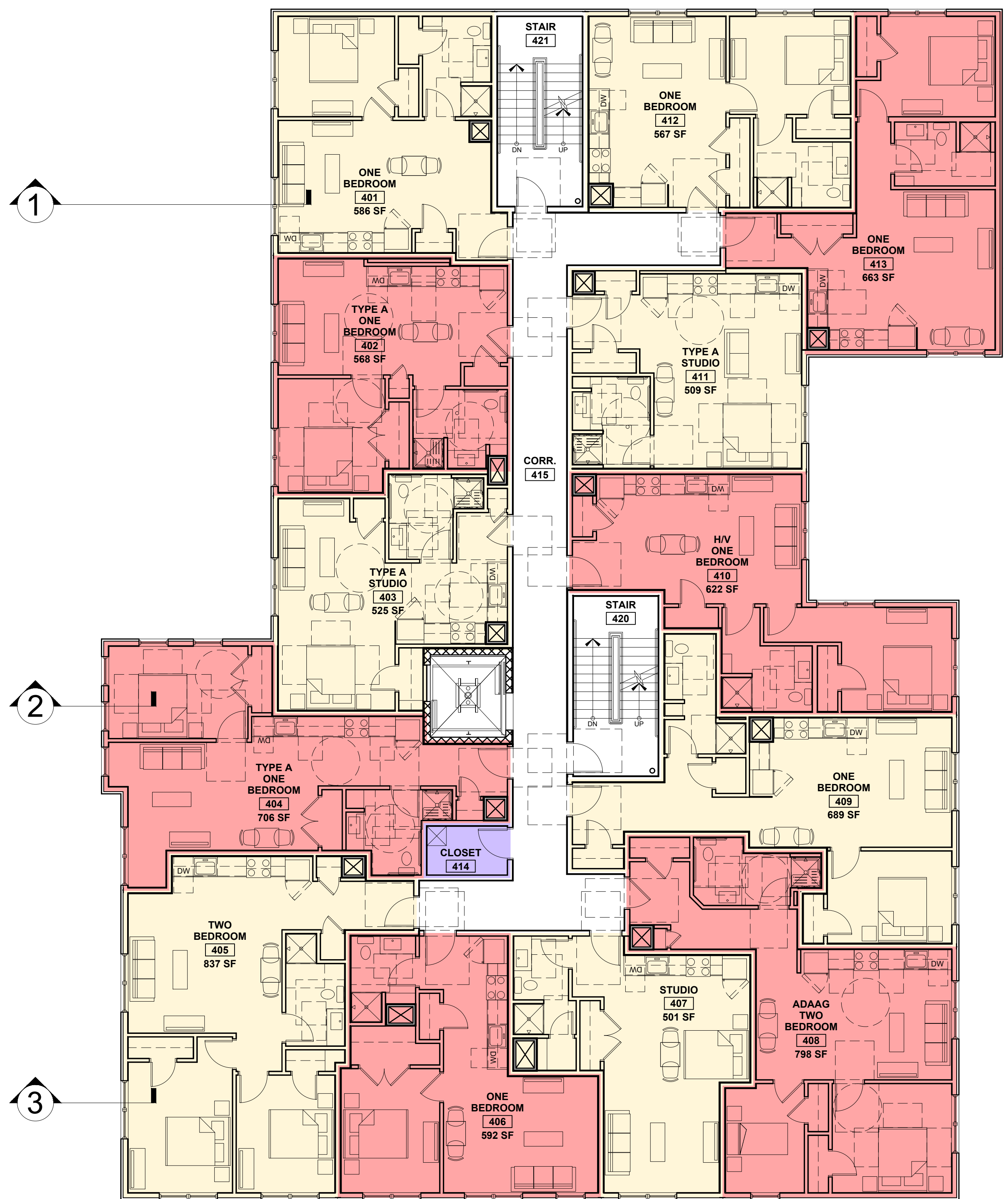
JULY 17, 2023

FIFTH FLOOR



1 FIFTH FLOOR PLAN
1/8" = 1'-0"

FOURTH FLOOR



1 FOURTH FLOOR PLAN
1/8" = 1'-0"

RYAN SENATORE ARCHITECTURE

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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023

MATERIALS KEY		
ITEM	INFORMATION	COLOR
FIBERCEMENT PANEL SIDING - COLOR #1	MAIN BODY	SAFFRON
FIBERCEMENT PANEL SIDING - COLOR #2	PANEL ACCENT COLOR	SW 6164
FIBERCEMENT PANEL SIDING - COLOR #3	ENTRY TOWER ACCENT COLOR	SW 6169
FIBERCEMENT PANEL SIDING - COLOR #4	CORNICE ACCENT COLOR	IRON GRAY
PRE-CAST - COLOR #5		LIGHT LIMESTONE
WINDOW - COLOR #6		BLACK
MATERIALS NOTE:		
1.) ALL DIS-SIMILAR METALS TO BE ISOLATED FROM ONE ANOTHER WITH ADHERED STRIPS OR SEALANTS TO PREVENT GALVANIC ACTION		



