

1. Legal Ad

Documents:

[PB LEGAL AD 11-14-17.PDF](#)

2. Agenda

Documents:

[PB AGENDA 11-14-17.PDF](#)

3. 383 Commercial Street

3.I. Memo And Attachments

Documents:

[COMMERCIAL ST. - 383 \(MEMO\).PDF](#)
[COMMERCIAL ST. - 383 \(MEMO ATTACHMENTS\).PDF](#)
[COMMERCIAL ST. - 383 \(APPLICANTS SUBMITTAL\).PDF](#)
[COMMERCIAL ST. - 383 \(PLANS\).PDF](#)
[COMMERCIAL ST. - 383 \(PUBLIC COMMENT\).PDF](#)

4. 233 Anderson Street (This Item Will Be Tabled)

4.I. Memo

Documents:

[PB TABLING MEMO RE 233 ANDERSON.PDF](#)

5. Thompson's Point

5.I. Report And Attachments

Documents:

[THOMPSONS POINT \(REPORT\).PDF](#)
[THOMPSONS POINT \(REPORT ATTACHMENTS\).PDF](#)
[THOMPSONS POINT \(APPLICANTS SUBMITTAL\).PDF](#)
[THOMPSONS POINT \(PLANS\).PDF](#)

5.II. Additional Public Comment Received

Documents:

[DIDONATO 11-10-17.PDF](#)
[MARGARET GAERTNER 11-12-17 \(2\).PDF](#)
[MARGARET GAERTNER 11-12-17.PDF](#)
[MARGARET GAERTNER 11-14-17 \(3\).PDF](#)

6. Handicap Ramp - Technical Manual Update

6.I. Report

Documents:

[PBREPORT11-14-17 WITH ATTACHMENTS.PDF](#)

7. 443 Congress Street

7.I. Report And Attachments

Documents:

[CONGRESS ST. - 443 \(REPORT AND ATTACHMENTS\).PDF](#)

8. 37 Front Street

8.I. Memo And Attachments

Documents:

[FRONT ST. - 37 \(MEMO\).PDF](#)
[FRONT ST. - 37 \(MEMO ATTACHMENTS\).PDF](#)
[FRONT ST. - 37 \(APPLICANTS SUBMITTAL\).PDF](#)
[FRONT ST. - 37 \(PLANS\).PDF](#)
[FRONT ST. - 37 \(PUBLIC COMMENTS\).PDF](#)

8.II. Additional Public Comment Received

8.II.i. Richard Weare 11-11-17

Documents:

[RICHARD WEARE 11-11-17.PDF](#)

8.II.ii. Christos Llanides-Chin 11-14-17

Documents:

[CRISTOS LLANIDES-CHIN 11-14-17.PDF](#)

**LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD
MEETING AGENDA**

The Portland Planning Board will hold a meeting on **Tuesday, November 14, 2017**, Council Chambers, 2nd Floor, City Hall, 389 Congress Street.

Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to planningboard@portlandmaine.gov

Workshop – 4:30 p.m.

- i. Master Development Plan, 383 Commercial Street, Deering Property Management, LLC, Applicant. (4:30p.m. **estimated time**) The Board will hold a workshop to consider the proposals for a phased Master Development Plan (MDP) for the mixed use redevelopment of the Rufus Deering Lumber Yard. The full build-out would total 469,153 sq ft and include a 139 bedroom hotel, 203 residential condominiums, 21,355 sq ft of retail space and structured parking for 313 vehicles accessed from York, Maple and Commercial Streets. The site is within the B-5b zone. The workshop will focus on transportation, servicing and parking issues.

Public Hearing 7:00 p.m.

- i. Zoning Map Amendment from IL-b to B1b; 233 Anderson Street; 2 Walnut, LLC., Applicant. This item will be tabled.
- ii. Level III Site Plan; Museum and Theater; Thompson's Point; Children's Museum & Theatre of Maine, Applicant. (7:00 p.m. **estimated time**) The Board will hold a public hearing on a proposal to construct a museum and theatre with a building footprint of 9,682 sq. ft. and a total floor area of 29,046 sq. ft. The proposal includes 18 parking spaces on the lot, roadway extension, and stormwater management improvements. The site is in the B-5 zone and is subject to review under the City's site plan and shoreland zoning regulations.
- iii. Handicap Ramp – Technical Manual Update, City of Portland, Applicant. (7:45 p.m. **estimated time**) The Board will hold a public hearing on an updated detail for an ADA detectable warning panel within street right-of-ways.
- iv. Amended Inclusionary Zoning Conditional Use; 443 Congress Street, Northland Enterprises, LLC, Applicant. (8:00 p.m. **estimated time**) The Board will hold a public hearing on an amendment to the inclusionary zoning conditional use application to allow for fee in-lieu for the workforce units.

Evening Workshop (immediately following the Public Hearing)

- i. Level III Site Plan Application, Front Street Redevelopment, Front Street Housing Redevelopment, Applicant. The Planning Board will hold an EVENING WORKSHOP on the Front Street Housing Redevelopment Level III subdivision and site plan application for the redevelopment of the Portland Housing Authority property at 37 Front Street. The site is composed of 2 parcels with 3.93 acres and having frontage on West Presumpscot, Illsley and Front Streets. The 50 existing units will be replaced with 99 residential units in six (6) buildings as planned residential unit development. There will be 79 affordable units and 20 market-rate units. The proposal has on-site parking for 102 vehicles, a community building, and internal trash and bike storage. The site is in the R-5 zone. The proposal is subject to review under the standards of the subdivision, site plan ordinances and under the Division 30 Affordable Housing provisions for inclusionary zoning and workforce housing incentives.

ELIZABETH BOEPPLE, CHAIR – PORTLAND PLANNING BOARD

PLANNING BOARD



Elizabeth Boepple, Chair
Sean Dundon, Vice Chair
Carol Morrisette
David Eaton
Brandon Mazer
Maggie Stanley
Lisa Whited

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BREAK FOR DINNER

PUBLIC HEARING – 7:00 p.m.

1. **ROLL CALL AND DECLARATION OF QUORUM**
2. **COMMUNICATIONS AND REPORTS**
3. **REPORT OF ATTENDANCE AT THE MEETINGS HELD ON OCTOBER 10, 2017:**

Workshop: All members were present. Eaton recused for the second item.

Public Hearing: All members were present.

4. **REPORT OF DECISIONS AT THE MEETINGS HELD ON OCTOBER 24, 2017:**

- i. Zoning Text Amendments for Emergency Shelters in Residential and Business Zones, City of Portland, Applicant. Dundon moved and Morrisette seconded a motion to table this item. Vote: 7-0.

5. NEW BUSINESS

- i. Zoning Map Amendment from IL-b to B1b; 233 Anderson Street; 2 Walnut, LLC., Applicant. This item will be tabled. The Planning staff is recommending the item be tabled to Wednesday, December 6, 2017 at 7:00 p.m.
- ii. Level III Site Plan; Museum and Theater; Thompson's Point; Children's Museum & Theatre of Maine, Applicant. (7:00 p.m. **estimated time**) The Board will hold a public hearing on a proposal to construct a museum and theatre with a building footprint of 9,682 sq. ft. and a total floor area of 29,046 sq. ft. The proposal includes 18 parking spaces on the lot, roadway extension, and stormwater management improvements. The site is in the B-5 zone and is subject to review under the City's site plan and shoreland zoning regulations.
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Memorandum

Planning and Urban Development Department

Planning Division

To: Elizabeth Boepple, Chair and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: November 9th, 2017

Re: Revised MDP concept – topic discussion (transportation, parking, servicing and design)
Level III Master Development Plan
383 Commercial Street (Rufus Deering site)

Deering Property Development, LLC, Applicant
Project #: 2017-005 CBL: 042 A001001

Meeting Date: November 14th, 2017

I. INTRODUCTION

This is the third Planning Board workshop on the revised MDP concept that includes a hotel at the eastern end of the site (see summary of workshops below). The current configuration includes 203 condos, about 20,000 sq ft of retail, and a 139 room hotel at the corner of Maple and Commercial Streets.

At the October workshop the Board requested an in-depth discussion of transportation, servicing and parking issues and this Memo focusses on those subjects. The applicant has also submitted revised architectural plans and elevations and Board feedback on these would be helpful if time allows.

This Workshop was noticed to 158 property owners within 500 feet of the site and interested parties, and a legal ad was published in the *Portland Press Herald* on November 6th and 7th, 2017. Neighborhood meetings were held in the spring on the original proposals for a residential/retail development. Staff have not receive any recent public comments; two written public objections were received earlier this year (PC 1 & PC2.) A petition from lobstermen and fishermen working on the waterfront is included (PC3) as it raises concerns about the impact of additional development along Commercial Street.



Applicant: Deering Property Development LLC
Engineer: Sebago Technics, Inc
Architect: Archetype PA

- ❖ Planning Board Workshops:
 - MDP: without hotel 4.6.17
 - MDP and Phase 1 Site Plan without hotel: 6.13.17
 - MDP with hotel: 8.8.17
 - MDP with hotel: 10.24.17

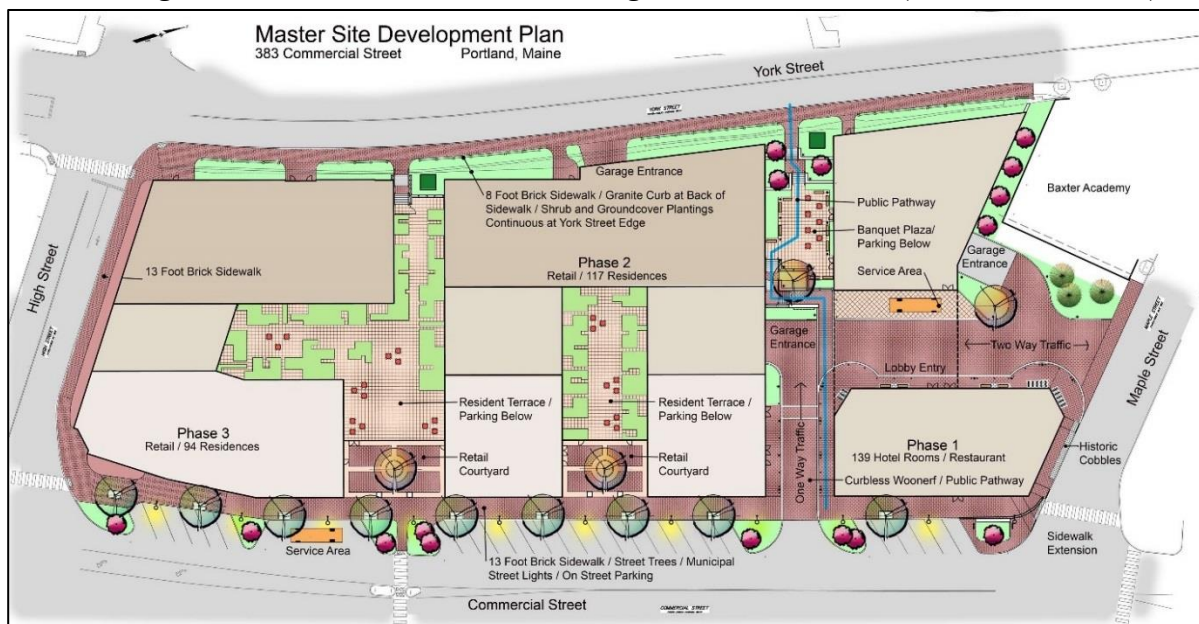
Required Review (waivers may be needed):

<i>Applicant's Proposal (July revision)</i>	<i>Applicable Standards</i>
Overall master development plan	Master Development Plan Review

II. CHANGES SINCE THE OCTOBER PLANNING BOARD WORKSHOP

The applicant has made the following revisions and submitted further information as noted below:

- Master Site Development Plan generally unchanged, except sidewalk planters in High and Commercial Street removed per staff comments (see below)
- Additional traffic evaluation submitted, including trip generation data ([Attachment J](#))
- Details illustrated to clarify how the servicing and woonerf areas would operate ([Attachment I.](#))
- Additional parking demand information submitted to support the proposed hotel parking that exceeds the zoning requirements ([Attachments D and G](#))
- Confirmed that the Public Pathway will not be gated ([Attachment C](#))
- Introduced a granite base to the hotel plus submitted a new rendering of the project as seen from Maple Street (Renderings and Elevations [Plans 2-24](#))
- Detailing added to the brick colonnades along Commercial Street ([Plans P17 and P18](#))



Summary of MDP elements:

- 139 room hotel and restaurant (excluding Baxter Academy Building)
- Two phases of residential (total of 203 units) over parking, with over 20,000 sq ft of retail along Commercial Street
- New one way “in” access (at grade) from Commercial Street to the hotel lobby entry, with associated service area and garage access within the site
- Two way access (at grade) on Maple Street and a garage access from York Street
- Parking garage mostly beneath the condos (313 spaces)

III. EVOLUTION OF THE MDP DESIGN/BUILDING ENVELOPE

PREVIOUS (August 2017):



REVISED (October 2017):



REVISED
(November
2017):



IV. PROJECT DATA

Existing Zoning	B-5b	
Existing Use	Lumber company; retail.	
Proposed Use	Mixed use (including retail, residential and structured parking)	
Proposed Development Program	Three phases, starting with Maple Street hotel building (Phase 1) (Revised concept shows Phases I and II going forward at the same time with one existing building remaining for the interim)	
Property Size	2.58 acres	
	<i>Existing whole site</i>	<i>Proposed whole site</i>
Building Footprint	32,100 sq ft	87,663 sq ft
Building Floor Area	35,000 sq ft	469,153 sq ft (comprising 203 dwelling units, mix of sizes); and 21,355 sq ft retail)
Impervious Surface Area	2.43 acres	2.38 acres
Parking Spaces (on site)	?	313
Bicycle Parking Spaces	0	105
Estimated Cost of Project	Not identified	

V. ISSUES RAISED DURING PLANNING BOARD WORKSHOPS

A. Pre-hotel MDP concept:

At the earlier PB Workshops the Planning Board were consistently concerned about the safety and feasibility of the service and access proposals, the need for public pedestrian permeability, the scale of the parking, the appearance of the interim conditions (prior to completion of all phases), and questioned some elements of the architecture (eg corner to High Street and massing).

B. MDP with hotel added within the original envelope 8.8.2017

- Issue of pedestrian permeability/links had not been addressed
- Pedestrian realm along York Street questioned
- Hotel entrance location and design needs further consideration
- Servicing from Maple needs further consideration
- Scale of the building and roofline problematic
- Absence of integration into environment
- Note hotel raises more traffic issues

C. MDP with hotel located in a separate building 10.24.17

- Need more information regarding traffic and impact on the already congested Commercial Street
- Servicing does not appear to fully meet need as depends on public ROW areas
- Consider more green space should be incorporated
- Not convinced the surface parking is needed
- Seeking a public walkway without gates and 24/7 access, inviting
- Suggest better delineation of access within shared space ? safety issues
- Offered guidance on design questions raised by the HP Board and Design Review

VI. THE SITE and CONTEXT

The development site is 2.58 acres currently occupied by Rufus Deering Lumber, bounded by Commercial, Maple, York and High Streets in the B5b zone. It is a prominent parcel on Commercial Street, with a frontage of approximately 600 feet. To the south is a gas station and to the north is the recently completed Marriott Courtyard Hotel. To the west across York Street is a new 5 story mixed use development currently under construction. To the west (across Commercial Street) is the Gulf of Maine Research Institute and the waterfront. Details are in the previous Memoranda.



VII. ZONING ANALYSIS

The hotel use is allowed in the B5b zone as a permitted use and the proposals comply with the dimensional requirements of this zone.

One question that the applicant asked staff to consider is the allowable height of the buildings with the “stepped” roofline, given that this is not explicitly addressed in the Land Use Ordinance and is most nearly comparable with a sloped roof (where the height is measure at the mid-point of the roof). The applicant provided information comparing the stepped roofline for the two phases of condos with an equivalent sloped roof (Attachment F).

In consultation with the Zoning Administrator, staff agreed that from a zoning viewpoint the principle of the "stepped flat roofs" meets the intent of the zoning based on a comparison to the sloped roof height calculations. It reduces the height along York to a level below what would be allowed under a sloped roof scenario (and at or below the maximum height under zoning), and also results in a lower built volume overall than would have been allowed in the sloped roof scenario.

VIII. TRANSPORTATION IMPACTS ON SURROUNDING STREET NETWORK

The MDP ordinance sets out the following submittal requirements:

(xii) A traffic analysis and recommendations prepared by a registered professional engineer qualified to conduct such studies, including current traffic counts for streets surrounding the project, analysis of the existing capacity of those streets, projections of the amount of traffic that will be generated by the proposed development, and the ability of the street system to absorb the increased traffic without decreasing the level of service below an acceptable level – said level to be determined by the Planning Authority in concert with the Department of Public Services. In cases where the Master Development Plan is subject to a Traffic Movement Permit (TMP) for all phases, the TMP submissions and review shall supersede these requirements.

The city's consultant Traffic Engineering Reviewer, in consultation with other staff, has been working with the applicants Traffic Engineer to agree the basis for the traffic evaluation, given the mix of uses and the urban setting. Staff support the inclusion of the three driveways, given the scale of the project and the change of grade within the site.

The applicant has submitted a Traffic Evaluation ([Attachment J](#)) and indicated that the TMP application would be submitted in association with the Site Plan. The Evaluation includes the table below:

Table 4 –Net External Trip Generation

<i>Time Period</i>	<i>Total Trips</i>	<i>Entering</i>	<i>Exiting</i>
AM Peak Hour of Adjacent Street (7-9 AM)	128	56	72
PM Peak Hour of Adjacent Street (4-6 PM)	174	105	69

The City's Traffic Engineering Review has reviewed the Traffic Evaluation and while agreeing the methodology underpinning some of the conclusions, he has requested field verification of certain intersections, and further studies and analysis including recommendations for mitigation of the project's traffic impacts ([Attachment 2](#)):

The following comments are based upon a review of the Traffic Impact Study Master Development Plan, Sebago Technics, November 3, 2017.

- o The applicant has conducted a trip generation estimate for the project based upon the recently released update of the Trip Generation Manual, ITE, 10th Edition. The project is estimated to generate 128 AM peak hour trips and 174 PM peak hour trips. I find the methods to be reasonable.*
- o Traffic counts were conducted at the Commercial Street/Park Street, Commercial Street/High Street, Commercial Street/Maple Street, High Street/York Street and York Street/Maple Street intersections in April of 2017. I find the existing traffic volume data to be acceptable.*

- o Future traffic volumes in the year 2024, without the project, were based upon increasing 2017 traffic volumes by an annual growth rate of 0.5%. Typical traffic impact studies also include traffic associated with approved but unbuilt developments. In my professional opinion the use of the background growth rates is reasonable for the MDP process, but during the Traffic Movement Permit process, Other Development traffic would need to be included.
- o The study assigns site generated traffic to the roadway system according daily traffic volumes in the project vicinity. I continue to review this method and refinement can be expected.
- o The applicant conducted a capacity analysis to assess roadway/intersection mobility conditions in the vicinity of the project. My comments for each of the study intersections is noted as follows:
 - Commercial Street/High Street – The analysis estimates long delays from the STOP controlled High Street approach, which seems to reflect field conditions. However, the analysis concludes that Commercial Street functions with little or no delay. During peak time periods, Commercial Street experiences significant congestion, with delays originating from the Beach Street traffic signal to the west and congestion to the east in the central waterfront area. It is recommended that the study traffic modeling expand to include streets/intersections so that actual congestion is accounted for in the analysis.
 - York Street/High Street – The analysis concludes that the intersection operates at acceptable levels of service. Field observations should be performed to corroborate this conclusions. I have observed longer vehicle delays.
 - Commercial Street/Maple Street – As noted, long delays are estimated from Maple Street, which is not unexpected given high volumes on Commercial Street.
 - York Street/Maple Street – The analysis indicates this intersection will operate will little or no delay.
 - Commercial Street/Park Street – The analysis concludes that long delays for Park Street movements will continue to be an issue. As noted previously, Commercial Street is congested and revised traffic modeling is suggested.
 - Commercial Street/Site Drive – Little delay is expected due to it being an entry drive only.
 - Maple Street/Site Drive – Little delay is expected due to low traffic volumes on Maple Street.
 - York Street/Site Drive – Little delay is expected.
- o The traffic study evaluated conditions at the Commercial Street/High Street intersection assuming existing STOP sign control. It has been requested that the intersection also be evaluated under the assumption that a traffic signal is installed. This analysis is pending. In conjunction with the traffic signal, left-turn movements from Park Street onto Commercial Street may be prohibited and diverted to the new traffic signal. The Park Street intersection should be evaluated assuming left-turns are prohibited.
- o The traffic study should include an evaluation/summary of crash history in the study area.
- o Given actual traffic conditions on Commercial Street (long delays/queues), the conclusion in traffic study should be revised and include a list of suggested recommendations for mitigating project traffic impacts.

It is considered that the submitted Traffic Evaluation does not fully reflect the current conditions in Commercial Street although it does suggest that this project generates less vehicle traffic than might be assumed based on its scale. The applicant submitted an Addendum to the Traffic Evaluation addressing the existing conditions on Commercial Street (Attachment K) that arrived just as this Memo was being completed, so reviewers will provide comments at the workshop meeting.

The staff and Board are aware that Commercial Street is at or near “the limit” at many times, as identified in:

- The comments from the applicant (Attachment K) and Traffic Engineering Reviewer (Attachment 2) as above;
- The recent petition from lobstermen and fisherman (signed by over 85 lobstermen and fishermen) (Attachment PC3) who consider the waterfront economy is threatened by new developments along the water front and congestion in Commercial Street;
- As acknowledged in the *West Commercial Street Multi-modal Corridor Study* (2016 covering High Street to Veterans Bridge) (Attachment 5- Memo from Transportation Program Manager regarding the Transportation Planning Context) which proposed improvements to better accommodate the range of users along this section of Commercial Street, including a signal at High Street and Commercial Street at the corner of this site and a trail;
- As recognized by the imminent *Commercial Street Operations and Master Plan* (Attachment 5) which aims to develop proposals that will help sustain the corridor for marine commerce, freight handling and businesses while also improving conditions for all modes of travel.

In this context the incremental traffic increase from developments are critical and the MDP review needs to address the wider context, as supported by following Master Development Plan Standards:

d. Consistent with the City’s Comprehensive Plan and consistent with City Council approved master plans and facility plans for off-premise infrastructure, including but not limited to, trails, pedestrian and bicycle network, view corridors, environmental management, sewer and stormwater, streets, or other facilities (see Section 15 of the Technical Manual);

h. An efficient use of land demonstrating full coordination of its own site development and surrounding context including, but not limited to, the land uses and functions contemplated, architecture, open space and pedestrian networks, vehicular access and circulation, and all other infrastructure;

i. Linked and coordinated with surrounding land uses, infrastructure and off-site public facilities, including but not limited to the public school system, where appropriate, in a manner that is safe, efficient, non-injurious to the public, and an improvement or benefit to the public where possible;

j. Designed with sizing of street and other infrastructure systems to accommodate the overall service demand of the Master Plan;

k. Designed to create a street grid pattern that reflects average city block sizes of the neighborhood for street connectivity;

These standards focus on the way the project is integrated into the surrounding context and connections with existing and proposed infrastructure such as trails/walkways, street reconfiguration etc. along with steps to reduce the existing traffic flows, minimize any new traffic, and encourage alternative modes of travel.

As noted above there are a number of current initiatives that address these issues and the potential impacts of this development. Participation in or a contribution to one or more of the following may be an appropriate way for the project to meet the MDP standards:

- *West Commercial Street Multi-modal Corridor Study (Att 5):* includes unfunded proposals for:
 - West Commercial Street Path, Phase III, Nova Seafood to High Street
 - High Street - Commercial Street, traffic and pedestrian signals, curb modifications, etc

- *Commercial Street Operations and Master Plan (Att 5):* funding currently being sought for the study and implementation of first phase proposals that could include traffic signal optimization, redirection of through traffic, revised parking and transit systems
- *Portland Transportation Management Association (TMA)* feasibility study and start up costs, that would help progress the introduction of TDM
- *Waterfront TIF:* Staff note that this site is eligible for tax increment financing to benefit waterfront infrastructure through activities and improvements to support the waterfront, including traffic and congestion management installations. The City's Waterfront Coordinator has noted that the Economic Development Department would support exploring expanded use of TIF funding to implement projects benefitting Commercial Street and the marine economy, and provided the following background (Memo with plan in Attachment 4):

While a study for addressing Commercial Street is under consideration, there is as of yet no specific plan to mitigate congestion and travel delay on the waterfront. Even when such a plan is developed, there currently is no dedicated funding for plan implementation. Use of Tax Increment Financing (TIF) funds could be used to counter cumulative impacts of multiple developments that might not otherwise be addressed through the standards-based requirements on individual projects.

The Rufus Deering site lies within the Waterfront Redevelopment Economic Zone (WREZ). New developments within the WREZ are eligible for tax increment financing to accomplish infrastructure benefiting the Portland waterfront, as described in "Investing in Our Working Waterfront: Final Report of the Mayor's Waterfront Task Force on Economic Development," dated September 2000, as adopted by the Portland City Council on June 4, 2001.

The WREZ Ordinance suggests that new taxes generated by development of greater than \$400,000 in value on and near the Portland waterfront can assist with the following improvements and activities: "...parking facilities, utilities, traffic and congestion management installations, operating facilities for the cargo, fishing and other water-dependent, marine related industries, environmental protection and improvement, including the management and abatement of combined sewer overflows, appropriate assistance in the permitting and completion of dredging of siltation at piers, wharfs and weirs, and such other matters as the City Council shall approve from time to time..."

IX. SERVICING

The applicant has provided a six page explanation of how the service areas would operate, including the path of service delivery and turning templates for vehicles (Attachment G). This includes an allocation of the parking spaces within the site, which in turn would impact the vehicle movement pattern at the entrance/exit points.

The reviewing Traffic Engineer has commented (Attachment 2):

Truck deliveries for the project site will occur internally via Maple Street or Commercial Street and on Commercial Street in a commercial loading zone. In general, I find the truck delivery program to be acceptable, although more detail is required. The applicant has provided some detail on anticipated delivery vehicle type, routing, on-site vertical clearance, length and accessibility of the on-street loading space, vehicle turning templates entering and exiting the site, and proximity/accessibility of trucks to land use destination. Further coordination is required, but as noted above, acceptable truck delivery conditions appear to be provided.

X. PARKING

Off street: Further information was submitted to clarify the need for the hotel parking provision to be greater than required under the zoning (Attachments D and G). In summary, the proposed level of parking for the hotel (62 spaces) is about half way between the zoning requirement (35 spaces) and what would be recommended based on the ITE Parking Generation Tables for an Urban Hotel (89 spaces).

The Traffic Engineering Reviewer has commented that he finds this assessment to be reasonable (Att. 2).

In the interim prior to the construction of Phase 3, the hotel parking supply is proposed to be partially met through the provision of 47 spaces in a surface lot at the west end of the site. The applicant has noted that surface parking is a permitted use, but the scale of parking is a Planning Board determination. As part of the parking allocation note in Attachment G it is confirmed that the parking for hotel guests will be mandatory valet-only and the plan (Plan P26) clarifies that the interim surface parking is for the hotel.

It is understood that this area of surface parking is accessible both from the lower level of the garage and from Commercial Street via the existing access that will also serve the construction offices located in the original Rufus Deering building. The Traffic Engineering reviewer has noted that the applicant will need to seek a waiver for this access as its too close to the corner, and if this moves forward would request a pedestrian facility between Commercial Street and the parking area.



This section of Commercial Street is under some pressure for parking, primarily to serve the waterfront (marine) employees, as noted by the City's Waterfront Coordinator (Att. 4):

WCZ policies actively discourage use of pier property for development of parking. Not surprisingly, many waterfront businesses and fish harvesters experience a shortage of employee parking, particularly during the summer months. Unrestricted parking on Commercial Street helps alleviate employee parking on the waterfront and is heavily used by fish processors, lobster fishing crews, and others. The unrestricted parking located along the Rufus Deering site is a significant increment in the available supply. Competition for unrestricted parking by new uses north of Commercial Street including hotel employees and patrons is increasing. Loss of this parking as a resource to employers will place further pressures on marine businesses that already struggle to operate on the heavily congested corridor. Moving forward, finding ways to either protect, replace, or substitute for marine employment parking should be considered within the context of project review.

In the summer there is also a need for additional parking in this area. The Board may wish to condition any approval of this interim parking to ensure it is managed for particular users, such as the hotel and the waterfront employees.

On-street: It is noted that the existing on-street parking along the frontage of the MDP site (approximately 35 spaces) has traditionally been free and served local employees including the marine related employees as noted above. This “supply” will be reduced as a result of the removal of approximately 7 spaces to allow for the revised access and the service area, along with the conversion of the existing street parking to “turn over” charged parking. The Board may also wish to provide direction on this issue.

XI. PEDESTRIAN ACCOMMODATIONS

At the last Workshop the applicant introduced a pedestrian and one-way “street” between the hotel and the phase 2 condos/retail. This would allow for a public pedestrian link that starts at grade in Commercial Street and rises (via several sets of stairs) over the one story parking level and then links into York Street at grade. See Plans P19, P24 and P25.

Further detail regarding the operation of this area, particularly where it interfaces with parking garage and service vehicle access, is described in Attachment I and the Plan P25 at right and attached.

The design of the passageway has not been revised since the October workshop and would be subject to further detailed review at the Site Plan stage. A corridor of about 35 feet is illustrated with an 8 foot wide pedestrian path. Staff suggest that the final design of this passageway should address the following concerns, some of which were raised by the Board at the October Workshop:

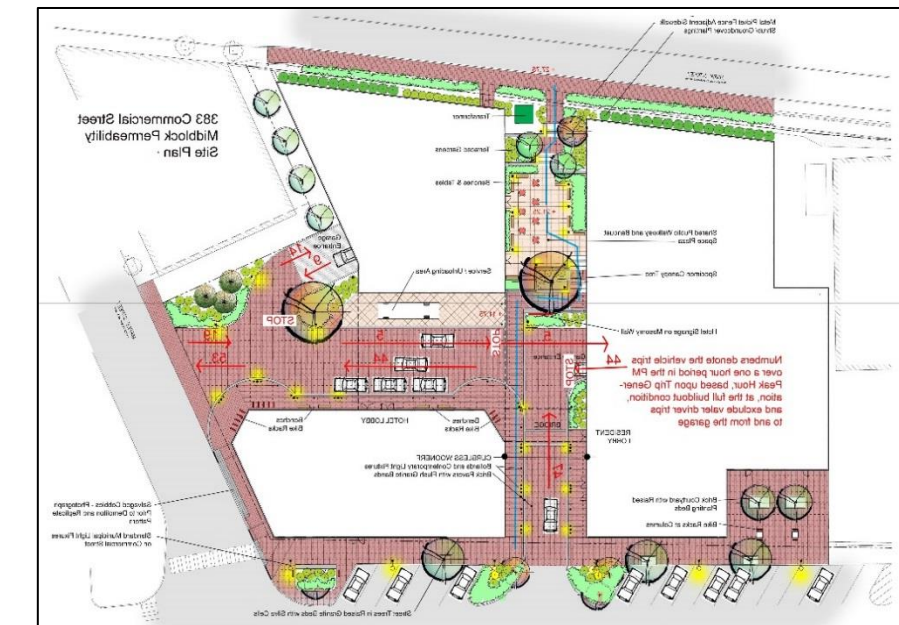
- Need for some additional width to allow for more planting and a wider public path that does not conflict with hotel activities (the width is MDP issue);
- Safety for pedestrians where the path is abutting the service area and crossing the main path of traffic (as noted by the reviewing Traffic Engineer in Attachment 2 and which could be addressed as part of the site plan review);
- Attention to CPTED issues such as ensuring overlooking, avoidance of dark corners and shrubs; lighting etc, which also could be fine tuned as part of the site plan review.

The Architectural Description (Attachment C) confirms that the public walkway will not be gated, but as part of the final MDP submissions the proposal should outline how this area of open and public space will meet the following standard for MDP:

m..Inclusive of provisions for the ownership and maintenance of usable open space as appropriate; and

Legal options include the creation of a public access easement or similar mechanism, and this would need to confirm the aspects that the Board have indicated as important eg re 24/7 access.

The rendering to the right shows the public walkway as from Commercial Street. The Design Review (Attachment 1) and some Planning Board members have suggested that the overhead walkway is not a positive element.



XII. DESIGN REVISIONS

At the previous workshop there was an extensive discussion in the context of the previous Design Review (included in Att. 1 for information) and the advisory comments offered by the Historic Preservation Board (Att. 3.) The changes that have been made since the October workshop are summarized in Att. C and include:

- Changing the base of the hotel to granite;
- Eliminating the glass curtain wall on the west side of the passageway;
- Adding detailing to the brick colonnade along Commercial Street;
- Retaining the York Street elevation largely as previously proposed.

Full build out as previously presented:



Full build out as presented in November, 2017:



The elevation of the hotel as from maple Street was also submitted - below and in Plan P16:



The updated Design Review is at the beginning of Attachment 1 (with the comments presented at the previous workshop included for information) and extracted below. The staff recommend that a condition of the MDP review include the suggested Design Guidelines:

DESIGN REVIEW COMMENTS ON REVISED DESIGN (Att. 1)

The project at 383 Commercial Avenue is subject to the *Master Development Plan Standards of Review*. The project is also within 100' of a historic district and included an advisory design review by the Historic Preservation Board.

The proposed master plan for multi-family residential buildings is only reviewed according to the Master Plan criteria. In future Site Plan design reviews, the projects will be subject to the R-5 and Multi-family design guidelines. Staff recommend the MDP approval include design guidelines that will apply to all subsequent site plan projects.

Based on the revised submission from October 31, 2017 and Planning Board comments, staff have the following comments as well as recommended Design Standards to apply to future Site Plan applications.

Design Review Comments: *(suggested revisions in red)*

(iii) Standards of Review.

b. Developed in a comprehensive, design-integrated manner, according to an overall master development plan

- Staff continue to support the Master Plan layout. The physical forms and layout now reflect the different uses of the buildings, create mid-block breaks, and provide logical circulation and servicing locations. The project layout and general massing is comprehensive and design-integrated internally and also now in a more context-sensitive way.

d. Consistent with the City's Comprehensive Plan and consistent with City Council approved master plans . . .

- The project is not within a Pedestrian Activities District Overlay zone (PAD).
- The project is not located within a view corridor protection area.

f. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts or historic landscapes, the Master Plan shall be developed so as to be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity of the proposed development

- See memo from Historic Preservation staff regarding the Historic Preservation Board review comments for compatibility with the Old Port Historic District. Staff agree with many of the HP Board comments. Staff will have building-specific design review and comments during Site Plan application.

l. Designed as to create a cohesive identity through building scale, massing, and articulation; use of quality exterior material, architectural detailing at pedestrian scale; consistency of design and materials for streetscape and pedestrian amenities; framing of outdoor open space and linkages; a clear conveyance of the function and significance of various buildings, entrances, and features; and to generally comply with design and development standards of the zone in which it is located;

- Cohesive identity: The hotel, by choice and request, is designed to stand apart in character from the residential buildings.
On Commercial Street, the residential buildings have a cohesive identity and the designs are informed by the historic context. Staff support detail revisions made to incorporate the reference lines on Commercial Street. This includes pronounced bases on the buildings, horizontal proportioned facades, and regular rhythm of vertically proportioned windows. Staff recommends that the Commercial Street residential facades be one consistent material – brick-

with glass curtain wall as an accent. The York and High Street residential designs suffer from a lack of cohesiveness. There are too many elements - especially materials - applied to these facades in an attempt to provide visual interest.

- Quality exterior material: The materials proposed meet this standard. In Site Plan review the details should be reviewed further to provide depth, articulation, visual interest, and quality transitions.
- Consistency of design and materials for streetscape and pedestrian amenities – See proposed design guidelines below for preferred streetscape treatments. Staff agree that the streetscape on Commercial Street should differ from that on York, High, and Maple. York Street includes private uses and therefore the landscape buffer between the sidewalk and residential building is appropriate. Commercial Street appears to be the only street wide enough to provide street trees.
- Framing of outdoor open space and linkages – the proposal creates several outdoor plazas and passages. These are framed literally by colonnades on Commercial Street. On York Street, the linkages are indicated by breaks in the buildings, landscaping, and steps. Staff are concerned about the internal passageway linking the residential buildings to the hotel – urban design best practice typically avoids such passages which usually lead to inactivity at the street level. In addition, the passage blocks the visual connection of the public passageway from York to Commercial Street – this may make wayfinding less clear. The applicant describes their rationale for the passage in the response narrative.
- Clear conveyance of the function and significance of the various buildings, entrances, and features – the design of the hotel exterior was revised to differentiate that use from the residential/mixed-use buildings. Staff support this design direction. The hotel design also provides more prominent entrances on Commercial Street.
- Design standards of the zone: See memo from 10/19/17 for those comments. Additional design review for each specific building will be conducted with Site Plan applications.

Proposed MDP Design Guidelines

- Materials

- **Commercial Street** – Material placement, detail, and articulation should emphasize the established historic Commercial Street patterns of massing, proportions, and façade composition regulating lines and building base. Material selection on the residential buildings will predominantly use red brick and granite with glass curtain wall as an accent. The hotel, in order to stand apart in character and use, will have a more contemporary expression but will continue the base and regulating lines found in the Commercial streetscape.
- **York, High, and Maple Streets** – These streets are not part of the historic district and the context is varied. Residential building materials should be consistent and be rationally placed based on interior uses or massing variation – not an arbitrary attempt to create visual interest. A consistent base line is recommended to be carried through the residential buildings.
- Quality Exterior Materials includes the detailing, articulation, transition, durability, and visual interest of the materials, not only their selection and placement. These aspects will be reviewed with special attention to the ground floors and areas most visible to pedestrians.

- Façade composition

- **Commercial Street** - Commercial Street has a strong, consistent pattern of a tall base story, overall horizontal proportion, and regular window patterns. Commercial Street facades will continue and interpret these characteristics. The ground floors will consider pedestrian comfort and scale, especially in the placement of doors, windows, canopies, and details in the materials and articulation.
- **York Street** – Facades should include a defined base. Window and material placement should follow a rationale tied to the building uses or changes in massing.

- **Streetscape design**

- **Commercial, High, and Maple Streets** – Character = Predominantly commercial, active uses fronting the street. The sidewalk should be as wide as possible. Where the sidewalk is at least 12' wide, street trees should be provided in raised granite planters in the furnishing zone. Planters or landscape areas should not be placed between the sidewalk and the building – this is not consistent with the established urban streetscape.
- **York Street** – Character = predominantly residential uses fronting the street. The private uses justify a landscape buffer between the street and the residential use. Landscape areas should be raised with either a curb or a seating wall. The sidewalk width should be consistent for the whole block.
- **Interior Passages** – Internal passages should employ CPTED principles as a best practice to make spaces that are safe, active, and inviting. Material selection and design should indicate private or public access.

XIII. NEXT STEPS

The applicant will need to submit revised proposals and updated applications, plans, and documents to address the staff and Board comments and relevant ordinance/technical standard requirements.

ATTACHMENTS

STAFF REVIEW COMMENTS

1. Design Review Memo including previous comments
2. Traffic Review comments
3. Historic Preservation comments
4. Waterfront Coordinator Memo re TIF and marine parking
5. Transportation Program Manager Memo information re *West Commercial Street Multi-modal Corridor Study* and *Commercial Street Operations and Master Plan*

PUBLIC COMMENTS

- PC1 Dittmer 4.4.17
- PC2 Kilbreth 6.14.17
- PC3 Portland Lobsterman & Fisherman Petition

APPLICANT'S REVISED MDP SUBMITTAL

*****See PB Memos for April 6 and June 13, 2017 for all preliminary submitted documents and plans**

- A. Revised MDP application and data sheet
- B. Project Phasing
- C. Architectural Description updated 10.31.17 incl previous
- D. Off Street parking summary with floor area details (updated 11.2.17)
- E. Zoning Assessment
- F. Zoning Calculations re height
- G. Service and Loading (updated 11.2.17)
- H. Treatment of Historic Cobbles
- I. Woonerf Circulation narrative 11.2.17
- J. Traffic Evaluation 11.3.17
- K. Addendum to Traffic Evaluation re Commercial Street 11.9.17

REVISED MDP PLANS AND RENDERINGS

- P1 Revised Site Master Plan (updated)
- P2 Level 1 Plan
- P3 Level 2 Plan
- P4 Level 3 Plan
- P5 Section Condos in context
- P6 Section Hotel
- P7 Section Retaining Wall York
- P8 Section Condo
- P9 Elevations (updated)
- P10 Commercial Aerial first phases
- P11 Commercial Aerial (updated)
- P12 York Aerial full build out
- P13 Perspective full build out from south
- P14 Perspective full build out from east (new)
- P15 Rendering of hotel corner Maple (updated)
- P16 Rendering Maple St elevation (new)
- P17 Rendering of courtyard on Commercial (updated)
- P18 Rendering of courtyard (zoom) (updated)
- P19 Rendering of mid block passageway from Commercial (updated)
- P20 Corner York and Commercial (updated)
- P21 Rendering York Street
- P22 Rendering York Street
- P23 Rendering York Street
- P24 Rendering mid block passageway from York
- P25 Public Path and Woonerf Detail Block Permeability Plan (updated)
- P26 Surface Parking Plan first phases

Planning and Urban Development Department Planning Division



Subject: MDP and B-5 Design Review – 383 Commercial Street
Written by: Caitlin Cameron, Urban Designer
Date of Review: Tuesday, November 7, 2017

The project at 383 Commercial Avenue is subject to the *Master Development Plan Standards of Review*. The project is also within 100' of a historic district and included an advisory design review by the Historic Preservation Board.

The proposed master plan for multi-family residential buildings is only reviewed according to the Master Plan criteria. In future Site Plan design reviews, the projects will be subject to the R-5 and Multi-family design guidelines. Staff recommend the MDP approval include design guidelines that will apply to all subsequent site plan projects.

Based on the revised submission from October 31, 2017 and Planning Board comments, staff have the following comments as well as recommended Design Standards to apply to future Site Plan applications.

Design Review Comments: *(suggested revisions in red)*
(iii) Standards of Review.

b. Developed in a comprehensive, design-integrated manner, according to an overall master development plan

- Staff continue to support the Master Plan layout. The physical forms and layout now reflect the different uses of the buildings, create mid-block breaks, and provide logical circulation and servicing locations. The project layout and general massing is comprehensive and design-integrated internally and also now in a more context-sensitive way.

d. Consistent with the City's Comprehensive Plan and consistent with City Council approved master plans . . .

- The project is not within a Pedestrian Activities District Overlay zone (PAD).
- The project is not located within a view corridor protection area.

f. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts or historic landscapes, the Master Plan shall be developed so as to be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity of the proposed development

- See memo from Historic Preservation staff regarding the Historic Preservation Board review comments for compatibility with the Old Port Historic District. Staff agree with many of the HP Board comments. Staff will have building-specific design review and comments during Site Plan application.

I. Designed as to create a cohesive identity through building scale, massing, and articulation; use of quality exterior material, architectural detailing at pedestrian scale; consistency of design and materials for streetscape and pedestrian amenities; framing of outdoor open space and linkages; a clear conveyance of the function and significance of various buildings, entrances, and features; and to generally comply with design and development standards of the zone in which it is located;

- Cohesive identity: The hotel, by choice and request, is designed to stand apart in character from the residential buildings.
On Commercial Street, the residential buildings have a cohesive identity and the designs are informed by the historic context. Staff support detail revisions made to incorporate the reference lines on Commercial Street. This includes pronounced bases on the buildings, horizontal proportioned facades, and regular rhythm of vertically proportioned windows. Staff recommends that the Commercial Street residential facades be one consistent material – brick- with glass curtain wall as an accent. **The York and High Street residential designs suffer from a lack of cohesiveness. There are too many elements - especially materials - applied to these facades in an attempt to provide visual interest.**
- Quality exterior material: The materials proposed meet this standard. In Site Plan review the details should be reviewed further to provide depth, articulation, visual interest, and quality transitions.
- Consistency of design and materials for streetscape and pedestrian amenities – See proposed design guidelines below for preferred streetscape treatments. Staff agree that the streetscape on Commercial Street should differ from that on York, High, and Maple. York Street includes private uses and therefore the landscape buffer between the sidewalk and residential building is appropriate. Commercial Street appears to be the only street wide enough to provide street trees.
- Framing of outdoor open space and linkages – the proposal creates several outdoor plazas and passages. These are framed literally by colonnades on Commercial Street. On York Street, the linkages are indicated by breaks in the buildings, landscaping, and steps. **Staff are concerned about the internal passageway linking the residential buildings to the hotel – urban design best practice typically avoids such passages which usually lead to inactivity at the street level. In addition, the passage blocks the visual connection of the public passageway from York to Commercial Street – this may make wayfinding less clear. The applicant describes their rationale for the passage in the response narrative.**
- Clear conveyance of the function and significance of the various buildings, entrances, and features – the design of the hotel exterior was revised to differentiate that use from the residential/mixed-use buildings. Staff support this design direction. The hotel design also provides more prominent entrances on Commercial Street.
- Design standards of the zone: See memo from 10/19/17 for those comments. Additional design review for each specific building will be conducted with Site Plan applications.

Proposed MDP Design Guidelines

- **Materials**
 - o **Commercial Street** – Material placement, detail, and articulation should emphasize the established historic Commercial Street patterns of massing, proportions, and façade composition regulating lines and building base. Material selection on the residential buildings will predominantly use red brick and granite with glass curtain wall as an accent. The hotel, in order to stand apart in character and use, will have a more contemporary expression but will continue the base and regulating lines found in the Commercial streetscape.
 - o **York, High, and Maple Streets** – These streets are not part of the historic district and the context is varied. Residential building materials should be consistent and be rationally placed based on interior uses or massing variation – not an arbitrary attempt to create visual interest. A consistent base line is recommended to be carried through the residential buildings.
 - o Quality Exterior Materials includes the detailing, articulation, transition, durability, and visual interest of the materials, not only their selection and placement. These aspects will be reviewed with special attention to the ground floors and areas most visible to pedestrians.
- **Façade composition**
 - o **Commercial Street** - Commercial Street has a strong, consistent pattern of a tall base story, overall horizontal proportion, and regular window patterns. Commercial Street facades will continue and interpret these characteristics. The ground floors will consider pedestrian comfort and scale, especially in the placement of doors, windows, canopies, and details in the materials and articulation.
 - o **York Street** – Facades should include a defined base. Window and material placement should follow a rationale tied to the building uses or changes in massing.
- **Streetscape design**
 - o **Commercial, High, and Maple Streets** – Character = Predominantly commercial, active uses fronting the street. The sidewalk should be as wide as possible. Where the sidewalk is at least 12' wide, street trees should be provided in raised granite planters in the furnishing zone. Planters or landscape areas should not be placed between the sidewalk and the building – this is not consistent with the established urban streetscape.
 - o **York Street** – Character = predominantly residential uses fronting the street. The private uses justify a landscape buffer between the street and the residential use. Landscape areas should be raised with either a curb or a seating wall. The sidewalk width should be consistent for the whole block.
 - o **Interior Passages** – Internal passages should employ CPTED principles as a best practice to make spaces that are safe, active, and inviting. Material selection and design should indicate private or public access.



Planning and Urban Development Department Planning Division

Subject: MDP and B-5 Design Review – 383 Commercial Street
Written by: Caitlin Cameron, Urban Designer
Date of Review: Thursday, October 19, 2017 **(SUPERCEDED)**

The project at 383 Commercial Avenue was reviewed according to the *Master Development Plan Standards of Review* by Caitlin Cameron, Urban Designer, Jean Fraser, Planner, and Deb Andrews, Historic Preservation Program Manager. The project is also within 100' of a historic district and included an advisory design review by the Historic Preservation Board.

The proposed master plan for multi-family residential buildings is only reviewed according to the Master Plan criteria. In future Site Plan design reviews, the projects will be subject to the R-5 and Multi-family design guidelines. Staff recommend the MDP approval include design guidelines that will apply to all subsequent site plan projects.

Design Review Comments: *(suggested revisions in red)*
(iii) Standards of Review.

b. Developed in a comprehensive, design-integrated manner, according to an overall master development plan

- The master plan includes three groupings of buildings. The scale of the block has been divided by two mid-block passages. One passage is private and provides a physical separation of the buildings on York Street. The second passage is more publicly accessible and provides passage from York Street down to Commercial Street. This break also serves as a function break between the residential/mixed-use buildings and the hotel building. The circulation, both pedestrian and vehicular, through and around the site has been improved by this revised master plan layout. Staff support the plan because the physical forms and layout now also reflect the different uses of the buildings. The project is comprehensive and design-integrated internally and also now in a more context-sensitive way.

d. Consistent with the City's Comprehensive Plan and consistent with City Council approved master plans . . .

- The project is not within a Pedestrian Activities District Overlay zone (PAD)
- The project is not located within a view corridor protection area

f. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts or historic landscapes, the Master Plan shall be developed so as to be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity of the proposed development

- See memo from Historic Preservation staff regarding the Historic Preservation Board review comments for compatibility with the Old Port Historic District. Staff agree with

many of the HP Board comments, especially revising the designs to provide a pronounced base on Commercial Street and York Street facades. The glass corner of the hotel appears disconnected to the primary hotel massing, by providing a grounded base this corner will feel more connected and grounded to the overall building composition. There is some concern that such exposed hotel rooms will consistently have drawn shades – some revisions to add privacy to those rooms may make sense.

I. Designed as to create a cohesive identity through building scale, massing, and articulation; use of quality exterior material, architectural detailing at pedestrian scale; consistency of design and materials for streetscape and pedestrian amenities; framing of outdoor open space and linkages; a clear conveyance of the function and significance of various buildings, entrances, and features; and to generally comply with design and development standards of the zone in which it is located;

- Cohesive identity: The residential buildings have a clear cohesive identity. The hotel, by choice and request, is designed to stand apart in character from the residential buildings. Staff recommends that the Commercial Street residential facades be one consistent material – brick- with glass curtain wall as an accent. Overall, the buildings should continue to be revised to incorporate the reference lines on Commercial Street. This includes pronounced bases on the buildings, horizontal proportioned facades, and regular rhythm of vertically proportioned windows. Staff suggests that the building bases on Commercial Street should return to a granite or cast concrete rather than brick.
- Quality exterior material: The materials proposed meet this standard. In Site Plan review the details should be reviewed further to provide depth, articulation, visual interest, and quality transitions.
- Consistency of design and materials for streetscape and pedestrian amenities – See proposed design guidelines below for preferred streetscape treatments. Staff agree that the streetscape on Commercial Street should differ from that on York, High, and Maple. York Street includes private uses and therefore the landscape buffer between the sidewalk and residential building is appropriate. The sidewalk should be a consistent width and not jog from the Baxter School building. Commercial Street appears to be the only street wide enough to provide street trees. The planters on High Street are not appropriate and are not consistent with the streetscape design of High Street.
- Framing of outdoor open space and linkages – the proposal creates several outdoor plazas and passages. These are framed literally by colonnades on Commercial Street. On York Street, the linkages are indicated by breaks in the buildings, landscaping, and steps.
- Clear conveyance of the function and significance of the various buildings, entrances, and features – the design of the hotel exterior was revised to differentiate that use from the residential/mixed-use buildings. Staff support this design direction. The hotel design also provides more prominent entrances on Commercial Street.
- Design standards of the zone:

(c) B-5 and B-5b Urban Commercial Business Zones

Standard (1) a. Shared Infrastructure – Met – The project shares structured parking through the block to be used by all buildings. The project has been improved by providing an interior drive to access the garage, hotel entrance, and servicing.

Standard (1) b. Buildings and Uses shall be located close to the street . . . – Met – On Commercial Street, the project is located near the property line and creates strong street wall on street-facing façade consistent with other commercial or mixed use building placement. On York Street, the buildings are set back from the street to allow for a landscape buffer between the sidewalk and the private uses which are also raised from the street. Each Commercial Street corner is infilled with building to hold the corner. In the case of Commercial and High a chamfered corner with glass emphasizes the corner. On Commercial and Maple, the hotel marks the corner.

Standard (1) c. Buildings shall be oriented toward the street . . . – Met – Primary building entrances are oriented to the street. Commercial Street is considered the more active, commercial street while York is a smaller, less active street. In the case of the hotel, the main entrance was relocated to face Commercial Street. Retail uses face Commercial Street in the residential blocks. On York Street, each residential block includes entrances directly onto the street and some entrances to the private plaza spaces.

Standard (1) d. Parking lots shall be located to the maximum extent practicable toward the rear . . . – Met – Parking is structured and is buried within the block. In most cases the parking is lined with active uses or is buried into the grade change.

Planning Board Comment:

The Planning Board, in the previous workshop, commented on the following subjects:

- Mid-block permeability and scale of block development – The proposal was significantly revised to provide a pedestrian accessible passage through the site from York Street to Commercial Street. This change also provides vehicular circulation and service areas internal to the site. There are two mid-block breaks in the block, one break between the residential buildings accommodates private outdoor areas. The second break not only brings a smaller scale to the block but also gives pedestrian circulation through the site.
- Hotel design – The proposal was revised to give the hotel building a different character from that of the residential buildings. The applicant was encouraged by staff to pursue a contemporary approach that takes cues from the predominant characteristics and regulating lines of the Commercial Streetscape but that also stands apart from the residential buildings. This was accomplished through massing, material, and façade composition. The building is now more regular to Commercial Street.
- Roof lines – Board members commented on the desire to see roof lines that are varied. The proposal introduces a stepped roof from York Street down to Commercial Street. This change is most perceived from the High Street and long views and brings some visual interest while keeping consistent roof lines along the York and Commercial Street frontages.
- Gateway – The board requested that the building design at the corner of High and Commercial include special emphasis as gateway location and prominent vantage at the end of Commercial Street. This version of the design uses a chamfered corner with glass curtain wall.

Proposed MDP Design Guidelines

- **Materials**
 - o **Commercial Street** – Material placement, detail, and articulation should emphasize the established historic Commercial Street patterns of massing, proportions, and façade composition regulating lines and building base. Material selection on the residential buildings will predominantly use red brick and granite with glass curtain wall as an accent. The hotel, in order to stand apart in character and use, will have a more contemporary expression but will continue the base and regulating lines found in the Commercial streetscape.
 - o **York, High, and Maple Streets** – These streets are not part of the historic district and the context is varied. Residential building materials should be consistent and be rationally placed based on interior uses or massing variation. A consistent base line is recommended to be carried through the residential buildings.
 - o Quality Exterior Materials includes the detailing, articulation, transition, durability, and visual interest of the materials, not only their selection and placement. These aspects will be reviewed with special attention to the ground floors and areas most visible to pedestrians.
- **Façade composition**
 - o **Commercial Street** - Commercial Street has a strong, consistent pattern of a tall base story, overall horizontal proportion, and regular window patterns. Commercial Street facades will continue and interpret these characteristics. The ground floors will consider pedestrian comfort and scale, especially in the placement of doors, windows, canopies, and details in the materials and articulation.
 - o **York Street** – Facades should include a defined base. Window and material placement should follow a rationale tied to the building uses or changes in massing.
- **Streetscape design**
 - o **Commercial, High, and Maple Streets** – Character = Predominantly commercial, active uses fronting the street. The sidewalk should be as wide as possible. Where the sidewalk is at least 12' wide, street trees should be provided in raised granite planters in the furnishing zone. Planters or landscape areas should not be placed between the sidewalk and the building – this is not consistent with the established urban streetscape.
 - o **York Street** – Character = predominantly residential uses fronting the street. The private uses justify a landscape buffer between the street and the residential use. Landscape areas should be raised with either a curb or a seating wall. The sidewalk width should be consistent for the whole block.

383 Commercial Street MDP - Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com>

Thu, Nov 9, 2017 at 11:26 AM

To: Jean Fraser <jf@portlandmaine.gov>

Cc: "Keith Gray, PE (kgray@portlandmaine.gov)" <kgray@portlandmaine.gov>, Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>

Jean – I have reviewed the application materials for the project and offer the following comments as it relates to the Master Development Plan.

- The following comments are based upon a review of the Traffic Impact Study Master Development Plan, Sebago Technics, November 3, 2017.
 - The applicant has conducted a trip generation estimate for the project based upon the recently released update of the Trip Generation Manual, ITE, 10th Edition. The project is estimated to generate 128 AM peak hour trips and 174 PM peak hour trips. I find the methods to be reasonable.
 - Traffic counts were conducted at the Commercial Street/Park Street, Commercial Street/High Street, Commercial Street/Maple Street, High Street/York Street and York Street/Maple Street intersections in April of 2017. I find the existing traffic volume data to be acceptable.
 - Future traffic volumes in the year 2024, without the project, were based upon increasing 2017 traffic volumes by an annual growth rate of 0.5%. Typical traffic impact studies also include traffic associated with approved but unbuilt developments. In my professional opinion the use of the background growth rates is reasonable for the MDP process, but during the Traffic Movement Permit process, Other Development traffic would need to be included.
 - The study assigns site generated traffic to the roadway system according daily traffic volumes in the project vicinity. I continue to review this method and refinement can be expected.
 - The applicant conducted a capacity analysis to assess roadway/intersection mobility conditions in the vicinity of the project. My

comments for each of the study intersections is noted as follows:

- Commercial Street/High Street – The analysis estimates long delays from the STOP controlled High Street approach, which seems to reflect field conditions. However, the analysis concludes that Commercial Street functions with little or no delay. During peak time periods, Commercial Street experiences significant congestion, with delays originating from the Beach Street traffic signal to the west and congestion to the east in the central waterfront area. It is recommended that the study traffic modeling expand to include streets/intersections so that actual congestion is accounted for in the analysis.
- York Street/High Street – The analysis concludes that the intersection operates at acceptable levels of service. Field observations should be performed to corroborate this conclusions. I have observed longer vehicle delays.
- Commercial Street/Maple Street – As noted, long delays are estimated from Maple Street, which is not unexpected given high volumes on Commercial Street.
- York Street/Maple Street – The analysis indicates this intersection will operate will little or no delay.
- Commercial Street/Park Street – The analysis concludes that long delays for Park Street movements will continue to be an issue. As noted previously, Commercial Street is congested and revised traffic modeling is suggested.
- Commercial Street/Site Drive – Little delay is expected due to it being an entry drive only.
- Maple Street/Site Drive – Little delay is expected due to low traffic volumes on Maple Street.
- York Street/Site Drive – Little delay is expected.
- The traffic study evaluated conditions at the Commercial Street/High Street intersection assuming existing STOP sign control. It has been requested that the intersection also be evaluated under the assumption that a traffic signal is installed. This analysis is pending. In conjunction with the traffic signal, left-turn movements from Park Street onto Commercial Street may be prohibited and diverted to the new traffic signal. The Park Street intersection should be evaluated assuming left-turns are prohibited.
- The traffic study should include an evaluation/summary of crash history in the study area.

- Given actual traffic conditions on Commercial Street (long delays/queues), the conclusion in traffic study should be revised and include a list of suggested recommendations for mitigating project traffic impacts.

- The applicant is proposing access/egress to the site via an entry drive on Commercial Street, an access/egress driveway on Maple Street and an access/egress drive on York Street. The provision of three driveways for the site requires a waiver from City standards (a maximum of two driveways is permitted). Given site conditions, land use, and that the Commercial Street driveway is an entry driveway only, I support a waiver.
- Truck deliveries for the project site will occur internally via Maple Street or Commercial Street and on Commercial Street in a commercial loading zone. In general, I find the truck delivery program to be acceptable, although more detail is required. The applicant has provided some detail on anticipated delivery vehicle type, routing, on-site vertical clearance, length and accessibility of the on-street loading space, vehicle turning templates entering and exiting the site, and proximity/accessibility of trucks to land use destination. Further coordination is required, but as noted above, acceptable truck delivery conditions appear to be provided.
- The applicant is proposing a pedestrian use corridor through the site between York Street and Commercial Street. The applicant is proposing a “shared use” facility from Commercial Street to the Hotel Entry/garage drop-off area. I find the general concept of designing the driveway for low speed vehicle and pedestrian interaction to be reasonable. I would note that specific design details, traffic control at the garage/hotel area, delivery truck maneuver/management, and hotel valet operations will need to be reviewed to ensure safe pedestrian conditions are provided.
- The driveway serving the temporary surface parking lot does not meet City corner clearance standards. While there was a driveway servicing Rufus Deering at this location, the applicant will need to provide detailed documentation in support of a waiver.
- A pedestrian facility should be provided between Commercial Street and the temporary surface parking lot.

- The applicant has conducted a parking demand analysis for Phase 1/2 and Phase 3 build-out scenarios. The parking demand is primarily based on hotel and residential parking needs. The Residential parking demand is based upon an assumption of providing 1 parking space per dwelling unit, which I find to be reasonable. The Hotel parking demand is based upon parking generation rates as documented in the publication Parking Generation, ITE, 4th Edition. ITE notes the following for a Hotel located in an Urban location:

“Weekday parking demand were provided for five urban sites. Transit services were available within three blocks of all urban sites. The average size of the study sites was 458 rooms. The average peak period parking demand was 0.64 vehicles per occupied room. The weekday peak period occurred between 7:00 and 9:00AM a.m. between 12:00 and 1:00 p.m. and between 8:00 and 9:00 p.m.” Also, “Saturday peak period parking demand for urban sites was 0.90 vehicles per occupied room (two sites) and the Saturday peak period occurred between 8:00 and 9:00 p.m.”.

While the sample size of the data collected for deriving the average parking rate is small, the Zoning Ordinance of 0.25 parking spaces per room would seem to result in an inadequate parking supply. It is my understanding that the applicant is using an average parking generation rate of 0.45 parking spaces per room, which I find to be reasonable given the ITE data.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE

Senior Associate

Traffic Engineering Director

TYLIN INTERNATIONAL

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+1.207.347.4354 direct

+1.207.400.0719 mobile

Memorandum
Department of Planning and Development
Historic Preservation Office



To: Chair Boepple and Members of the Planning Board
From: Deborah Andrews, Historic Preservation Program Manager
Cc: Jean Fraser, Planner
Date: October 20, 2017
Re: Historic Preservation Board Advisory Review of *Revised Development Proposal for 383 Commercial Street*

On October 18th, the Historic Preservation Board conducted an advisory review of Archetype's revised development proposal for 383 Commercial Street. The revised design scheme, prepared for applicant Gordon Reger Holdings LLC., was developed in response to concerns raised by the Planning Board about previous proposals as well as a change in the applicant's development program to include a hotel at the eastern end of the subject block.

It should be noted that the elevations and renderings forwarded to the Historic Preservation Board in advance of the October 18 meeting were superseded by revised elevations and renderings presented at the meeting itself. The revised drawings represented a fairly substantial change in design direction. While the architect's design revisions were made in an effort to respond to preliminary feedback from staff, neither the Board nor staff had the opportunity to review the updated drawings before the meeting itself. Additionally, a number of design details had not yet been addressed or resolved. These factors effectively limited the Historic Preservation Board's review to preliminary comments.

Notwithstanding these limitations, the Historic Preservation Board offered a number of comments and questions for consideration by the project architect and the Planning Board as the project moves forward. Following is a summary of the Historic Preservation Board's advisory review:

- With respect to the form and massing of the easternmost building, the Board found that the revised proposal represents a significant improvement over the initial design reviewed by the HP Board last March. The form and massing are now consistent with the prevailing development pattern of Commercial Street and the west elevation is perpendicular to the street.
- The Board found that the proposed pedestrian passageway located between the hotel and the residential development represents a significant improvement over previous schemes

as it provides meaningful public access across the block and offers an amenity for the area.

- Board members were supportive of the contemporary design direction and proposed material palette for the hotel, but expressed concern that the new proposal lacked key elements that would help relate it to its larger Commercial Street context. Specifically, the Board recommended that the building include a defined base, as this is one of the strongest shared architectural characteristics of buildings on the inland side of Commercial Street. A base articulated in smooth-finish granite or composite stone would be consistent with the building's sleek design vocabulary and at the same time help relate the overall building composition to its Commercial Street context.
- Board members recommended that the hotel's curtainwall system be set back from the surface of the façade to provide some level of three-dimensional relief.
- While most members were not opposed to the glazed western corner of the hotel's Commercial Street façade, they felt that further design development was needed to ensure that this corner was better integrated into the overall design. As proposed, it stands apart from the balance of the building because of its high level of transparency. Consideration might be given to continuing the lead-coated copper across the entire building base or framing the western edge of the glazed corner with lead-coated copper.
- With respect to this glazed corner of the hotel building, Board members noted that the floor plans called for guest rooms on the upper floor levels. Board members expressed concern that the design intent of this glazed corner would likely be undermined by the fact that blinds would be drawn most of the time. In fact, this observation would apply to the entire upper façade of the hotel, which features a high degree of glazing.
- Some members of the Board questioned the bridge connecting the residential development to the hotel, particularly its considerable depth, which would likely create a significant visual barrier looking up into the pedestrian passageway.
- The Board's comments regarding the proposed treatment for the northeast corner of the hotel (facing Maple Street) were fairly limited, as Mr. Lloyd indicated that it was still under design development. For example, exterior materials, color and detailing had not yet been determined. Additionally, no drawing was provided for east elevation of the hotel abutting the former Baxter School building. Without renderings or views from Maple Street, the Board could not address this important elevation of the building.
- Regarding the Commercial Street frontage of the residential buildings west of the hotel, Board members questioned the decision to feature a two-story base across the entire frontage. Board members expressed the view that the previous scheme—which featured two-story arcades which stepped down to a one-story base at the building facades—was a better scheme for the residential development.
- Board members questioned the introduction of lead-coated copper in the center of the westernmost building's facade, as the change in material did not coincide with a change in building plane. As such, it appeared somewhat applied and arbitrary. By

reintroducing it on this building, it also undermined the distinctiveness of the hotel. Board members also expressed the view that the original proposal's curved façade was more successful than the faceted façade of the revised proposal and that the treatment of the western corner itself remained unresolved.

- Regarding the York Street facades of the residential buildings, Board members noted that the design solution includes a number of exterior materials to provide visual interest and variety. The Board suggested that a single building base material and consistent base height be introduced across the facades of the residential buildings to provide some level of continuity along this streetscape.
- Board members questioned the treatment of the two passageways on York Street leading to the private courtyards. They noted that while the generous width of the stairways communicated an invitation to enter the development, the fence positioned at top of the stairs would prevent access. This treatment sent a mixed message. Similarly, they noted that the treatment of the elevator towers facing York Street appeared unresolved.



Economic Development Department
Gregory A. Mitchell, Director

To: Jean Fraser, Planner
From: Bill Needelman, Waterfront Coordinator
RE: Waterfront Parking and Use of Waterfront TIF
Date: November 9, 2017

Introduction:

The ongoing review of the Rufus Deering site master plan has generated concerns from waterfront industries on parking and general congestion along Commercial Streets. Planning staff has asked for a brief statement from the Economic Development Department on these issues for the benefit of the Planning Board.

Economic Development staff has not conducted a comprehensive analysis of the master plan under review. Accordingly, the comments below are intended to be the start of a conversation and are not intended as a conclusion on the merits of the project. The Waterfront Coordinator will be available at the November 14 workshop to answer questions if needed.

Waterfront Industry Parking:

WCZ policies actively discourage use of pier property for development of parking. Not surprisingly, many waterfront businesses and fish harvesters experience a shortage of employee parking, particularly during the summer months. Unrestricted parking on Commercial Street helps alleviate employee parking on the waterfront and is heavily used by fish processors, lobster fishing crews, and others. The unrestricted parking located along the Rufus Deering site is a significant increment in the available supply. Competition for unrestricted parking by new uses north of Commercial Street including hotel employees and patrons is increasing. Loss of this parking as a resource to employers will place further pressures on marine businesses that already struggle to operate on the heavily congested corridor. Moving forward, finding ways to either protect, replace, or substitute for marine employment parking should be considered within the context of project review.

Potential TIF Funding to Mitigate Development Impacts:

As evidenced by the circulated petition by the lobstering community, there is increasing concern generated by the perceived cumulative impacts of non-marine development on the waterfront. Any casual user of Commercial Street during the summer months will understand the congestion issues. Many (most) Portlanders now choose to avoid Commercial Street from May to October. Water dependent uses, however, have no choice but to endure these impacts as the price of doing business.

While a study for addressing Commercial Street is under consideration, there is as of yet no specific plan to mitigate congestion and travel delay on the waterfront. Even when such a plan is developed, there currently is no dedicated funding for plan implementation. Use of Tax Increment Financing (TIF) funds could be used to counter cumulative impacts of multiple developments that might not otherwise be addressed through the standards-based requirements on individual projects.

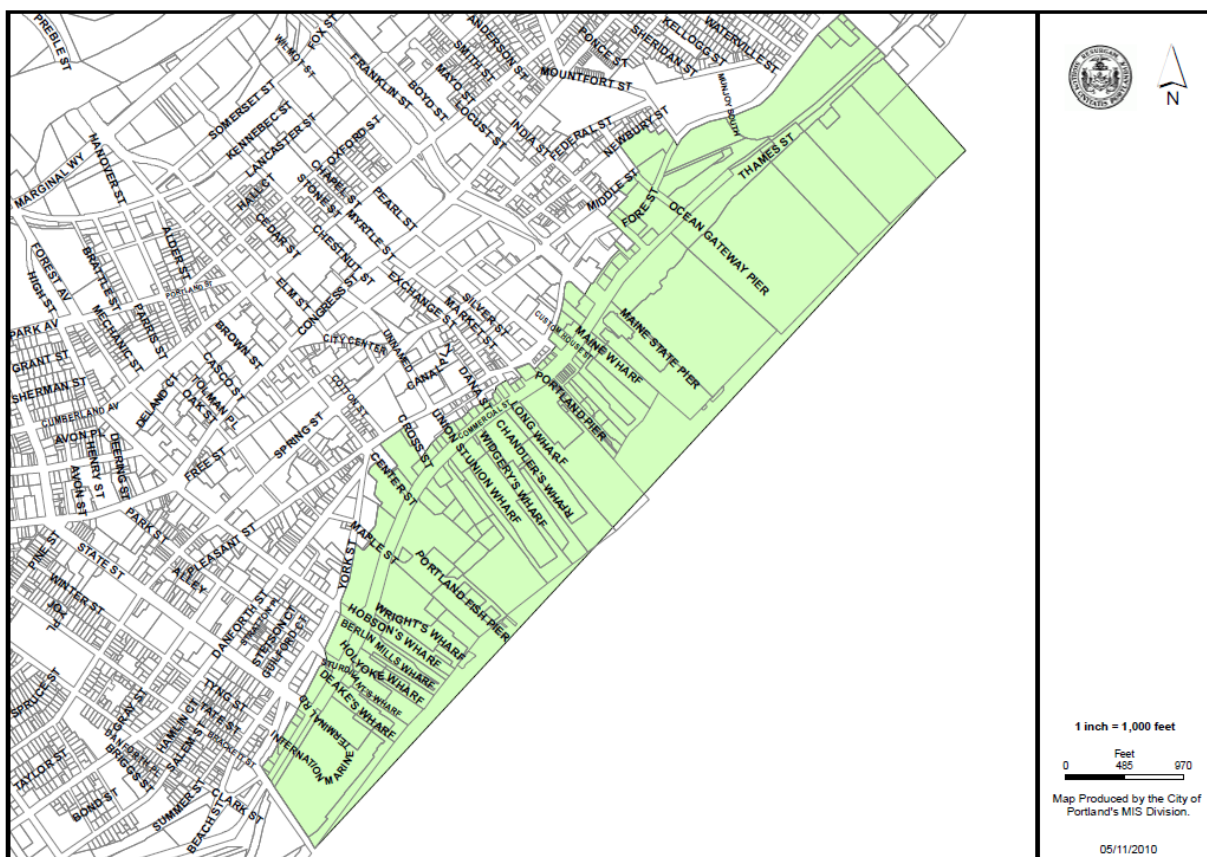
The Rufus Deering site lies within the Waterfront Redevelopment Economic Zone (WREZ). New developments within the WREZ are eligible for inclusion within the TIF district to improve infrastructure

benefiting the Portland waterfront. The WREZ and use of the funds were established and described in *"Investing in Our Working Waterfront: Final Report of the Mayor's Waterfront Task Force on Economic Development,"* dated September 2000, as adopted by the Portland City Council on June 4, 2001.

The *WREZ Ordinance* suggests that new taxes generated by development of greater than \$400,000 in value on and near the Portland waterfront can assist with the following improvements and activities: *"...parking facilities, utilities, traffic and congestion management installations, operating facilities for the cargo, fishing and other water-dependent, marine related industries, environmental protection and improvement, including the management and abatement of combined sewer overflows, appropriate assistance in the permitting and completion of dredging of siltation at piers, wharfs and weirs, and such other matters as the City Council shall approve from time to time. These activities shall be collectively known as the redevelopment program."* (Ord. No. 249-01, 6-4-01, Section 14-906)

All new qualifying development within the WREZ is reviewed by the City Council for inclusion within the TIF program on a project-by-project basis. With increased development activity located on and near the waterfront, the Economic Development Department supports exploring expanded use of TIF funding to implement projects benefitting Commercial Street and the marine economy.

Waterfront Capital Improvement & Economic Redevelopment Zone





Memorandum

Planning and Urban Development Department

Planning Division

To: Elizabeth Boepple, Chair and Members of the Portland Planning Board

From: Bruce Hyman, Transportation Program Manager

Date: November 9, 2017

Re: **West Commercial Street: Recent and Near-term Transportation Planning Context**

Meeting Date: November 14, 2017

City staff have participated in a number of recent meetings and site walks with the Waterfront Alliance that have highlighted a range of transportation issues facing Commercial Street. These issues. Many of these issues arise from the complex and varied inter-play of local and statewide transportation functions being served by Commercial Street and the current and evolving land uses it serves.

The balance of this memo describes a recently completed transportation study that looked to strike the balance between West Commercial Street's growing freight traffic function with the expansion of the International Marine Terminal and with its needs to safely and efficiently serve motor vehicles, bicyclists and pedestrians and serve its changing land use mix. A second study will commence in 2018 looking at the easterly end of Commercial Street (High Street to India Street).

West Commercial Street Multi-modal Corridor Study (2016)

The West Commercial Street Multi-modal Corridor Study was completed in January 2016. It has not been formally adopted by the City Council as a master plan. Its study area encompassed West Commercial Street from the Veteran's Bridge to High Street.

The study was commissioned in 2014 to look at balancing the multimodal transportation demands on West Commercial Street in anticipation of the intensifying freight usage with the (at the time) proposed International Marine Terminal expansion by the MaineDOT. One of the early steps in a transportation study of this type is to develop a Purpose and Need Statement.

The study's adopted Purpose and Need Statement is (page 7):

"3. PURPOSE AND NEED

The purpose of the West Commercial Street Multi-Modal Corridor Study is to recommend a configuration for the corridor that safely accommodates all modes of transportation and improves bicycle and pedestrian connections through the corridor. Special attention will be paid to

supporting the current mixed-use environment and currently proposed projects such as the IMT expansion and other mixed-use development proposals. Because of the adjacent industrial, fishing and marine-based commercial uses, particular emphasis is placed on accommodation of truck traffic and temporary staging. The recommended cross sections found further on in this report include: travel lanes, turn lanes, on-road bicycle facilities, a wide sidewalk/shared-use path along the north side, crosswalks, on-street parking and other streetscape amenities such as landscaping and enhanced lighting. From an urban design perspective, changes proposed along the corridor are intended to create an enhanced gateway to Portland's waterfront from the west.

Goals:

- Balance truck access and staging with pedestrian and bicycle safety and mobility
- Build on IMT expansion plans to leverage current investments to achieve a road and trail system serving current and future uses along the corridor
- Utilize West Commercial Street to efficiently serve divergent land uses and the widest number of roadway users
- Enhance the physical and operational nature of West Commercial to serve the mixed land uses and create an attractive gateway to Portland's waterfront.

Needs:

- Reduce the current high vehicle speeds
- Create better-defined areas for truck parking, staging, and loading/unloading
- Extend the shared-use path from the Veterans Memorial Bridge to the Old Port
- Provide on-road bicycle facilities with buffers to truck traffic or parked cars, where possible
- Enhance pedestrian accessibility along and across West Commercial Street."

A key section of the study that guided its conduct and the development of the recommendations along with the Purpose and Need Statement is entitled "Marine Industry." It states (page 6):

"MARINE INDUSTRY

The Commercial Street and West Commercial Street corridor holds a unique place in the City of Portland amid the regional marine economy. As the interface between the City and the piers and wharfs of Portland Harbor, Commercial Street serves as both an urban main street, and the functional interface with Portland's treasured harbor. These multiple purposes present potential conflicts and challenges for transportation planning unique to mixed use industrial waterfronts. Increasingly, Commercial Street is becoming a tourist attraction, placing further strains and complexity on the infrastructure. While the street evolves, one must always consider that certain elements are fixed. Piers can't move, water-dependent industries can't relocate, and water-constrained properties can't expand. The fisheries and other marine businesses that dominate the waterside of Commercial Street have no alternative locations within which to operate. For Commercial Street, a "Complete street" needs to accommodate the unique transportation needs of marine industries. While truck staging and loading may not be typical activities for urban streets, these activities are character defining features of Commercial Street. The broad right of way, as much as 100 feet, results from the 1850's recognition that the street needs to accommodate the loading, staging, and complex transportation needs of the piers and wharfs. In identifying a context sensitive solution for updating the harbor, Commercial Street and West

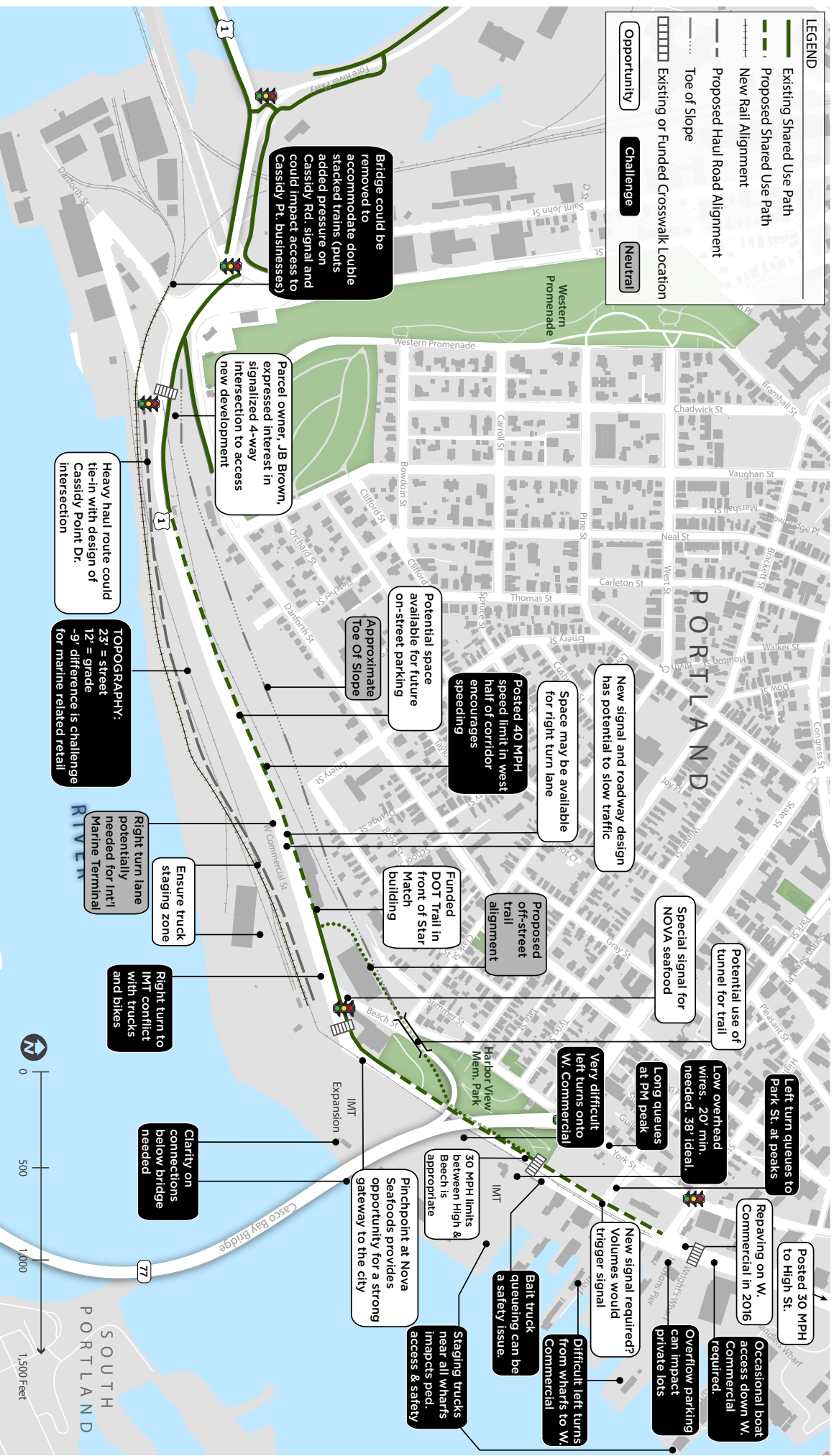
Commercial Street require a detailed understanding of both roadways and water-bourne transportation. This report embraces the marine industrial character of the context while expanding opportunities for pedestrian and bicycle transportation.”

The following graphic documents Stakeholders’ Opportunities and Challenges that were identified at the beginning of the study.

Key recommendations (and their current status) in the vicinity of the 383 Commercial Street proposed project include:

- Completion of the West Commercial Street Pathway to High Street (Phase I was completed by the MaineDOT as part of the IMT expansion) – an application for Phase III from Nova Seafood to High Street has been submitted to the MaineDOT for funding which would require approximately \$90,000 in local matching funds which has not yet been secured
- Installation of a traffic signal at High Street when triggered by traffic volumes – the likely need for this signal has been identified should traffic continue to grow – no funding for the signal has been identified/secured nor design plans developed
- Installation/extension of bike lanes to Maple Street from High Street – not yet implemented
- Construction of a new, enhanced pedestrian crossing across Commercial Street at the IMT to Harborview Park – being considered as part of the IMT’s new proposed training building
- Construction of a new, enhanced pedestrian crossing across Commercial Street at Park Street – no action yet taken nor funding secured.

STAKEHOLDERS' OPPORTUNITIES AND CHALLENGES



West Commercial Street Multi-Modal Corridor Study

RECOMMENDATIONS MAP



Commercial Street Operations and Master Plan (planned for 2018-2019)

In response to the growing recognition of the competing uses and functions for which Commercial Street is being tasked to serve, the city applied for and received approximately \$85,000 (the limit of available funding – with \$17,000 being local match) for an Operations and Master Plan for Commercial Street from India Street to High Street. It is anticipated that an additional \$30,000 - \$40,000 may be needed to adequately complete this study's anticipated scope of work. The application to PACTS developed a preliminary Purpose and Need Statement that will be refined during the study process.

PURPOSE

The Commercial Street Operations and Master Plan will develop a plan to create a safe and inviting environment for users of Commercial Street – an American Planning Association “Great Street”. This Plan – focusing on the easterly portion of the street – will allow it to maintain its role as the spine of a great working waterfront, an economic development center, and a nationally recognized retail/tourist destination while enhancing future economic development opportunities for the region.

NEED

A victim of its own success, Commercial Street is the irreplaceable and sole landside support corridor for regionally significant fisheries, freight, and marine passenger industries. Simultaneously, Portland's waterfront has emerged as a destination second only to Acadia National Park in the State of Maine's tourism industry. Furthermore, mixed-use development planned along and nearby Commercial Street is booming. Existing and worsening congestion, anecdotally attributed to tourism vehicle and pedestrian traffic, threatens the function, efficiency, and safety of Commercial Street for all travelers and users. For marine industry, the potential loss of Commercial Street as a functional industrial corridor is an existential threat.

The Commercial Street Operations and Master Plan will address the following needs:

- Functional utility of piers and port facilities as centers for marine commerce
- Safe, comfortable, and reasonably managed pedestrian access along and across Commercial Street, including the width of sidewalks and location and configuration of crosswalks
- Management and facilitation of the freight and delivery activities, including to piers/wharves and the use of the center median area for deliveries to businesses
- Pedestrian-scale and roadway lighting
- Vehicular traffic operations and safety resulting in reasonable flow and travel time for all modes
- Bicycle facilities for safety and comfort, including bicycle racks and pavement markings
- Access management to improve mobility and safety for vehicles and pedestrians
- The potential for transit service to help meet mobility needs for employees, customers and tourists/visitors.

The study's public engagement/outreach strategy will work closely with all area stakeholders; the study is expected to commence in the Spring 2018.



383 Commercial Street
Master Development Plan
Development Review Application
Portland, Maine

Planning and Urban Development Department
 Planning Division

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

Purpose of a Master Development Plan:

- The purpose of a Master Development Plan is to provide for a mix of land uses at designated locations to achieve a land development responsive to the assets of a site. A Master Development Plan is a well-integrated development in terms of land uses, functional activities, and major design elements such as buildings, roads, utilities, drainage systems and open space. The Master Development Plan is deemed appropriate to large scale mixed use projects that are intended to be developed in phases. The Master Development Plan shall be reviewed by the Planning Board and may be reviewed independently or concurrently with review of a Level III site plan application for a phased development.

A Master Development Plan is applicable as follows:

- A Master Development Plan is applicable for a site with one acre or larger in cumulative lot area that is designed as a cohesive and integral development program consisting of multiple buildings and associated site improvements proposed to be built in phases.
- The Master Development Plan option shall not apply in residential zones, except for institutional uses.

Planning Board Decision:

- A Master Development Plan approval shall not be construed as final authorization of the development. An approval shall confer pending proceeding status upon the development with the effect of maintaining the applicability of regulations in effect at the time of approval for as long as the Master Development approval remains valid (6 years from date of approval), including permissible extensions if granted (two 2-year extensions may be granted based upon criteria). All Level III site plans for each phase shall be in general conformance with the Master Development Plan.

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: <http://me-portland.civicplus.com/DocumentCenter/Home/View/1080>

Design Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2355>

Technical Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2356>

Planning Division

Fourth Floor, City Hall

389 Congress Street

(207) 874-8719

planning@portlandmaine.gov

Office Hours

Monday thru Friday

8:00 a.m. – 4:30 p.m.

PROJECT NAME:383 Commercial Street**PROPOSED DEVELOPMENT ADDRESS:**383 Commercial Street**PROJECT DESCRIPTION:**Mixed Use Retail (27,747SF) and Residential
Condominiums (284 units) and Structured Parking**CHART/BLOCK/LOT:** 42/A/1**PRELIMINARY PLAN**

_____(date)

FINAL PLAN

_____(date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: <u>Deering Property Development LLC</u> Business Name, if applicable: Address: <u>2730 Transit Road</u> City/State: <u>West Seneca NY</u> Zip Code: <u>14224</u>	Applicant Contact Information Work #: Home #: Cell #: <u>413.244.9092</u> Fax#: e-mail: <u>joe@dasco.com cast.net</u>
Owner – (if different from Applicant) Name: <u>Milliken Smith Block LLC</u> Address: City/State: Zip Code:	Owner Contact Information Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: <u>Sebago Technics / Will Conway</u> Address: <u>75 John Roberts Road</u> City/State: <u>So. Portland ME</u> Zip Code: <u>04106</u>	Agent/Representative Contact information Work #: <u>207.280.2055</u> Home #: Cell #: Fax#: e-mail: <u>wconway@sebago technics.com</u>
Billing Information Name: <u>Sebago Technics Inc</u> Address: City/State: Zip Code:	Billing Information Work #: Home #: Cell #: Fax#: e-mail:

Engineer Name: <u>Sebygo Technics Inc.</u> Address: City/State : Zip Code:	Engineer Contact Information Work #: Home #: Cell #: Fax#: e-mail:
Surveyor Name: <u>Owen Haskell, Inc.</u> Address: City/State : Zip Code:	Surveyor Contact Information Home #: Work #: Cell #: Fax#: e-mail:
Architect Name: <u>Archetype PA/ David Lloyd</u> Address: <u>48 Union Street</u> City/State : <u>Portland ME</u> Zip Code: <u>04101</u>	Architect Contact Information Work #: <u>207. 712. 6022</u> Home #: Cell #: Fax#: e-mail: <u>lloyd @ archetypepa . com</u>
Attorney Name: <u>—</u> Address: City/State : Zip Code:	Attorney Contact Information Work #: Home #: Cell #: Fax#: e-mail:
Designated person/person(s) for uploading to e-Plan: Name: <u>William Conway</u> e-mail: <u>wconway @ sebygo technics . com</u> Name: e-mail: Name: e-mail:	

APPLICATION FEES:

Master Development Plan (check applicable reviews) ☒ Application Fee (\$1,000.00)	The City invoices separately for the following: • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$50.00 hour) • Legal Review (\$75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.
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INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the application only to planning@portlandmaine.gov
(Please be sure to designate a person who will be responsible for uploading documents and drawings.)
This step will generate the project ID number for your project.
2. An invoice for the application fee will be e-mailed to you. Payments can be made on-line at [Pay Your Invoice](#), by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.
3. The designated person responsible for uploading documents and drawings will receive an email from epian@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

Applying Online Instructions

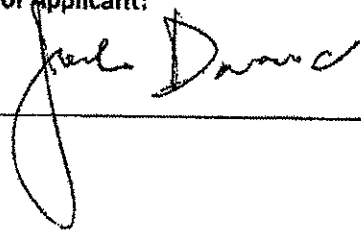
5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

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

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

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

Signature of Applicant: 	Date: 1/9/17
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V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

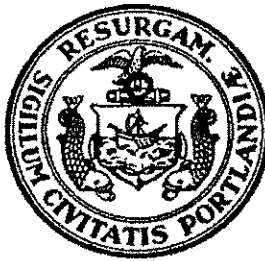
TOTAL AREA OF SITE	2.38	Ac	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	2.58	Ac	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.			
IMPERVIOUS SURFACE AREA			
Impervious Area (Total Existing)	2,43		sq. ft.
Impervious Area (Total Proposed)	2,38		sq. ft.
Building Ground Floor Area and Total Floor			
Building Footprint (Total Existing)	2950		sq. ft.
Building Footprint (Total Proposed)	87,663		sq. ft.
Building Floor Area (Total Existing)			sq. ft.
Building Floor Area (Total Proposed)	469,153		sq. ft.
ZONING			
Existing	B5b		
Proposed, if applicable	B5b		
LAND USE			
Existing			
Proposed	LUMBER RETAIL HOTEL, RETAIL, RESIDENTIAL		
RESIDENTIAL, IF APPLICABLE			
# of Residential Units (Total Existing)	0		
# of Residential Units (Total Proposed)	203		
# of Lots (Total Proposed)	4 - Phase 1A, 1B, 2, 3		
# of Affordable Housing Units (Total Proposed)	TBD		
PROPOSED BEDROOM MIX			
# of Efficiency Units (Total Proposed)	27		
# of One-Bedroom Units (Total Proposed)	94		
# of Two-Bedroom Units (Total Proposed)	73		
# of Three-Bedroom Units (Total Proposed)	9		
PARKING SPACES			
# of Parking Spaces (Total Existing)			
# of Parking Spaces (Total Proposed)	313		
# of Handicapped Spaces (Total Proposed)	13		
BICYCLE PARKING SPACES			
# of Bicycle Spaces (Total Existing)	0		
# of Bicycle Spaces (Total Proposed)	105		
ESTIMATED COST OF THE PROJECT			
	\$	TBD	

MASTER DEVELOPMENT PLAN SUBMISSIONS			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST Sec. 14-527 (c) and (e)
✓		1	Completed Application form
✓		1	Application fees
✓		1	Written description of project
✓		1	A written statement and/or plan as to the general impact of the proposed Master Development plan upon the area, relationship to surrounding properties, and measures to create appropriate transitions and access to abutting public properties and neighboring tracts.
✓		1	Evidence of right, title and interest
✓		1	Evidence of state and/or federal approvals, if applicable
✓		1	Written assessment of proposed project's compliance with applicable zoning requirements
✓		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
✓		1	Written requests for waivers from site plan or technical standards, if applicable
✓		1	Evidence of financial and technical capacity
✓		1	General statements concerning storm water management techniques.
✓		1	Traffic Analysis and recommendations prepared by a registered professional engineer, including current traffic counts, existing street capacity, traffic generation projections, and ability to absorb the increased traffic. If Traffic Movement Permit applies, the TMP submissions and review supersede. (Section 14-527 (e) xii)
✓		1	Utilities analysis and recommendations prepared by registered professional engineer. (see utility plan below) Analysis shall assess capacity, identify deficiencies and recommend improvements, including timing, funding mechanisms and coordination with City (14-527 (e) xiii)
Applicant Checklist	Planner Checklist	# of Copies	SITE PLAN SUBMISSIONS CHECKLIST Sec. 14-527 (c) and (e)
✓		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
✓		1	Master Development Plan Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase) – scale not less than 1 inch equaling 50 feet
✓			Neighborhood context map, at a scale not less than 1 inch 100 feet
✓			Approximate boundary lines of existing and proposed lots with areas and dimensions
✓			Plan show north arrow, date, scale, legend, title Master Development Concept Site Plan, followed by project name, applicant, engineer, designer, and/or agents
✓			For residential areas, proposed density, lot configuration, circulation and plot plan
✓			Analysis of natural features of the site, including natural waterways, wetlands, floodplains, topography, soil conditions and other natural features
✓			Analysis of designated view corridors, historic resources, and archeological resources associated with the site
✓			Existing/proposed buildings and other significant structures, building groupings, exterior building elevations and entrances, parking areas and other significant physical features of the site

✓		Context drawings, perspective renderings, photographic montages, or computer generated graphics depicting the proposed development within the surrounding building and environmental context
✓		Building elevation drawings shall include:
✓		• Illustration of all sides of the structures
✓		• Views of major entries or prominent building features
✓		• Illustration of building articulation and elements
✓		• Building finish composition
✓		• Pedestrian and streetscape elements of the Master Development Plan
		Digital 3-D model tied to specific location that is submitted as a KML, KMZ, DXF or DWG file on a CD or DVD or such format as approved by the Planning Authority (Sec. 14527 (e)2)
✓		Major circulation patterns surrounding and serving the site, existing and proposed street lines, ways, easement and public areas within or next to the site
✓		Major landscaping elements, features, open space, and plans for preservation of natural features
		Analysis of the public safety services needed to support the Master Development Plan
✓		Analysis of the anticipated impacts on the public school system to support the Master Development Plan
✓		Generalized drainage plan for the site, drainage ways, flows, points of outfall and indicating impacts of development on affected drainage basins. Contour information at not less than 2 ft. intervals and document run-off characteristics
✓		Inventory of existing utilities (storm water, sanitary, electrical, fire alarm boxes & lines, gas, water, lighting, curb and gutter and etc.) illustrating locations, sizes, diameters carrying capacity and present load

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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



Bradley Roland, P.E.
Water Resources Division

Date: 10/10/17

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

Site Address: 323 Commercial Street
Chart Block Lot Number: 42/A/1
Proposed Use: HOTEL/RETAIL/RESIDENTIAL
Previous Use: _____
Existing Sanitary Flows: TBD GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
Commercial Street

Site Category	Commercial (see part 4 below)	☒
	Industrial (complete part 5 below)	☐
	Governmental	☐
	Residential	☒
	Other (specify) <u>HOTEL</u>	☒

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

2. Please, Submit Contact Information.

City Planner's Name: Jean Fraser Phone: _____
Owner/Developer Name: Deering Property Development LLC
Owner/Developer Address: 2730 Trans. Road West Seneca NY
Phone: 413.244.9092 Fax: _____ E-mail: joedascio@comcast.net
Engineering Consultant Name: Selengo Technics / Will Conway
Engineering Consultant Address: 75 John Roberts Rd So Portland ME
Phone: 200.2055 Fax: _____ E-mail: wconway@selengotechnics.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: 33,750 GPD
Peaking Factor/ Peak Times: _____
Specify the source of design guidelines: (i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," "Portland Water District Records, Other (specify) _____

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

Restaurant - 100 seats @ 30 gpd = 3000 + 10 employees @ 12 gpd = 120 ; TOTAL 3120 GPD
Retail - 45 employees @ 12 gpd = 540 GPD
Efficiency /
1 BR Units - 121 @ 120 gpd = 14,520 GPD
2 BR Units - 73 @ 180 gpd = 13,140 GPD
3 BR Units - 9 @ 270 gpd = 2,430 GPD
TOTAL = 33,750 GPD

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values:

TBD

Size of External Grease Interceptor:

Retention Time:

Peaking Factor/ Peak Times:

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated:

N/A

GPD

Do you currently hold Federal or State discharge permits?

Yes ☐ No ☐

Is the process wastewater termed categorical under CFR 40?

Yes ☐ No ☐

OSHA Standard Industrial Code (SIC):

(<http://www.osha.gov/oshstats/sicser.html>)

Peaking Factor/Peak Process Times:

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

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

MASTER DEVELOPMENT PLAN
383 COMMERCIAL STREET
WRITTEN SUBMISSION S-7 PROJECT PHASING PLAN

THE PROJECT IS PROPOSED TO BE CONSTRUCTED IN THREE PHASES, AS DEPICTED ON PLANS SUBMITTED BY ARCHETYPE. PHASE 1 IS PROPOSED AS A HOTEL, AND PHASE 2 IS RETAIL/ RESIDENTIAL. THEY WILL BE BUILT AT THE SAME TIME, HOWEVER, EACH WILL HAVE ITS OWN OWNERSHIP ENTITY.

IN PHASE 1 AND 2, ALL EXISTING BUILDINGS WILL BE REMOVED, EXCEPT FOR THE TWO STORY LUMBER OFFICE, WHICH WILL REMAIN AND BE USED AS A CONSTRUCTION OFFICE .

(47) TEMPORARY SURFACE PARKING SPACES ARE PROPOSED, SET BACK FROM THE COMMERCIAL STREET EDGE AND BUFFERED FROM THE STREET WITH LAWN AREA, TREES AND SHRUBS . THIS PROPOSAL IS BASED UPON AN INEFFICIENT GARAGE LAYOUT, AS ALL OF THE ACCESS TO THE FULL BUILD – OUT GARAGE OCCURS IN PHASE 1.

MUCH OF THE YORK STREET SIDEWALK WILL REMAIN, WITH PORTIONS OF IT RECONSTRUCTED TO A WIDTH OF 8 FEET AND FOR ENTRANCES TO THE MIDBLOCK PERMEABILITY PLAZA AND THE LEVEL 2 GARAGE. MAPLE STREET SIDEWALKS WILL BE COMPLETELY RECONSTRUCTED. THE COMMERCIAL STREET SIDEWALK WILL BE RECONSTRUCTED – THE EXTENT COINCIDES WITH THE WIDTH OF THE PHASE 1 AND 2 BUILDING.

IN PHASE 3, THE BUILDOUT OF THE STRUCTURE WILL BE COMPLETED. THE YORK STREET, COMMERCIAL STREET AND HIGH STREET SIDEWALKS WILL ALSO BE COMPLETED IN THIS PHASE. ALSO IN PHASE 3, IT IS ANTICIPATED THAT THE MORATORIUM IN COMMERCIAL STREET WILL BE LIFTED; THE CURB BUMPOUT AT MAPLE STREET AND THE SERVICE AREA AT COMMERCIAL STREET WILL BE BUILT AT THIS TIME.

October 31, 2017

Att. C

Jean Fraser
Planner, City of Portland
Portland City Hall
389 Congress Street
Portland, ME 04101

RE: 383 Commercial Street -Architectural Changes

Dear Ms. Fraser,

The following are changes incorporated since our last presentation. These changes reflect our discussions with the planning board from October 24, 2017.

1. The base of the hotel is now a full two-story base of "rough back" granite along Commercial Street. This is a very rich material with a slightly rolling irregular faced finish. We believe this will establish a strong base element and the juxtaposition with the glass and metal above will be striking. As presented to the board the southeast corner is now solid with the granite base detail while the southeast corner has remained a glass element. We believe this will be a very inviting open architectural corner, inviting people into the hotel and the passage way. It also highlights the two-story hotel lobby space with banquet facilities on the second floor. Above these floors are guest rooms which will at times be open to interior views of the hotel and at times closed off with interior drapes. To the west side of the passage way we have made the corner solid and eliminated the vertical glass curtain wall element. This established the passage way entry with the juxtaposition of the glass to the east and solid to the west.
2. We have kept the bridge connection from the residential building to the hotel. This bridge will be an important life style feature allowing people living in the residential building to access activity's in the hotel. Giving year-round safe weather controlled access ie going for a swim in the hotel pool. We envision many of our units going to senior citizens and this feature will give them full access regardless of weather or their physical abilities. It also is provided with seating areas for someone to lounge and look out over Commercial Street.
3. The base detail of the building along commercial street is a very critical element for the building architecture and its connection to historic Commercial Street. While we understand the expressed concerns of an all brick base, there are many poor examples in the city, we believe that with careful proportions and careful detailing we can achieve a very unique contemporary element that still establishes a strong base and relates historically. We have incorporated granite bases and caps and set recessed brick courses. This careful detailing will define the base with the richness of the granite and a well-proportioned brick architecture yielding what we feel is a more dynamic element. We are also designing with a 16-inch-long brick vs a standard 12 inch.
4. As discussed with the board we kept the strong vertical elements along York Street and did not incorporate the suggestion of a continuous brick base which was recommended by the HP Board. We feel that the architecture is stronger with the vertical elements expressed. The continuous brick base will we feel will created a more monotonous effect.
5. The passageway will not be gated. By incorporating lighting, security cameras and hotel security we feel that we can provide an open inviting and safe passageway for those passing through and living or staying at the project.

Respectfully Submitted,



David Lloyd
Maine Licensed Architect

REVISED LAYOUT 383 COMMERCIAL - DESCRIPTION

On Oct 9, 2017, at 11:42 AM, David Lloyd <lloyd@archetypepa.com> wrote:

Our new revised architectural submission is a direct result of critiques developed through interaction with the planning board and the planning staff. Please note the following:

1 Along Commercial street the architecture is still a reflection of the architecture to the east running up commercial all the way to Franklin Street . A strong unity of building wall that is a distinctive Portland Maine architecture . While in full respect of this architecture we have moved in a more contemporary version of this archetype . The hotel on the corner of Commercial and Maple has been redesigned bringing the hotel entry lobby down to street grade . Thus creating a more dynamic interaction with the street and building activity . We have also introduced glass facades in the east and west corners . Creating a two story lobby space and more views to the south .

2 West of the hotel we have developed the new entry off Commercial street . This passage way allows for pedestrians, cars and trucks to enter the site . This passage way extends to York street giving full access for pedestrians from York to Commercial . As we turn into the site the architecture becomes more contemporary and light in color . The passage way is also highlighted by an overhead bridge , allowing residents of the residential building to gain access to activities in the hotel . There are also seating areas allowing people to sit and watch the street scene .

3 Going west from the hotel we have incorporated setbacks on the building . Thus giving a more dynamic architecture and also more units with southern light and views . The actual volume remains the same but the first cornice line on Commercial street is lowered by one story and the cornice on York is raised one story.

4 Going west from the new entry , we have incorporated another courtyard directly off the sidewalk . Both these courtyards offer a unique urban space offering views to the sidewalk , a quiet urban space that can be used to sit , interact or dine .

5 The base of the building has been changed from precast to brick . Still with an established base typical of Commercial street. This change is more reflective of the modern architecture we wish to incorporate . The brick material will be an elongated brick 16 inches Vs a standard 8 inch and brown in color offering a more distinctive subtle change from the more typical old port blend . The base is also evolved into a two story element. A reflection of the architecture of the former Porteous warehoused building to the east .

6 Continuing west to the last phase of the project we have incorporated a metal clad building between two brick faced buildings .

7 Solid to void proportions have been adjusted , giving the fenestration a more vertical expressive design .

8 Building elevations along York Street have been increased in height by one story , due to the stepping of the roofline

9 Residential entries are now located on both Commercial and York , giving stronger relationships to each street and better access for those living there .

In summation We believe that the buildings are moving in a very positive direction offering a more dynamic architecture , a more connected urban fabric and still maintaining a strong authentic Portland architecture.

David Lloyd, Architect

Archetype PA | 48 Union Wharf | Portland, Maine 04101 | tel. [207.772.6022](tel:207.772.6022) | cell. [207.831.8627](tel:207.831.8627)

lloyd@archetypepa.com

www.archetype-architects.com

MASTER DEVELOPMENT PLAN

383 COMMERCIAL STREET

WRITTEN SUBMISSION S- 8 OFF STREET PARKING SUMMARY

REQUIRED - PHASE 1:

- Hotel – 139 Rooms @ 1 space / 2.24 rooms = 62 spaces ***
- Restaurant – 2352 sf dining area @ 1 space / 150 sf = 16 spaces
- Total Required Phase 1 : 62+16 = 78 spaces

REQUIRED – PHASE 2 :

- 51 spaces to accommodate Phase 1
- Retail A1 – 2840 sf – 2000 = 840sf x .75= 535.5 sf @ 1 space / 200sf = 3 spaces
- Retail A2 is 1379 sf and is exempt
- Retail A3 – 3338 sf – 2000 = 1338 sf x .75 = 1003.5 sf @ 1 space/ 200 sf = 5 spaces
- Condos – 111 units @ 1 space / unit = 111 spaces
- Total Required Phase 2 : 78 + 3 + 5 + 111 = 197 spaces

REQUIRED- PHASE 3 :

- 197 spaces to accommodate Phase 1 and 2
- Retail B is 1841 sf and is exempt
- Retail C2 is 1920 sf and is exempt
- Retail C1 – 5598sf – 2000= 3598sf x .75= 2698.5sf @ 1 space / 200sf = 14 spaces
- Retail 390 – 2087sf-2000sf= 87 sf x .75 = 65.25 sf @ 1 space / 200 sf = 1 space
- Condos – 92 units@ 1 space / unit = 92 spaces
- Total Required Phase 3 = 197+14+1+92= 304 spaces

PHASE 1 AND PHASE 2 WILL BE BUILT CONCURRENTLY :

REQUIRED – PHASE 1 AND PHASE 2 – 197 spaces

PROPOSED 203 spaces

156 spaces in garage

47 surface parking spaces

REQUIRED – PHASE 3 – 304 spaces

PROPOSED 308 spaces – all in garage

*** HOTEL PARKING DEMAND

As discussed at the October 24 Planning Board Workshop, the applicant is proposing more parking for the hotel than is required by Ordinance. At 1 space per 4 hotel rooms, the Ordinance requirement is 35 parking spaces.

In discussions with potential hotel flag partners, 35 spaces is simply inadequate.

Please refer to the attached excerpt from the Institute of Traffic Engineers ITE PARKING GENERATION STUDY, 4TH EDITION. Under the category of Hotel (Urban) , ITE has determined that the national average is a minimum of 0.64 spaces per hotel room and 88.96 parking stalls for 139 hotel rooms.

The applicant is proposing 62 spaces for the hotel use. This is derived from taking the average of the Ordinance requirement (35 spaces) and the ITE National Average (88.96 spaces). The applicant suggests that this proposal is a reasonable compromise.



Description/ITE Code
Commercial Airport 021
Light Rail Transit Station w/ Parking, Suburban 093
Light Rail Transit Station w/ Parking, Urban 093
General Light Industrial 110
General Light Industrial 110
Industrial Park 130
Industrial Park 130
Manufacturing 140
Manufacturing 140
Warehousing 150
Warehousing 150
Mini-Warehouse 151
Mini-Warehouse 151
Single-Family Detached Housing 210
Low/Mid-Rise Apartment, Suburban 221
Low/Mid-Rise Apartment, Urban 221
High-Rise Apartment (Central City, not Downtown) 222
High-Rise Apartment (Urban Central Business District) 222
Rental Townhouse 224
Residential Condominium/Townhouse, Suburban 230
Residential Condominium/Townhouse, Urban 230
Senior Adult Housing - Attached 252
Congregate Care Facility 253
Assisted Living 254
Continuing Care Retirement Community 255
Hotel, Suburban 310
Hotel, Urban 310
All Suites Hotel, Suburban 311
All Suites Hotel, Urban 311
Business Hotel 312
Motel 320
Resort Hotel 330
City Park 411
Water Slide Park 414
Marina 420
Golf Course 430

Multipurpose Recreational Facility 435 *
Multipurpose Recreational Facility 435 *
Multipurpose Recreational Facility 435 *
Bowling Alley, Suburban 437 **
Bowling Alley, Suburban 437 *
Bowling Alley, Urban 437 **
Billiard Hall 438
Billiard Hall 438
Adult Cabaret 440
Live Theater, Rural 441
Live Theater, Rural 441
Movie Theater w/ Matinee 444 *
Multiplex Movie Theater 445 *
Multiplex Movie Theater 445 *
Roller Skating Rink 464 *
Ice Skating Rink 465 *
Snow Ski Area, Rural 466
Snow Ski Area, Rural 466
Casino/Video Lottery Establishments 473 *
Casino/Video Lottery Establishments 473 *
Zoo 481
Soccer Complex 488
Tennis Courts 490
Raquet/Tennis Club 491
Health/Fitness Club 492
Health/Fitness Club 492
Athletic Club 493
Athletic Club 493
Recreational Community Center, Suburban 495
Recreational Community Center, Urban 495
Elementary School 520
Middle School/Junior High School 522
School For The Blind 525
School For The Blind 525
School For The Blind 525
High School, Suburban 530
High School, Urban 530
Private School (K-12) 536
Junior/Community College 540
University/College, Suburban 550
University/College, Urban 550
Church 560
Church 560
Church 560

Synagogue 561 *
Mosque 562 **
Mosque 562 *
Day Care Center 565
Day Care Center 565
Day Care Center 565
Museum 580
Museum 580
Library, Suburban 590
Library, Urban 590
Library, Urban 590
Convention Center 595
Hospital , Suburban 610
Hospital , Urban 610
Hospital , Suburban 610
Hospital , Urban 610
Hospital , Rural 610
Hospital , Suburban 610
Hospital , Urban 610
Hospital , Rural 610
Surgery Center, Suburban 612
Surgery Center, Rural 612
Nursing Home 620
Nursing Home 620
Nursing Home 620
Clinic 630
Clinic 630
Animal Hospital/Veterinary Clinic 640
Animal Hospital/Veterinary Clinic 640
Office Building, Suburban 701
Office Building, Urban 701
Office Building 701
Medical-Dental Office building 720
Government Office Building 730
Government Office Building 730
United States Post Office 732
United States Post Office 732
Judicial Complex, Suburban 735
Judicial Complex, Urban 735
Judicial Complex, Suburban 735
Judicial Complex, Urban 735
Building Materials and Lumber Store, Suburban 812
Building Materials and Lumber Store, Urban 812
Free-Standing Discount Superstore 813

Free-Standing Discount Store 815 ^
Free-Standing Discount Store 815 ^^
Hardware/Paint Store 816
Shopping Center 820 ** ^
Shopping Center 820 * ^
Shopping Center 820 ** ^^
Shopping Center 820 * ^^
Automobile Parts Sales 843
Motorcycle Dealership 845
Tire Store 848
Supermarket, Suburban 850
Supermarket, Urban 850
Supermarket, Rural 850
Convenience Market (Open 24 Hours), Suburban 851
Convenience Market (Open 24 Hours), Urban 851
Convenience Market (Open 24 Hours), Rural 851
Convenience Market With Gasoline Pumps 853
Discount Supermarket 854
Discount Club 857
Liquor Store 859
Sporting Goods Superstore 861 ^
Sporting Goods Superstore 861 ^^
Home Improvement Superstore, Suburban 862
Home Improvement Superstore, Urban 862
Electronics Superstore, Suburban 863
Electronics Superstore, Urban 863
Toy/Children's Superstore 864
Pet Supply Superstore, Suburban 866
Pet Supply Superstore, Urban 866
Office Supply Superstore 867
Book Superstore 868
Apparel Store 876
Pharmacy/Drugstore w/o Drive-Through Window 880
Pharmacy/Drugstore w/o Drive-Through Window 880
Pharmacy/Drugstore w/ Drive-Through Window 881
Pharmacy/Drugstore w/ Drive-Through Window 881
Furniture Store 890
Furniture Store 890
Carpet Store 892
Carpet Store 892
Video Rental Store 896
Drive-in Bank, Suburban 912
Drive-in Bank, Suburban 912
Copy, Print and Express Ship Store 920

Quality Restaurant 931 **
Quality Restaurant 931 *
Quality Restaurant 931 **
Quality Restaurant 931 *
High-Turnover (Sit-Down) Restaurant w/o Bar or Lounge, Suburban 932
High-Turnover (Sit-Down) Restaurant w/o Bar or Lounge, Urban 932
High-Turnover (Sit-Down) Restaurant w/ Bar or Lounge, Suburban 932
High-Turnover (Sit-Down) Restaurant w/o Bar or Lounge, Suburban 932
High-Turnover (Sit-Down) Restaurant w/o Bar or Lounge, Urban 932
High-Turnover (Sit-Down) Restaurant w/ Bar or Lounge, Suburban 932
Fast-Food Restaurant w/o Drive-Through Window, Hamburger, Suburban 933
Fast-Food Restaurant w/o Drive-Through Window, Hamburger, Urban 933
Fast-Food Restaurant w/o Drive-Through Window, Non-Hamburger 933
Fast-Food Restaurant w/o Drive-Through Window, Hamburger, Suburban 933
Fast-Food Restaurant w/ Drive-Through Window 934
Fast-Food Restaurant w/ Drive-Through Window 934
Coffee/Donut Shop w/o Drive-Through Window 936
Coffee/Donut Shop w/ Drive-Through Window 937
Bread/Donut/Bagel Shop w/o Drive-Through Window 939
Bread/Donut/Bagel Shop w/ Drive-Through Window 940
Gasoline/Service Station w/ convenience Market 945
Dry Cleaners, Urban 960

ITE Parking Generation Rates - 4th Edition

Units	ITE Vehicle Parking Generation Rates			
	Average			
	Weekday	Saturday	Sunday	Weekday
Daily enplanements	0.4	0.84	0.57	0.61
1000 Daily Boardings	136	NA	NA	212
1000 Daily Boardings	58	NA	NA	94
KSF	0.75	NA	NA	1.13
Employees	0.64	NA	NA	0.81
KSF	1.27	NA	NA	1.85
Employees	0.89	NA	NA	0.98
KSF	1.02	NA	NA	1.18
Employees	0.97	NA	NA	1.14
KSF	0.51	NA	NA	0.81
Employees	0.78	NA	NA	1.01
KSF	0.14	0.11	NA	0.17
100 Storage Units	1.35	0.77	NA	1.66
Dwelling Units	1.83	NA	NA	2.14
Dwelling Units	1.23	1.13	NA	1.94
Dwelling Units	1.2	1.03	1.05	1.61
Dwelling Units	1.37	NA	NA	1.52
Dwelling Units	0.45	NA	NA	NA
Dwelling Units	1.62	NA	NA	1.76
Dwelling Units	1.38	NA	1.3	1.52
Dwelling Units	NA	0.85	NA	NA
Dwelling Units	0.59	NA	NA	0.66
Dwelling Units	0.45	NA	NA	NA
Dwelling Units	0.41	0.4	0.34	0.54
Dwelling Units	1	NA	0.92	1.12
Occupied Rooms	0.89	1.2	NA	1.08
Occupied Rooms	0.64	0.9	NA	NA
Occupied Rooms	0.88	0.83	0.74	NA
Occupied Rooms	0.86	NA	NA	NA
Occupied Rooms	0.6	0.66	NA	0.75
Occupied Rooms	0.71	NA	NA	0.85
Occupied Rooms	1.29	0.64	NA	1.59
Acres	NA	4.2	2.8	NA
Acres	49.7	72.9	12	NA
Berths	0.27	0.35	0.59	NA
Holes	8.68	NA	7.24	9.83

Holes	1.06	1.78	NA	NA
KSF	6.33	10.67	NA	NA
Acres	9.5	16	NA	NA
Lanes	4	3.47	NA	4.62
Lanes	5.02	3.47	NA	5.58
Lanes	3.13	NA	NA	3.78
KSF	6.56	NA	NA	NA
Tables	2.89	NA	NA	NA
KSF	4.82	11.13	NA	NA
Attendees	0.38	NA	NA	0.39
Seats	0.25	NA	NA	0.32
Seats	0.26	0.19	0.11	0.36
Seats	0.15	NA	NA	0.2
Screens	36.2	NA	NA	45
KSF	5.8	NA	NA	NA
KSF	0.42	0.58	NA	NA
Acres of Ski Trails	NA	1.31	NA	NA
Daily Lift Tickets Sold	NA	0.25	NA	NA
KSF	5.81	NA	NA	NA
Gaming Positions	0.34	NA	NA	NA
Acres	8.7	NA	12.1	NA
Fields	38.3	58.8	56.3	60.5
Tennis Courts	NA	3.16	2.5	NA
Courts	3.56	NA	NA	4.13
KSF	5.27	2.89	NA	8.46
Members	0.13	NA	NA	0.16
KSF	3.55	NA	NA	4.94
Members	0.07	NA	NA	0.12
KSF	3.2	NA	4	5.03
KSF	1.15	NA	NA	NA
Students	0.17	NA	NA	0.21
Students	0.09	NA	NA	0.1
Students	1.08	NA	NA	NA
Employees	1.47	NA	NA	NA
KSF	2.67	NA	NA	NA
Students	0.23	NA	NA	0.25
Students	0.09	NA	NA	0.13
Students	0.39	NA	NA	NA
Students	0.18	NA	NA	0.2
School Population	0.33	NA	NA	0.38
School Population	0.22	NA	NA	0.29
KSF	3.79	NA	8.37	NA
Seats	0.01	NA	0.2	NA
Attendees	NA	0.36	0.45	NA

Attendees	0.41	NA	NA	NA
KSF	4	NA	NA	NA
KSF	17.32	NA	NA	25.79
KSF	3.16	NA	NA	3.7
Students	0.24	NA	NA	0.33
Employees	1.38	NA	NA	1.78
KSF	0.98	1.32	10.18	1.23
Visitors	NA	0.3	0.3	NA
KSF	2.61	2.22	2.72	4.19
KSF	0.42	NA	NA	NA
Employees	0.43	NA	NA	NA
Attendees	0.31	NA	0.4	NA
KSF	2.5	NA	NA	3.41
KSF	3.7	NA	NA	6.36
Beds	4.49	NA	NA	7.35
Beds	3.47	NA	NA	4.92
Beds	4.08	NA	NA	5.19
Employees	0.81	NA	NA	1.08
Employees	0.6	NA	NA	0.83
Employees	0.76	NA	NA	0.83
Operating Rooms	5.67	NA	NA	NA
Operating Rooms	1.67	NA	NA	NA
KSF	0.98	NA	NA	1.5
Beds	0.35	0.16	0.26	0.48
Employees	0.88	NA	NA	1.51
KSF	4.94	NA	NA	4.96
Employees	0.82	NA	NA	NA
KSF	1.6	NA	NA	NA
Employees	1.4	NA	NA	NA
KSF	2.84	NA	NA	3.45
KSF	2.47	NA	NA	2.98
Employees	0.83	NA	NA	0.98
KSF	3.2	NA	NA	4.27
KSF	4.15	NA	NA	6.13
Employees	0.83	NA	NA	1.01
KSF	33.2	NA	NA	NA
Employees	2.01	NA	NA	NA
KSF	3.02	NA	NA	NA
Employees	0.61	NA	NA	NA
KSF	1.64	NA	NA	NA
Employees	0.41	NA	NA	NA
KSF	1.69	NA	NA	NA
KSF	1.06	NA	NA	NA
KSF	1.85	NA	NA	NA

KSF	3.81	4.49	4.51	4.09
KSF	1.33	2.7	NA	1.87
KSF	1.9	2.19	NA	NA
KSF	3.76	4.67	4.41	5.05
KSF	3.96	4.67	4.41	5.23
KSF	2.55	2.87	2.04	3.16
KSF	2.94	2.87	2.04	3.9
KSF	2.14	2.25	NA	2.47
KSF	1.78	2.38	2.97	NA
KSF	NA	4.17	NA	NA
KSF	3.78	3.92	3.05	5.05
KSF	2.27	2.32	1.57	2.83
KSF	2.63	1.78	NA	NA
KSF	5.5	4	NA	NA
KSF	3.11	NA	NA	3.79
KSF	1.4	NA	NA	NA
KSF	8.38	5.11	NA	10.5
KSF	4.13	3.99	4.21	NA
KSF	2.22	2.9	5.58	3.34
KSF	2.98	2.55	NA	NA
KSF	1.78	4.35	3.34	2.4
KSF	1.78	2.18	NA	2.4
KSF	2.23	3.19	2.49	2.82
KSF	1.35	NA	NA	NA
KSF	3.03	NA	NA	NA
KSF	1.91	NA	NA	NA
KSF	1.94	NA	NA	NA
KSF	0.66	1.17	NA	NA
KSF	1.17	NA	NA	NA
KSF	0.61	NA	NA	NA
KSF	0.89	NA	NA	NA
KSF	1.13	9.58	0.87	NA
KSF	2.2	2.94	NA	2.72
Employees	3.73	NA	NA	5.1
KSF	2.39	2.18	NA	2.92
Employees	1.4	1.63	NA	1.84
KSF	1.22	1.04	1.43	NA
Employees	NA	1.73	2.23	NA
KSF	1.33	1.79	NA	1.57
KSF	NA	2.27	NA	NA
KSF	2.41	3.04	NA	2.76
KSF	4	3.47	NA	5.67
Employees	1.6	NA	NA	NA
KSF	3	NA	NA	NA

KSF	10.6	16.4	7.11	14.2
KSF	16.41	16.4	7.11	19
Seats	0.47	0.46	0.29	0.67
Seats	0.49	0.46	0.29	0.61
KSF	10.6	13.5	9.7	16.3
KSF	5.55	NA	NA	6.37
KSF	13.3	16.3	NA	17.4
Seats	0.35	0.35	NA	0.54
Seats	NA	0.35	NA	NA
Seats	0.48	0.47	NA	0.73
KSF	12.4	NA	NA	14.5
KSF	17.41	NA	NA	NA
KSF	8.2	NA	NA	12.33
Seats	0.52	NA	NA	0.77
KSF	9.98	8.7	NA	15.13
Seats	0.4	0.35	NA	0.53
KSF	13.56	14.44	NA	17.33
KSF	10.4	8.63	NA	18.97
KSF	8	9.78	NA	NA
KSF	4.5	NA	3	NA
Fueling Positions	0.75	NA	NA	1.03
KSF	1.4	NA	NA	2.44

KEY:	
	LIMITED: 1 site in data set
	LIMITED: 2 sites in data set
	LIMITED: 3 sites in data set
KSF	1,000's of square feet
*	Weekdays are for Friday only
**	Non-Friday Weekday
^	December Only
^^	Non-December

Instructions: Enter Expected Unit Volumes into Columns

Occupancy Rates		Expected Units	Total Stalls Occupied		
85th Percentile			Average		
Saturday	Sunday		Weekday	Saturday	Sunday
1.48	0.92		0	0	0
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
0.13	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	0	NA
1.14	NA		0	0	0
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	0
NA	NA		NA	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
0.31	0.47		0	0	0
NA	NA		0	NA	0
1.54	NA	139	123.71	166.8	NA
NA	NA	139	88.96	125.1	NA
NA	NA		0	0	0
NA	NA		0	NA	NA
0.72	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	0	NA
NA	NA		NA	0	0
NA	NA		0	0	0
NA	NA		0	0	0
NA	NA		0	NA	0

NA	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
0.23	0.15		0	0	0
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	0	NA
1.62	NA		NA	0	NA
0.31	NA		NA	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	0
65.2	69.3		0	0	0
NA	NA		NA	0	0
NA	NA		0	NA	NA
3.38	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	0
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	14.38		0	NA	0
NA	0.25		0	NA	0
NA	0.6		NA	0	0

[illegible]

5.54	NA		0	0	0
3.09	NA		0	0	NA
NA	NA		0	0	NA
5.91	5.84		0	0	0
5.91	5.84		0	0	0
3.4	2.39		0	0	0
3.4	2.39		0	0	0
2.74	NA		0	0	NA
NA	NA		0	0	0
NA	NA		NA	0	NA
4.94	NA		0	0	0
NA	NA		0	0	0
NA	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
6.47	NA		0	0	NA
NA	NA		0	0	0
3.93	NA		0	0	0
NA	NA		0	0	NA
NA	NA		0	0	0
NA	NA		0	0	NA
4.34	2.83		0	0	0
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	0	0
3.74	NA		0	0	NA
NA	NA		0	NA	NA
2.94	NA		0	0	NA
2.2	NA		0	0	NA
1.34	NA		0	0	0
2.16	NA		NA	0	0
3	NA		0	0	NA
3.2	NA		NA	0	NA
NA	NA		0	0	NA
4.66	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA

22.7	NA		0	0	0
22.7	NA		0	0	0
0.48	NA		0	0	0
0.48	NA		0	0	0
20.6	13.58		0	0	0
NA	NA		0	NA	NA
20.4	NA		0	0	NA
0.48	NA		0	0	NA
0.48	NA		NA	0	NA
0.72	NA		0	0	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
NA	NA		0	NA	NA
12.9	NA		0	0	NA
0.64	NA		0	0	NA
14.67	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	0	NA
NA	NA		0	NA	0
NA	NA		0	NA	NA
NA	NA		0	NA	NA

mn 'J'

ied in Peak Period		
85th Percentile		
Weekday	Saturday	Sunday
0	0	0
0	NA	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	0	NA
0	NA	NA
0	NA	NA
0	NA	NA
0	0	NA
0	NA	NA
NA	NA	NA
0	NA	NA
0	NA	NA
NA	NA	NA
0	NA	NA
NA	NA	NA
0	0	0
0	NA	NA
150.12	214.06	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
0	0	NA
0	NA	NA
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NA	NA	NA
NA	NA	NA
NA	NA	NA
0	NA	NA

NA	NA	NA
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NA	NA	0

[illegible]

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NA	NA	NA
NA	NA	NA
0	NA	NA
0	NA	NA

MASTER DEVELOPMENT PLAN APPLICATION
383 COMMERCIAL STREET
WRITTEN SUBMISSION D – ZONING ASSESSMENT

THE PROJECT IS LOCATED WITHIN THE B5b ZONING DISTRICT , AND CONFORMS TO THE PURPOSE OF THE DISTRICT – TO REDEVELOP UNDERDEVELOPED LOTS WITH DENSER, MIXED USES THAT RELY ON SHARED INFRASTRUCTURE, INCLUDING SERVICE ALLEYS, PARKING LOTS, PUBLIC TRANSPORTATION FACILITIES, STORMWATER MANAGEMENT, AND DRIVEWAYS.

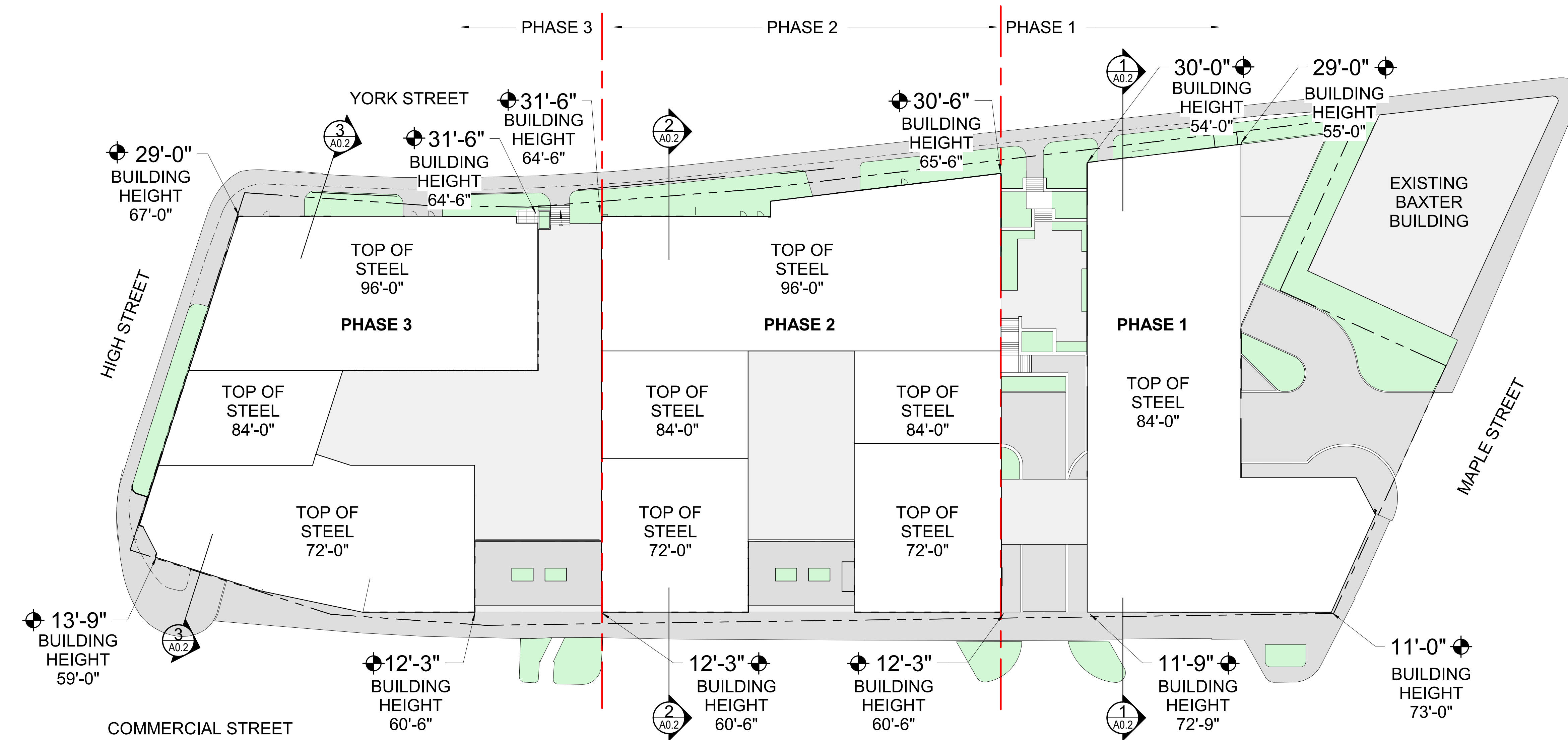
THE HOTEL, RETAIL, RESIDENTIAL , SURFACE PARKING AND PARKING GARAGE USES ARE ALL PERMITTED USES IN THE B5b DISTRICT.

IN THE B5b DISTRICT THERE ARE NO DIMENSIONAL REQUIREMENTS FOR LOT SIZE, STREET FRONTAGE, LOT COVERAGE NOR MINIMUM YARD SETBACKS. THE PROJECT CONFORMS TO THE REQUIREMENT OF A MAXIMUM FRONT YARD SETBACK OF 10 FEET.

THE PROJECT WILL CONFORM TO ALL OF THE PERFORMANCE STANDARDS IN THE B5b DISTRICT, AS STIPULATED IN ZONING SECTION 14 - 230.5. THE AVERAGE HEIGHT OF THE BUILDING WILL BE LESS THAN 65 FEET, AVERAGED AS SHOWN ON DRAWINGS BY ARCHETYPE.

ARCHETYPE HAS DESIGNED A BUILDING THAT COMPLIMENTS THE COMMERCIAL STREET CORRIDOR AND IS ENGAGED IN A REVIEW PROCESS WITH THE HP BOARD. TO MEET THE REQUIREMENT FOR MIDBLOCK PERMEABILITY A PUBLIC ACCESS WALKWAY WILL TRAVERSE THE SITE FROM YORK STREET TO COMMERCIAL STREET, LOCATED BETWEEN THE HOTEL AND RETAIL / RESIDENTIAL PHASE ONE BUILDING

WITH RESPECT TO OFF STREET PARKING , REFER TO WRITTEN SUBMISSION S-8. BICYCLE PARKING IS PROVIDED AT THE HOTEL, WITHIN THE GARAGE, AND AT THE COURTYARDS ON COMMERCIAL STREET.TWO OFF STREET LOADING AREAS ARE PROPOSED, ONE ON MAPLE STREET AND ONE AT COMMERCIAL STREET.



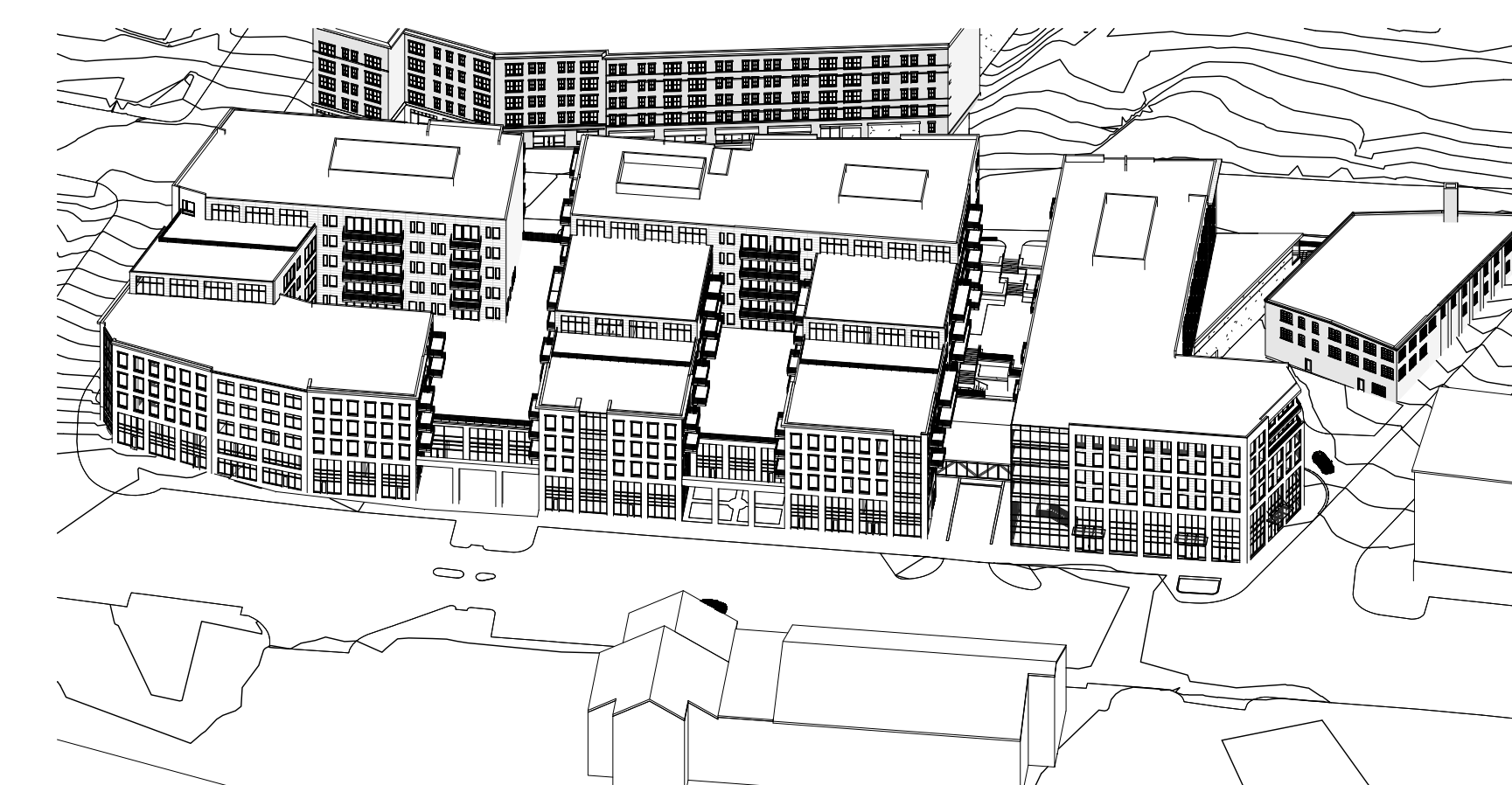
5 OVERALL SITE PLAN
1" = 30'-0"

OVERALL SITE -
AVERAGE BUILDING HEIGHT FROM GRADE = 63'-10"
 $67'-0" + 55'-0" + 73'-0" + 59'-0" = 254'-0" / 4 = 63'-6"$
AVERAGE GRADE
 $29'-0" + 29'-0" + 11'-0" + 13'-9" = 82.75 / 4 = 20.69'$

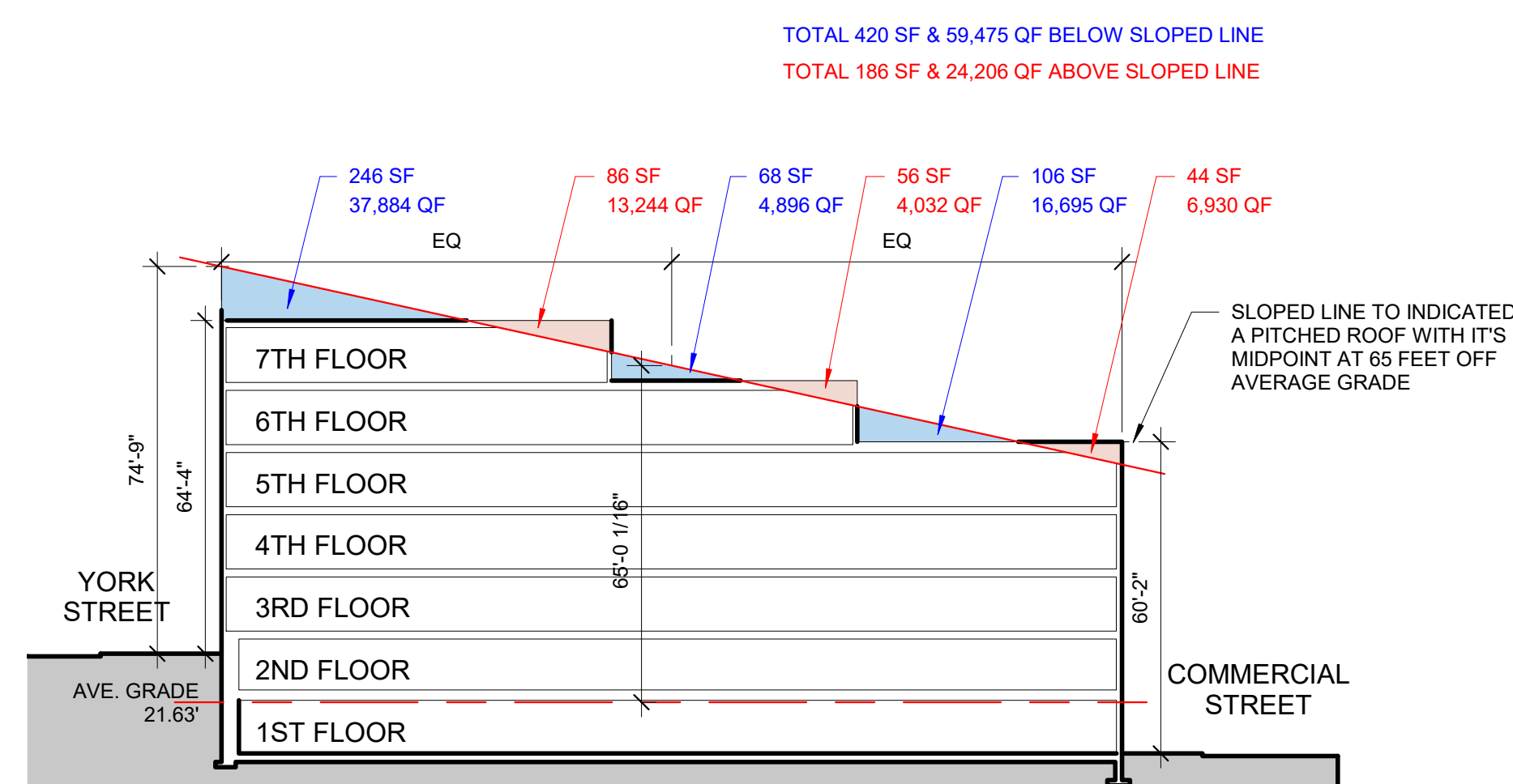
PHASE 1 -
AVERAGE BUILDING HEIGHT FROM GRADE = 64'-11"
 $73'-0" + 73'-0" + 57'-0" + 56'-9" = 259'-9" / 4 = 64'-11"$
AVERAGE GRADE
 $30'-0" + 29'-0" + 11'-9" + 11'-0" = 81.75' / 4 = 20.44'$

PHASE 2 -
AVERAGE BUILDING HEIGHT FROM GRADE = 62'-9"
 $59'-9" + 65'-6" + 65'-0" + 60'-0" = 250'-3" / 4 = 62'-9"$
AVERAGE GRADE
 $31'-6" + 30'-6" + 12'-3" + 12'-3" = 86.5 / 4 = 21.63'$

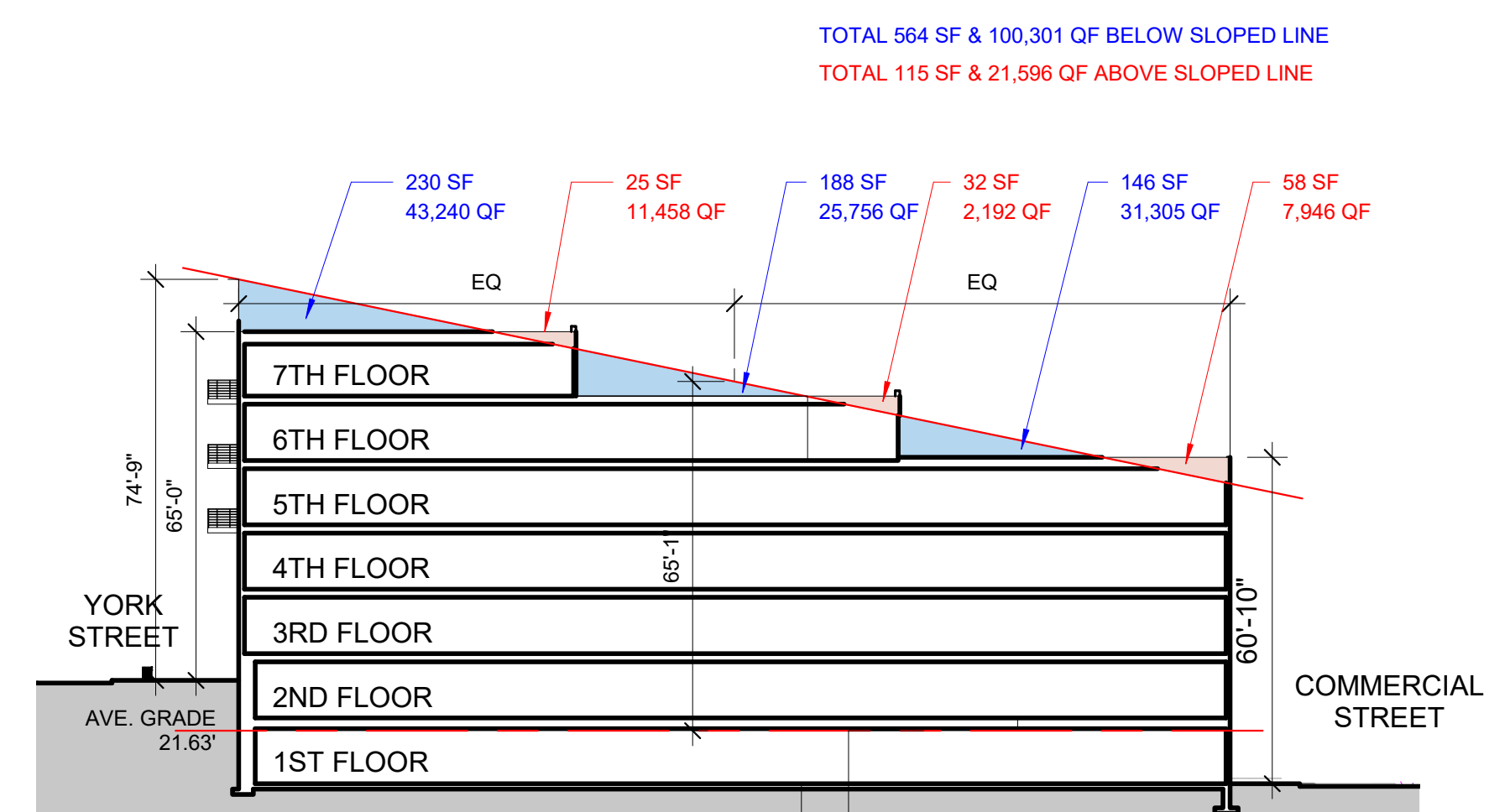
PHASE 3 -
AVERAGE BUILDING HEIGHT FROM GRADE = 62'-7 1/2"
 $58'-3" + 59'-9" + 65'-6" + 67'-0" = 250'-6" / 4 = 62'-7 1/2"$
AVERAGE GRADE
 $29'-0" + 31'-6" + 13'-9" + 12'-3" = 86.5 / 4 = 21.63'$



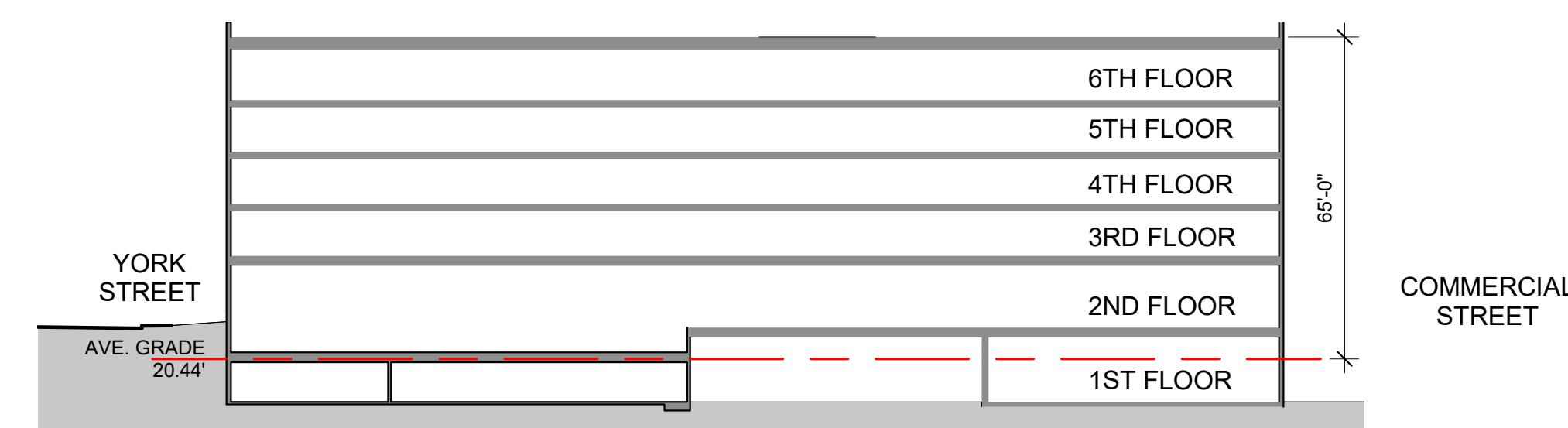
4 AERIAL SITE VIEW



3 SECTION - PHASE 3
1" = 30'-0"



2 SECTION - PHASE 2
1" = 30'-0"



1 SECTION - PHASE 1
1" = 30'-0"

Att. G
Att. F

Owner	
Prepared For:	
Consultant:	
Architect: ARCHETYPE architects 48 Union Wharf Portland, Maine 04101 (207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM	
Project: 383 COMMERCIAL STREET Portland, Maine	
Revisions:	
Date: OCT. 17, 2017	Scale: 1" = 30'-0"
BUILDING HEIGHT CALCULATIONS	
A0.2	

MASTER DEVELOPMENT PLAN
383 COMMERCIAL STREET
WRITTEN SUBMISSION S – 9 PARKING ALLOCATION / SERVICE FUNCTION

PARKING ALLOCATION

As outlined in Written Submission S – 8, the required parking is provided on two levels of the parking garage. In Phase 1 and 2, the applicant is proposing limited surface parking which is a permitted use at this property. The applicant proposes to retain the driveway to and from Commercial Street to the surface parking, as the Rufus Deering building will be used as a construction office. This driveway will be gated closed when the construction office is not occupied.

Attached are two plan exhibits which illustrate where parking will be allocated in Phase 1 and 2 for the hotel, restaurant, retail and residences. The hotel will manage its parking with a mandatory valet – only policy after guests initially arrive. These allocation numbers correspond with Written Submission S – 8.

SERVICE FUNCTION

The Level 1 Plan exhibit attached also depicts the location of the service area across from the hotel lobby drop off area. Access routes from this location to lobby elevators and trash rooms for all of the uses proposed in Phase 1 and 2.

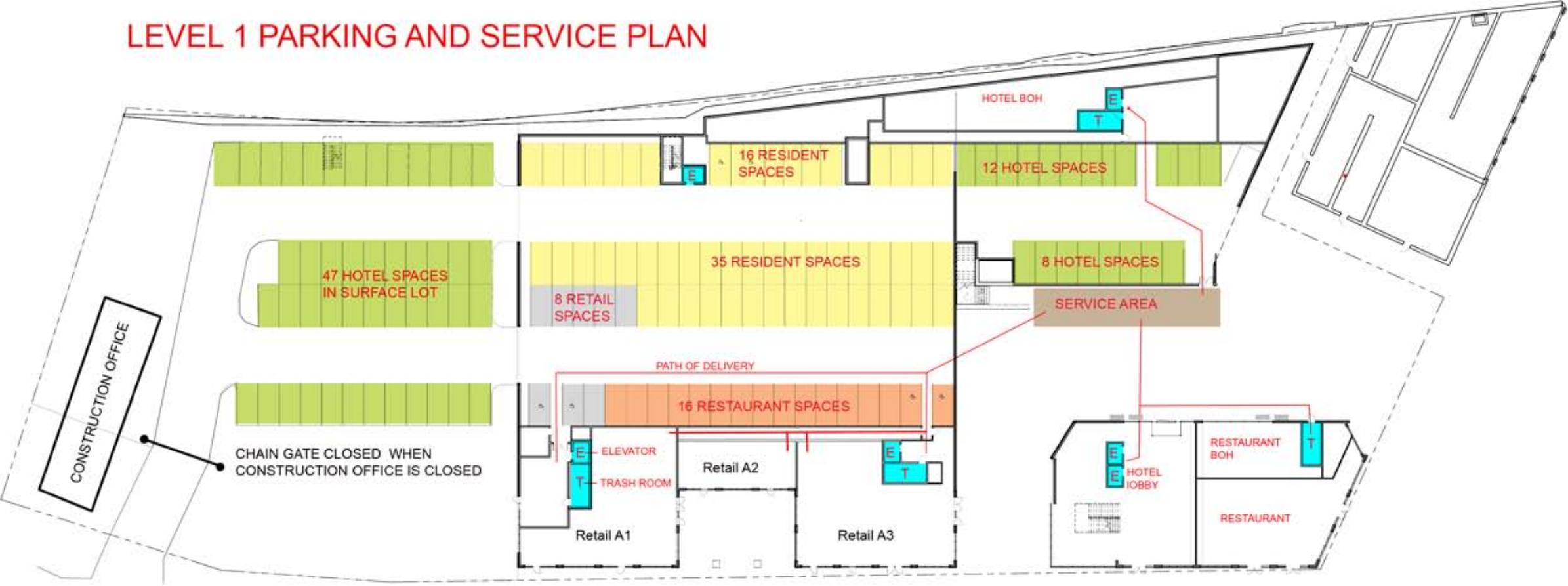
A second plan exhibit illustrates the location of the service area on Commercial Street in Phase 3 and depicts the access route to lobby elevators and trash rooms in that phase. As agreed to at a recent meeting with staff, this area will be signed with “ Dual Rear Wheeled Vehicles Only – Parallel Parking Only – 6:00 AM To 6:00 PM Only ” signs.

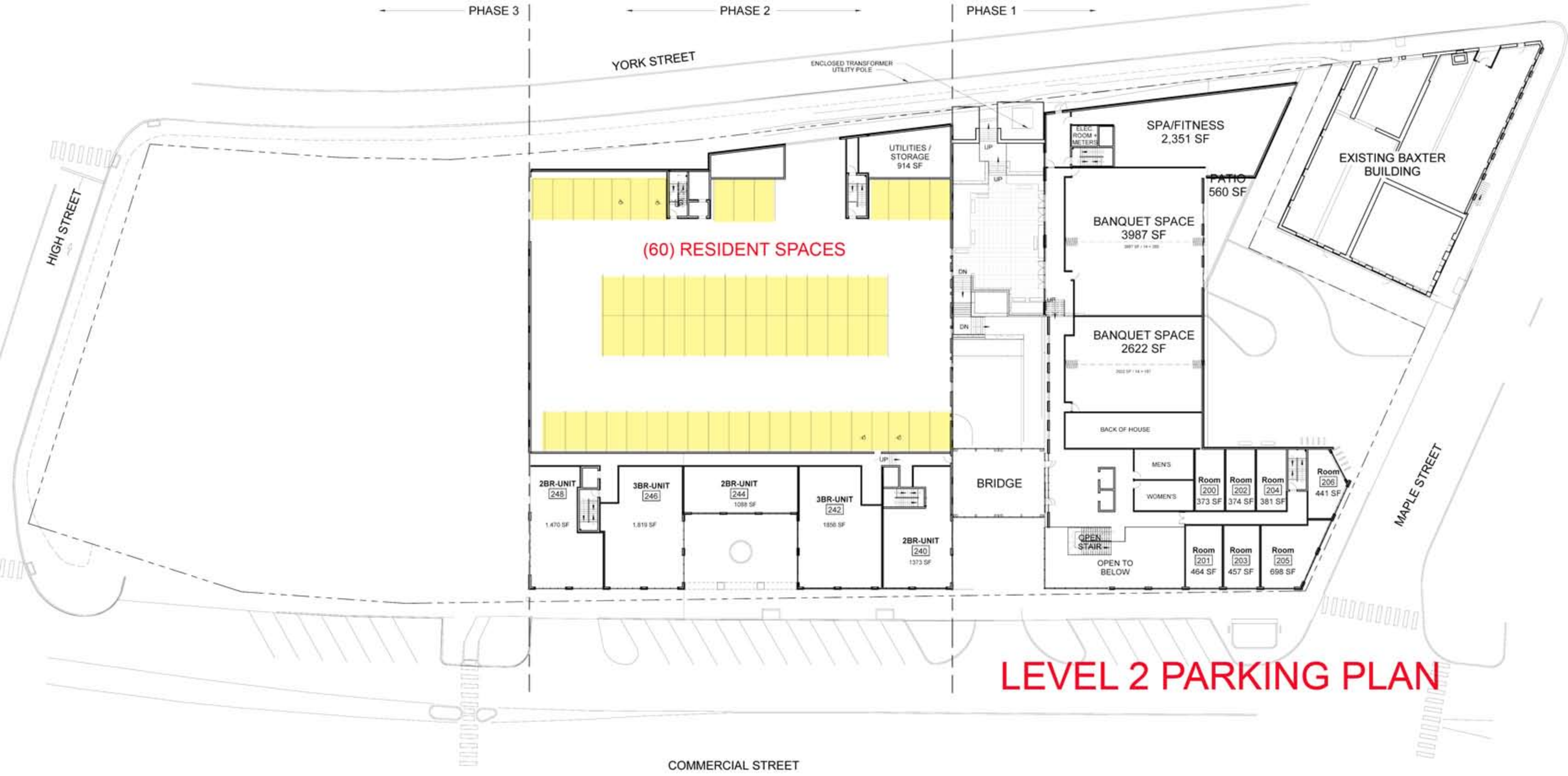
Both service areas are accessible to SU-30 box trucks and WB-40 trucks (small tractor trailers), as depicted on the attached turning movement diagrams. The SU-30 box trucks include US Mail, FEDEX, UPS , Small Moving Vans and Trash trucks. The WB-40 trucks include Mid Sized Moving Vans and Retail Delivery vehicles.

The applicant’s experience at its projects in the India Street neighborhood is that most residents move into the project using Small or Mid Sized Moving Vans, however, on occasion , Large Moving Vans (Mayflower or United Van Lines) are utilized. In these cases, the resident will contact the City Parking Office in advance, reserving the some of the angled parking spaces on Commercial Street, and compensate the City for lost revenues.

It is important to note that, unlike apartments, condominium resident occupancy is stable, without frequent turnover, therefore, limiting the activity of moving vans at this property.

LEVEL 1 PARKING AND SERVICE PLAN





LEVEL 2 PARKING PLAN

Phase 3
Retail / 94 Residences

Path of Service Delivery

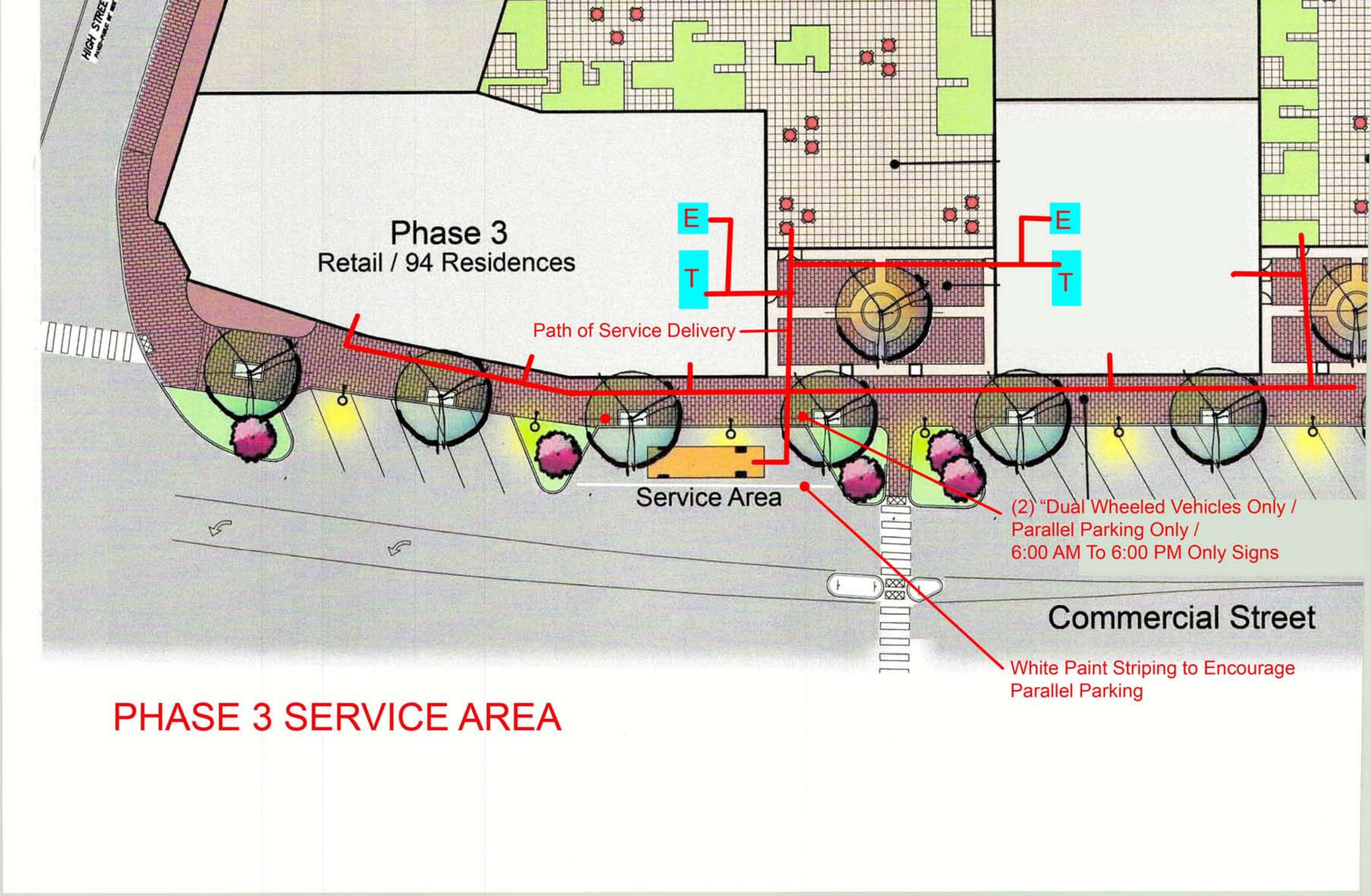
Service Area

(2) "Dual Wheeled Vehicles Only /
Parallel Parking Only /
6:00 AM To 6:00 PM Only Signs

Commercial Street

White Paint Striping to Encourage
Parallel Parking

PHASE 3 SERVICE AREA



SU-30

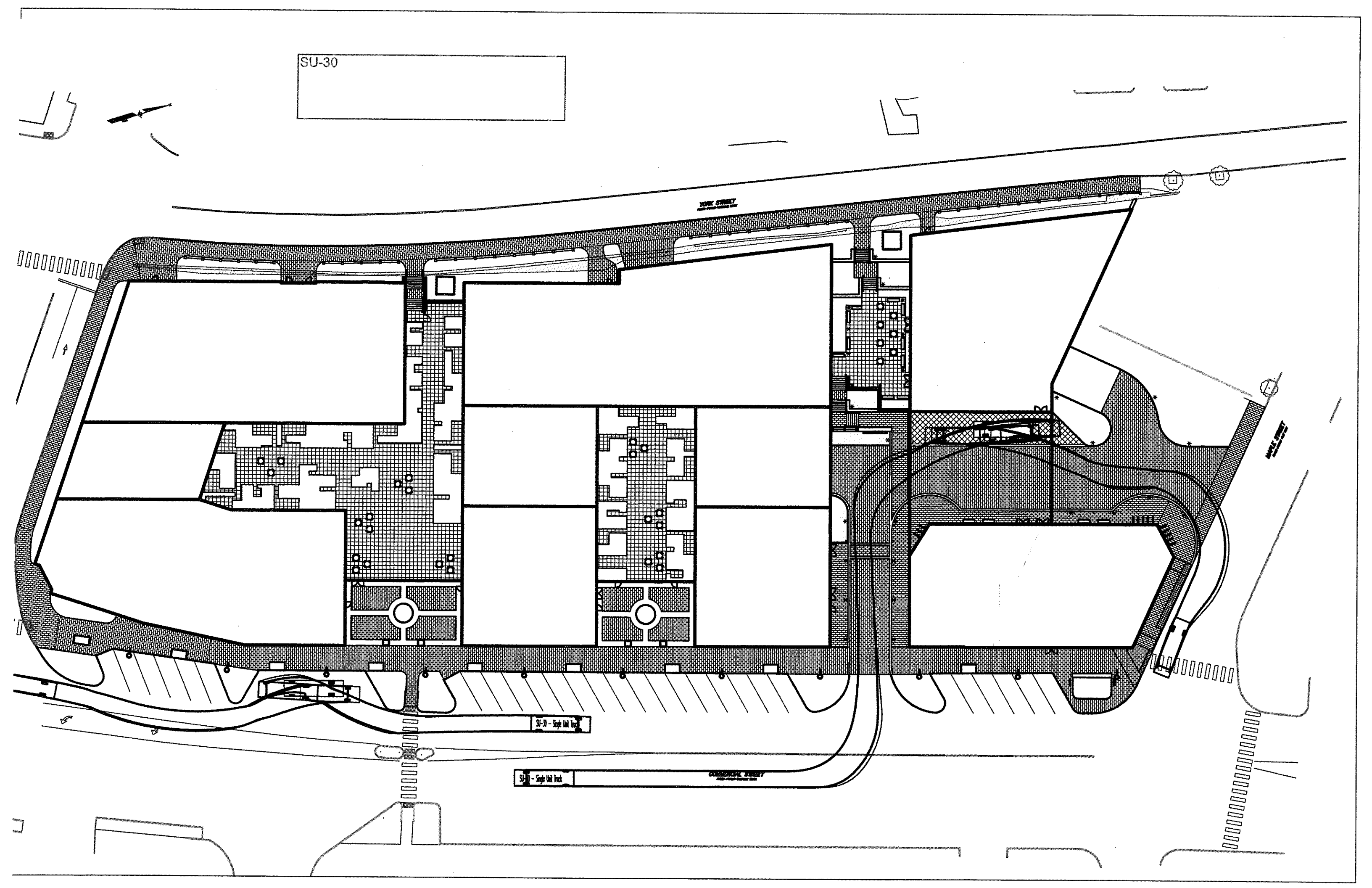
YORK STREET
NEW YORK, N.Y.

WALL STREET
NEW YORK, N.Y.