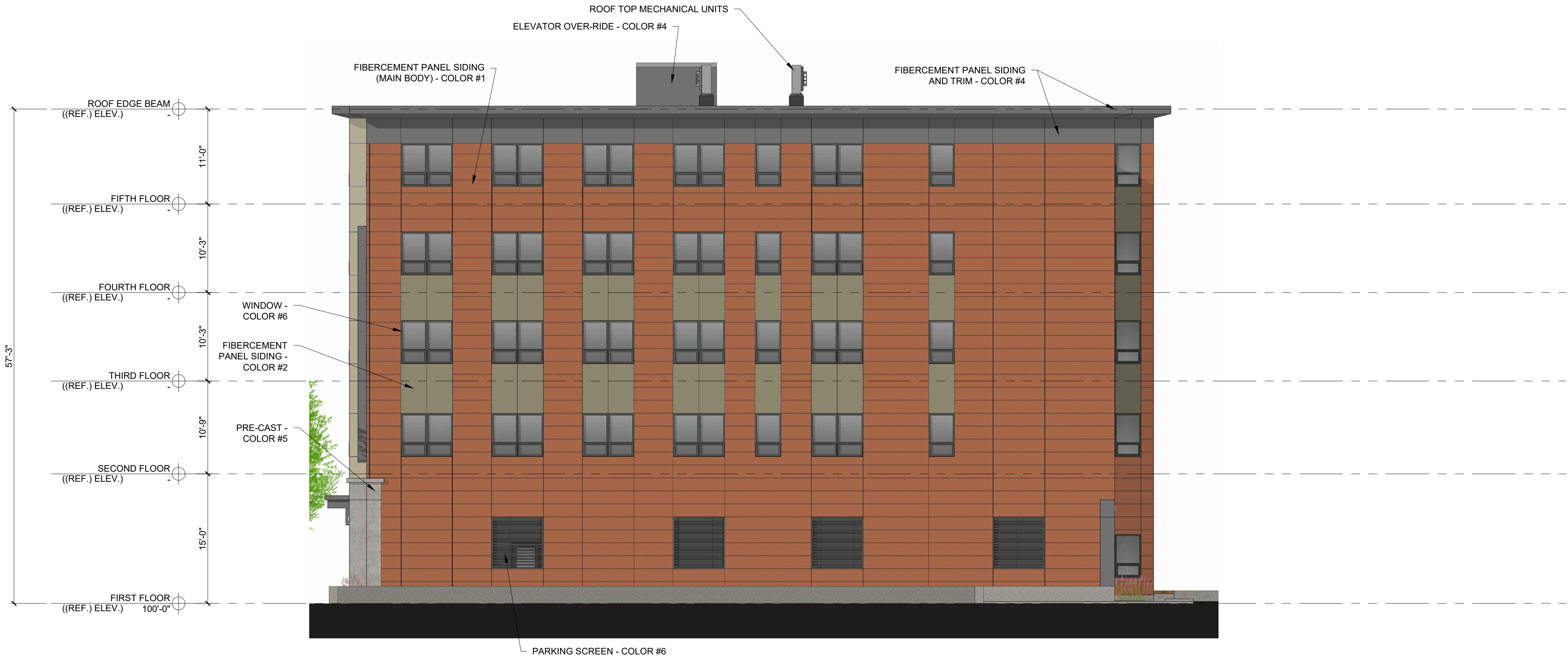
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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023

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FIBERCEMENT PANEL SIDING - COLOR #4	CORNICE ACCENT COLOR	IRON GRAY
PRE-CAST - COLOR #5		LIGHT LIMESTONE
WINDOW - COLOR #6		BLACK
MATERIALS NOTE:		
1.) ALL DIS-SIMILAR METALS TO BE ISOLATED FROM ONE ANOTHER WITH ADHERED STRIPS OR SEALANTS TO PREVENT GALVANIC ACTION		



1 SOUTH ELEVATION COLOR RENDERING

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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023

MATERIALS KEY		
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FIBERCEMENT PANEL SIDING - COLOR #3	ENTRY TOWER ACCENT COLOR	SW 6169
FIBERCEMENT PANEL SIDING - COLOR #4	CORNICE ACCENT COLOR	IRON GRAY
PRE-CAST - COLOR #5		LIGHT LIMESTONE
WINDOW - COLOR #6		BLACK
MATERIALS NOTE:		
1.) ALL DIS-SIMILAR METALS TO BE ISOLATED FROM ONE ANOTHER WITH ADHERED STRIPS OR SEALANTS TO PREVENT GALVANIC ACTION		



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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023

MATERIALS KEY		
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FIBERCEMENT PANEL SIDING - COLOR #4	CORNICE ACCENT COLOR	IRON GRAY
PRE-CAST - COLOR #5		LIGHT LIMESTONE
WINDOW - COLOR #6		BLACK
MATERIALS NOTE:		
1.) ALL DIS-SIMILAR METALS TO BE ISOLATED FROM ONE ANOTHER WITH ADHERED STRIPS OR SEALANTS TO PREVENT GALVANIC ACTION		



1 NORTH ELEVATION COLOR RENDERING
NTS

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#1



FIBERCEMENT PANEL SIDING - "SAFFRON"
(MAIN BODY - 10' LONG X 18" TALL)

#5



PRE-CAST - "LIGHT LIMESTONE"

#2



SW 6164
FIBERCEMENT PANEL SIDING
(PANEL ACCENT COLOR)

#3



SW 6169
FIBERCEMENT PANEL SIDING
(ENTRY TOWER ACCENT COLOR)