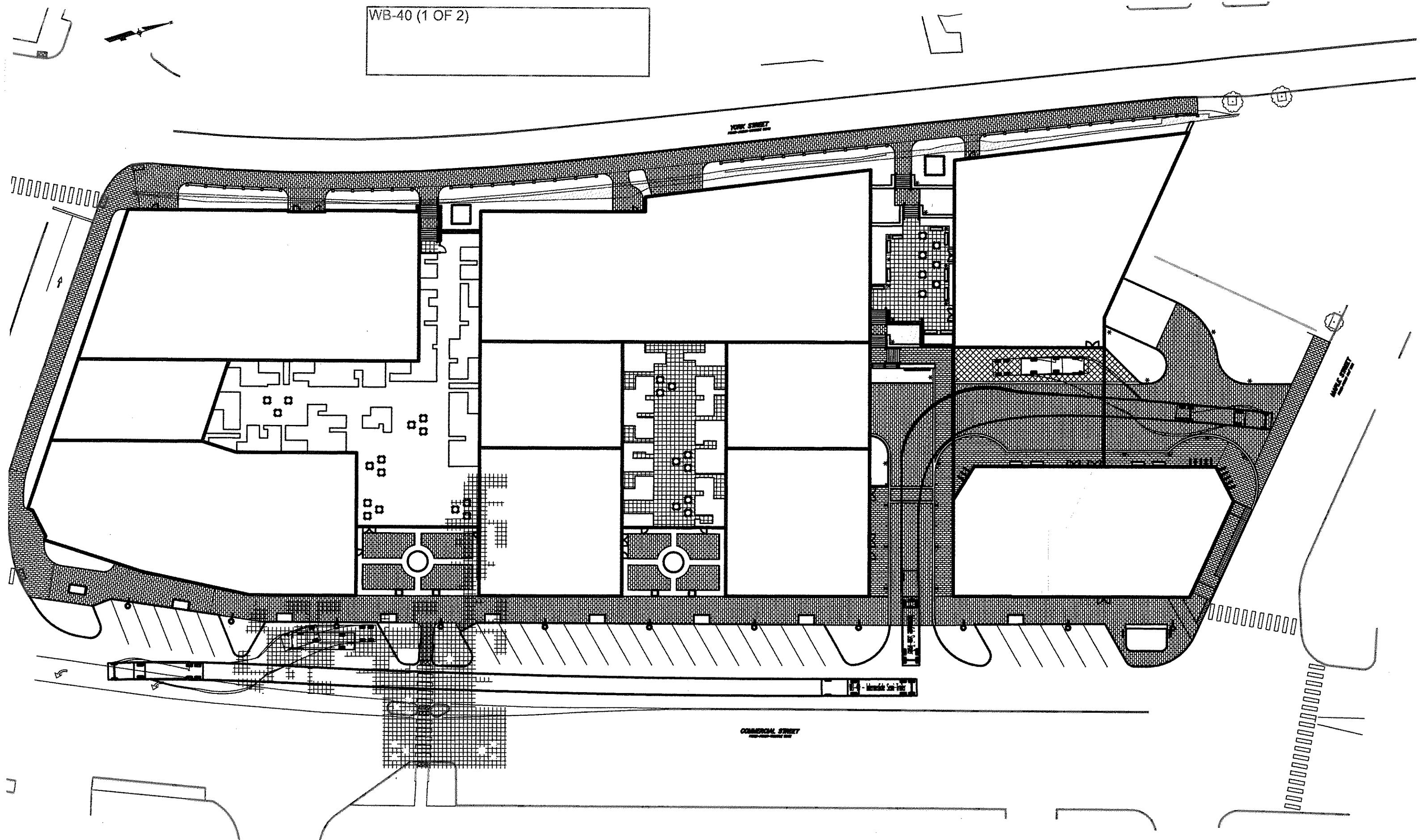
SU-30 - Single Unit Truck

SU-30 - Single Unit Truck

COMMERCIAL STREET
NEW YORK, N.Y.



WB-40 (1 OF 2)



MASTER DEVELOPMENT PLAN
383 COMMERCIAL STREET
WRITTEN SUBMISSION S-6 SERVICE AND LOADING AREAS

IN PHASE 1 AN UNLOADING AREA IS PROVIDED ACROSS FROM THE HOTEL LOBBY. TRUCKS WILL ENTER FROM COMMERCIAL STREET AND EXIT TO MAPLE STREET. THIS LOCATION IS CONVENIENT TO THE RETAIL SPACE , HOTEL AND RESIDENT LOBBIES AND TRASH ROOMS.

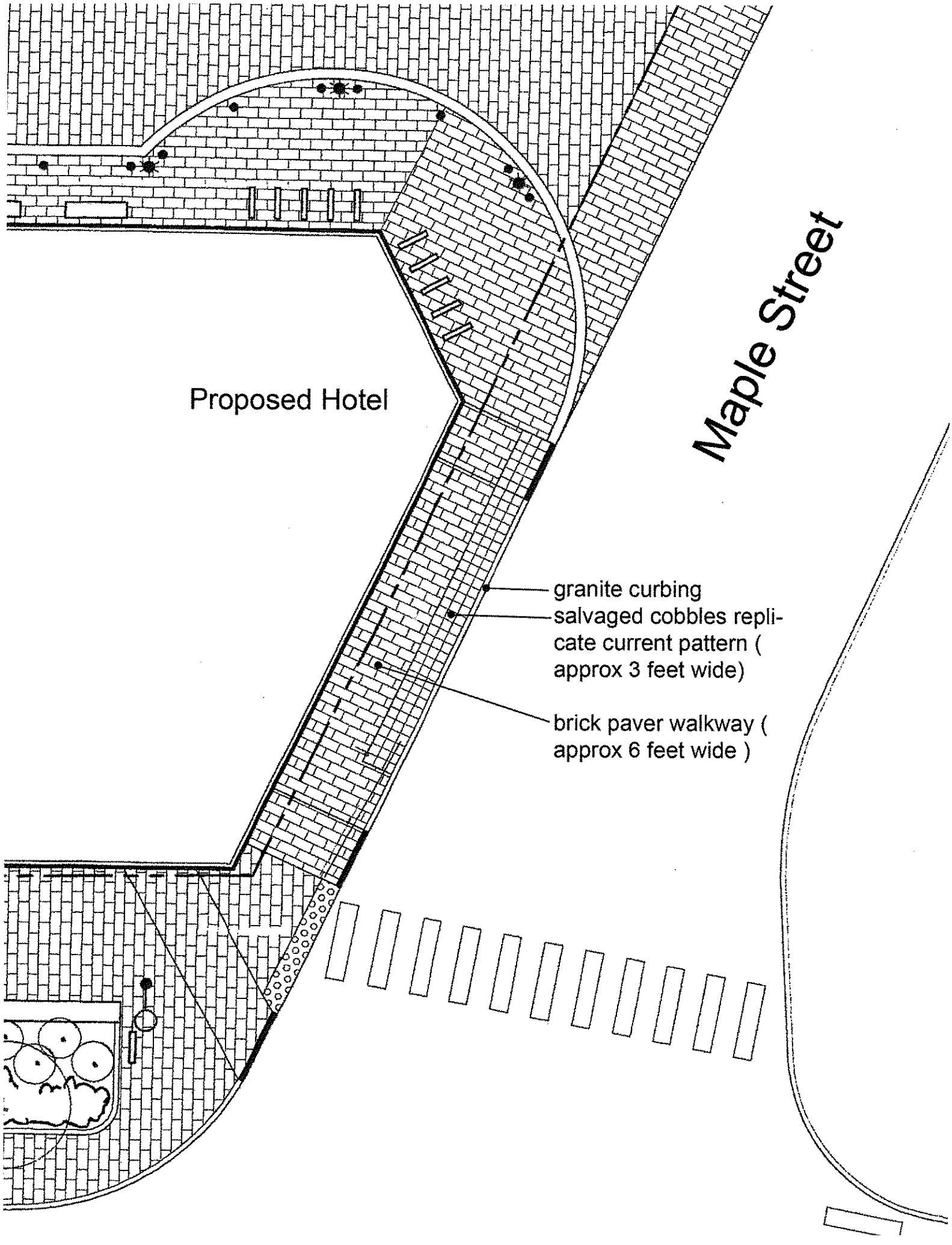
THE COMMERCIAL STREET SERVICE AREA, TO BE CONSTRUCTED IN PHASE 3, IS PROPOSED AS A DEDICATED UNLOADING ZONE / NO PARKING AREA. THIS LOCATION IS CONVENIENT TO THE PHASE 3 RETAIL AREA AND RESIDENT LOBBIES AND TRASH ROOMS.

MASTER DEVELOPMENT PLAN
383 COMMERCIAL STREET
WRITTEN SUBMISSION S – 4 HISTORIC COBBLES

THE MARCH 22, 2016 STAFF REPORT INCLUDES A PHOTOGRAPH AND STATEMENT THAT “ ON MAPLE STREET THERE ARE REMNANTS OF THE HISTORIC COBBLES IN THE SIDEWALK AND EXISTING CURB CUT, AND FURTHER DISCUSSION IS NEEDED AS TO WHETHER AND HOW THESE MAY BE PRESERVED.”

THE APPLICANT HAS CONSIDERED THIS REQUEST AND IS PROPOSING THAT THE APPLICANT’S SITE CONTRACTOR SALVAGE AND PRESERVE THE EXISTING COBBLES FOR RE – USE . BECAUSE THE EXCAVATION FOR THE HOTEL BUILDING FOOTINGS WILL DISTURB THE COBBLES, THEY CANNOT BE PRESERVED IN SITU.

AS NOTED ON THE ATTACHED SKETCH, THE CONTRACTOR WILL BE REQUIRED TO PHOTOGRAPH THE COBBLES PRIOR TO REMOVAL, AND TO REPLICATE THE CURRENT PATTERN WHEN INSTALLING THEM. THE COBBLES WILL BE PLACED ADJACENT TO THE GRAINITE CURB AT A WIDTH OF APPROXIMATELY 3 FEET , LEAVING A WIDTH OF APPROXIMATELY 6 FEET FOR THE BRICK PAVER SIDEWALK ADJACENT TO THE HOTEL BUILDING.



Proposed Hotel

Maple Street

- granite curbing
- salvaged cobbles replicate current pattern (approx 3 feet wide)
- brick paver walkway (approx 6 feet wide)

MASTER DEVELOPMENT PLAN
383 COMMERCIAL STREET
WRITTEN SUBMISSIONS-10 CIRCULATION AT WOONERF NOVEMBER 3 2017

WIKIPEDIA DEFINES A WOONERF AS " A LIVING STREET...WHERE EQUAL PRIORITY IS GIVEN TO ALL MODES OF TRANSPORTATION INCLUDING AUTOMOBILES, BICYCLES AND PEDESTRIANS...

SIMILAR TO THE ATTACHED PHOTOGRAPH, THE PROPOSED WOONERF AT 383 COMMERCIAL STREET IS DESIGNED WITHOUT CURBS, HOWEVER, PEDESTRIAN ZONES ARE DEFINED WITH FLUSH GRANITE ACCESS BANDS, PAVERS SET IN A DIFFERENT PATTERN, AND FURTHER SEPARATION IS ACCOMPLISHED USING BOLLARDS AND LIGHT FIXTURES. WE WILL ADVANCE AND REFINE THIS DESIGN WITH THE LEVEL III SITE PLAN SUBMISSIONS.

AS NOTED AT THE OCTOBER 24 PLANNING BOARD WORKSHOP, SOME BOARD MEMBERS WERE CONCERNED WITH TRAFFIC CIRCULATION IN THIS AREA. TO THAT POINT, PLEASE SEE THE ATTACHED EXHIBIT – WE HAVE ADDED STOP SIGNS IN 3 LOCATIONS TO CLARIFY RIGHTS OF WAY AND IMPROVE TRAFFIC SAFETY. AS DESIGNED THIS ARRANGEMENT GIVES THE PRIORITY AND RIGHT OF WAY TO CARS ENTERING FROM COMMERCIAL STREET TO LIMIT STACKING AND BACKUPS INTO COMMERCIAL STREET.

THE EXHIBIT ALSO ILLUSTRATES THE ASSIGNMENT OF TRAFFIC TRIPS WHICH DEMONSTRATES RELATIVELY LOW TRAFFIC VOLUMES IN THIS AREA. WE ALSO NOTE THAT THE MAJORITY OF DRIVERS USING THE WOONERF WILL BE THOSE FAMILIAR WITH THE DESIGN – CONDOMINIUM RESIDENTS AND HOTEL VALET STAFF.

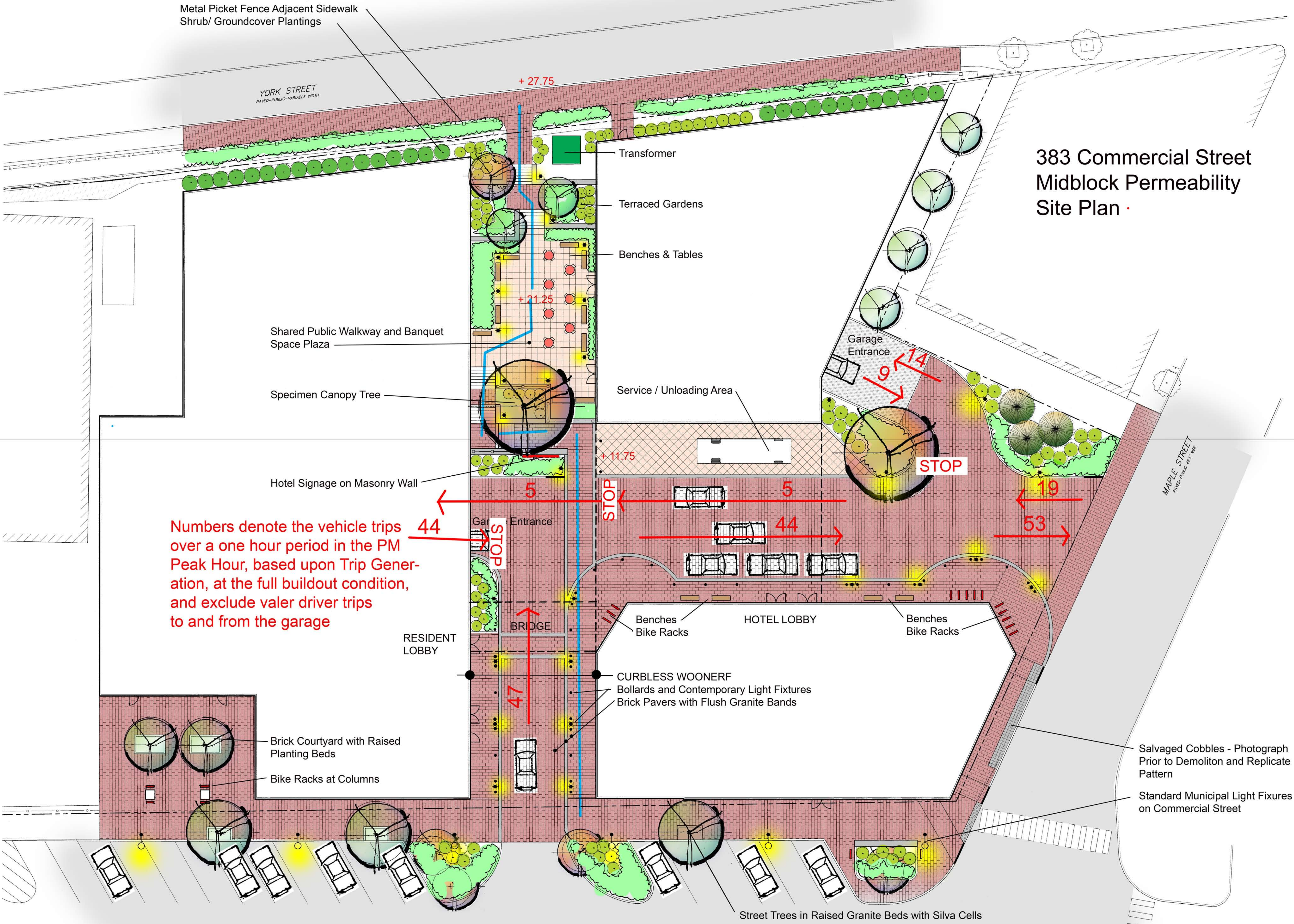


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MASTER DEVELOPMENT PLAN
383 COMMERCIAL STREET
WRITTEN SUBMISSION 5- 11 Traffic Evaluation

Attached is a Traffic Impact Study outlining the expected new traffic generation and subsequent operational impact on the surrounding area roadways.



Att. J

Traffic Impact Study Master Development Plan

**383 Commercial Street
Portland, Maine**

Prepared For:
Deering Property Development, LLC
2730 Transit Road
West Seneca, New York 14224

Prepared By:
Sebago Technics, Inc.
75 John Roberts Road, Suite 1A
South Portland, Maine 04106

Sebago Project No. 16324

November 3, 2017

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Introduction

The purpose of this Traffic Impact Study (TIS) is to identify the impacts the proposed 383 Commercial Street Development may have on the surrounding area roadways. This study assumes the following land uses in the full build development:

- 211 Condominium Units
- 139 Room Hotel
- 2,352 square foot Restaurant
- 19,003 square feet of Retail space

As part of the permitting process for this project, it is expected that a Traffic Movement Permit (TMP) will be obtained, if necessary, for each phase of development. It is expected that the TMP permitting process will provide further detail regarding the capacity analyses and any necessary off-site mitigation.

Trip Generation

We have used the 10th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate the following trip generation for the proposed development. Tables 1 through 3 show the estimated trip generation for each proposed land use.

Table 1 –Trip Generation
Land Use Code 231– Mid-Rise Residential with 1st-Floor Commercial
Dense Multi-Use Urban
(211 Occupied Units and 19,003 Sq. Ft Retail)

<i>Time Period</i>	<i>Trip Generation Equation</i>	<i>Total Trips</i>	<i>Entering</i>	<i>Exiting</i>
AM Peak Hour of Adjacent Street (7-9 AM)	$T = [2.65 \times (\text{Retail GFA (000)})] + [0.03 \times (\text{Occupied Units})] + 5.2$	62	17	45
PM Peak Hour of Adjacent Street (4-6 PM)	$T = [3.43 \times (\text{Retail GFA (000)})] + [0.10 \times (\text{Occupied Units})] - 8.2$	78	53	25

*T=Vehicle Trip Ends

Table 2 –Trip Generation
Land Use Code 310 – Hotel
General Urban/Suburban
(139 Rooms)

<i>Time Period</i>	<i>Trip Generation Equation</i>	<i>Total Trips</i>	<i>Entering</i>	<i>Exiting</i>
AM Peak Hour of Adjacent Street (7-9 AM)	$T = 0.50(X) - 5.34$	64	38	26
PM Peak Hour of Adjacent Street (4-6 PM)	$T = 0.75(X) - 26.02$	78	40	38

*T=Trip Ends, X=Rooms

Table 2 –Trip Generation
Land Use Code 931 – Quality Restaurant
General Urban/Suburban
(2,352 Sq. Ft)

<i>Time Period</i>	<i>Trip Generation Rate</i>	<i>Total Trips</i>	<i>Entering</i>	<i>Exiting</i>
AM Peak Hour of Adjacent Street (7-9 AM)	0.73/1,000 SF	2	1	1
PM Peak Hour of Adjacent Street (4-6 PM)	7.8/1,000 SF	18	12	6

Table 4 shows the net external trip generation for the proposed development. This is found by adding Tables 1 through 3.

Table 4 –Net External Trip Generation

<i>Time Period</i>	<i>Total Trips</i>	<i>Entering</i>	<i>Exiting</i>
AM Peak Hour of Adjacent Street (7-9 AM)	128	56	72
PM Peak Hour of Adjacent Street (4-6 PM)	174	105	69

All trips are assumed to be primary. In addition, no internal capture was calculated as this is accounted for in Land Use 231 – Mid-Rise Residential with 1st Floor Commercial.

Traffic Volumes

Turning movement counts were obtained on Wednesday April 12, 2017 at the following intersections in the vicinity of the development site.

- Commercial Street at Park Street
- Commercial Street at High Street
- Commercial Street at Maple Street
- High Street at York Street
- York Street at Maple Street (counted on Tuesday April 18, 2017)

The existing traffic volumes are shown in Figure 1. Using the MaineDOT weekly group mean factors, the turning movement counts were adjusted to represent a 30th highest design hour. The weekly group mean factor for the selected week in April is 0.94. The design factor is 0.86, resulting in an adjustment factor of 1.09. The counts were then grown to seven year future design year of 2024, representing the anticipated completion of the full build development. An annual growth factor of 0.5% was applied. This growth factor was determined from MaineDOT count stations on Commercial Street, shown in Table 5 below. Although both locations show a decrease in traffic, this growth rate would account for other development in the area. The 2024 no-build volumes are shown in Figure 2.

Table 5: MaineDOT Count Data

STA	Location	AADT		Growth/yr
		2014	2016	
02102	US 1A Commercial St NE/O High Street	15820	15160	-2%
00606	US 1A Commercial St SW/O High Street	15460	14330	-4%

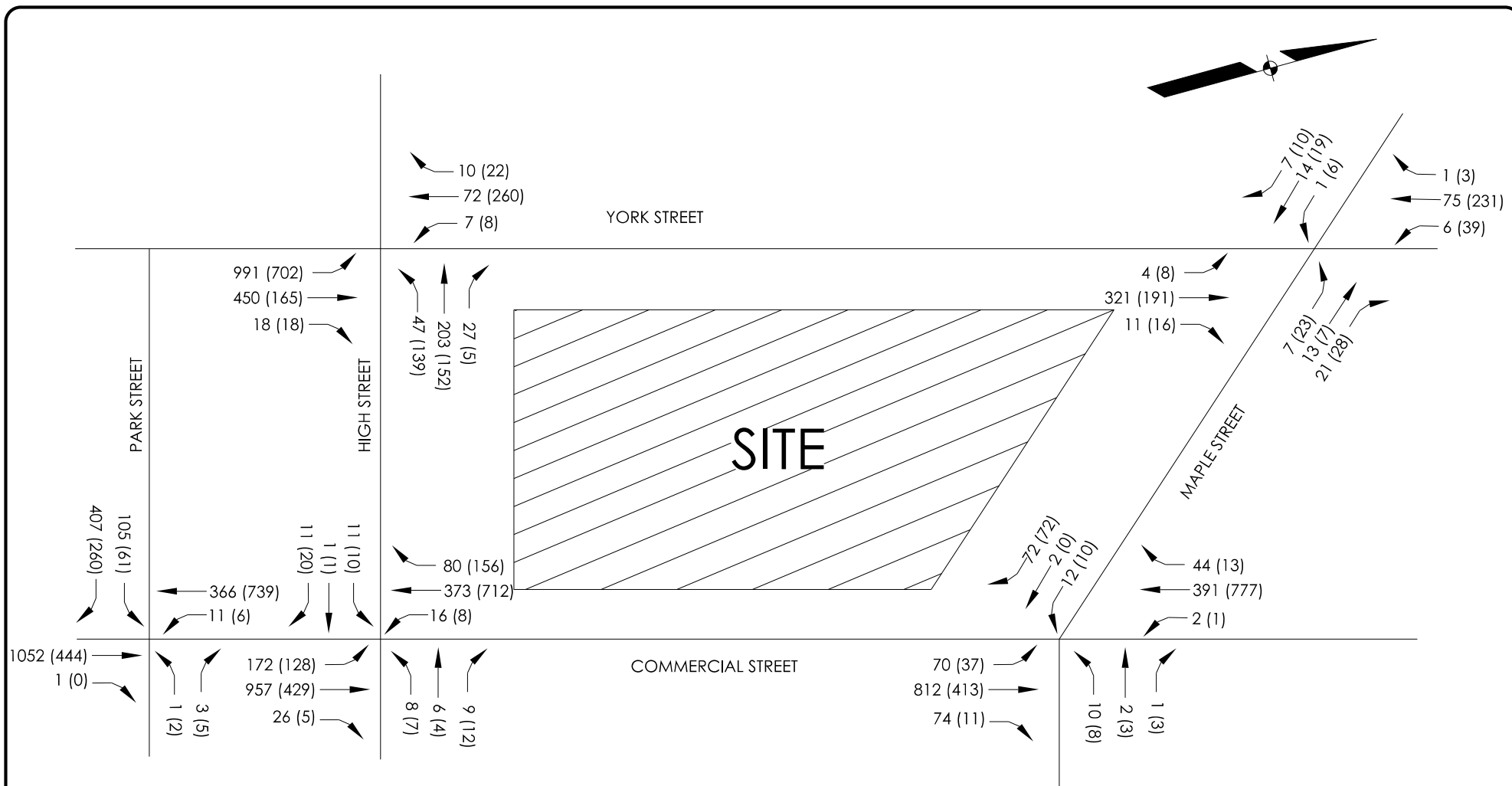
Trip Distribution and Assignment

Access to the development is to be by three proposed driveways. Access for the hotel, restaurant, retail and a portion of residential parking will be by a one-way in driveway located on Commercial Street and a full access driveway on Maple Street. These driveways will provide access to the proposed 'woonerf.' A driveway will also be located on York Street to provide access to the 2nd level of the parking garage. This level of the garage is to be for residents only.

Based upon the proposed parking configuration, it is assumed all traffic generated by the hotel and restaurant, as well as 35% of the traffic generated by the residential units will use either the Commercial Street or Maple Street Driveways. The additional 65% of traffic generated by the residential units is anticipated to use the York Street access.

Traffic was distributed from the access points based upon AADT volumes from the Maine Transportation Count Book at multiple locations on Commercial Street and York Street in the vicinity of the site. Approximately 8% of traffic is projected to be distributed to/from York Street to the north, 25% to/from Commercial Street to the north, 28% to/from Commercial Street to the south, and 39% to/from York Street to the south.

The proposed trip assignment for the AM and PM hour of the adjacent street is shown in Figure 3. The full build 2024 traffic volumes are shown in Figure 4.



KEY

XX AM PEAK HOUR - 7:15 A.M. - 8:15 A.M.
 (XX) PM PEAK HOUR - 4:30 P.M. - 5:30 P.M.

NOTES:

Traffic volumes were determined by
 Turning movement counts taken
 on Wednesday April 12, 2017



75 John Roberts Rd. - Suite 1A
 South Portland, ME 04106
 Tel. 207-200-2100

250 Goddard Rd. - Suite B
 Lewiston, ME 04240
 Tel. 207-783-5656

EXISTING TRAFFIC VOLUMES 383 COMMERCIAL STREET DEVELOPMENT

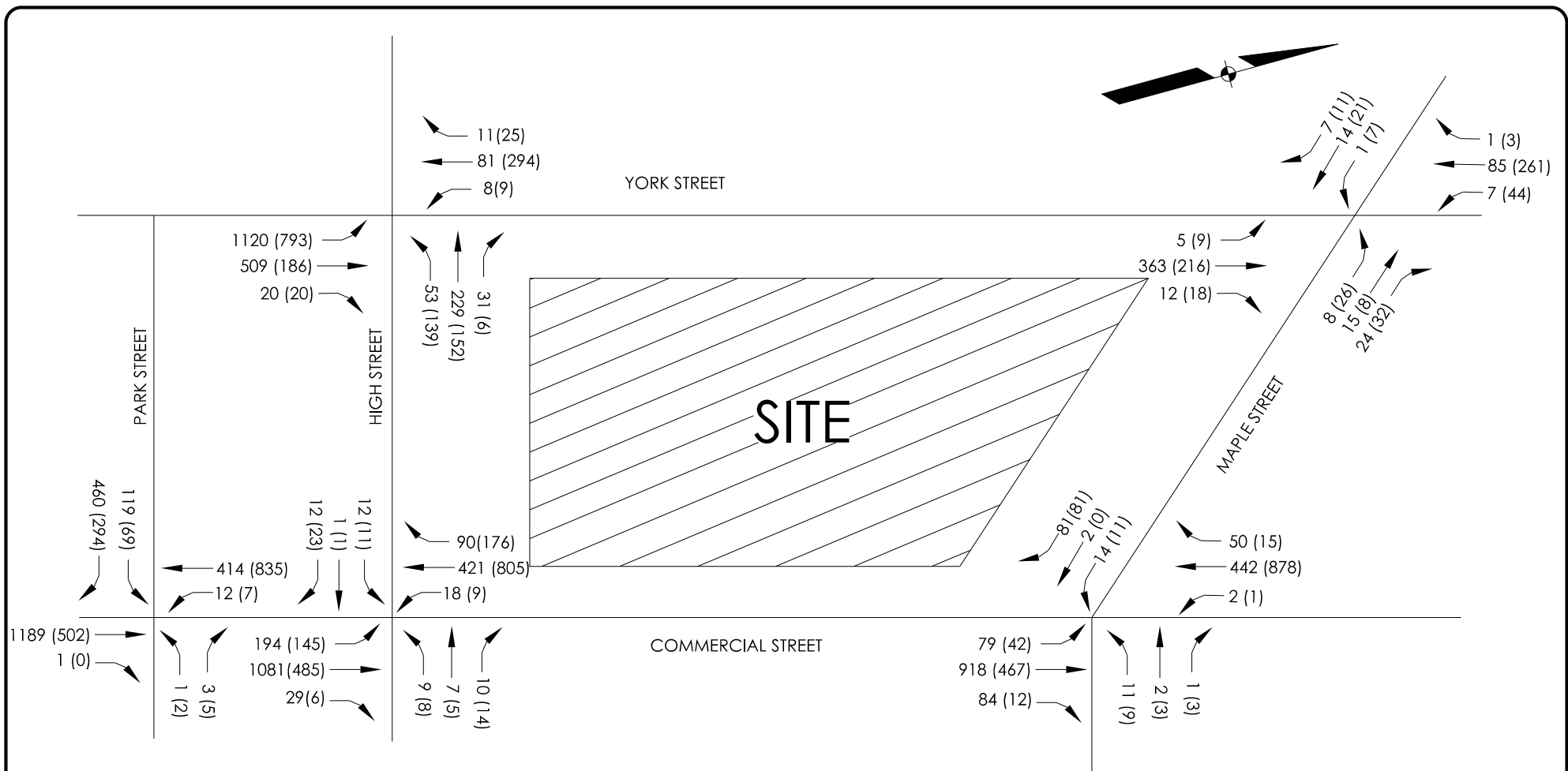
LOCATION: 383 COMMERCIAL STREET
 PORTLAND, MAINE

FOR: DEERING PROPERTY DEVELOPMENT, LLC
 2730 TRANSIT ROAD
 WEST SENECA, NEW YORK 14224

SCALE: N.T.S.

DATE: 11/02/2017

FIGURE:
 1 OF 4



KEY

XX AM PEAK HOUR - 7:15 A.M. - 8:15 A.M.
 (XX) PM PEAK HOUR - 4:30 P.M. - 5:30 P.M.

NOTES:

Raw Traffic Counts shown in Figure 1 were factored seasonally to the 30th highest hour using MaineDOT 2016 Weekly Group Mean Factors: 0.94/0.86=1.09

Traffic Counts were then factored annually from 2017 using an increase of 0.5% per year to a design year of 2024.



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 Tel. 207-783-5656

2024 NO-BUILD TRAFFIC VOLUMES 383 COMMERCIAL STREET DEVELOPMENT

LOCATION: 383 COMMERCIAL STREET
 PORTLAND, MAINE

FOR: DEERING PROPERTY DEVELOPMENT, LLC
 2730 TRANSIT ROAD
 WEST SENECA, NEW YORK 14224

SCALE: N.T.S.

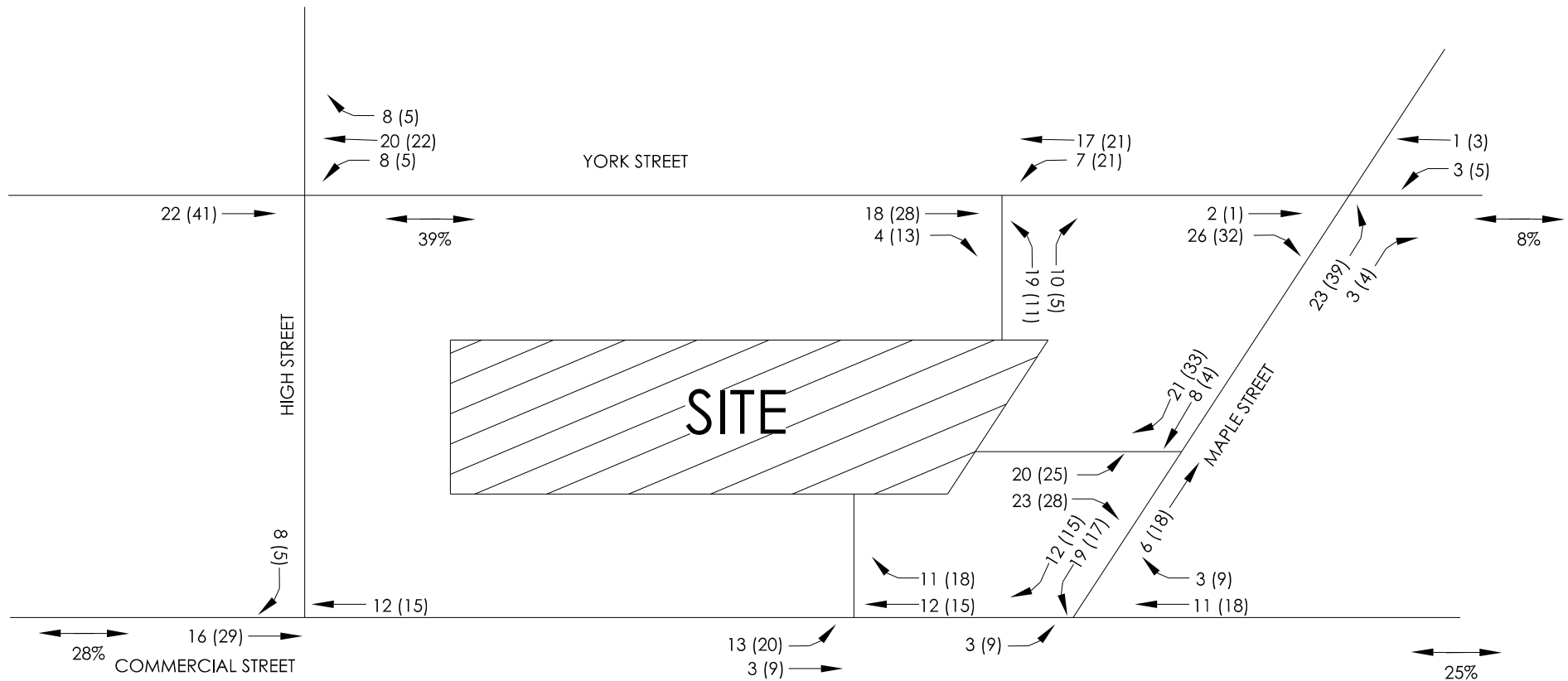
DATE: 11/02/2017

FIGURE:
 2 OF 3

NOTES:

Total Primary Trip Ends During Peak Hour:

	Entering	Exiting
AM	56	72
PM	105	69



KEY

XX AM PEAK HOUR
(XX) PM PEAK HOUR



75 John Roberts Rd. - Suite 1A
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Tel. 207-200-2100

250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT GENERATED TRIPS
383 COMMERCIAL STREET DEVELOPMENT

LOCATION: 383 COMMERCIAL STREET
PORTLAND, MAINE

FOR: DEERING PROPERTY MANAGEMENT, LLC
2730 TRANSIT ROAD
WEST SENECA, NEW YORK 14224

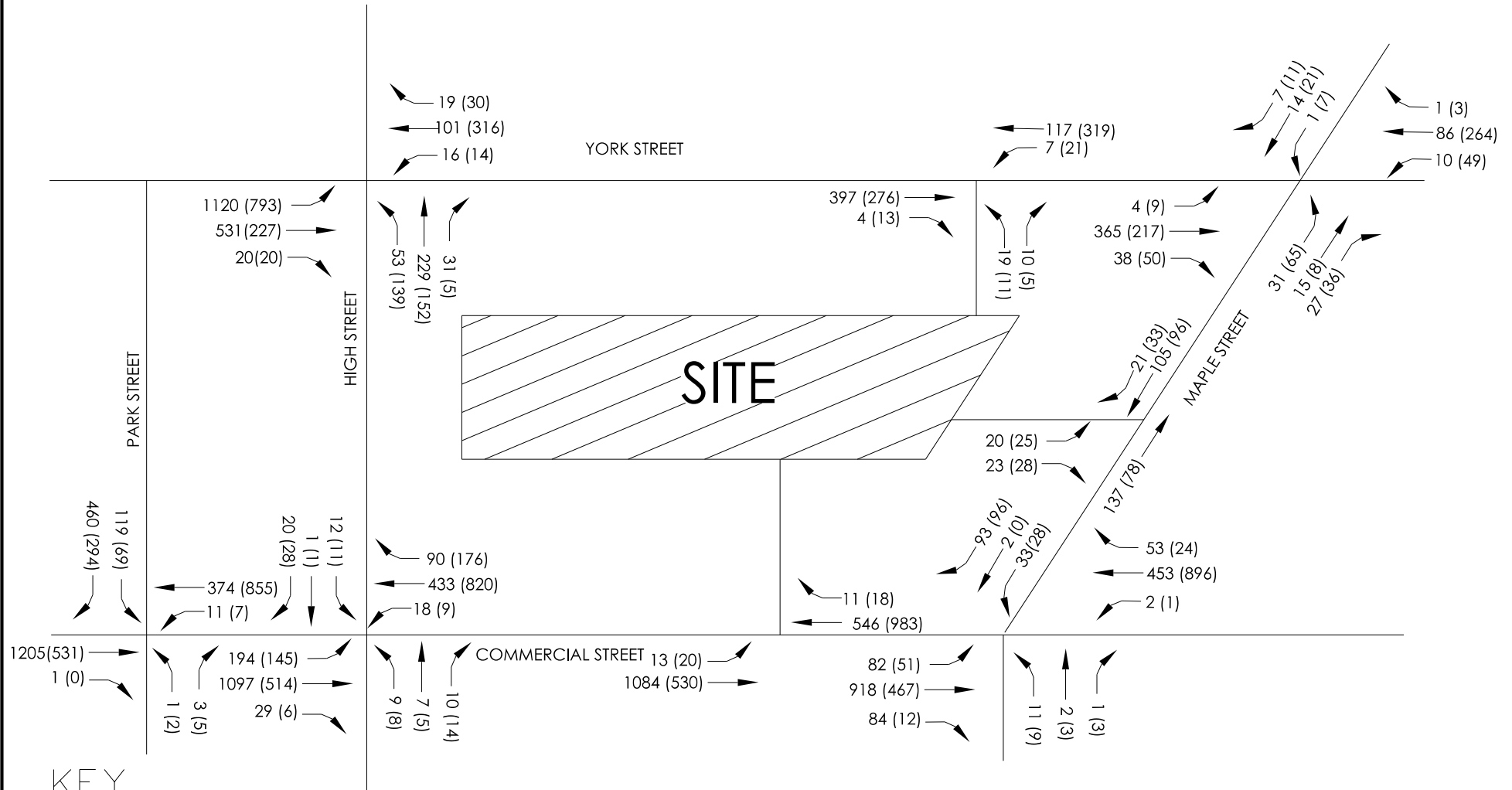
SCALE: N.T.S.

DATE: 11/02/2017

FIGURE:
3 OF 4

NOTES:

Volumes found by adding
Figures 2 and 3.



75 John Roberts Rd. - Suite 1A
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Tel. 207-200-2100

250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

2024 FULL BUILD TRAFFIC VOLUMES 383 COMMERCIAL STREET DEVELOPMENT

LOCATION: 383 COMMERCIAL STREET
PORTLAND, MAINE

FOR: DEERING PROPERTY MANAGEMENT, LLC
2730 TRANSIT ROAD
WEST SENECA, NEW YORK 14224

SCALE: N.T.S.

DATE: 11/02/2017

FIGURE:
4 OF 4

Capacity Analyses

An intersection capacity analysis for the 2024 No-Build and 2024 Build Volumes was completed. Synchro/SimTraffic Version 9 was used for this analysis. The focus of our analysis was on the control delay (or the average amount of delay that a vehicle experiences as it travels through an intersection or section of roadway). This is defined by Level of Service (LOS), in terms of A through F, with A being optimal and E/F being unacceptable.

Table 6: LOS from Control Delay

<i>Level of Service (LOS)</i>	<i>Unsignalized Control Delay (Sec./Vehicle)</i>	<i>Signalized Control Delay (Sec./Vehicle)</i>
A	≤10	≤10
B	>10-≤15	>10-≤20
C	>15-≤25	>20-≤35
D	>25-≤35	>35-≤55
E	>35-≤50	>55-≤80
F	>50	>80

Source: Highway Capacity Manual 6th Edition

Five existing were included in this analysis. These included the following:

- High Street at York Street (signalized)
- Commercial Street at Park Street (unsignalized)
- Commercial Street at High Street (unsignalized)
- Commercial Street at Maple Street (unsignalized)
- Maple Street at York Street (unsignalized)

The three proposed unsignalized driveways were also included in the 2024 Build analysis.

In some cases, the results may show an intersection or approach operating slightly better during build conditions. This is due to the nature of the traffic simulation, in which there are slight variants which may occur in each simulation run in addition to the increase in traffic under build conditions. This results in slight decreases in delay being reported. In these cases, it can be expected that traffic conditions before and after the build scenario would be similar.

Table 6: Capacity Analysis Summary (1 of 3)

	2024 AM No-Build		2024 AM Build		2024 PM No-Build		2024 PM Build	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
High Street at Commercial Street								
<i>Commercial St EB LT</i>	7	A	7	A	17	C	19	C
<i>Commercial St EB TH</i>	2	A	2	A	1	A	1	A
<i>Commercial St EB RT</i>	1	A	2	A	1	A	0	A
<i>Commercial St WB LT</i>	11	B	12	B	7	A	5	A
<i>Commercial St WB TH</i>	2	A	2	A	4	A	3	A
<i>Commercial St WB RT</i>	2	A	1	A	2	A	2	A
<i>High Street SB LT</i>	60	F	101	F	106	F	70	F
<i>High Street SB TH</i>	3	A	13	B	18	C	71	F
<i>High Street SB RT</i>	20	C	40	E	33	D	29	D
<i>INTERSECTION</i>	4	A	5	A	6	A	6	A

High Street at York Street								
<i>York St EB LT</i>	17	B	18	B	18	B	19	B
<i>York St EB TH</i>	15	B	16	B	14	B	14	B
<i>York St EB RT</i>	15	B	13	B	9	A	10	A
<i>York St WB LT</i>	23	C	26	C	39	D	47	D
<i>York St WB TH</i>	24	C	26	C	38	D	51	D
<i>York St WB RT</i>	19	B	18	B	35	C	49	D
<i>High St NB LT</i>	25	C	25	C	27	C	27	C
<i>High St NB TH</i>	19	B	20	B	23	C	22	C
<i>High St NB RT</i>	16	B	16	B	12	B	11	B
<i>INTERSECTION</i>	17	B	18	B	23	C	25	C

Maple Street at Commercial Street								
<i>Commercial St EB LT</i>	7	A	4	A	11	B	9	A
<i>Commercial St EB TH</i>	5	A	2	A	4	A	2	A
<i>Commercial St EB RT</i>	3	A	1	A	4	A	1	A
<i>Commercial St WB LT</i>	9	A	11	B	3	A	0	A
<i>Commercial St WB TH</i>	1	A	1	A	1	A	2	A
<i>Commercial St WB RT</i>	1	A	1	A	1	A	1	A
<i>Maple Street SB LT</i>	41	E	42	E	31	D	40	E
<i>Maple Street SB RT</i>	15	B	17	C	18	C	21	C
<i>INTERSECTION</i>	5	A	4	A	4	A	4	A

Table 7: Capacity Analysis Summary (2 of 3)

	2024 AM No-Build		2024 AM Build		2024 PM No-Build		2024 PM Build	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Maple Street at York Street								
<i>York St EB LT</i>	3	A	2	A	5	A	3	A
<i>York St EB TH</i>	2	A	1	A	2	A	1	A
<i>York St EB RT</i>	2	A	0	A	2	A	0	A
<i>York St WB LT</i>	3	A	4	A	3	A	3	A
<i>York St WB TH</i>	0	A	0	A	1	A	1	A
<i>York St WB RT</i>	0	A	0	A	1	A	0	A
<i>Maple St NB LT</i>	7	A	8	A	8	A	9	A
<i>Maple St NB TH</i>	1	A	1	A	8	A	8	A
<i>Maple St NB RT</i>	4	A	4	A	4	A	4	A
<i>Maple St SB LT</i>	5	A	5	A	8	A	7	A
<i>Maple St SB TH</i>	6	A	8	A	7	A	11	B
<i>Maple St SB RT</i>	4	A	3	A	4	A	4	A
<i>INTERSECTION</i>	2	A	1	A	2	A	2	A
	Park Street at Commercial Street							
<i>Commercial St EB TH</i>	1	A	1	A	0	A	0	A
<i>Commercial St WB LT</i>	16	C	21	C	5	A	4	A
<i>Commercial St WB TH</i>	2	A	3	A	2	A	2	A
<i>Park St SB LT</i>	158	F	118	F	21	C	19	C
<i>Park St SB RT</i>	17	C	12	B	32	D	19	C
<i>INTERSECTION</i>	13	B	10	A	8	A	5	A

Table 8: Capacity Analysis Summary (3 of 3)

2024 AM No-Build		2024 AM Build		2024 PM No-Build		2024 PM Build	
Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Site Drive at Commercial Street							
<i>Commercial St EB LT</i>		5	A			9	A
<i>Commercial St EB TH</i>		3	A			2	A
<i>Commercial St WB TH</i>		0	A			1	A
<i>Commercial St WB RT</i>		0	A			0	A
<i>INTERSECTION</i>		2	A				A
Site Drive at Maple Street							
<i>Site EB LT</i>		11	B			18	C
<i>Site EB RT</i>		24	C			19	C
<i>Maple St SB TH</i>		1	A			1	A
<i>Maple St SB RT</i>		0	A			1	A
<i>INTERSECTION</i>		4	A			5	A
Site Drive at York Street							
<i>York St EB TH</i>		2	A			2	A
<i>York St EB RT</i>		2	A			2	A
<i>York St WB LT</i>		3	A			3	A
<i>York St WB TH</i>		0	A			2	A
<i>Site NB LT</i>		6	A			12	B
<i>SITE NB RT</i>		5	A			3	A
<i>INTERSECTION</i>		2	A			2	A

As can be seen in the preceding Tables a few movements are shown to be failing during both the future build and no-build conditions. Of particular note is the intersection of High Street and Commercial Street. The High Street southbound movements were found to be failing during all four analysis scenarios. The *West Commercial Street Multi-Modal Corridor Study*, completed in January 2016, has identified the need for a traffic signal at this intersection. The report calls for this signal to be optimized in coordination with other traffic signals in the area. This TIS does not further explore the need for a traffic signal. It could be assumed that traffic operations for High Street as well as the Commercial Street turning movements would be improved with the installation of this signal.

Conclusion

Several intersections in the study area are shown to have operational issues under the projected future no-build conditions. Although generating a sizeable amount of new traffic, the analysis indicates that the existing roadway will be able to reasonably accommodate the increase in traffic as a result of the proposed development. As part of the TMP application process, further analysis will be performed to identify any off site mitigation which may be required as a result of this development.

4: DWY/High Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.3	2.0	1.3	11.2	2.1	1.7	86.0	48.9	39.3	60.3	3.0	19.6

4: DWY/High Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	3.8

5: High Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	12.6	6.7	5.1	1.5
Total Del/Veh (s)	16.9	14.7	14.5	23.2	24.2	18.9	25.3	19.0	15.8	17.2

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.5	0.4	0.5	0.1	0.1	0.1	1.0	0.1	1.1
Total Del/Veh (s)	6.8	4.5	3.0	9.1	1.2	0.7	44.4	28.1	3.9	41.4	52.0	14.5

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	4.6

9: Maple Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	3.0	2.1	2.1	2.8	0.2	0.0	7.2	1.4	3.6	5.0	6.3	3.6

9: Maple Street & York Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.0

10: Park Street & York Street Performance by movement

Movement	EBT	EBR	WBT	All
Denied Del/Veh (s)	207.8	211.6	0.0	193.6
Total Del/Veh (s)	8.4	12.1	1.2	8.7

11: Strudents/Park Street & Commercial Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	1.6	1.0	0.0	0.0	0.1	0.1	2.2	0.0	0.1	1.0
Total Del/Veh (s)	1.1	0.1	15.6	2.4	77.6	43.4	157.9	6.6	16.8	12.7

Total Network Performance

Denied Del/Veh (s)										108.8
Total Del/Veh (s)										24.4

Intersection: 4: DWY/High Street & Commercial Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	96	48	38	108	78	58
Average Queue (ft)	42	2	11	8	22	16
95th Queue (ft)	77	33	32	47	57	44
Link Distance (ft)		324		536	116	179
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	100		50			
Storage Blk Time (%)	1		0	1		
Queuing Penalty (veh)	7		1	0		

Intersection: 5: High Street & York Street

Movement	EB	EB	EB	WB	NB	NB
Directions Served	L	L	TR	LTR	L	TR
Maximum Queue (ft)	330	405	322	123	139	193
Average Queue (ft)	163	192	149	57	25	100
95th Queue (ft)	288	355	283	101	97	184
Link Distance (ft)	328	328	328	554	179	179
Upstream Blk Time (%)	0	0	0		0	3
Queuing Penalty (veh)	2	2	1		0	4
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Browns Wharf/Maple Street & Commercial Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	258	50	36	117
Average Queue (ft)	59	3	9	40
95th Queue (ft)	169	23	28	91
Link Distance (ft)	536	460	116	252
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
AM Peak Hour 2024 NB

11/03/2017

Intersection: 9: Maple Street & York Street

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	29	43
Average Queue (ft)	1	14	17
95th Queue (ft)	12	28	41
Link Distance (ft)	191	252	308
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Park Street & York Street

Movement	EB	EB
Directions Served	T	TR
Maximum Queue (ft)	254	269
Average Queue (ft)	112	149
95th Queue (ft)	308	345
Link Distance (ft)	232	232
Upstream Blk Time (%)	6	18
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Strudents/Park Street & Commercial Street

Movement	WB	NB	SB	SB
Directions Served	LT	LTR	L	TR
Maximum Queue (ft)	185	58	241	249
Average Queue (ft)	22	7	150	149
95th Queue (ft)	107	37	243	265
Link Distance (ft)	324	180	190	190
Upstream Blk Time (%)			13	13
Queuing Penalty (veh)			37	39
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 94

4: DWY/High Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.2	2.2	1.5	11.8	1.6	1.2	163.1	116.7	60.2	101.0	13.0	40.3

4: DWY/High Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	4.6

5: High Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	10.0	4.8	2.9	1.0
Total Del/Veh (s)	18.3	15.7	13.0	25.7	26.2	18.4	25.2	19.6	15.9	18.4

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.0	1.6	0.4	0.4	0.1	0.1	0.1	1.0	0.0	0.5
Total Del/Veh (s)	4.0	1.8	0.7	11.4	1.1	0.6	36.7	38.8	12.7	41.8	16.3	16.9

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	3.6

9: Maple Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	2.2	0.7	0.2	3.8	0.4	0.0	7.6	1.4	4.1	5.0	7.5	2.8

9: Maple Street & York Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.4

10: Park Street & York Street Performance by movement

Movement	EBT	EBR	WBT	All
Denied Del/Veh (s)	126.5	121.0	0.0	115.3
Total Del/Veh (s)	7.7	10.9	1.3	8.0

11: Strudents/Park Street & Commercial Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	1.6	1.8	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.9
Total Del/Veh (s)	1.2	0.4	20.8	2.8	96.9	56.9	118.3	1.9	12.0	9.8

16: Commercial Street & Site 1 Performance by movement

Movement	EBL	EBT	WBT	WBR	SBT	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.0	3.2	0.4	0.2	0.0	2.2

18: Maple Street & Site 2 Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	12.3	3.2	0.0	0.1	0.1	1.3
Total Del/Veh (s)	10.8	23.9	0.4	1.1	0.3	3.5

20: Site 3 & York Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	1.9	1.7	2.6	0.3	6.1	4.9	1.8

Total Network Performance

Denied Del/Veh (s)										64.8
Total Del/Veh (s)										23.9

Intersection: 4: DWY/High Street & Commercial Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	104	53	38	110	76	84
Average Queue (ft)	44	2	10	9	24	24
95th Queue (ft)	80	34	31	51	69	65
Link Distance (ft)		324		426	116	174
Upstream Blk Time (%)					1	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	100		50			
Storage Blk Time (%)	0		0	1		
Queuing Penalty (veh)	5		1	0		

Intersection: 5: High Street & York Street

Movement	EB	EB	EB	WB	NB	NB
Directions Served	L	L	TR	LTR	L	TR
Maximum Queue (ft)	332	334	310	160	129	181
Average Queue (ft)	180	184	157	75	21	98
95th Queue (ft)	289	294	282	133	84	174
Link Distance (ft)	328	328	328	355	174	174
Upstream Blk Time (%)	0	0	0			2
Queuing Penalty (veh)	1	2	1			4
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Browns Wharf/Maple Street & Commercial Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	131	75	38	130
Average Queue (ft)	54	6	10	57
95th Queue (ft)	125	35	30	115
Link Distance (ft)	50	465	119	74
Upstream Blk Time (%)	4			12
Queuing Penalty (veh)	49			17
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
AM Peak Hour 2024 BUILD

11/03/2017

Intersection: 9: Maple Street & York Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	19	48	83	41
Average Queue (ft)	1	4	17	14
95th Queue (ft)	7	23	49	39
Link Distance (ft)	140	191	116	308
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Park Street & York Street

Movement	EB	EB
Directions Served	T	TR
Maximum Queue (ft)	247	268
Average Queue (ft)	121	137
95th Queue (ft)	314	335
Link Distance (ft)	232	232
Upstream Blk Time (%)	4	12
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Strudents/Park Street & Commercial Street

Movement	EB	WB	NB	SB	SB
Directions Served	TR	LT	LTR	L	TR
Maximum Queue (ft)	10	220	59	202	221
Average Queue (ft)	0	27	8	120	125
95th Queue (ft)	7	127	37	211	213
Link Distance (ft)	234	324	180	190	190
Upstream Blk Time (%)		0		9	5
Queuing Penalty (veh)		0		26	15
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

AM Peak Hour 2024 BUILD

11/03/2017

Intersection: 16: Commercial Street & Site 1

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	167	27
Average Queue (ft)	23	1
95th Queue (ft)	98	12
Link Distance (ft)	426	50
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: Maple Street & Site 2

Movement	EB	B17	NB	SB
Directions Served	LR	T	LT	TR
Maximum Queue (ft)	95	13	8	15
Average Queue (ft)	30	1	0	2
95th Queue (ft)	73	11	6	19
Link Distance (ft)	95	69	74	116
Upstream Blk Time (%)	2	0		
Queuing Penalty (veh)	1	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Site 3 & York Street

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	35	45
Average Queue (ft)	2	19
95th Queue (ft)	15	44
Link Distance (ft)	140	80
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 122

4: DWY/High Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	5.3	0.0	3.5
Total Del/Veh (s)	16.9	0.9	0.5	6.5	3.6	2.2	53.8	86.8	24.0	106.1	18.4	33.0

4: DWY/High Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	5.5

5: High Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	18.2	14.2	9.3	39.3	38.1	35.0	27.0	22.7	11.6	23.0

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.9	1.0	0.1	0.1	0.1	0.0	0.0	0.6
Total Del/Veh (s)	10.9	4.0	4.3	3.2	1.3	0.8	29.3	35.2	7.1	31.3	17.5	3.9

9: Maple Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.3	0.2	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	4.5	2.1	1.7	2.7	0.7	0.6	7.9	8.1	3.5	7.8	7.3	4.3

9: Maple Street & York Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	2.2

10: Park Street & York Street Performance by movement

Movement	EBT	EBR	WBT	All
Denied Del/Veh (s)	1.9	2.2	0.0	1.5
Total Del/Veh (s)	2.7	5.7	1.6	3.0

11: Strudents/Park Street & Commercial Street Performance by movement

Movement	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.0	0.0	0.5	0.1	0.0	0.0	0.3	0.2
Total Del/Veh (s)	0.3	4.5	2.1	40.2	5.9	20.8	8.4	32.4	7.6

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	22.0

Intersection: 4: DWY/High Street & Commercial Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	103	77	34	93	82	99
Average Queue (ft)	52	5	5	12	21	29
95th Queue (ft)	92	56	22	55	60	74
Link Distance (ft)		324		535	116	179
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	100		50			
Storage Blk Time (%)	2		0	0		
Queuing Penalty (veh)	8		0	0		

Intersection: 5: High Street & York Street

Movement	EB	EB	EB	WB	NB	NB
Directions Served	L	L	TR	LTR	L	TR
Maximum Queue (ft)	205	200	151	349	149	156
Average Queue (ft)	129	129	73	175	77	74
95th Queue (ft)	183	183	131	302	132	134
Link Distance (ft)	328	328	328	554	179	179
Upstream Blk Time (%)					0	0
Queuing Penalty (veh)					0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Browns Wharf/Maple Street & Commercial Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	277	22	48	104
Average Queue (ft)	62	1	10	42
95th Queue (ft)	189	10	34	85
Link Distance (ft)	535	459	109	246
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
PM Peak Hour 2024 NB

11/03/2017

Intersection: 9: Maple Street & York Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	66	46	57
Average Queue (ft)	3	13	18	24
95th Queue (ft)	20	45	33	53
Link Distance (ft)	554	191	246	308
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Park Street & York Street

Movement	EB	EB
Directions Served	T	TR
Maximum Queue (ft)	189	205
Average Queue (ft)	26	41
95th Queue (ft)	141	181
Link Distance (ft)	232	232
Upstream Blk Time (%)	1	4
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Strudents/Park Street & Commercial Street

Movement	WB	NB	SB	SB
Directions Served	LT	LTR	L	TR
Maximum Queue (ft)	68	56	188	203
Average Queue (ft)	3	10	49	123
95th Queue (ft)	27	39	120	214
Link Distance (ft)	324	180	190	190
Upstream Blk Time (%)			0	9
Queuing Penalty (veh)			0	16
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 25

4: DWY/High Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.5	0.1	0.0	0.5	0.1	0.1	1.9	0.1	0.4	0.0	0.2	0.8
Total Del/Veh (s)	18.6	1.2	0.4	4.5	3.3	2.0	88.7	85.8	42.0	70.1	71.4	28.5

4: DWY/High Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	5.9

5: High Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	17.2	4.4	0.7	0.0	0.0	0.0	0.9
Total Del/Veh (s)	18.5	13.6	10.0	46.8	51.0	48.5	27.4	22.2	10.6	25.4

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.1	0.0		0.8	0.9	0.1	0.1	0.1	1.3	0.0	0.9
Total Del/Veh (s)	8.9	1.9	0.7		1.5	0.8	27.0	21.3	6.1	39.9	5.2	21.2

8: Browns Wharf/Maple Street & Commercial Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	4.0

9: Maple Street & York Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.3	0.4	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	2.7	1.0	0.4	3.3	1.0	0.3	8.5	7.8	4.0	6.8	10.8	4.2

9: Maple Street & York Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	2.3

10: Park Street & York Street Performance by movement

Movement	EBT	EBR	WBT	All
Denied Del/Veh (s)	0.4	0.6	0.0	0.4
Total Del/Veh (s)	1.6	2.1	1.6	1.7

11: Strudents/Park Street & Commercial Street Performance by movement

Movement	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	0.4	4.0	1.9	26.2	7.1	18.9	1.2	18.5	5.0

16: Commercial Street & Site 1 Performance by movement

Movement	EBL	EBT	WBT	WBR	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.3	2.4	0.6	0.2	0.0	1.3

18: Maple Street & Site 2 Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.6	0.0	0.0	0.3	0.1
Total Del/Veh (s)	17.8	18.9	0.5	1.0	0.9	4.6

20: Site 3 & York Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	1.8	1.7	3.3	1.7	12.2	2.8	1.9

Total Network Performance

Denied Del/Veh (s)			1.1			
Total Del/Veh (s)			22.5			

Intersection: 4: DWY/High Street & Commercial Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	118	134	23	54	99	98
Average Queue (ft)	58	7	2	14	29	25
95th Queue (ft)	101	81	13	40	78	70
Link Distance (ft)		324		426	116	174
Upstream Blk Time (%)		0			2	0
Queuing Penalty (veh)		1			0	0
Storage Bay Dist (ft)	100		50			
Storage Blk Time (%)	3			0		
Queuing Penalty (veh)	14			0		

Intersection: 5: High Street & York Street

Movement	EB	EB	EB	WB	NB	NB
Directions Served	L	L	TR	LTR	L	TR
Maximum Queue (ft)	222	218	180	326	153	160
Average Queue (ft)	141	140	78	206	73	81
95th Queue (ft)	206	205	144	341	125	144
Link Distance (ft)	328	328	328	355	174	174
Upstream Blk Time (%)				3	0	0
Queuing Penalty (veh)				11	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Browns Wharf/Maple Street & Commercial Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	127	20	51	128
Average Queue (ft)	45	1	11	60
95th Queue (ft)	117	11	37	112
Link Distance (ft)	50	465	119	74
Upstream Blk Time (%)	6			14
Queuing Penalty (veh)	34			18
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Maple Street & York Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	109	60	53
Average Queue (ft)	2	15	20	24
95th Queue (ft)	15	61	44	50
Link Distance (ft)	140	191	116	308
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Park Street & York Street

Movement	EB	EB
Directions Served	T	TR
Maximum Queue (ft)	58	126
Average Queue (ft)	2	8
95th Queue (ft)	31	65
Link Distance (ft)	232	232
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Strudens/Park Street & Commercial Street

Movement	EB	WB	NB	SB	SB
Directions Served	TR	LT	LTR	L	TR
Maximum Queue (ft)	15	50	66	120	177
Average Queue (ft)	1	3	9	44	94
95th Queue (ft)	12	24	39	97	169
Link Distance (ft)	234	324	180	190	190
Upstream Blk Time (%)				0	1
Queuing Penalty (veh)				0	2
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

MASTER DEVELOPMENT PLAN

383 COMMERCIAL STREET

WRITTEN SUBMISSION 5- 11a Traffic Evaluation – Commercial Street

In addition to the Traffic Impact Study (TIS) submitted as part of written submission 5-11, the following outlines some of the existing issues on Commercial Street and how this development may impact those.

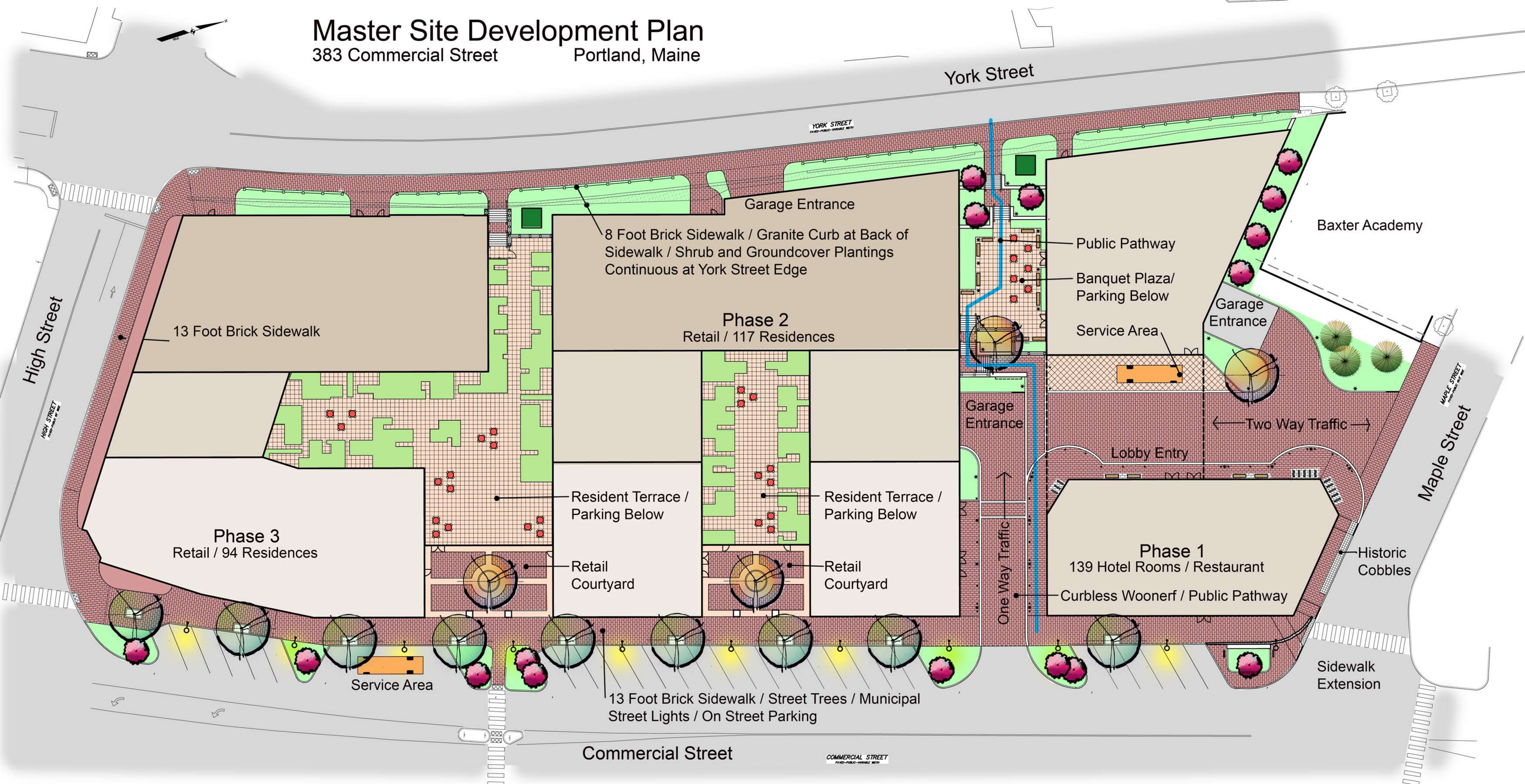
Presently, Commercial Street experiences significant delays and queues during the afternoon peak hour when heading in a westbound direction (leaving Downtown Portland). A large amount of this delay seems to be attributed to the traffic signal located at the intersection of Commercial Street and Beach Street/IMT. Westbound traffic at this location is stopped when eastbound traffic is turning left onto to the Casco Bay Bridge approach. Based upon the projected trip distribution of the traffic attributes to the 383 Commercial Street traffic, it is expected that a majority of traffic travelling to/from the development will be in the eastbound direction at this location. This congestion in westbound traffic is assumed to be due to people commuting home to points outside of Downtown Portland. Due to the proposed residential portion of the development, it can be assumed a majority of traffic in the afternoon peak hour would be headed towards the development, and therefore not travelling westbound on Commercial Street beyond the site. This is demonstrated in Figure 3 of the TIS. Based upon the proposed trip distribution, the development would be adding 20 new vehicular trips to Commercial Street west of the intersection with High Street. This would represent an approximate 2% increase over projected future year 2024 No-Build conditions. It should be noted that these no-build traffic volumes were found by applying a 0.5% annual growth rate. This growth rate can be thought to account for some of the development that is occurring on the Portland peninsula. This project will add traffic to the area, but the nature of the currently observed conditions on Commercial Street suggests an already existing issue.

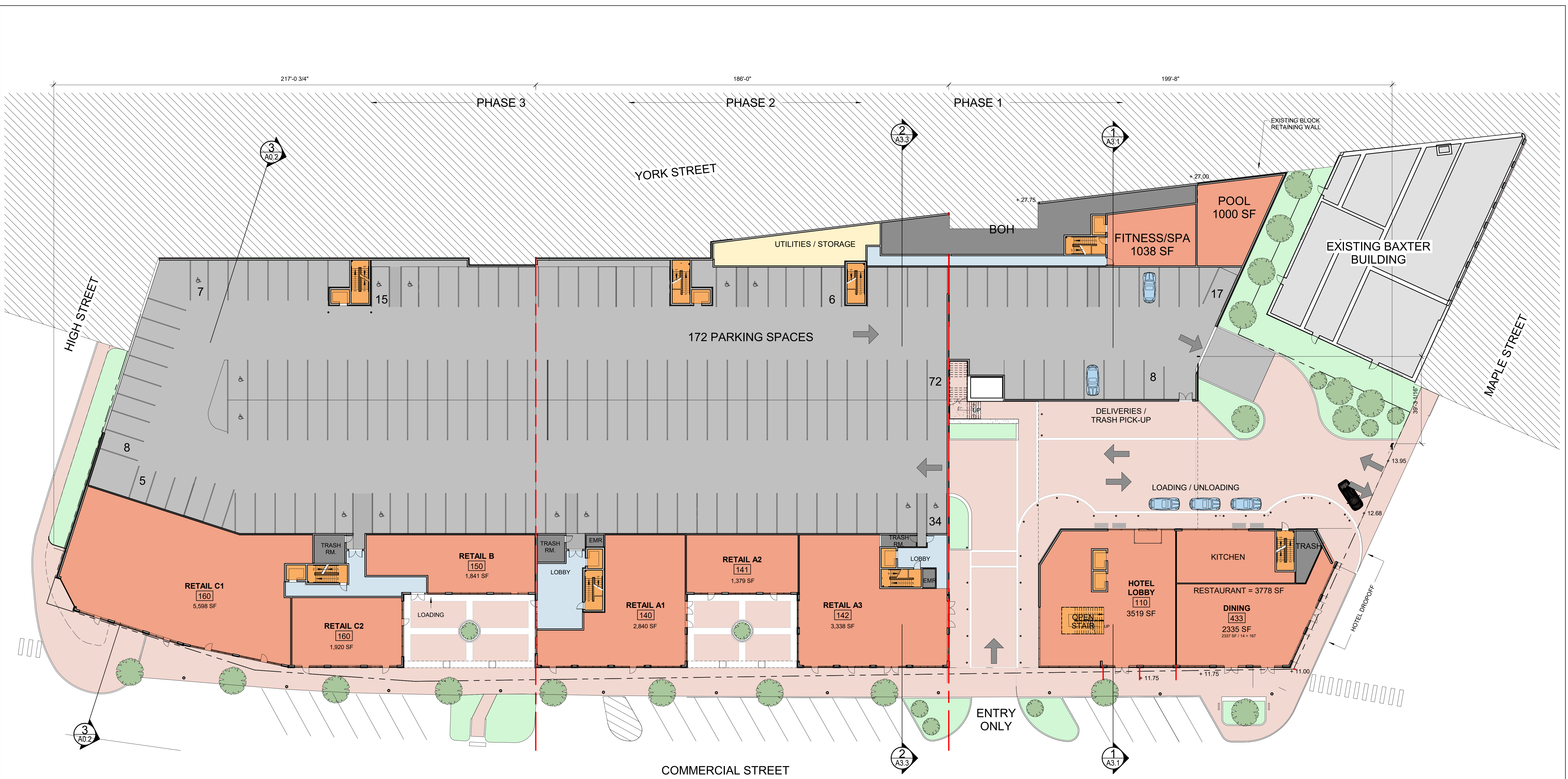
Commercial Street is also well known to have significant traffic issues to the east (towards Franklin Arterial) of the site, especially during the summer/fall months when tourism is at its highest. The root cause of this congestion seems to be a mixing of high volumes of all modes of users. Passenger vehicles, trucks, busses, pedestrians and bicycles all utilize the corridor. Along Commercial Street there are a number of unsignalized pedestrian crossings. Between the intersection with Union Street and the intersection with the Franklin Arterial, a distance of approximately 1/3 of a mile, there are 11 such marked crossings. This would suggest that the priority of this portion of Commercial Street is not necessarily vehicular capacity. Unsignalized pedestrian crossings allow for pedestrians to cross freely (assuming vehicular traffic stops) whenever arriving at the crosswalk. This causes constant interruption to vehicular traffic, not allowing for any predictable progression through the corridor. This is not necessarily a negative quality, but rather the objective must be made clear on what is the desired purpose of the Commercial Street corridor. Based on the proposed trip distribution outlined in the TIS, the project is expected to increase vehicular traffic on Commercial Street east of the site by approximately 2% (33 vehicles) during the AM Peak Hour and 3% (44 vehicles) during the PM Peak Hour. This increase represents assigned trips in both directions of travel.

Master Site Development Plan

383 Commercial Street

Portland, Maine





1 | LEVEL 1
1" = 20'-0"
0 5'-0" 10'-0" 20'-0" 40'-0"

383 COMMERCIAL STREET

Portland, Maine



383 COMMERCIAL STREET

Portland, Maine

OCT. 10, 2017

A1.2

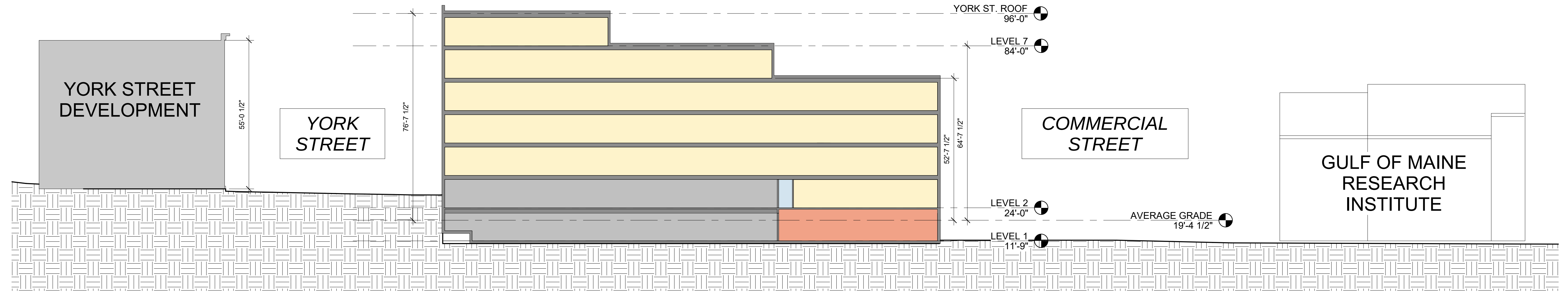


383 COMMERCIAL STREET

Portland, Maine

OCT. 10, 2017

A1.3



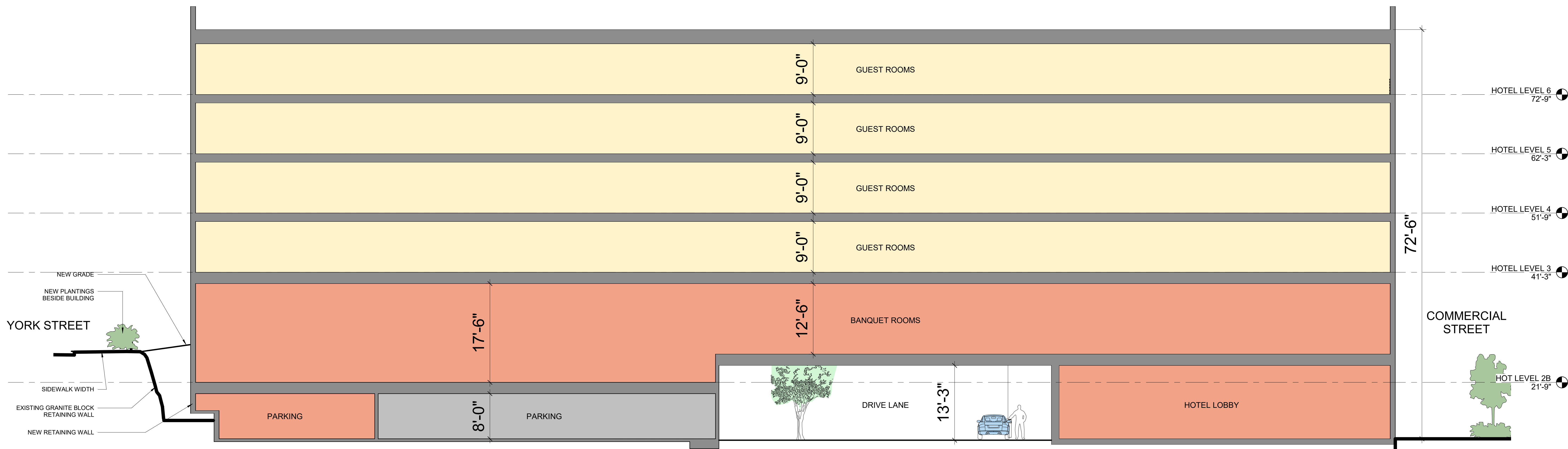
1 | SECTION THROUGH YORK AND COMMERCIAL STREET
1" = 20'-0"

383 COMMERCIAL STREET

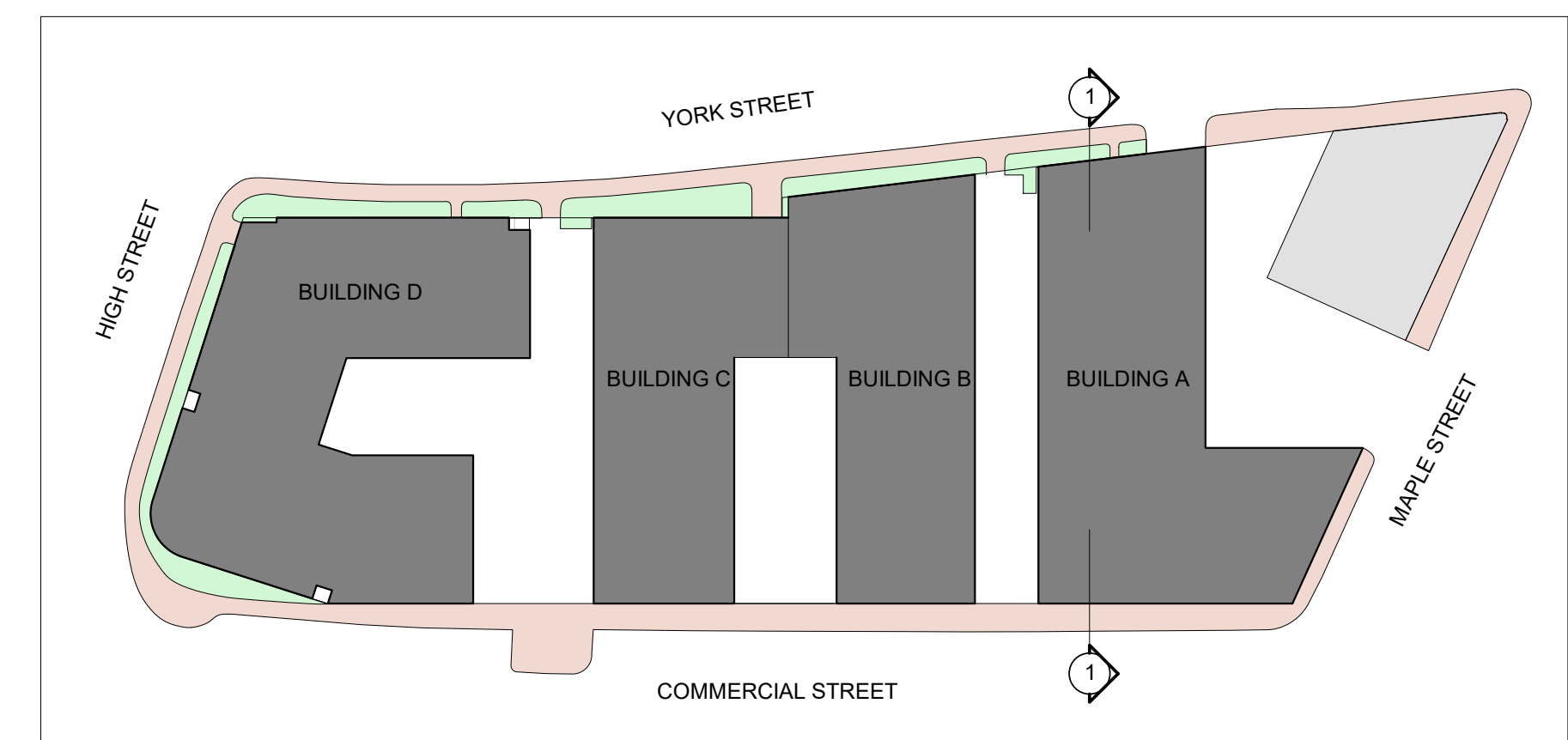
Portland, Maine

OCT. 17, 2017

A3.0



1 | SECTION AT DRIVE LANE
1/8" = 1'-0"

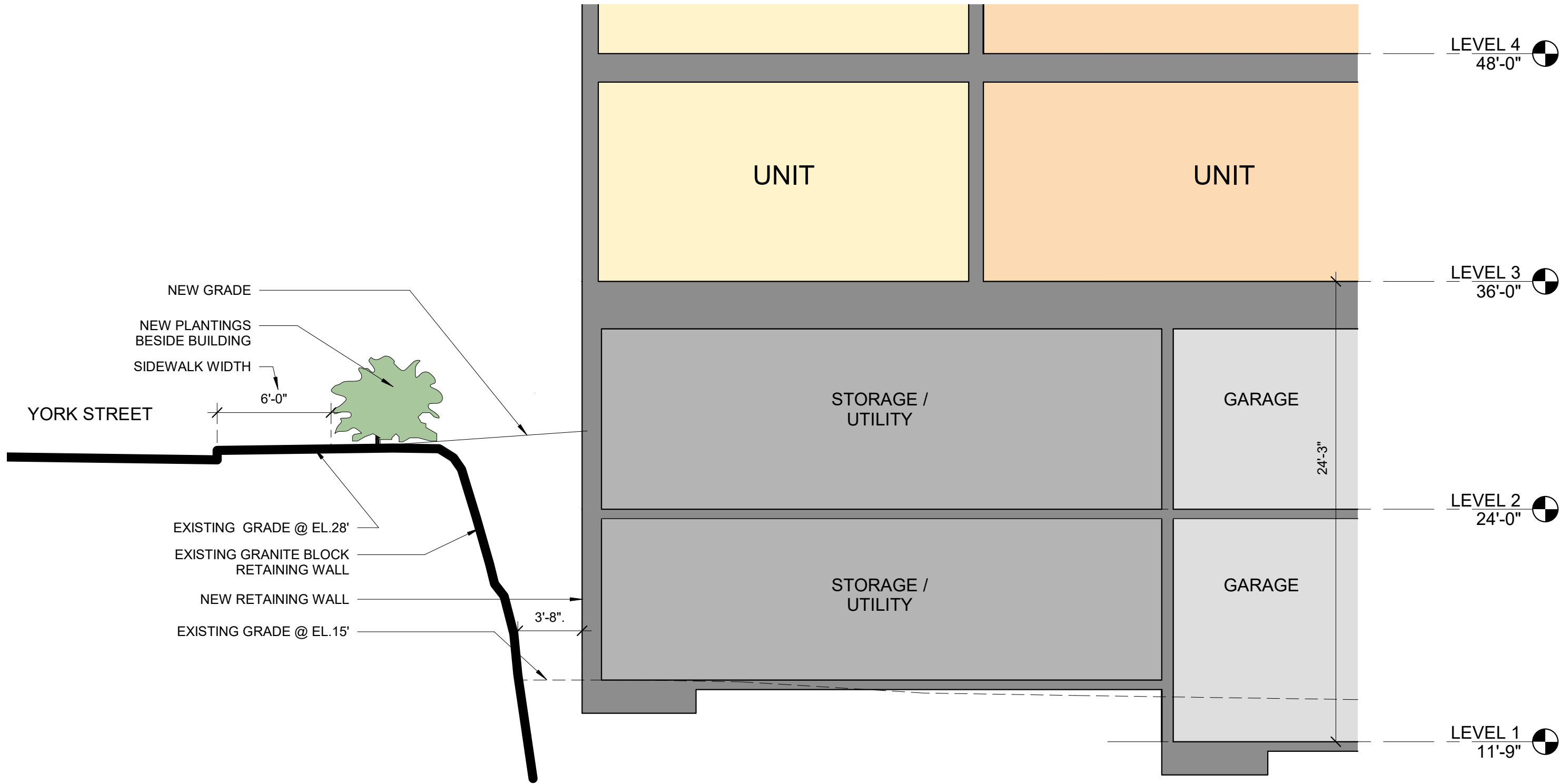


383 COMMERCIAL STREET

Portland, Maine

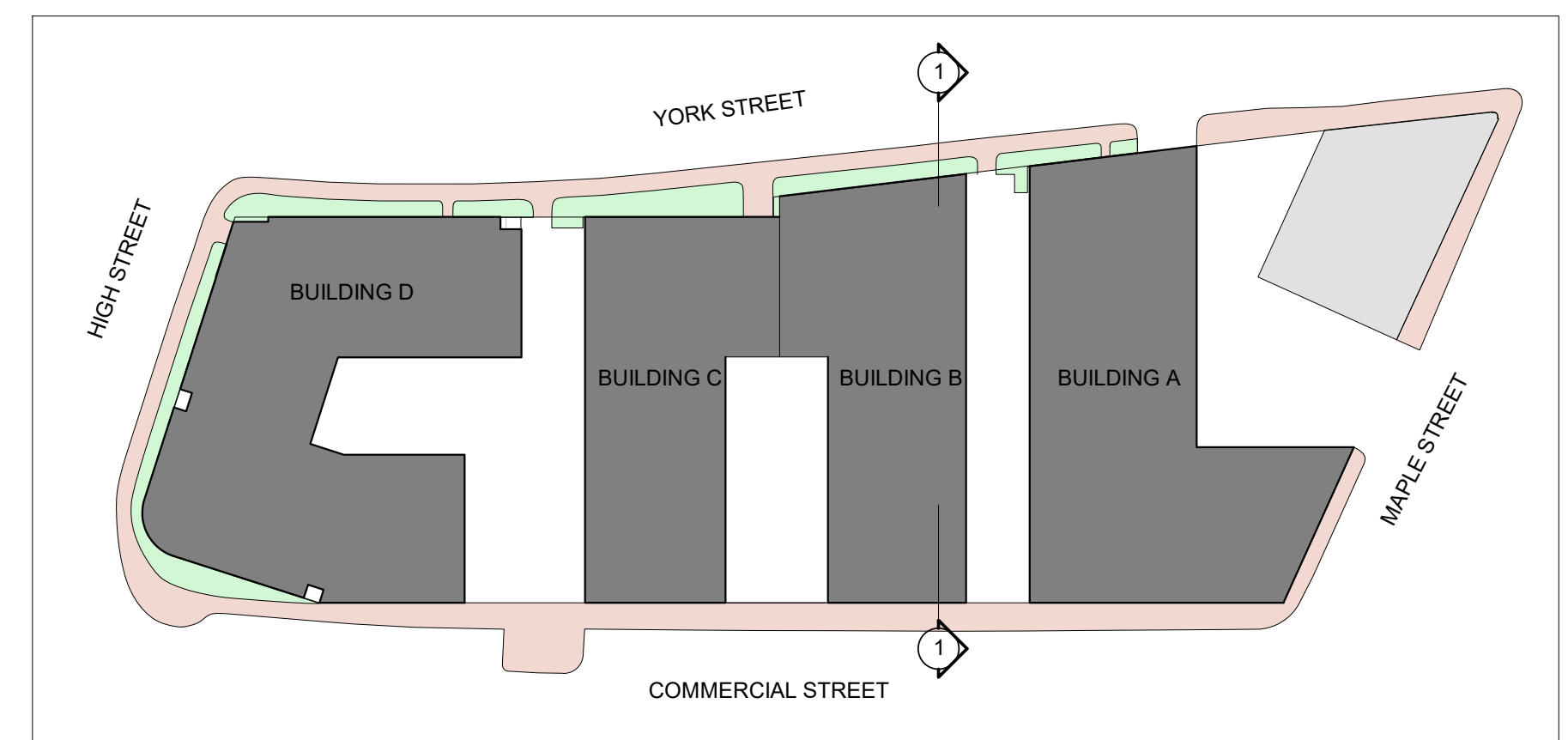
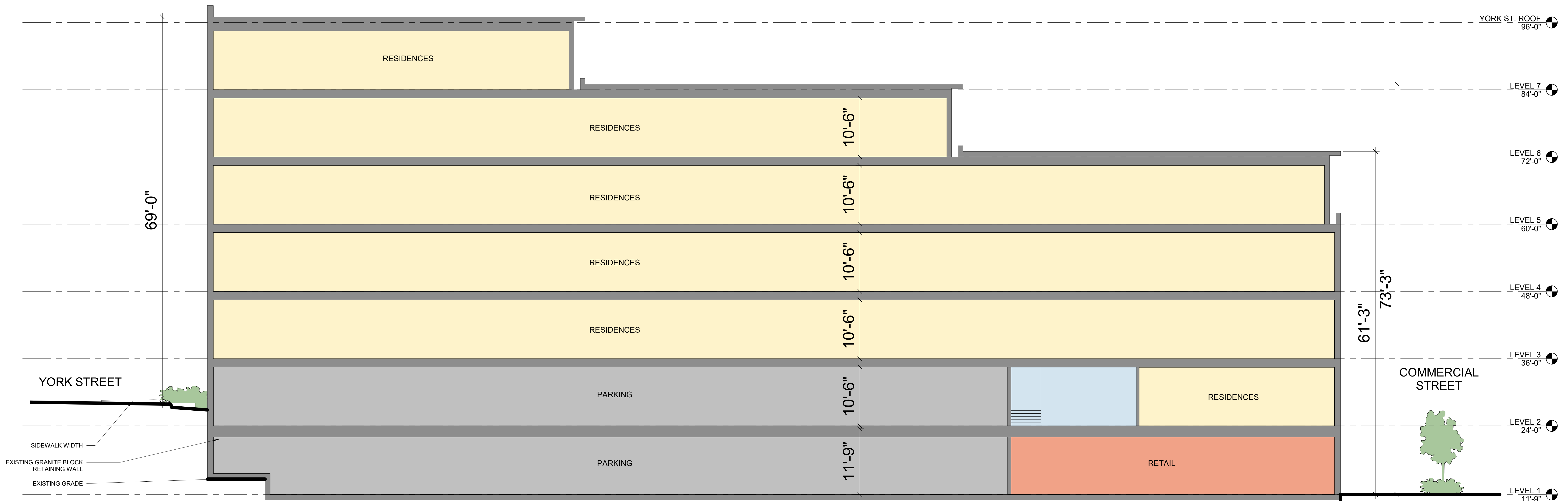
OCT. 10, 2017

A3.1



383 COMMERCIAL STREET
Portland, Maine



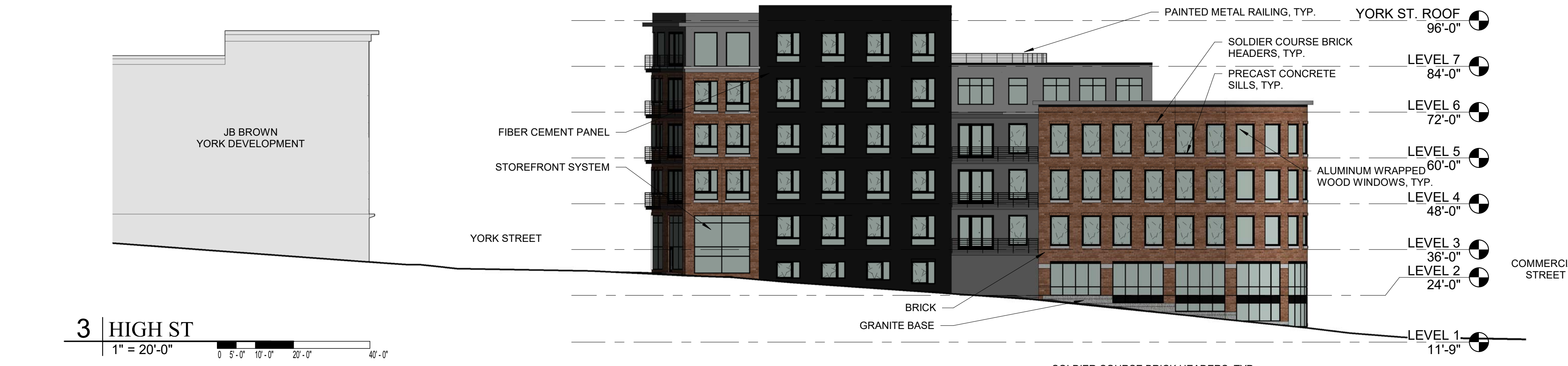


383 COMMERCIAL STREET

Portland, Maine

OCT. 10, 2017

A3.3



383 COMMERCIAL STREET

Portland, Maine

OCT. 31, 2017

A2.1





















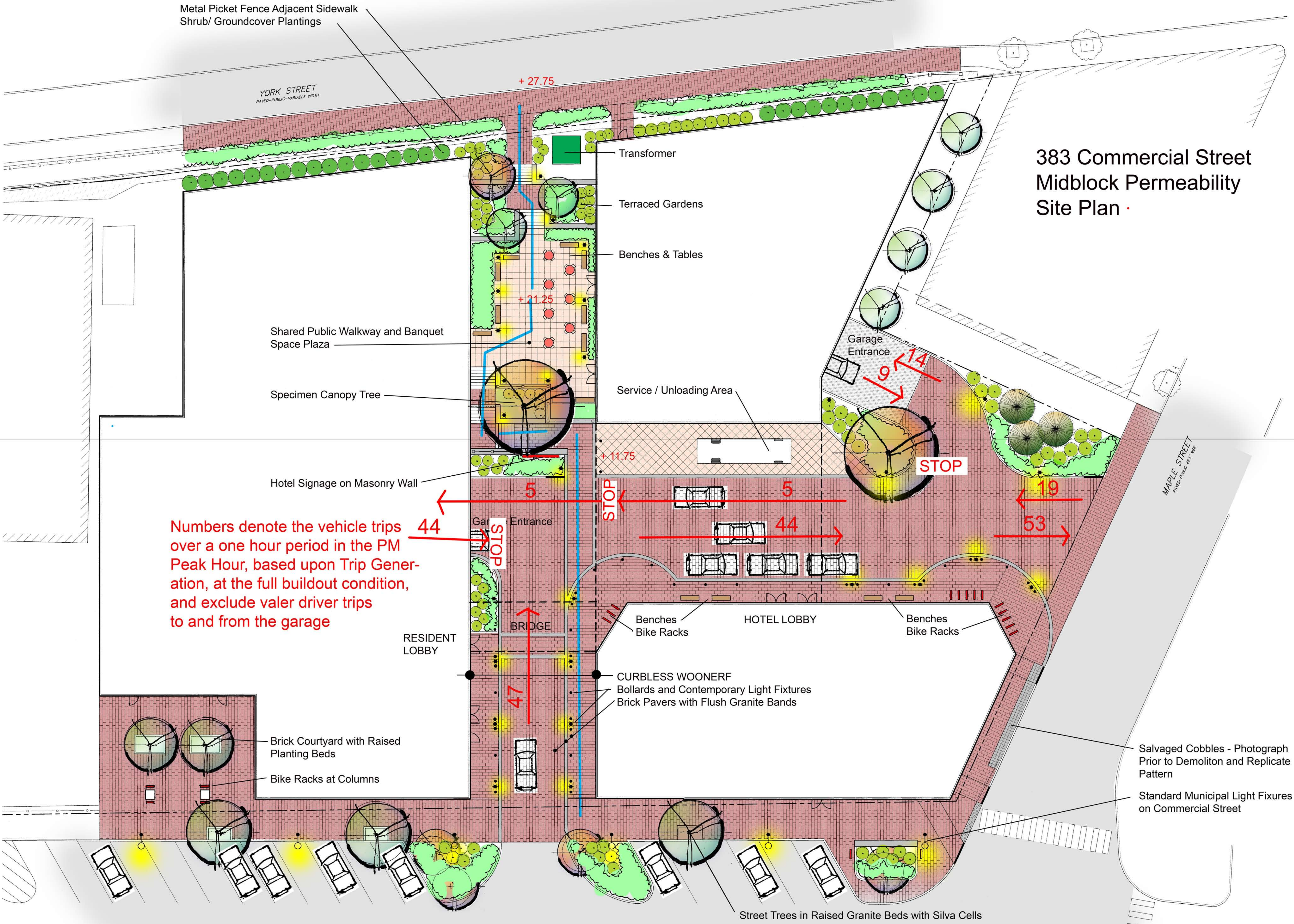












383 Commercial Street
Midblock Permeability
Site Plan

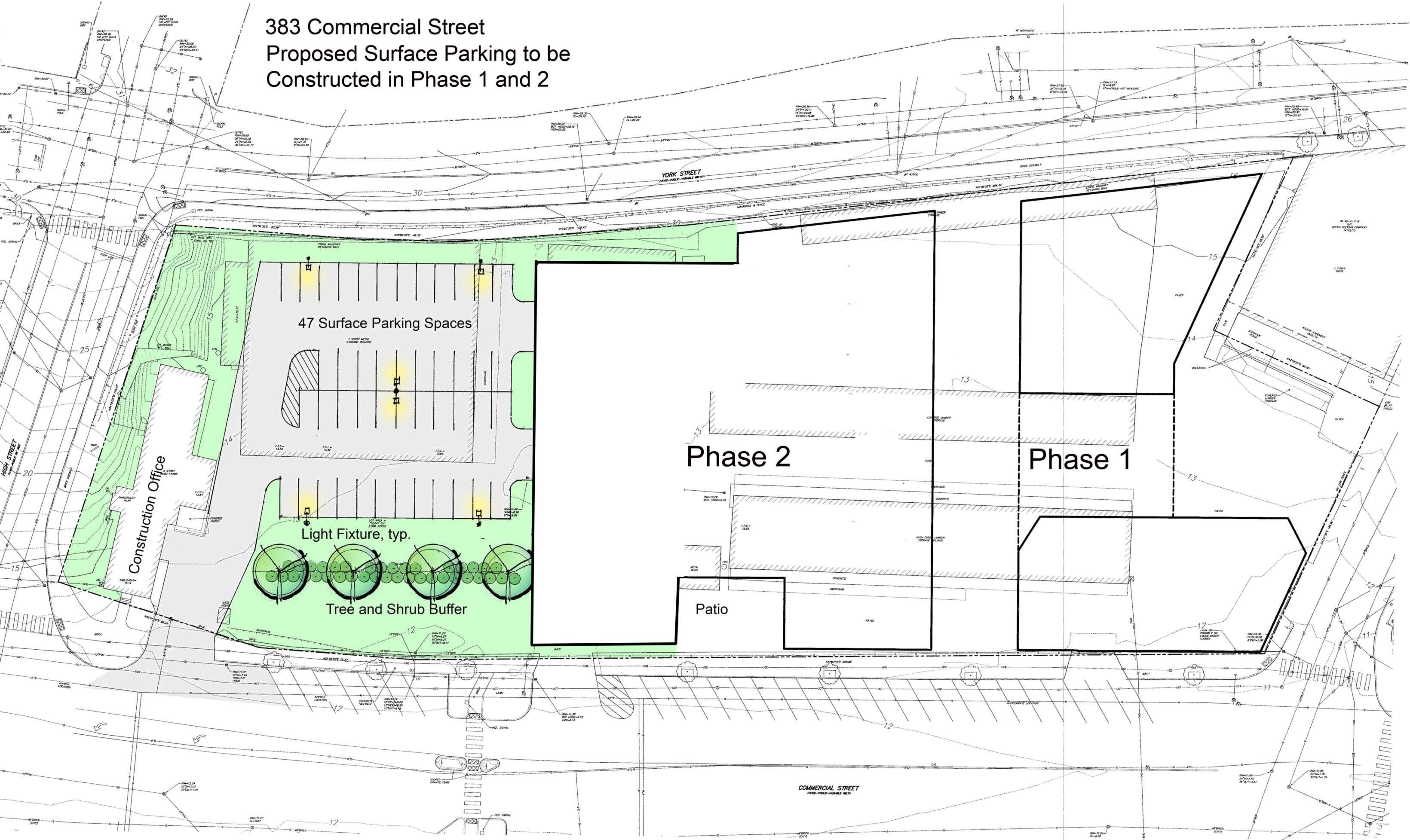
Numbers denote the vehicle trips over a one hour period in the PM Peak Hour, based upon Trip Generation, at the full buildout condition, and exclude valet driver trips to and from the garage

Salvaged Cobbles - Photograph Prior to Demolition and Replicate Pattern

Standard Municipal Light Fixures on Commercial Street

Street Trees in Raised Granite Beds with Silva Cells

383 Commercial Street Proposed Surface Parking to be Constructed in Phase 1 and 2



Google Groups

Redevelopment of Rufus Deering lot

Margo Dittmer <margodittmer@gmail.com>

Apr 4, 2017 6:16 PM

Posted in group: **Planning Board**

Dear Members of the Planning Board,

I have been a Portland resident since 1991, and have two grown sons who attended Portland public schools.

I read that you will be discussing the plan to redevelop the Rufus Deering lot this Thursday. I am wondering when I will read about a housing development in our town that includes workforce/affordable housing? The plan I read about for this development is once again, all market rate housing. My sons and their friends, in their 20s and 30s, can no longer afford to live in Portland. This is now true for thousands of people. When will you start holding developers responsible for including some in their developments? I know they are allowed to pay a penalty if they don't, but I also don't see any affordable housing going up out of those funds anywhere.

I'm feeling very discouraged about the priorities set by my city officials. It seems you and the developers see dollar signs everywhere today, not thinking about the livability and balance of our city tomorrow.

Sincerely,
Margo Dittmer

Google Groups

383 Commercial St. project

Samuel Kilbreth <broken.broken.broken.glasses@gmail.com>

Jun 14, 2017 11:21 PM

Posted in group: **Planning Board**

Hello members of the Planning Board,

I'm writing regarding the development planned for the former Rufus Deering Lumber site, based on what was shared in Randy Billing's article published in the Press Herald yesterday.

1. Projects of this scale should not be allowed to be built in Portland, and especially along the waterfront. It's totally out of character with the city, disproportionate in terms of scale, lacks charm and vision, and creates a monolithic, uninteresting cityscape, besides creating massive traffic issues.

I reviewed the City's new *Comprehensive Plan*, and was pleased to see the following tenets:

URBAN DESIGN

Portland's physical character is defined by a distinctive relationship between its topography, building character and fabric, and the natural landscape. The authentic, scenic, and historic nature of the built and natural environment provides the context for the city's current success and attractiveness as a city. The city building taking place in this current period of change will be the legacy of this generation to the future Portland. The critical question is not "if" but "how" we should grow to maintain that authentic character while allowing our city to flourish. It is incumbent on city builders to provide excellence in architectural quality and urban design commensurate with the image of Portland in history and today. Thoughtful and good quality design is achieved through attention to quality of space and placemaking, the relationship of buildings to the streets and built context, durability and integrity of materials, and a pleasing and timeless quality of architecture - these must be held to the highest possible standards. Practicing and incentivizing contextual principles of urban design are central to the health and well-being of the City of Portland.

(page 82) (highlights are mine)

The rendering I saw does not seem to be making a high quality "space" or creating a unique "place". Perhaps inside the fortress, there are some interesting "spaces" - but there doesn't seem to be much of a relationship between this building and the streets and the built context around it. It's eclipsing everything else in sight.

2. While I know it's not the planning board's decision on which architect to use for a project, I'm sure board members will recognize it's detrimental to a city's skyline when one architect is responsible for so many buildings being built in the same small city in such a short period of time. It's like the Flintstones effect, with every corner beginning to look the same. Let's instead encourage developers to create an interesting, diverse cityscape, instead of continuing to work with the same architect doing the same work, over and over again.

3. Assuming my first point will be falling deaf ears, then I urge the Planning Board to be more aggressive about getting more back for the public from this project. It shouldn't be about just preserving pedestrian thoroughways. The developer should be required to build a *park* or some *usable* space on this site for the public. It would be absolutely shameful to not get the people of Portland something more than just a way to pass through a giant monolithic ugly condo development - we have an opportunity to get and do more for the city: let's, please. Everyone loves to heap praise on Portland's "working waterfront" - sure, I'm happy that there are jobs and that industry of one kind or another is still here, but the waterfront area is exactly that: *working*. It's not exactly filled with many places to go and sit and relax and enjoy the space near the waterfront. If the Planning Board is interested in turning this formerly industrial/commercial area into a true mix use area that supports residents, then let's create the space for that to happen.

On the recently developed Brooklyn waterfront, condo buildings were only allowed if the developers not only kept public access to the water, but enhanced and developed it. Perhaps that could serve as an example.

Thank you for taking the time to read this and to take my points into consideration as you work with the developer on this project.

regards,
-Sam Kilbreth

Fishermen & Lobstermen
of Portland, Maine
July 8, 2017

Elizabeth Boepple, Chair
City of Portland, Planning Board
389 Congress Street
Portland, Maine 04101

Dear Madam Chair and Board Members:

There are at least four proposed developments which will have an impact on the working waterfront. Those four are 58 Fore Street, 184 Commercial Street, Proprietors of Union Wharf, and Reger Dasco Properties at the Rufus Deering Lumber Yard.

It is apparent to the lobsterfishermen of Portland that the day to day business on Commercial Street is becoming more difficult with the increase in vehicular and pedestrian traffic; the fisherman feel with these

The very life blood of Portland will cease to flow if these developments are allowed to happen.

No new offices, condominiums or hotels must ever be allowed on the wharf side of Commercial Street, if the infrastructure of the maritime trade is to continue to exist.

You can go anywhere in America and see cheap hotels made of plastic and glass or Condominiums pushed to the edge of the sea but nowhere in America can you see little wharves built in the 17 and 18 hundreds, working daily to provide jobs and food for the people of Maine and this Country.

We have talked to lobster, groundfish and herring boats the last two weeks on these issues and they have all signed in agreement with these thoughts. We have also collected information about the direct economic impact of these fisheries. It is attached.

Sincerely,
The Lobstermen & Fishermen of
Portland, Maine
July 8, 2017

Lobster

A cursory presentation of the number of boats and gross stock of the boats by wharves in Portland

	Number of Boats	
Maine Wharf	4	30
Custom House Wharf	11	<u>X \$150,000</u>
Portland Pier	9	<u>\$4,500,000</u>
Dimillos	2	
Widgery Wharf	12	
Union Wharf	12	
Merchants Wharf	6	
Hobsons Wharf	10	
Gowens Wharf	2	
Holyoke Wharf	6	
Sturtivants Wharf	5	
Deakes Wharf	<u>5</u>	

Island based boats, with their catch collected by smacks which are based in Portland. Their trucks have to move along Commercial St. to

84 boats
X \$150,000
 \$12,600,000 + \$4,500,000 Projected gross value

Bait

Herring Boats - 12 to 15 weeks

4,000,000 lbs. weekly at 60¢/lb = \$2,400,000/wk
X 12-15 wks

Pogey Boats

\$36,000,000/yr.

5,000,000 annually at 25¢/lb

\$2,500,000/yr

Bait, over the road

Emskip

Boston

New Jersey

Virginia

as high as 10X more

80,000,000/yr

total \$141,000,000/yr
moving over Commercial St.

Ground fish from Portland Fish Exchange

Approx \$15,000,000 from Director

All of which has to move over Commercial Street,

Ground Fish	\$ 15,000 000
Lobster total	\$ 17,000,000
Herring	\$ 36,000 000
Pogey	\$ 2,500,000
over the road bait	\$ 80,000,000
	\$ 150,000,000

and we left out the Douty
• Reedy Bros. who truck
the majority of the
lobsters over the road

X 6 economic multiplier
to estimate full
economic impact of
industry - workers,
income, fuel, ice, repair
etc

Name

Boat or Affiliation

Harold Stewart
George Anderson
David Burns

Ian Shockey
Eric H. Wynn ———— Erichymur
John St. Clair
Kevin Gilbert
Kevin Cullbert
Kevin Foley
Dennis Foley
in Vals

Donna Elaine
Donna Elaine
Moira O'hare
Moira O'hare
Moira O'hare
Eric Maine Responder
Maine Responder
Maine Responder
Maine Responder
Custom House Wharf

Name
Ziggy

W. Allen

~~gary~~

Brian Skillings
Zachary Gallant

Scott Logge
(Scott Logge)

Scott Logge

Jon & Patti

Pat & Pat

Kimberley & Tucker

JD Hall

Dan & Hobbs

Daphne Cunningham

Chris Jones

David Violet

Boat or Affiliation
HAYLEY G 807 228
Billy + Andy

Endurance

Billy and Andy -
BILLY AND ANNY

Frank Street
F/V Nancy J.

Heather Marie

Kimberley, J
Kimberley J

STELLA - MAREN

STELLA MAREN

F/V BENJAMIN & ROBERT

MISS CADENCE

David Violet
maie maie Supply

Name

Boat or Affiliation

NICK PELLECHIA

ANDREW PELLECHIA

→ F/V SHOTGUN RIDER
(LOBSTER)

Rocky Alley

→ F/V Miss Carmen

Phil Black

→ F/V Black Pearl

Deborah B. June

→ F/V Deborah + Megan II

Clay Gilbert

→ F/V Elizabeth Jane

Charles Smith

→ F/V Sandy Rose

Don H. Sullivan

MAINE LOBSTERING UNION

Jul A. Piche

Maine Lobstering Union

DD

Thorfinn Olaf

McCann

Call the Island

Is Bitt

No mail

Gray P. Turner

Deborah & Megan II

Clay Turner

Deborah & Megan II

off

Deborah & Megan

J. D.

DEBORAH & MEGAN

Name	Boat or Affiliation
Keith Lane	F/V KESTREL CUSTOM HOUSE WHF.
Tollet Olson	Oceans Balance, Inc.
Richard A. Holt	F/V Long bow of
Richard A. Holt	F/V Hilina FENCES
ERIK PRAT Erin Pratt	F/V LADY CATHERINE
Margaret Olson	BMC-INC/Pass Varsity
Lee Olson	F/V Alice O
Scott Hiltredge	F/V NEWMENON
Craig A. Whitton	F/V Astaco AMANTE
JD Hahn	F/V STELLA MARENI
David Sumrell	Freedom Fish
Jeff Amuller	S/V GREBE

Name

Lee MacVane

~~Lee MacVane~~

T. Lovington Johnson

Michael Libby

Victor Kain

JEDIDIAH T. SPAR

Harry C. Popple

~~Paul D. Dwyer~~

Wendell Harman

Craig Ford

L. R. R. H.

~~Michael J. H.~~

Juli Bug

James O'Brien

Phil Dyl

Boat or Affiliation

Dominator

Katie Sean

HARD SUMMER TIDE

Ann Elizabeth

MISTY DAWN II

SEACAST ELECTRIC-PORTLAND

COASTAL BAY INC

F/V Deje Vu II

F/V Carl + Co

F/V Bad Company

Vessel Services

Vessel Services

Vessel Services

Vessel Services

+ PFS

Atlantic Trawlers

CASCO BAY WELDING

Willis M. Spear III (Obie)

Marshall Spear

Michael Davis

AARON comen

Adam Libby

Mark A. Leland

Shawn Loh

SCOTT WENGER

Matthew Moretti

Doreen H. Vane

Rose Marie Vane

Laurel Vane

D. E. T. (Daniel E. Train)

B. S. D. T. (Bailey D. Train)

Darrel J. Train

Don Shockey

Jim J. J. J.

F/V Old Speck

F/V Tenacious

F/V Newfie Star

S/V JACANA

F/V Protector

F/V PROVIDOR

F/V Rising Tide

F/V Hockey B. Racer

F/V Alexander Mace

F/V ALPHEAN

Wild Ocean Aquaculture /
Bangs Island Mussel /
Carol

Alison Eva

Alison Eva

F/V Moira Bay

F/V Moira Bay

Moira O'hare

Moira O'hare

Moira O'hare

Eastern Lady



Memorandum Planning and Urban Development Department Planning Division

To: Chair Boepple and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: November 9, 2017

Re: **November 14th 2017 Planning Board Hearing**
Level III Zoning Map Amendment Ilb to B1b
233 Anderson Street

CBL: 010 A040001 - Project #: 2017-170
2 Walnut LLC, Applicant

This item is listed as the first item for the Planning Board hearing and the following advertisement was circulated two weeks ago in accordance with the ordinance requirements; the area included in the advertisement was as advised by the Board:

To Residents and Property Owners: The Portland Planning Board will hold a public hearing to consider a zoning map amendment application by 2 Walnut, LLC. to change the zoning in the vicinity of 233 Anderson Street from Low Impact Industrial (I-Lb) to Neighborhood Business (B1b). The current zoning for the applicant's vacant lot is split between the two zones and the applicant is seeking to have the entire parcel under the B-1b designation in order to develop a mixed-use development (potentially including multi-family). The proposed map amendment to B-1b includes a portion of City owned property adjoining the site on Anderson Street. Public comments will be taken at this meeting and written comments should be submitted to planningboard@portlandmaine.gov



Staff recommend that the Planning Board table this item to the date certain of December 6, 2017 7pm because the applicant was unable to hold the required Neighborhood Meeting within the timeframe specified in the Ordinance ie 7 days before the hearing.



PLANNING BOARD REPORT PORTLAND, MAINE

The Children's Museum and Theater of Maine at Thompson's Point
Level III Site Plan Review

2017-074

Children's Museum and Theater of Maine and Forefront Partners I, LP

Submitted to: Portland Planning Board Public Hearing Date: November 14, 2017	Prepared by: Shukria Wiar, Planner Date: November 9, 2017
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I. INTRODUCTION

Children's Museum and Theater of Maine and Forefront Partners I, LP, co applicants, has requested a Level III site plan review for a construction of a multistory Children's Museum and Theater of Maine (CMTM) building with associated parking, utilities and stormwater management. The project includes the development of Lot 7 of the previously approved Forefront at Thompson's Point Subdivision Plan at Thompsons' Point that will house the CMTM building. The development also includes a loop access road that will extend from between southwest corner of Brick South

around the CMTM site and connect to the access drive on the north side of Brick North. The total development area consists of 1.12 acres. The site's approved master development plan called for cultural center development on this site. A time line of the multiple prior approvals for this site is below as background information.

The applicant is seeking the Board's approval of a final plan submission. A workshop was not held for this item.

This development is being referred to the Planning Board for compliance with the site plan standards. The project is also subject to the B-5 and B-5b Urban Commercial Business Zones standards in the City's Design Manual, which addresses shared infrastructure, the location of buildings to the street, and location of parking lots. A total of 283 notices were sent to property owners within 500 feet of the site and a legal ad ran in the Portland Press Herald on November 6th and 7th, 2017.



Applicant: Children's Museum and Theater of Maine and Chris Thompson, Forefront Partners I, LP
Consultants: Stephen Bushey, P.E., Stantec and Bo Kennedy, P.E., Fay, Spofford & Thorndike; Charlie Marchese, Surveyor, Sebago Technics, Inc.; Greg Russell, Architect, Bruner/Cott & Associates, Inc.; Jennifer Brook and Lemon Brooke, Landscape Architect

II. REQUIRED REVIEWS

Review	Applicable Standards
Site Plan	Section 14-526
Design Review	B-5 and B-5b Urban Commercial Business Zones Design Standards

III. PROJECT DATA

Existing Zoning	B-5
Existing Use	Vacant Lot
Proposed Use	Commercial and Public Use
Proposed Development Program	App. 29,000 SF of Cultural Center
Parcel Size	1.12 acres (32.67 acres for Thompson's Point)

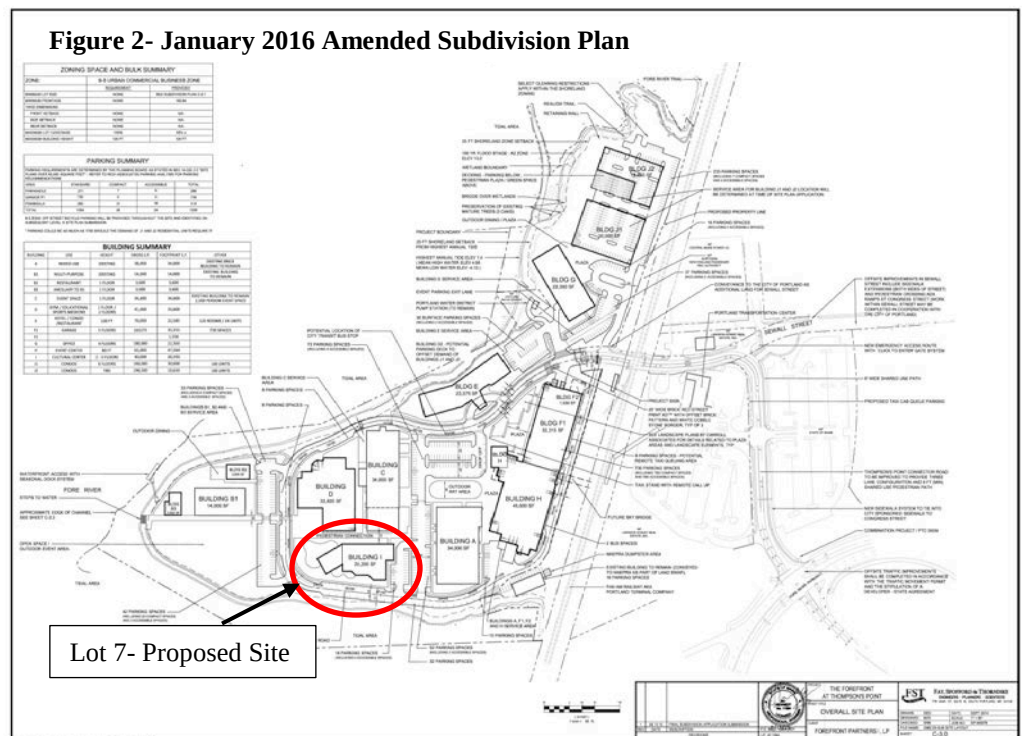
	Existing	Proposed	Net Change
Building Footprint	0 SF	9,682 SF	9,682 SF
Building Floor Area	0 SF	29,046 SF	29,046 SF
Impervious Surface Area	48,787 SF	30,492 SF	
Parking Spaces (on site)			
- Required for Development	None Required	18 (2 Handicapped)	18
- On the Proposed Loop Road	Unknown	64	64
Bicycle Parking Spaces	0	8	8
Estimated Cost of Project	\$10.5 Million		

**IV. BACKGROUND
(Christian Grimando,
Senior Planner)**

Thompson's Point consists of 30+ acres immediately adjacent to the Portland Transportation Center, on a peninsula of land that extends into the Fore River. It has been a continuously occupied industrial site, and in recent years has begun its transition to a mixed-use destination, hosting events at the southern tip of the peninsula and securing new tenants to support the redevelopment of the property. Bound by railroad tracks to the north, surrounded by the Fore River on three sides, it is currently occupied by existing

buildings, and a mixture of long term and temporary uses. The site also includes an extension of the Fore River trail. Zoned B-5 (urban commercial mixed-use zone), it is immediately adjacent to residential, industrial, business and resource protection zones. Its size, proximity to both the natural resource of the Fore River and the transit resources of the Portland Transportation Center, and its location at the intersection of a variety of urban contexts make this a unique development site in Portland.

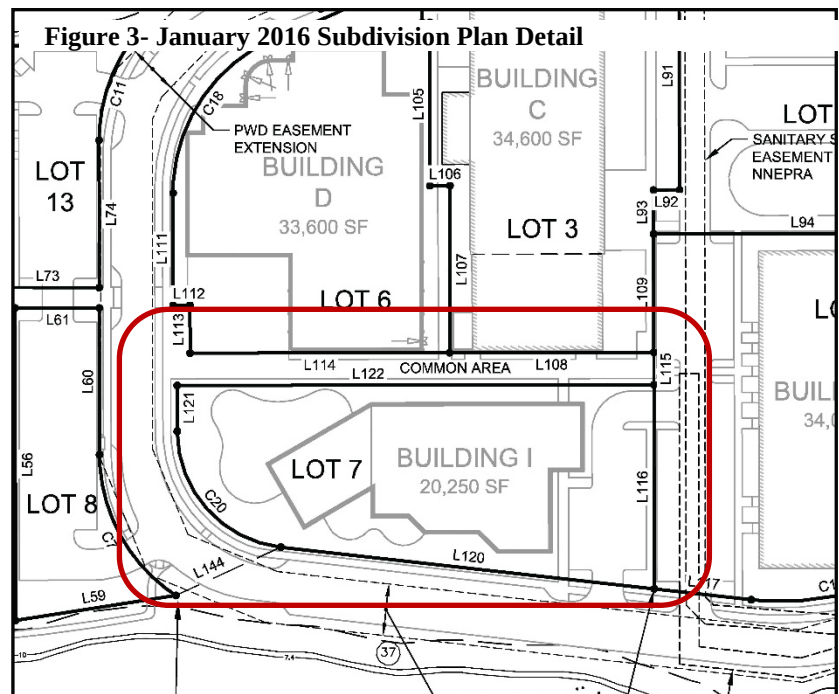
Thompson's Point has been the site of a number of approvals since an initial proposal in 2012. Initially, the site was approved for 600,000 square feet of a mix of uses as a Level III site plan and subdivision, but a Master



Development Plan (MDP) approval in March of 2014 reimagined the 30+ acre site, superseding a 2012 Level III site plan approval. The MDP approval established a cohesive development, allowing for multiple development phases over an extended time frame of six years, with possibilities for extension. An approval of a MDP requires subsequent site plan and subdivision applications with specific construction proposals towards fulfillment of the overarching approval.

The 2014 MDP approved a host of different uses, consistent with the B-5 zone, including: office, restaurant, retail, educational and cultural uses, an event center, gym and medical office, outdoor stage, boat launch, hotel, parking garage, and residential condominiums. A revised overall site plan and subdivision plan was approved by the Planning Board in January 2016, and depicts the most recent site layout, which didn't alter MDP approved uses, total parking, overall site circulation configuration or permitted total square feet of building area. The area proposed for the Children's Museum has shown a building and parking, with a cultural center, since the 2014 approval and in the most recent site plan and subdivision approval. The B-5 zone allows for museums, theaters, educational uses, and places of assembly, all of which fit under the umbrella of *cultural center*, and all of which are anticipated in the range of uses included in the approval for Thompson's Point.

The MDP approval is meant to provide a flexible framework for larger sites to develop over multiple phases and multiple years, and is not intended to conclusively fix locations of buildings or locations of uses within the site. The layout approved in the MDP is important for understanding of site plan intent and impacts, including those related to site circulation, infrastructure, stormwater management, and initial design concepts, but the need for submission of site plans for each phase of development assures that the particulars of each will be reviewed under full site plan standards, and reviewed for overall consistency with the MDP. The proposed building and the configuration of parking on lot 7 is consistent with the MDP approval in use, building location, and general site configuration and circulation.



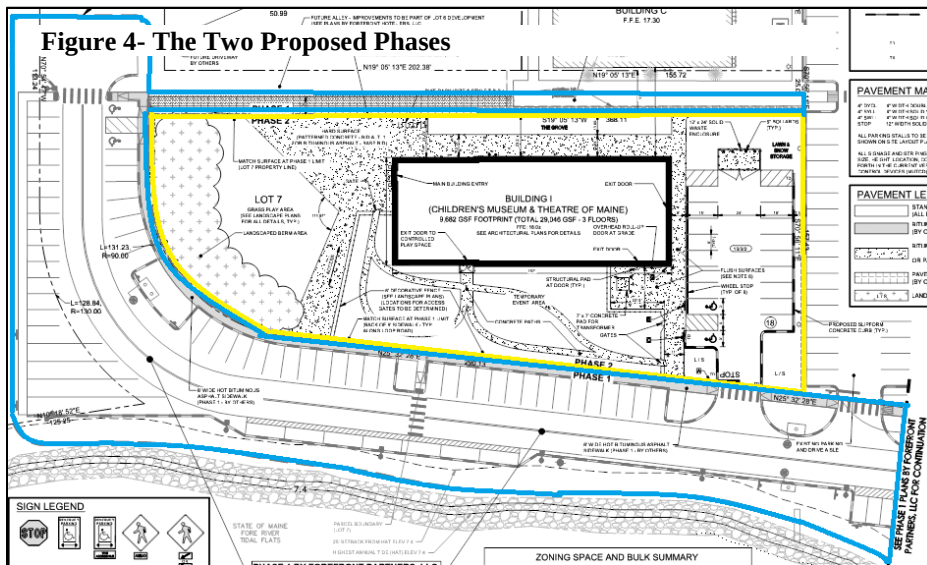
those related to site circulation, infrastructure, stormwater management, and initial design concepts, but the need for submission of site plans for each phase of development assures that the particulars of each will be reviewed under full site plan standards, and reviewed for overall consistency with the MDP. The proposed building and the configuration of parking on lot 7 is consistent with the MDP approval in use, building location, and general site configuration and circulation.

V. EXISTING CONDITIONS

The CMTM project parcel is designated as Lot 7 on the approved Subdivision Plat (Plan1). The total site area is 1.12 acres (48,958 SF) and currently vacant, open lot. The site is bordered by a parking lot associated with the Brick North building to the north and to the west of the site, Brick South and future development (Lot 6) is located. The depot and concert grounds are located to the south. To the site's east side, the proposed loop road, parking, and yard area to the Fore River are located to.

VI. PROPOSED DEVELOPMENT

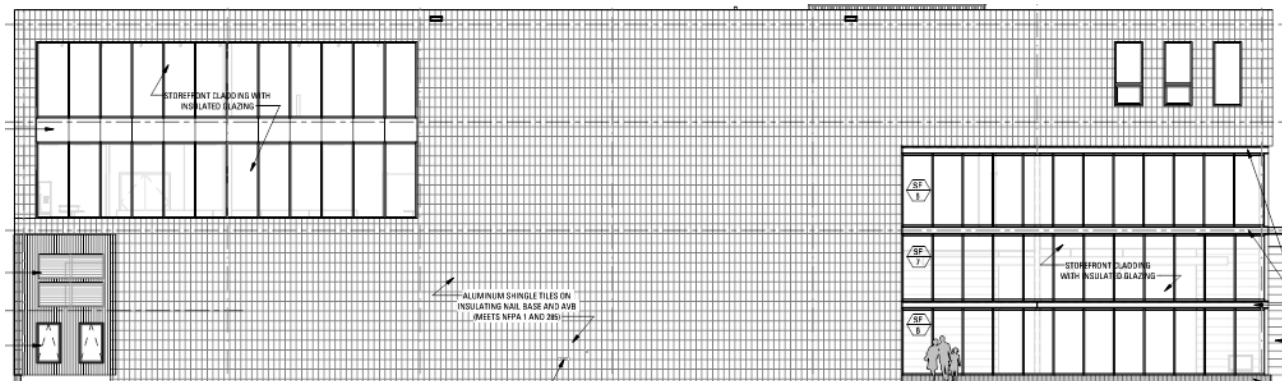
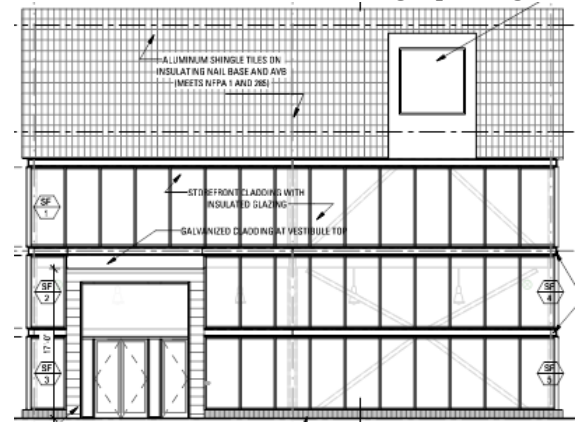
The development will consist of Children's Museum & Theatre of Maine building construction with associated parking lot and construction of a road. The applicant is proposing to develop the lot in two phases. Phase One will be completed by Forefront Partners I, LP and will consist of construction of the loop access road that will extend from between southwest corner of Brick South around the CMTM site and connect to the access drive on the north side of Brick North. This loop road, as well as the accompanying utility development, will be utilized by the Lot 7 development associated with the CMTM as well as the overall site redevelopment planning. The road is to be a continuation of the private road on Thompson's Point.



Phase Two will consist of the development of a Children's Museum & Theatre of Maine Building. A "Cultural Center", non-profit entity at Lot 7 has been envisioned in the Thompson's Point Master Plan. The site plan includes a 9,682 SF building with a roughly 20,000 SF open space area and onsite parking for 18 vehicles near the building. The development will also include new parking area, utilities including water, sanitary, drainage, power, and/or communications extensions, and landscaping.

The site layout is consistent with the overall master development plan approval – it is generally consistent with the approved layout of buildings, circulation infrastructure, open spaces, and uses, cumulative lot coverage, parking and circulation. The overall proposed site circulation remains closely aligned to the originally approved master development plan.

CMTM is proposing a three-story building with the main entrance is oriented to the plaza. The building's placed away from the road, with the pedestrian pathways and children's play area in the front and side of the building. Below are the elevations of the proposed building.



VII. PUBLIC COMMENT

No comments have been received to date. A neighborhood meeting was held on May 25, 2017 at Brick South Building and approximately six to eight members of the public attended ([Attachment T](#)).

VIII. RIGHT, TITLE, & INTEREST

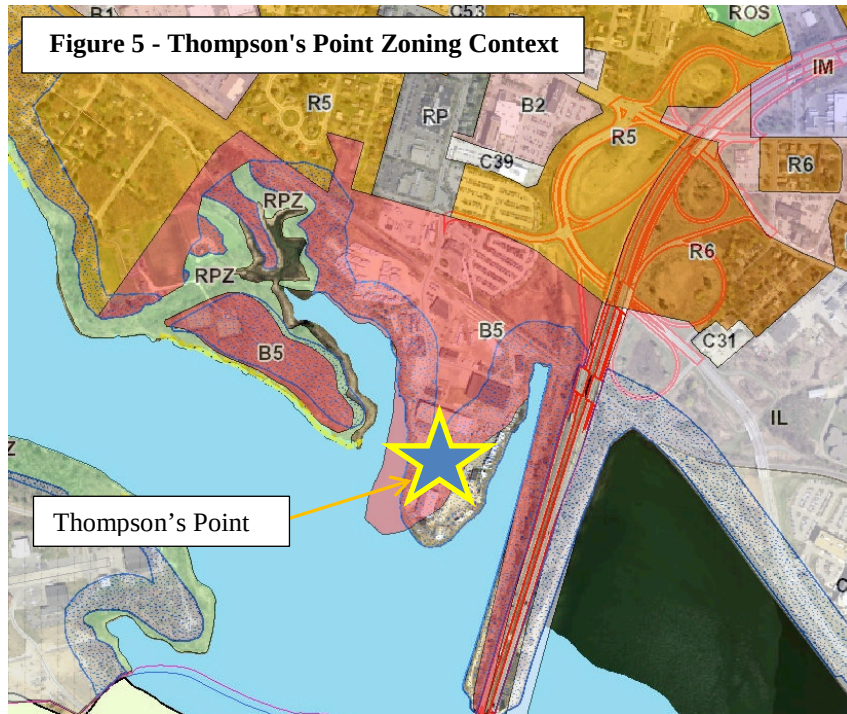
The applicant has provided a Purchase and Sale Agreement, dated 01.7.2016 as evidence of Right, Title & Interest in [Attachment 6](#).

IX. FINANCIAL & TECHNICAL CAPACITY

A financial letter from Gorham Savings Bank, dated 10.06.2017, attesting to the Children's Museum and Theater of Maine's ability to complete the project.

X. ZONING ANALYSIS

Thompson's Point lies in the B-5 zone, and is also subject to shoreland and floodplain regulations under the city's land use code. The application complies with floodplain and shoreland requirements. The building is not in the



floodplain. Shoreland setbacks are a required minimum 25' for structures from the annual mean high tide line. There are areas on the site plan where the road hugs the 25' line, on the allowable side of that boundary; the proposed activity meets shoreland requirements.

The project meets the requirements of the B-5 zone use and dimensional standards. The B-5 zone allows for a wide range of commercial and mixed uses, and encourages urban patterns of development. There are no lot coverage limits or applicable setbacks in the B-5, and there is a height limit of 120 feet. The proposed building has an average height of 46'2". Due to the close proximity to Portland Jetport, a confirmation from the Federal Aviation Administration that the proposed

building height Children's Museum meets their standards.

XI. SITE PLAN REVIEW

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

Transportation Standards

1. Impact on Surrounding Street Systems

As part of the overall master plan for the Point, a traffic movement permit was obtained to address impacts on the surrounding street systems. The master plan also has an approved Transportation Demand Management Plan (TDM) for managing and reducing traffic trips and parking demand. Included in the applicant's application is an update to the approved Transportation Demand Management. A number of improvements to the surrounding street system have been completed on the Point since the approval of the master plan, thus creating ample conditions to allow the Lot 7 site development to proceed.

Tom Errico, Consultant Traffic Engineer, has reviewed the TMP and states:

The applicant has provided a trip generation summary and new traffic generated by the Children's Museum will not exceed trip levels associated with the MaineDOT Traffic Movement Permit. I would note that the City will require a trip generation study to document actual trip generating characteristics of existing land uses in the near future. This will occur at a time when development activity approaches Permit trip threshold volumes.

2. Access and Circulation

a. Site Access and Circulation.

Thompson's Point's relatively isolated peninsula geography has provided access challenges for this site, off-set by its access to multiple forms of transit served at the Portland Transportation Center. As

part of the master plan for the Point, there has been extensive coordination between the applicant and the City of Portland to establish a safe and efficient system for all users. Served by Thompson's Point Connector Road, the approved master plan provides for vehicle, transit, bicycle and pedestrian access. The co-applicant Forefront has worked previously with fire safety and City officials to produce an access and circulation that is easy and safe for all vehicular and pedestrian users for the overall site.

The project phases have been reviewed, each evaluated for compliance with the approved master development plan. Mr. Errico's finds the current application generally acceptable, but needing some further refinement regarding the crosswalks:

Given the importance of understanding the soon to be reviewed site plan for the abutting Hotel project on Lot 6, it is recommended that evaluation and final design of the subject crosswalk be considered as part of the Hotel project approval. City staff does have concerns regarding pedestrian routing in front of Lot 6 and the Hotel pick-up/drop-off area. A comprehensive review in conjunction with the Hotel site plan would inform the best and safest outcome.

b. Loading and Servicing

Formal loading docks have not been proposed for the site plan, but a service area has been designated on the rear side of the proposed building; this will allow CMTM to utilize the area for movement of exhibits or event support equipment, delivery vehicles, etc.

c. Sidewalks

Sidewalks are proposed to at eight feet and on one side of the new road (Plans 4 and 23). The site will also be connected to the pedestrian alley between the site and Brick South and the future hotel building to the west. Overall site circulation includes sidewalks, crosswalks and trail connections throughout Lot 7 and the entire Thompson's Point site.

3. *Public Transit Access*

The development is served by the existing transit service at Portland Transportation Center. There is no additional transit facility included as part of this site plan.

4. *Parking*

a. *Location and number of parking spaces*

A surface parking lot with eighteen (18) spaces is part of the proposed CMTM development, which will be staff and patrons. Also with this parking lot, a total of 64 on-street parking spaces will also be provided along the new loop street. The overall site layout contains an adequate number of parking spaces, meeting the City's dimensional requirements. Mr. Errico's traffic and parking review provided the following comments on the parking analysis that accompanied the site plan application:

The seven parallel parking spaces on the roadway will not provide vehicle access for passengers. The plans should be revised accordingly.

Status: The applicant has noted that the condition is similar to a standard City Street that includes a grass esplanade and no changes have been incorporated. I would note that most City streets provide a sidewalk abutting a grass esplanade for safe pedestrian movements. The proposed parking spaces do not provide a safe facility for passenger side pedestrians and a side slope to the water is nearby. Staff continues to be concerned about the current design as it relates to pedestrian safety.

b. *Location and number of bicycle parking*

Four bicycle spaces are required at this stage, with eight being provided by the applicant, will be located nearby the CMTM entrances at both the south and north ends of the building.

c. *Transportation Demand Management*

A Transportation Demand Management (TDM) Plan was approved in September 2011 and reapproved as part of the Point's Master Development Plan; and an amendment to the TDM was completed in November of 2015. As part of the application, Forefront Partners and CMTM has submitted an update to the approved Transportation Demand Management. In regard to the TDM, Mr. Errico has the following comment:

The applicant has submitted a Micro TDM Plan for the Children's Museum and I find the Plan to be acceptable. I would note that the overall Site TDM and Traffic Management Plan shall be revisited for determining if adjustments/alterations are required. Given that the Children's Museum TDM Plan can generally function independently, it is suggested that the Overall TDM Plan be reviewed during the Hotel project application.

d. *Construction Management Plan*

A write up of the construction management plan has been submitted at part of the application but there is not site plan associated with it. Mr. Errico has requested that:

The applicant has provided a construction management plan for Children's Museum only. A plan shall also be provided for the construction of the roadway. In general, given that the site is generally contained, I do not expect issues. The applicant should specifically note how the active construction site will be managed when large events are scheduled. Specifically, how will vehicles and pedestrians be managed during these events.

Environmental Quality Standards

1. *Preservation of Significant Natural Features*

Preservation of significant natural features is being met through maintaining a 25' buffer from the annual mean high tide, as required by shoreland regulations.

2. *Landscaping and Landscape Preservation*

This lot is a vacant site with no existing vegetation. Landscaped berms and tree groves are proposed as part of the development. The City Arborist has reviewed the proposed landscape plan (Plans 21 and 22), and is ultimately satisfied with the landscaping but would like to see the island in the on-street parking to be landscaped (Attachment 3).

3. *Water Quality/Storm Water Management/Erosion Control*

The site is currently almost entirely impervious, with no stormwater treatment. There was an overall stormwater management plan that has been reviewed and approved for the Point site as a whole. The applicant has submitted a stormwater management and erosion control plan for this site and meets City's standards as outlined in Section 5 of the Technical Manual, as well as the standards required by the MaineDEP Site Location and Development Permit.

Lauren Swett, Consultant Civil Engineer, commented in her peer review of the revisions presented are acceptable, with the following additional comments:

- a) *Basic Standard: Plans, notes, and details for the CMTM site have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.*
 - *No filter barrier locations have been proposed for the CMTM site. We understand that this will need to be coordinated with the road construction. A separate plan for ESC features for the road construction should be provided.*
- b) *General Standard: The project is being completed as part of an overall Master Development Plan and Subdivision Plan, which originally included detailed stormwater management plans. Some minor modifications have been made to the proposed stormwater treatment system from the original approved plan, but adequate treatment will be provided by the proposed system.*
 - *The Stormwater Management report notes that treatment calculations for the Jellyfish treatment system will be submitted under separate cover. These should be provided, as well as the Filterra and Stormtech chamber sizing for the road. We anticipate that the*

Applicant has been working directly with the manufacturer on the sizing calculations, but they should verify that the manufacturer has reviewed the current design.

- c) *Flooding Standard: The project area discharges to the Fore River, and as noted in previous reviews of the Master Development Plan and Subdivision Plan, the project has received a waiver form complying with the Flooding Standard. The proposed project does not result in any changes that would impact the previous waiver approval.*

Ms. Swett also comments on the stormwater impact on the entire Point's site:

The submitted documents are intended to be for both the Children's Museum & Theater of Maine (CMTM) and the adjacent road to be completed next to the CMTM. Some information shared between the two projects is shown on all plans, but other pieces of information are not. In addition, we understand that another project for an adjacent hotel has been submitted, and review will be starting soon. Some of the plans show portions of this project as well. For the purposes of inspection, and also for verification of potential conflicts, we recommend that a comprehensive plan be provided that shows all proposed features. Depending on the timing of construction, it may make sense for this set of plans to be developed as part of the hotel submission. This could also be done as an update to the Subdivision/Master Development plans. Beyond the plans, there should also be some clarification of ownership/responsibility on stormwater between the different projects. The specific items that we noted that could be further clarified include:

- a) Utilities – show the in-street utilities and the CMTM site utilities connecting on one plan. Some are shown together, but others are not (i.e. electric).*
- b) Erosion & Sedimentation Control – only ESC features for the CMTM site have been shown.*
- c) Stormwater treatment systems – the systems for treating the road and the CMTM are both located within the CMTM site, but are shown on separate plans.*
- d) Stormwater treatment area calculations – the plan table of treatment areas provided for the road specifically excludes the CMTM parcel. A separate table was provided in the stormwater management report that is for the CMTM, but does not include the road.*
- e) Stormwater O&M – ownership of all of the stormwater treatments systems on the site should be clarified. It is understood that different entities are constructing different components. Will the different components be maintained by one overall Thompson's Point owner?*

With the exception of necessary stormwater discharges, all structures and paved surfaces will be set 25 feet back from high water at the shoreline, as consistent with Shoreland Zoning regulations.

Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

b. Public Safety and Fire Prevention

The proposal has been reviewed for public safety and fire prevention, and has been found to allow for emergency response vehicles to move around all areas of the site. It provides for new and existing fire hydrants. A review of fire protection provisions for the site, have been submitted and meets the public safety requirements for the site.

c. Availability and Capacity of Public Utilities

The applicant has not provided letters indicating the capacity to serve for water, sewer, gas, and power. All utility work has been reviewed with conformance with the city's Technical Manual, including all stormwater management standards. Trash will be stored in dumpsters, eventually to be served by a contracted waste management company.

Site Design Standards

1. Massing, Ventilation, and Wind Impact

These standards are concerned primarily with bulk, location, or height of buildings incurring health, safety, unsafe wind conditions, and direct impact of buildings on abutters. Since the site is private and the proposed buildings do not have direct abutters, these standards are not applicable to this site.

2. *Shadows*

As in the massing standards in 1, above, these standards are concerned with impacts on direct abutters, and are not applicable.

3. *Snow and Ice Loading*

On-site snow storage will be accommodated along the perimeter of the site, as well as limited snow storage along the west end of the parking areas. In addition, there will be snow removal and off-site disposal.

4. *View Corridors*

This standard is in regard to impacts on public view corridors, and is not applicable.

5. *Historic Resources*

The property is not in an historic district, and contains no designated landmarks. There are no known archeological resources on site.

6. *Exterior Lighting*

Lighting information has been submitted as Attachment 14 and are consistent to the fixtures previously approved. The proposed lighting will all be full cutoff. The applicant will need to submit a photometric plan for review and approval by the Planning Authority.

7. *Noise and Vibration*

The proposal does not anticipate exceeding current noise levels for the permanent uses on the site.

8. *Signage and Wayfinding*

All signage being proposed will be reviewed and approved by the Department of Public Works separately. The applicant will need separate permits from DPW.

9. *Zoning-Related Design Standards*

Zoning-related design standards encourage dense, mixed-use development, and attractive pedestrian environments. The Design Manual standards for the B-5 zone encourages shared circulation, parking and transportation infrastructure wherever possible, and several standards for building orientation towards public streets. Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, Nell Donaldson, Senior Planner reviewed the project against design standards. Ms. Cameron has found the proposal to be in general compliance, however, there is recommended improvement under a couple of the standards have not been met. Excerpt from Ms. Cameron memo is below:

Standard (1) a. Shared Infrastructure – The project will share a pedestrian walkway, sidewalks, and new road and on-street parking with surrounding developments of Thompson's Point. However, the new surface parking lot proposed with a separate curb cut does not meet this standard. See applicant's response regarding the practical considerations and rationale for this decision not to share the parking infrastructure. The standard does say "to the extent practicable" and therefore the design review defers to the traffic review recommendations, the practical needs of the applicant, and the Planning Board's opinion. The road at the Children's Museum is a private road.

Standard (1) c. Buildings shall be oriented toward the street . . . – The building, though approached from all sides, is designed to be directional and is somewhat oriented towards the new street. The street-facing or primary façade includes a prominent entry and windows. However, the building is set back quite a distance from the street – the applicant has made the decision to orient the building to the internal, pedestrian alley rather than the vehicular street.

XIV. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the planning board approve the proposed subdivision and site plan for the Children's Museum and Theater of Maine at Thompson's Point.

XVI. PROPOSED MOTIONS**A. DEVELOPMENT REVIEW**

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on November 14, 2017 for application 2017-074 relevant to the site plan regulations; and the testimony presented at the planning board hearing, the planning board finds that the plan **is/is not** in conformance with the site plan standards of the land use code, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. The applicant shall provide a full construction management plan for review and approval by the Planning Authority and Department of Public Works; and
2. The applicant shall submit a confirmation from Federal Aviation Administration that the proposed building height is acceptable; and
3. The landscaping plan shall be revised to show street trees and landscaping on the bump-out areas on the proposed loop road. The tree types shall be consistent to the overall Thompson's Point Master Plan landscaping plan; and
4. The developer/contractor/subcontractor must comply with conditions of the construction stormwater management plan and sediment and erosion control plan based on City standards and state guidelines. 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. A maintenance agreement for the stormwater drainage system, as attached, or in substantially the same form, shall be submitted for review by Corporation Counsel. Once approved, the document shall be signed and recorded at the Cumberland County Registry of Deeds prior to the issuance of a building permit. Please submit final copies to both the Department of Planning and Urban Development and the Department of Public Works; and
5. The applicant shall submit a Photometric Plan to be reviewed and approved by the Planning Authority; and
6. The applicants shall submit a comprehensive, final site plan set showing all proposed features, as stated in Lauren Swett's memorandum dated 11.09.2017; and
7. The final design of the roadway and pedestrian crosswalk, near the westerly limits, shall be conducted in conjunction with the Hotel project application (Lot 6), to be reviewed and approved by the Department of Public Works and Planning Authority, in order to provide the best and safest outcome; and
8. The overall Site TDM and Traffic Management Plan shall be reviewed and compared to existing conditions for determining if adjustments/alterations are required. A comprehensive revised TDM and Traffic Management Plan shall be prepared in conjunction with the Hotel project application (Lot 6).

XVII. ATTACHMENTS**PLANNING BOARD REPORT ATTACHMENTS**

1. Traffic Engineer Reviews, dated 11.08.2017
2. Civil Engineer Review, dated 11.09.2017
3. City Arborist Review, dated 11.09.2017
4. Urban Designer Review, dated 11.08.2017
5. Fire Department, dated 08.17.2017

APPLICANT'S SUBMITTALS

- A. 2017.11.07 Phase 1 LOR 1
- B. lor_1_wiar_20170802_final
- C. Lor_1_wiar_20170802_final
- D. Cover letter & application
- E. Sec 1_development description
- F. Sec 2_title, right & interest
- G. Section 3_state & federal permits
- H. Section 4_conformance zoning standards
- I. Section 5_easements
- J. Section 6 tech & financial capacity
- K. Section 7_construction management plan
- L. Section 8-traffic & parking
- M. Section 9_natural features
- N. Section 10_stormwater management
- O. Section 11_utilities
- P. Section 12_solid waste
- Q. Section 13_fire safety
- R. Section 14_conformity design standards
- S. Section 15_hvac
- T. Neighborhood Meeting Packet

PLANS

- PLAN 1 C-1.0_cover_sheet
- PLAN 2 C-1.1_general_notes_and_legend
- PLAN 3 C-2.0_existing_conditions_and_removals
- PLAN 4 C-3.0_site_layout_plan
- PLAN 5 C-4.0_utility_plan
- PLAN 6 C-5.0_grading_and_drainage_plan
- PLAN 7 C-5.1_stormwater_management_plan
- PLAN 8 C-6.0_erosion_control_plan
- PLAN 9 C-7.0_stormwater_details
- PLAN 10 C-8.0_pavement_sections_and_sidewalk_details
- PLAN 11 C-8.1_curbing_and_sidewalk_details
- PLAN 12 C-8.2_parking_and_traffic_control_details
- PLAN 13 C-8.3_storm_drain_details
- PLAN 14 C-8.4_storm_drain_and_sanitary_sewer_details
- PLAN 15 C-8.5_erosion_and_sediment_control_details
- PLAN 16 C-8.6_erosion_and_sediment_control_details
- PLAN 17 C-8.7_erosion_and_sediment_control_details
- PLAN 18 C-8.8_water_service_details
- PLAN 19 C-9.0_fire_safety_compliance_plan
- PLAN 20 G-100_code summary plans & sections
- PLAN 21 L-001_landscape site plan
- PLAN 22 L-002_landscape site details
- PLAN 23 Phase 1 c-3.0 site layout plan
- PLAN 24 Phase 1 c-4.0 utility plan
- PLAN 25 Phase 1 c-5.0 grading plan
- PLAN 26 Phase 1 c-5.1 stormwater management plan
- PLAN 27 Phase 1 c-5.2 stormwater management plan – 2
- PLAN 28 Phase 1 c-8.8 typical sections
- PLAN 29 Phase 1 c-11.0 water profiles
- PLAN 30 Phase 1 c-14.0 access drive profiles
- PLAN 31 Phase 1 l-1.0 landscape plan CMTM

PLAN 32 A-101_1st floor plan & mech mezzanine
PLAN 33 A-102_2nd floor plan
PLAN 34 A-103_3rd floor plan
PLAN 35 A-104_roof plan
PLAN 36 A-300 north, south, west elevation
PLAN 37 A-301 east elevation



Shukria Wiar <shukriaw@portlandmaine.gov>

Thompson's Point - Children's Museum - Final Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com>

Thu, Nov 9, 2017 at 8:22 AM

To: "Shukria Wiar (shukriaw@portlandmaine.gov)" <shukriaw@portlandmaine.gov>

Cc: Katherine Earley <kas@portlandmaine.gov>, "Keith Gray, PE (kgray@portlandmaine.gov)" <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>

Hi Shukria – the following summarizes a status update of my initial comments dated August 30, 2017 and the following represents my Final Traffic Comments.

- The plans should depict actual existing conditions.

Status: The plans have been revised to reasonably reflect existing conditions. I have no further comment.

- The project should specifically summarize what projects are being constructed as part of the application (e.g. the roadway and the museum site).

Status: The application notes that it is a joint application and is proposed as two phases. I have no further comment.

- Vehicles will overhang and encroach onto the sidewalk. It is suggested that a landscape strip (or a wider sidewalk) be added to ensure the sidewalk is not blocked.

Status: The plans have been revised to include an 8-foot sidewalk. I find this width to be acceptable and therefore I have no further comment.

- The seven parallel parking spaces on the roadway will not provide vehicle access for passengers. The plans should be revised accordingly.

Status: The applicant has noted that the condition is similar to a standard City Street that includes a grass esplanade and no changes to the plans have been incorporated. I would note that most City streets provide a sidewalk abutting a grass esplanade for safe pedestrian movements. The proposed parking spaces do not provide a safe facility for passenger side pedestrians and a side slope to the water is nearby. Staff continues to be concerned about the current design as it relates to pedestrian safety.

- The crosswalk width across the roadway shall be 10 to 12 feet wide.

Status: Given the importance of understanding the soon to be reviewed site plan for the abutting Hotel project on Lot 6, it is recommended that evaluation and final design of the subject crosswalk be considered as part of the Hotel project approval. City staff does have concerns regarding pedestrian routing in front of Lot 6 in the area of the Hotel pick-up/drop-off area. A comprehensive review in conjunction with the Hotel site plan would inform the best and safest outcome.

- The applicant shall provide a trip generation summary as it relates to the Traffic Movement Permit and the current accounting of permitted trips for documentation purposes. Trip levels are not expected to exceed TMP limits.

Status: The applicant has provided a trip generation summary and new traffic generated by the Children's Museum will not exceed maximum trip levels associated with the MaineDOT Traffic Movement Permit. I would note that the City will require a trip generation study to document actual trip generating characteristics of existing land uses in the near future. This will occur at a time when development activity approaches TMP trip threshold volumes.

Additional Comments

- The City suggested that the bus parking spaces be designed with uniform dimensions. The applicant noted the use of this area for event truck access/parking and given site service requirements, I find the plan to be acceptable.
- The City suggested that the flush sidewalk in front of the bus parking spaces be raised similar to a typical sidewalk or protected with a barrier. The applicant noted the importance of this area for truck maneuvering into and out of the event stage area. Given this need, I find the plan to be acceptable.
- The applicant has submitted a Micro TDM Plan for the Children's Museum and I find the Plan to be acceptable. I would note that the overall Site TDM and Traffic Management Plan shall be revisited for determining if adjustments/alterations are required. Given that the Children's Museum TDM Plan can generally function independently, it is suggested that the Overall TDM Plan be reviewed during the Hotel project application.
- The applicant has noted that the proposed Children's Museum will generate a need for 50 to 60 parking spaces. Eighteen new parking spaces are dedicated to the Children's Museum with the remaining demand accommodated via new on-street parking spaces and in nearby parking lots. I find the proposed parking plan to be acceptable (I would note that the site will need to be managed – as they do now – during events).
- The applicant has provided a construction management plan for Children's Museum only. A plan shall also be provided for the construction of the roadway. In general, given that the site is contained, I do not expect issues. The applicant should specifically note how the active construction site will be managed when large events are scheduled. Specifically, how will vehicles and pedestrians be managed during these events.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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"One Vision, One Company"

MEMORANDUM



TO: Shukria Wiar, Planner
FROM: Lauren Swett, PE & Craig Sweet, EIT
DATE: November 9, 2017
RE: Children's Museum & Theatre of Maine of Thompson's Point, Level III Site Plan Application

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed development located at 7 Thompsons Point Road in Portland, Maine. The project involves the construction of the Children's Museum & Theatre of Maine building and associated parking as well as the construction of the adjacent roadway and associated utilities.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Application and attachments, dated October 12, 2017, prepared by Stantec Consulting Services Inc., on behalf of Children's Museum & Theatre of Maine & Forefront Partners I, LP.
- Engineering Plans, Sheets C-1.0, C-1.1, C-2.0, C-3.0, C-4.0, C-5.0, C-5.1, C-6.0, C-7.0, C-7.1, C-7.2, C-8.0, C-8.1, C-8.2, C-8.3, C-8.4, C-8.5, C-8.6, C-8.7, C-8.8, C-8.9, and C-9.0, dated October, 2017, prepared by Stantec Consulting Services Inc., on behalf of Children's Museum & Theatre of Maine & Forefront Partners I, LP.
- Architectural Plans, Sheet A-101, A-102, A-103, A-104, A-300, and A-301, dated March 31, 2017, prepared by Bruner/Cott, on behalf of Children's Museum & Theatre of Maine & Forefront Partners I, LP.

Comments

- 1) The submitted documents are intended to be for both the Children's Museum & Theater of Maine (CMTM) and the adjacent road to be completed next to the CMTM. Some information shared between the two projects is shown on all plans, but other pieces of information are not. In addition, we understand that another project for an adjacent hotel has been submitted, and review will be starting soon. Some of the plans show portions of this project as well. For the purposes of inspection, and also for verification of potential conflicts, we recommend that a comprehensive plan be provided that shows all proposed features. Depending on the timing of construction, it may make sense for this set of plans to be developed as part of the hotel submission. This could also be done as an update to the Subdivision/Master Development plans. Beyond the plans, there should also be some clarification of ownership/responsibility on stormwater between the different projects. The specific items that we noted that could be further clarified include:
 - a) Utilities – show the in-street utilities and the CMTM site utilities connecting on one plan. Some are shown together, but others are not (i.e. electric).
 - b) Erosion & Sedimentation Control – only ESC features for the CMTM site have been shown.
 - c) Stormwater treatment systems – the systems for treating the road and the CMTM are both located within the CMTM site, but are shown on separate plans.
 - d) Stormwater treatment area calculations – the plan table of treatment areas provided for the road specifically excludes the CMTM parcel. A separate table was provided in the stormwater management report that is for the CMTM, but does not include the road.
 - e) Stormwater O&M – ownership of all of the stormwater treatments systems on the site should be clarified. It is understood that different entities are constructing different components. Will the different components be maintained by one overall Thompson's Point owner?
- 2) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:



- a) Basic Standard: Plans, notes, and details for the CMTM site have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
 - No filter barrier locations have been proposed for the CMTM site. We understand that this will need to be coordinated with the road construction. A separate plan for ESC features for the road construction should be provided.
 - b) General Standard: The project is being completed as part of an overall Master Development Plan and Subdivision Plan, which originally included detailed stormwater management plans. Some minor modifications have been made to the proposed stormwater treatment system from the original approved plan, but adequate treatment will be provided by the proposed system.
 - The Stormwater Management report notes that treatment calculations for the Jellyfish treatment system will be submitted under separate cover. These should be provided, as well as the Filterterra and Stormtech chamber sizing for the road. We anticipate that the Applicant has been working directly with the manufacturer on the sizing calculations, but they should verify that the manufacturer has reviewed the current design.
 - c) Flooding Standard: The project area discharges to the Fore River, and as noted in previous reviews of the Master Development Plan and Subdivision Plan, the project has received a waiver form complying with the Flooding Standard. The proposed project does not result in any changes that would impact the previous waiver approval.
- 3) The Applicant has provided an inspection and maintenance plan for the stormwater systems proposed on the CMTM site. There appears to be an issue with some of the Appendices with some repeated sections. Also, the Maintenance Agreement provided references "The Forefront at Thompson's Point." Clarification of ownership and maintenance of all of the systems should be provided. As noted previously, clarification is needed on ownership of all of the systems.



Shukria Wiar <shukriaw@portlandmaine.gov>

Thompson's Point Children's Museum

Jeff Tarling <jst@portlandmaine.gov>

Thu, Nov 9, 2017 at 8:53 AM

To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hi Shukria -

In review of the revised landscape plan for the Childrens Museum, street trees in the bump-out areas would be a condition for the tree and landscape review. The tree types should match up with the overall Thompson's Point Master Plan landscape plan, we can suggest tree types if needed.

Thanks

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
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[Portland, ME. 04103](#)
[\(207\) 808-5446](#)
jst@portlandmaine.gov

Planning and Urban Development Department Planning Division



Subject: B-5 Design Review – Children’s Museum, 1 Thompsons Point
Written by: Caitlin Cameron, Urban Designer
Date of Review: Wednesday, November 8, 2017

The project at 1 Thompson’s Point for the Children’s Museum was reviewed according to the *City of Portland Design Manual* section B-5 and B-5b Urban Commercial Business Zone Design Standards by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Nell Donaldson, Senior Planner.

Design Review Comments: *(outstanding items are marked in red)*

(c) B-5 and B-5b Urban Commercial Business Zones

Standard (1) a. Shared Infrastructure – The project will share a pedestrian walkway, sidewalks, and new road and on-street parking with surrounding developments of Thompson’s Point.

However, the new surface parking lot proposed with a separate curb cut does not meet this standard. See applicant’s response regarding the practical considerations and rationale for this decision not to share the parking infrastructure. The standard does say “to the extent practicable” and therefore the design review defers to the traffic review recommendations, the practical needs of the applicant, and the Planning Board’s opinion. The road at the Children’s Museum is a private road.

Standard (1) b. Buildings and Uses shall be located close to the street . . . Corner lots shall fill into the corner and shall provide an architectural presence and focus to mark the corner. – The building has been sited close to an internal, pedestrian alley rather than the vehicular street – Staff are amenable to this interpretation of the standard and the buildings placement is consistent with the Master Development Plan intent. Other active programmatic and landscape elements are placed between the building and the vehicular street.

Standard (1) c. Buildings shall be oriented toward the street . . . – The building, though approached from all sides, is designed to be directional and is somewhat oriented towards the new street. The street-facing or primary façade includes a prominent entry and windows. However, the building is set back quite a distance from the street – the applicant has made the decision to orient the building to the internal, pedestrian alley rather than the vehicular street.

Standard (1) d. Parking lots shall be located to the maximum extent practicable toward the rear . . . The plan places parking on the street and a surface parking lot to the “rear” of the building in the sense that it is in the least visible location possible based on the current building and street placement.

MEMORANDUM

To: FILE
From: Shukria Wiar
Subject: Application ID: 2017-074
Date: 11/9/2017

Comments Submitted by: John Brennan/Fire on 8/17/2017

I'm not seeing the nearest fire hydrant?
2009 NFPA 1 18.3 Water Supplies and Fire Hydrants
Fire Department Connections shall not be located where large diameter hose may block egress.
Fire Department Connections shall not be blocked and be identified with proper signage complying with NFPA.
The letters shall be 4 inches high and in red lettering on white background or white lettering on a red background.

Comments Submitted by: John Brennan/Fire on 8/17/2017

Exit Discharge:
A Life Safety Evacuation Plan shall be submitted with the Building Permit detailing the exiting and waiting area for occupants.

Comments Submitted by: John Brennan/Fire on 8/17/2017

Premises Identification:
The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address.
Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer.
If the building entry faces a different street, both the street name and number should be large enough to read from the street.
Address numbers must be a minimum of 6 inches high.
The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty").
Color: Addresses should be in a color that contrasts with the background.
Whenever possible, should be illuminated.

**PLACEMAKER PARTNERS, LLC**501 Danforth Street
Portland, ME 04102

November 7, 2017

Ms. Shukria Wiar, Planner
Planning and Development Department
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

**Subject: The Forefront at Thompson's Point – Children's Museum & Theatre of Maine
Level III – Site Plan Application – Design Review Letter of Response**

Dear Shukria:

We have received and reviewed peer review comments and offer our responses to these comments. For ease of reference we have repeated each comment in *italics* with our response following.

DESIGN REVIEW COMMENTS FROM TY LIN – TOM ERRICO DATED 11.01.2017

Comment 1:

Would like to see an 8' wide sidewalk along the loop road rather than 6'.

Response:

Placemaker Partners has widened the sidewalk from 6' to 8' by eliminating the 2' wide shoulder along the westerly side of the loop road and shifting the curb line to the east. The revised plan sheet Phase 1 C-3.0 Site Layout Plan is enclosed with this letter.

Comment 2:

Would prefer the 7 parallel spaces on the westerly side of the road are eliminated. There are concerns that passengers have no sidewalk to step onto.

Response:

Placemaker Partners notes that the Master Development Plan and Subdivision Plan were approved with 23 parallel spaces along the easterly side of the loop road. This type of space has been minimized with preference given to perpendicular spaces on the developed side of the loop road. Placemaker Partners views the passenger side operations technically equivalent to those of parking stalls adjacent to an esplanade found thru-out the City of Portland.

Comment 3:

If the 7 spaces are eliminated than the crosswalk that goes to the middle parallel space could be eliminated.

Response:

The crosswalk has remained part of the site design to provide a clear pedestrian connection to the sidewalk network from the 7 parallel spaces. Also, the crosswalk is used in part as a traffic calming/speed reduction element.

Comment 4:

Why are the bus spaces designed with varying lengths. An alternate design would save pavement area.

Response:

The pavement shape in this area is designed to not only accommodate bus parking of all sizes but will also be instrumental support to the outdoor event venue located to the south of the loop road. The additional pavement and oversized bus stalls will help maximize potential event vendor parking or storage during an event. Furthermore, the straightened design will help with winter operations by providing additional snow storage area and a more efficient plowing operation.

Comment 7:

Would like to review an August 2015 parking study completed by Gorrill Palmer.

Response:

The referenced parking study is enclosed with this letter in Attachment A.

Comment 8:

Would like to review the TDM prepared by CMTM.

Response:

Stantec has submitted a Micro TDM narrative for review by City Staff. For ease of Reference we have enclosed the document in Attachment B. Placemaker Partners notes that Forefront Partners I, LP (Co-Applicants) will provide an update to the site-wide (Macro) TDM document by the end of December 2017 as originally contemplated during the last Level III Site Plan Application completed on Thompson's Point.

Comment 9:

At some point in the future I will likely want to see some updated trip generation numbers. However, it is noted that there are currently not any particular problems. Given the success of the site, he is interested in revisiting the trip generation at some point. Not a current CMTM issue however.

Response:

Placemaker Partners concurs that even with the additional traffic generated by the future CMTM traffic numbers are well below the permitted and anticipated Peak Hour Trip generators when the site is fully developed. Forefront Partners I, LP agrees to review traffic after a consensus with city staff that a study is warranted.

If you have any questions regarding these materials, please contact this office.

Ms. Shukria Wiar
November 7, 2017
Page 3

Sincerely,

PLACEMAKER PARTNERS, LLC

A handwritten signature in black ink, appearing to read 'Bo Kennedy', with a long horizontal flourish extending to the right.

Bo Kennedy, P.E.
Project Manager/Engineer

Attachments

c: Barbara Barhydt, City of Portland Planning
Suzanne Olson, Children's Museum & Theatre of Maine
Greg Russell, Bruner/Cott Architects
Stephen Bushey, Stantec
Chris Thompson, Forefront Partners I, LP
Jed Troubh, Forefront Partners, I, LP

G:\Development Projects\Thompson's Point\Children's Museum\Site Design and Permitting\Permitting\2017.11.07 Phase 1 LOR 1.docx

ATTACHMENT A

August 2015 Parking Study

MEMORANDUM
Forefront at Thompson's Point
Parking Summary

Date: August 31, 2015
Subject: Parking Summary
Forefront at Thompson's Point
Portland, Maine
To: City of Portland
From: Randy Dunton, Gorrill-Palmer (JN 2419)

Since the peak parking demand for each individual use does not occur concurrently, the overall peak parking demand for the site was reviewed. The following is a summary of the forecasted peak parking demand. The results reflect a combination of the City parking requirements, ITE Parking Generation Manual (4th Edition), and published data / engineering judgment. For the purpose of the overall peak parking demand, the site was reviewed for two time periods; 5 PM or prior and after 5 PM. On an average day, vehicles would be expected to park on-site. On a day when large groups of people are anticipated, some parking in nearby lots may also be needed, depending on the size of the special event.