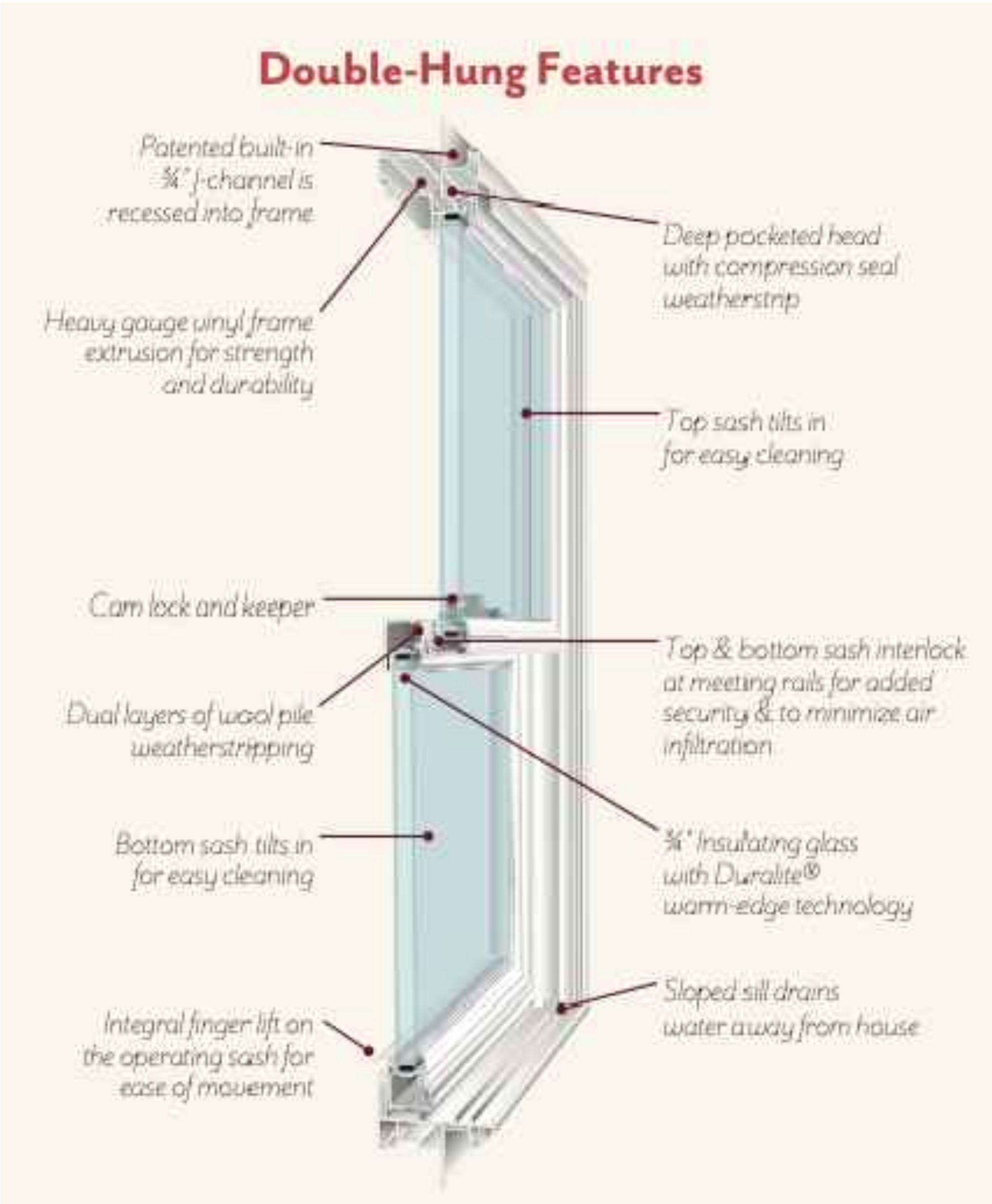
#4



FIBERCEMENT PANEL SIDING
(CORNICE ACCENT COLOR)

AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE



VINYL DOUBLE HUNG WINDOWS
(BLACK COLOR)

JULY 17, 2023

- ECONOMY**
- Trifab® VersaGlaze® 450/451/451T/451UT Framing Systems offer a variety of fabrication choices to suit your project:
- **Screw Spline** – for economical continuous runs utilizing two-piece vertical members that provide the option to pre-assemble units with controlled shop labor costs and smaller field crews for handling and installation. (available for all systems)
 - **Shear Block** – for punched openings or continuous runs using tubular moldings with shear block clips that provide tight joints for transporting large pre-assembled multi-lite units. (available for 450/451/451T systems)
 - **Stick** – for fast, easy field fabrication. Field measurements and material cuts can be done when metal is on the jobsite. (available for 450/451/451T systems)
 - **Pre-glazed** – The combination of screw spline construction with pre-glazing in the shop accelerates installation and reduces field labor time while minimizing disruption to the surrounding area or existing tenants. Making it an exceptional choice for new or retrofit applications, particularly in urban areas or where space is limited. (available for 451/451T/451UT framing)