<u>Scenario</u>	<u>5 PM or prior</u>	<u>After 5 PM</u>
Average Day without Theater / Arena / Convention	771 ✓	442 ✓
Average Day With Live Theater after 5 PM	1535 ✓	1790 ✓
Average Day With Arena Activity after 5 PM	1398 ✓	1790 ✓
Average Day With Convention during the day	1401 ✓	754 ✓

Brick North															
Building Letter	A		A		A		A (2)		A		A		A (1)		Total for Brick North
	Specialty Retail (6)		Circus Conservatory		Office		Café		Manufacturing (5)		Manufacturing (5)		Specialty Retail		
Rate	200	1 / 200 sf	0.36	0.36 per student		1/400 sf		13.56/1000	1.020	1.02 / 1000 sf	1.020	1.02 / 1000 sf	200	1 / 200 sf	
Monthly Adjustment				1										1	
SQF or Unit	5840	5,840 sf	120	120 students (Shared with Building D)	3461	3,461 sf	2200	2,200 sf	10809	10,809 sf	5284	5,284 sf	2136	2,136 sf	
6:00AM	0.00	0	0.23	5	0.00	0	0.73	2	0.00	0	0.00	0	0.00	0	7
7:00AM	0.00	0	0.23	5	0.20	2	1.00	2	0.55	6	0.55	3	0.20	2	20
8:00AM	0.00	0	0.79	17	0.64	6	0.63	1	0.69	8	0.69	4	0.64	7	42
9:00AM	0.00	0	0.88	19	0.93	8	0.57	1	0.74	8	0.74	4	0.93	10	50
10:00AM	0.20	3	0.98	21	1.00	9	0.42	1	0.75	8	0.75	4	1.00	11	57
11:00AM	0.64	9	1.00	22	1.00	9	1.00	2	0.75	8	0.75	4	1.00	11	65
12:00PM	0.90	13	0.93	20	0.90	8	0.63	1	0.73	8	0.73	4	0.90	10	64
1:00PM	0.93	14	0.88	19	0.90	8	0.57	1	0.97	11	0.97	5	0.90	10	67
2:00PM	1.00	15	0.81	17	1.00	9	0.42	1	1.00	11	1.00	5	1.00	11	69
3:00PM	1.00	15	0.74	16	1.00	9	0.39	1	0.95	10	0.95	5	1.00	11	66
4:00PM	0.93	14	0.33	7	0.93	8	0.73	2	0.77	8	0.77	4	0.93	10	53
5:00PM	0.64	9	0.23	5	0.64	6	1.00	2	0.62	7	0.62	3	0.64	7	39
6:00PM	0.20	3	0.23	5	0.20	2	0.63	1	0.00	0	0.00	0	0.20	2	13
7:00PM	0.00	0	0.23	5	0.10	1	0.57	1	0.00	0	0.00	0	0.00	0	7
8:00PM	0.00	0	0.23	5	0.10	1	0.42	1	0.00	0	0.00	0	0.00	0	7
9:00PM	0.00	0	0.23	5	0.10	1	0.39	1	0.00	0	0.00	0	0.00	0	7
10:00PM	0.00	0	0.23	5	0.10	1	0.27	1	0.00	0	0.00	0	0.00	0	6

1. Specialty Retail = Color Me Mine
2. Modified Coffee / Donut Shop without Drive-Thru
3. Assumes Evening Event
4. Restaurant changes from 6.5/1,000 SF to 10/1,000SF at 4:00 PM
5. Factors based on ITE LUC 130 -Industrial Park
6. Factors adjusted to reflect a 11:00AM opening time

Building B							Brick South		Building D						
B1 (3)		B2		B3 (4)		Total for "B" Buildings	C (Brick South)		D		D		D		Total for "D" Buildings
Live Theater (Depot)		Ancillary		Restaurant			Event Space		Gym		Medical Office		Education		
3.50	3.5 persons per vehicle	0.00	0	6.50	6.5 / 10		3.5	3.5 persons per vehicle	4.55	4.55 / 1000	400	1/400 sf	0.36	0.36 / student	
		1		1				1				1		1	
4800	4800 seating	0.00	0.0	3.60	3600 sf		2500	2500 person	9	9,000 sf	2	2,000 sf	120.0	120 students (Shared with Building A)	
0.00	0	0.00	0	0.00	0	0	0.00	0	0.45	18	0.02	0	0.23	5	24
0.00	0	0.00	0	0.10	2	2	0.01	4	0.35	14	0.20	1	0.23	5	20
0.00	0	0.00	0	0.10	2	2	0.01	4	0.50	20	0.66	3	0.79	17	41
0.01	7	0.00	0	0.20	5	12	0.01	4	0.65	27	0.86	4	0.88	19	50
0.01	7	0.00	0	0.30	7	14	0.01	4	0.65	27	1.00	5	0.98	21	53
0.01	14	0.00	0	0.90	21	35	0.01	7	0.75	31	0.95	5	1.00	22	57
0.01	14	0.00	0	1.00	23	37	0.01	7	0.95	39	0.78	4	0.93	20	63
0.08	103	0.00	0	0.90	21	124	0.01	7	0.95	39	0.83	4	0.88	19	62
0.10	137	0.00	0	0.65	15	152	0.02	11	1.00	41	0.99	5	0.81	17	63
0.25	343	0.00	0	0.35	8	351	0.03	21	0.75	31	0.93	5	0.74	16	51
0.35	480	0.00	0	0.35	8	488	0.10	71	0.65	27	0.77	4	0.33	7	38
0.65	891	0.00	0	0.60	14	905	0.55	393	0.50	20	0.19	1	0.23	5	26
0.95	1303	0.00	0	0.90	21	1,324	0.85	607	0.25	10	0.05	0	0.23	5	15
1.00	1371	0.00	0	1.00	23	1,395	1.00	714	0.00	0	0.02	0	0.23	5	5
1.00	1371	0.00	0	1.00	23	1,395	1.00	714	0.00	0	0.01	0	0.23	5	5
1.00	1371	0.00	0	1.00	23	1,395	1.00	714	0.00	0	0.01	0	0.23	5	5
1.00	1371	0.00	0	0.75	18	1,389	1.00	714	0.00	0	0.01	0	0.23	5	5

							Building G		Building H				Building I	
E		E		E		Total for "E" Buildings	G		H (option 1)		H (option 2)		I	
Hotel		Restaurant		Condo			Office		Arena		Convention		Cultural Center	
1	1 per 4 guests	6.5	6.5 / 10	1	1 per Unit		400	1/400 sf	3.50	3.5 persons per vehicle	100	1 per 100 sf	1.34	Based on Client Info
	1		1		1					1		1		1
125	125 Rooms	6	6,000 sf	24	24 Units		180	180,000 sf	4800	4800 seats	63000	63,000 sf	40.00	40,000 sf
1.00	10	0.00	0	0.84	20	30	0.00	0	0.00	0	0.1	60	0.00	0
1.00	10	0.10	2	0.62	15	27	0.20	90	0.01	7	0.3	189	0.48	26
1.00	10	0.10	2	0.41	10	22	0.64	287	0.01	7	0.5	312	0.50	27
0.75	7	0.20	5	0.34	8	20	0.93	419	0.01	7	1.0	630	0.44	24
0.50	5	0.30	7	0.32	8	20	1.00	450	0.01	7	1.0	630	0.50	27
0.40	4	0.90	21	0.31	7	32	1.00	450	0.01	14	1.0	630	0.52	28
0.35	3	1.00	23	0.30	7	34	0.90	403	0.01	14	1.0	630	0.55	29
0.35	3	0.90	21	0.31	7	32	0.90	403	0.01	14	1.0	630	0.63	34
0.35	3	0.65	15	0.33	8	27	1.00	450	0.02	21	1.0	630	0.77	41
0.40	4	0.35	8	0.37	9	21	1.00	450	0.03	41	1.0	630	0.96	51
0.50	5	0.35	8	0.45	11	24	0.93	419	0.10	137	1.0	630	1.00	54
0.60	6	0.60	14	0.61	15	35	0.64	287	0.55	754	1.0	630	0.89	48
0.70	7	0.90	21	0.69	17	44	0.20	90	0.85	1166	0.5	312	0.69	37
0.80	8	1.00	23	0.72	17	48	0.10	45	1.00	1371	0.3	189	0.43	23
0.90	9	1.00	23	0.80	19	51	0.10	45	1.00	1371	0.3	189	0.00	0
0.95	9	1.00	23	0.89	21	54	0.10	45	1.00	1371	0.1	60	0.00	0
1.00	10	0.75	18	0.92	22	49	0.10	45	1.00	1371	0.1	60	0.00	0

Building J					Total W/O Theater OR Concert OR Convention OR Brick South Event OR Arena (Average Work Day)	Avg Work Day W/ Brick South Event	Avg Work Day W/ Live Theater (B1) [Does not include any other concurrent Events]	Avg Work Day W/ Arena Event	Avg Work Day W/ Convention
J1		J2		Total for "J"					
Condo		Condo							
1	1 per Unit	1	1 per Unit						
	1		1						
160	160 Units	160	160 Units						
0.84	134	0.84	134	269	329	329	329	329	389
0.62	99	0.62	99	198	384	387	384	391	573
0.41	66	0.41	66	131	552	556	552	559	864
0.34	54	0.34	54	109	676	680	683	683	1306
0.32	51	0.32	51	102	715	719	722	722	1345
0.31	50	0.31	50	99	752	759	766	766	1382
0.30	48	0.30	48	96	713	720	727	727	1343
0.31	50	0.31	50	99	718	725	821	732	1348
0.33	53	0.33	53	106	771	782	908	791	1401
0.37	59	0.37	59	118	767	788	1110	808	1397
0.45	72	0.45	72	144	739	811	1219	876	1369
0.61	98	0.61	98	195	644	1037	1535	1398	1274
0.69	110	0.69	110	221	442	1049	1745	1608	754
0.72	115	0.72	115	230	383	1097	1754	1754	572
0.80	128	0.80	128	256	388	1102	1759	1759	577
0.89	142	0.89	142	285	419	1133	1790	1790	479
0.92	147	0.92	147	294	418	1132	1789	1789	478

ATTACHMENT B

Micro TDM Narrative



**Children's Museum and Theatre of Maine "Micro TDM" Plan
September 19, 2017**

The Children's Museum and Theatre of Maine ("CMTM") is excited to participate in the ongoing Transportation Demand Management effort in our new home at Thompson's Point. The purpose of this memorandum is to follow up on the initial details provided in our August 1, 2017 application letter.

Pursuant to the terms of the Transportation Demand Management Plan for the Forefront at Thompson's Point as most recently updated, the CMTM plans to undertake the activities and practices outlined herein as part of our "Micro TDM" plan, the goal of which is to reduce reliance upon single-occupant vehicle ("SOV") usage and foster the use of alternate modes of transportation.

As a practical matter, many of our patrons are families with young children, so with the exception of our staff, it is virtually never the case that CMTM patrons come one per vehicle. Indeed, our ratios are closer to an average of 3.5 per vehicle at the outset. That said, one of the features that has attracted us to Thompson's Point is the proximity to the Portland Transportation Center, with Amtrak, Concord Coach, and METRO bus services at our front door, and linkage to the Portland Trails network. And we are also interested to do what we can within reason to promote those modes, as well as carpooling and ridesharing, among our staff to help reduce SOV parking demand.

We have noted with interest the way that the Thompson's Point project has developed an array of strategies to help foster alternative transportation, from their partnerships with Amtrak and METRO to their encouragement of the use the trail and bicycle parking for their patrons, tenants, and event visitors.

The CMTM will work closely with Thompson's Point and its TDM coordinator, Soli DG, to find ways to effectively collaborate on these strategies and hopefully contribute creatively to their ongoing use and development.

We plan to pursue the following opportunities as part of our participation in the emergent neighborhood at Thompson's Point:

Play. Imagine. Act.



Amtrak Downeaster:

Thompson's Point is already implementing various promotions and cross-marketing efforts with the Amtrak Downeaster service, which connects Thompson's Point to Brunswick and Freeport as well as a range of communities throughout Maine, Seacoast New Hampshire, and greater Boston. The Children's Museum serves families from all of these regions, and we are enthusiastic about collaborating with Thompson's Point and the Downeaster to explore packages and promotional synergies to encourage Amtrak ridership among our guests and our staff.

METRO:

As the METRO bus lines expand their offerings (including the BREEZ service to Yarmouth which stops at the PTC), their services are an increasing area of opportunity for our patrons and employees. Thompson's Point has begun facilitating connections and partnerships with METRO (with their tenants and with their larger events) that we envision being able to leverage. We will also ensure that our website materials provide detailed information about the METRO routes serving our new facility at Thompson's Point.

Bicycle Parking:

In addition to the ample bicycle parking that Thompson's Point is providing (as a LEED campus, they already provide more than is required), the CMTM will be providing additional bicycle storage for our patrons, employees, and guests. We are also evaluating participation in the Bicycle Benefits program, which would entail discounted ticketing for families who bike to the CMTM and have the BB sticker on their helmets.

Pedestrian Connectivity:

The connection to the Portland Trails network, and the inclusion of our lot within the extensive pedestrian infrastructure at Thompson's Point, are both very attractive features for the CMTM. We expect many of our visitors to come on foot from surrounding neighborhoods particularly in nice weather, and will ensure that our website materials provide detailed information about the Portland Trails network and how one can utilize that to get to and from our new facility.

Employee Transit:

We intend to participate at the CMTM level as well as at the broader site-wide level in any efforts to encourage our staff to carpool, bike, walk, and ride METRO to work.

We believe that the ongoing efforts to create a sustainable neighborhood at Thompson's Point are well underway, and show a mix of practical planning and imaginative engagement with a variety of stakeholders. We are very excited to get our operations underway at Thompson's Point, and to

Play. Imagine. Act.

142 Free Street • Post Office Box 4041 • Portland, Maine 04101
T: 207-828-1234 F: 207-828-5726 • www.kitetails.org



work with their TDM coordinator and our other neighbors to continue to pursue ways to encourage alternative modes of transportation.

Proposed Timeline:

Convene Kickoff Meeting with TDM Coordinator:	6 Months after Groundbreaking
Team Meeting with CMTM Staff and TDM Coordinator:	1 Month before Opening
Provide Visitor and Staff Surveys:	6 Months after Opening
Establish Year One Micro TDM:	12 Months after Opening
Evaluate Year One Micro TDM and Report to City:	24 Months after Opening

Thank you for your consideration and we look forward to this ongoing effort to improve transit offerings for our constituents.

Sincerely,

Suzanne P. Olson
Executive Director

Play. Imagine. Act.

142 Free Street • Post Office Box 4041 • Portland, Maine 04101
T: 207-828-1234 F: 207-828-5726 • www.kitetails.org



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

October 12, 2017

Ms. Shukria Wiar, Planner

Planning and Development Department
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

**Subject: Application for Phased Level III Site Plan Application-Final Submission
Children's Museum Theatre of Maine (Lot 7) Thompson's Point &
Common Area Roadway Extension for Amended Sectional 2 Subdivision**

Dear Shukria:

On behalf of the Children's Museum & Theatre of Maine (CMTM) & Forefront Partners I, LP (Co-applicants), our office is pleased to provide the accompanying package of submission materials for a Final Phased Level III Site Plan Application. This submission package is intended to meet the City's Level III Final Site Plan Submission requirements as outlined in the Level III Site Plan Application procedures as well as Section 14-527 (f) of the Code of Ordinances. The co-applicants are proposing the following:

1. Phase 1 (by Forefront Partners I, LP) – Development of the loop access road (Drive "A") that will extend from between southwest corner of Brick South around the CMTM site and connect to the access drive on the north side of Brick North. We understand that Forefront Partners I, LP was previously approved for the 483-foot extension of the loop drive and utilities as shown on the Amended Sectional 1 the Southwest Brick South Subdivision plat. This road extension is from a point just off the southwest corner of Brick South to a point just north of the Depot building. This 483-foot portion of the loop drive was recently paved. The accompanying application materials are for another road extension around the perimeter of the CMTM site, approximately 780 LF, to a match point near the southeast corner of Brick North. This loop road and utility development will benefit the Lot 7 development associated with the CMTM as well as it will complete various infrastructure pieces that have been contemplated as part of the overall site redevelopment planning and identified in the sectional recording document.
2. Phase 2 (by CMTM) – Development of a Children's Museum & Theatre of Maine building at Thompson's Point has been envisioned during much of the previous Master Planning and site permitting effort. The CMTM will occupy the 1.12-acre Lot 7 of the approved Subdivision and Master Development Plans previously identified as a "Cultural Center". This location is generally positioned just east of the Brick South building and south of the Brick North building. The site plan includes a 9,682 SF building (footprint) with an approximately 20,000 SF open space area with ancillary onsite parking for 18 vehicles near the building. Additional parking for the facility will be



Ms. Shukria Wiar
October 12, 2017
Page 2

available within the general development within shared parking facilities that are located throughout the site which is consistent with the parking provisions outlined in the approved Master Plan. This project will involve site work construction including new parking area construction, utilities construction including water, sanitary, drainage, power, and/or communications extensions into the building, and landscaping. The development site is located within the Urban Commercial Mixed Use B-5 Zone and the Children's Museum & Theatre of Maine is an allowed use.

The applicants are seeking Planning Board Approval to allow commencement of road and utilities construction later this year as well as placement of a soils preload that will be in place for 3-4 months in advance of building construction commencement in 2018. A CMTM fundraising campaign will precede the Lot 7 development; however, the project goals are to start building construction in 2018 if possible.

Accompanying this cover letter are the following materials:

- Level III Preliminary Site Plan Application
- Section 1: Development Description
- Section 2: Evidence of Right, Title, and Interest
- Section 3: Evidence of State and/or Federal Permits
- Section 4: Written assessment of proposed projects specific compliance with applicable zoning requirements
- Section 5: Summary of existing and/or proposed easements, covenants, public or private right-of-ways, or other burdens on the site.
- Section 6: Evidence of Financial and Technical Capacity
- Section 7: Construction Management Plan
- Section 8: Traffic assessment
- Section 9: Summary of Natural Features
- Section 10: Stormwater Management Plan and Calculations
- Section 11: Summary of Project's Consistency with Related City Master Plans
- Section 12: Evidence of Utility Capacity
- Section 13: Summary of Solid Waste Generation and Management
- Section 14: Code Summary
- Section 15: Verification of Proposed HVAC Equipment

You will find in the accompanying materials, information including the Final Site Layout Plan and various site plans that provide greater detail for Lot 7 the site development activities. We have also included preliminary building elevations by Bruner/Cott



Ms. Shukria Wiar
October 12, 2017
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Architects for the proposed building. Information pertaining to the project's utilities needs and statements regarding compliance with the City's Standards are contained within this submission. You will also find that the accompanying final submission materials address various staff comments we have received to date, including those from the following correspondence:

- Email Transmission on May 15, 2017 from Shukria Wiar containing comments from Caitlin Cameron
- Email transmission on May 18, 2017 from Shukria Wiar containing a short list of general staff comments
- Email Transmission on August 30, 2017 from Shukria Wiar containing comments from Tom Errico
- Email transmission on August 30, 2017 from Shukria Wiar containing comments from Jeff Tarling

On behalf of the Co-applicants, we look forward to your continued assistance on the project and we look forward to the appearing before the Planning Board in November 2017 for a Public Hearing and possible approval action. The submission materials have been uploaded to the City of Portland's e-plan site for review.

If you have any questions regarding this submission, please contact our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Stephen R. Bushey, P.E.
Associate
Phone: 207-887-3478
Fax: 207-887-3376
stephen.bushey@stantec.com

Attachments

c: Greg Russell, Bruner/Cott Architects
Suzanne Olson, Children's Museum & Theatre of Maine
Chris Thompson, Forefront Partners I, LP
Bo Kennedy, Placemaker Partners, LLC

v:\1953\active\195350337\civil\admin\permitting\local\level iii spa\final application oct 2017\ltr_final_app_wiar_level3_20171010.docx

PROJECT NAME:

Children's Museum & Theatre of Maine at Thompson's Point

PROPOSED DEVELOPMENT ADDRESS:

Thompson's Point

PROJECT DESCRIPTION:

Proposed construction of 9,682 SF (footprint) Children's Museum & Theatre with 18 parking spaces
and various site enhancements.

CHART/BLOCK/LOT: 201/A/5, 8, 10
202/A/1, 4

PRELIMINARY PLAN 3/29/17 (date)
FINAL PLAN 10/10/17 (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer CO-APPLICANTS Name: Suzanne Olson, Children's Museum & Theatre of Maine and Chris Thompson of Forefront Partners I, LP Business Name, if applicable: Address: PO Box 4041; 501 Danforth Street City/State : Portland, ME Zip Code: 04101; 04102	Applicant Contact Information Work #: 207-828-1234 ext. 223 - Suzanne Olson 207-747-5288 Chris Thompson Home #: Cell #: Fax#: 207-828-5726 -CMTM e-mail: suzanne@kitetails.org; parallaxpartners@gmail.com
Owner – (if different from Applicant) Name: Same as Applicant Address: City/State : Zip Code:	Owner Contact Information Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: Stephen R. Bushey, PE Stantec Consulting LLC Address: 482 Payne Road City/State : Scarborough, ME Zip Code: 04074	Agent/Representative Contact information Work #: 207-887-3478 Home #: Cell #: 207-756-9359 Fax#: 207-883-3355 e-mail: stephen.bushey@stantec.com
Billing Information Name: SAME AS APPLICANT Address: City/State : Zip Code:	Billing Contact Information Work #: Home #: Cell #: Fax#: e-mail:

Engineer Name: SAME AS REPRESENTATIVE Address: City/State : Zip Code:	Engineer Contact Information Work #: Home #: Cell #: Fax#: e-mail:
Surveyor Name: Sebago Technics, Inc. Address: 75 John Roberts Rd, City/State :South Portland, ME Zip Code: 04106	Surveyor Contact Information Home #: Work #: 207-200-2100 Cell #: Fax#: e-mail:
Architect Name: Greg Russell Bruner/Cott & Associates, Inc. Address: 130 Prospect Street City/State : Cambridge, MA Zip Code: 02139	Architect Contact Information Work #: 617-492-8400 Home #: Cell #: Fax#: e-mail: grussell@brunercott.com
Attorney Name: Address: City/State : Zip Code:	Attorney Contact Information Work #: Home #: Cell #: Fax#: e-mail:
Designated person/person(s) for uploading to e-Plan: Name: Celina Daniell e-mail: celina.daniell@stantec.com Name: Sandi Keef e-mail: sandi.keef@stantec.com Name: e-mail: Bo Kennedy bo@placemakerpartners.com	

APPLICATION FEES:

Level III Development (check applicable reviews) ☒ Less than 50,000 sq. ft. (\$750.00) ☐ 50,000 - 100,000 sq. ft. (\$1,000) ☐ 100,000 – 200,000 sq. ft. (\$2,000) ☐ 200,000 – 300,000 sq. ft. (\$3,000) ☐ over 300,00 sq. ft. (\$5,000) ☐ Parking lots over 11 spaces (\$1,000) ☐ After-the-fact Review (\$1,000.00 plus applicable application fee) Plan Amendments (check applicable reviews) ☐ Planning Staff Review (\$250) ☐ Planning Board Review (\$500) _____ The City invoices separately for the following: • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$50.00 hour) • Legal Review (\$75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	Other Reviews (check applicable reviews) ☐ Traffic Movement (\$1,500) ☒ Stormwater Quality (\$250) ☐ Subdivisions (\$500 + \$25/lot) # of Lots _____ x \$25/lot = _____ ☐ Site Location (\$3,500, except for residential projects which shall be \$200/lot) # of Lots _____ x \$200/lot = _____ ☐ Other _____ ☐ Change of Use ☐ Flood Plain ☐ Shoreland ☐ Design Review ☐ Housing Replacement ☐ Historic Preservation
--	--

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov
(Please be sure to designate a person who will be responsible for uploading documents and drawings.)
This step will generate the project ID number for your project.
2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at [Pay Your Invoice](#) , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.
3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

[Applying Online Instructions](#)

5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"

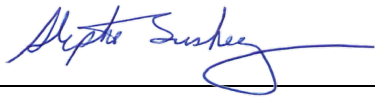
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

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

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

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

Signature of Applicant: 	Date: October 12, 2017
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FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)
X		1	* Completed Application form
X		1	* Application fees
X		1	* Written description of project
X		1	* Evidence of right, title and interest
On file		1	* Evidence of state and/or federal permits
X		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
X		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
X		1	* Evidence of financial and technical capacity
X		1	Construction Management Plan
Previously Submitted		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
X		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
X		1	Stormwater management plan and stormwater calculations
X		1	Written summary of project's consistency with related city master plans
X		1	Evidence of utility capacity to serve
X		1	Written summary of solid waste generation and proposed management of solid waste
X		1	A code summary referencing NFPA 1 and all Fire Department technical standards
X		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
X		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

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

- Continued on next page -

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

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Section 2: Attachment A – Purchase & Sale Agreement & Letter
Section 7: Attachment B – Preliminary Construction Management Plan
Section 8: Attachment C – Gorrill-Palmer Consulting Engineers Trip Generation Summary
Section 10: Attachment D – Supplemental Stormwater Management Report Attachment E – Erosion & Sediment Control Plan
Section 11: Attachment F – Correspondence with Utilities
Section 13: Attachment G – Portland Fire Department Review Checklist & NRPA 1 Review Attachment H– Combined SD/DD Fire Protection/Life Safety Code Compliance Report
Section 14: Attachment I – Proposed Lighting Fixtures Attachment J – CMTM Micro TDM Plan
Section 15: Attachment K – HVAC Catalog Cuts

LIST OF FINAL PLANS

Phase 1

SHEET #	TITLE
C-1.0	COVER SHEET
C-1.1	GENERAL NOTES AND LEGEND
C-2.0	EXISTING CONDITIONS & REMOVALS PLAN
C-3.0	SITE LAYOUT PLAN
C-3.1	PHASE 1 IMPROVEMENTS PLAN
C-4.0	UTILITY PLAN
C-5.0	GRADING & DRAINAGE PLAN
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*E2.1	SITE LIGHTING PLAN
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L-002	LANDSCAPE SITE DETAILS

Phase 1

SHEET #	TITLE
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PHASE 1 C-4.0	PHASE 1 UTILITY PLAN
PHASE 1 C-5.0	PHASE 1 GRADING PLAN
PHASE 1 C-5.1	PHASE 1 STORMWATER MANAGEMENT PLAN-1
PHASE 1 C-5.2	PHASE 1 STORMWATER MANAGEMENT PLAN-2
*PHASE 1 C-6.0	PHASE 1 EROSION CONTROL & CONSTRUCTION MANAGEMENT PLAN
PHASE 1 C-8.8	PHASE 1 TYPICAL SECTIONS
PHASE 1 C-11.0	PHASE 1 WATER PROFILES
PHASE 1 C-14.0	PHASE 1 ACCESS DRIVE PROFILES
PHASE 1 L-1.0	LANDSCAPE PLAN

*Not included in this plan set. Will be submitted separately.



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

August 2, 2017

Ms. Shukria Wiar, Planner

City of Portland – Planning Division

389 Congress Street

Portland, ME 04101

**Subject: Application for Phased Level III Site Plan Application
Children's Museum & Theatre of Maine at Thompson's Point
Lot 7 – The Forefront at Thompson's Point Subdivision Plan
Letter of Response #1 to Staff Review Comments**

Dear Shukria:

On behalf of Children's Museum & Theatre of Maine (CMTM) & Forefront Partners I, LP (Co-applicants), Stantec has received and reviewed your comments sent via email on May 18, 2017 for the proposed Children's Museum & Theatre of Maine at Thompson's Point in Portland, Maine. We apologize for the delay in responding to you. This delay was due to our ongoing coordination with the architect and geotechnical consultant. As an outcome of this coordination, we have updated the site plans whereby the proposed building location has been shifted within the site, from the northwest site corner to more centrally positioned within the property. The basis of this shift has to do with the need for a preload placement on the site to allow for the future spread footing foundation. The preload will measure 12 feet to 16 feet in height and requires sufficient lateral space to minimize impacts to the surrounding buildings (i.e. Brick South) and the site's pedestrian corridors. The latest site plans have been uploaded to eplan. For ease of reference, we have repeated each comment below in *italics* followed by our response.

- *Construction Management Plan*

Response:

As requested, we have included a Preliminary Construction Management Plan as Attachment A. A final plan will be submitted with the Final Site Plan submission.

- *Provide height calculation based on average grade.*

Response:

The basic height of the building is 46'-5½" above the finished floor elevation of 18.0', although some mechanical equipment will extend to a height of 50'-6" above the finish floor elevation. The maximum building height in the B-5 zone is 65 feet as approved during the Master Plan phase. Generally, the exterior grade will match the finish floor at all access doors, and trend slightly lower along the building edges and into the surrounding yard areas. The attached architectural elevation plan indicates the building height and the grading plan indicates the average grade at the exterior of the building.

- *When will the pedestrian corridor be built?*

Response:

One half of the pedestrian alley has already been constructed in its interim state, and its full buildout will be completed in phases. It will ultimately be finalized upon the completion of both the Lot 6 (Hotel) and CMTM developments. The schedule for final construction is undetermined at this time due to the necessary collaboration during the design process and



Ms. Shukria Wiar
August 2, 2017
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the final sequencing of construction for each individual project. If the CMTM project is constructed in advance of the Lot 6 Hotel development, then adequate pedestrian circulation will be provided to support the CMTM. Forefront Partners I, LP anticipates it is possible that the Hotel is completed at about the same time or slightly ahead of the CMTM. In either case, the pedestrian alley will be completed by the later to occur of: (i) completion of the Hotel or (ii) completion of the CMTM, but until both are completed, the alley will be constructed to safe interim standards comparable to the condition of the alley at present.



- *Landscaping Plan*

Response:

LemonBrooke has prepared the accompanying Landscape Plan for the CMTM site. The plan includes the following themes:

- A raised berm on the south end of the site that will contain a birch tree grove;
 - The use of textured surfaces to mimic the historic "Tracks" that covered the site;
 - Creative use of recycled railroad tracks for lighting;
 - A maple grove with stepping stone pathway;
 - Site amenities including bicycle racks, log benches and related improvements;
 - Outside exhibit space with hard surface walking routes and surrounding lawn spaces; and
 - Decorative fencing to create defined Exhibit area associated with the Museum.
- *Any pedestrian and/or children amenities proposed, like a children's garden?*

Response:

Please see Landscape Plan included with this submission.

- *The solid waste enclosure will need to be housed inside the building.*

Response:

As requested the solid waste enclosure has been placed inside the building possibly near the loading area. The barrels/dumpster will be picked by a truck from the museum parking lot. The Final Site Plan submission will include more information on the exact location.

- *Please submit a Transportation Demand Management Plan for the project based on the approved plan in 2011. See attachment.*



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Response:

The Transportation Demand Management (TDM) Plan for Thompson's Point was first approved in September 2011 and reapproved in February 2013 with Master Development Plan approval. An Amendment to the TDM was completed in November of 2015. The next full update is due in December 2017.

The Children's Museum/Theater of Maine (CMTM) project will integrate the principles and goals outlined in the Thompson's Point TDM. This includes measures to encourage and promote bicycling, walking, carpooling, and the use of public transit. Typical visitors to the CMTM are families in automobiles and arriving by van or bus, thus these visitors are already achieving many of the TDM goals for the overall development.

Key Strategies for Transportation Demand Management for the CMTM

1. **Proximity to Transit:** Given its proximity to the Portland Transportation Center (PTC), visitors to the CMTM will be able to take advantage of transit. The PTC hosts the following transit services:
 - o Downeaster (AMTRAK)
 - o Concord Coach
 - o Portland Metro Bus – Metro service is expected to improve over time as the Metro route will include specific bus facilities onsite and not just at the PTC.
2. **Bicycle Parking:** Bicycle parking will be provided on the CMTM site in a convenient and functional location.
3. **Automobile Parking:** Eighteen (18) parking spaces will be provided on site. An additional 65 on street parking spaces will be provided immediately adjacent to the site. CMTM will be part of the shared parking strategy for Thompson's Point, which is overseen by the TDM coordinator.
4. **Pedestrian Connectivity:** The project will include sidewalks and hardscape that will provide direct connectivity to adjacent plazas and sidewalks throughout Thompson's Point. Ultimately the Point is connected to the Fore River Parkway Trail, The Fore River Trail and other pedestrian linkages within the surrounding street systems including Congress Street and nearby residential neighborhoods. As evidenced by the ongoing events at the Point, including concerts and special events we believe that pedestrian connectivity to the site has proven to be reasonable and practical.
5. **TDM Coordinator:** The Forefront at Thompson's Point employs a TDM coordinator who is charged with implementing the TDM plan (Macro Plan). This coordinator will work with all tenants to:
 - a. Coordinate and promote ridesharing opportunities (such as Uber and Lyft);
 - b. Promote use of public transit (metro);
 - c. Promote use of shared transit (bus and train travel);
 - d. Monitor parking usage and manage parking facilities;
 - e. Encourage use of alternative modes of transportation including biking and walking; and
 - f. Overseeing and updating the Macro TDM through implementation of micro strategies.



Ms. Shukria Wiar
August 2, 2017
Page 4

- *Road structure of the two projects.*

Response:

The roadway associated with the Phase 1 portion of the CMTM application starts at a match line shown at approximately station 22+50 to the recently approved Level II site plan application. The section of roadway between stations 18+00 and 22+50 will be constructed this summer and incorporates future development for the CMTM, Hotel, and parking in front of the Depot Pavilion into its design. The section of "loop road" included in this application will complete the permanent vehicular and pedestrian connection around the peninsula until such a time in the future Forefront Partners I, LP is able to acquire and develop the Suburban Property. The Phase 1 roadway as depicted on the preliminary site plan has been revised to include bus parking spaces and vegetated island relief in the long stretch of on-street parking spaces.

This letter submission includes updated site plans that have been uploaded to the eplan site for staff review. This submission also includes the Public information meeting minutes and certification as a meeting was held on May 25, 2017.

We are very interested in placement on the next available Planning Board Workshop agenda. If you have any questions with regards to the information submitted, please contact our office.

Regards,

STANTEC CONSULTING SERVICES INC.

Stephen R. Bushey, P.E.
Associate
Phone: (207) 887-3478
Fax: (207) 883-3376
stephen.bushey@stantec.com

Attachments

c: Greg Russell, Bruner/Cott Architects
Suzanne Olson, Children's Museum & Theatre of Maine
Chris Thompson, Forefront Partners I, LP
Bo Kennedy, Placemaker Partners, LLC

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ATTACHMENTS

**PRELIMINARY
PROPOSED CONSTRUCTION MANAGEMENT PLAN FOR THE
CHILDREN'S MUSEUM & THEATRE OF MAINE PROJECT
AT THOMPSON'S POINT**

CONSTRUCTION MANAGEMENT NARRATIVE:

The core element of the plan is to have the Project Management team and the Construction Oversight team working together to ensure clear and timely communication within the General Contractor team and seamless coordination of project activities. Project management will be overseen by a Senior Project Manager working out of the General Contractor's home office. The General Contractor will locate a Project Manager and one or more Superintendents on site for direct oversight and management of the site work and building work.

The work involves the construction of a new three-story museum and theatre building within the Thompson's Point development. This work will require coordination with the utility companies, City of Portland, and adjacent property owners.

Key issues to be addressed include:

- Public safety and continued accessibility along the adjacent streets, parking areas, and businesses
- Communication with abutters
- Coordination of work on active utilities
- Phasing coordination
- Traffic management
- Parking for workforce
- Storage for heavy equipment not in use (including outside of work hours; nights, weekends, etc.)
- Coordination of material deliveries
- Laydown and material storage areas
- Crane pads and erection sequences (if required)
- Waste management
- Designated areas for stockpiled materials
- Snow removal

The General Contractor will work with the City of Portland, Owner and other entities to coordinate the various on and off-site construction activities.



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

I, Darrin Stairs of Stantec, hereby certify that a Neighborhood Meeting was held on May 25, 2017 at the project site at the Brick South Building, 8 Thompson's Point, Portland, Maine at 5:00 PM.

I also certify that on May 11, 2017 (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.
3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

A handwritten signature in black ink, appearing to read "D. Stairs", written over a horizontal line.

Darrin Stairs, P.E.

August 1, 2017

Date

Attached to this certification are:

1. Meeting invitation
2. Sign-in sheet
3. Meeting minutes

V:\1953\active\195350337\civil\admin\permitting\local\level III spa\Neighborhood Meeting\meeting certification_20170802.docx



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

May 11, 2017

Dear Neighbor:

Please join us for a Neighborhood Meeting to discuss our plans for proposed construction of the Children's Museum & Theatre of Maine with a at Thompson's Point, Portland, Maine. The project includes a 9,682 SF building, onsite parking, hardscape, landscaping, utilities and stormwater treatment.

Meeting Location: Brick South Building
8 Thompsons Point
Portland, Maine
An Informational Board will be Posted for Directions to Meeting

Meeting Date: May 25, 2017

Meeting Time: 5:00 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. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions, please feel free to contact Steve Bushey, P.E. at 207-883-3355.

Sincerely,

STANTEC CONSULTING SERVICES, INC.

A handwritten signature in black ink, appearing to read "Stephen R. Bushey", with a stylized flourish at the end.

Stephen R. Bushey, P.E.
Associate

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Note: Under Section 14-32(C) and 14-525 of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 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 or by email to: bab@portlandmaine.gov

Children's Museum & Theatre of Maine Thompson's Point

Public Information Meeting

May 25, 2017

Name	Address/Company	Tel/Email
Francesca Bowe		770-883-9901
Darrin Stairs	Stantec	207-310-8574 darrin.stairs@stantec.com
Jim Marcisso	CMTM	807-4741
Suzanne Olson	Children's Museum + Theatre of Maine	828-1238
Emily Ruger	CMTM	845-750-0142
Meryl Hernandez	Brick South	Meryl@thompsonspointmaine.com
DANA KNAPP	Coastal Creek Living	xcoastal@maine.irr.com
TIM DAVOREN	OA Centers for ORTHO	TDavoren@orthocenters.com
Bo Kennedy	Placemaker Partners	747-5288 Ext 112 Bo@placemakerpartners.com
Kimberly Sacney	1296 Congress St 04102	207-3371767 halfawake.herce@yahoo.com
Rose Splint	Children's Museum + Theatre	rose@latefeels.org
Jed Trough	Thompson's Point	Jtrough@gmail.com
Leslie & Ted Kaynor	315 Capisk St.	lkaynor@icloud.com



May 25, 2017

[illegible]

CMTM Public Information Meeting Presentation Outline

Stantec –	Darrin Stairs
CMTM –	Suzanne Olson – Executive Director
Thompsons Point –	Bo Kennedy
	Chris Thompson
	Jed Troubh

-
- Introduction and statement on Purpose of the meeting – Requirement of Level III Site Plan approval process with the City of Portland by Darrin Stairs.
 - Brief introduction of Forefront Development team by Bo or Chris – Brief history and explanation that the cultural land use has always been part of the Master Plan. Happy to be moving forward with CMTM.
 - Brief introduction of CMTM by Suzanne Olson – History and why Thompsons Point – possibly explain what will happen to the existing CMTM home?
 - Presentation of the site plan using both the master Plan to express overall setting and location of CMTM within the development and Lot 7 Site Plan to show specifics of the CMTM program by Darrin Stairs.
 - Lot 7 = 1.12 acres currently undeveloped
 - Proposed 3 story building at 9,682 SF footprint – explain access routes, etc. building orientation to help with maintaining onsite open space and to work with pedestrian access features of overall site.
 - Onsite parking for mix of visitors, staff etc. plus shared offsite parking across campus – might point to Bo or Chris for a few seconds on the other uses on the point both existing and proposed in the future. The rink, Bissell, Cellardoor, tree of 40 fruits, etc.
 - CMTM outdoor programming for play areas and exhibits by Darrin generally.
 - Suggest Suzanne discuss interior programming for a minute or so – Basically what programs will CMTM provide at this location - exhibits, productions etc. How might this new site differ from the existing? Explain operating hours, typical attendance numbers, what might neighbors expect from CMTM with respect to the rest of the site?
 - Darrin explains standard stuff about utilities, drainage etc. Lighting is part of an overall site strategy which is a work in progress.
 - Bo Kennedy might say a few more words about other developer initiatives including Hotel or housing? (up to Bo and Chris on that).
 - Darrin to explain permitting process and schedule.
 - We have made preliminary Level III application and expect to be before PB for workshop in late June. Attendees should be told to watch for legal notices
 - Final Plan application and public hearing with the PB will occur later summer hopefully.
 - 2018 construction start with occupancy by 2019 or so, depending on fund raising/financing? Suzanne can explain more on that if needed.
 - Q and A

City Contact – Shukria Wiar, Planner
Planning Division City of Portland 389 Congress Street
Portland, ME 04101
Ph: 207.756.8083; Fax: 207.756.8258
Shukria Wiar shukriaw@portlandmaine.gov



Stantec Consulting Services Inc.
482 Payne Road Scarborough Court, Scarborough ME 04074-8929

November 7, 2017

Ms. Shukria Wiar, Planner

City of Portland – Planning Division
389 Congress Street
Portland, ME 04101

**Subject: Application for Phased Level III Site Plan Application
Children's Museum & Theatre of Maine at Thompson's Point
Lot 7 – The Forefront at Thompson's Point Subdivision Plan
Letter of Response #2 to Staff Review Comments**

Dear Shukria:

On behalf of Children's Museum & Theatre of Maine (CMTM) & Forefront Partners I, LP (Co-applicants), Stantec has received and reviewed your comments sent via email on October 25, 2017 for the proposed Children's Museum & Theatre of Maine at Thompson's Point in Portland, Maine.

We offer the following responses to the B-5 Design Review comments staff have provided:

Design Review Comments:

(c) B-5 and B-5b Urban Commercial Business Zones

Standard (1) a. Shared Infrastructure – The project will share a pedestrian walkway, sidewalks, and new road and on-street parking with surrounding developments of Thompson's Point. However, staff questioned why a new surface parking lot with its own curb cut was being introduced directly next to another surface parking lot. In keeping with this design standard, staff suggest that the applicant re-examine the surface parking lot design for shared circulation, joint curb cut, and parking area.

Response:

The placement of eighteen (18) parking spaces on the north side of the CMTM building is consistent with the original Master Development Plan, previously reviewed and approved by the City. The goal is to provide a stand-alone parking area, designated for CMTM use with a focus on CMTM employee parking. The placement of the lot entrance is consistent with typical parking area configurations and since the loop access drive is not a City street, the technical standards for driveway separation do not apply. By providing an entry off the loop drive this also affords better access for delivery vehicles and related services, who are then not required to go thru the Brick North parking lot. The proposed CMTM parking lot will provide ample pedestrian connectivity via the walkway along the north end of the CMTM building, which is ultimately connected to the loop access drive sidewalk as well as the central Alley between CMTM and Brick South. Based on our follow up discussions with staff and primarily Tom Errico, we believe the CMTM parking lot design is satisfactory and meets the project objectives.



Ms. Shukria Wiar
November 7, 2017
Page 2

Standard (1) b. Buildings and Uses shall be located close to the street. Corner lots shall fill into the corner and shall provide an architectural presence and focus to mark the corner. – Building placement is not close to the street and the building does not fill or mark the corner. Staff ask the applicant to explain the rationale for the building placement and orientation in relationship to the street, other buildings, and pedestrian alley and why this standard is not able to be met or for the building to be placed as approved in the Master Development Plan.

Response:

The CMTM design team has been guided by the objective that maintaining proximity between the proposed CMTM building and the proposed hotel/Brick South/pedestrian Alley is highly desirable to creating a great sense of place, active streetscape, etc. as has been contemplated in the approved Master Plans. The building's main entry is south facing which is desirable and it also is proximate to the proposed pedestrian Alley, which will form a spine through the central part of the peninsula as well as within the overall development core, which will consist of Brick North, Brick South, CMTM, and the proposed Hotel. It is also important to the CMTM to maintain a substantial outdoor area for their programming including soft scape play space, exhibit area, special events, etc. Placing these opens spaces to the south end of the site provides improved south facing exposure and visibility from the highway and leaves space for possible future building expansion.

If you have any questions with regards to the information submitted, please contact our office.

Regards,

STANTEC CONSULTING SERVICES INC.

Stephen R. Bushey, P.E.
Associate
Phone: (207) 887-3478
Fax: (207) 883-3376
stephen.bushey@stantec.com

c: Greg Russell, Bruner/Cott Architects
Suzanne Olson, Children's Museum & Theatre of Maine
Chris Thompson, Forefront Partners I, LP
Bo Kennedy, Placemaker Partners, LLC

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1. DEVELOPMENT DESCRIPTION

1.1 PROJECT OVERVIEW

The project consists of the development of Lot 7 of the previously approved Forefront at Thompson's Point Subdivision Plan at Thompsons' Point. The Lot 7 development fulfills the long-term goal of providing a location for a Cultural Center within a mixed-use development as shown on the Master Development Plan. In this case, the Children's Museum & Theatre of Maine is seeking to relocate from their existing location on Free Street, whereby they can address pressing needs for additional space and programming including exhibit and Theatrical performance space. As evidenced by the multiple past reviews and approvals granted by the Portland Planning Board for the Forefront site, we believe the current application will be welcomed and embraced by the community and continue the dynamic growth and excitement associated with the Thompson's Point redevelopment. The CMTM/Forefront application is intended to cover the development activity associated with Lot 7 as well as a portion of the long-planned loop access road that will be extended from just south of Brick South to a location near the east side of the Brick North building. A separate application has been recently filed with the City related to the proposal for a new Hotel, to be located just to the south side of Brick South and west of the Lot 7 site. The applicants continue to coordinate efforts for these development pieces in order to create a seamless development program for these sites.

1.2 PROJECT PURPOSE AND NEED

The existing site (Lot 7) is currently an unimproved, open area that has been used for parking, trailer storage and related industrial uses. The site area has been mostly gravel within the recent past. The site presents an opportunity for the Children's Museum to relocate to a new facility to meet growing attendance and programming needs which would allow more accessibility to local and out of state visitors. The project presents a continuation of the Thompson's Point property redevelopment to provide an attractive and viable destination with linkage to the City's multi-modal transportation hub, nearby highways and good pedestrian, bicycle, and vehicular connectivity. A new multi-story building and the addition of landscape and hardscape features will improve the aesthetics of the site from the highway and from within the site, and contribute to the improving vitality of the area. The community benefits provided by the project include the following:

- Contribute to the redevelopment and revitalization of the area.
- Provide a quality cultural use destination to complement other mixed use activities on the site.
- Incorporate exterior site enhancements for child play, outside exhibits, general recreation.

1.3 EXISTING CONDITIONS

The CMTM project parcel is described as Lot 7 on the approved Subdivision Plan¹. The total site area is 48,958 SF (1.12 acres) and there is a small single story masonry block

¹ See CCRD Book 216, Page 438

building partially located on the south end of the site that will require demolition prior to construction. The project site is currently owned by Forefront Partners I, LP (Forefront) which is currently under contract with the Children's Museum & Theatre of Maine (CMTM) who will purchase the property. The site is bounded to the north by a parking lot associated with the Brick North building. Brick South and future development (Lot 6) is located to the west of the site. The depot and concert grounds are located to the south. The proposed loop road, parking, yard area and the tidal flat to the Fore River are located to the site's east side.

Existing Lot 7 utilities are limited to a few stormwater catch basins with small conveyance systems discharging to a tidal flat associated with the Fore River. There are also overhead power and communication lines feeding the south end of the peninsula running through the site area. These will be rerouted as part of the project. There are new nearby utilities previously constructed as part of the Brick North and Brick South development activities and these will remain unchanged except for the drainage system, which will require additional improvements.

The limited amount of infrastructure within Lot 7 is anticipated to be removed and/or abandoned as part of the development of the site. Aside from abandoning the existing utilities and removal of the small building, general site preparation is anticipated to be straightforward to include site grading, new utilities, drainage, building construction and site surface improvements for parking and landscaping. A temporary 3-4 month soil surcharge preload program is currently contemplated as part of foundation preparation program.

Existing topography is relatively flat with elevations ranging from approximately 14.5 to 16.25 based on NGVD 1929 vertical Datum. The lot is internally draining, meaning the lowest portion of the site is towards the center of the site and the higher grades are around the perimeter. The site improvements will involve ground disturbance over the entire site. Haley & Aldrich has been engaged to assist with a geotechnical investigation. Their initial findings include identifying soft marine clay soils underlying the site. The preliminary recommendations include the use of a preload to aid with addressing long term settlement potential.

The site is within the Thompson's Point peninsula which extends into and is generally surrounded by the Fore River. This portion of the Fore River is tidally influenced and has a mean annual high tide elevation of 7.4 (NGVD 1929) and a 100-year FEMA flood elevation of 10.0 (NGVD 1929). Tidal information as determined by Sebago Technics, Inc., land surveyor is defined as follows:

- Mean High Water is: Elevation 4.95
- Mean Low Water is: Elevation -4.95

Groundwater is anticipated to be encountered in excavations for foundations, utilities, and stormwater management systems. The site has been previously included within the Maine Voluntary Response Action Program (VRAP).² Site activities including earthwork, soils management and groundwater handling will require compliance with the recommended actions contained within a work plan developed by Credere Associates.

² See No Action Assurance Letter dated March 6, 2013 to Forefront Partners I, LP

Photographs of the existing site conditions have been previously submitted with the Masterplan Submission.

1.4 PROPOSED DEVELOPMENT

The development program is depicted on two plan series developed by the co-applicant team. The Phase 1 activity covers the loop road that has been designed by Forefront Partners and the Phase 2 activity covers the Lot 7 development for CMTM, as designed by Stantec and the Bruner Cott Architectural team. The development programs by phase include the following components:

1.4.1 ON-SITE (PHASE 2)

The proposed CMTM development will include improvements to the entire parcel which is approximately 49,000 SF in size. The proposed land cover is anticipated to be comprised of a 9,682 SF± multi-story building footprint, paved parking for 18 parking spaces, at-grade loading at an overhead door, various sidewalks/pedestrian hardscape, lawn, planted landscape, and possibly ground level exterior play or exhibit areas. The building's main entrance will be positioned on the south end, facing the depot building. Patrons may park within the 18 onsite parking spaces located to the northeast corner of the site or within additional parking that will be located along the new access road that will be extended from between Brick South and the Depot and connecting to the Brick North parking lot. There will be two ADA compliant spaces onsite and an ADA compliant access route will be provided to the front entry.

Lemon Brooke has prepared a landscape plan that accompanies this submission. The south end of the CMTM site is currently envisioned as a landscape area containing both hard and landscaped surfaces. The hard surfaces may consist of bituminous asphalt or patterned concrete or paver blocks subject to funding availability while the landscaped areas are likely to contain various themes including plantings, fixed and non-fixed site measures including, but not limited to, benches, fencing, exhibits, etc. The north end of the site will include mostly hard surfaces consisting of bituminous asphalt, concrete, pavers, or similar measures along with a less amount of vegetative landscaping. The co-applicants realize the importance of continuity and connectivity to the Brick North and Brick South uses, parking, and pedestrian designs and they are working closely to assure the CMTM site is well integrated to the long-term vision of the site.

Multiple bicycle racks will be positioned nearby the CMTM entrances at both the south and north ends of the building.

The layout of the site has been prepared in a manner to seamlessly transition to the surrounding site improvements including the loop road as well as future Pedestrian Alley and Hotel site to the west of Lot 7.

1.4.2 OFF-SITE (PHASE 1)

The co-applicant, Forefront Partners I, LP will complete additional improvements to the overall site as part of or in advance of the CMTM development. Separate plan drawings detailing the scope of work for the access loop road are now made part of the submission

materials. This will involve the extension of the access loop road from basically between Brick South and the Depot, around and over to the access drive serving the parking just to the south and east of Brick North. This work will complete a looped access within the site whereby site visitors will have access to defined parking areas and uses. This access and circulation pattern has been basically in existence during the earlier phases of the site's redevelopment, albeit within undefined gravel areas around the site. The proposed work will now provide a continuation of both paved vehicular routes and the pedestrian sidewalks and related site amenities. Defined parking along the access loop will also be created as part of this work as was contemplated in the Master Plan. The current plans identify the access drive loop and show a layout of traditional perpendicular parking on the CMTM side of the drive as well as on the south side of the loop, basically up against the peninsula's south end concert area. A 6' wide sidewalk system along the west side of the loop road also is provided.

The Co-applicants are also continuing to discuss and refine the pedestrian alley that will be between Brick South and the CMTM building. The alley is part of future activities on the site, including the Hotel development, now submitted under separate application for Level III Site plan review; however, it has been partially paved at this time as patrons to the site often use this route for access within the overall development.



This north-south pedestrian access spine has always been considered a vital core element to pedestrian connectivity on the site. It will extend from the Brick North parking lot ultimately to the Depot building. The team continues to discuss the use of different ground surface treatments including concrete, pavers or similar, vegetative landscaping, site improvements and lighting. Ultimately, this alley will be the primary pedestrian link between the majority of uses in the core of the property, so all team members are



interested in making this space contain aesthetic appeal and interest for all those using the site, including workers and visitors. The landscape plan for CMTM also contemplates this corridor and a central feature that will be provided along the site interface with the Alley will be a grove of trees with stepping stone path. In addition, fixed outdoor seating will be provided along the building's west side, facing the alley, allowing patrons and visitors the opportunity to view various activity within this high use corridor.

1.5 SOILS/GEOTECHNICAL REVIEW

A geotechnical investigation is being prepared by Haley & Aldrich. It is anticipated the subsurface soils will consist of urban fill, marine clay, and sand. Some level of onsite soils may contain contaminants that require the material to remain onsite and covered in an approved manner consistent with the MaineDEP VRAP Work Plan. Generally, this involves the placement of a minimum layer (12" usually) of clean material and/or pavement/hardscape surface, in order to minimize exposure. The applicants are currently working with Credere Associates, the site environmental firm, on the environmental analysis and work plan to address Lot 7 site conditions.

2. RIGHT, TITLE AND INTEREST

2.1 OVERVIEW

The applicant has an existing Purchase & Sale Agreement with Forefront Partners I, LP for the project site. A copy of Proof of the Purchase & Sale Agreement is included in Attachment A to this application.

2.2 ATTACHMENTS

Attachment A – Purchase & Sale Agreement (Letter from Verrill Dana LLP) & Financial Capacity Letter

ATTACHMENT A

**Proof of Purchase & Sale Agreement
(Letter from Verrill Dana LLP – Attorney's for the Owner)
Financial Capacity Letter**

Verrill Dana_{LLP}

Attorneys at Law

RAYMOND A. PELLETIER, JR.
PARTNER
rpelletier@verrilldana.com
Direct: 207-253-4512

ONE PORTLAND SQUARE
PORTLAND, MAINE 04112-0586
207-774-4000 • FAX 207-774-7499
www.verrilldana.com

March 28, 2017

Planning Department
City of Portland
389 Congress Street
Portland, Maine 04101

Re: The Forefront at Thompson's Point Subdivision (the "Subdivision")

To whom it may concern:

This firm represents Forefront Partners I, LP ("Forefront"), developer of the above-referenced subdivision. This letter will confirm that Forefront and Children's Museum and Theatre of Maine ("CMTM") are parties to a Purchase and Sale Agreement dated January 7, 2016, as amended, which provides for the sale of Lot 7 in the Subdivision to CMTM, and which authorizes CMTM to submit an application for site plan approval with respect to Lot 7.

Sincerely,



Raymond A. Pelletier



October 6, 2017

TO: City of Portland, Department of Planning & Urban Development
RE: Application No: 2017-074
Project Name: Children's Museum
CBL: 201 A005001
Applicant: Forefront Partners, I, LP - Parallex Partners
Location: Thompson's Point
Development Type; Level III Site Plan under 50,000 sf

To Whom It May Concern:

The Children's Museum & Theatre of Maine are valued customers of Gorham Savings Bank.

Gorham Savings Bank is aware of the aforementioned project in Portland. The Bank understands the scope of this project and is very interested in working with the development team. The organization has the financial capacity and management capability to successfully complete the project.

This letter is not to be construed as a commitment to lend money.

Please feel free to call me with any questions.

Sincerely,

Karl Suchecki
Senior Vice President
(207) 222-1492
ksuckecki@gorhamsavingsbank.com

3. STATE AND FEDERAL PERMITS

3.1 OVERVIEW

The project as presented does not require any additional Federal and State level site permits. Construction activities will require compliance with the previously approved VRAP Work Plan. The Forefront Development has previously obtained the following permits:

GOVERNING BODY - STATE	APPLICATION	DATE OF APPROVAL
City of Portland Planning Authority Delegated Authority 389 Congress Street Portland, ME 04101	MaineDEP Site Location of Development	Approved June 5, 2012 Under City of Portland's Delegated Authority
City of Portland Planning Authority Delegated Authority 389 Congress Street Portland, ME 04101	MaineDEP Site Location of Development	Approval January 12, 2016 Under City of Portland's Delegated Authority - Subdivision Application
Maine Department of Environmental Protection 312 Canco Road Portland, ME 04103	Natural Resources Protection Act (NRPA)	Original Approval July 2012 Permit Order #L-25672-2G-A-N/L- 25672-FS-B-N Amended Approval June 2014 Permit Order #L-25672-4P-F-N/L- 25672-FS-G-N
Maine Department of Environmental Protection 312 Canco Road Portland, ME 04103	Maine Construction General Permit	Approval June 23, 2014
Maine Department of Transportation State House Station 16 Augusta, ME 04333	Traffic Movement Permit	Approved June 13, 2012 Reg. 01-00155-A-N
Maine Department of Environmental Protection 312 Canco Road Portland, ME 04103	Maine Voluntary Response Action Plan (VRAP)	No Action Assurance Letter Issued March 6, 2013
Maine Department of Transportation State House Station 16 Augusta, ME 04333	Public Rail Crossing Petition	Decision #364 - April 3, 2012
Maine Department of Transportation State House Station 16 Augusta, ME 04333	Developer/State Agreement	Executed on October 2013
GOVERNING BODY - FEDERAL	APPLICATION	DATE OF APPROVAL
U.S. Army Corps of Engineers RR 2 Box 1855 Manchester, ME 04351	U.S. Army Corps of Engineers Section 404 Permit	Approved August 24, 2012 Corp Permit #NAE-2012-00992 Amended April 16, 2014
Federal Aviation Administration Air Traffic Airspace Branch, ASW-520 2601 Meacham Blvd Fort Worth, TX 76137-0520	Determination of No Hazard to Air Navigation Review	Feasibility Report Issued 12/21/2010.
Maine Historic Preservation Commission 55 Capitol Street 65 State House Station Augusta, ME 04333	Section 106 Historic Property Review	Approval March 29, 2013

4. CONFORMANCE WITH APPLICABLE ZONING REQUIREMENTS

The following information is made in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7).

4.1 OVERVIEW

The project is located in the B-5 Zone. The proposed uses include:

- Museums and art galleries;
- Indoor recreation and family amusement establishments; and
- Theaters and places of public assembly.

These uses are all allowed by right in the zone.

The space and bulk criteria for the B-5 Zoning District are not overly restrictive. There is no minimum lot size, minimum frontage, minimum front yard, side yard, rear yard, or street setbacks in the B-5 Zone. Lot development for Lot 7 has been previously presented as part of earlier overall permitting submissions³ for the Thompson's Point Development. The current proposal remains within all the previously approved design parameters and no zoning relief is required.

4.2 SHORELAND ZONING

The site is located within the Shoreland Zoning District, however, there are no specific restrictions related to vegetative clearing or resource setbacks, given the nature of the site's historic developed conditions

³ See Overall Site Plan dated 06.16.2016 as part of Final Subdivision plan submission

5. EASEMENTS OR OTHER BURDENS

5.1 OVERVIEW

There are no existing easements or encumbrances that impact the current site development proposal across Lot 7. Cross access and utility easement agreements will be part of the land transfer between Forefront Partners I, LP and CMTM. The Fourth Amendment to the Purchase & Sale Agreement between the two parties includes easement conditions pertaining to stormwater management systems that will be shared on Lot 7.

6. TECHNICAL AND FINANCIAL CAPACITY

6.1 OVERVIEW

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.

6.2 CONSULTANT TEAM

Discipline	Lot 7 – Phase 2	Common Area Road (Phase I)
<i>Civil Engineer</i>	Stephen R. Bushey, P.E. Stantec Consulting Services, Inc. 482 Payne Road Scarborough, ME 04074 (207) 887-3478 – Work (207) 883-3355 – Fax stephen.bushey@stantec.com	Bo E. Kennedy P.E. Placemaker Partners, LLC 501 Danforth Street Portland, ME 04102 (207) 747-5288 - Work
<i>Surveyor</i>	Charlie Marchese Sebago Technics, Inc. 75 John Roberts Road So. Portland, ME 04106 (207) 200.2100 – Work www.sebagotechnics.com	
<i>Architect</i>	Greg Russell Bruner/Cott & Associates, Inc. 130 Prospect Street Cambridge, MA 02139 (617) 492-8400 – Work grussell@brunercott.com	
<i>Landscape Architect</i>	Jennifer Brooke Lemon Brooke 31 Oxbow Road Concord, MA 01742 jennifer@lemonbrooke.com	
<i>Geotechnical Consultant</i>	Wayne Chadbourne, PE Haley & Aldrich, Inc. 75 Washington Avenue Portland, ME 04103 (207) 482-4600 – Work wchadbourne@haleyaldrich.com	
<i>Environmental Engineer</i>	Rip Patten Credere Associates, Inc. 776 Main Street Westbrook, ME 04092 (207) 828-1272 – Work Credere LLC	

6.3 EXPERIENCE OF PROJECT TEAM

All members of the project team have significant expertise and experience on the project site. Resumes for key personnel can be provided upon request.

6.4 FINANCIAL CAPACITY

The applicant has adequate financial resources to undertake this project at Thompson's Point. The CMTM intends to use a combination of self-financing, capital campaign fund raising, and debt financing for the project. Evidence of the CMTM ability to undertake the project is provided in Section 2 of this submission.

6.5 CONSTRUCTION COST ESTIMATE

A breakdown of the preliminary project cost estimates includes the following:

- | | |
|-----------------------|---------------------------------------|
| ➤ Construction Cost: | \$9.3 million |
| ➤ Soft Costs: | \$500,000 to \$750,000 |
| ➤ Total Costs: | \$10 million to \$10.5 million |

7. CONSTRUCTION MANAGEMENT PLAN

The following information is provided in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(1).

7.1 CONSTRUCTION MANAGEMENT PLAN

CMTM & Forefront are seeking to commence construction during the Fall 2017 into 2018 and complete work by the Summer 2019. The construction will involve mobilization, site work and building construction. A Preliminary Construction Management Plan has been prepared and is included in Attachment B of this submission.

7.2 ATTACHMENT

Attachment B – Preliminary Construction Management Plan by Zachau Construction

ATTACHMENT B

PRELIMINARY CONSTRUCTION MANAGEMENT PLAN

Construction Management Plan
Children's Museum and Theatre of Maine
Zachau Construction, Inc.

This document and its subsequent attachments comprise The Construction Management Plan being submitted to the City of Portland for the Children's Museum and Theatre of Maine Project located at Thompson's Point in Portland, Maine. The construction management plan contains information pertaining to the overall planning and coordination of the project.

The Children's Museum and Theatre of Maine new facility consists of a 3 story building, approximately 29,000 sf building located in Thompson's Point. The first level will consist mainly of children's display and play structures with an open vestibule. The second level will contain more children's play areas and a theatre that is two levels high. The third level will contain offices and the upper level of the theatre.

A. Construction Management Principles

The impact of this project on the public will be minimized by use of the following construction management principles:

- The construction zone will be fully secured with a moveable 6' chain link fence with an entrance gate which will be locked at all non-construction work hours
- All construction activities will be contained within the construction fence.
- As shown on attachment "A" there will be a construction staging/storage area and construction office contained within the construction fence.
- All deliveries will be scheduled to occur during normal working hours
- All construction activities will occur during normal working hours to minimize noise impacts to the surrounding area.

B. Development Review of Construction Management Plan

- Attachment "A" contained with this plan identifies the site specific site fence and storage/staging areas that will be implemented at the onset of this project to ensure that the public is not put at risk at any time. At no time during this project with the public have access to the project.
- Zachau Construction prepares a site specific safety plan for each project. All team members for this project will be trained and made aware of this site specific safety plan prior to their respective start of work.

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

- All fees, permits and guarantees will be paid/issued prior to the start of the project
- This project will require utility tie-ins located off site. All required permits will be requested and granted by the appropriate City of Portland department prior to start of this activity.

D. Construction Administration and Communication

- The contact person for this project will be:
Bruce Hilfrank – VP and Project Manager
(207) 807-8973
bruce@zachauconstruction.com



- At the project entrance signage will be posted with the project contact information for Zachau Construction

E. Construction Schedule

- A preliminary construction schedule for the project starts in late fall of 2017 with the placement of a surcharge on the building pad area. 6 to 9 months later, depending on soils conditions, the construction of the building and site improvements will commence. The building and site improvements are estimated to take 12 months.
- Attachment "B" to this document is the current preliminary construction schedule
- Construction activities for this project will be completed during normal working hours

F. Security & Public Safety

- Attachment "A" identifies the location of the 6' construction fence which will be used to isolate the public from all construction activities. The gate will have a knox box locking device to allow for emergency access
- The fire safety program onsite will be as follows:
 - o Fire extinguishers will be placed throughout the construction for the duration of the project
 - o The new fire alarm system will be installed throughout the construction of the new building

G. Construction Permitting and Traffic Control

1. Construction Activity in Public Streets
 - o This project will require street openings in a new, yet to be constructed road within Thompson's Points. Prior to starting, permits will be submitted for and approved by the appropriate City of Portland Department
2. Sewer and Storm Water
 - o This building will connect to an existing force main sewer in an adjacent parking lot. The storm water will be treated by an onsite storm water management system prior to be discharged into the ocean. Prior to starting, permits will be submitted for and approved by the appropriate City of Portland Department
3. Traffic Control Plans
 - o There will be periods of time throughout the project where construction activities will be performed in adjacent roadways and parking lots. Maintenance of traffic plans will be submitted to the appropriate City of Portland Department for approval prior to start of work.

H. Site Management and Controls

Zachau Construction will perform the following activities as regular site management and controls:

- o Construction site signage will be provided and maintained throughout the project
- o Trash and construction debris will be removed from the site utilizing a construction dumpster which will be changed out as required on a regular basis
- o Street cleaning will be performed on an as needed basis
- o Onsite snow removal will be performed by Zachau Construction

I. Erosion Control and Preservation of Trees



Erosion control measures will be installed prior to the commencement of any work. A complete erosion control plan will be submitted for review at the preconstruction meeting. The erosion control measures will be maintained on a daily basis and inspected weekly or after any storm event. The inspection will be documented for review by the City or DEP. There are currently no trees located within the site.

J. Construction Staging Area

Attachment "A" of this document depicts the location of the storage and staging area. This area is within the construction fence and allows for adequate space for truck unloading

K. Construction Parking

Construction parking will be provided onsite and in the proposed new parking area shown as phase 1.

The truck route will go around the south road on Thompson's Point as shown on attachment "A"

I. Special Measure as Necessary

This project will require the building footprint to be surcharged prior to the start of the building construction. This will be in place 6 to 9 months prior to the building construction. The construction fence and erosion control will be in place prior to the placement of the surcharge and remain in place the entire duration of the project. No other special measures will be required.



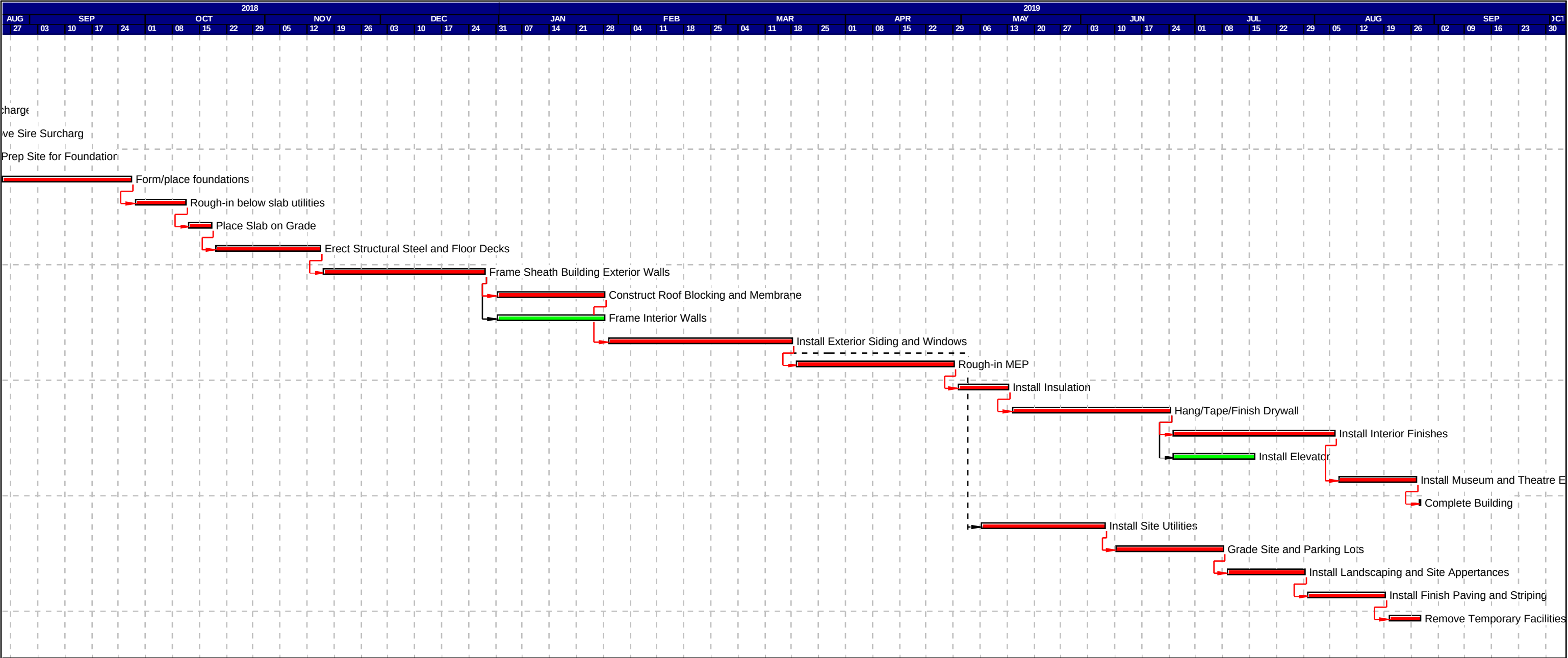


OVERALL SITE PLAN

GRAPHIC SCALE

0 100 200 400

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Start date	04DEC17
Finish date	28AUG19
Data date	04DEC17
Run date	14SEP17
Page number	1B
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Zachau Construction, Inc.
Children;s Museum & Theatre

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

8. TRAFFIC & PARKING DEMAND

8.1 TRAFFIC

The Thompson's Point development has involved multiple submissions and traffic reviews over time. The development was granted a Traffic Movement Permit from the MaineDOT and this permit remains valid and applicable to the current CMTM proposal. The overall project has benefited from off-site traffic improvements including substantial improvements to the Thompsons Point Connector road and the public rail crossing accessing the property. These improvements will continue to satisfactorily address the site's access needs into the foreseeable future. Trip Generation for the CMTM project was forecast at 29 trips for the am and pm peak hours⁴ based on a 40,000 SF facility. The proposed facility is now at approximately 29,000 SF. Gorrill-Palmer Consulting Engineers have provided the accompanying letter in Attachment C outlining the CMTM trip generation and evidence related to the original TMP thresholds.

8.2 PARKING DEMAND

The predicted peak parking demand is estimated to be approximately 50-60 vehicles as identified in the previously submitted Parking Summary⁵ by Gorrill-Palmer Consulting Engineers. Their study outlined peak parking demand to the full development and it accounted for variable parking demand for CMTM (Building I in the Study) from 6:00 AM to 10:30 PM. The CMTM's parking supply includes 18 spaces on Lot 7 as well as additional spaces (in lots and on-street) near the site. As has always been proposed, the management of parking encompasses all the site uses and there will continue to be a reliance of shared parking throughout the site. With the additional on-street spaces and the active management that Thompson's Point employs, there will be no issue meeting the peak demand (anticipated to be 50-60 vehicles) for the CMTM.

8.3 ATTACHMENT

Attachment C – Gorrill-Palmer Consulting Engineers Trip Generation Summary

⁴ See *The Forefront at Thompsons Point Trip Generation for the Master Plan* dated August 31, 2015 by Gorrill Palmer.

⁵ See *Memorandum – Forefront at Thompsons Point Parking Summary* by Gorrill Palmer dated August 31, 2015

ATTACHMENT C

**Gorrill-Palmer Consulting Engineers
Trip Generation Summary**

**Trip Generation Summary
Thompson's Point
Portland, Maine
October 2017**

Date: October 6, 2017
Subject: Updated Trip Generation
Thompson's Point - Portland, Maine
To: Suzanne Olson, Children's Museum and Theatre of Maine
From: Randy Dunton, Emily Tynes, Gorrill Palmer (JN 3353)

Gorrill Palmer (GP) has prepared this summary to evaluate the trip generation for the proposed Children's Museum and Theatre of Maine at Thompson's Point in Portland, Maine. In addition, this summary evaluates the updated trip generation for the Thompson's Point site and compares it to the permitted Traffic Movement Permit (TMP) trip generation. The following is a summary of the trip generation used for the permitted Thompson's Point site, the forecast trip generation for the existing uses, approved uses that have not yet been built, the proposed Children's Museum and Theatre of Maine, and the comparison of the total trip generation to the permitted trip generation.

Previous Museum Trip Generation

GP researched the trip generation methodology and size of the proposed Museum that was utilized during previous evaluations. Although the Museum was not included in the original TMP, it was included in trip generation evaluations completed after the TMP was obtained. Since the TMP is for the number of trip ends generated by the site and not for the specific uses, alternative uses can be proposed, provided the trip generation does not exceed the permitted levels. Based on a review of previous information, the Museum was originally estimated to be 25,000 sf. The trip generation was forecast based on information for the Los Angeles Entertainment District Museum and was forecast to generate the following:

- AM Peak Hour: 29 trip ends
- PM Peak Hour: 29 trip ends

One trip end is equal to a trip into or out of the site, thus a round trip is equal to two trip ends. In subsequent evaluations, the size of the proposed building had been increased to 40,000 sf, but the forecast trip generation remained the same because the increase in building size was to decompress the previously proposed building and allow more open space. The size of the Museum "program" was expected to remain the same. The trip generation calculations are attached.



Currently Proposed Museum Trip Generation

The trip generation for the proposed Children's Museum and Theatre of Maine has been based on 29,096 sf. This is 4,096 sf larger than the originally proposed museum. Based on this size and the trip generation methodology used previously, the proposed Museum is forecast to generate the following:

- AM Peak Hour: 33 trip ends
- PM Peak Hour: 33 trip ends

The trip generation for the currently proposed Museum is forecast to be four trip ends greater than the forecast trip generation for the originally proposed museum during both peak hours.

Proposed Site Trip Generation

To ensure that the Thompson's Point site will not exceed the permitted trips, the City of Portland requires that an evaluation of overall site trip generation be completed for each addition to the site. The trip generation for the existing, approved but not yet built, and currently proposed uses are summarized below.

Proposed Site Trip Generation

Building	Description	Size	AM Peak Hour	PM Peak Hour
Existing				
Brick North				
	Winery	5,890 sf	4	16
	Circus Conservatory	6,800 sf	5	4
	Big Room Studios	3,461 sf	13	20
	Big J's Chicken Shack	1,852 sf	21	20
	Brewery	10,068 sf	7	7
	Distillery	5,284 sf	4	4
	Color Me Mine	2,136 sf	2	6
	International Cryptozoology Museum	993 sf	1	1
	Brick North Total		57	78
Brick South				
	Event/Assembly Space	2,500 Seats	100	195
	Annex	7,384 sf	--*	--*
	Brick South Total		100	195
Proposed, Not Built				
	Hotel	125 rooms	83	87
	Proposed, Not Built Total		83	87
Currently Proposed				
	Children's Museum	29,096 sf	33	33
	Currently Proposed Total		33	33
Proposed Site Subtotal			273	393
Reduction (10%) for Bus / Train / Shared Use			(-27)	(-39)



Proposed Site Trip Generation	246	354
Permitted Trip Ends	734	1091
Difference Between Permitted and Proposed Site	488	737

*Maximum of 2,500 people in the building for events. Highest trip generation would be an event in the Event space, not the Annex.

As shown in the table, with the addition of the proposed Children's Museum and Theatre of Maine, the proposed site is forecast to generate 246 trip ends during the AM peak hour and 354 trip ends during the PM peak hour. This is 488 trip ends and 737 trip ends less than the permitted trip generation during the AM and PM peak hours respectively.

JN: 2419
 Project Description: Thompson's Point
 Project Location: Portland
 Date: August 14, 2015

Gorrill-Palmer Consulting Engineers, Inc.
 P.O. Box 1237
 15 Shaker Road
 Gray, Maine 04039

Cultural Center
Based on Los Angeles Entertainment District Museum

Gross Floor Area 25,000

Time Period	Trip Rate per 1000 GFA	Trip Ends	Number of Studies	Directional Split		Directional Distribution		R ²
				IN	OUT	IN	OUT	
PM Peak Hour	T = 1.14(X)	29	1	50%	50%	15	14	---

JN: 2419
 Project Description: Thompson's Point
 Project Location: Portland
 Date: August 14, 2015

Gorrill-Palmer Consulting Engineers, Inc.
 P.O. Box 1237
 15 Shaker Road
 Gray, Maine 04039

Cultural Center
Based on Los Angeles Entertainment District Museum

Gross Floor Area 25,000

Time Period	Trip Rate per 1000 GFA	Trip Ends	Number of Studies	Directional Split IN OUT	Directional Distribution IN OUT	R ²
PM Peak Hour	T = 1.14(X)	29	1	50% 50%	15 14	---

Building size increased from 25,000sf to 40,000sf,
 but program size remained the same, so no
 additional increase in trip generation is expected.

JN: 3369
 Project Description: i's Museum Thompson's Point
 Project Location: Portland, Maine
 Date: October 4, 2017

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

Cultural Center
Based on Los Angeles Entertainment District Museum

Gross Floor Area 29,096

Time Period	Trip Rate per 1000 GFA	Trip Ends	Number of Studies	Directional Split		Directional Distribution		R ²
				IN	OUT	IN	OUT	
PM Peak Hour	T = 1.14(X)	33	1	50%	50%	17	16	---

JN: 3353
 Project Description: Thompsons Point Existing
 Project Location: Portland, Maine
 Date: 9/7/2017

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

**Specialty Retail Center
 Land Use Code (LUC) 814**

Gross Floor Area (ft²): 5,890

Average Rate

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 44.32 (X)	261	4	50%	50%	131	130	---
Peak Hour of Adjacent Street Traffic 7-9 AM**	T = 0.74 (X)	4	N/A	60%	40%	2	2	---
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.71 (X)	16	5	45%	55%	7	9	---
AM Peak Hour of Generator	T = 6.84 (X)	40	4	50%	50%	20	20	---
PM Peak Hour of Generator	T = 5.02 (X)	30	3	55%	45%	17	13	---
Saturday	T = 42.04 (X)	248	3	50%	50%	124	124	---
Saturday Peak Hour of Gen.***	T = 6.63 (X)	39	3	50%	50%	20	19	---

**Based on ratio of AM/PM traffic for LUC 820, Shopping Center and applied to 814 PM rate.

* Percentages rounded to nearest 5%

***Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center

Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 42.78 (X) + 37.66	290	4	50%	50%	145	145	0.69
Peak Hour of Adjacent Street Traffic 7-9 AM	---	---	---	---	---	---	---	---
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.40 (X) + 21.48	36	5	45%	55%	16	20	0.98
AM Peak Hour of Generator	T = 4.91 (X) + 115.59	145	4	50%	50%	73	72	0.90
PM Peak Hour of Generator	---	---	---	---	---	---	---	---
Saturday	---	---	---	---	---	---	---	---
Saturday Peak Hour of Gen.	---	---	---	---	---	---	---	---

* Percentages rounded to nearest 5%

(---) Not Given

AM Peak of Adjacent Street 7-9 AM***	T = 0.275 (PM Peak Hour)	8	60%	40%	5	3
Saturday Peak Hour**	T = 1.325 (PM Peak Hour)	40	50%	50%	20	20

**Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center

***AM Peak Hour of Adjacent Street comes from a ration of PM to AM trip rates from LUC 820 - Shopping Center



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JOB 2419

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

Education Space Trip Generation

Total (from 2/27/14 submittal): 25AM and 21 PM

6,799 SF in Building A }
30,600 SF in Building D } 37,399 SF Total

$$\frac{6,799}{37,399} \times 25 = 5 \text{ AM trips to building A}$$

$$\frac{6,799}{37,399} \times 21 = 4 \text{ PM trips to Building A}$$

$$\frac{30,600}{37,399} \times 25 = 20 \text{ AM trips to Building D}$$

$$\frac{30,600}{37,399} \times 21 = 17 \text{ PM trips to Building D}$$

JN: 2419
 Project Description: Thompsons Point
 Project Location: Portland, Maine
 Date: August 14, 2015

Gorrill-Palmer Consulting Engineers, Inc.
 P.O. Box 1237
 15 Shaker Road
 Gray, Maine 04039

**General Office Building
 Land Use Code (LUC) 710**

Square Feet 3,461

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	$\ln(T) = 0.77 \ln(X) + 3.65$	100	78	50%	50%	50	50	0.80
AM Peak Hour	$\ln(T) = 0.80 \ln(X) + 1.55$	13 ✓	217	90%	10%	12	1	0.83
PM Peak Hour	$T = 1.12(X) + 78.81$	83	235	15%	85%	12	71	0.82
Saturday	$T = 2.14(X) + 18.47$	26	17	50%	50%	13	13	0.66
Peak Hour of Generator	$\ln(T) = 0.81 \ln(X) - 0.12$	2	10	55%	45%	1	1	0.59

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	$T = 11.01(X)$	38	78	50%	50%	19	19	---
AM Peak Hour	$T = 1.55(X)$	5	217	90%	10%	5	0	---
PM Peak Hour	$T = 1.49(X)$	5	235	15%	85%	1	4	---
Saturday	$T = 2.37(X)$	8	17	50%	50%	4	4	---
Saturday Peak Hour of Gen.	$T = 0.41(X)$	1	10	50%	50%	1	0	---

* Percentages rounded to nearest 5%

PM Peak Hour: $T = 1.49/1.55$ (AM Peak) 12 15% 85% | 2 10 0.82

PM Trips Based on Email From Chris T. dated
 Aug 28, 2015 stating 20 max.

JN: 3353
 Project Description: Thompson's Point Existing
 Project Location: Portland, Maine
 Date: September 7, 2017

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

**High Turnover (Sit Down) Restaurant
 Land Use Code (LUC) 932**

Gross Floor Area (ft²): 1,852

Time Period	ITE Trip Rate (Average Rate)	# of Sources	Trip Ends	Directional Split		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 127.15 (X)	14	235	50%	50%	118	117	N/A
AM Peak Adjacent Street	T = 11.52 (X)	18	21	50%	50%	11	10	N/A
PM Peak Adjacent Street	T = 10.92 (X)	38	20	60%	40%	12	8	N/A
AM Peak of Generator	T = 13.53 (X)	21	25	50%	50%	13	12	N/A
PM Peak of Generator	T = 18.80 (X)	27	35	55%	45%	19	16	N/A
Saturday	T = 158.37 (X)	2	293	50%	50%	147	146	N/A
Saturday Peak Hour of Gen.	T = 20.00 (X)	3	37	65%	35%	24	13	N/A

JN: 3353
 Project Description: Thompsons Point Existing
 Project Location: Portland, Maine
 Date: 09/07/17

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

**Manufacturing
 Land Use Code (LUC) 140**

Gross Floor Area 10,068

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution		Number of Studies
			IN	OUT	IN	OUT	
Weekday	T = 3.88 (X) - 20.70	18	50%	50%	9	9	62
AM Peak Adjacent Street	T = 0.83 (X) - 28.88	-21	75%	25%	-16	-5	50
PM Peak Adjacent Street	T = 0.78 (X) - 12.89	-5	35%	65%	-2	-3	54
AM Peak hour of Generator	T = 0.83 (X) - 17.71	-9	70%	30%	-6	-3	50
PM Peak Hour of Generator	T = 0.76 (X) - 5.15	3	50%	50%	2	1	50
Saturday	Not Given	-	50%	50%	---	---	2
Saturday Peak Hour of Gen.	Not Given	-	50%	50%	---	---	2

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution		
			IN	OUT	IN	OUT	
Weekday	T = 3.82 (X)	38	50%	50%	19	19	62
AM Peak Adjacent Street	T = 0.73 (X)	7	75%	25%	5	2	50
PM Peak Adjacent Street	T = 0.74 (X)	7	35%	65%	2	5	54
AM Peak Hour of Generator	T = 0.78 (X)	8	70%	30%	6	2	50
PM Peak Hour of Generator	T = 0.75 (X)	8	50%	50%	4	4	50
Saturday	T = 1.49 (X)	15	50%	50%	8	7	2
Saturday Peak Hour of Gen.	T = 0.28 (X)	3	50%	50%	2	1	2

* Percentages rounded to nearest 5%

JN: 2419
 Project Description: Thompsons Point
 Project Location: Portland, Maine
 Date: 08/14/15

Gorrill-Palmer Consulting Engineers, Inc.
 P.O. Box 1237
 15 Shaker Road
 Gray, Maine 04039

**Manufacturing
 Land Use Code (LUC) 140**

Gross Floor Area 5,284

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution		Number of Studies
			IN	OUT	IN	OUT	
Weekday	T = 3.88 (X) - 20.70	0	50%	50%	0	0	62
AM Peak Adjacent Street	T = 0.83 (X) - 28.88	-24	75%	25%	-18	-6	50
PM Peak Adjacent Street	T = 0.78 (X) - 12.89	-9	35%	65%	-3	-6	54
AM Peak hour of Generator	T = 0.83 (X) - 17.71	-13	70%	30%	-9	-4	50
PM Peak Hour of Generator	T = 0.76 (X) - 5.15	-1	50%	50%	-1	0	50
Saturday	Not Given	-	50%	50%	---	---	2
Saturday Peak Hour of Gen.	Not Given	-	50%	50%	---	---	2

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution		
			IN	OUT	IN	OUT	
Weekday	T = 3.82 (X)	20	50%	50%	10	10	62
AM Peak Adjacent Street	T = 0.73 (X)	4	75%	25%	3	1	50
PM Peak Adjacent Street	T = 0.74 (X)	4	35%	65%	1	3	54
AM Peak Hour of Generator	T = 0.78 (X)	4	70%	30%	3	1	50
PM Peak Hour of Generator	T = 0.75 (X)	4	50%	50%	2	2	50
Saturday	T = 1.49 (X)	8	50%	50%	4	4	2
Saturday Peak Hour of Gen.	T = 0.28 (X)	1	50%	50%	1	0	2

* Percentages rounded to nearest 5%

JN: 2419
 Project Description: Thompsons Point
 Project Location: Portland, Maine
 Date: 8/14/2015

Gorrill-Palmer Consulting Engineers, Inc.
 P.O. Box 1237
 15 Shaker Road
 Gray, Maine 04039

**Specialty Retail Center
 Land Use Code (LUC) 814**

Gross Floor Area (ft²): 2,136

Average Rate

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 44.32 (X)	95	4	50%	50%	48	47	---
Peak Hour of Adjacent Street Traffic 7-9 AM**	T = 0.74 (X)	2	N/A	60%	40%	1	1	---
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.71 (X)	6	5	45%	55%	3	3	---
AM Peak Hour of Generator	T = 6.84 (X)	15	4	50%	50%	8	7	---
PM Peak Hour of Generator	T = 5.02 (X)	11	3	55%	45%	6	5	---
Saturday	T = 42.04 (X)	90	3	50%	50%	45	45	---
Saturday Peak Hour of Gen.***	T = 6.63 (X)	14	3	50%	50%	7	7	---

**Based on ratio of AM/PM traffic for LUC 820, Shopping Center and applied to 814 PM rate.

* Percentages rounded to nearest 5%

***Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center

Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 42.78 (X) + 37.66	129	4	50%	50%	65	64	0.69
Peak Hour of Adjacent Street Traffic 7-9 AM	---	---	---	---	---	---	---	---
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.40 (X) + 21.48	27	5	45%	55%	12	15	0.98
AM Peak Hour of Generator	T = 4.91 (X) + 115.59	126	4	50%	50%	63	63	0.90
PM Peak Hour of Generator	---	---	---	---	---	---	---	---
Saturday	---	---	---	---	---	---	---	---
Saturday Peak Hour of Gen.	---	---	---	---	---	---	---	---

* Percentages rounded to nearest 5%

(---) Not Given

AM Peak of Adjacent Street 7-9 AM***	T = 0.275 (PM Peak Hour)	3	60%	40%	2	1
Saturday Peak Hour**	T = 1.325 (PM Peak Hour)	15	50%	50%	8	7

**Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center

***AM Peak Hour of Adjacent Street comes from a ration of PM to AM trip rates from LUC 820 - Shopping Center

JN: 3353
 Project Description: Thompson's Point
 Project Location: Portland, Maine
 Date: September 7, 2017

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

Cultural Center
Based on Los Angeles Entertainment District Museum

Gross Floor Area 993

Time Period	Trip Rate per 1000 GFA	Trip Ends	Number of Studies	Directional Split		Directional Distribution		R ²
				IN	OUT	IN	OUT	
PM Peak Hour	T = 1.14(X)	1	1	50%	50%	1	0	---

Trip Generation - Event / Assembly Space / Event Center

Source: Original approved study (Trip Gen Summary Memo 3.3-14)

2500 occupants = 100 AM trips
195 PM trips

Based on City and MaineDOT reviewed and approved rates used in the original approved study. They originate from a study from the Bayside Expo and Executive Conference Center in Boston, Massachusetts

JN: 3353
 Project Description: Thompson's Point Proposed
 Project Location: Portland, Maine
 Date: September 7, 2017

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

Hotel **Land Use Code (LUC) 310**

Numer of Rooms: 148

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	$T = 8.95 (X) - 373.16$	951	50%	50%	476	475
AM Peak Adjacent Street	$\ln(T) = 1.24 \ln(X) - 2.00$	66	60%	40%	40	26
PM Peak Adjacent Street	---	---	55%	45%	---	---
AM Peak hour of Generator	$\ln(T) = 0.87 \ln(X) + 0.02$	79	55%	45%	43	36
PM Peak Hour of Generator	$\ln(T) = 1.00 \ln(X) - 0.58$	83	60%	40%	50	33
Saturday	$T = 9.62 (X) - 294.56$	1129	50%	50%	565	564
Saturday Peak Hour of Gen.	$T = 0.69 (X) + 4.32$	106	55%	45%	58	48

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	$T = 8.17 (X)$	1209	50%	50%	605	604
AM Peak Adjacent Street	$T = 0.56 (X)$	83	60%	40%	50	33
PM Peak Adjacent Street	$T = 0.59 (X)$	87	55%	45%	48	39
AM Peak Hour of Generator	$T = 0.52 (X)$	77	55%	45%	42	35
PM Peak Hour of Generator	$T = 0.61 (X)$	90	60%	40%	54	36
Saturday	$T = 8.19 (X)$	1212	50%	50%	606	606
Saturday Peak Hour of Gen.	$T = 0.72 (X)$	107	55%	45%	59	48

* Percentages rounded to nearest 5%

9. NATURAL FEATURES

9.1 OVERVIEW

The development is designated to maintain a 25' foot buffer from the annual mean high tide to all impervious and building structures. Phase I grading and stormwater quality improvements are proposed inside of this setback or has always been proposed and previously approved. The project will avoid impacts to the wetland of special significance around the perimeter of the site. The development will improve water quality of stormwater runoff entering the Fore River.

10. STORMWATER MANAGEMENT

10.1 OVERVIEW

A supplemental stormwater management report has been prepared (Attachment D) and is intended to describe the improvements included with the CMTM plan and demonstrate the integration of stormwater treatment and conveyance design with the approved Master Plan Stormwater Management Strategy. The accompanying computations show that this phase of the project has been designed to meet the Portland Stormwater Management Standards adopted July 19, 2010 and General Stormwater Standards of MaineDEP (revised October 2010) and are consistent with the overall goals presented in previous Stormwater Reports.

A detailed soil erosion and sediment control plan and a brief narrative has been produced for the project and this is included as Attachment E.

10.2 ATTACHMENTS

Attachment D – Supplemental Stormwater Management Report

Attachment E – Erosion & Sediment Control Plan

ATTACHMENT D

Supplemental Stormwater Management Report

**SUPPLEMENTAL STORMWATER MANAGEMENT REPORT FOR
CHILDREN'S MUSEUM AND THEATRE OF MAINE
PRELIMINARY SITE PLAN APPLICATION
(GENERAL STANDARDS)**

**LOT 7
CHILDREN'S MUSEUM & THEATRE OF MAINE SITE
THE FOREFRONT AT THOMPSON'S POINT
PORTLAND, MAINE**

PREPARED FOR:

**CHILDREN'S MUSEUM & THEATRE OF MAINE
142 FREE STREET
P.O. BOX 4041
PORTLAND, MAINE 04101
(207) 828-1234**

PREPARED BY:

**STANTEC CONSULTING SERVICES, INC
482 PAYNE ROAD SCARBOROUGH COURT
SCARBOROUGH, MAINE 04106
(207) 883-3355**

October 2017

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List of Appendices

Appendix A – Jellyfish™ Treatment System Computations (Provided for Final Submission)

Appendix B – Rational Method 25-Yr Event Stormdrain Pipe Sizing Computations

Appendix C – StormTech® Chamber Sizing Computation

Appendix D – Summary of Water Quality Treatment – “Zone F”

Appendix E – Operations & Maintenance Manual (Lot 7 – Only)

Appendix F – Long Term Stormwater Management Maintenance Agreement

SUPPLEMENTAL STORMWATER MANAGEMENT REPORT

1.0 INTRODUCTION

Stantec Consulting Services, Inc. (Stantec) was retained by Children's Museum & Theatre of Maine (CMTM) for preparation of the proposed development of Lot 7 within the Forefront at Thompson's Point development in Portland, Maine.

This supplemental report is intended to describe the improvements included with the development of Lot 7 and demonstrates the integration of stormwater treatment and conveyance design with the approved Master Plan Stormwater Management Strategy. The enclosed computations show that this development has been designed to meet the Portland Stormwater Management Standards adopted July 19, 2010 and General Stormwater Standards of MaineDEP (revised October 2010) and are consistent with the overall goals presented in previous Stormwater Reports. The intent of the stormwater management design, erosion and sediment control, and Inspection and Maintenance Manual have remained the same as approved in June 5, 2012. This project will have a cumulative developed area of 1.12 acres of which 0.70 acres (30,492 SF) are newly constructed impervious area. Revisions to how the development of Lot 7 was presented in the Master Plan and how it relates to Stormwater Management Discharge Zone F is outlined below and tabulated in the attached computations.

2.0 JELLYFISH FILTER UNITS

As of January 21, 2015, MaineDEP has approved the use of a Jellyfish™ filter unit as an acceptable BMP for stormwater treatment. Jellyfish™ units have been integrated into the overall stormwater management strategy and are designed to treat zones that were previously treated by StormTreat™ units. MaineDEP approves the use of the Jellyfish™ units when sized, installed, and maintained in accordance with the following provisions:

- Each treatment cartridge is approved for a maximum flow rate of 80 GPM for each 54-inch long membrane cartridge and 40 GPM for each drawdown cartridge.
- Upstream water quality volume equal to 1.0 inch of runoff from impervious surfaces and 0.4 inch of runoff from landscaped areas to be stored and hydraulically isolated from any other storage on site. Water quality volume must also be drained in 24-48 hours.
- All systems must provide means to maintain the system.
- System must be inspected every 6 months.
- Review and approval by the manufacturer for the proposed use and sizing of the Jellyfish™ to ensure conformance with the manufacturer's design specifications.

Jellyfish™ units for this project have been designed by the manufacturer's engineers and checked thoroughly by Stantec. See Jellyfish™ unit details on Sheet C-7.0 Detail A. Also see Appendix A for attached Jellyfish™ unit computations.

3.0 **STORMWATER MANAGEMENT REVISIONS**

Zone F (Lot 7-CMTM Site, Brick North Building, Brick South Building and Associated Parking Areas):

Stormwater Management Zone F continues to include approximately half of the existing Brick South building, the existing Brick North building, and the associated developed area in between including landscaping, walkways, and parking areas. However, Zone F has been updated to now include all of Lot 7 (CMTM Site). The stormwater management strategy remains the same for Zone F, but has been resized based on the revised site plan for the CMTM site.

Zone F water quality treatment will be comprised of two treatment measures:

- A collection of Filterra® (or approved equal) tree box filters sized for the specific tributary area to each filter. All Tree-Box Filters have been designed to meet new sizing requirements as of January 21, 2015. (Designed by Others)
- Contech Jellyfish™ Treatment Units (CMTM Site):

Jellyfish™ units are manholes that utilize membrane filtration treatment cartridges. Flow enters the Jellyfish™ from an upstream storage chamber and flows down into a settling tank portion of the unit. Once the settling tank is filled, flow from the bottom of the tank is forced up through hi-flow cartridges and routes to the outlet. A baffle wall is located between the inlet and outlet compartments to ensure that un-treated flow is not mixed with treated flow. When the hi-flow treatment cartridge has filled, a drain down cartridge is activated treating the remaining water quality volume. Horizontal orifices are located on top of the cartridges to control the outflow of the system. Each Jellyfish™ unit is designed to discharge the water quality volume within 24-48 hours.

To meet Chapter 500, the Water Quality Volume provided within a Jellyfish™ System must be equal to or greater than the following:

- $1''/12 \times \text{impervious area} + 0.4''/12 \times \text{landscaped area} = \text{Water Quality Volume (cubic feet)}$

Computations of Water Quality Volume for Zone F can be found in Appendix D.

The water quality volume is provided in a subsurface arched chambers storage system. This portion of the design is consistent with the previously design storage for the StormTreat™ systems.

Jellyfish™ units are designed based on a mass sediment loading calculation. Each treatment hi-flow cartridge has a mass capacity of 125 lbs and each low-flow (draindown) cartridge has a capacity of 63 lbs. The mass loading for each zone was determined by Maine DEP sediment loading standards, assuming a 50% sediment removal from a designed pretreatment StormTech® Isolator row.

Discharge from larger storm events are controlled over a broad crested weir housed in a precast concrete outlet control structure set above the water quality volume. The overflow piping network is sized to handle runoff from a 25-year storm event.

Pretreatment for flow entering from all inlet pipes to the storage area will be provided via the installation of a StormTech® Isolator row(s).

Therefore, water quality goals for the Jellyfish™ Proprietary Systems meet the General Stormwater Standards of the November 2005 Chapter 500 Rules of MaineDEP (rev. January 2015).

The Jellyfish™ treatment system is considered adequate to meet the Chapter 500 General Standards.

4.0 CONCLUSION

The stormwater management strategy for this project presented herein allows for treatment of 100% of the developed area and 100% of the impervious area within Lot 7, the Children's Museum & Theatre of Maine site. The individual systems have been adjusted to accommodate layout revisions but ultimately the detailed design remains the same and meets or exceeds the City of Portland Stormwater Management Requirements.

5.0 APPENDICES

Appendix A – Jellyfish™ Treatment System Computations

Appendix B – Rational Method 25-Yr Event Stormdrain Pipe Sizing Computations

Appendix C – StormTech® Chamber Sizing Computation

Appendix D – Summary of Water Quality Treatment – “Zone F”

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APPENDIX A

JELLYFISH™ TREATMENT SYSTEM COMPUTATIONS (TO BE PROVIDED SEPARATELY)

APPENDIX B

RATIONAL METHOD 25-YR EVENT STORMDRAIN PIPE SIZING COMPUTATIONS

ATTACHMENT B

Rational Method Flow Computation - 25-Yr Storm Event Children's Museum & Theatre of Maine Forefront Thompson's Point - Portland, ME

Storm Water Management Zone	Area Trib To Discharge	Total Developed Area (sf)	Total Impervious Area (sf)	Total Pervious Area (sf)	Total Area (acres)	Weighted C	25 Year Flow (CFS)
Zone F	702 (CMTM SITE)	34,080.03	14,946.24	19,133.79	0.78	0.53	2.70
	702A	8,276.47	2,517.07	5,759.40	0.19	0.43	0.53
	702B1	7,826.31	2,781.96	5,044.35	0.18	0.47	0.55
	702B2	1,768.77	0.00	1,768.77	0.04	0.20	0.05
	702C	732.08	0.00	732.08	0.02	0.20	0.02
	702D	1,500.12	81.97	1,418.15	0.03	0.24	0.05
	702E	1,385.82	76.22	1,309.60	0.03	0.24	0.05
	702F1	9,091.23	7,445.88	1,645.35	0.21	0.81	1.11
	702F2	2,057.80	1,601.71	456.09	0.05	0.78	0.24
	702G	1,441.43	441.43	1,000.00	0.03	0.43	0.09
	703 (CMTM BUILDING)	9,632.10	9,602.10	30.00	0.22	0.95	1.37
	CMTM Subtotal	43,712.13	24,548.34	19,163.79	1.00	0.48	4.06
	CB F-3	4,476.35	2,203.47	2,272.88	0.10	0.57	0.38
	CB F-5	5,211.51	2,336.19	2,875.32	0.12	0.54	0.42
	CB F-6	2,907.41	1,336.65	1,570.76	0.07	0.54	0.24
	CB F-8	5,571.53	4,925.59	645.94	0.13	0.86	0.72
	CB F-7	19,466.31	17,661.14	1,805.17	0.45	0.88	2.57
	701	21,172.99	17,635.58	3,537.41	0.49	0.82	2.61
	704	8,858.74	7,701.29	1,157.45	0.20	0.85	1.13
	Brick South North Side* (706)	16,464.53	16,464.53	0.00	0.38	0.95	2.34
	Brick North (Treated)* (705)	33,340.00	33,340.00	0.00	0.77	0.95	4.74
	Remained of Zone F Subtotal	117,469.37	103,604.44	13,864.93	2.70	0.77	15.15
	Totals	161,181.50	128,152.78	33,028.72	3.70	1.25	19.21

Assumptions	
Pervious C	0.2
Impervious C	0.95
I-25 Year Storm ¹	6.52 In/Hr
RATIONAL FLOW = C*I*A	
Notes:	
1. Rainfall intensity based on Thompson's Point IDF curve using a TC of 5 min.	

Computed By: AMS
Checked By: SRB
Date: 3/21/2017

Pipe Capacity Computations 25-Yr Storm Event Children's Museum & Theatre of Maine at the Forefront at Thompson's Point		
Inlet ID	702A (CB9)	
Peak Runoff	0.53	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0050	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	2.66	(ft/s)
Maximum Capacity	0.93	(cfs)
Inlet ID	702B1 (CB7)	
Peak Runoff	0.55	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0102	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.80	(ft/s)
Maximum Capacity	1.33	(cfs)
Inlet ID	702B2 (CB5)	
Peak Runoff	0.05	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0350	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	7.04	(ft/s)
Maximum Capacity	2.46	(cfs)
Inlet ID	702C (CB8)	
Peak Runoff	0.02	(cfs)
Add Flow from 702A	0.53	(cfs)
Total	0.55	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0051	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.52	(ft/s)
Maximum Capacity	2.76	(cfs)
Inlet ID	702D (CB6)	
Peak Runoff	0.05	(cfs)
Add Flow from 702B1	0.55	
Add Flow from 702C	0.55	(cfs)
Total	1.15	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0051	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.52	(ft/s)
Maximum Capacity	2.76	(cfs)
Inlet ID	702E (CB4)	
Peak Runoff	0.05	(cfs)
Add Flow from 702B2	0.05	
Add Flow from 702D	1.15	(cfs)
Total	1.26	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0039	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.08	(ft/s)
Maximum Capacity	2.42	(cfs)
Inlet ID	702F1 (CB1)	
Peak Runoff	1.11	(cfs)
Add Flow from 702F2	0.33	(cfs)
Total	1.44	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0050	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.48	(ft/s)

Maximum Capacity	2.74	(cfs)
Inlet ID	702F2 (CB2)	
Peak Runoff	0.24	(cfs)
Add Flow from 702G	0.09	(cfs)
Total	0.33	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0059	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.78	(ft/s)
Maximum Capacity	2.97	(cfs)
Inlet ID	702G (CB3)	
Peak Runoff	0.09	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0053	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	2.74	(ft/s)
Maximum Capacity	0.96	(cfs)
Inlet ID	703 (Roof Drain)	
Peak Runoff	1.37	(cfs)
Pipe Diameter	6	(in)
Cross Sectional Area	0.20	(sf)
Slope	0.0731	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	8.39	(ft/s)
Maximum Capacity	1.65	(cfs)

Pipe Capacity Computations 25-Yr Storm Event Children's Museum & Theatre of Maine at the Forefront at Thompson's Point		
Inlet ID	702A (CB9)	
Peak Runoff	0.53	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0050	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	2.66	(ft/s)
Maximum Capacity	0.93	(cfs)
Inlet ID	702B1 (CB7)	
Peak Runoff	0.55	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0102	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.80	(ft/s)
Maximum Capacity	1.33	(cfs)
Inlet ID	702B2 (CB5)	
Peak Runoff	0.05	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0350	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	7.04	(ft/s)
Maximum Capacity	2.46	(cfs)
Inlet ID	702C (CB8)	
Peak Runoff	0.02	(cfs)
Add Flow from 702A	0.53	(cfs)
Total	0.55	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0051	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.52	(ft/s)
Maximum Capacity	2.76	(cfs)
Inlet ID	702D (CB6)	
Peak Runoff	0.05	(cfs)
Add Flow from 702B1	0.55	
Add Flow from 702C	0.55	(cfs)
Total	1.15	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0051	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.52	(ft/s)
Maximum Capacity	2.76	(cfs)
Inlet ID	702E (CB4)	
Peak Runoff	0.05	(cfs)
Add Flow from 702B2	0.05	
Add Flow from 702D	1.15	(cfs)
Total	1.26	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0039	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.08	(ft/s)
Maximum Capacity	2.42	(cfs)
Inlet ID	702F1 (CB1)	
Peak Runoff	1.11	(cfs)
Add Flow from 702F2	0.33	(cfs)
Total	1.44	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0050	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.48	(ft/s)

Maximum Capacity	2.74	(cfs)
Inlet ID	702F2 (CB2)	
Peak Runoff	0.24	(cfs)
Add Flow from 702G	0.09	(cfs)
Total	0.33	(cfs)
Pipe Diameter	12	(in)
Cross Sectional Area	0.79	(sf)
Slope	0.0059	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	3.78	(ft/s)
Maximum Capacity	2.97	(cfs)
Inlet ID	702G (CB3)	
Peak Runoff	0.09	(cfs)
Pipe Diameter	8	(in)
Cross Sectional Area	0.35	(sf)
Slope	0.0053	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	2.74	(ft/s)
Maximum Capacity	0.96	(cfs)
Inlet ID	703 (Roof Drain)	
Peak Runoff	1.37	(cfs)
Pipe Diameter	6	(in)
Cross Sectional Area	0.20	(sf)
Slope	0.0731	(ft/ft)
Mannings 'n'	0.012	
Flow Velocity	8.39	(ft/s)
Maximum Capacity	1.65	(cfs)

APPENDIX C

STORMTECH CHAMBER SIZING COMPUTATION

ATTACHMENT C STORMTECH CHAMBER SIZING

Zone F Chamber Storage

Weir Height	13.63 EL	
Bottom of Chamber Elevation	11.13 EL	
Total Chamber Height	30 Inches	30 (max chamber height)
Total Crushed Stone Height	6 Inches	
Total Storage Height	30 * Inches	(chamber only, no stone storage)
Total Storage per chamber	61.38 * CF	
Total WQV Required for Zone F	7,416.05 CF	
Total WQV Provided for Zone F	7,856.64 CF	
Total Chambers Required	121.0 Chambers	
Total WQV Required for Zone F (CMTM Site)	2,686.06 CF	
Total WQV Provided for Zone F (CMTM Site)	2,700.72 CF	
Total Chambers Required (CMTM Site)	44.0 Chambers	
Total WQV Required for Zone F (Remainder of Zone F)	4,729.99 CF	
Total WQV Provided for Zone F (Remainder of Zone F)	4,787.64 CF	
Total Chambers Required (Remainder of Zone F)	78.0 Chambers	

* Storage per chamber of 61.38 cf taken from the StormTech design manual for an SC-740 chamber with 36" depth of water is the system minus the storage of 6" of stone as the outlet pipe invert is at the top of stone elevation, therefore the stone volume is not used as storage.

APPENDIX D

SUMMARY OF WATER QUALITY TREATMENT – “ZONE F”

ATTACHMENT D Summary of Water Quality Treatment													
Storm Water Management Zone	Inlet Subcatchment	Total Developed Area (sf)	Total Impervious Area (sf)	Total Pervious Area (sf)	Total New Developed Area (Acres)	Required Water Quality Volume (cf) ²	Existing Roof Mitigation Credit (sf) ⁹	Treatment Approach	1 Yr 24-hr Storm Event Peak Flow Rate (cfs) ³	Stormtech Isolator Row Chambers Required (EA) ⁴	Jelly Fish Treatment Unit Required(Where Applicable) ^{5,11}	Jelly Fish Units Provided (EA)	Provided Water Quality Volume (cf) ^{4, 7}
Zone F	702 (CMTM SITE)	34,080.03	14,946.24	19,133.79	0.78	1,883	0	Jelly Fish Unit	1.27	6.33	JF6-4-1	JF6-4-1	2,700.72
	703 (CMTM BUILDING)	9,633.00	9,633.00	0.00	0.22	803	0	Jelly Fish Unit	0.64	3.21			
	Sub-Total CMTM Site	43,713.03	24,579.24	19,133.79	1.00	2,686.06	0	Jelly Fish Unit	-	10.00			
	CB F-3	4,476.35	2,203.47	2,272.88	0.10	259	0	Jelly Fish Unit	0.18	0.89	JF6-4-1	JF6-4-1	4,787.64
	CB F-5	5,211.51	2,336.19	2,875.32	0.12	291	0	Jelly Fish Unit	0.20	0.98			
	CB F-6	2,907.41	1,336.65	1,570.76	0.07	164	0	Jelly Fish Unit	0.11	0.56			
	CB F-8	5,571.53	4,925.59	645.94	0.13	432	0	Jelly Fish Unit	0.34	1.69			
	CB F-7	19,466.31	17,661.14	1,805.17	0.45	1,532	0	Jelly Fish Unit	1.20	6.02			
	704	8,858.74	7,701.29	1,157.45	0.20	680	0	Jelly Fish Unit	0.53	2.65			
	701	21,172.99	17,635.58	3,537.41	0.49	1,588	0	Filterra	1.23	0.00	-	-	-
	Sub-Total Remainder of Zone F	67,664.84	53,799.91	13,864.93	1.55	3,358	0	-		12.79			
	Sub-Total Zone F New Treated Area	111,377.87	78,379.15	32,998.72	2.56	6,044.01	0.00	-	-	22.79	JF6-4-1	JF6-4-1	7,488.36
	Brick South North Side* (706)	16,464.53	16,464.53	0.00	0.38	1,372	9,879	Jelly Fish Unit	1.10	5.49	JF6-4-1	JF6-4-1	1360
	Brick North (Treated)* (705)	33,340.00	33,340.00	0.00	0.77	2,778	20,004	Gravel Drip Strip	-	0.00	-	-	2,920
	Sub-Total Zone F Existing Treated Roof Area	49,804.53	49,804.53	0.00	1.14	4150.38	29882.72	-	-	5.49	JF6-4-1	JF6-4-1	4,280.00
	Zone F New Untreated Area - Perimeter Grades	0.00	0.00	0.00	0.00		0	None	-	NA	N/A	N/A	0
	Zone F Total Area Discharge	161,182.40	128,183.68	32,998.72	3.70	10,194	29,883	-	-	28.29	JF6-4-1	JF6-4-1	11,768

APPENDIX E

OPERATIONS & MAINTENANCE MANUAL (LOT 7 – ONLY)

**INSPECTION AND MAINTENANCE MANUAL
FOR STORMWATER MANAGEMENT AND
RELATED STORMWATER FACILITIES**

**LOT 7
CHILDREN'S MUSEUM & THEATRE OF MAINE SITE
THE FOREFRONT AT THOMPSON'S POINT
PORTLAND, MAINE**

PREPARED FOR:

**CHILDREN'S MUSEUM & THEATRE OF MAINE
142 FREE STREET
P.O. BOX 4041
PORTLAND, MAINE 04101
(207) 828-1234**

PREPARED BY:

**STANTEC CONSULTING SERVICES INC.
482 PAYNE ROAD
SCARBOROUGH, MAINE 04074
(207) 883-3355**

MARCH 2017

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I. INTRODUCTION

Relatively complex stormwater management facilities are commonly installed in development projects including, commercial facilities, and many other developments. The complexity and goals of these systems vary with the nature of the receiving water, as well as the type of development. Runoff from developed areas of the project, including rooftops, paved or lawn areas, typically contain materials that can impact the receiving waters. Source control and the installation of wet ponds, infiltration galleries, and water quality units, often combined with pretreatment measures or followed by vegetated buffer strips and other best management practices, can significantly reduce the non-point pollution discharge from the developed area. These measures are particularly important to projects in the watersheds of sensitive water bodies, or projects with potential impacts to groundwater. With the increased cost of land and development, there is an increased tendency to construct portions of the stormwater management systems underground.

The effectiveness of water quality management provisions and other components of the stormwater management system are dependent on their design, upkeep, and maintenance to assure they meet their intended function over an extended period of years. It is critical that the stormwater management facilities are regularly inspected, and that maintenance is performed on an as-needed basis. It must also be recognized that the effectiveness of these facilities, and their maintenance requirements, are related to the stormwater drainage facilities that collect and transport the flow to the ponds, infiltration galleries, and other treatment measures. Thus, maintenance should be directed to the total system, not just the pond or primary stormwater management facility.

The purpose of this document is to define, in detail, the inspection and maintenance requirements deemed necessary to assure that the stormwater management facilities function as intended when they were designed. Subsequent sections identify individual maintenance items, give a brief commentary of the function, and need for the item, a description of the work required, and a



suggested frequency of accomplishment. While the suggested programs and schedules must be adapted to projects, the material presented should provide guidance for a successful long-term program for operation and maintenance. A supplemental section provides guidance for construction monitoring of the facilities during their installation and more detailed checklists. Certain facilities, specifically the groundwater recharge and infiltration beds are not intended to be placed in service until the tributary catchment area has the permanent cover in place and any contributing turf areas have achieved a 90% catch of vegetation (i.e. established).

A. GUIDELINES OVERVIEW

A summary of the individual components of stormwater management facilities has been prepared. The format used in the summary is as follows:

Preface: A general description of what function/benefit the element is intended to provide. This is a short summary and not intended to provide the design basis which can be found in other sources.

Inspection: This section provides the inspection requirements for the individual component.

Maintenance: The section provides general information on the routine maintenance requirements of this element.

Frequency: This section outlines the best judgment of the designer on the system to the frequency of maintenance.

Comments: This section provides any particular comment on the site-specific features of this element. This is a summary only. The owner/operator should review the design drawings and documents carefully to understand the particular elements of the project. The end of this section should allow for the owner/operator to make notes on the specific program. This may include the selected maintenance procedure, cross-references to applicable design drawings, etc.

A list of the individual inspection/maintenance elements is provided in the table of contents. The guidelines are proposed for initial use with adjustments made as appropriate based upon specific project experience.

II. PROJECT OVERVIEW

Key permits issued (or applied for) on the project include:

- MaineDEP Site Location of Development (City of Portland Delegated Review Authority)
- City of Portland Site Plan Review

The permit applications pending for the project include the design information for the stormwater system.

A copy of the permits and Stormwater Management Report should be appended to this manual as Appendix B. The Owner/Operator of the stormwater management system should review these permits for a general description and background of the project, as well as any specific permit conditions or requirements of the project.

The applicant the Children's Museum & Theatre of Maine (CMTM) has retained Stantec Consulting Services Inc. for civil engineering for the proposed Children's

Museum & Theatre of Maine at the Forefront at Thompsons's Point in Portland, Maine. Stantec Consulting Services Inc. has prepared the design for the stormwater management facilities and may be contacted at:

Stantec Consulting Services Inc.
482 Payne Road
Scarborough, Maine 04074
(207) 883-3355

It is recommended the preparer of the plan be contacted with any particular questions on the design intent or similar issues.

The applicable plans/design documents which apply to the project are:

1. Civil Site Plans/Permit Applications Prepared by Stantec Consulting Services Inc.
2. The Erosion Control/Sedimentation Control Plan for the project.
3. The Stormwater Management Plan for the project.

A copy of these documents should be retained with the manual.

The site is tributary to the Fore River watershed.

The proposed design will include deep sump catch basins, oil absorbent sorbent booms, underground detention including the use of an arched chamber system, Jellyfish® filter, and collection, conveyance, and discharge systems.

The project is subject to the requirements of the City of Portland Code of Ordinances, Chapter 32. Specifically, the post construction stormwater management plan. The City requirements have been reiterated for ease of reference; however, the owner shall be responsible to meet the current City code.

"Any person owning, operating or otherwise having control over a BMP required by a post construction stormwater management plan shall maintain the BMP's in accordance with the approved plan and shall demonstrate compliance with that plan as follows:

(a) Inspections. The owner or operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMP's, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

(b) Maintenance and repair. If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action (s) to address the deficiency or deficiencies as soon as

possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action (s) to the department of public services ("DPS") in the annual report.

(c) Annual report. The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPS in a form provided by DPS, certifying that the person has inspected the BMP (s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective action (s) taken.

(d) Filing fee. Any persons required to file an annual certification under this section shall include with the annual certification a filing fee established by DPS to pay the administrative and technical costs of review of the annual certification.

(e) Right of entry. In order to determine compliance with this article and with the post-construction stormwater management plan, DPS may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMP's."

III. STANDARD INSPECTION/MAINTENANCE DESCRIPTIONS

The following narratives describe the inspection/maintenance provisions for the Stormwater Management area. These O&M procedures will complement scheduled sweeping of the pavement areas anticipated to occur at least twice per year. The MaineDEP will require the stormwater system be certified to meet the basis of design at five year increments. Proper O&M is necessary to make sure the system can be certified.

A. POND OVERFLOW

Preface: The stormwater detention facilities proposed for the project includes underground detention systems under the paved parking areas. The underground units are a proprietary system called StormTech® SC-740 Chambers. The storage portion of the 30-inch high chambers will travel to the Jellyfish® filter. The upper storage portion will bypass the treatment system for major storm events. If the detention storage volume were exceeded, water would spill over the overflows of the underground systems and flow to the next inlet or sheet flow over the curb line and down the perimeter slope to the Fore River.

Inspection: There are inspection ports that should be checked semiannually to make sure that water is not ponded due to blockage.

Maintenance: The upstream measures are intended to reduce and presumably eliminate maintenance cleanings. Major cleaning would likely require excavation of the system although some success has been reported with fire flow flushing.

B. CONTROL STRUCTURES

Preface: The proposed underground storage systems will serve as a detention pond controlled by the hydraulic outlet control structure. The outlet control structure will be designed to detain the water quality volume with a slow release through the treatment measure (Jellyfish®) and discharge runoff for storm events larger than 1". Therefore, flow is anticipated to be released during and after every major storm event. Minor events will likely pass through the Jellyfish® filter. The Jellyfish® filters have a controlled low flow discharge of 0.066 cfs per unit. The control structure will be designed to be inspected by removing the manhole covers and inspection of the valve, orifice, weir, and channels. Debris should be removed whenever observed and reported to key maintenance personnel since any debris would indicate lack of proper system O&M in the collection and conveyance system. Entry may require CONFINED SPACE ENTRY procedures and appropriately trained personnel.

Inspection: The outlet control structures must be inspected to assure it maintains its intended hydraulic characteristics. The inspection would note any debris or sediment which may accumulate in the structure and in the inlet and outlet pipes. It is noted that it does not take much debris or silt to alter the hydraulic characteristics of the discharge. The inlet should be inspected to assure it is not blocked or restricted or there is sediment to the extent that its flow characteristics may be altered.

Maintenance: Maintenance of the control structure will consist primarily of removing debris which may accumulate and sealing the bulkhead if leakage occurs.

Frequency: The control structure should be inspected quarterly and after a high intensity rainfall event (in excess of 3 inches in a 24-hour period).

Maintenance/Inspection Responsibility:

Inspection Personnel: The maintenance personnel will be an outside agent hired by CMTM and will perform the scheduled maintenance/inspection.

Dates of inspections, maintenance performed, and any observed problems should be noted in the logs/records maintained by the outside agent.

Outside Contract Services: The outlet structure should be opened/inspected by the outside agent of CMTM on a quarterly basis. The logs and records of inspections and maintenance of the control structures should be maintained during each 5-year re-certification interval.

Replacement Parts/Repairs: No normal replacement parts are required. Inspection personnel should have a bucket to remove debris from the

structure. If leakage of the bulkhead occurs, it is recommended that repairs be made by a professional contractor familiar with hydraulic grouts.

C. STORMWATER INLETS

Preface: The success of any stormwater facility relies on the ability to intercept stormwater runoff at the design locations. Stormwater inlets may include catch basins, open culverts, culverts with bar screens, and field inlets. Inlets exist throughout the system at the points of collection as well as at the outlet of many ponds. Bar racks are common on many inlet locations which intercept an open channel. This section is directed at maintenance of the actual inlet point. A later section addresses more substantive maintenance of the structures and conveyance facilities. The inlets contain oil absorbent sorbent booms to retain oils and avoid discharge to downgradient areas. These will become saturated with oil over time and require replacement.

Inspection: The inspection of inlet points will need to be coordinated with other maintenance items, these include:

- Roadway/parking lot maintenance areas
- Building maintenance areas
- Grounds maintenance

The key elements of the inspection are to assure the inlet entry point is clear of debris and will allow the intended water entry.

Maintenance: The key maintenance is the removal of any blockage which restricts the entry of stormwater to the inlet. The removed material should be taken out of the area of the inlet and placed where it will not reenter the runoff collection system. Snow should be removed from inlets in parking lots/roadway areas. Grass clippings and leaves should be bagged and removed particularly near the yard inlets near the building.

Frequency: All inlets should be inspected on a monthly basis, and after/during significant storm events. A windshield survey is suitable for most inlets but off road inlets and pond structures require more rigorous inspection.

Maintenance/Inspection Responsibility:

Maintenance Personnel: The outside agent will perform the normal maintenance/inspections of the inlets and culvert crossings.

Comments: Maintenance of inlets is critical on this project.



POORLY STABILIZED INLET ALLOWS ENTRANCE OF DEBRIS AND REDUCED CAPACITY



STABILIZED INLETS REDUCE DEBRIS ACCUMULATION AND MAINTAIN DESIGN CAPACITY

D. TRIBUTARY DRAINAGE SYSTEM

Preface: Stormwater from the project will be directed through a conveyance system which transports the flow to water quality units (underground storage) and to a Jellyfish® filter. This conveyance system will be principally overland flow discharging to piped drain systems. Most of the sediment carried by the drainage system is intended to be trapped in the catch basins, isolator rows or water quality units. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the treatment systems.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems the inlets must be inspected to ensure the rims are set at the proper elevation to optimize flow entry and are not clogged with leaves or other debris. The inlet basins are normally equipped with sumps which will remove large sediment particles from the flow stream with hooded outlets. The inlet basins may be equipped with oil absorbent sorbent booms which should be inspected for saturation. Once the boom becomes saturated it will appear brown or black in color and will be ineffective at removing oils.

The level of sediment in the sumps should be checked to assure their effectiveness. Pipelines connecting the inlets should be checked to determine if siltation is occurring. This will be most critical on drain lines laid at minimal slopes. This can usually be accomplished by a light and mirror procedure.

In some projects most of the stormwater is carried in open swales, channels, or ditches. These conveyance channels may be rip rapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be noted. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be noted.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long term basis, and that its operation does not transport excessive sedimentation to any downstream detention pond, or the receiving waters. Elevations on the rim of catch basins should be adjusted as needed to assure optimal water entry. Depending on the frost susceptibility of the soil, the rims may become elevated over time causing flow to circumvent the inlet. When the sump in an inlet restricts capacity and is half full with silt or other deleterious materials, the catch basin cleaning would normally be accomplished with vacuum trucks contracted as a maintenance service for the development center. The removed material must be disposed of at an approved site for such materials. The removed and replaced sorbent boom shall be disposed of in accordance with local and state regulations.

If sediment in the pipeline exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed. In general, a sump or sediment trap should be used where it can be flushed into the underground detention pond, since it will reduce pond volume and hasten the time when it must be cleaned.

Frequency: The piped drainage system should be inspected on an annual basis. Adjustment of inlet rim elevations should be on an as needed basis. Cleaning catch basin sumps and pipelines will depend on the rate of accumulation.

Maintenance/Inspection Responsibility:

Maintenance Personnel: Outside agent appointed by CMTM.

Special Services: The owner will elect to contract with an independent agent for cleaning catch basins, sumps, pipelines, and replacement of sorbent booms. Remedial source control measures may be performed by the owner or an outside service depending upon the nature of the particular situation.

Comments: Maintenance of inlets is critical on this project.



A WELL STABILIZED VEGETATED SWALE SHOWS LITTLE SIGNS OF EROSION VELOCITIES OR FLOWS. THIS SWALE ALSO FUNCTIONS AS A POND SPILLWAY

E. JELLYFISH® FILTER

Preface: The primary purpose of the Jellyfish Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.

It is recommended that Jellyfish Filter inspection and maintenance be performed by professionally trained individuals, with experience in stormwater maintenance and disposal services. Maintenance procedures may require manned entry into the Jellyfish structure. Only professional maintenance service providers trained in confined space entry procedures should enter the vessel. Procedures, safety and damage prevention precautions, and other information, included in these guidelines, should be reviewed and observed prior to all inspection and maintenance activities.

Inspection: Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; or per the approved project stormwater quality documents (if applicable), whichever is more frequent.

- Post-construction inspection is required prior to putting the Jellyfish Filter into service. All construction debris or construction-related sediment within the device must be removed, and any damage to system components repaired.
- A minimum of two inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
- Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year. Inspection is recommended after each major storm event.
- Immediately after an upstream oil, fuel or other chemical spill.

Inspection activities are typically conducted from surface observations and include:

- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW)

The following procedure is recommended when performing inspections:

- Provide traffic control measures as necessary.
- Inspect the MAW for floatable pollutants such as trash, debris, and oil sheen.
- Measure oil and sediment depth by lowering a sediment probe through the MAW opening until contact is made with the floor of the structure. Retrieve the probe, record sediment depth, and presences of any oil layers and repeat in multiple locations within the MAW opening. Sediment depth of 12 inches or greater indicates maintenance is required.
- Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
- Inspect the MAW, cartridge deck, and backwash pool weir, for cracks or broken components. If damaged, repair is required.
- Dry weather inspections: inspect the cartridge deck for standing water.
 - o No standing water under normal operating condition.

- o Standing water inside the backwash pool, but not outside the backwash pool, this condition indicates that the filter cartridges need to be rinsed.
- o Standing water outside the backwash pool may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Wet weather inspections: observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW.
 - o Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
 - o Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flow cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
 - o 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges are occluded with sediment and need to be rinsed.

Maintenance: Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Maintenance activities may be required in the event of an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events. Recommended maintenance activities typically include:

- Removal of oil, floatable trash and debris.
- Removal of collected sediments.
- Rinsing and re-installing the filter cartridges.
- Replace filter cartridge tentacles, as needed.

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

- Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
- Floatable trash, debris, and oil must be removal.
- Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.

- Replace filter cartridge if rinsing does not remove accumulated sediment from the tentacles, or if tentacles are damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
- Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
- The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged by the spill.

The following procedures are recommended when maintaining the Jellyfish Filter:

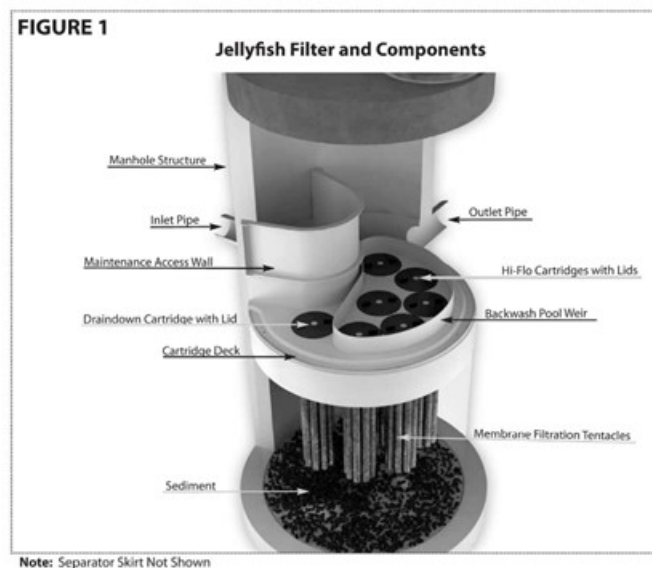
- Provide traffic control measures as necessary.
- Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures.
- Caution: Dropping objects onto the cartridge deck may cause damage. Perform Inspection Procedure prior to maintenance activity.
- To access the cartridge deck for filter cartridge service, descend the ladder and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
- Filter Cartridge Rinsing Procedure
 - o Remove a cartridge lid.
 - o Remove the cartridge from the receptacle using the lifting loops in the cartridge head plate. Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Rotate the cartridge with a slight sideways motion to clear the snag and continue removing the cartridge.
 - o Thread a rope or cord through the lifting loops and lift the filter cartridge from the cartridge deck to the top surface outside the structure.
 - o Caution: Immediately replace and secure the lid on the exposed empty receptacle as a safety precaution. Never expose more than one empty cartridge receptacle.
 - o Repeat the filter cartridge removal procedure until all of the cartridges are located at the top surface outside the structure.
 - o Disassemble the tentacles from each filter cartridge by rotating counter-clockwise. Remove the tentacles from the cartridge head plate.
 - o Position a receptacle in a plastic tub or garbage can such that the rinse water is captured. Using a low-pressure garden hose sprayer, direct a wide-angle water spray at a downward 45° angle

onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane.

- o Remove rinse water from rinse tub or garbage can using a vacuum hose as needed.
- o Slip the O-ring over the pipe nipple on the top end of the tentacle and reassemble onto the cartridge head plate; hand tighten.
- o If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.
- o Lower a rinsed filter cartridge to the cartridge deck. Remove the cartridge lid on a receptacle and carefully lower the filter cartridge into the receptacle until the head plate gasket is seated squarely on the lip of the receptacle. Caution: Should a snag occur when lowering the cartridge into the receptacle, do not force the cartridge downward; damage may occur. Rotate the cartridge with a slight sideways motion to clear the snag and complete the installation.
- o Replace the cartridge lid on the exposed receptacle. Check the fit before completing rotation to a firm hand-tight attachment. Rinse away any accumulated grit from the receptacle threads if needed to get a proper fit.
- o Repeat cartridge installation until all cartridges are installed.
- Vacuum Cleaning Procedure
 - o Caution: Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening, being careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck. The separator skirt surrounds the filter cartridge zone, and could be torn if contacted by the wand. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
 - o to remove floatable trash, debris, and oil, lower the vacuum hose into the MAW opening and vacuum floatable pollutants off the surface of the water. Alternatively, floatable solids may be removed by a net or skimmer.
 - o Using a vacuum hose, remove the water from the lower chamber to the sanitary sewer, if permitted by the local regulating authority, or into a separate containment tank.

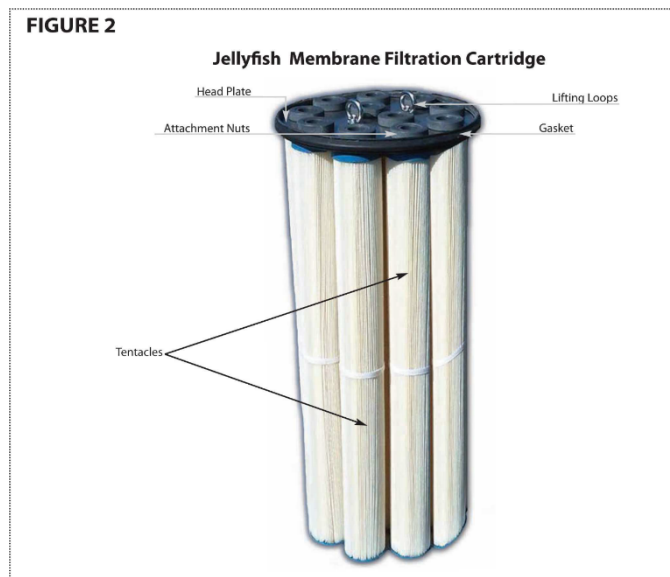
- o Remove the sediment from the bottom of the unit through the MAW opening.
- o For larger diameter Jellyfish Filter manholes (8-ft, 10-ft, 12-ft diameter), complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.
- o After the unit is clean, re-fill the lower chamber with water if required by the local jurisdiction, and re-install filter cartridges.
- o Dispose of sediment, floatable trash and debris, oil, spent tentacles, and water according to local regulatory requirements.
- Chemical Spills
 - o Caution: If a chemical spill has been captured by the Jellyfish Filter, do not attempt maintenance. Immediately contact the local hazard response agency, and contact Contech Engineered Services.

Below is a cut-away schematic of the Jellyfish Filter manhole with key components identified (6-ft. diameter manhole is depicted):



The Jellyfish Filter has no moving parts to wear out and therefore maintenance activities are generally focused on pollutant removal and filter cartridge service.

Below is a schematic of a Jellyfish Filter membrane filtration cartridge. Tentacles can be easily removed from the head plate and rinsed or replaced as needed.



Frequency: The Jellyfish Filter should be inspected a minimum of 2 times during the first year of operation and a minimum of once per year in subsequent years. Inspection is also recommended after each major storm event or immediately after an upstream oil, fuel or other chemical spill.

Maintenance/Inspection Responsibility:

Inspection Personnel: It is recommended that Jellyfish Filter inspection and maintenance be performed by professionally trained individuals, with experience in stormwater maintenance and disposal services. Maintenance procedures may require manned entry into the Jellyfish structure. Only professional maintenance service providers trained in confined space entry procedures should enter the vessel. Procedures, safety and damage prevention precautions, and other information, included in these guidelines, should be reviewed and observed prior to all inspection and maintenance activities.

Replacement Parts/Repairs: Jellyfish Filter cartridges, replacement tentacles, cartridge lids, and other system components can be ordered by contacting: Contech Engineered Solutions, 1-800-548-4667.

Comments: The benefits of regular inspection and maintenance are many from ensuring maximum operation efficiency, to keeping maintenance costs low, to the continued protection of natural waterways and provide the key to the Jellyfish Filter's long and effective service life.

F. PRETREATMENT SOLIDS REMOVAL (WATER QUALITY UNITS)

Preface: Certain vendors provide pre-manufactured systems which are effective in removal of suspended sediment particularly sand used for

winter maintenance. Some of the units operate on a vortex principal with the sediment being swept from the stormwater stream and stored in the base of the unit. Other units are long linear units designed in accordance with Stokes Law. The units are constructed of durable materials requiring little maintenance of the physical component and typically are accessible via an at grade manhole cover.

The vendor of the unit should provide information on suggested maintenance which should be appended to this manual.

These units typically do not remove nutrients, metals, and dissolved materials.

Inspection: Most water quality units have an access manhole cover for inspection. The sediment storage zone is the bottom of the system and lies below the vortex in this type of unit or along the bottom. Because of the depth, a pole staff, or sludge judge is helpful in determining the depth of the sediment. Inspection should comply with applicable confined space regulations and vendor recommendations. Oil and floatables are also trapped in certain devices and should be removed.

Maintenance: The typical unit maintenance is the removal of sediment. Stantec Consulting Services Inc. typically recommends the units be inspected in the spring and late fall with adjustments based on historic operating experience.

The vendor may have specific scheduled maintenance schedules which should be followed.

The structural components of the system are principally stainless steel, concrete, and or climate resistant plastics.

Frequency: Twice per year or as outlined above.

Applicability: This system has three water quality units. The three linear units are in Zone A upstream of the underground sand filter.

Special Notes: These units are designed for a specific flow and catchment area. If the contributing watershed is increased, the need for design modifications or supplements to the water quality units should be examined.

G. IN-LINE STORAGE (UNDERGROUND DETENTION)

Preface: In-line storage may be used for storage of water ahead of treatment systems, or for buried underdrained filters. Because of the difficulty in access for inspection and maintenance, the units will be preceded with pretreatment to remove sediment.

The underground storage systems for this project include StormTech® chamber system for detention ahead of water quality treatment units or underground sand filter.

In-line storage systems typically have a restrictive outlet when used for detention. This outlet is a separate downstream appurtenance with orifices, weirs, and overflows.

Specific design cautions should be considered if in-line storage is used as part of a stormwater management system. In-line storage systems have multiple inspection ports. The locations should consider the need for confined space entry.

Inspection: Inspection of in-line storage systems should follow all protocols for confined space entry. Inspections should include:

- Observations of standing water and monitoring drainage to make sure drainage is achieved 72 hours after a rainfall of 1 inches or greater (annually) for Jellyfish® filter systems and 48 hours for underground sand filters.
- Sedimentation
- Outlet Controls
- Inlets
- Inspection of each isolated tank series, run of pipe, distribution of manhole, and header pipe

Maintenance: Maintenance of in-line storage systems will vary depending upon the extent of pretreatment, the nature of the receiving bodies, and the design. Leakage, accumulated sediment, and repairs of any damaged portion of the system should be performed immediately upon discovery.

Maintaining Responsibility: A contract for third party maintenance needs to be established before occupancy.

Frequency: After successful operation of the in-line storage system for one year or two major storms (whichever is longer), quarterly inspections are recommended except the drawdown test after a one-inch rain may be annually only. Maintenance repairs should be performed as soon as possible. The Site Location of Development Permit will require recertification on a periodic basis as stipulated by the permit conditions.

Applicability: Underground detention will be employed on this project

H. SORBENT BOOMS

Preface: During construction, sorbent booms will be installed in the catch basins which have pavement areas. The intent of these is to absorb oil and runoff from new pavement surfaces. These will be removed and replaced when construction of the project is complete and should be inspected quarterly for the first year and annually thereafter.

Inspection: The sorbent boom should be raised out of the inlet, inspected, and replaced if necessary. Inspection should occur for the first year and annually thereafter concurrent with the catch basin cleaning.

Recommendation: It is recommended this project have additional sorbent booms or pillows onsite in the event of an unexpected spill or if oil sheen is observed frequently on any inlet.

Maintenance: The inspection and replacement should be conducted as part of a third party O&M contract and require disposal of used sorbent booms as "special wastes".

I. PARKING LOT CLEANING

To protect the catch basin sediment sumps, underground storage, tree box, and Jellyfish® filter, it is recommended the parking lot be swept at mid winter and spring and that power washing with an appropriate vacuum/power wash vehicle be done once a year.

Maintenance: It is recommended this service be contract with the firm that maintains lawns and landscaping.

J. LITTER

Litter should be removed as a matter of course by workers and a part of the grounds maintenance contract.

K. SUMMARY CHECKLIST

The above described inspection and maintenance items have been summarized on a checklist appended hereto as Appendix C.

IV. PROGRAM ADMINISTRATION

A. GENERAL

A reliable administrative structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must be responsible for long-term operation and maintenance of the facilities.

2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.
3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.
4. The administrative body must have the staff to accomplish the inspection and maintenance programs, or must have authority to contract for the required services.
5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.

If any of the above criteria cannot be met by the entity assigned inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. While each of the above criteria may be met by a variety of formats, it is critical to clearly establish the assigned administrative body in a responsible and sustainable manner.

B. RECORD KEEPING

Records of all inspections and maintenance work accomplished must be kept and maintained to document facility operations. These records should be filed and retained for a minimum 5-year time span. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions. Typical inspection and maintenance record forms are attached hereto as Appendix B.

C. CONTRACT SERVICES

In some instances or at specific times, the Maintenance Personnel may not have the staff to conduct the required inspection and/or maintenance programs as outlined in this document. In such cases the work should be accomplished on a contractual basis with a firm or organization that has the staff and equipment to accomplish the required work.

The service contract for inspection and maintenance should be formal, well written legal document which clearly defines the services to be provided, the contractual conditions that will apply, and detailed payment schedules. Liability insurance should be required in all contracts.

APPENDIX A

Sample Inspection Logs

**THE FORERONT AT THOMPSON'S POINT
PORTLAND, MAINE**

STORMWATER MANAGEMENT
IN-LINE STORAGE
ANNUAL INSPECTION & MAINTENANCE LOG

FACILITY:		YEAR:	
LOCATION:		CONTRACTOR:	
FUNCTION:		INSPECTOR:	
DATE OF INSPECTION:			
ITEM IDENTIFICATION	DESCRIPTION OF CONDITIONS	MAINTENANCE ACCOMPLISHED	DATE OF MAINTENANCE
GENERAL COMMENTS:			

CHILDREN'S MUSEUM & THEATRE OF MAINE
PORTLAND, MAINE
 STORMWATER MANAGEMENT
 IN-LINE STORAGE
 MONTHLY INSPECTION & MAINTENANCE LOG

FACILITY:			YEAR:			
LOCATION:			CONTRACTOR:			
FUNCTION:						
MONTH	DAY	INSPECTOR	WATER DEPTH	OVERFLOW WEIR		WEIR CONDITION
				CLEAR	DEBRIS	
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						
LIST SPECIAL MAINTENANCE UNDERTAKEN:						

**CHILDREN'S MUSEUM & THEATRE OF MAINE
PORTLAND, MAINE**

STORMWATER MANAGEMENT
IN-LINE STORAGE
SEMI-ANNUAL INSPECTION & MAINTENANCE LOG

SEMI-ANNUAL INSPECT 1.2	FACILITY:
DATE:	LOCATION:
INSPECTOR:	FUNCTION:
WEIR CONDITION:	
OUTLET CONDITION	

FORE BAY SUMP	EST. DEPTH SED.	REMOVED? Y/N	EST. VOL. CY	WHERE DISPOSED OF	STRUCTURAL CONDITION

CONTROL STRUCTURE:
DESCRIBE CONDITIONS FOUND & MAINTENANCE ACCOMPLISHED:

APPENDIX B

Permits for Project

(To be Added at a Subsequent Time)

APPENDIX C

Summary Checklist Inspection and Maintenance

**Stormwater Management System
Maintenance Program
Summary Checklist**

Item	Commentary	Frequency				
		Monthly	Quarterly	Semi-Annual	Annual	Long Term
Control Structure	Inspect outlet control to assure it maintains its hydraulic characteristics. Inspect after high intensity rain (excess of 3"/24 hr.) Inspect inlets for blockage.		X			
Stormwater Inlets in Series	Stormwater inlets allow flow entry from a surface swale to a piped system. Entry may or may not be equipped with a bar rack. Inspect entry for debris accumulation. Remove debris to allow unimpeded entry. Lawn clippings and leaves should be removed from yard areas.	X			X Clearing	
Tributary Drainage	Inspect to assure that the carrying capacity has not been diminished by debris, sediment or other hydraulic impediments.				X	
Jellyfish® Filter	The operation and maintenance of the Jellyfish® filter system is limited to annual inspections and solids removal on an as-needed basis.			X First year only	X	X
In-Line Storage (Underground detention)	Inspect for standing water not anticipated, sedimentation, outlet control, inlets. Jet Stream sediment removal from Isolator Row				X	X
Sorbent Booms	Sorbent boom should be raised out of the inlet, inspected, and replaced if necessary.		X For first 12 months		X After first year	
Parking Lot Cleaning	Parking lot be swept at mid-winter and spring. Power washing with an appropriate vacuum/power wash vehicle be done once a year.			X	X	
Litter	Litter should be removed daily.					

APPENDIX F

LONG TERM STORMWATER MANAGEMENT MAINTENANCE AGREEMENT

STORMWATER DRAINAGE SYSTEM MAINTENANCE AGREEMENT

IN CONSIDERATION OF the site plan approval granted by the Planning Authority of the City of Portland to the proposed **The Forefront at Thompson's Point #2017-065** shown on the Site Plan (Exhibit A) submitted by Placemaker Partners, LLC and associated Stormwater Management Plan and Detail Sheets, Grading Plan, and Erosion Control Plan titled "Stormwater Management Plan" dated May 25th, 2017, "Stormwater Details Filterra Units" dated March 20th, 2017, "Grading Plan" dated May 25th, 2017, and "Erosion Control & Construction Management Plan" dated May 25th, 2017 (Exhibit B) prepared by Placemaker Partners, LLC of 501 Danforth Street, Portland, ME 04102 and pursuant to a condition thereof, Forefront Partners I, LP, a Maine limited liability company with a principal place of business in Portland, Maine, and having a mailing address of 501 Danforth Street, Portland, ME 04102, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the "Owner"), as follows:

Maintenance Agreement

That it, its successors and assigns, will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the tree box filters, (hereinafter referred to collectively referred to as the "stormwater system"), as shown on the Grading and Drainage Plans in Exhibit B and in strict compliance with the Maintenance of Facilities as described in the Inspection and Maintenance Manual for Stormwater Management and Related Stormwater Facilities prepared by Fay, Spofford & Thorndike (now Stantec) (copy attached to Exhibit C) and Chapter 32 of the Portland City Code.

Owner of the subject premises further agrees, at its own cost, to keep a Stormwater Maintenance Log. Such log shall be made available for inspection by the City of Portland upon reasonable notice and request.

Said Agreement is for the benefit of the said City of Portland and all persons in lawful possession of said premises and abutters thereto; further, that the said City of Portland and said persons in lawful possession may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice and a stated time to perform that shall be not less than ninety (90) days from the receipt of notice, that the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon said premises to maintain, repair, or replace said stormwater system in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand not less than ninety (90) days after presentation to Owner by the City of Portland of the invoice for the completed work.

Notwithstanding anything to the contrary contained herein, prior to commencing work, City shall provide an indication of the scope of work necessary and the estimated cost to perform said work, and Owner shall have a reasonable period, not less than thirty (30) days from receipt of the estimate, to dispute any portion of the scope it deems unnecessary and provide alternative solution(s) from qualified engineer(s) or contractor(s). Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall also not be construed to allow any change or deviation from the requirements of the subdivision and/or site plan most recently and formally approved by the Planning Authority of the City of Portland.

This Agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear.

For the purpose of this Agreement and release, "Owner" is any person or entity who is a successor or assign and has a legal interest in part, or all, of the real estate and any building. The real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and lienied if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the Owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by this Agreement shall be complete on the date the notice is attached to one or more doors providing entry to any buildings and is mailed by certified mail, return receipt requested or ordinary mail or both to the owner of record as shown on the tax roles on file in the City Assessor's Office.

If the property has more than one owner on said tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this Agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this ____ day of _____, 20__.

(Name of Company)

By: _____
(Representative of owner, name and title)

STATE OF MAINE
CUMBERLAND, ss.

Date: _____

Personally appeared the above-named _____, and
acknowledged the foregoing instrument to be his/his free act and deed in his said capacity.

Before me,

Notary Public/Attorney at Law

Print name: _____

Exhibit A: Site Plan Approved

Exhibit B: Stormwater Management Plan, Grading Plan, and Erosion Control & Construction
Management Plan

Exhibit C: Approved Inspection and Maintenance Manual for Stormwater Management and
Related Stormwater Facilities

EXHIBIT A

Site Plan as Approved

EXHIBIT B

Stormwater Management, Grading, & Erosion Control Plans

EXHIBIT C

Approved Inspection and Maintenance Manual for Stormwater Management and Related Stormwater Facilities

STORMWATER DRAINAGE SYSTEM MAINTENANCE AGREEMENT

IN CONSIDERATION OF the site plan approval granted by the Planning Authority of the City of Portland to the proposed **The Forefront at Thompson's Point #2017-065** shown on the Site Plan (Exhibit A) submitted by Placemaker Partners, LLC and associated Stormwater Management Plan and Detail Sheets, Grading Plan, and Erosion Control Plan titled "Stormwater Management Plan" dated May 25th, 2017, "Stormwater Details Filterra Units" dated March 20th, 2017, "Grading Plan" dated May 25th, 2017, and "Erosion Control & Construction Management Plan" dated May 25th, 2017 (Exhibit B) prepared by Placemaker Partners, LLC of 501 Danforth Street, Portland, ME 04102 and pursuant to a condition thereof, Forefront Partners I, LP, a Maine limited liability company with a principal place of business in Portland, Maine, and having a mailing address of 501 Danforth Street, Portland, ME 04102, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the "Owner"), as follows:

Maintenance Agreement

That it, its successors and assigns, will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the tree box filters, (hereinafter referred to collectively referred to as the "stormwater system"), as shown on the Grading and Drainage Plans in Exhibit B and in strict compliance with the Maintenance of Facilities as described in the Inspection and Maintenance Manual for Stormwater Management and Related Stormwater Facilities prepared by Fay, Spofford & Thorndike (now Stantec) (copy attached to Exhibit C) and Chapter 32 of the Portland City Code.

Owner of the subject premises further agrees, at its own cost, to keep a Stormwater Maintenance Log. Such log shall be made available for inspection by the City of Portland upon reasonable notice and request.

Said Agreement is for the benefit of the said City of Portland and all persons in lawful possession of said premises and abutters thereto; further, that the said City of Portland and said persons in lawful possession may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice and a stated time to perform that shall be not less than ninety (90) days from the receipt of notice, that the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon said premises to maintain, repair, or replace said stormwater system in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand not less than ninety (90) days after presentation to Owner by the City of Portland of the invoice for the completed work.

Notwithstanding anything to the contrary contained herein, prior to commencing work, City shall provide an indication of the scope of work necessary and the estimated cost to perform said work, and Owner shall have a reasonable period, not less than thirty (30) days from receipt of the estimate, to dispute any portion of the scope it deems unnecessary and provide alternative solution(s) from qualified engineer(s) or contractor(s). Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall also not be construed to allow any change or deviation from the requirements of the subdivision and/or site plan most recently and formally approved by the Planning Authority of the City of Portland.

This Agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear.

For the purpose of this Agreement and release, "Owner" is any person or entity who is a successor or assign and has a legal interest in part, or all, of the real estate and any building. The real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and lienied if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the Owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by this Agreement shall be complete on the date the notice is attached to one or more doors providing entry to any buildings and is mailed by certified mail, return receipt requested or ordinary mail or both to the owner of record as shown on the tax roles on file in the City Assessor's Office.

If the property has more than one owner on said tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this Agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this ____ day of _____, 20__.

(Name of Company)

By: _____
(Representative of owner, name and title)

STATE OF MAINE
CUMBERLAND, ss.

Date: _____

Personally appeared the above-named _____, and
acknowledged the foregoing instrument to be his/his free act and deed in his said capacity.

Before me,

Notary Public/Attorney at Law

Print name: _____

Exhibit A: Site Plan Approved

Exhibit B: Stormwater Management Plan, Grading Plan, and Erosion Control & Construction
Management Plan

Exhibit C: Approved Inspection and Maintenance Manual for Stormwater Management and
Related Stormwater Facilities

EXHIBIT A

Site Plan as Approved

EXHIBIT B

Stormwater Management, Grading, & Erosion Control Plans

EXHIBIT C

Approved Inspection and Maintenance Manual for Stormwater Management and Related Stormwater Facilities

ATTACHMENT E

Erosion & Sediment Control Plan

(Included in Plan Set)

11. EVIDENCE OF UTILITY CAPACITY

The following information is made in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7).

11.1 OVERVIEW

Electrical, water, sewer, and gas services to the property will be extended from existing or new facilities with the site. These services will be updated to serve the new proposed use. The Development Team has contacted all governing utility agencies and companies and will continue to coordinate the provision of new services, as required throughout the design and construction phases of the project. The following sections outline current conditions and anticipated improvements associated with each system.

11.2 WATER SUPPLY

There is currently a single water service to the Forefront site from the PWD 12-inch main that enters the site from across the rail tracks. Improvements to the onsite water supply systems have been incrementally completed as work has progressed on the site. For the CMTM development additional water main work including new installation of pipe to create an onsite loop will be completed, as has been previously discussed and approved by the Portland Water District. A new fire service will be required to support sprinkler systems in the building. A 2" domestic service will provide water supply to the building. We have enclosed previous Ability to Serve letters addressing the entire Thompson's Point project as well. Forefront Partners continues to work closely with the PWD regarding the overall completion of water system improvements for the development.

11.2.1 Total Project Water Usage

A preliminary estimate of project water use has been undertaken using commonly accepted daily water demand criteria:

CMTM Building	Design Flow (GPD)
555 Visitors at 6 gpd/Visitor	3,330
15 Employees at 15 gpd/Employee	225
	3,555

11.3 WASTEWATER DISPOSAL

The proposed building will be served by a new 6" domestic sanitary service that will exit the north end of the building and tie into an existing 8" gravity main installed during the renovations to the Brick North building. This system ultimately discharges to the existing PWD pump station. Domestic sanitary flows are expected to be within the previously estimated flow amounts from the development. At this time, a grease trap is not currently part of the plan based on the lack of a full kitchen facility with the CMTM programming.

11.4 NATURAL GAS SUPPLY

There is an existing gas main located west of the proposed building in the pedestrian alleyway. It is expected that a natural gas service connection will be made for heating the building. Unitil has expressed a commitment to provide service for the facility.

11.5 ELECTRICITY SUPPLY/COMMUNICATIONS

Stantec and Bartlett Design have been involved with various improvements to the site's overall power supply and communications systems. The Phase 1 work will include a continuation of underground facilities within the loop road, thus extending power and communications to serve the CMTM building. Alignments for this infrastructure are represented on the Phase 1 drawings. The applicant will continue to coordinate provision of power to the CMTM site with CMP. Similarly, communications and cable service will be coordinated with Oxford Network, Fairpoint, and Time Warner Cable. All facilities for power and communications will be underground, except for one or more pad mount transformers.

11.6 ATTACHMENTS

Attachment F – Correspondence with Utilities

ATTACHMENT F

Correspondence with Utilities

March 27, 2017

Mr. Jamie Cough

Central Maine Power
162 Canco Road
Portland, Maine 04103

**Subject: Proposed Children's Museum & Theatre of Maine
Thompson's Point
Power Supply and Ability to Serve**

Dear Jamie:

Our office is working as a consultant in the site planning and permitting associated with a proposed development of a proposed Children's Museum & Theatre of Maine building at Thompson's Point. The project site is located on all or a portion of Map 201/Block A/Lots 5, 8 & 10 & Map 202/Block A/Lot 1, 4 according to the City of Portland Tax Assessor's Maps. This site is part of the original Thompson's Point Master Plan (Lot 7) which was previously reviewed and an ability to serve confirmation was provided by your office on March 30, 2016.

The project will consist of the development of a 9,682 SF building and ancillary parking for children's museum & theatre.

We trust that the existing power supply system has adequate capacity to serve this project. We are in the process of completing the Preliminary Site Plan Application for a submission to the City Planning Staff and we would appreciate your confirmation of site conditions. The electrical design has not yet been started; however, we would like your initial assessment of project conditions and service capacity.

We look forward to your review of this request and a summary of your findings and any updated cost projections for the project you may be able to provide.

Please include in your assessment any costs that could be associated with the following:

- Upgrades to nearby CMP infrastructure;
- All onsite overhead and underground improvements;
- Impact fees or connection fees; and
- CMP engineering costs.



Mr. Jamie Cough
March 27, 2017
Page 2

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Stephen Bushey, PE
Associate, Senior Project Manager
Phone: (207) 887-3478
Fax: 207-883-3376
Stephen.Bushey@stantec.com

Attachment

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Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

March 27, 2017

Mr. Mike Ellingwood
Oxford Networks
491 Lisbon Street
Lewiston, ME 04240-7418

**Subject: Proposed Children's Museum & Theatre of Maine
Thompson's Point**

Dear Mike:

Our office is working as a consultant in the site planning and permitting associated with a proposed development of a proposed Children's Museum & Theatre of Maine building at Thompson's Point. The project site is located on all or a portion of Map 201/Block A/Lots 5, 8 & 10 & Map 202/Block A/Lot 1, 4 according to the City of Portland Tax Assessor's Maps. This site is part of the original Thompson's Point Master Plan (Lot 7) which was previously reviewed and an ability to serve confirmation was provided by your office.

The project will consist of the development of a 9,682 SF building and ancillary parking for children's museum & theatre.

We are in the process of completing the Site Plan Application for a submission to the City Planning Staff and we are seeking to provide documentation indicating your confirmation of natural gas service availability to the project. At this time, we are still interested in what upgrades and measures you may anticipate necessary to extend your service into the site.

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in blue ink, reading "Stephen Bushey".

Stephen Bushey, PE
Associate, Senior Project Manager
Phone: (207) 887-3478
Fax: 207-883-3376
Stephen.Bushey@stantec.com

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Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

March 27, 2017

Mr. Brad Roland, PE
City of Portland Public Works
55 Portland Street
Portland, Maine 04104-3553

**Subject: Proposed Children's Museum & Theatre of Maine
Thompson's Point
Wastewater Capacity Ability to Serve**

Dear Brad:

Our office is working as a consultant in the site planning and permitting associated with a proposed development of a proposed Children's Museum & Theatre of Maine building at Thompson's Point. The project site is located on all or a portion of Map 201/Block A/Lots 5, 8 & 10 & Map 202/Block A/Lot 1, 4 according to the City of Portland Tax Assessor's Maps. This site is part of the original Thompson's Point Master Plan (Lot 7) which was previously reviewed by your office. On behalf of the owner, we would like to verify the City's wastewater division has ability to provide wastewater capacity for the project and to determine any impact fees.

The project will consist of the development of a 9,682 SF building and ancillary parking for children's museum & theatre.

The projected water use using the Maine State Plumbing Code and typical City of Portland flows information is as follows:

CMTM Building	Design Flow (GPD)
555 Visitors at 6 gpd/Visitor	3,330
15 Employees at 15 gpd/Employee	225
	3,555

Based on this amount of flow, we trust that the existing sanitary sewer system has adequate capacity to serve this project. We understand there is an existing sewer service(s) into the site; however, the exact conditions, flows, and service conditions are unknown. We would like to review the City's records for the existing services so we may determine any necessary improvements. We are in the process of completing preliminary submission materials and responses to City staff comments and we are seeking to provide documentation indicating the city's continued ability to provide sanitary sewer service to this project.



Brad Roland
March 29, 2017
Page 2

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

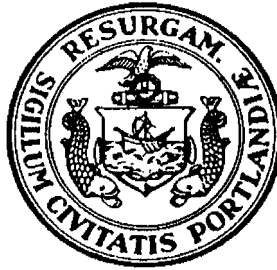
Stephen Bushey, PE
Associate, Senior Project Manager
Phone: (207) 887-3478
Fax: 207-883-3376
Stephen.Bushey@stantec.com

Attachment: Wastewater Application

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CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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



Bradley Roland, P.E.
Water Resources Division

Date: March 14, 2017

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

Site Address: Thompson's Point

Chart Block Lot Number: 201/A/5, 8, 10
202/A/1, 4

Proposed Use: Children's Museum & Theatre

Previous Use: Mixed Use-Industrial

Existing Sanitary Flows: _____ GPD

Existing Process Flows: _____ GPD

Description and location of City sewer that is to
receive the proposed building sewer lateral.

Flows collected from development connect to existing
sanitary Thompson's Point Pump Station

Site Category
Commercial (see part 4 below)
Industrial (complete part 5 below)
Governmental
Residential
Other (specify)

X

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

2. Please, Submit Contact Information.

City Planner's Name: Barbara Barhydt

Phone: _____

Owner/Developer Name: Chris Thompson - Forefront Partners I, LP & Children's Museum & Theatre of Maine

Owner/Developer Address: 501 Danforth Street - Portland, ME 04102 & PO Box 4041 - Portland, ME 04101

Phone: 207-747-5288 & 207-828-1234

Fax: _____ E-mail: _____

Engineering Consultant Name: Steve Bushey - Stantec

Engineering Consultant Address: 482 Payne Road - Scarborough, ME 04074

Phone: 207-887-3478

Fax: 207-883-3355

E-mail: stephen.bushey@stantec.com

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: _____ N/A _____ GPD

Peaking Factor/ Peak Times: _____

Specify the source of design guidelines: (i.e. "Handbook of Subsurface Wastewater Disposal in
Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records,
Other (specify) _____

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values:

Size of External Grease Interceptor:

Retention Time:

Peaking Factor/ Peak Times:

N/A

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:

Do you currently hold Federal or State discharge permits?

Is the process wastewater termed categorical under CFR 40?

OSHA Standard Industrial Code (SIC):

Peaking Factor/Peak Process Times:

N/A	GPD
Yes	No
Yes	No
(http://www.osha.gov/oshstats/sicser.html)	
N/A	

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

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

--



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

March 29, 2017

MEANS Group
Portland Water District
225 Douglass Street
P.O. Box 3553
Portland, Maine 04104-3553

**Subject: Proposed Children's Museum & Theatre of Maine
Thompson's Point
Water Supply and Ability to Serve**

Dear Coordinator:

Our office is working as a consultant in the site planning and permitting associated with a proposed development of a proposed Children's Museum & Theatre of Maine building at Thompson's Point. The project site is located on all or a portion of Map 201/Block A/Lots 5, 8 & 10 & Map 202/Block A/Lot 1, 4 according to the City of Portland Tax Assessor's Maps. This site is part of the original Thompson's Point Master Plan (Lot 7) which was previously reviewed and an ability to serve confirmation was provided by your office on March 14, 2014.

On behalf of the owner, we would like to verify the Portland Water District's ability to provide domestic and fire supply water for the project and determine any impact fees.

The project will consist of the development of a 9,682 SF building and will include domestic and fire supply services.

The projected water use using the Maine State Plumbing Code and typical City of Portland flows information is as follows:

CMTM Building	Design Flow (GPD)
555 Visitors at 6 gpd/Visitor	3,330
15 Employees at 15 gpd/Employee	225
	3,555

Based on this amount of flow, we trust that the existing water supply system has adequate capacity to serve this project. For the CMTM development, additional water main work including new installation of pipe to create an onsite loop will be completed, as has been previously discussed and approved by the Portland Water District. We are in the process of completing the Site Plan Application for a submission to the City Planning Staff and we are seeking to provide documentation indicating the District's continued ability to provide water supply service to this project.



MEANS Group
March 27, 2017
Page 2

The proposed building will have fire protection sprinkler systems; however, at this time, the size and flow requirements of the sprinkler system have not yet been determined. As the building and site design effort progresses, our office will meet with you to provide detailed information for the new water services and connections proposed for this project. A fixture count spreadsheet accompanies this letter for your use in estimating peak water demand.

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Stephen Bushey, PE
Associate, Senior Project Manager
Phone: (207) 887-3478
Fax: 207-883-3376
Stephen.Bushey@stantec.com

Attachment

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Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer
Street Address
City

Children's Museum and Theatre of Maine
Thompson's Point
Portland

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	4	x	0	=	0
Bidet	1	x	0	=	0
Dental Unit	1	x	0	=	0
Drinking Fountain - Public	0.5	x	4	=	2
Kitchen Sink	1.5	x	3	=	4.5
Bathroom Sink	1	x	13	=	13
Showerhead (Shower Only)	2	x	1	=	2
Service Sink	3	x	4	=	12
Toilet -Flushometer(high pressure)	5	x	0	=	0
-Tank Type	2.5	x	17	=	42.5
Urinal -Flushometer Valve	5	x	5	=	25
-Tank Type	2	x	0	=	0
Wash Sink (Each Set of Faucets)	2	x	0	=	0
Dishwasher	1.5	x	0	=	0
Washing Machine	4	x	0	=	0
Hose (outdoor spigot) <3/4 in.	2.5	x	4	=	10

Combined Fixture Value Total

111

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)		0
Irrigation Factor	(1.16-Spray Systems, 0.40-Rotary Systems)	
Hose Bibs for Irrigation:		
	Fixture	No. of
Size	Value	Fixtures
1/2"		0
5/8"		0
3/4"		0

Total Fixed Demand (Peak Flow)

#VALUE! gpm



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

March 27, 2019

Mr. Mark Pelletier

Time Warner Cable
118 Johnson Road
Portland, Maine 04102

**Subject: Proposed Children's Museum & Theatre of Maine
Thompson's Point
Request for Ability to Serve Letter**

Dear Mr. Pelletier:

Our office is working as a consultant in the site planning and permitting associated with a proposed development of a proposed Children's Museum & Theatre of Maine building at Thompson's Point. The project site is located on all or a portion of Map 201/Block A/Lots 5, 8 & 10 & Map 202/Block A/Lot 1, 4; Proposed Lot 7, according to the City of Portland Tax Assessor's Maps. This site is part of the original Thompson's Point Master Plan (Lot 7) which was previously reviewed and an ability to serve confirmation was provided by your office on February 13, 2014.

The project will consist of the development of a 9,682 SF building and ancillary parking for children's museum & theatre.

We are in the process of completing the Preliminary Site Plan Application for a submission to the City Planning Staff and we would appreciate your confirmation of site conditions.

We look forward to your review of this request and a summary of your findings and any updated cost projections for the project you may be able to provide.

Please include in your assessment any costs that could be associated with the following:

- Upgrades to nearby Time Warner Cable infrastructure;
- All onsite overhead and underground improvements;
- Impact fees or connection fees; and
- Time Warner Cable engineering costs.



Mr. Mark Pelletier
March 27, 2017
Page 2

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Stephen Bushey, PE
Associate, Senior Project Manager
Phone: (207) 887-3478
Fax: 207-883-3376
Stephen.Bushey@stantec.com

Attachment

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Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

March 29, 2017

Mr. Scott Carpenter

Unitil

1075 Forest Avenue

Portland, Maine 04103

**Subject: Proposed Children's Museum & Theatre of Maine
Thompson's Point
Ability to Serve Project with Natural Gas**

Dear Ms. Fowler:

Our office is working as a consultant in the site planning and permitting associated with a proposed development of a proposed Children's Museum & Theatre of Maine at Thompson's Point. The project site is located on all or a portion of Map 201/Block A/Lots 5, 8 & 10 & Map 202/Block A/Lot 1, 4 according to the City of Portland Tax Assessor's Maps. This site is part of the original Thompson's Point Master Plan (Lot 7) which was previously reviewed and an ability to serve confirmation was provided by your office on February 13, 2014.

The project will consist of the development of a 9,682 SF building and ancillary parking for children's museum & theatre.

We are in the process of completing the Site Plan Application for a submission to the City Planning Staff and we are seeking to provide documentation indicating your confirmation of natural gas service availability to the project. At this time, gas loads have not yet been fully estimated.

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in blue ink, reading "Stephen Bushey", with a stylized flourish extending from the end.

Stephen Bushey, PE

Associate, Senior Project Manager

Phone: (207) 887-3478

Fax: 207-883-3376

Stephen.Bushey@stantec.com

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July 20, 2017

Stephen Bushey
Stantec Consulting Services, Inc.
482 Payne Road,
Scarborough, ME 04074

Re: Proposed Children's Museum & Theatre of Maine, Thompson's Point

Dear Stephen:

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

Unitil has natural gas in the street serving Thompson's Point and the gas mains were sized to accommodate the build-out of the various building that was discussed with the developer. We do not anticipate any issues serving the needs of the Children's Museum project. Once you can provide us the load we can take a look to see what size service and metering we will need.

If you have any further questions or require additional information, please contact me directly at (207) 541-2543 or at carpenters@unitil.com.

Sincerely,

Scott Carpenter

Scott Carpenter
Senior Business Development Representative
Unitil Corporation
(o) 207-541-2543 (f) 207-541-2593

ME GAS CUSTOMER ENERGY SOLUTIONS
1075 Forest Avenue
Portland, ME 04103-3586

T 207-541-2508 www.unitil.com

12. SUMMARY OF SOLID WASTE GENERATION & MANAGEMENT

The following information is made in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(8).

12.1 OVERVIEW

This section provides estimates of solid waste generation during construction and operation of the finished project. Procedures for the transport and disposal of generated wastes are described, as are measures to reduce waste loads through re-use and recycling.

The project will generate the following estimated volumes of solid waste during construction and operation:

- <50 cubic yards of waste asphalt material associated with existing pavement areas.
- <20 cubic yards of grubblings from existing vegetated areas.
- <200 cubic yards of construction and demolition debris (CDD) associated with building demolition and new construction work (excluding recycled materials).
- <20 cubic yards per week of municipal solid waste (MSW) per week during operation and an additional 10 cubic yards of recyclable materials.

12.2 SOLID WASTE GENERATED DURING THE CONSTRUCTION OF THE SITE

It is anticipated that approximately 200 cubic yards of demolition debris will be generated during the initial phase of the project. Waste generated during ongoing construction activities is estimated to be in the range of 10 cubic yards of mixed debris per week. The project is expected to take approximately 12 months to complete.

12.3 SOLID WASTE GENERATED FROM THE OPERATION OF THE SITE

Waste generated after occupancy is projected to consist of paper and regular waste to be handled on Lot 7. The solid waste enclosure will be placed at the end of the parking area within a wood style enclosure. Routine weekly trash and recycling removal is anticipated through a contact with a local waste removal contractor.