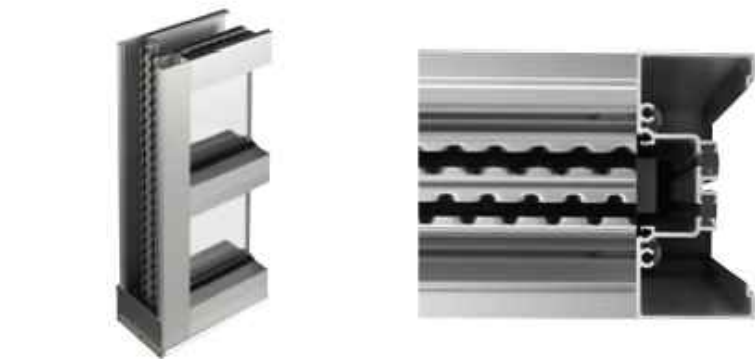


Brighton Landing
Cambridge, Massachusetts
ARCHITECT
ADD Inc., Cambridge, Massachusetts
GLAZING CONTRACTOR
Ipswich Bay Glass Company, Inc., Rowley, Massachusetts
PHOTOGRAPHER
© Gordon Schenk, Jr.

All systems can be flush glazed from either the inside or outside. The weatherseal option provides an alternative to SSG vertical mullions for Trifab® VersaGlaze® 450/451/451 T. This ABS/ASA rigid polymer extrusion allows complete inside glazing and creates a flush glass appearance on the building exterior without the added labor of scaffolding or swing stages. Additionally, high-performance **flashing** options are engineered to eliminate perimeter sill fasteners and associated blind seals.

FOR THE FINISHING TOUCH
Architectural Class I anodized aluminum and painted finishes in fluoropolymer (AAMA 2605) and solvent-free powder coatings (AAMA 2604) offer a variety of color choices.

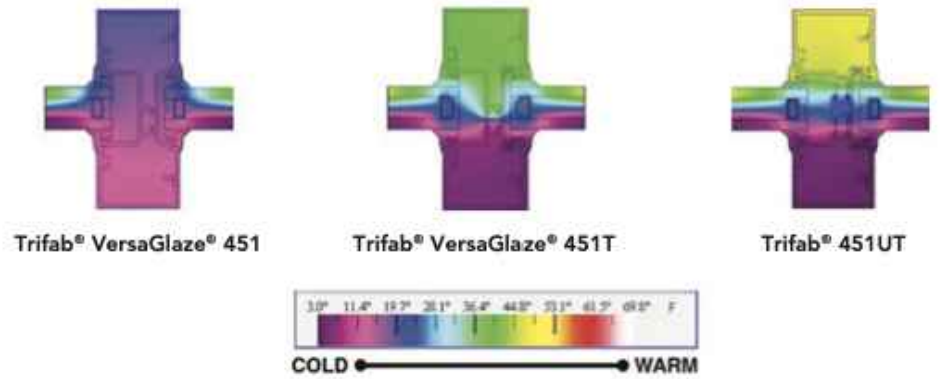
PERFORMANCE
Kawneer's Isolock® thermal break technology creates a composite section, prevents dry shrinkage and is available on Trifab® VersaGlaze® 451T. For even greater thermal performance, a dual Isolock® thermal break is used on Trifab® 451UT.



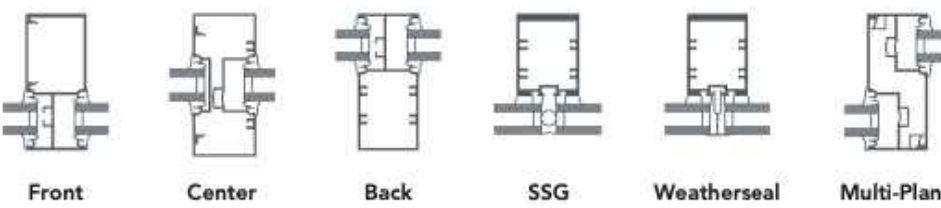
Trifab® 451UT uses a dual Isolock® thermal break (right) and features a new high-performance sill design, which incorporates a screw-applied end dam (left), ensuring positive engagement and tight joints between the sill flashing and end dam.

U-factor, CRF values and STC ratings for Trifab® framing systems vary depending upon the glass plane application. Project-specific U-factors can be determined for each individual project. (See the Kawneer Architectural Manual or Kawneer.com for additional information.)

Thermal simulations showing temperature variations from exterior/cold side to interior/warm side.



PERFORMANCE TEST STANDARDS	
Air Infiltration	ASTM E283
Water	AAMA 501, ASTM E331
Structural	ASTM E330
Thermal	AAMA 1503
Thermal Break	AAMA 505, AAMA TIR-A8
Acoustical	AAMA 1801, ASTM E1425



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Kawneer Company, Inc.
Technology Park / Atlanta
555 Guthridge Court
Norcross, GA 30092
770.449.5555
kawneer.com



ARCHITECTURAL SYSTEMS | ENTRANCES + FRAMING | CURTAIN WALLS | WINDOWS



STOREFRONT
WINDOWS
(BLACK COLOR)

RYAN SENATORE **ARCHITECTURE**

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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



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CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



1 VIEW NORTH DOWN CASCO STREET
NTS

RYAN SENATORE ARCHITECTURE

AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



1 VIEW EAST DOWN SHEPLEY STREET
NTS

RYAN SENATORE **ARCHITECTURE**

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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