12.4 FLUORESCENT LIGHTS AND FIXTURES

The developer may use fluorescent light bulbs that do not have PCB ballasts. The electrical switches for the project will be specified to not contain mercury.

12.5 HAZARDOUS AND SPECIAL WASTES

The proposed use is not expected to generate hazardous, or special wastes after construction. During construction activities will be performed in accordance with the Soils Management Plan and VRAP requirements.

12.6 GRIT/SEDIMENT REMOVAL

The applicant will be responsible for the maintenance of the minor storm drain systems on the site. They will be responsible for the long-term maintenance of the stormwater collection system and the associated structures, including removal of sediment from catch basin sumps. The CMTM will execute a Long Term Stormwater Management Maintenance Agreement with the City of Portland, as it typically required. A Draft Agreement accompanies this submission. Given the limited nature of the on-site storm drainage system the quantities associated with this task are considered insignificant.

13. FIRE SAFETY/CODES

13.1 OVERVIEW

Stantec has completed the Fire Department checklist and will continue to perform ongoing coordination with Fire Department representatives and City Planning officials. The accompanying memorandum outlines our findings with respect to compliance with the City's Public Safety Standards as set forth in the City's Technical Manual, Section 3 – Public Safety Standards.

The development plans include the placement of new fire hydrants along the access road in accordance with previously approved Fire Safety Compliance plan documents. Similarly, the loop road will be completed in a manner that will provide improved access for fire safety apparatus. An updated Fire Safety Compliance Plan that depicts AutoTURN movements for fire apparatus accompanies this submission.

The building will be fully sprinkled and code compliant to current applicable standards.

Additional fire safety review and evidence of building related fire code compliance will be provided as part of the Building Permit process. Bruner Cott has completed a Codes review which is included as Attachment H to this submission.

13.2 ATTACHMENT

Attachment G – Portland Fire Department Site Review Checklist & NFPA 1 Review

Attachment H – Combined SD/DD Fire Protection/Life Safety Code Compliance Report

ATTACHMENT G

Portland Fire Department Site Review Checklist & NFPA 1 Review



Stantec Consulting Services Inc.
482 Payne Road, Scarborough Court, Scarborough, ME 04074

March 29, 2017

Mr. Keith Gautreau, Assistant Chief

City of Portland Fire Department
380 Congress Street
Portland, Maine 04101

**Subject: Proposed Children's Museum & Theatre of Maine
Lot 7 Thompson's Point
Fire Safety Checklist**

Dear Assistant Chief Gautreau:

In accordance with instructions in the City's Level III Site Plan Review packet, please find enclosed the drawings necessary for your review of the proposed amended project. The current application is associated with the construction of the Children's Museum and Theatre on Lot 7 as well as additional access road and utility infrastructure. We have listed each item in your checklist below, followed by our response.

1. Name, address, telephone number of applicant.

Co-Applicant's:

Phase 2

Children's Museum & Theatre of Maine
Attn: Suzanne Olson
P.O. Box 4041
Portland, ME 04101
207.828.1234

Phase 1

Forefront Partners, I, LP
Attn: Chris Thompson
501 Danforth Street
Portland, ME 04101
207.747.5288

2. Name, address, telephone number of architect.

Bruner/Cott & Associates, Inc.
Attn: Greg Russell
130 Prospect Street
Cambridge, MA 02139
617.492.8400



Keith Gautreau, Assistant Chief

March 29, 2017

Page 2

3. *Proposed uses of any structures (NFPA and IBC classification).*

Building	IBC Code	NFPA Code	Sprinkler
Museum & Theatre _ Construction Type II-A (protected, non-combustible)	A-1, A-3, B, S-2	Assembly NFPA 1 and NFPA 101	Yes NFPA 13

* Systems designed to meet NFPA

4. *Square footage of all structures (total and per story).*

Building	Footprint Area (SF)
29,046 SF total over 3 floors	9,682 SF

5. *Elevation of all structures.*

The building finish floor elevations will be as follows:

Building	Finished Floor Elevation	Building Height
CMTM	18.0 ft. (NGVD29)	45 ft. +/-

6. *Proposed fire protection of all structures.*

The proposed building will have a sprinkler system.

7. *Hydrant locations.*

Fire hydrants are currently located on the peninsula at various locations. The proposed work will include the extension of additional water supply main on the site and the placement of a fire hydrant immediately east of the proposed building and within 100 feet. We currently identify a fire department connection on the building's east side.

8. *Water main(s) size and location.*

There will be a 12" water main extended basically along the south and east perimeter of the Lot 7 site area. A 6" fire supply main will be extended into the building. The sprinkler riser will be located on the west side of the building per the current building floor plans.

9. *Access to all structures (min. 2 sides).*

The proposed structure will be accessible from at least three sides.

10. *A code summary shall be included referencing NFPA 1 and all fire department technical standards.*



Keith Gautreau, Assistant Chief

March 29, 2017

Page 3

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is accessed via Thompson's Point connector road and an internal loop road. The accompanying fire compliance plan identifies fire apparatus routes and access conditions.

Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 ft. from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety

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

Supporting Evidence: There are no dead-end roadways proposed. The paved yard area provides emergency vehicles accessibility.

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

Supporting Evidence: The Site Plan includes hard surface areas that circle the building and will provide at least three-sided access to the building.

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

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

Supporting Evidence: The proposed building and existing buildings will be fully accessible to emergency equipment.

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



Keith Gautreau, Assistant Chief

March 29, 2017

Page 4

Supporting Evidence: The alleyway between Brick South and the CMTM entrance, located at the SW corner of the building will allow an emergency vehicle to pull within 10' of the structure.

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

Supporting Evidence: There are no vertical obstructions for the proposed building.

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

Supporting Evidence: The building elevator will accommodate these stretcher dimensions.

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

Supporting Evidence: The street number will be displayed on the building and/or street signage (submitted under separate application). The development team will work with the Fire Dept., E911 and public works on the building numbering and address.

If you need any further information regarding this review, please contact our office.

Regards,

STANTEC CONSULTING SERVICES INC.

Stephen R. Bushey, P.E.

Associate

Tel: 207-887-3478

Stephen.bushey@stantec.com

Attachments

c: Captain David Petruccelli, Fire Department (via email)

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ATTACHMENT H

**Combined SD/DD Fire Protection/
Life Safety Code Compliance Report**



154 TURNPIKE ROAD SUITE 200, SOUTHBOROUGH MA 01772
WWW.CRCFIRE.COM

Children's Museum & Theatre of Maine

Combined SD/DD
Fire Protection/Life Safety
Code Compliance Report

February 27, 2017

Prepared for:

Bruner/Cott Architects & Planners
130 Prospect Street
Cambridge, MA 02139

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**CODE CONSULTING - FIRE PROTECTION ENGINEERING
CONSTRUCTION ADMINISTRATION - PERFORMANCE-BASED DESIGN**

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1. INTRODUCTION

Bruner/Cott Architects & Planners has retained Code Red Consultants to provide fire protection, life safety, and accessibility code consulting services for the Children's Museum & Theatre of Maine project located in Portland, ME. This document has been prepared to describe the overall code compliance approach to the new construction project in context of the applicable codes and standards listed in Section 2 of this report.

The project consists of a new museum and theater consisting of interactive museum and exhibit space with a 100-person theater located on the First Floor. The building is three stories, 46' - 6", in height with exhibit, theatre, and storage spaces on the First Floor and exhibit, office, and mechanical/storage spaces on the mezzanine through Third Floors. The building has a maximum footprint area of approximately 10,000 sf.

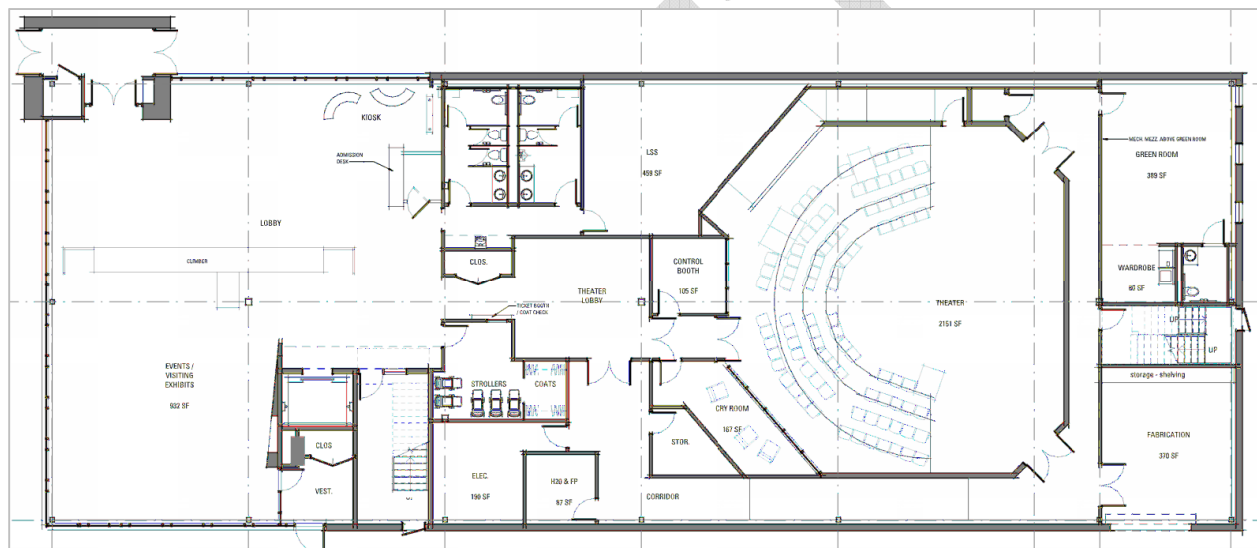


FIGURE 1: FIRST FLOOR OF MAINE CHILDREN'S MUSEUM AND THEATER

2. APPLICABLE CODES

Building	Maine Uniform Building and Energy Code (MUBEC), which is an amended version of the 2015 Edition of the International Building Code (IBC). The MUBEC Technical Codes and Standards Board submitted amendments to the Governor's Office for the adoption of the 2015 IBC in May of 2016. As of February, approval of those amendments has not yet been granted, although it is anticipated that the adoption of the 2015 IBC, IEBC, and IECC will be promulgated before building permit application. As such, the following analysis will be based on the base 2015 IBC and IECC. The code adoption should be confirmed to not have been delayed before building permit application such that the 2009 IBC would be applicable.
Fire	Maine Fire Prevention Code/ (MFPC), which adopts the 2006 Edition of NFPA 1, <i>Uniform Fire code</i> and the 2009 Edition of NFPA 101, the <i>Life Safety Code</i>
Accessibility	2010 ADA Standards for Accessible Design. Note that the current adoption of the MUBEC deletes Chapter 11 of the IBC entirely
Electrical	2017 Edition of NFPA 70, <i>National Electrical Code (NEC)</i> The adoption of the 2017 NFPA 70 is anticipated in mid-2017 and therefore the design and analysis of building electrical system should be based on the 2017 NEC. The code adoption should be confirmed to not have been delayed before building permit application such that the 2014 NEC would be applicable.
Mechanical	1993 BOCA National Mechanical Code
Plumbing	2015 Uniform Plumbing Code (UPC)
Energy	2015 Edition of the International Energy Conservation Code (IECC)
Elevator	ASME A17.1, 2013 Edition, Safety Code for Elevators & Escalators
Other	National Fire Protection Association (NFPA) Standards, as referenced by the above codes

3. BUILDING / FIRE PROTECTION / LIFE SAFETY CODE APPROACH

The following describes the basic building code compliance approach for the project.

3.1 USE AND OCCUPANCY CLASSIFICATIONS

3.1.1 Primary Occupancies

Anticipated Occupancy Groups (MUBEC 301)	
Description	MUBEC Classification
Theater	Group A-1
Museum/Exhibit	Group A-3
Offices	Group B
Storage/Mechanical	Group S-2

TABLE 1: ANTICIPATED OCCUPANCY GROUPS

3.2 BUILDING CONSTRUCTION

3.2.1 Construction Classification and Occupancy Approach

- 3.2.1.1 The construction type of the building is **Type IIA (Type II(111))**, Protected, noncombustible (MUBEC 602.2 & NFPA 101 Table 12.1.6).

Note that the restriction on assembly space at the Third Floor per the requirements of NFPA 101 are dictating the construction type of the building. See limitations in the Appendix of this report.

- 3.2.1.2 Non-Separated mixed use approach (MUBEC 508.4).

3.2.2 Building Height & Area

The building will not exceed the limitations of MUBEC Sections 504 & 506 for Type IIA construction. See below for analysis. For the purposes of the height analysis, a 1 story (20') increase is assumed to be provided. For the purposes of the area analysis, a 200% area increase for automatic sprinkler protection is assumed to be provided.

Construction Type	Occupancy (<u>Limiting</u>)	Tabular Max Floor Area (Sprinklered)	Actual Floor Area	Compliant?
IIA	A-1	46,500	10,000 ft ²	Yes

TABLE 2: FLOOR AREA ANALYSIS

Construction Type	Occupancy (<u>Limiting</u>)	Tabular Maximum Height (Sprinklered)	Actual Height (st/ft)	Compliant?
IIA	A-1 & A-3	4 Stories/85'	3 Stories/48'-6"	Yes

TABLE 3: HEIGHT ANALYSIS

3.2.2.1 Mezzanines

Two, separate mechanical floor areas are located between the First and Second Floors. Each of these areas is directly accessed by an enclosed exit stairs. These floor areas are considered mezzanines since the floor area is less than one third of the floor area of the space in which it shares a volume (MUBEC 505.2.1) and the mezzanines are permitted to be enclosed since the occupant load of the enclosed space is less than 10 (MUBEC 505.2.3).

3.2.3 Construction Type

3.2.3.1 Table 4 indicates the minimum fire-resistance ratings required for **Type IIA** Construction (MUBEC Table 601).

Fire Resistance Rating of Building Elements	
Construction Type	IIA
Building Element	Fire Resistance Ratings
Primary structural frame	1 Hour
Exterior bearing walls	1 Hour
Interior bearing walls	1 Hour
Nonbearing exterior walls	Based on Fire Separation Distance (See Section 3.2.3.2)
Nonbearing interior walls	0 Hour
Floor construction and secondary members	1 Hour
Roof construction and secondary members	1 Hour

TABLE 4: FIRE-RESISTANCE RATINGS

3.2.3.2 Nonbearing Exterior Walls

Table 5 indicates the fire-resistance ratings required for the nonbearing exterior walls based on fire separation distance (MUBEC Table 602).

Fire Resistance Rating for Exterior Walls Based on Fire Separation Distance	
Fire Separation Distance	Fire Resistance Rating
Less than 10 feet	1 Hour
10 feet or greater	0 Hour

TABLE 5: FIRE-RESISTANCE RATING FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

3.2.3.3 Exterior Wall Openings

Table 6 indicates the maximum area of unprotected exterior wall openings based on fire separation distance (MUBEC 705.8).

Allowable Exterior Wall Openings Based on Fire Separation Distance	
Fire Separation Distance	Allowable Opening Area % ¹
0 to less than 3 feet	Not Permitted
3 feet to less than 5 feet	15%
5 feet to less than 10 feet	25%
10 feet or greater	No Limit

TABLE 6: MAXIMUM AREA OF UNPROTECTED EXTERIOR WALL OPENINGS

3.3 INTERIOR WALLS AND PARTITIONS

3.3.1 Fire/Smoke Resistive Assemblies

Table 7 identifies the interior walls and partitions which are required to be constructed as fire/smoke resistive assemblies.

Fire/Smoke Resistive Assemblies		
Type of Assembly	Construction	Code Reference
Special Rooms/Incidental Uses		
Dry Type Transformer Room > 35,000 V	3 hour fire barrier	NFPA 70, 450.42
Elevator Machine Room / Controls Room	1 hour fire barrier	MUBEC 3005.4
Nonsprinklered Electrical Room	2 hour fire barrier	NFPA 13, 8.15.10.3
Dry Type Transformer Room > 112.5 kVA	1 hour fire barrier	NFPA 70, 450.21(B)
Boiler room where the largest piece of equipment is > 15 psi and 10 horsepower	Wall capable of resisting the passage of smoke	MUBEC Table 509
Furnace room where any piece of equipment is over 400,000 Btu/hr input	Wall capable of resisting the passage of smoke	MUBEC Table 509
Shafts		
Connecting 3 or fewer stories	1 hour fire barrier	MUBEC 713.4

TABLE 7: FIRE/SMOKE RESISTIVE ASSEMBLIES

¹ Based on the facility being fully sprinkler protected and unprotected openings

Wall Type	Construction
Fire Barrier (MUBEC 707.5)	Wall construction is required to extend from the floor or foundation below to the underside of the floor or roof sheathing, slab or deck above. Fire barriers are required to be continuous through concealed spaces, such as those above ceiling. Supporting construction for a fire barrier must be protected to afford the required fire-rating of the assembly being supported (MUBEC 707.5.1).
Fire Partition (MUBEC 708.4)	Wall construction is required to extend from the top of the floor/ceiling assembly below to the underside of the floor or roof sheathing above or to the underside of the fire resistance rated floor/ceiling or roof/ceiling assembly above. Supporting construction for a fire partition must be protected to afford the required fire-rating of the fire partition being (MUBEC 708.4). Where a corridor ceiling is constructed as required for corridor walls, the walls are permitted to terminate at the upper membrane of the ceiling assembly (MUBEC 708.4 Exception 3).
Fire Wall (MUBEC 706)	Wall construction is required to extend from the top of the floor/ceiling assembly below to the underside of the floor or roof sheathing above or to the underside of the fire resistance rated floor/ceiling or roof/ceiling assembly above. Supporting construction for a fire partition must be protected to afford the required fire-rating of the smoke barrier (MUBEC 709.4). Smoke barrier walls are not required in interstitial spaces that are designed and constructed with ceilings or exterior walls that provide resistance to the passage of fire and smoke equivalent to that provided by the smoke-barrier walls (MUBEC 709.4 Exception).
Smoke Tight (MUBEC 509.4)	Walls are capable of resisting the passage of smoke and extend from the underside of the floor below to the deck above or at ceiling that is part of fire resistance rated floor or roof assembly. Doors are required to be self or automatic closing upon detection of smoke and without air transfer openings. HVAC air transfer openings are only permitted if protected with smoke dampers.

TABLE 8: WALL CONSTRUCTION REQUIREMENT TABLE BY WALL TYPE

3.3.2 Vertical Openings

Shafts, including stairs and elevators, and other vertical openings are required to be enclosed as noted in Table 7.

3.4 INTERIOR FINISHES

3.4.1 Wall and Ceiling Finishes

Interior wall and ceiling finish ratings are classified in accordance with ASTM E 84 or UL 723 (MUBEC 803.1.1). The flame spread and smoke-developed indexes must not be greater than that specified in Table 9 based on the occupancy.

Minimum Interior Wall & Ceiling Finish Requirements ²			
Occupancy Classification	Exit Enclosures	Corridors, Exit Access Stairways/Ramps	Rooms and Enclosed Spaces
A-1 & A-3	B	B	C
B	B	C	C
S-2	C	C	C

TABLE 9: INTERIOR WALL & CEILING FINISH REQUIREMENTS

3.4.2 Interior Floor Finish

In all areas, interior floor covering materials are required to comply with the requirements of the DOC FF-1 “pill test” (CPSC 16 CFR Part 1630) (MUBEC 804.4.1).

3.5 FIRE PROTECTION SYSTEMS

3.5.1 Automatic Sprinkler Systems

- 3.5.1.1 An automatic sprinkler system is required to be installed throughout the facility in accordance with NFPA 13 (MUBEC 903.2.1.3).

3.5.2 Standpipe Systems

- 3.5.2.1 A Class I standpipe system is required to be installed throughout the facility in accordance with NFPA 14 as the floor level of the highest story is more than 30 feet above the lowest level of fire department vehicle access (MUBEC 905.3.1(1)).
- 3.5.2.2 Hose connections are required at the intermediate landing between stories (MUBEC 905.4(1)).

3.5.3 Portable Fire Extinguishers

Fire extinguishers must be provided. MUBEC 906.1 requires portable fire extinguishers be installed throughout the facility in accordance with NFPA 10.

The maximum allowable travel distance to a fire extinguisher is 75 feet (MUBEC Table 906.3(1)).

² Interior finishes are grouped in the following classes: Class A – flame spread index 0-25, Class B – flame spread index 26-75, Class C – flame spread index 76-200. All classes must have a smoke-developed index that does not exceed 450.

3.6 EMERGENCY SYSTEMS

3.6.1 Fire Alarm and Detection Systems

- 3.6.1.1 Valves controlling the water supply and waterflow switches are required to be supervised by a listed fire alarm control until (MUBEC 903.4)
- 3.6.1.2 Occupant notification must be made by voice announcements or voice communication per NFPA 101 Sections 12.3.1.3.

3.6.2 Standby/Emergency Power Systems

The standby and emergency power systems are required to be installed in accordance with MUBEC, NPFA 70, NFPA 110, and NFPA 111.

3.6.3 Fire Department Access

- 3.6.3.1 A fire department access road must extend to within 50 ft of at least one exterior door that can be opened from the outside and that provides access to the interior of the building (NFPA 1 18.2.3.2.1).
- 3.6.3.2 The fire department access roads must be provided such that any portion of the building or any portion of an exterior wall of the first story of a building is located not more than 450 ft from the fire department access road (NFPA 1 18.2.3.2.2.1).
- 3.6.3.3 The following dimensional and material criteria should be provide for the fire department access road (NFPA 1 18.2.3.4.1)
 - Width not less than 20 ft
 - Vertical clearance not less than 13 ft 6 in
 - All-weather driving surface design to support load of fire apparatus
 - Turning radius of not less than 25 ft
 - No dead-ends in excess of 150 ft without a turn around
 - Gradient may not exceed 10%

3.7 MEANS OF EGRESS

3.7.1 Occupant Load

The number of occupants is computed at the rate of one occupant per unit of area as prescribed in Table 10 (MUBEC 1004.1.2). The occupant load is permitted to be increased from the occupant load established for the given use where all other requirements of MUBEC are met (MUBEC 1004.2).

Occupant Load Factors	
Function of Space	Occupant Load Factor (sf/occ)
Assembly – Fixed Seating	Fixed
Assembly – Standing	5 Net
Assembly – Tables/Chairs & Stages	15 Net
Classroom	20 Net
Assembly – Exhibit Gallery/Museum	30 Net
Office Areas	100 gross
Storage/MEP	300 gross

TABLE 10: OCCUPANT LOAD FACTORS

Occupant Load Analysis				
Floor	Space	Area (ft²)	Factor (ft²/occ)	Occupant Load
1	Theatre	864	Fixed	100
	Lobbies	874	5 Net	175
	Performing Space	608	15 Net	41
	Green Room	389	15 Net	26
	Storage/MEP	1,770	300 Gross	6
	Total			348
Mezz	Storage/MEP	2,303	300 Gross	8
	Total			8
2	Classrooms	646	20 Net	33
	Museum/Exhibit	4,176	30 Net	140
	Office	1,467	100 Gross	15
	Storage/MEP	611	300 Gross	3
	Total			190
3	Classroom	790	20 Net	40
	Museum/Exhibit	4,711	30 Net	158
	Office	1,482	100 Gross	15
	Storage/MEP	601	300 Gross	3
	Total			216

TABLE 11: OCCUPANT LOAD CALCULATIONS

3.7.2 Egress Capacity

The required egress capacity for any means of egress component is based on the following capacity factors (MUBEC 1005.3):

Egress Width Factors	
Stairways (inches of width per person)	All Other Components (inches of width per person)
0.3	0.2

TABLE 12: EGRESS WIDTH FACTORS

Egress Capacity						
Floor(s)	Exit	Door Width	Door Capacity	Stair Width	Stair Capacity	Limiting Capacity
1	Main	69"	345	-	-	345
	Vestibule	44"	220	-	-	220
	Rear Stair	34"	170	36"	153	153
	Side Stair	34"	170	-	-	170
	Provided: 888 People Required: 348 People					
Mezz	Rear Stair	32"	160	46"	153	153
	Provided: 153 People Required: 2 People					
	Side Stair	32"	160	180	160	160
	Provided: 160 People Required: 6 People					
2	Rear Stair	32"	160	45"	150	150
	Side Stair	36"	180	54"	180	180
	Provided: 360 People Required: 190 People					
3	Rear Stair	32"	160	46"	153	153
	Side Stair	36"	180	54"	180	180
	Provided: 333 People Required: 216 People					

TABLE 13: EGRESS CAPACITY

3.7.3 Number of Exits

The number of exits required from every story cannot be less than that specified in Table 14 (MUBEC Table 1006.3.1).

Minimum Number of Exits Required	
Occupant Load	Number of Exits Required
1 - 500	2
501 - 1,000	3
> 1,000	4

TABLE 14: MINIMUM NUMBER OF EXITS REQUIRED

3.7.4 Exit Discharge

3.7.4.1 Exits shall discharge directly to the exterior, except where permitted below (MUBEC 1028.1).

3.7.4.2 A maximum of 50 percent of the number and capacity of exit enclosures are permitted to egress through either (1) areas on the level of exit discharge or (2) a vestibule (MUBEC 1028.1).

Both exit stairs discharge directly to the exterior.

3.7.5 Accessible Means of Egress

- 3.7.5.1 Accessible means of egress are required to be provided from all accessible spaces within the facility. Where more than one means of egress is required from any accessible space, the space must be serviced by not less than two accessible means of egress (MUBEC 1009.1).
- 3.7.5.2 Exit stairways will serve as the both accessible means of egress from the stories located above the level of exit discharge. The stairs are not required to be accessed from an area of refuge in order to be considered as an accessible means of egress since the facility will be fully sprinkler protected (MUBEC 1009.3(5)).

3.7.6 Exit Access

- 3.7.6.1 Two exits are required to be provided from any space where one of the following conditions exists (MUBEC Table 1006.2.1):

- The occupant load exceeds the values listed in Table 15 (MUBEC 1006.2.1);

Spaces with One Exit or Exit Access Doorway	
Occupancy	Maximum Occupant Load
A & B	49
S-2	29

TABLE 15: SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

- The common path of egress travel exceeds the maximum limitations listed in Table 16 (MUBEC Table 1006.2.1).

Common Path of Egress Travel	
Occupancy	Maximum Common Path of Travel Distance
A	75 feet
B & S-2	100 feet

TABLE 16: COMMON PATH OF EGRESS TRAVEL

- 3.7.6.2 Where two or more exits or exit access doorways are required, at least two are required to be placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the building or area served (MUBEC 1007.1.1(2)).

- 3.7.6.2.1 Doors serving boiler, incinerator, and furnace rooms are required to be placed a distance apart equal to not less than one-half of the diagonal dimension of the room (MUBEC 1015.3)

3.7.7 Travel Distances

Exit access travel distances must not exceed the maximum values specified in Table 17 (MUBEC Table 1017.2).

Exit Access Travel Distances	
Occupancy	Maximum Exit Access Travel Distance
A	250 feet
B	300 feet
S-2	400 feet

TABLE 17: EXIT ACCESS TRAVEL DISTANCES

3.7.8 Dead Ends

Where more than one exit or exit access doorway is required, the exit access must be arranged such that dead ends in the corridors do not exceed the maximum allowable distances specified in Table 18 (MUBEC 1020.4):

Dead End Distances	
Occupancy	Maximum Dead End Distance
A	20 feet
B, S-2	50 feet

TABLE 18: DEAD END DISTANCES

3.7.9 Exit Signage and Marking

3.7.9.1 Exit Signage

Exits and exit access doors are required to be marked by an approved exit sign readily visible from any direction of egress travel (MUBEC 1013.1).

The path of egress travel to exits and within exits must be marked by readily visible exit signs to clearly indicate the direction of egress travel where the exit or path of travel is not immediately visible. Exit signs within corridors and exit passageways must be placed such that no point is more than 100 feet or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign. Exit signs are not required in the following locations:

- In rooms or areas that require only one exit or exit access.
- Main exterior exit doors that are obviously and clearly identifiable as exits where approved by the building official.

3.7.10 Egress Illumination

The means of egress serving a room or space must be illuminated at all times the room or space is occupied (MUBEC 1008.2). The illumination level must not be less than 1 foot-candle (11 lux) at the walking surface (MUBEC 1008.2.1).

In the event of power supply failure in rooms or spaces that require two or more means of egress, an emergency electrical system must automatically illuminate all of the following areas (MUBEC 1008.3.1 & 1008.3.3):

- Corridors
- Exit access stairways and ramps
- Electrical equipment rooms
- Public restrooms with an area greater than 300 square feet

In the event of power supply failure in buildings that require two or more means of egress, an emergency electrical system must automatically illuminate all of the following areas (MUBEC 1008.3.2):

- Interior exit access stairways and ramps
- Interior and exterior exit stairways and ramps
- Vestibules and areas on the level of discharge used for exit discharge in accordance with Section 1028.1
- Exterior landings as required by 1010.1.6 for exit doorways that lead directly to the exit discharge

The emergency power system must provide power for a duration of not less than 90 minutes and must consist of storage batteries, unit equipment, or an on-site generator (MUBEC 1008.3.4). The initial illumination must be an average of 1 foot-candle (11 lux) and a minimum at any point of 0.1 foot-candle (1 lux) measured along the path of egress at the floor level. Illumination levels are permitted to decline to 0.6 foot-candle (6 lux) average and a minimum of 0.06 foot-candle (0.6 lux) at the end of the emergency lighting time duration (MUBEC 1008.3.5).

3.8 ACCESSIBILITY

The facility must meet the requirements of the Americans with Disabilities Act (ADA) and the 2010 ADA Standard for Accessible Design.

3.9 PLUMBING FIXTURES

- 3.9.1 The building is required to be provided with separate plumbing fixtures for males and females in accordance with UPC Section 412.3.
- 3.9.2 Occupants of the building are permitted to travel up to one story vertically to reach the required fixtures.
- 3.9.3 The UPC requires both male toilets and male urinals for Group A-3 spaces (UPC Table 422.1). For each urinal added in excess of the minimum required, one water closet shall be permitted to be deducted. The number of water closets shall not be reduced to less than two-thirds of the minimum requirement (footnote 4).

4. APPENDIX - CONSTRUCTION TYPE

Table 12.1.6 Construction Type Limitations

Construction Type	Sprinklered ^b	Stories Below	Stories in Height ^a				
			1	2	3	4	≥5
I (442) ^{c, d, e}	Yes	X	X	X	X	X	X
	No	NP	X	X	X	X	X4
I (332) ^{c, d, e}	Yes	X	X	X	X	X	X
	No	NP	X	X	X	X	X4
II (222) ^{c, d, e}	Yes	X	X	X	X	X	X
	No	NP	X	X	X	X	X4
II (111) ^{c, d, e}	Yes	X1	X	X	X	X3	NP
	No	NP	X	X	X3	NP	NP
II (000)	Yes	X2	X	X4	NP	NP	NP
	No	NP	X3	NP	NP	NP	NP
III (211) ^d	Yes	X1	X	X	X	X3	NP
	No	NP	X	X	X4	NP	NP
III (200)	Yes	X2	X3	X4	NP	NP	NP
	No	NP	X3	NP	NP	NP	NP
IV (2HH)	Yes	X1	X	X	X	X3	NP
	No	NP	X	X	X4	NP	NP
V (111)	Yes	X1	X	X	X	X3	NP
	No	NP	X	X	X4	NP	NP
V (000)	Yes	X2	X3	X4	NP	NP	NP
	No	NP	X3	NP	NP	NP	NP

X: Permitted for assembly of any occupant load.

X1: Permitted for assembly of any occupant load, but limited to one story below the level of exit discharge.

X2: Permitted for assembly limited to an occupant load of 1000 or less, and limited to one story below the level of exit discharge.

X3: Permitted for assembly limited to an occupant load of 1000 or less.

X4: Permitted for assembly limited to an occupant load of 300 or less.

NP: Not permitted.

^a See 4.6.3

^b Protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 in the following locations:

(1) Throughout the story of the assembly occupancy

(2) Throughout all stories below the story of the assembly occupancy, including all stories below the level of exit discharge

(3) In the case of an assembly occupancy located below the level of exit discharge, throughout all stories intervening between the story of the assembly occupancy and the level of exit discharge, including the level of exit discharge

^c Where every part of the structural framework of roofs in Type I or Type II construction is 20 ft (6100 mm) or more above the floor immediately below, omission of all fire protection of the structural members is permitted, including protection of trusses, roof framing, decking, and portions of columns above 20 ft (6100 mm).

^d In open-air fixed seating facilities, including stadia, omission of fire protection of structural members exposed to the outside atmosphere is permitted where substantiated by an approved engineering analysis.

^e Where seating treads and risers serve as floors, such seating treads and risers are permitted to be of 1-hour fire resistance-rated construction. Structural members supporting seating treads and risers are required to conform to the requirements of Table 12.1.6. Joints between seating tread and riser units are permitted to be unrated, provided that such joints do not involve separation from areas containing high hazard contents and the facility is constructed and operated in accordance with 12.4.2.

14. CONFORMITY WITH APPLICABLE DESIGN STANDARDS

The following statements are made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526 Site Plan Standards.

14.1 OVERVIEW

This project conforms with all the applicable design standards of Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

The Co-applicant (Forefront) has previously obtained a Traffic Movement Permit for the entire Thompson's Point project which addressed impacts on surrounding street systems. Various improvements to the surrounding street system have been previously completed, thus creating ample conditions to allow the Lot 7 site development to move forward.

2. Access and Circulation:

a. Site Access and Circulation.

- (i) The development provides access via Thompson's Point Connector Road. Forefront has worked previously with fire safety and City officials to make access and circulation easy and safe for all vehicular and pedestrian users for the entire site. The interior loop road will be widened and improved.
- (ii) There are no new vehicular access and egress points to Thompsons Point being constructed as part of this project.
- (iii) The site does not feature drive up services as mentioned in this requirement.
- (iv) Site access has been designed so as not to impede potential future connection to adjacent streets.

b. Loading and Servicing.

- (i) Adequate provisions are made at the site for periodic loading from panel trucks to service the proposed use. The site provides a clear area in front of the solid waste enclosures for servicing and loading vehicles. The CMTM will utilize occasional semi-trailer deliveries for new exhibits or events occurring at the facility and these vehicles will use the main entry road and loop road for direct access to the site. These vehicles will then use the proposed parking lot for access to an overhead door at the rear of the building.

c. Sidewalks.

- (i) The project will provide new pedestrian routes from the CMTM site to the nearby Brick South, Brick North and Depot site uses. The site will also be

connected to the Pedestrian alley between the site and Brick South and Hotel building to the west. This alleyway is expected to become a central and vibrant component to pedestrian activity within the Point.

3. Public Transit Access:

- a. The development site will continue to have superior access to public transit facilities including the nearby Portland Transportation Center Hub. From its origins several years ago, the Thompsons Point redevelopment was always considered to be ideally suited to benefit from its proximity to the transportation terminal. The CMTM development will benefit similarly from these conditions.

4. Parking:

a. Location and Required Number of Vehicle Parking Spaces:

- (i) Off-street parking is provided on the site to accommodate the proposed use. An Agreement between the Co-Applicants will allow for shared use parking conditions to meet the needs of CMTM.
- (ii) As contemplated in previous approved submissions, the overall development relies on shared parking conditions.
- (iii) See above.
- (iv) The parking spaces and aisles meet the applicable dimensions detailed in the Technical Manual.
- (v) The onsite parking lot will be paved. Parking along the loop road will also be paved.

b. Location and Required Number of Bicycle Parking Spaces:

- (i) The project provides multiple racks, each with a capacity for two bicycles, providing a total of at least 20 bicycle parking spaces. The bike racks will be positioned at the north end of the building and also near the front entrance at the south end of the building.

c. Motorcycles and Scooter Parking:

- (i) Motorcycles and scooters are allowed into the Forefront development and they have access to the traditional parking as well as some designated smaller parking stalls sporadically located throughout the Point.

d. Snow Storage:

- (i) Snow storage management will employ two strategies:
 - a. Limited snow storage along the west end of the parking areas (this will suffice for small storm events and temporary storage only).
 - b. Snow removal and off-site disposal.

5. Transportation Demand Management (TDM):

- a. The Transportation Demand Management (TDM) Plan for Thompson's Point was first approved in September 2011 and reapproved in February 2013 with Master Development Plan approval. An Amendment to the TDM was completed in November of 2015. Forefront Partners and CMTM have completed the attached TDM update.

The Children's Museum/Theater of Maine (CMTM) project will integrate the principles and goals outlined in the Thompson's Point TDM. This includes measures to encourage and promote bicycling, walking, carpooling, and the use of public transit. Typical visitors to the CMTM are families in automobiles and arriving by van or bus, thus these visitors are already achieving many of the TDM goals for the overall development.

Key Strategies for Transportation Demand Management for the CMTM:

1. **Proximity to Transit:** Given its proximity to the Portland Transportation Center (PTC), visitors to the CMTM will be able to take advantage of transit. The PTC hosts the following transit services:
 - o Downeaster (AMTRAK)
 - o Concord Coach
 - o Portland Metro Bus – Metro service is expected to improve over time as the Metro route will include specific bus facilities onsite and not just at the PTC.
2. **Bicycle Parking:** Bicycle parking will be provided on the CMTM site in a convenient and functional location.
3. **Automobile Parking:** Eighteen (18) parking spaces will be provided on site. An additional 65 on street parking spaces will be provided immediately adjacent to the site. CMTM will be part of the shared parking strategy for Thompson's Point, which is overseen by the TDM coordinator.
4. **Pedestrian Connectivity:** The project will include sidewalks and hardscape that will provide direct connectivity to adjacent plazas and sidewalks throughout Thompson's Point. Ultimately the Point is connected to the Fore River Parkway Trail, The Fore River Trail and other pedestrian linkages within the surrounding street systems including Congress Street and nearby residential neighborhoods. As evidenced by the ongoing events at the Point, including concerts and special events we believe that pedestrian connectivity to the site has proven to be reasonable and practical.
5. **TDM Coordinator:** The Forefront at Thompson's Point employs a TDM coordinator who is charged with implementing the TDM plan (Macro Plan). This coordinator will work with all tenants to:
 - a. Coordinate and promote ridesharing opportunities (such as Uber and Lyft);

- b. Promote use of public transit (metro);
- c. Promote use of shared transit (bus and train travel);
- d. Monitor parking usage and manage parking facilities;
- e. Encourage use of alternative modes of transportation including biking and walking; and
- f. Overseeing and updating the Macro TDM through implementation of micro strategies.

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

- a. The CMTM site is previously partially developed, nearly 100% impervious, and contains no significant natural features.

2. Landscaping and Landscaping Preservation:

a. Landscape Preservation.

- (i) There are no existing landscape features or elements at the site. A substantial amount of new landscaping will be provided to the site.

b. Site Landscaping.

(i) Landscaped Buffers:

- (a) The HVAC and loading area will be screened from public view by wood or metal fencing all around the enclosure and perimeter landscaping. The solid waste dumpster will be screened with a wood fence enclosure.

- (b) The accompanying landscaping plan outlines the proposed measures for the site. The planting schedule includes quantities for over 150 trees to be planted on the Lot 7 property. Additional plantings will also be installed along the proposed loop road, consistent with work that has previously been done for the completed portions of the access road within the Point.

- (c) Not applicable.

- (d) Not applicable.

(ii) Parking Lot Landscaping:

- a) Trees and shrubs are provided throughout the site at the perimeters of the parking area and in the internal islands. Over 150 trees will be planted on the Lot 7 site and additional street trees will be installed.

- b) Landscaped islands will be provided such that there is no interrupted pavement exceeding forty parking spaces.

c) There is no central landscaped island.

d) Not applicable.

(iii) Street Trees:

(a) The roadway landscape plan includes at least 10 street trees along the 700 LF +/- Loop Road that is Phase 1 of this application package.

3. Water Quality, Stormwater Management and Erosion Control:

a. The project proposes the development of Children's Museum & Theatre of Maine. The property is currently 100% impervious. Redevelopment of the site will reduce the impervious cover and provide pervious landscaped surfaces that will reduce both the peak rate of runoff and the volume of runoff from the site under all storm conditions. The provision of landscaped green space will also enhance the quality of surface runoff from the site under all conditions. The site improvements will also include measures for meeting the MaineDEP Stormwater Chapter 500 Rules and the City of Portland Stormwater Management Standards.

(i) There is currently no evidence of offsite runoff draining onto or across the lot. The Lot 7 design is intended to transition smoothly with the surrounding grades and proposed conditions around the property. The Loop road has been designed to match into existing road grades and to work with the proposed Lot 7 site grading.

(ii) See above. There will be no increase in the rate or volume of runoff from the site. The site drains directly to the Fore River which is under tidal influence, thus there are no requirements for flood control on the site.

(iii) See above.

(iv) See above.

b. The project will ultimately meet the General Standards under Chapter 500, Stormwater Law (City of Portland Technical Manual, Section 5 - Portland Stormwater Management and Maine DEP Ch. 500, 3 (e)). The Basic Standards will apply to this project and a detailed Soil Erosion and Sediment Control Plan has been developed to address this.

c. Not applicable.

d. Not applicable.

e. Construction at the site will be required to follow local, state and federal regulations and will be undertaken under the supervision of a suitably qualified environmental professional. Post-construction activities at the site do not pose a risk of groundwater contamination.

- f. The project will be connected to the public sanitary sewer system which is adequately sized for the anticipated project flows.

(c) Public Infrastructure and Community Safety Standards.

1. Consistency with City Master Plans:

- a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure plans. A Master Development plan has been previously approved for the overall Forefront development and the current proposals for the Lot 7 development and loop road extension are entirely consistent with the Master Plan including the land use, program layout and related infrastructure needs.

- b. Not applicable.

2. Public Safety and Fire Prevention:

- a. The site has been designed to promote a safe and welcoming mixed use development environment. Public spaces are highly visible and overall the management of the site has addressed safety as evidenced by the successful handling of numerous large public events (>7,000 persons). The safe operations of the site will continue to be a priority for both the Forefront management and CMTM development.

- b. The site provides access from Thompson's Point Road for emergency vehicles.

- c. Fire hydrants are to be located adjacent to the property along the loop drives. The lot 7 building will be fully sprinklered as are other buildings on the Forefront property.

3. Availability and Adequate Capacity of Public Utilities:

- a. The applicant has/will secure letters from all applicable utilities stating their ability to serve the site. The Lot 7 project will require new electrical, gas, sewer, and water services be extended from new infrastructure from within the new loop road extension or from existing onsite facilities. The proposed loop road extension will involve utility work including new water main and underground power and communications infrastructure.

- b. All new electrical services to the site will be underground.

- c. All new utility infrastructures will meet the provisions of the Technical Manual.

- d. The project will utilize an existing service connection to the sewer system within the Peninsula. The system ties into the Portland Water District Sanitary Pump station located on the Point.

- e. All new sewer and stormwater infrastructure will meet City standards.

- f. A solid waste collection and storage area will be provided with adequate capacity for the needs of the development. The solid waste enclosure has been placed off the end of the proposed Lot 7 parking lot for ease of access. The barrels/ dumpster will be picked by a truck from the museum parking lot. The owner will contract with a waste removal vendor as part of the onsite management of waste collection and recycling.

(d) Site Design Standards.

- 1. Massing, Ventilation and Wind Impact:
 - a. The project proposes construction of a new multi-story building and parking area. The project will not result in any significant changes to the wind environment proximate to the site.
 - b. The project will not result in any significant impacts to abutting properties.
 - c. HVAC venting, if necessary, will be directed through ground mounted units and will not impact any adjacent public spaces.
- 2. Shadows:
 - a. The project is in the B-5 Zone. This standard is not applicable.
- 3. Snow and Ice Loading:
 - a. The building will be designed in such a way that accumulated snow does not impact adjacent properties or public ways.
- 4. View Corridors:
 - a. The project entails construction of a multistory building at the site. There will be no significant changes to view corridors offered to adjacent properties.
- 5. Historic Resources:
 - a. The project is not located in a historic district, historic landscape district, or City designated landmark.
 - b. The project is not located adjacent to, or within 100 feet of, a historic district, historic landscape district, or City designated landmark.
 - c. There are no historical or archaeological resources on the project site.
- 6. Exterior Lighting:
 - a. Site Lighting
 - (i) All new exterior lighting at the site will be full cutoff with no light emitted above the horizontal plane, and in accordance with Section 12 of the

Technical Manual. Catalog cuts are included in Attachment I to this section. A photometric lighting plan has been developed demonstrating illumination levels throughout the Lot 7 site and the loop road extension consistent with previously submitted plans.

7. Noise and Vibration:

- a. Project noise levels will be designed to meet the permitted standards within the zone. HVAC units will be located on the ground adjacent the building. Equipment cut sheets will be provided in the Final Site Plan Application package.

8. Signage and Wayfinding:

- a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.
 - (i) The project is not located in a historic district or subject to Article IX.
 - (ii) Proposed commercial signage has not yet been designed for the site and will be submitted in a separate application.
 - (iii) All street and wayfinding signage is designed to meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

9. Zoning Related Design Standards:

- a. The project satisfies the goals and objectives previously approved in the overall Master Plan and Sectional Recording Plan.

14.2 ATTACHMENTS

Attachment I – Proposed Lighting Fixtures

Attachment J – CMTM Micro TDM Plan

ATTACHMENT I

Proposed Lighting Fixtures

BRICK NORTH AND SOUTH BUILDINGS
AT THE FOREFRONT AT THOMPSON'S POINT

PROPOSED LIGHTING FIXTURES

August 30, 2016

Bartlett Design

LIGHTING & ELECTRICAL ENGINEERING

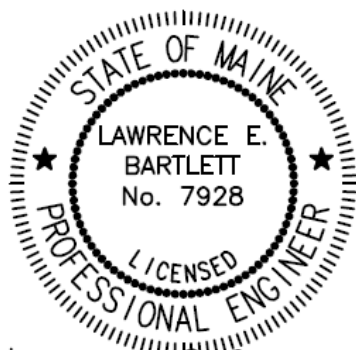
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The proposed lighting for parking lots and access drives has been prepared in conformance with the *Illuminating Engineering Society of North America* recommendations published in Lighting for Parking Facilities RP-20-14. Based on a Lighting Zone Classification of LZ2 (moderate ambient lighting), the RP-20-14 horizontal illuminance criteria is as follows:

- Minimum Illuminance at Grade: 0.5 footcandles
- Average-to-Minimum Uniformity: 4-to-1, or better
- Maximum-to Minimum Uniformity: 15-to-1 or better



Lawrence E. Bartlett

LIGHTING FIXTURE TYPE S1



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LEADER IN LIGHTING SOLUTIONS
An *Acuity Brands* Company
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DWG #. |

Specifications

General Construction

Rugged die cast aluminum housing, low copper aluminum, allow for corrosion resistance and long life. Horizontal arm mount with +/-6 degrees vertical adjustment. Four bolt mast arm provides easy, secure installation and adjustability for arms 1-1/4 & 2 inch pipe (1.66" & 2.38" O.D.) Trigger latch disengages for easy access to four bolt mounting, terminal block, surge protection module, LED drivers, and electronic transfer switch. An optimized maintained thermal management system is achieved by combining a robust heat sink utilizing both convection and conduction methodology with a mechanical design that provides maximum airflow ensuring a minimum of 50,000 hours L70 at 25C operating ambient. Internal perforated stainless steel cover protects the luminaire against dirt and foliage build up while maintaining the integrity of the airflow requirement. Solar guard technology isolates top cover of luminaire from thermal heat sink through four touch points providing protection from solar loading while not in operation.

Environmental

Luminaire design and tested to comply with ANSI C136:31 2001 for 100,000 cycles at 3G acceleration for normal road and bridge applications. The range of luminaire operation is -40C to +50C.

Six sealed LED light engines meet dust and moisture rating of IP-66 per IEC 60068-2-3 1987 ensures long component life and protection from the environment.

The luminaire is finished with polyester paint applied after a pretreatment process to ensure maximum durability. The finish shall pass the 1000 hour salt fog test per ASTM B117 and D1654 standard.

The luminaire passed Humidity testing per IEC 60068-2-3 1987 and passed Temperature-Voltage Cycling and Condensing Humidity testing per Acuity Brands Validation Test Specification 902-00007-001

Regulatory

The luminaire is safety listed to CSA-C22.2 number 250, wet location. See chart below for model rating based on drive current and led combination.

Series	Drive Current	Number of LED'S	CSA Ambient Listing
LEDG	350 mA	36,60,72,84,96,108,120	40C
LEDG	525 mA	36,48,60,72,84,96,108,120	40C
LEDG	700 mA	72,60,48,36	40C
LEDG	700 mA	84	35C
LEDG	700 mA	96	30C
LEDG	700 mA	108	25C



The luminaire is ROHS compliant. Luminaire meets EMI compliance per FCC Title 47 CFR Part 15, Class A.

Electrical

The surge protection is tested to ANSI/IEEE C62.41-2002 specification. For the AS voltage option (120-277), the device meets category C high (20kV, 10kA). For AH voltage rating (347-480), the protection level is category C low. (6kV, 3kA) The surge protection module (SPD) protects all downstream electronics such as led drivers, transfer switch, and relays for the purpose of protecting from electrical disturbances such as nearby lightning strikes.

Extended life driver option (EL 350 mA only) provides both main and auxiliary driver system extending system driver to 200,000 hours minimum. The control in EL option constantly monitors an output current of the Main Driver. In the event of a Main driver failure (no output current), the control switches power to the Auxiliary driver. The Auxiliary driver is not energized during normal operation.

The photocell receptacle is adjustable without tools and is ROAM compatible.

The luminaire is designed to conform to ANSI C82.77:2002 for Maximum Total Harmonic Distortion (THD) -20%. Inrush current complies with NEMA410:2004 table B-2 and line fluctuations and Ramp Input voltage per UL 991:2004.

The luminaire conforms to Electromagnetic compatibility tests for Electrostatic Discharge (ESD) per IEC 61000-4-2:2001, Level 4.

Optical

Environmentally friendly, zero uplight luminaire reduces light pollution. Glass optics provides minimal dirt depreciation and will not discolor or become brittle over time. The permanence of glass results in less dirt depreciation and more maintained lumens on the intended space. The luminaire is available with narrow, medium, and wide asymmetric distributions designed to maximize pole spacing and reduce energy usage resulting in a lower total cost of ownership. The highly engineered light engine is designed to restrict direct view of individual LED's increasing visual comfort within the field of view. The luminaire is available with LED color temperatures of 4000K and 5000K. The minimum color rendering Index (CRI) is 70.

Reference www.Holophane.com for individual photometric tests on LEDgend LED luminaire that are tested per LM79 guidelines. Consult factory for LM80 data as that varies per LED chip manufacturer.

LEDGEND™
LED Roadway Lighting

**Functional
Outdoor**

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An Acuity Brands Company
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ORDER #: _____
TYPE: _____
DRAWN: LJS
DATE: 10/6/11
DWG #: LUM LEDG

TracPoles

SiteLink is a line of engineered structures that feature tracks and locking hardware for mounting and connecting a variety of necessary attachments.

Easy assembly is key and provides the ability to simplify installation, maintenance, modification, and integration of new and existing equipment.

The heart of the system is the new TracPoles with TracLoc which will be supported by accessories and site amenities. These units are easily modified or customized to meet a wide range of site requirements.



Features and benefits

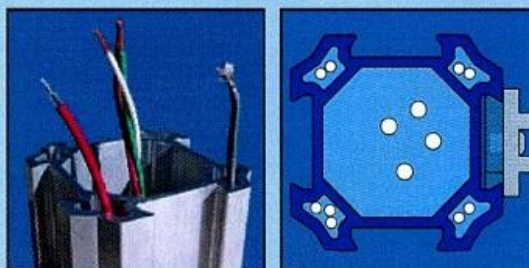
- **Structurally strong**
 - Maximum use of aluminum.
Extrusions: 6061-T6 aluminum alloy.
Castings: 356 aluminum alloy.
 - Fasteners: 300 series stainless steel.
 - Dovetail track.
- **Protected wireways**
 - Four isolated wireways for low voltage wiring, fiber optics, etc.
- **Mounting versatility**
 - Allows adjustment to site conditions.
- **Finishes**
 - Anodized finishes and paint options are available.



Medium Duty
Four track pole
5.75" square

Communication wireways

An extruded aluminum pole with up to four self-contained dovetail tracks for mounting sensory equipment. The central core can be used for the main power, while the four auxiliary channels provide strength as well as isolated communication wireways.



Line voltage in the core channel, low voltage communication cable in the auxiliary channels. And a typical cross section of a TracPoles shows line voltage delivered through the central core, low voltage in the auxiliary channels, with an accessory fastened onto one of four mounting tracks.

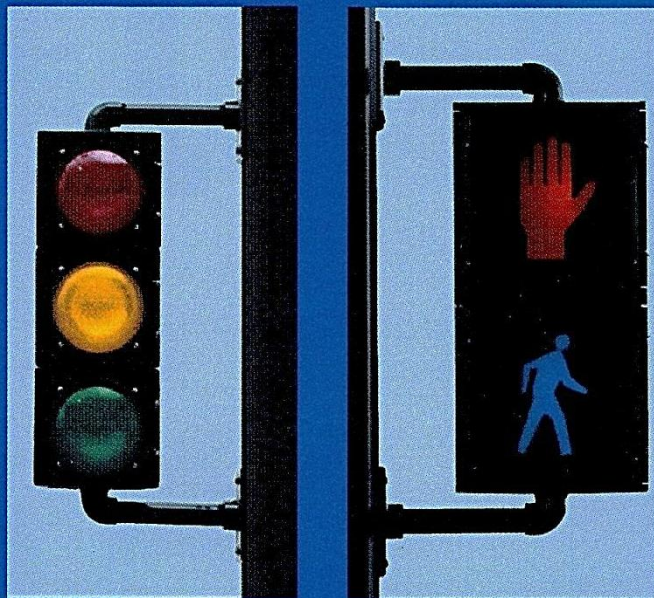
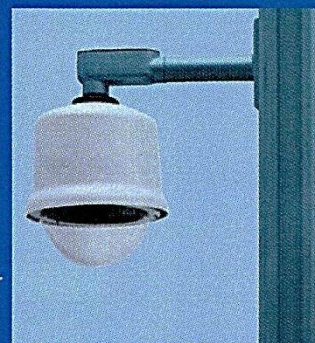
TracLoc System

At the heart of the TracLoc System is the dovetail track and TracNut.

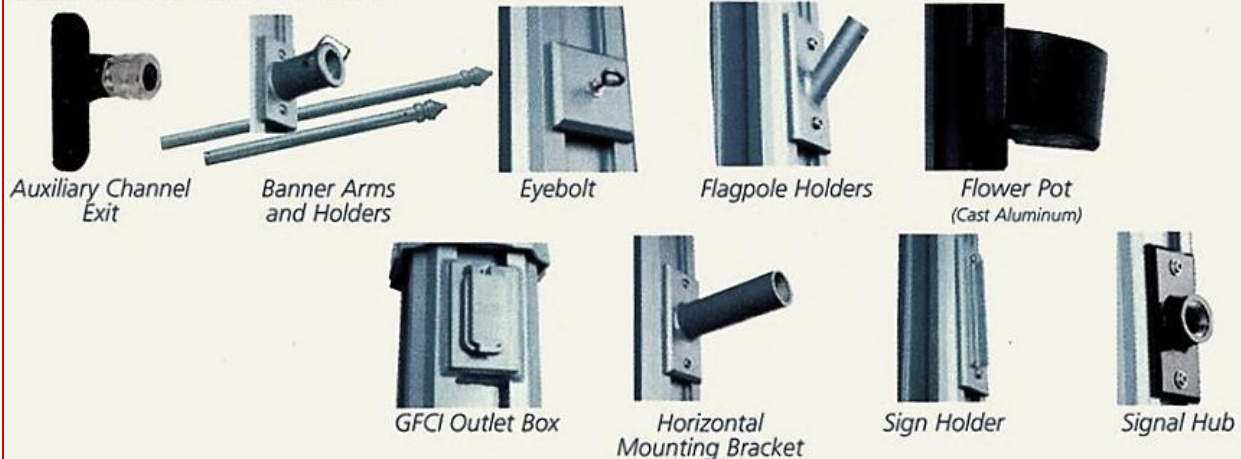


TracEquipment

Site equipment such as traffic lights, pedestrian signal equipment, security cameras and traffic signs can all fit the TracLoc System through the use of one of the several standard accessory components available. Custom components can also be developed for more challenging designs that require special attachments. In these instances, please contact your local Holophane factory sales representative for consultation.



accessories

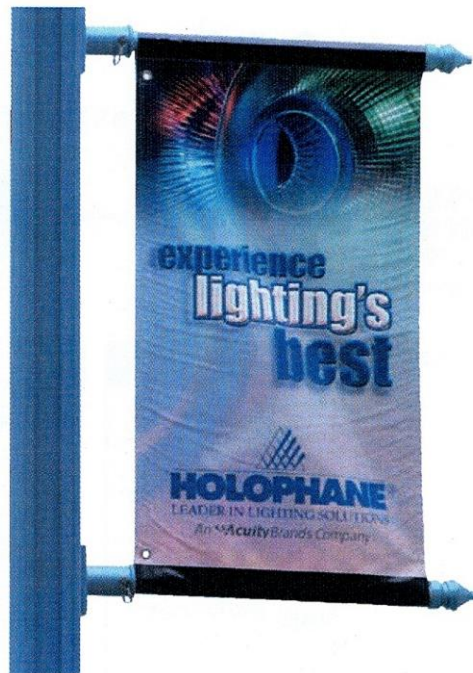


TracBanners

SiteLink offers a standard set of functional cast aluminum banner arms for use with the TracLoc system. TracBanners can be moved to accommodate new banner sizes, removed for different pole requirements or inclement weather, or added for special events easily without damaging the surface of the pole.

Features

- Cast aluminum construction
- Powder coat, or Kynar finish options
- Variety of lengths and diameters
- Variety of decorative end caps



BRICK NORTH AND SOUTH BUILDINGS AT THE FOREFRONT AT THOMPSON'S POINT
LIGHTING FIXTURE **TYPE S1**



BRACKET ARM: # SLNY72T2721 HD1

BASE: #SLDECVRCACSBT2D1

Post	Material	Height	Shaft Style
SL = SiteLink	A = Aluminum	08 = 8' 16 = 16' 24 = 24' 09 = 9' 17 = 17' 25 = 25' 10 = 10' 18 = 18' 26 = 26' 11 = 11' 19 = 19' 27 = 27' 12 = 12' 20 = 20' 28 = 28' 13 = 13' 21 = 21' 29 = 29' 14 = 14' 22 = 22' 30 = 30' 15 = 15' 23 = 23'	T1J = SiteLink 3"x5" Extruded Shaft-Light Duty T2J = SiteLink 5.75" SQ. Extruded Shaft-Medium Duty T3H = SiteLink 8.50" SQ. Extruded Shaft-Heavy Duty L6J = SiteLink 5.75" SQ. Extruded Shaft-Medium Duty L8G = SiteLink 8.50" SQ. Extruded Shaft-Heavy Duty
Base	Tenon	Mounting	Finish
BP = Base Plate SB = Shoe Base (T1J-TMP40002A) (T2J-TMP40000A BP) (T2J-TMP40016 SB) (T3H-TMP40001A) (L6J-TMP40017) (L8G-TMP40018)	P01 = POLE CAP P05 = 3" O.D. X 4" LG. P07 = 3" O.D. X 3" LG. P08 = 3" O.D. X 5" LG. P09 = 3" O.D. X 6" LG. P10 = 3" O.D. X 9" LG. P11 = 4.38 O.D. x 12" LG. (3" O.D. = ACTUAL SIZE IS 2.88" O.D.)	P12 = 3" O.D. X 12" LG. P13 = 3" O.D. X 8" LG. P14 = 3" O.D. X 14" LG. P15 = 3.5" O.D. X 8" LG. P16 = 4.5" O.D. X 10" LG. PT1 = VGC Plate ABG = Anchor Bolts Galvanized Steel LAB = Less Anchor Bolts	BK = Black BD = Dark Blue BZ = Bronze GH = Graphite GN = Green GR = Gray PP = Prime Painted SL = Silver WH = White
Options			

BRICK NORTH AND SOUTH BUILDINGS AT THE FOREFRONT AT THOMPSON'S POINT
LIGHTING FIXTURE TYPES S2, S3, S4, S5 & S6



Prefix	Controls	Arm	Mounting	Optics ⁵	LED Watts	Color Temp	Voltage	Finish	Options
P21 -	-	-	-	-	-	-	-	-	
P21- PureForm 21" fixture	— Standard luminaire DIM 0-10V Dimming APD¹ Automatic Profile Dimming APD-MRO² APD with Motion Response Override pole mounted sensor APD-MRI³ APD with Motion Response Override luminaire mounted sensor MRI³ Motion Response at 50% low, luminaire mount sensor MR50² Motion Response at 50% low, pole mounted sensor LimeLight Wireless Controls LLC2^{1,10,13} #2 lens for 8-15' mounted heights LLC3^{1,10,13} #3 lens for 15-25' mounted heights LLC4^{1,10,13} #4 lens for 25-40' mounted heights	A1¹⁴ Standard 9" Arm A2¹⁴ Short 5" Arm A3¹⁴ Decorative Arm MA Mast Arm Fitter (requires 2 3/8" O.D. Mast Arm)	1 Standard 2 2@180 2@90 2@90 3 3@90 3@120 3@120 4 4@90 W Wall Mount WS⁴ Wall mount including surface conduit rear entry permitted	Standard Optic Position 2 Type 2 3 Type 3 4 Type 4 5M Type 5 Medium 5W Type 5 Wide BLC Backlight Ctrl 2BL Type 2 with backlight (less shield) LCL⁶ LEED Corner Cutoff Optics LCR⁶ LEED Corner Cutoff Optics Optics Rotated Left (90°)⁷ 2-90 Type 2 3-90 Type 3 4-90 Type 4 BLC-90 Backlight Ctrl 2BL-90 Type 2 with backlight (less shield) Optic Rotated Right (270°)⁷ 2-270 Type 2 3-270 Type 3 4-270 Type 4 BLC-270 Backlight Ctrl 2BL-270 Type 2 with backlight (less shield)	350mA 55LA 70LA 90LA 530mA 80LA 105LA 130LA 640mA 165LA¹² 700mA 110LA 140LA 180LA 800mA 200LA¹²	CW Cool White 5,700K 70 CRI (nominal) NW Neutral White 4,000K 70 CRI (nominal) WW Warm White 3,000K 80 CRI (nominal)	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V 50hz/60hz HVU 347-480V 50hz/60hz	BRP Bronze Paint BLP Black Paint WP White Paint NP Natural Paint OC Optional Color Specify optional color or RAL (ex: OC-LGP or OC-RAL7024) SC Special color Specify, must supply color chip. Requires factory quote.	TL Tool-Less entry and driver removal hardware TB Terminal Block F⁸ Fusing LF In-Line/In-Pole Fusing PC^{9,10,13} Receptacle with Photocell (Includes PCR5) PCB^{9,10,13} Photocell Button PCR5^{10,13,15,17} Photocell Receptacle only with 2 dimming connections PCR7^{10,13,16,17} Photocell Receptacle only with 2 dimming and 2 auxiliary connections EHHS External Houseside Shield PTF2 Pole Top Fitter for 2 3/8"-3" Tenon PTF3 Pole Top Fitter for 3"-3 1/2" Tenon PTF4 Pole Top Fitter for 3 1/2"-4" Tenon SPA1-2 Square Pole Adapter for use with A1 or A2 Arms SPA3¹⁸ Square Pole Adapter for use with A3 Arms DL¹¹ Diffusing Lens CLR¹¹ Clear Glass Lens POLY¹¹ Polycarbonate Lens (1 year warranty on lens) BD Bird Deterrent Spike Kit – consist of 25 injection molded plastic bird deterrent spikes (field installed only).

TYPE S2: #P21-DIM-A1-1-2-55LA-NW-UNV-BLP-PC

TYPE S3: #P21-DIM-A1-1-4-105LA-NW-UNV-BLP-PC

TYPE S4: #P21-DIM-A1-1-4-BLC-105LA-NW-UNV-BLP-PC

TYPE S5: #P21-DIM-A1-1-5M-105LA-NW-UNV-BLP-PC

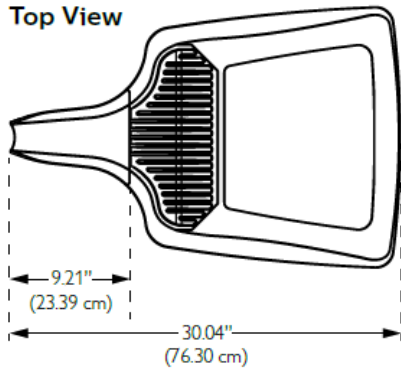
TYPE S6: #P21-DIM-A1-1-2-55LA-NW-UNV-BLP-PC

BRICK NORTH AND SOUTH BUILDINGS AT THE FOREFRONT AT THOMPSON'S POINT
LIGHTING FIXTURE TYPES S2, S3, S4, S5 & S6

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Type 2				Type 2BL				Type 3			
				Average System Watts ¹	Lumen Output ^{1,2}	Efficacy (LPW)	BUG Rating	Average System Watts ¹	Lumen Output ^{1,2}	Efficacy (LPW)	BUG Rating	Average System Watts ¹	Lumen Output ^{1,2}	Efficacy (LPW)	BUG Rating
55LA	48	350	4000K	54	5,327	99	B1-U0-G1	54	5,981	111	B3-U0-G3	54	5,330	98	B1-U0-G1
70LA	64	350	4000K	69	7,350	107	B1-U0-G1	69	8,252	120	B3-U0-G3	69	7,354	107	B1-U0-G2
90LA	80	350	4000K	88	9,370	106	B1-U0-G2	89	10,521	119	B3-U0-G3	89	9,375	106	B1-U0-G2
80LA	48	530	4000K	78	7,656	98	B1-U0-G2	79	8,596	109	B3-U0-G3	79	7,660	97	B1-U0-G2
105LA	64	530	4000K	103	10,521	102	B1-U0-G2	103	11,814	114	B3-U0-G3	103	10,527	102	B1-U0-G2
130LA	80	530	4000K	127	13,490	106	B1-U0-G2	128	15,147	118	B4-U0-G4	128	13,498	105	B1-U0-G2
165LA	80	640	4000K	162	15,651	97	B2-U0-G2	162	17,425	107	B4-U0-G4	162	15,691	97	B1-U0-G2
110LA	48	700	4000K	108	9,735	90	B1-U0-G2	108	10,931	101	B3-U0-G3	108	9,740	90	B1-U0-G2
140LA	64	700	4000K	137	13,287	97	B2-U0-G2	138	14,918	108	B4-U0-G4	138	13,294	96	B1-U0-G2
180LA	80	700	4000K	176	16,723	95	B2-U0-G2	177	18,777	106	B4-U0-G4	177	16,732	94	B2-U0-G3
200LA	80	800	4000K	205	18,514	90	B2-U0-G2	206	20,788	101	B4-U0-G4	206	18,524	90	B2-U0-G3

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Type 4				Type 5M				Type 5W			
				Average System Watts ¹	Lumen Output ^{1,2}	Efficacy (LPW)	BUG Rating	Average System Watts ¹	Lumen Output ^{1,2}	Efficacy (LPW)	BUG Rating	Average System Watts ¹	Lumen Output ^{1,2}	Efficacy (LPW)	BUG Rating
55LA	48	350	4000K	54	5,279	98	B1-U0-G1	54	6,059	112	B2-U0-G0	53	6,014	113	B3-U0-G1
70LA	64	350	4000K	69	7,284	106	B1-U0-G2	69	8,360	122	B3-U0-G1	70	8,298	119	B3-U0-G2
90LA	80	350	4000K	88	9,286	105	B1-U0-G2	88	10,657	121	B3-U0-G1	86	10,579	123	B4-U0-G2
80LA	48	530	4000K	78	7,588	97	B1-U0-G2	79	8,708	111	B3-U0-G1	82	8,644	106	B3-U0-G2
105LA	64	530	4000K	103	10,428	101	B1-U0-G2	103	11,967	116	B3-U0-G1	108	11,879	111	B4-U0-G2
130LA	80	530	4000K	127	13,370	105	B1-U0-G2	128	15,344	120	B3-U0-G1	134	15,231	114	B4-U0-G2
165LA	80	640	4000K	162	15,389	90	B1-U0-G2	162	17,663	109	B4-U0-G1	164	17,878	109	B4-U0-G2
110LA	48	700	4000K	108	9,648	96	B1-U0-G2	108	11,073	102	B3-U0-G1	110	10,991	100	B4-U0-G2
140LA	64	700	4000K	137	13,168	94	B1-U0-G2	138	15,112	110	B4-U0-G1	146	15,001	103	B4-U0-G2
180LA	80	700	4000K	176	16,574	95	B2-U0-G2	177	19,021	108	B4-U0-G1	179	18,881	105	B4-U0-G2
200LA	80	800	4000K	206	18,349	89	B2-U0-G3	206	21,058	102	B4-U0-G2	206	20,903	101	B4-U0-G2

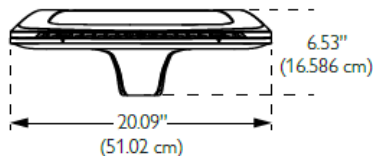
Top View



Side View



End View



PHILIPS



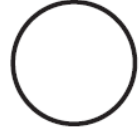
PHILIPS



Poles

4.5" Straight Round Aluminum - Cast Base

The Philips Gardco RA4.5 straight aluminum pole consists of a one-piece 4.5" round extruded aluminum lighting standard mounted to a cast aluminum base. The poles are finished with either Architectural Class I anodizing or electrostatically applied TGIC polyester powdercoat. All poles include anchor bolts, full base cover, hand hole, ground lug and top cap.



PREFIX	BASE	HEIGHT	DRILLING	FINISH	OPTIONS
RA45	CB	18	D1	BLP	VDA

Enter the order code into the appropriate box above. Note: Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

PREFIX	BASE	HEIGHT	DRILLING
RA4.5	CB Fixed Cast Base	10' 12' 15' 18' 20'	D1 1 Way D2 2 Way D2@90 2 Way at 90° D3 3 Way D3@120 3 Way at 120° D4 4 Way T2 2 3/8" OD Tenon T4 4" OD Tenon

Hinged Bases are available for this pole size. Please refer to Hinged Base sheet 79415-8 for specifications and dimensions.

FINISH	OPTIONS
BRP Bronze Paint BLP Black Paint WP White Paint NP Natural Aluminum Paint BRA Bronze Anodized BLA Black Anodized NA Natural Anodized OC Optional Color Paint <i>Specify Optional Color or RAL ex: OC-LGP or OC-RAL7024.</i> SC Special Color Paint <i>Specify. Must supply color chip.</i>	DR Duplex Receptacle GFCI Ground Fault Receptacle VDA Vibration Dampener Nipples and Couplings <i>Indicate size (1/2", 3/4", 1", 1 1/4", 1 1/2".) Indicate height above base and orientation to hand hole. See Pole Orientation Information on Page 4.</i> NL Nipple - External thread CL Coupling - Internal thread Single Mount Bullhorn Brackets <i>Indicate height above base and orientation to hand hole. See Pole Orientation Information on Page 4.</i> A15BH-19 Single - 1.9" OD A15BH-24 Single - 2.4" OD A215BH-19 2-Tenon - 1.9" OD A215BH-24 2-Tenon - 2.4" OD Motion Response Provisions GMR Provision for Gardco HID Motion Response System <i>Minimum Pole Height is 18'. Includes a 1/2" coupling placed 180° to the hand hole, 12' above the pole base.</i> MSM Motion Sensor Mounting Provision for LED Luminaires available with Motion Response <i>Minimum Pole Height is 18'. Includes a special hand hole with 1/2" coupling placed in the cover plate, 180° to the hand hole, 15' above the pole base.</i>

CATALOG NUMBER	POLE SIZE		MAXIMUM LUMINAIRE LOADING ¹			ANCHOR BOLT DATA ²		
	ACTUAL HEIGHT	WALL THICKNESS (inches.)	100 MPH EPA-FT ²	90 MPH EPA-FT ²	80 MPH EPA-FT ²	BOLT CIRCLE (inches)	BOLT SIZE (inches)	MAX PROJ. (inches)
PREFIX - BASE - HEIGHT								
RA4.5-CB-10	10'	.125	7.6	9.5	12.5	7 - 8.625	3/4 x 17 x 3	3.25"
RA4.5-CB-12	12'	.125	5.6	7.1	9.5	7 - 8.625	3/4 x 17 x 3	3.25"
RA4.5-CB-15	15'	.188	5.1	6.5	8.8	7 - 8.625	3/4 x 17 x 3	3.25"
RA4.5-CB-18	18'	.188	3.6	4.7	6.7	7 - 8.625	3/4 x 17 x 3	3.25"
RA4.5-CB-20	20'	.188	2.4	3.2	5.1	7 - 8.625	3/4 x 17 x 3	3.25"

ROUND STRAIGHT ALUMINUM POLES – 17 FEET TALL. INSTALLED ON A RAISED 3-FOOT CONCRETE FOUNDATION BASE.

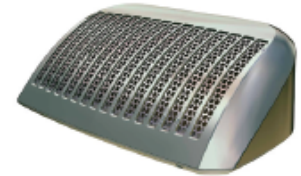
PHILIPS



120 LINE LED

121 LED Performance Sconce - Generation 2

The Philips Gardco 121 LED Performance Sconce provides an energy efficient, architecturally pleasing solution for wall mount applications. The sloped surface ribs of the die cast aluminum housing create a distinctly unique aesthetic element, and perform important functions in the Philips Gardco thermal management system. 121 Generation 2 luminaires feature high performance Class 1 LED systems. The high performance LED optical systems produce full cutoff performance, minimizing glare and light trespass. Philips Gardco's LED technology provides maximized light output and maximum energy savings.



PREFIX	OPTICAL SYSTEM	LED WATTAGE	LED SELECTION	VOLTAGE	FINISH	OPTIONS
121	3	26LA	NW	UNIV	BLP	PCB
Enter the order code into the appropriate box above. Note: Philips Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.						

PREFIX

121 121 LED Performance Sconce - Constant Wattage / Full Light Output
121-MR 121 LED Performance Sconce - Motion Response
121-DIM 121 LED Performance Sconce - 0 - 10V Dimming
121-APD 121 LED Performance Sconce - Automatic Profile Dimming

121-DCC 121 LED Performance Sconce - Dual Circuit Control

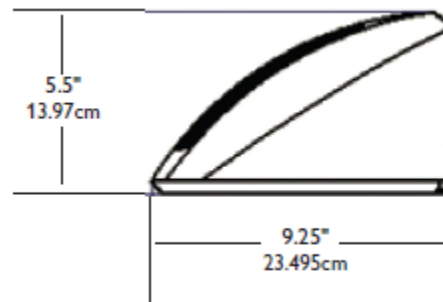
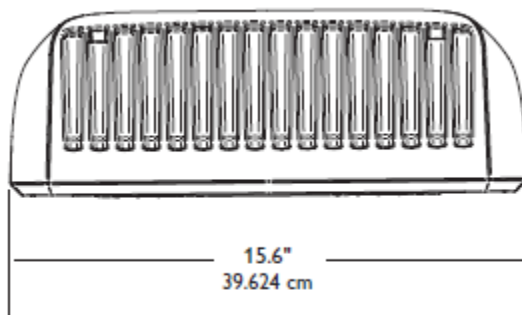
OPTICAL SYSTEM

2 Type 2
3 Type 3
4 Type 4
MT Medium Throw

*All optical systems are supplied with a clear glass lens standard. A Diffuse Lens (DL) option is available. See **OPTIONS** on Page 2.*

LED WATTAGE AND LUMEN VALUES

Single LED Array Wattages, Available in 121, 121-MR, 121-DIM and 121-APD Only								
Ordering Code	Average System Watts ¹	LED Current (mA)	LED Quantity - Single LED Array	LED Selection	Luminaire Initial Absolute Lumens ²			
					TYPE 2	TYPE 3	TYPE 4	MT
18LA	18	350	16	NW	1,673	1,707	1,609	2,022
26LA	26	530	16	NW	2,442	2,485	2,345	2,927
35LA-700	36	700	16	NW	3,102	3,139	2,972	3,650
35LA-350	35	350	32	NW	3,664	3,736	3,523	4,425
50LA	52	530	32	NW	5,587	5,685	5,365	6,697
75LA	72	700	32	NW	6,199	6,538	6,296	7,289



BRICK NORTH AND SOUTH BUILDINGS AT THE FOREFRONT AT THOMPSON'S POINT
LIGHTING FIXTURE **TYPE S9**

SLIMFC37N/PC

RAB
LIGHTING



37, 57 and 62 Watt SLIM Wallpacks are designed to cover the footprint of most traditional wallpacks. They are suitable for mounting heights from 20' to 30', and replace HID Wattages from 200W MH to 320W MH. These ultra-high efficiency fixtures are available in cutoff or full cutoff models.

Color: Bronze

Weight: 7.5 lbs

Project:

Type:

Prepared By:

Date:

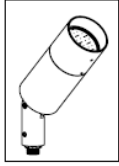
Driver Info

Type: Constant Current
120V: 0.31A
208V: N/A
240V: N/A
277V: N/A
Input Watts: 38W
Efficiency: 98%

LED Info

Watts: 37W
Color Temp: 4000K (Neutral)
Color Accuracy: 82 CRI
L70 Lifespan: 100,000
Lumens: 2,413
Efficacy: 64 LPW

BRICK NORTH AND SOUTH BUILDINGS AT THE FOREFRONT AT THOMPSON'S POINT
LIGHTING FIXTURE TYPE S10



18-29W LED



DENALI SERIES™ FLOODLIGHT

PROJECT:

TYPE:

CATALOG
NUMBER:

SOURCE:

NOTES:

CATALOG NUMBER LOGIC

Example: DE - LED - x31 - FL - SAP - 12 - 11 - C

Series: DE - Denali Series™ Floodlight

Source: LED - 'X' Module with Cold Phosphor Technology

LED Type: x30 - 18WLED/2.7K, x31 - 18WLED/3K, x32 - 18WLED/4K, x33 - 29WLED/2.7K, x34 - 29WLED/3K, x35 - 29WLED/4K

Optics: SP - Spot (20°), FL - Flood (40°), WFL - Wide Flood (60°)

Finish: Aluminum Finish, Premium Finish

Configure Driver Housing Separately Driver Housing Required

INTEGRAL DRIVER HOUSINGS:

- HP2 - HP2 Housing
- PM2 - Universal Power Module 2
- PM2D - Universal Power Module 2 Dual
- PC - Power Canopy
- PPH - Power Pipe II
- TMB - Pole Mount or Tenon Mount

REMOTE DRIVER HOUSINGS:

- HP2RM - HP2 Remote Housing
- PM2RM - Universal Power Module 2 Remote
- PM2DRM - Universal Power Module 2 Dual Remote
- RM - Remote Wall Mount
- DRM - Dual Remote Wall Mount

Aluminum Finish		
Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White (Gloss)	WHP	WHW
Aluminum	SAP	—
Verde	—	VER

Premium Finish		
ABP	Antique Brass Powder	CMG
AMG	Aleutian Mountain Granite	CRI
AQW	Antique White	CRM
BCM	Black Chrome	HUG
BGE	Beige	MDS
BPP	Brown Patina Powder	NBP
CAP	Clear Anodized Powder	OCP
		RMG
		SDS
		SMG
		TXF
		WCP
		WIR
Also available in RAL Finishes See submittal SUB-1439-00		

Lens Type: 9 - Clear (Standard), 10 - Spread Lens*, 12 - Soft Focus Lens*, 13 - Rectilinear Lens*

Shielding: 11 - Honeycomb Baffle*
**Accommodates up to 2 Lens/Shielding media*

Cap Style: A - 45°, B - 90°, C - Flush, D - 45° less Weep Hole (Interior Use Only), E - 90° less Weep Hole (Interior Use Only)

LUMINAIRE AIMED STRAIGHT DOWN

ATTACHMENT J

**Children's Museum and Theatre of Maine
Micro TDM Plan**



**Children's Museum and Theatre of Maine "Micro TDM" Plan
September 19, 2017**

The Children's Museum and Theatre of Maine ("CMTM") is excited to participate in the ongoing Transportation Demand Management effort in our new home at Thompson's Point. The purpose of this memorandum is to follow up on the initial details provided in our August 1, 2017 application letter.

Pursuant to the terms of the Transportation Demand Management Plan for the Forefront at Thompson's Point as most recently updated, the CMTM plans to undertake the activities and practices outlined herein as part of our "Micro TDM" plan, the goal of which is to reduce reliance upon single-occupant vehicle ("SOV") usage and foster the use of alternate modes of transportation.

As a practical matter, many of our patrons are families with young children, so with the exception of our staff, it is virtually never the case that CMTM patrons come one per vehicle. Indeed, our ratios are closer to an average of 3.5 per vehicle at the outset. That said, one of the features that has attracted us to Thompson's Point is the proximity to the Portland Transportation Center, with Amtrak, Concord Coach, and METRO bus services at our front door, and linkage to the Portland Trails network. And we are also interested to do what we can within reason to promote those modes, as well as carpooling and ridesharing, among our staff to help reduce SOV parking demand.

We have noted with interest the way that the Thompson's Point project has developed an array of strategies to help foster alternative transportation, from their partnerships with Amtrak and METRO to their encouragement of the use the trail and bicycle parking for their patrons, tenants, and event visitors.

The CMTM will work closely with Thompson's Point and its TDM coordinator, Soli DG, to find ways to effectively collaborate on these strategies and hopefully contribute creatively to their ongoing use and development.

We plan to pursue the following opportunities as part of our participation in the emergent neighborhood at Thompson's Point:

Play. Imagine. Act.



Amtrak Downeaster:

Thompson's Point is already implementing various promotions and cross-marketing efforts with the Amtrak Downeaster service, which connects Thompson's Point to Brunswick and Freeport as well as a range of communities throughout Maine, Seacoast New Hampshire, and greater Boston. The Children's Museum serves families from all of these regions, and we are enthusiastic about collaborating with Thompson's Point and the Downeaster to explore packages and promotional synergies to encourage Amtrak ridership among our guests and our staff.

METRO:

As the METRO bus lines expand their offerings (including the BREEZ service to Yarmouth which stops at the PTC), their services are an increasing area of opportunity for our patrons and employees. Thompson's Point has begun facilitating connections and partnerships with METRO (with their tenants and with their larger events) that we envision being able to leverage. We will also ensure that our website materials provide detailed information about the METRO routes serving our new facility at Thompson's Point.

Bicycle Parking:

In addition to the ample bicycle parking that Thompson's Point is providing (as a LEED campus, they already provide more than is required), the CMTM will be providing additional bicycle storage for our patrons, employees, and guests. We are also evaluating participation in the Bicycle Benefits program, which would entail discounted ticketing for families who bike to the CMTM and have the BB sticker on their helmets.

Pedestrian Connectivity:

The connection to the Portland Trails network, and the inclusion of our lot within the extensive pedestrian infrastructure at Thompson's Point, are both very attractive features for the CMTM. We expect many of our visitors to come on foot from surrounding neighborhoods particularly in nice weather, and will ensure that our website materials provide detailed information about the Portland Trails network and how one can utilize that to get to and from our new facility.