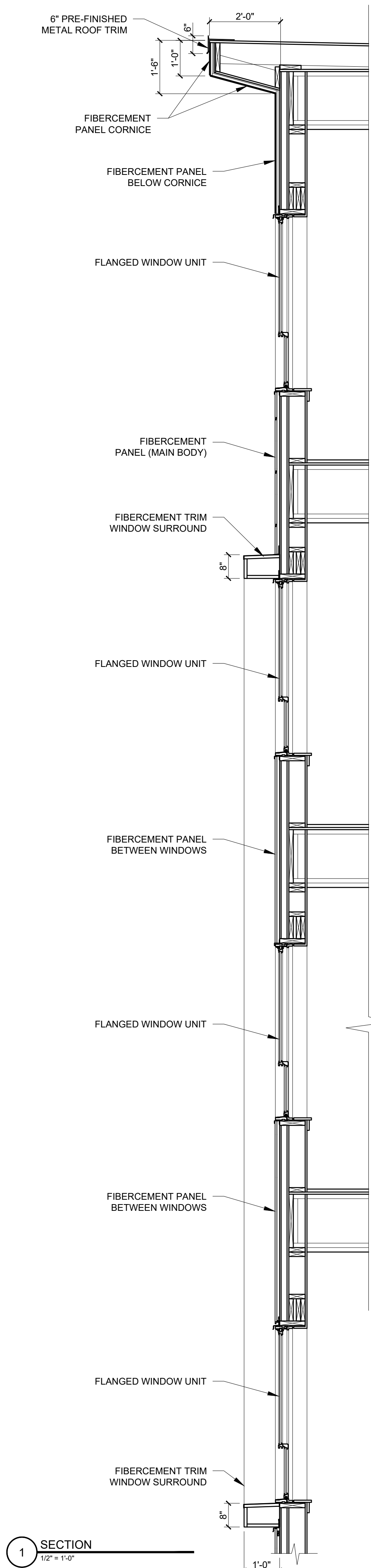
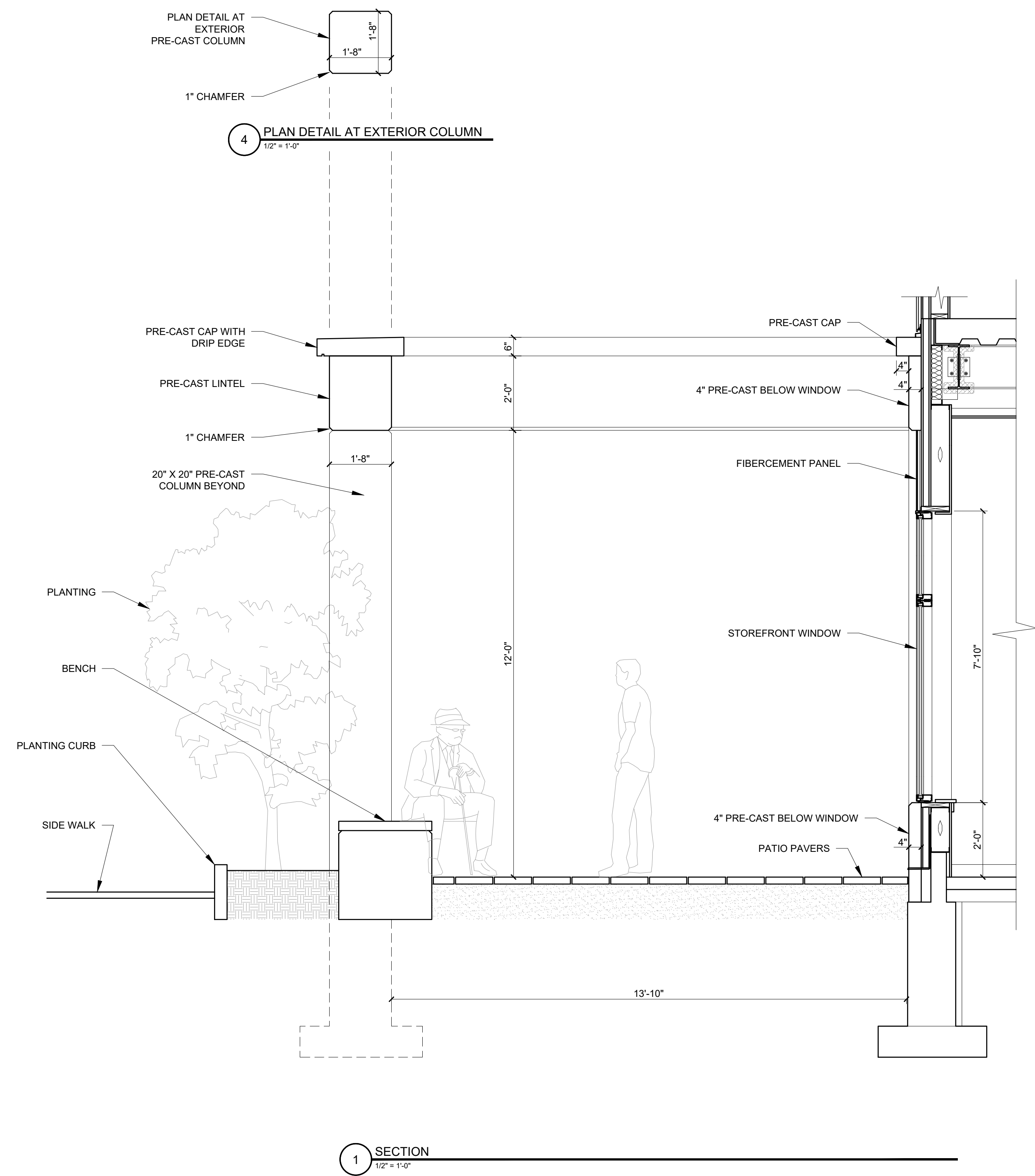
1 VIEW SOUTH DOWN CASCO STREET
NTS

RYAN SENATORE **ARCHITECTURE**

AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



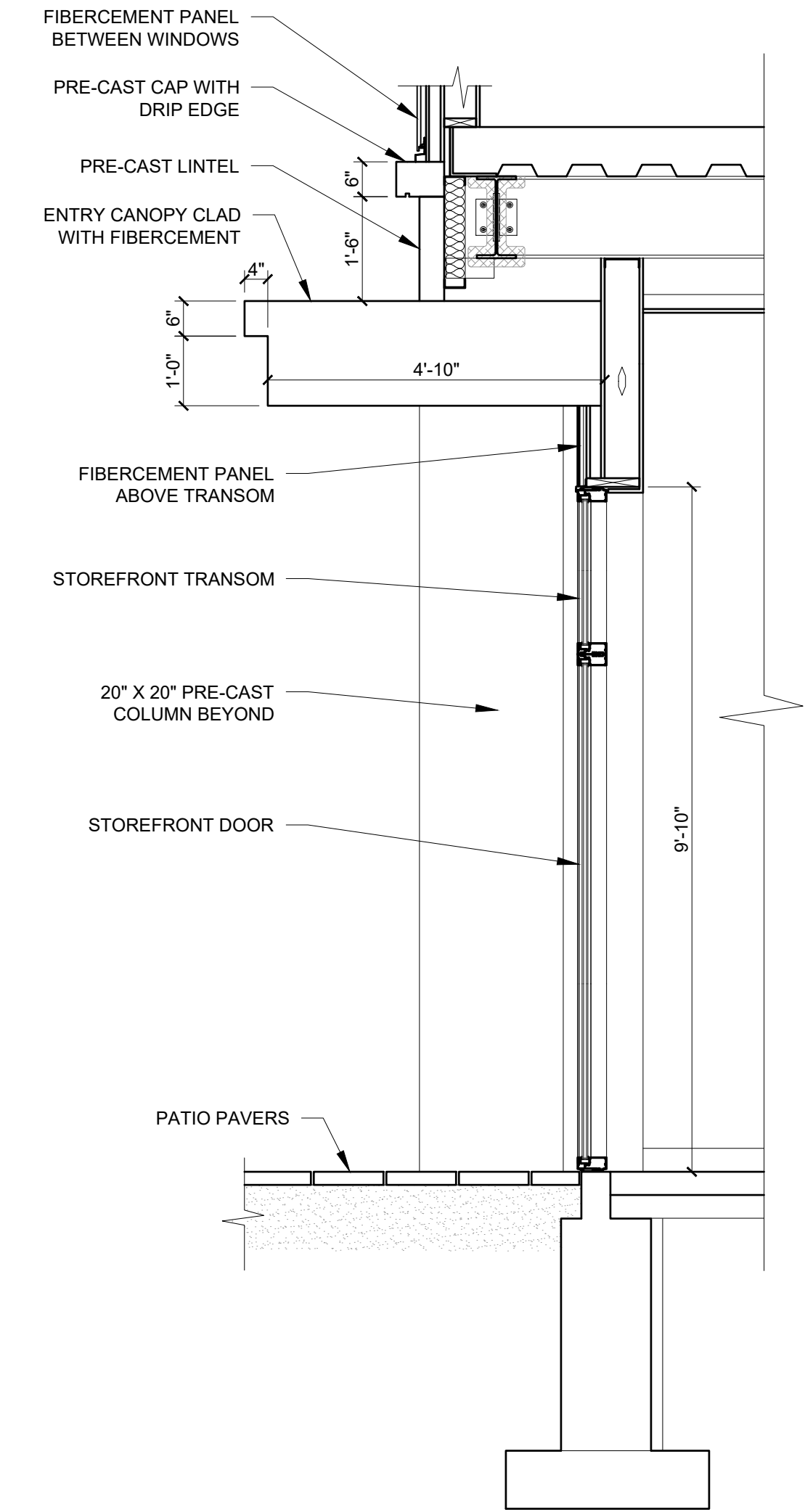
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RYAN SENATORE ARCHITECTURE

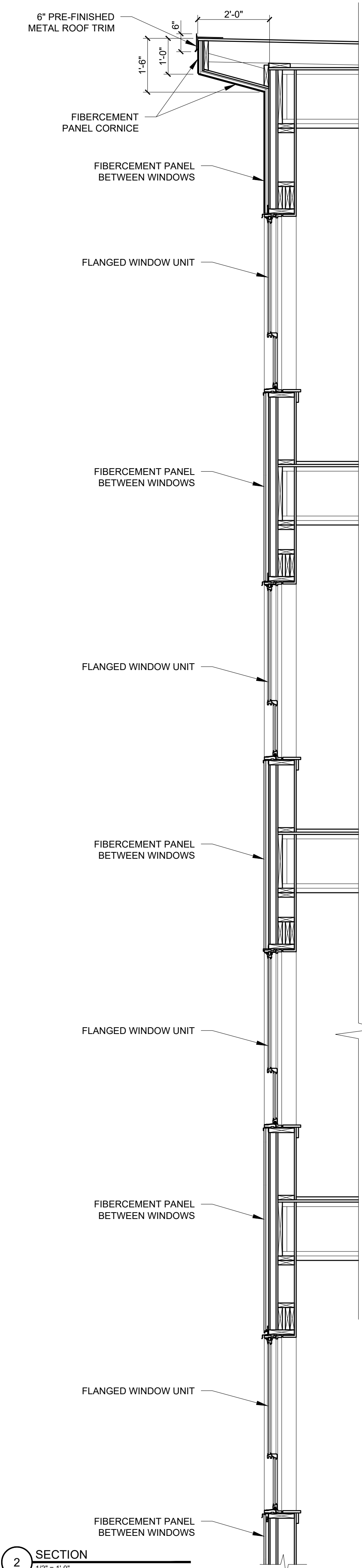
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CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



2 SECTION
1/2" = 1'-0"



2 SECTION
1/2" = 1'-0"

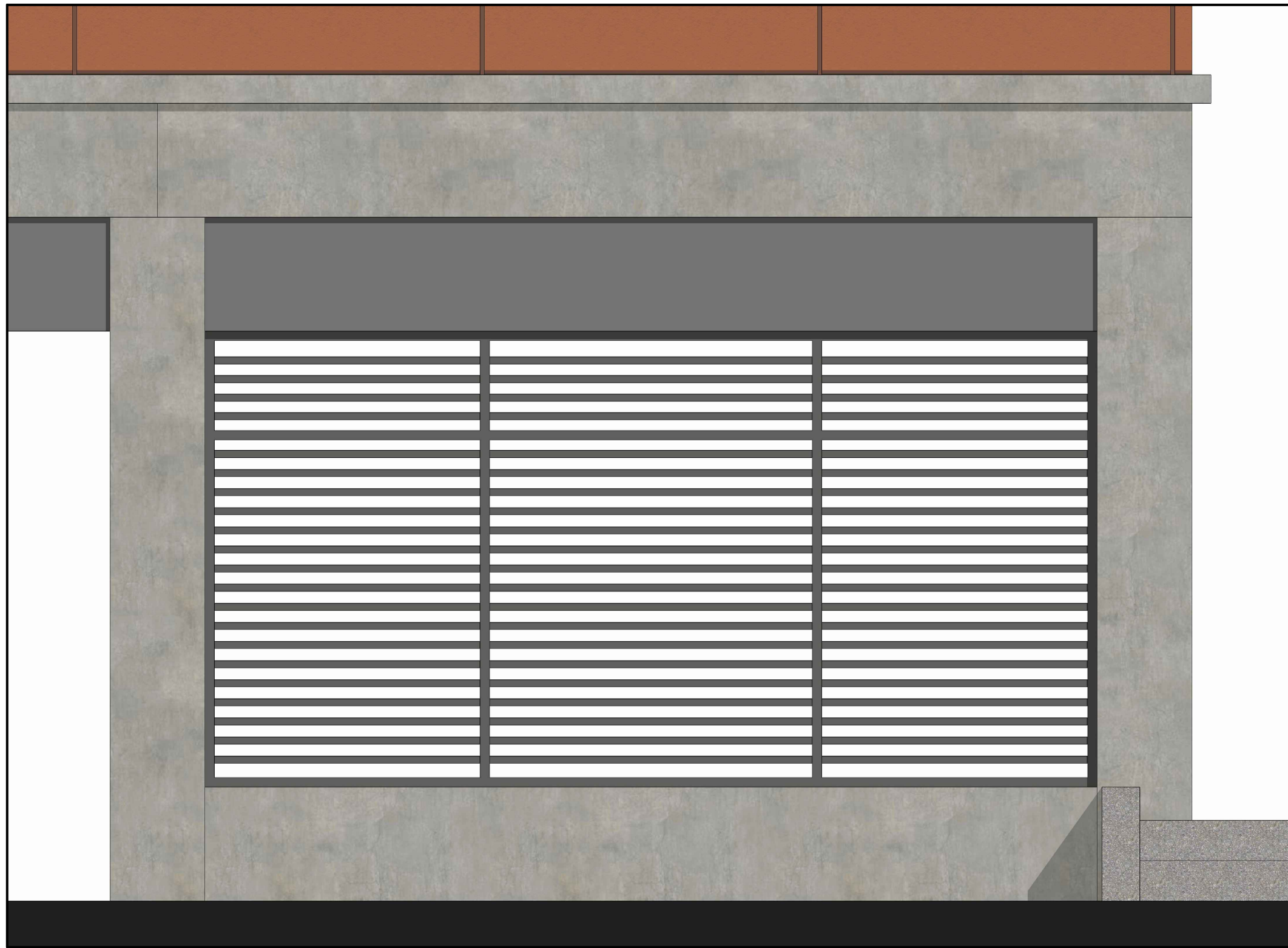
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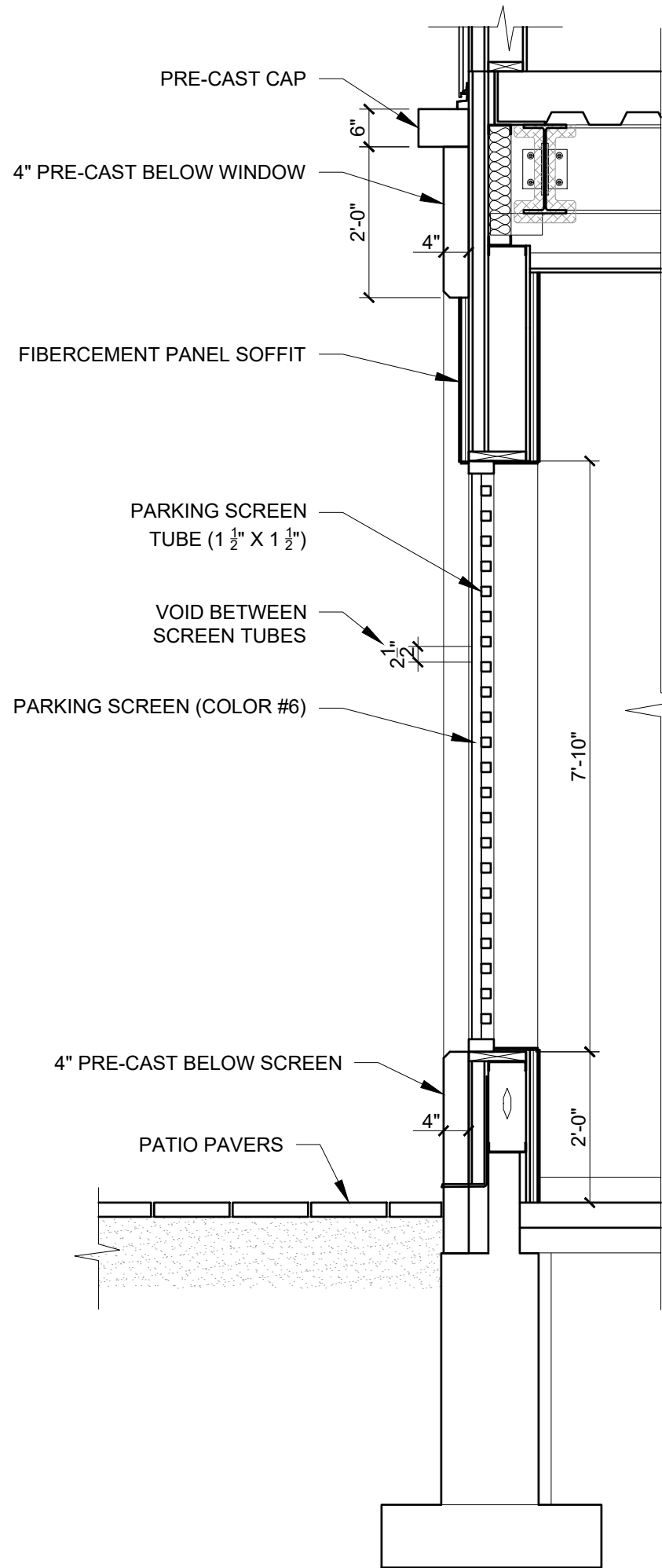
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CASCO STREET, PORTLAND, MAINE

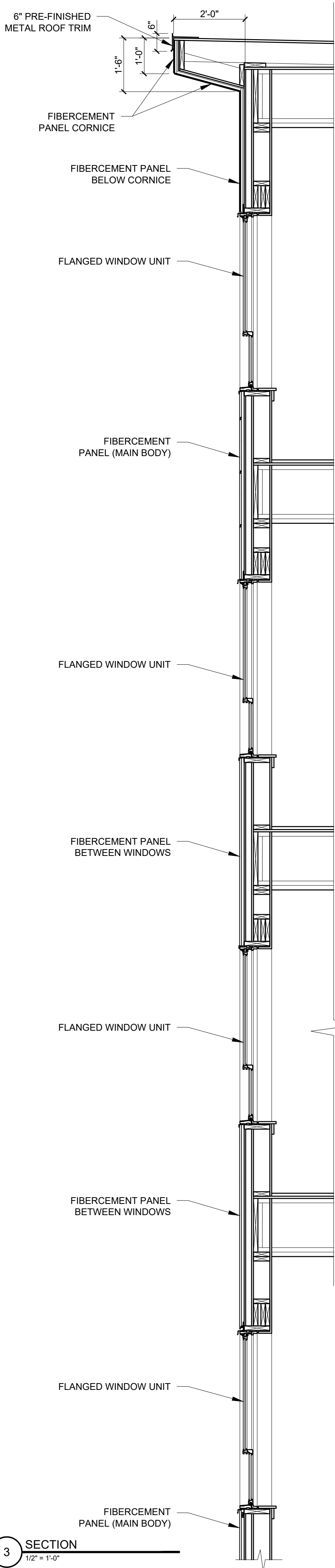
JULY 17, 2023



5 PARKING SCREEN ELEVATION
1/2" = 1'-0"



3 SECTION
1/2" = 1'-0"



3 SECTION
1/2" = 1'-0"

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RYAN SENATORE ARCHITECTURE

AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



PRECEDENT IMAGES

RYAN SENATORE ARCHITECTURE

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AFFORDABLE APARTMENTS

CASCO STREET, PORTLAND, MAINE

JULY 17, 2023



PRECEDENT IMAGES

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