Employee Transit:

We intend to participate at the CMTM level as well as at the broader site-wide level in any efforts to encourage our staff to carpool, bike, walk, and ride METRO to work.

We believe that the ongoing efforts to create a sustainable neighborhood at Thompson's Point are well underway, and show a mix of practical planning and imaginative engagement with a variety of stakeholders. We are very excited to get our operations underway at Thompson's Point, and to

Play. Imagine. Act.

142 Free Street • Post Office Box 4041 • Portland, Maine 04101
T: 207-828-1234 F: 207-828-5726 • www.kitetails.org



work with their TDM coordinator and our other neighbors to continue to pursue ways to encourage alternative modes of transportation.

Proposed Timeline:

Convene Kickoff Meeting with TDM Coordinator:	6 Months after Groundbreaking
Team Meeting with CMTM Staff and TDM Coordinator:	1 Month before Opening
Provide Visitor and Staff Surveys:	6 Months after Opening
Establish Year One Micro TDM:	12 Months after Opening
Evaluate Year One Micro TDM and Report to City:	24 Months after Opening

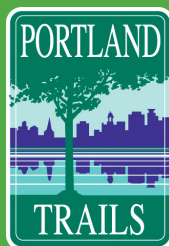
Thank you for your consideration and we look forward to this ongoing effort to improve transit offerings for our constituents.

Sincerely,

Suzanne P. Olson
Executive Director

Play. Imagine. Act.

142 Free Street • Post Office Box 4041 • Portland, Maine 04101
T: 207-828-1234 F: 207-828-5726 • www.kitetails.org



GOOD CLEAN FUN

Join Bissell Brothers + Portland Trails for
an evening of *trail work, pizza, & beer!*

MONDAY • JULY 17TH

TRAIL WORK
5:30-7:30

DINNER + BEER
7:30-8:30

MEET AT BISSELL TAPROOM

DINNER ON SITE FROM
SLAB PORTLAND AND
VOLUNTEERS (21+) WILL
RECEIVE A DRINK TICKET
FOR *a well-deserved beer!*

Portland Trails will have gloves for volunteers, but please feel free to bring your own!

interested? rsvp to
hester@bissellbrothers.com



**bicycle
benefits**

TIMETRO

Greater Portland Transit District



EXPRESS LANE

**PLEASE HAVE BUS/TRAIN TICKET IN HAND
OR BIKE BENEFITS HELMET STICKER VISIBLE**

SUNAANA EXPRESS

ONLY \$25. LIMITED TICKETS. ACT FAST!

FEATURING LIVE MUSIC FROM **CONNOR GARVEY**
BEER FROM **ALLAGASH BREWING COMPANY**

A PRIVATE AMTRAK RAIL CAR

DEPARTING OUT OF BOSTON'S **NORTH STATION**
ON **FRIDAY MARCH 3 AT 6:15**
TICKETS AND INFORMATION AT **WWW.SUNAANA.COM**

SUNAANA EXPRESS PRESENTED BY
DOWNEAST MAGAZINE
ALLAGASH BREWING COMPANY
THE PRESS HOTEL
NORTHERN NEW ENGLAND PASSENGER RAIL AUTHORITY



INAUGURAL VOYAGE OF THE SUNAANA EXPRESS

FOR IMMEDIATE RELEASE, PORTLAND, MAINE, FEBRUARY 21, 2016

Allagash Brewing Company, Downeast Magazine, Northern New England Passenger Rail Authority, the Press Hotel, and the founders of **Sunaana**, a winter music, beer, and performance festival scheduled for March 4, 2017 at the Brick South event venue at Thompson's Point, are excited to announce the inaugural run of the **"Sunaana Express."**

Leaving Boston's North Station at 6:15pm and arriving at Thompson's Point in Portland at 8:50pm on Friday, March 3, this customized Amtrak Downeaster car will feature Portland-based Allagash Brewing Company's award-winning brews and a concert by Maine acoustic funk-folk-rock singer-songwriter Connor Garvey, a pairing designed to get folks in the mood to experience what's on stage and on tap at the Sunaana festival. Sunaana will convene a unique mix of emerging musicians from Maine, Iceland, and beyond, all curated by Darren Elder of Halo Recording Studios, and a hand-selected list of craft beer heavyweights from Maine and beyond selected by Portland's own Bissell Brothers Brewery, together with contemporary performance by Allison Chase and Circus Maine and art installation by Sam Van Aken.

Sunaana takes place at Thompson's Point, a 30 acre former railyard at the gateway to the City of Portland that is being redeveloped and revitalized as a dynamic neighborhood with a focus on cutting edge cultural experience and a commitment to creating a great place to live, work, and play. The festival's inaugural year will take place at Brick South, a painstakingly restored 35,000 square foot turn of the century brick and beam rail building. And the Portland Transportation Center, home to the Amtrak Downeaster, is literally a one-minute walk away from the venue, providing year round transit service to Thompson's Point.

"We are excited to have the opportunity to partner with the Downeaster to add a layer of excellence, convenience, and fun to the experience of getting to and from Sunaana," said Patrick Arnold, one of the co-founders of the festival. "We are humbled to have Allagash on board for the Sunaana Express and for the festival itself," Arnold continued. "Their beer and their commitment to Maine are both second to none, and their participation in the first year of Sunaana is significant as their uncompromising pursuit of excellence and their supportive approach to building beer culture in Maine has paved the way for the current generation of Maine brewers who are also pushing the envelope of their craft."

"Getting Connor Garvey to play on the Sunaana Express was a huge coup," said Darren Elder. "He's an amazing performer with huge range and unbelievable talent, and he gets the out-of-the-box approach that this festival is all about. And Maine roots. We're psyched that he's kicking off the weekend for us and helping to give our friends from Boston a taste of Maine on their journey to Portland."

As the largest city in Maine increasingly becomes the epicenter of New England's cultural, economic, and political engagement with the North Atlantic region, Sunaana serves as a hub for these kinds of regional and, ultimately, international encounters and engagements. 2017 puts forth a kernel of an event that will ultimately grow into a city-wide winter festival blending music, art, food, beer, and outdoor recreation.

"It's an honor to have Downeast Magazine help us tell the story of Sunaana's first year with the authenticity and finesse that they are famous for, and to help us launch this creative venture to partner with the Downeaster to bring our guests to the event by train," said Sunaana co-founder Chris Thompson. "The festival begins when our guests start their journey to it, and this partnership with Downeaster, the Downeaster, and Allagash will help create an excellent experience from beginning to end, whether our guests are at Thompson's Point, travelling to it, or following their adventure off-site to other parts of Portland."

The great highlight of the first Sunaana event will be the rich fabric of collaboration that it produces and leaves as a foundation for expansion, extension, and intensification in subsequent years as the festival becomes a multi-day, city-wide event. Non-profit collaborators include Northern New England Passenger Rail Authority, Portland Trails, Alison Chase/Performance, the Maine Brewers' Guild, Jewels of the North Atlantic (Iceland), and the Open Bench Project, a shared makers' space based at Thompson's Point. Private business collaborators include Soli DG, Eirmskip, Halo Recording Studio, the State Theatre, Thompson's Point, Circus Maine, Bissell Brothers Brewing, Cellar-door Winery, Stroudwater Distillery, and artist Sam Van Aken.

For more information please visit www.sunaana.com.
Or contact Chris Cary at ccary@solidginc.com.

METRO Service to Thompson's Point



Concerts and Events

Take METRO to the Show.

Ask the driver for a transfer as you EXIT the bus, walk to Thompson's Point, show your transfer to use the METRO Express Entrance*.

*METRO EXPRESS Entrance
is not available at all shows.

Information, route maps schedules:
Visit: **gpmetrobus.com**

Limited time offer,
beginning June 9, 2017.

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Convenient, affordable access to Thompsons's Point attractions:

- METRO Routes 5 and 9A/B stops along Congress Street. (see map for location).
Use bus stops at Whitney Ave. and Congress; Sewall St. and Congress St.**

From bus stop, walk down Sewall Street, past Portland Transportation Center (PTC) and continue to Thompson's Point.
(.4 miles, eight minute walk, Source: Google Maps).

- METRO BREEZ & Route 1 - Direct service to Portland Transportation Center**
 From the bus shelter (marked “Ground Transportation”), located to the right of the (PTC) terminal (see photo), cross the street, turn left on sidewalk toward Thompson’s Point.
 (.3 miles, five minute walk, Source: Google Maps).

There are limited late evening METRO schedule options **FROM** Thompson's Point. Please check schedule.

Take Transit to Thompson Point attractions. It's easy:

- Pay as you go or purchase tickets in advance. Use Exact Change.
Local Service - \$1.50 / reduced fare* - .75
BREEZ Express Service - \$3 / reduced fare* - \$1.50

*Seniors 65+ and persons with disabilities with Valid ID.

NOTE: FREE METRO Rides - Summer Weekend Kickoff:

After 4pm June 9, all day June 10 & 11; First Fridays monthly after 4p.m.



METRO
Greater Portland Transit District
gpmetrobus.com • 207-774-0351

15. VERIFICATION OF PROPOSED HVAC EQUIPMENT

15.1 OVERVIEW

The manufacturer cut sheets verifying that all proposed HVAC and manufacturing equipment meets applicable State and Federal emissions requirements are contained at the end of this section.

ATTACHMENT K

HVAC Catalog Cuts

September 28, 2017

Rachelle Ain, AIA
Bruner/Cott Architects
130 Prospect Street
Cambridge, MA 02139

Re: Children's Museum HVAC Equipment

Dear Rachelle:

It is our intent that all HVAC equipment on the Children's Museum project at Thompson's Point will meet all applicable State and Federal emissions requirements. Please feel free to contact me if you have any questions.

Sincerely,



Derek Converse
Director of Preconstruction and Estimating
derek@zachauconstruction.com





Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

May 11, 2017

Dear Neighbor:

Please join us for a Neighborhood Meeting to discuss our plans for proposed construction of the Children's Museum & Theatre of Maine with a at Thompson's Point, Portland, Maine. The project includes a 9,682 SF building, onsite parking, hardscape, landscaping, utilities and stormwater treatment.

**Meeting Location: Brick South Building
8 Thompsons Point
Portland, Maine
An Informational Board will be Posted for Directions to Meeting**

Meeting Date: May 25, 2017

Meeting Time: 5:00 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. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions, please feel free to contact Steve Bushey, P.E. at 207-883-3355.

Sincerely,

STANTEC CONSULTING SERVICES, INC.

A handwritten signature in black ink, appearing to read "Stephen R. Bushey", written over a horizontal line.

Stephen R. Bushey, P.E.
Associate

V:\1953\active\195350337\civil\admin\permitting\local\level III spa\Neighborhood Meeting\Neighborhood Meeting Notice.docx

Note: Under Section 14-32(C) and 14-525 of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 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 or by email to: bab@portlandmaine.gov

1250 CONGRESS ST ASSOCIATES
1250 CONGRESS ST
PORTLAND, ME 04102

1250 CONGRESS STREET ASSOCIATES
1250 CONGRESS ST
PORTLAND, ME 04102

1283 PROPERTIES LLC
PO BOX 10855
PORTLAND, ME 04104

1335 CONGRESS STREET LLC
1335 CONGRESS ST
PORTLAND, ME 04102

3A PROPERTIES
1227 CONGRESS ST
PORTLAND, ME 04102

ABBOTT JEREMY R
52 WILLOW LN
PORTLAND, ME 04102

ADAM EL-HADI
PO BOX 371
PORTLAND, ME 04112

ALBERT LINDA J
220 CAPISIC ST
PORTLAND, ME 04102

ALCORN MATTHEW W & ELLEN D JTS
4 MACY ST
PORTLAND, ME 04102

ALLEN DAVID L VN VET & MICHELE M
ALLEN JTS
10 MITTON ST
PORTLAND, ME 04102

ALLEN LARRY KNOX & ERNESTINE
LUCRETIA ALLEN JTS
1251 CONGRESS ST # 102
PORTLAND, ME 04102

ANANIA'S INC
1227 CONGRESS ST
PORTLAND, ME 04102

ANSHELES CAROLE J
31 MACHIGONNE ST
PORTLAND, ME 04102

ANTONIOU MARGARET E
15 SEWALL ST
PORTLAND, ME 04102

ARONSON STEPHEN R LIFE ESTATE &
SUSAN E DENT
198 CAPISIC ST
PORTLAND, ME 04102

ATH REALTY LLC
660 BRIGHTON AVE
PORTLAND, ME 04102

ATKINS MARIA & MICHAEL BEDECS JTS
95 SANDY POINT RD
YARMOUTH, ME 04096

AVESTA FORE RIVER HOUSING LP
307 CUMBERLAND AVE
PORTLAND, ME 04101

AYUB MARIAM & REHEMA AYUB JTS
44 SEWALL ST
PORTLAND, ME 04102

BAILEY BEVERLY
295 CAPISIC ST
PORTLAND, ME 04102

BAKER DONNA M & DALE A BAKER JTS
28 SEWALL ST
PORTLAND, ME 04102

BAKER HARLAN R & KRISTEN E BAKER
JTS
44 MITTON ST
PORTLAND, ME 04102

BEACHAM KAREN A & GRAYBERT D
BEACHAM JTS
1251 CONGRESS ST # 206
PORTLAND, ME 04102

BENENTI TAYLOR W
39 LASSELL ST
PORTLAND, ME 04102

BERNARD RICHARD P J & PATRICIA A
BERNARD JTS
13 LASSELL ST
PORTLAND, ME 04102

BIG DONUT LLC
9 BOLTON ST
PORTLAND, ME 04102

BINETTE EVELYN L
36 GREELEY ST
PORTLAND, ME 04102

BOCAL ELISABELLE L & NU CARPENTER
JTS
16 LASSELL ST
PORTLAND, ME 04102

BOKEELIA INVESTMENTS LLC
PO BOX 1456
PORTLAND, ME 04104

BOWER FRANCESKA
1251 CONGRESS ST # 304
PORTLAND, ME 04102

BRITTON JOAN L & THEODORE C
HUNTINGTON JTS
34 LASSELL ST
PORTLAND, ME 04102

CAMPBELL JOSEPH A
55 POWSLAND ST
PORTLAND, ME 04102

CANER-MEDLEY NIKLAS
71 WILLOW LN
PORTLAND, ME 04102

CENTRAL MAINE POWER CO LOCAL TAX
70 FARM VIEW DR
NEW GLOUCESTER, ME 04260

CHESSEY DAVID P VN VET & JOAN M
CHESSEY
50 DOUGLASS ST # 1
PORTLAND, ME 04102

CHICOINE STEVEN J
672 OCEAN AVE
PORTLAND, ME 04103

COLBURN ELIZABETH ANNE
40 PRESNELL ST
PORTLAND, ME 04102

COLLINS RICHARD F III & SARAH E JTS
38 POWSLAND ST
PORTLAND, ME 04102

CONCANNON ELIZABETH A WID WWII
VET
1301 CONGRESS ST
PORTLAND, ME 04102

CONLEY STEPHEN E & MARYANN JTS
17 DAVIS ST
PORTLAND, ME 04102

CONNOLLY MECHELLE L & ROBERT M
CONNOLLY JTS
33 SANDY TER
PORTLAND, ME 04102

CONNOLLY THOMAS R
29 MITTON ST
PORTLAND, ME 04102

COOLEDGE KEVIN P
52 DOUGLASS ST
PORTLAND, ME 04102

COVILLE KIMBERLY J
57 POWSLAND ST
PORTLAND, ME 04102

CP WESTGATE LLC
300 THIRD AVE STE 2
WALTHAM, MA 02451

DAVIES FRANCIS J & JENNIFER E
DAVIES JTS
33 WILLOW LN
PORTLAND, ME 04102

DAVIS JEFF
PO BOX 3084
PORTLAND, ME 04104

DELONG SUSAN E
37 MACHIGONNE ST
PORTLAND, ME 04102

DELUCA MARIA LUISA
6 LEDGEWOOD DR
FALMOUTH, ME 04105

DESJARDINS STEPHEN P
1251 CONGRESS ST # 302
PORTLAND, ME 04102

DILLON FREDERICK H & LINE C
PELLETIER JTS
18 DAVIS ST
PORTLAND, ME 04102

DIMILLO ANTONIO HEIRS
25 LONG WHARF
PORTLAND, ME 04101

DIMILLO DANIEL P
275 CAPISIC ST
PORTLAND, ME 04102

DIMILLO DANIEL P
275 CAPISIC ST
PORTLAND, ME 04102

DOANE DONALD C & SUSAN D JTS
9 EDWARDS ST
PORTLAND, ME 04102

DOLAN JOSEPH M & LISA C JTS
76 POWSLAND ST
PORTLAND, ME 04102

DOWD DEBRA V
PO BOX 1456
PORTLAND, ME 04104

DOWN EAST HOLDINGS LLC
103 S US RT 1 STE F5 PMB 145
JUPITER, FL 33477

DOYLE EDWARD J ETALS
30 LASSELL ST
PORTLAND, ME 04102

DRISCOLL KAREN L
23 MITTON ST
PORTLAND, ME 04102

DROLET KELLEY A
35 GREELEY ST
PORTLAND, ME 04102

DUGAS JOSEPH F TRUSTEE
275 MILL WAY BOX 271
BARNSTABLE HARBOR, MA 02630

DUGAS JOSEPH F TRUSTEE
275 MILL WAY BOX 271
BARNSTABLE HARBOR, MA 02630

DVILINSKY NORMAN L KW VET & MARY
E JTS
706 BRIGHTON AVE
PORTLAND, ME 04102

ELLIOTT EDGAR A III VN VET & VIRGINIA
D ELLIOTT JTS
9 CRAIGIE ST
PORTLAND, ME 04102

ELLIS DIANA L
1239 CONGRESS ST
PORTLAND, ME 04102

ENI 1199 CONGRESS STREET LLC
2 INTERNATIONAL WAY
LAWRENCE, MA 01843

ESPOSITO LISA MARIE
52 BERWICK ST
PORTLAND, ME 04103

EYE VENTURE ASSOCIATES
53 SEWALL ST
PORTLAND, ME 04102

EYE VENTURE ASSOCIATES LLP
53 SEWALL ST
PORTLAND, ME 04102

FIDDLER'S GREEN LLC
36 LIBERTY WAY
PORTLAND, ME 04103

FISCHER REBECCA A
1251 CONGRESS ST # 201
PORTLAND, ME 04102

FITCH JACK L VN VET & STACIA N
FITCH JTS
43 PRESNELL ST
PORTLAND, ME 04102

FLOYD STEVEN L & LAWRENCE H
JACKSON JTS
1308 CONGRESS ST
PORTLAND, ME 04102

FOOTE RAYMOND
57 CONCORD ST
PORTLAND, ME 04103

FOOTE RAYMOND M
57 CONCORD ST
PORTLAND, ME 04103

FORE RIVER REALTY SUB LLC
33 SEWALL ST
PORTLAND, ME 04102

FOREFRONT PARTNERS I LP
501 DANFORTH ST
PORTLAND, ME 04102

FOSTER NANCY HELEN & GERARD G
GIORDANO JTS
14 CRAIGIE ST
PORTLAND, ME 04102

FOURNIER LUCY M TRUSTEE
328 LUDLOW ST
PORTLAND, ME 04102

FOWLER JAMES
40 SEWALL ST
PORTLAND, ME 04102

FRA-MOLINERO PROPERTIES LLC &
NERO PROPERTIES LLC JTS
151 PETTINGILL ST
LEWISTON, ME 04240

GAGNON MARCI L
16 WILLOW LN
PORTLAND, ME 04102

GIARDINO JAMES A & JUDITH A
GIARDINO JTS
1251 CONGRESS ST # 204
PORTLAND, ME 04102

GOULD CHARLES M
39 MITTON ST
PORTLAND, ME 04102

GRAVES ELIZABETH S
41 SANDY TER
PORTLAND, ME 04102

GREEN SARAH KATE & WILHELM K
SCHERER JTS
24 SEWALL ST
PORTLAND, ME 04102

GUPTILL ELLEN R
1329 CONGRESS ST
PORTLAND, ME 04102

GUZIK MARY J & JAMIE A DESHAIES
14 MASSACHUSETTS AVE
PORTLAND, ME 04102

HALVERSON MARC S
183 PROSPECT ST
PORTLAND, ME 04103

HANLON JOHN S WWII VET TD & MARY
A JTS
2 LASSELL ST
PORTLAND, ME 04102

HESKETT STANLEY E JR & PATRICIA G
JTS
18 EDWARDS ST
PORTLAND, ME 04102

HOBBS REBECCA
1251 CONGRESS ST # 203
PORTLAND, ME 04102

HOLMAN DALE J
10 WILLOW LN
PORTLAND, ME 04102

HOWISON JULIE L
262 CAPISIC ST
PORTLAND, ME 04102

HUNKINS MARILYN S & JOHN A
TURNAGE JTS
15 BRADLEY ST
PORTLAND, ME 04102

HUNTER SUSAN E
50 MITTON ST
PORTLAND, ME 04102

HUNTINGTON THEODORE C & JOAN L
BRITTON JTS
34 LASSELL ST
PORTLAND, ME 04102

HUNZIKER CRAIG F & MARY KATHERINE
JTS
41 MACHIGONNE ST
PORTLAND, ME 04102

HURD STEVEN R
6 SANSFIELD RD
FRANKLIN, MA 02038

IBOURK MOULAY M
28 CODMAN ST
PORTLAND, ME 04103

ICEHOUSE PROPERTIES LLC
30 LEDGEWOOD DR
FALMOUTH, ME 04105

INGEROWSKI FRANK M WWII VET &
MARY T JTS
6 EDWARDS ST
PORTLAND, ME 04102

INHABITANTS OF THE COUNTY OF
CUMBERLAND
42 FEDERAL ST
PORTLAND, ME 04101

IRELAND KATHARINE R & JUSTIN S
JOHNSON JTS
60 WILLOW LN
PORTLAND, ME 04102

ITALIAN HERITAGE CENTER
40 WESTLAND AVE
PORTLAND, ME 04102

JEFFREY ROBERT H III & ALEXANDRA N
MAGNAUD JTS
15 WILLOW LN
PORTLAND, ME 04102

JELLISON ANDREA N
44 LASSELL ST
PORTLAND, ME 04102

JENSEN BRETT R
1251 CONGRESS ST # 103
PORTLAND, ME 04102

JOHNSON WALTER L & LINDA A
JOHNSON JTS
206 COOKS CORNER
BRUNSWICK, ME 04011

JOHNSON WALTER L & LINDA A JTS %
JOHNSON'S SPORTING GOODS
206 COOKS CORNER
BRUNSWICK, ME 04011

JONCAS CRAIG
16 MASSACHUSETTS AVE
PORTLAND, ME 04102

JOY REAL ESTATE OF PORTLAND LLC
13 LADYSLIPPER LN
FALMOUTH, ME 04105

JOYCE KENNETH T
726 BRIGHTON AVE
PORTLAND, ME 04102

KAYNOR EDWARD & LESLIE KAYNOR
JTS
315 CAPISIC ST
PORTLAND, ME 04102

KEAST NANCY D & MARK H KEAST JTS
28 BELKNAP ST
PORTLAND, ME 04103

KILBRIDE NANCY E
289 CAPISIC ST
PORTLAND, ME 04102

KOENIG DOROTHY A
65 POWSLAND ST
PORTLAND, ME 04102

KOENIG DOROTHY A WID WWII VET
65 POWSLAND ST
PORTLAND, ME 04102

KRAMER MICHAEL E & ELIZABETH M JTS
57 MACHIGONNE ST
PORTLAND, ME 04102

KRAMER MICHAEL E & ELIZABETH M JTS
57 MACHIGONNE ST
PORTLAND, ME 04102

LANDER JOHN A & JANICE W JTS
51 SANDY TER
PORTLAND, ME 04102

LANGDON STREET REAL ESTATE INC
7 LANGDION ST
CONCORD, NH 03301

LANGDON STREET REAL ESTATE INC
7 LANGDON ST
CONCORD, NH 03301

LANMAN ALISON J
40 MITTON ST
PORTLAND, ME 04102

LEAVITT TIMOTHY W VN VET & CAROL
A LEAVITT JTS
24 MITTON ST
PORTLAND, ME 04102

LEBEL SUZETTE M TD PG VET
1251 CONGRESS ST # 303
PORTLAND, ME 04102

LEE ROBIN E & HARVEY PAUL MCGUIRE
JTS
27 WILLOW LN
PORTLAND, ME 04102

LEE TRAVIS P & AMY E CASWELL JTS
31 MAYBERRY LN
YARMOUTH, ME 04096

LEMIEUX RONALD L & CAROL S
LEMIEUX JTS
26 FOREST LN
CUMBERLAND, ME 04021

LISEE MARGARET TRUSTEE
44 WILLOW LN
PORTLAND, ME 04102

LITCHFIELD ANDREW D
16 WEDGEWOOD ST
SCARBOROUGH, ME 04074

LOTH SAKHOETH
10 LASSELL ST
PORTLAND, ME 04102

MAHAFFEY JOEL & CHRISTIE
MAHAFFEY JTS
230 CAPISIC ST
PORTLAND, ME 04102

MAHAN NOREEN R
48 WILLOW LN
PORTLAND, ME 04102

MAILMAN GERALD F WWII VET &
FRANCES JTS
45 SANDY TER
PORTLAND, ME 04102

MAINE SAVINGS FEDERAL CREDIT
UNION
101 WESTERN AVE
HAMPDEN, ME 04444

MAXIMUS MANAGEMENT LLC
2382 W MUSKET WAY
CHANDLER, AZ 85286

MBD REATLY LLC
15 KELLY LN
SCARBOROUGH, ME 04074

MCCARTHY MICHAEL J & JAN-MARIE C
JTS
1305 CONGRESS ST
PORTLAND, ME 04102

MCCORMACK JAMES C & ERICA A
MCCORMACK JTS
256 CAPISIC ST
PORTLAND, ME 04102

MCEVOY SUSAN SCHULTZ & BARRY
COLIN MCEVOY JTS
32 MITTON ST
PORTLAND, ME 04102

MCKENNA SCOTT F
PO BOX 11124
PORTLAND, ME 04104

MCKENNEY MICHAEL J
54 POWSLAND ST
PORTLAND, ME 04102

MCKIBBEN SARAH E
16 WHITNEY AVE
PORTLAND, ME 04102

MEADE LARINDA L & SARA P DAVIS JTS
32 WILLOW LN
PORTLAND, ME 04103

MEIGHEN SCOTT
48 LUCAS ST
PORTLAND, ME 04102

MENDOZA ISMAEL & DELMI MARTINEZ
JTS
17 LASSELL ST
PORTLAND, ME 04102

MERCY HOSPITAL
144 STATE ST
PORTLAND, ME 04101

MERLIN MANAGEMENT COMPANY LLC
29 FIELD RD
FALMOUTH, ME 04105

MICHAUD DAVID B VN VET
150 HOBART ST
PORTLAND, ME 04102

MICHAUD FRANCIS J & JOLENE S JTS
141 FROST ST
PORTLAND, ME 04102

MICUCCI VINCENT
29 POWSLAND ST
PORTLAND, ME 04102

MIKKELSEN GREGORY J & TINA M
MIKKELSEN JTS
13 CALEB ST
PORTLAND, ME 04103

MILLER ABBIE
31 MITTON ST
PORTLAND, ME 04102

MILLER THOMAS O
43 POWSLAND ST
PORTLAND, ME 04102

MILLETT TERRY L & JAKE A MILLETT JTS
62 POWSLAND ST
PORTLAND, ME 04102

MILLS PENNY H & KENNETH R MAIN JTS
20 WILLOW LN
PORTLAND, ME 04102

MOORE JULIANNE M ETALS
301 CAPISIC ST
PORTLAND, ME 04102

MULKERN WILLIAM E
35 MACHIGONNE ST
PORTLAND, ME 04102

MUSE JOHN DAVID JR
19 MITTON ST
PORTLAND, ME 04102

NEHRT ROSS & LEIGH BULLION JTS
716 BRIGHTON AVE
PORTLAND, ME 04102

NGUYEN DONG & MAI T NGO JTS
408 LAKEFRONT CT
SCOCKBRIDGE, GA 30281

NORTHERN NEW ENGLAND
PASSENGER RAIL AUTHORITY
58 FORE ST BLDG 30
PORTLAND, ME 04101

NORWAY SAVINGS BANK
PO BOX 347
NORWAY, ME 04268

NOYES CHARLES E & SHARON E JTS
31 ABRAHAMSON RD
GRAY, ME 04039

OLSEN RANDOLPH S & KRISTIN J
TURNBULL JTS
4 QUAKER RD
WESTBROOK, ME 04092

OLYMPIA EQUITY INVESTORS II LLC
PO BOX 508
PORTLAND, ME 04112

OLYMPIA EQUITY INVESTORS I LP
PO BOX 508
PORTLAND, ME 04112

PAOLILLI ANNA M
710 BRIGHTON AVE
PORTLAND, ME 04102

PAULETTE ERICA L
1251 CONGRESS ST # 305
PORTLAND, ME 04102

PELKEY WALTER E & HOLLY C JTS
12 WILLOW LN
PORTLAND, ME 04102

PETERSON HOWARD W HEIRS
60 POWSLAND ST
PORTLAND, ME 04102

PETRELLA HOLDINGS LLC
1266 CONGRESS ST
PORTLAND, ME 04102

PFEFFER DONNA A
46 SANDY TER
PORTLAND, ME 04102

POLLOCK CHARLES LEON
51 POWSLAND ST
PORTLAND, ME 04102

PORTLAND TERMINAL CO
IRON HORSE PARK
NORTH BILLERICA, MA 01862

PORTLAND TRAILS
305 COMMERCIAL ST
PORTLAND, ME 04101

PORTLAND WATER DISTRICT
225 DOUGLASS ST
PORTLAND, ME 04102

POWSLAND LLC
264 FALMOUTH RD
WINDHAM, ME 04062

QUINCANNON JOHN P JR
48 POWSLAND ST
PORTLAND, ME 04102

QUINN THEODORE SAMUEL
75 JOHN ROBERTS RD
SOUTH PORTLAND, ME 04106

RAHEM LLC
PO BOX 6149
FALMOUTH, ME 04105

REED-WORKMAN C
14 FRANCES ST
PORTLAND, ME 04102

RHEAULT SCOTT M & THERESA M
SACHARKO JTS
72 POWSLAND ST
PORTLAND, ME 04102

RHEUMATOLOGY REALTY ASSOCIATES
51 SEWALL ST
PORTLAND, ME 04102

RHEUMATOLOGY REALTY
ASSOCIATES LIMITED PARTNERSHIP
51 SEWALL ST
PORTLAND, ME 04102

RICHARD AARON P & MARGARET J
ZAMBONI JTS
212 CAPISIC ST
PORTLAND, ME 04102

RICHARDSON ROBERT W & WAI KUE
YEE
51 DOUGLASS ST
PORTLAND, ME 04102

RICHIE STUART E Y
1251 CONGRESS ST # 301
PORTLAND, ME 04102

RIESENBERG ANNE R & ANDREW D
GRAHAM JTS
43 MACY ST
PORTLAND, ME 04102

RYAN CULLEN C
28 WILLOW LN
PORTLAND, ME 04102

SAVARD LOUIS M
22 DAVIS ST
PORTLAND, ME 04102

SCIPIONE RYAN P & DANIELLE DEVINE
SCIPIONE JTS
45 MACHIGONNE ST
PORTLAND, ME 04102

SCLAR STEVEN BENJAMIN & GLORIA
DRIESSNACK SCLAR JTS
25 SANDY TER
PORTLAND, ME 04102

SEARLE DAVID J
2 MITTON ST
PORTLAND, ME 04102

SEIDEL EDELTRAUD WID WWII VET
22 LASSELL ST
PORTLAND, ME 04102

SERAPPA SAMUEL M JR & THERESA M
SERAPPA JTS
18 CALEB ST
PORTLAND, ME 04102

SHEA WILLIAM T & SILVER C SHEA JTS
15 MITTON ST
PORTLAND, ME 04102

SHIR AHMAD S & SHAHNAZ JTS
722 BRIGHTON AVE
PORTLAND, ME 04102

SHIR MOHAMMED N
41 OCEAN HOUSE RD
CAPE ELIZAABETH, ME 04107

SITH NOP
48 SEWALL ST
PORTLAND, ME 04102

SIX FIFTY BRIGHTON LLC
650 BRIGHTON AVE
PORTLAND, ME 04102

SLOAN JAMES P
60 MITTON ST
PORTLAND, ME 04102

ST PATRICK'S SCHOOL CONDOMINIUMS
LLC
30 LIZA HARMON DR
WESTBROOK, ME 04092

STATE
AUGUSTA, ME 04333

STATE
OF, ME 04101

STATE OF MAINE
16 STATE HOUSE STATION
AUGUSTA, ME 04333

STJ INC
939 PARKER FARM RD
BUXTON, ME 04093

STROUT SHARON M
21 DAVIS ST
PORTLAND, ME 04102

SUBURBAN PROPANE LP
PO BOX 206 TAX DEPT
WHIPPANY, NJ 07981

SWAN ISLAND LLC
100 MIDDLE ST
PORTLAND, ME 04101

SWEENEY KIMBERLY M
1296 CONGRESS ST
PORTLAND, ME 04102

TANAKA YRI & DAVID HARRIGAN
5 COUNCIL TREE LN
WOLFEBORO, NH 03894

TANAKA YURI & DAVID HARRIGAN
5 COUNCIL TREE LN
WOLFEBORO, NH 03894

TARDIF MARY S
21 SOLOMON DR
GORHAM, ME 04038

TARLING GEORGE A & LOUISE A OR
SURV
47 PLEASANT AVE
SOUTH PORTLAND, ME 04106

THE JEWISH COMMUNITY ALLIANCE OF
SOUTHERN MAINE
1342 CONGRESS ST
PORTLAND, ME 04102

THE JEWISH COMMUNITY ALLIANCE OF
SOUTHERN MAINE
57 ASHMONT ST
PORTLAND, ME 04103

THEBERGE JUSTIN T
355 CENTRAL AVE
LEWISTON, ME 04240

TONER BRUCE M & SHARMON A JTS
12 GRANITE RIDGE RD
WINDHAM, ME 04062

TRIEU SANG T & MAI T HUYNH JTS
28 MITTON ST
PORTLAND, ME 04102

TROTT JOHN L
66 POWSLAND ST
PORTLAND, ME 04102

TRUE KAREN A
14 SEWALL ST
PORTLAND, ME 04102

TTJR LLC
PO BOX 2156
WINDHAM, ME 04062

TTRJ LLC
PO BOX 2156
WINDHAM, ME 04062

TURGEON ERIC M & STEPHANIE H
SMITH JTS
45 RUSTIC LN
PORTLAND, ME 04103

UNIQUE PROPERTIES LLC
796 FOREST AVE
PORTLAND, ME 04103

VANCE MYRNA E WID KW VET
63 POWSLAND ST
PORTLAND, ME 04102

WAKEFIELD RAYMOND B JR & SHARON
A JTS
732 BRIGHTON AVE
PORTLAND, ME 04102

WALKER KRISTEN D TRUSTEE
176 WARWICK ST
PORTLAND, ME 04102

WALKER KYRA D
47 MITTON ST
PORTLAND, ME 04102

WALKER PETER A
23 LASSELL ST
PORTLAND, ME 04102

WALLER NED W & WILMA C WALLER
56 POWSLAND ST
PORTLAND, ME 04102

WASHAM KIMBERLY A
1235 CONGRESS ST
PORTLAND, ME 04102

WAYNFLETE SCHOOL
360 SPRING ST
PORTLAND, ME 04102

WAYNFLETE SCHOOL THE
360 SPRING ST
PORTLAND, ME 04102

WEIDNER TYLER
9 POWSLAND ST
PORTLAND, ME 04102

WEINSCHENK WILLIAM B & COLLEEN P
TUCKER JTS
36 WILLOW LN
PORTLAND, ME 04102

WENZEL GARY M & RACHEL E WENZEL
JTS
45 DOUGLASS ST
PORTLAND, ME 04102

WENZEL WILL & LUCIA RAZIONALE JTS
57 WILLOW LN
PORTLAND, ME 04102

WEST ROBERT B JR & GERALD
OSBORNE
700 BRIGHTON AVE
PORTLAND, ME 04102

WESTGATE PROFESSIONAL CENTER
LLC
116 WALLACE AVE
SOUTH PORTLAND, ME 04106

WILDER SUSAN M ETALS
36 LASSELL ST
PORTLAND, ME 04102

WILEY ELIZABETH OTTERSON
1251 CONGRESS ST # 202
PORTLAND, ME 04102

WILLARD CAITLIN
1251 CONGRESS ST # 306
PORTLAND, ME 04102

WILLEY DIANA L
1 HARVEY ST
PORTLAND, ME 04102

WILLIAMS DONNA
85 MACHIGONNE ST
PORTLAND, ME 04102

WILLOW HOMEOWNER'S ASSOCIATION
60 WILLOW LN
PORTLAND, ME 04102

WILSON LORI A
72 FELICIA LN
PORTLAND, ME 04103

WITKAVITCH JEFFREY J
1251 CONGRESS ST # 205
PORTLAND, ME 04102

YACUB MOHAMMED
42 GATEWAY COMMONS
GORHAM, ME 04038

ZAPPIA JOHN J
686 BRIGHTON AVE
PORTLAND, ME 04102

Children's Museum & Theatre of Maine Thompson's Point

Public Information Meeting

May 25, 2017

Name	Address/Company	Tel/Email
Francesca Bowe		770-883-9901
Darrin Stairs	Stantec	207-310-8574 darrin.stairs@stantec.com
Jim Maricisso	CMTM	807-4741
Suzanne Olson	Children's Museum + Theatre of Maine	828-1238
Emily Ruger	CMTM	845-750-0142
Meryl Hernandez	Brick South	Meryl@thompsonspointmaine.com
DANA KNAPP	Coastal Co. & Live	xcoastal@maine.irr.com
TIM DAVOREN	OA Centers for ORTHO	TDavoren@orthoassociates.com
Bo Kennedy	Placemaker Partners	747-5288 Ext 112 Bo@placemakerpartners.com
Kimberly Sacney	1296 Congress St 04102	207-3371767 halfawakeherce@yahoo.com
Rose Splint	Children's Museum + Theatre	rose@latefeels.org
Jed Trough	Thompson's Point	JTrough@gmail.com
Leslie & Ted Kaynor	315 Capisk St.	lkaynor@icloud.com



May 25, 2017

[illegible]

Children's Museum Public Hearing

MINUTES

MAY 25, 2017

5:00 PM

BRICK SOUTH - MEETING ROOM

MEETING CALLED BY	Stantec on behalf of Children's Museum and Theatre of Maine
TYPE OF MEETING	Neighborhood Public meeting for Level III Site Plan Application
FACILITATOR	Darrin Stairs - Stantec
NOTE TAKER	Meryl Hernandez – Thompson's Point (Forefront Partners I, LP)
ATTENDEES	See attached sign in sheets

TOPIC	Children's Museum and Theatre of Maine – Site Plan Application
<u>Meeting Outline:</u> 1. Stantec – Darren Stairs P.E. - Opening remarks and purpose of meeting 2. Placemaker Partners - Bo Kennedy, P.E.- Introduction of Master Development Site Plan 3. CMTM – Jim Marcisso Owners Rep – CMTM Introduction, need, why Thompson's Point 4. Stantec – CMTM Site Plan discussion 5. CMTM - Suzanne Olson – Building program and design discussion. 6. Stantec - Schedule for the project 7. Questions -From the public	
<u>Master Development Plan</u> • Overview of TP master plan- Approved 2014 • Current activity – Includes completing Brick South Renovation, Parking Lot, and plaza around Tree of Forty Fruit grove. Brick North active with a diverse group of business • Future Map of TP – Hotel, build out of future parking lots, Residential building, outdoor event area improvements, and Proposed Children's Museum Lot • CMTM has always been and remains a key component as one of the master development plan uses; in fact their inclusion in the project goes back to the original site plan work prior to Master Plan • As a transit oriented development, the Master Plan relies on a campus wide shared and managed parking model	
<u>Assessment of Need</u> Jim Marcisso – Board of Directors of CMTM – Thompson's Point aligns with Short Term and Long Term Goals of Children's Museum and Theatre. Current building is an old building without a proper theater and difficult access. The current building is up against a daily parking challenge as well as wayfinding issues for out of city and state visitors. These physical barriers limit growth and diminishes the overall CMTM experience. Search for new home of the museum included key requirements such as: • Proper theater • Children friendly Design • Expanded and expandable Exhibition space • Parking • Family friendly location • Maximize open space • Enclosed ticketed outside play area • Available public transportation	

- Proximate to Transportation Center with access to out of state visitors

Site Plan:

- Site plan provides 18 +/- onsite (Lot 7) parking spaces, loading, wide pedestrian circulation, enclosed outside ticketed play area, open space, shared engaged pedestrian area in common with all visitors of Thompson's Point.
- Redesigned common roadway increases parking in close proximity to CMTM. Parking model relies on campus wide managed parking model to deal with ebbs and flows of all Thompson's Point visitors.
- Site plan is consistent with approved Subdivision plan for access to utilities and stormwater management.
- Building is positioned to maximize open space, future expansion, bright southerly exposure, visibility from I-295.

CMTM Building Overview:

- 3 story building – Smaller gross square footage than anticipated on MDP and original site plan (which have shown 40,000 SF). Lot size permits future expansion.

First Floor:

- Bright airy lobby – theater on first floor, exhibit space on upper floors Interior/programming: front area, climbing structure, back area 100 seat theater (children performing for children) horseshoe shape theater
- "Our Community" area – "control tower" watching the planes come in
- Train area
- Fish market/lobster shack/book nook/nursing area
- Bathrooms on every floor
- Selected exhibits from current CMTM are designed to be brought in, such as the fire truck, small hospital

Floor Two - Classroom

- Classroom/cultural/healthy snack cooking
- Classroom, school groups and birthday parties
- Admin offices

Floor Three

- Science/math floor
- Maine watershed – touch areas for salt and fresh water marine life (three tanks, life from Maine)
- Camera Obscura – light and color walls, indoor/outdoor perspectives
- Water play exhibit – toddlers and big kids
- Ball and air area

Moving Forward:

- Permitting Process – workshop Board meeting anticipated at the end of June
- Final plan application to follow workshop meeting
- Construction begin in 2018
- Occupancy in 2019-2020

PUBLIC COMMENTS AND CONCERNS

What are you doing about funding?

- Campaign consultant

- Grant possibilities
- CMTM owns existing building; sale proceeds will go to fund TP location

How long is Free Street Facility staying open?

- Ideally Close Free Street the day/weekend prior to opening TP location

Where will people park?

- CMTM visitors will be able to park in the onsite lot as well as any open parking stall onsite. There is substantial surface parking supply at TP.

What is the flow of vehicles?

- Generally, natural circulation and wayfinding signage will guide CMTM visitors around the "loop road" which passes by the southerly positioned and highly visible main entrance. Ultimately, traffic will tend to flow in a counter clockwise pattern 360 degrees around Thompson's Point with access to all developed and future development lots.

Will there be lighting?

- Yes. The lighting plan is consistent with previously developed portions of the site and meets all City of Portland Land Use Ordinances.

What is expected occupancy?

- CMTM experiences approximately 100,000 visitors a year today. This is anticipated to grow at Thompson's Point.

Will the parking lots be free?

- Parking will be an hourly pay and display model.
- All lots will be actively managed daily with additional support personnel during peak times or events.

How is Parking Managed between all users?

- The parking management relies on the ebbs and flows of peak demand for individual businesses. Because of the diverse uses present on Thompson's Point it is most often the case that peak usage of high volume events occur after business hours, and the uses and their respective parking needs are complementary.
- Most large events occur after museum is closed.
- Active daily management of Parking lots will be instrumental maximizing the efficiencies of available parking.
- The site utilizes and places a high importance in the Transportation Demand Management Plan (TDM) which encourages visitors to maximize access to bicycle and pedestrian trails, trains, charter buses, Metro, taxi, Uber, Lyft. The site is designed to encourage all modes of alternative transportation. Existing data for large events is evidence that the TDM is working and consistently out performs the average industry standard of shared vehicle ridership of 3.5 Ppl/vehicle, ranging from 6Ppl/Veh to 10.5 Ppl/Veh. The TDM is a working document which always looks to improve as new tenants of Thompson's Point are developed.

What is prohibiting people from parking in surrounding businesses at the end Sewall Street?

- Thompson's Point does not have the ability to meter or restrict access to Sewall Street as it is a city street and it is currently not signed or metered.
- TP has not been approached by a Sewall Street business owner expressing concerns. If this were to occur, TP is happy to sit down with any business that is concerned about parking in the area as a neighborhood. It is Forefront's intent to be a good neighbor. Currently, there is ample parking available on-site.
- We assume individual businesses sign their lots and manage their individual parking demands and supply parking to meet their own needs. Forefront is willing to collaborate with abutting neighbors on ideas and strategies to manage parking..

TOPIC	Conclusion
We thank you for coming and for your participation. We are open to suggestions from local residents as we want this project to be the best yet. Thank you.	



Stantec Consulting Services Inc.

482 Payne Road Scarborough Court, Scarborough ME 04074-8929

I, Darrin Stairs of Stantec, hereby certify that a Neighborhood Meeting was held on May 25, 2017 at the project site at the Brick South Building, 8 Thompson's Point, Portland, Maine at 5:00 PM.

I also certify that on May 11, 2017 (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.
3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,



Darrin Stairs, P.E.

August 1, 2017
Date

Attached to this certification are:

1. Meeting invitation
2. Sign-in sheet
3. Meeting minutes

V:\1953\active\195350337\civil\admin\permitting\local\level III spa\Neighborhood Meeting\meeting certification_20170802.docx

V:\195\main\19550337\withhead\permit\dwg\19550337_cover.dwg caddate 10/12/2017 3:53 PM

PROJECT PARCEL SITE		
ZONING: B-5 URBAN COMMERCIAL MIXED USE ZONE		
PORTLAND TAX ASSESSOR'S MAP & LOT NUMBERS:		
MAP	BLOCK	LOTS
201	A	5, 8, 10
202	A	1, 4

CO-APPLICANTS / OWNERS	
PHASE 1	
FOREFRONT PARTNERS I, LP	
501 DANFORTH STREET	
PORTLAND, MAINE 04102	
ATTN: CHRIS THOMPSON, PhD / BO KENNEDY, PE	
207.784.0335	
PARALLAXPARTNERS@GMAIL.COM	
PHASE 2	
CHILDREN'S MUSEUM & THEATRE OF MAINE	
142 FREE STREET	
P.O. BOX 4041	
PORTLAND, MAINE 04101	
ATTN.: SUZANNE OLSON, EXECUTIVE DIRECTOR	
207-828-1234 X223	
SUZANNE@KITETAILED.ORG	

PHASE 2 (LOT 7 - CMTM) SHEET INDEX

PHASE 2 C-1.0	COVER SHEET
PHASE 2 C-1.1	GENERAL NOTES AND LEGEND
PHASE 2 C-2.0	EXISTING CONDITIONS & REMOVALS PLAN
PHASE 2 C-2.1	OVERALL MASTER PLAN
PHASE 2 C-3.0	SITE LAYOUT PLAN
PHASE 2 C-4.0	UTILITY PLAN
PHASE 2 C-5.0	GRADING & DRAINAGE PLAN
PHASE 2 C-5.1	STORMWATER MANAGEMENT PLAN
PHASE 2 C-6.0	EROSION CONTROL PLAN
PHASE 2 C-7.0	STORMWATER DETAILS - JELLYFISH SYSTEMS
PHASE 2 C-7.1	STORMWATER DETAILS - SUBSURFACE WATER QUALITY VOLUME STORAGE
PHASE 2 C-7.2	STORMWATER DETAILS - SUBSURFACE WATER QUALITY VOLUME STORAGE
PHASE 2 C-8.0	PAVEMENT SECTIONS AND SIDEWALK DETAILS
PHASE 2 C-8.1	CURBING AND SIDEWALK DETAILS
PHASE 2 C-8.2	PARKING AND TRAFFIC CONTROL DETAILS
PHASE 2 C-8.3	STORM DRAIN DETAILS
PHASE 2 C-8.4	STORM DRAIN AND SANITARY SEWER DETAILS
PHASE 2 C-8.5	EROSION AND SEDIMENT CONTROL DETAILS
PHASE 2 C-8.6	EROSION AND SEDIMENT CONTROL DETAILS
PHASE 2 C-8.7	EROSION AND SEDIMENT CONTROL DETAILS
PHASE 2 C-8.8	WATER SERVICE DETAILS
PHASE 2 C-8.9	UTILITY DETAILS
PHASE 2 C-9.0	FIRE SAFETY COMPLIANCE PLAN
L-001	LANDSCAPE SITE PLAN
L-002	LANDSCAPE SITE DETAILS
*E0.0	PHOTOMETRIC LIGHTING PLAN
*E2.1	SITE LIGHTING PLAN
A-101	FIRST FLOOR PLAN + MECHANICAL MEZZANINE
A-102	SECOND FLOOR PLAN
A-103	THIRD FLOOR PLAN
A-104	ROOF PLAN
A-300	NORTH, SOUTH & WEST ELEVATIONS
A-301	EAST ELEVATION & ENLARGED ELEVATIONS

PHASE 1 (FOREFRONT PARTNERS, LLC) SHEET INDEX

PHASE 1 C-3.0	PHASE 1 SITE LAYOUT PLAN
PHASE 1 C-4.0	PHASE 1 UTILITY PLAN
PHASE 1 C-5.0	PHASE 1 GRADING PLAN
PHASE 1 C-5.1	PHASE 1 STORMWATER MANAGEMENT PLAN - 1
PHASE 1 C-5.2	PHASE 1 STORMWATER MANAGEMENT PLAN - 2
*PHASE 1 C-6.0	PHASE 1 EROSION CONTROL & CONSTRUCTION MANAGEMENT PLAN
PHASE 1 C-8.8	PHASE 1 TYPICAL SECTIONS
PHASE 1 C-11.0	PHASE 1 WATER PROFILES
PHASE 1 C-14.0	PHASE 1 ACCESS DRIVE PROFILES
PHASE 1 L-1.0	PHASE 1 LANDSCAPE PLAN

*Not included in this plan set. Will be submitted separately.

SITE PLANS
FOR
CHILDREN'S MUSEUM &
THEATRE OF MAINE (LOT 7)
AT THOMPSON'S POINT
PORTLAND, MAINE
IN SUPPORT OF
A PHASED LEVEL III SITE PLAN APPLICATION
OCTOBER 2017

UTILITIES

WATER
ATTN: ROBERT BARTELS
PORTLAND WATER DISTRICT
22 DOUGLAS STREET
P.O. BOX 3533
PORTLAND, MAINE 04104
207.761.8310

SEWER
ATTN: BRAD ROLAND
CITY OF PORTLAND
PUBLIC SERVICES ENGINEERING DEPT.
55 PORTLAND STREET
PORTLAND, MAINE 04102
207.874.8840

POWER
ATTN: JAMIE COUGH
CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, MAINE 04103
207.791.1023

TELEPHONE
ATTN: SCOTT DERRIG
FAIRPOINT COMMUNICATIONS
ONE DAVIS FARM ROAD
PORTLAND, MAINE 04103
207.797.1842

CABLE
ATTN: MARK PELLETIER
TIME WARNER CABLE
118 JOHNSON ROAD
PORTLAND, MAINE 04102
877.546.0962

ATTN: JAMES HARDER
OXFORD NETWORK
491 LISBON STREET
LEWISTON, MAINE 04240
1.800.520.9911

NATURAL GAS
ATTN: SCOTT CARPENTER
UNITIL / FORMERLY NORTHERN UTILITIES
1075 FOREST AVENUE
PORTLAND, MAINE 04103
207.541.2543
email: carpenters@unitil.com

CALL BEFORE YOU DIG:
1.888.DIGSAFE (1.888.344.7233)
DIG SAFE MAINE

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.

PERMITS / APPROVALS (APPLICABLE TO FULL DEVELOPMENT)

LOCAL
SITE PLAN, SHORELAND ZONING AND SUBDIVISION REVIEW

GOVERNING BODY
CITY OF PORTLAND PLANNING AUTHORITY
CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101
207.874.8722
CONTACT: SHUKRIA WIAR

STATUS
ORIGINAL APPROVED JUNE 5, 2012
AMENDED APPROVAL JUNE 19, 2013
MASTER PLAN APPROVAL 2015
SUBDIVISION APPROVAL 2016
PRELIMINARY SUBMISSION CMTM - 03.14.2017
REVISED SUBMISSION CMTM - 08.01.2017
FINAL SUBMISSION CMTM - 10.10.2017

BUILDING AND DEMOLITION PERMITS

CITY OF PORTLAND CODE ENFORCEMENT OFFICE
CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101
207.874.8703

CMTM BUILDING PERMIT TO BE FILED PRIOR TO CONSTRUCTION BY CONTRACTOR FOR THIS PROJECT

STATE

SITE LOCATION OF DEVELOPMENT

GOVERNING BODY
CITY OF PORTLAND PLANNING AUTHORITY
DELEGATED AUTHORITY
CITY HALL, 389 CONGRESS STREET 207.874.8722
CONTACT: CHRISTINE GRIMANDO

STATUS

APPROVED JUNE 5, 2012 UNDER CITY'S DELEGATED AUTHORITY

NATURAL RESOURCES PROTECTION ACT (NRPA) / MAINE CONSTRUCTION GENERAL PERMIT

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
312 CANCO ROAD
PORTLAND, MAINE 04103
207.822.6300
CONTACT: MARY BETH RICHARDSON

APPROVED #L-25672-FS-B-N DATED JULY 27, 2012 AND SUBSEQUENT ORDERS

MAINE DOT TRAFFIC MOVEMENT PERMIT

MAINE DEPARTMENT OF TRANSPORTATION
STATE HOUSE STATION 16
AUGUSTA, MAINE 04333
207.624.3620
CONTACT: STEVE LANDRY

APPROVED JUNE 13, 2012
REG. 01-00155-A-N

MAINE VOLUNTARY RESPONSE ACTION PLAN (VRAP)

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
312 CANCO ROAD
PORTLAND, MAINE 04103
207.623.8367
CONTACT: NICK HODGKINS

NO ACTION ASSURANCE LETTER
ISSUED MARCH 6, 2013

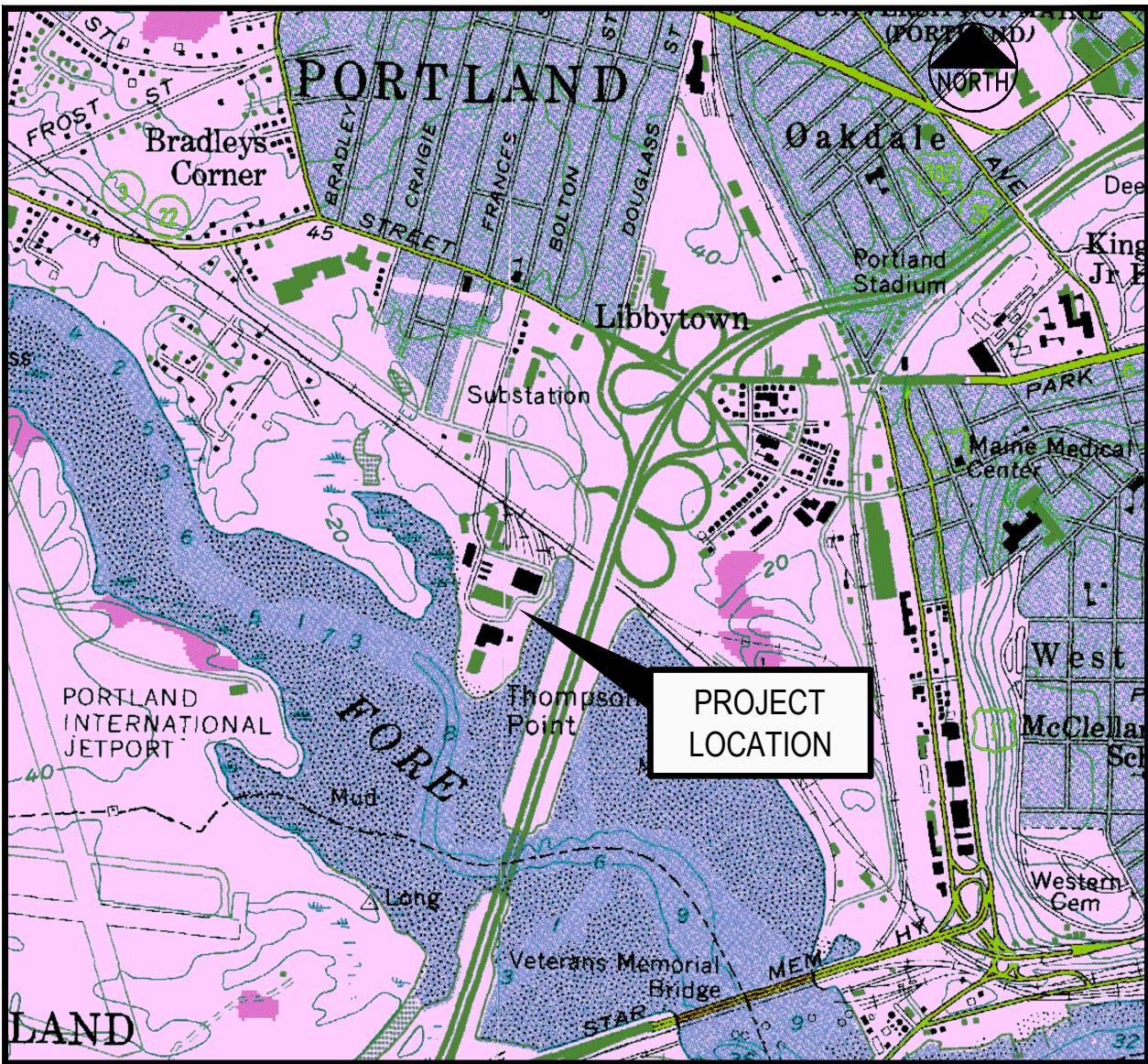
PUBLIC RAIL CROSSING PETITION

MAINE DEPARTMENT OF TRANSPORTATION
STATE HOUSE STATION 16
AUGUSTA, MAINE 04333

DECISION #364 - APRIL 3, 2012

PLAN REFERENCES:

TITLE	DATE APPROVED BY CITY
1. THE FOREFRONT AT THOMPSON'S POINT LEVEL III SITE PLAN	JUNE 5, 2012
2. THE FOREFRONT AT THOMPSON'S POINT LEVEL III SITE PLAN AMENDMENT	JUNE 19, 2013
3. BRICK NORTH BUILDING AT THE FOREFRONT AT THOMPSON'S POINT LEVEL III SITE PLAN	DECEMBER 17, 2013
4. THE FOREFRONT AT THOMPSON'S POINT MASTER PLAN	MARCH 11, 2014
5. THE DEPOT BUILDING LEVEL II SITE PLAN	JUNE 10, 2014
6. BRICK NORTH BUILDING AT THE FOREFRONT AT THOMPSON'S POINT LEVEL III SITE PLAN AMENDMENT (PHASE 1A)	DECEMBER 4, 2014
7. MASTER DEVELOPMENT PLAN	2015
8. SUBDIVISION APPLICATION	JANUARY 12, 2016
9. BRICK NORTH AND SOUTH BUILDINGS - LEVEL III SITE PLAN	JANUARY 12, 2016



LOCATION MAP
N.T.S.

CONSULTANT LIST

CIVIL ENGINEER:

PHASE 1 (COMMON AREA)
PLACEMAKER PARTNERS, LLC
501 DANFORTH STREET
PORTLAND, MAINE 04102
207.747.5288
ATTN: BO KENNEDY
BO@PLACEMAKERPARTNERS.COM

PHASE 2 (LOT 7)

Stantec
482 PAYNE ROAD, SCARBOROUGH COURT
SCARBOROUGH, MAINE 04074
207.887.3478
ATTN: STEVE BUSHEY
STEPHEN.BUSHEY@STANTEC.COM

ARCHITECT:

Bruner/Cott & Associates, Inc.
130 PROSPECT STREET
CAMBRIDGE, MASSACHUSETTS 02139
617.492.8400
ATTN: GREG RUSSELL
WWW.BRUNERCOTT.COM

LANDSCAPE ARCHITECT:

Lemon Brooke
31 OXBOW ROAD
CONCORD, MA 01742
978.222.3700
ATTN: JENNIFER BROOKE
JENNIFER@LEMONBROOKE.COM

LIGHTING CONSULTANT (OVERALL PROJECT):

Bartlett Design
942 WASHINGTON STREET
BATH, MAINE 04530
207.522.9789
ATTN: LARRY BARTLETT

GEOTECHNICAL ENGINEER:

Haley and Aldrich, Inc.
75 WASHINGTON AVENUE, SUITE 203
PORTLAND, MAINE 04101
207.482.4600
ATTN: WAYNE CHADBOURNE
WWW.HALEYALDRICH.COM

ENVIRONMENTAL ENGINEER:

Crederre Associates, LLC
776 MAIN STREET
WESTBROOK, MAINE 04092
207.828.1272
ATTN: RIP PATTEN
WWW.CREDERRELLC.COM

SURVEYOR:

Sebago Technics, Inc.
1 CHABOT STREET
WESTBROOK, MAINE 04092
207.856.0277
WWW.SEBAGOTECHNICS.COM



Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
Tel. 207.883.3355
www.stantec.com

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Consultants

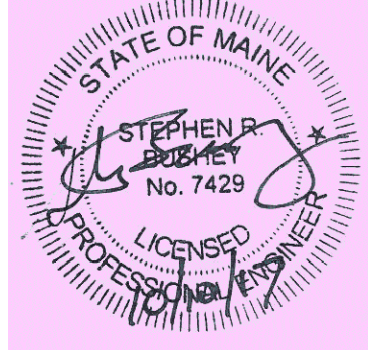
Notes

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.

17.03.0	17.08.01	17.07.28	17.05.09	Y:\AM\DD
SRB	SRB	SRB	SRB	Appr.
CDD	PRF	PRF	PRF	By
4	FINAL LEVEL III SITE PLAN APPLICATION			
3	REVISED SUBMISSION - LETTER OF RESPONSE 1			
2	REVISED SUBMISSION TO CITY			
1	REVISED FOR CLIENT REVIEW			
				Revision

File Name: 195550337 COVER	CDD	SRB	16.11.29
	DWN.	CHKD.	DATE

Permit-Seal



Client/Project

BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title

COVER SHEET

Project No.	Scale
195550337	AS NOTED
Sheet	PHASE 2 C-1.0

GENERAL NOTES

1. IN ADDITION TO THESE PLANS AND NOTES, THE CONTRACTOR SHALL REFER TO THE PROJECT MANUAL FOR CONSTRUCTION SPECIFICATIONS AND BIDDING PROCEDURES.
2. THIS PROJECT WILL BE SUBJECT TO THE TERMS AND CONDITIONS OF ALL PERMITS ISSUED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MAINE DEPARTMENT OF TRANSPORTATION, THE U.S DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, 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 THOMPSON'S POINT AND ALL ADJACENT PROPERTIES INCLUDING THE RAILROAD R.O.W. 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 EMERGENCY SITE ACCESS CONDITIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMANCE OF WORK IN ACCORDANCE WITH ALL AREMA SAFETY STANDARDS AND SHALL COOPERATE FULLY WITH REPRESENTATIVES OF PAN AM RAILWAYS AND THE NORTHERN NEW ENGLAND PASSENGER RAIL AUTHORITY (NNEPRA), MDOT, AND THE CITY OF PORTLAND AS MAY BE REQUIRED.

SITE LAYOUT NOTES

1. ALL HANDICAP PARKING SPACES ARE TO RECEIVE HANDICAP SIGNS AND PAVEMENT MARKINGS AS ILLUSTRATED ON THE DETAIL SHEETS.
2. BITUMINOUS CONCRETE CURB, SLIPFORM CONCRETE CURB AND GRANITE CURB SHALL MEET THE REQUIREMENTS OF MDOT 702.001, 703.07 AND 609.04.
3. ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB OR THE FACE OF THE BUILDING.
4. EXCEPT WHERE INDICATED OTHERWISE, THE PAVEMENT IS TO BE STANDARD DUTY PAVEMENT. SEE DRAWINGS C-3.5 SURFACE TREATMENT PLAN FOR PAVEMENT TYPE.
5. 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.
6. STRIPE PARKING AREAS, DRIVES AND ROADWAY AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, CROSSWALKS, HANDICAP SYMBOLS, PAINTED ISLANDS AND FIRE LANES. (ALL MARKINGS EXCEPT MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT). ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT.
7. SEE DETAILS FOR PARKING STALL DIMENSIONS, HANDICAP SYMBOLS, SIGNS AND SIGN POSTS.
8. STOP BARS SHALL BE 12" WIDE.
9. PAINTED ISLANDS SHALL BE 4" WIDE DIAGONAL LINES @ 3'-0" O.C. BORDERED BY 4" WIDE LINES.

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. PROVIDE TURF REINFORCEMENT IN AREAS INDICATED ON THE PLANS.
3. AS "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.
4. 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.
5. SEE EXISTING CONDITIONS FOR BENCHMARK INFORMATION.
6. SEE GRADING, DRAINAGE AND EROSION/SEDIMENT CONTROL FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
7. ALL DISTURBED AREAS NOT TO BE PAVED, SODDED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
8. **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.	
9. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.	
10. 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.	

11. PROVIDE STABILIZATION OR SEPARATION GEOTEXTILE FABRIC OVER UNSTABLE SOILS AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND IN ACCORDANCE WITH THE FINAL GEOTECHNICAL RECOMMENDATIONS.
12. NATIVE SOILS RANGE FROM GRANULAR TO CLAYEY AND SILTY. CARE MUST BE EXERCISED TO LIMIT DISTURBANCE OF THE BEARING SOILS. THE NATIVE CLAYEY OR 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.

UTILITY NOTES

1. ALL REQUIRED UTILITIES SERVING THE PROJECT SHALL BE COORDINATED AND CONSTRUCTED BY THE DIVISION 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.
4. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRIC SERVICE WITH CENTRAL MAINE POWER.
5. COORDINATE ALL 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.
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 UTILITY COMPANY STANDARDS AND PROJECT SPECIFICATIONS, WHICH EVER IS MORE STRINGENT.
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.
13. THE CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION AND PROVIDE TEMPORARY SERVICES AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO THE JOB SITE. SUBURBAN PROPANE AND NNEPRA TEMPORARY SERVICES SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. COORDINATE ALL TEMPORARY SERVICES WITH UTILITY COMPANY, OWNER AND AFFECTED BUSINESSES.

LANDSCAPE NOTES

- (SUBJECT TO COORDINATION WITH LANDSCAPE DRAWINGS. IN CASE OF CONFLICT BETWEEN THIS SECTION AND THE LANDSCAPE DRAWINGS, THE LANDSCAPING DRAWINGS SHALL GOVERN)
1. ALL PLANTS SHALL BE NURSERY GROWN AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN, STANDARDS AND SHALL BE SUBJECT TO THE APPROVAL OF THE OWNERS REPRESENTATIVE BEFORE AND AFTER PLANTING.
2. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER INSPECTION AND ACCEPTANCE, AND SHALL HAVE AT LEAST 80% HEALTHY GROWTH AT THE END OF THE GUARANTEED PERIOD.
3. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 4" LOAM AND SEED.
4. THREE (3) INCH BARK MULCH IS TO BE USED AROUND THE TREE AND SHRUB PLANTING AS SPECIFIED IN THE DETAILS. WHERE BARK MULCH IS USED IN A CURBED ISLAND, THE BARK SHALL MEET THE TIP INSIDE EDGE OF THE CURB. ALL OTHER AREAS SHALL RECEIVE 4" LOAM AND SEED.
5. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.
6. PARKING AREA PLANTED ISLANDS TO HAVE A MINIMUM OF 4" TOPSOIL. REMOVE ALL CONSTRUCTION DEBRIS BEFORE TOPSOILING. TOPSOIL SHALL BE PLACED TO TOP OF CURB.
7. ALL PLANT MATERIAL SHALL BE APPROVED BY THE OWNER OR THE OWNERS REPRESENTATIVE PRIOR TO ARRIVAL ON THE SITE.
8. PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE PRIOR TO DIGGING.
9. THE CONTRACTOR SHALL LOCATE, VERIFY, AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWN WORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTINGS AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
10. NO SUBSTITUTION OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTING AND LAWNS AGAINST DAMAGE FROM ONGOING CONSTRUCTION. THIS PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL THE FORMAL ACCEPTANCE OF ALL THE PLANTINGS.
12. SEE PLANTING DETAILS FOR WEED BARRIER INFORMATION.
13. ALL PLANTING LOCATED AT THE ENTRANCE TO THE PROJECT OR AT INTERSECTIONS WITHIN THE SITE WILL BE MAINTAINED AND WILL NOT EXCEED 3 FEET IN HEIGHT WITHIN A TRIANGLE FORMED 25' INTO THE DRIVEWAY AND 25' ALONG THE TRAVEL WAY.

EROSION CONTROL NOTES:

1. PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES, CLEARING AND 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 CLEARING AND GRADING LIMITS HAVE BEEN ACCEPTED, THE CONTRACTOR SHALL INSTALL THE PERIMETER SILT FENCES, SEDIMENT BARRIERS AND THE CONSTRUCTION ENTRANCES 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, THE CONTRACTOR SHALL REMOVE SILT FROM ALL STORM LINES AND APPURTANCES.
4. ALL STORM DRAIN INLETS AND OUTLETS NOT IN PAVED AREAS ARE TO RECEIVE RIPRAP PROTECTION APRONS DURING CONSTRUCTION.
5. SILT FENCES SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES SHOWN ON THE EROSION CONTROL DETAIL SHEET.
6. THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCE 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.
7. 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.
8. LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE WHICH CAUSE THE LEAST PRACTICAL UNPROTECTED DENUDED AREAS ON THE SITE DURING CONSTRUCTION.
9. 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.
10. A FULL EROSION/SEDIMENTATION CONTROL PLAN ACCOMPANIES THIS DRAWING SET AND IS ALSO CONTAINED IN THE DIV 312513 SPECIFICATIONS.
11. 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.
12. INSPECT EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH RAIN STORM OF 0.25 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 OF THE STRUCTURE HEIGHT.
13. INSTALL CURLEX EROSION CONTROL MAT OR EQUAL ON ALL SLOPES STEEPER THAN 3:1.
14. 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, MARCH 2003".

LEGEND

EXISTING	PROPOSED
BOUNDARY LINE/R.O.W.	BARRIER FREE SYMBOL
ABUTTER LINE/R.O.W.	SIGN
DEED LINE/ROW	SIGN LABEL
TIE LINE	GUIDERAIL - METAL
EASEMENT	GUIDERAIL - TIMBER
FLOODPLAIN	FENCE - CHAINLINK
CENTERLINE	FENCE - WOOD
IRON PIPE/ROD	BUILDING / BUILDING ACCESS
BENCHMARK	PROPERTY LINE
BUILDING	RETAINING WALL
WETLANDS	PEDESTRIAN CROSSWALK
EDGE WETLAND	TRAFFIC ARROWS
ROCK OUTCROP	BOLLARD
SIGN	VERTICAL GRANITE CURB
EDGE PAVEMENT	SLOPED GRANITE CURB
GRAVEL ROAD	CATCH BASIN
EDGE WATER	CONTOUR LABEL
CONTOURS	DRAIN MANHOLE
SPOT GRADE	RIPRAP INLET APRON
CHAIN LINK FENCE	RIPRAP OUTLET APRON
DECIDUOUS TREE	SLOPE DESIGNATION
CONIFEROUS TREE	SPOT GRADE
GUARDRAIL	SPOT GRADE AT CURB (TC=TOP / BC=BOTTOM)
WATER GATE VALVE	WATER MARK
HYDRANT	UNDERDRAIN
SEWER MH	STORM DRAIN
CATCH BASIN	TREE LINE OR LIMIT OF CLEARING
DRAINAGE MH	CURB STOP
UNIDENTIFIED MH	HYDRANT
OVERHEAD UTILITY	LIGHT POLE WITH FIXTURE(S)
ELECTRIC METER BOX	WALL MOUNT LIGHT
LIGHT POLE	SANITARY SEWER MANHOLE
UTILITY POLE	TEST PIT
GUY	TRANSFORMER PAD
RIPRAP	UTILITY POLE
BOULDER	VALVE
SCHEDULE B - SECTION 2 EXCEPTIONS	SANITARY SEWER
	WATER MAIN
	GAS MAIN
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	PEDESTRIAN FLASHER



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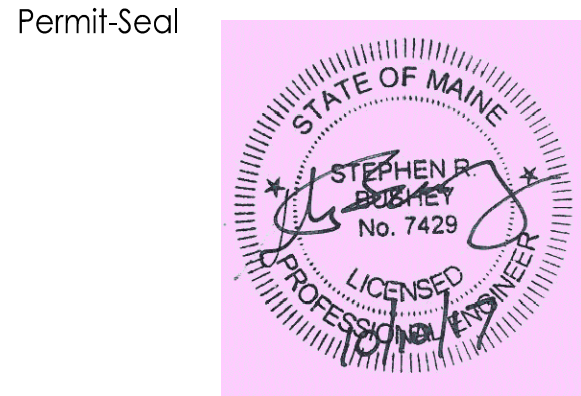
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Notes

17.03.0	17.08.01	17.07.28	17.05.09	Y:\AW\DD
SRB	SRB	SRB	SRB	Appr.
CDD	PRF	PRF	PRF	By
4	FINAL REVIEW BY PLAN APPLICATION			
3	REVISED SUBMISSION - LETTER OF RESPONSE 1			
2	REVISED SUBMISSION TO CITY			
1	REVISED FOR CLIENT REVIEW			
Revision				

File Name:	195350337 GEN NOTES	CDD	SRB	SRB	16.11.29
		DWN.	CHKD.	DSGN.	DATE



Client/Project
BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
GENERAL NOTES AND LEGEND

Project No. 195350337	Scale N.T.S.
Sheet	PHASE 2 C-1.1

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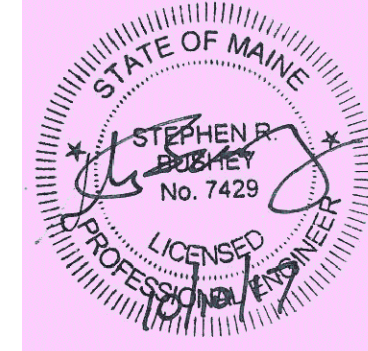
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Notes

4	FINAL LEVEL II SITE PLAN APPLICATION	17.03.10	SRB	SRB	SRB	Y.M.A.M.D.D
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	17.08.01	SRB	SRB	SRB	
2	REVISED SUBMISSION - LETTER OF RESPONSE 2	17.07.28	SRB	SRB	SRB	
1	REVISED FOR CLIENT REVIEW	17.05.09	SRB	SRB	SRB	
	By					
	Appr.					

File Name:	195350337-base	CDD	SRB	SRB	16.11.29
		DWN.	CHKD.	DSGN.	DATE

Permit-Seal



Client/Project

BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title

EXISTING CONDITIONS &
REMOVALS PLAN

Project No.

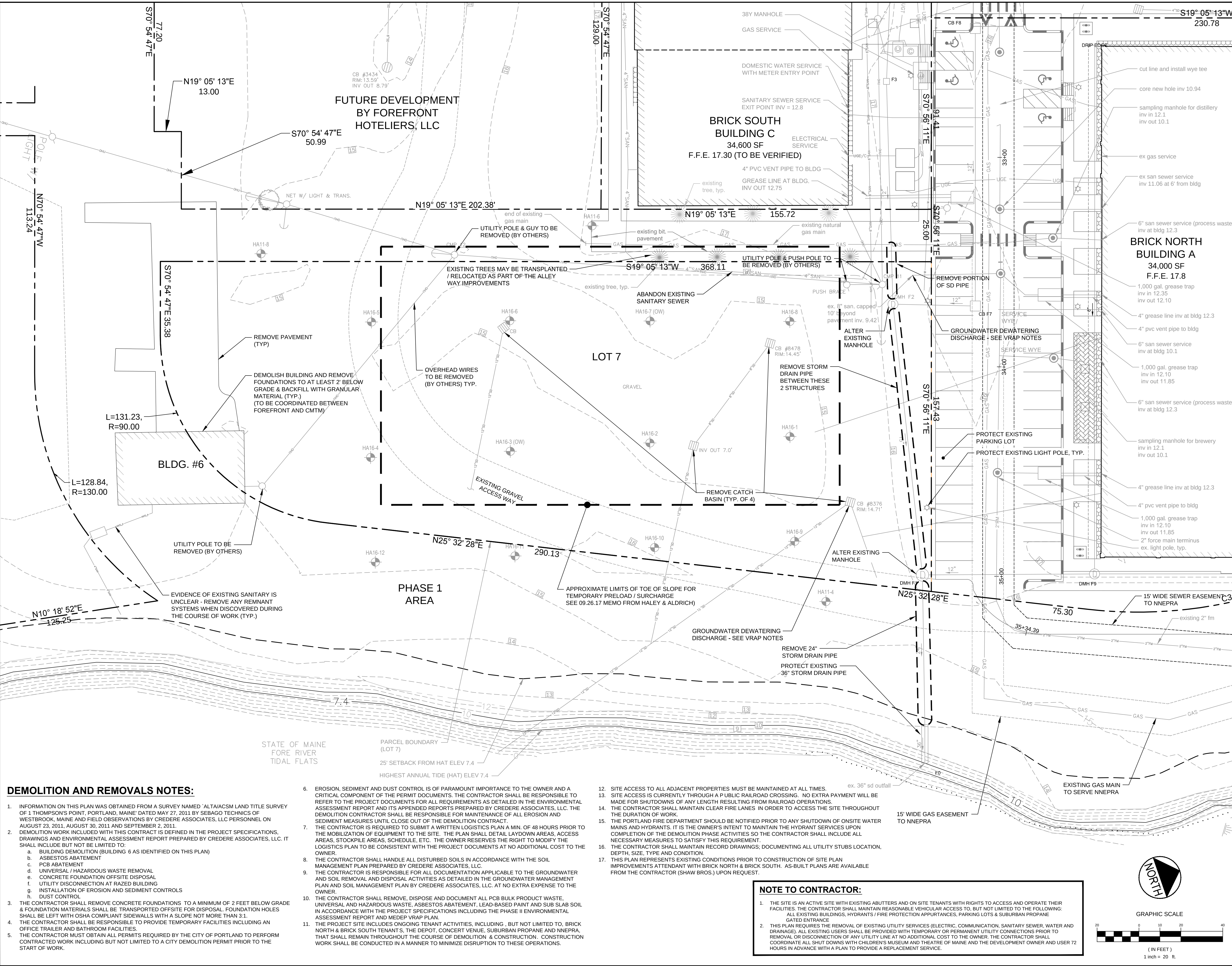
195350337

Sheet

Scale

1" = 20'

PHASE 2
C-2.0



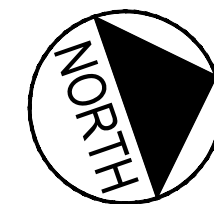
DEMOLITION AND REMOVALS NOTES:

- INFORMATION ON THIS PLAN WAS OBTAINED FROM A SURVEY NAMED 'ALTAIACSM LAND TITLE SURVEY OF 1 THOMPSON'S POINT, PORTLAND, MAINE' DATED MAY 27, 2011 BY SEBAGO TECHINCS OF WESTBROOK, MAINE AND FIELD OBSERVATIONS BY CREDERE ASSOCIATES, LLC PERSONNEL ON AUGUST 23, 2011, AUGUST 30, 2011 AND SEPTEMBER 2, 2011.
- DEMOLITION WORK INCLUDED WITH THIS CONTRACT IS DEFINED IN THE PROJECT SPECIFICATIONS. DRAWINGS AND ENVIRONMENTAL ASSESSMENT REPORT PREPARED BY CREDERE ASSOCIATES, LLC. IT SHALL INCLUDE BUT NOT BE LIMITED TO:
 - BUILDING DEMOLITION (BUILDING #6 AS IDENTIFIED ON THIS PLAN)
 - ASBESTOS ABATEMENT
 - PCB ABATEMENT
 - UNIVERSAL / HAZARDOUS WASTE REMOVAL
 - CONCRETE FOUNDATION OFFSITE DISPOSAL
 - UTILITY DISCONNECTION AT RAZED BUILDING
 - INSTALLATION OF EROSION AND SEDIMENT CONTROLS
 - DUST CONTROL
- THE CONTRACTOR SHALL REMOVE CONCRETE FOUNDATIONS TO A MINIMUM OF 2 FEET BELOW GRADE & FOUNDATION MATERIALS SHALL BE TRANSPORTED OFFSITE FOR DISPOSAL. FOUNDATION HOLES SHALL BE LEFT WITH OSHA COMPLIANT SIDEWALLS WITH A SLOPE NOT MORE THAN 3:1.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY FACILITIES INCLUDING AN OFFICE TRAILER AND BATHROOM FACILITIES.
- THE CONTRACTOR MUST OBTAIN ALL PERMITS REQUIRED BY THE CITY OF PORTLAND TO PERFORM CONTRACTED WORK INCLUDING BUT NOT LIMITED TO A CITY DEMOLITION PERMIT PRIOR TO THE START OF WORK.
- EROSION, SEDIMENT AND DUST CONTROL IS OF PARAMOUNT IMPORTANCE TO THE OWNER AND A CRITICAL COMPONENT OF THE PERMIT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO REFER TO THE PROJECT DOCUMENTS FOR ALL REQUIREMENTS AS DETAILED IN THE ENVIRONMENTAL ASSESSMENT REPORT AND ITS APPENDED REPORTS PREPARED BY CREDERE ASSOCIATES, LLC. THE DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION AND SEDIMENT MEASURES UNTIL CLOSE OUT OF THE DEMOLITION CONTRACT.
- THE CONTRACTOR IS REQUIRED TO SUBMIT A WRITTEN LOGISTICS PLAN A MIN. OF 48 HOURS PRIOR TO THE MOBILIZATION OF EQUIPMENT TO THE SITE. THE PLAN SHALL DETAIL LAYDOWN AREAS, ACCESS AREAS, STOCKPILE AREAS, SCHEDULE, ETC. THE OWNER RESERVES THE RIGHT TO MODIFY THE LOGISTICS PLAN TO BE CONSISTENT WITH THE PROJECT DOCUMENTS AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL HANDLE ALL DISTURBED SOILS IN ACCORDANCE WITH THE SOIL MANAGEMENT PLAN PREPARED BY CREDERE ASSOCIATES, LLC.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DOCUMENTATION APPLICABLE TO THE GROUNDWATER AND SOIL REMOVAL AND DISPOSAL ACTIVITIES AS DETAILED IN THE GROUNDWATER MANAGEMENT PLAN AND SOIL MANAGEMENT PLAN BY CREDERE ASSOCIATES, LLC. AT NO EXTRA EXPENSE TO THE OWNER.
- THE CONTRACTOR SHALL REMOVE, DISPOSE AND DOCUMENT ALL PCB BULK PRODUCT WASTE, UNIVERSAL AND HAZARDOUS WASTE, ASBESTOS ABATEMENT, LEAD-BASED PAINT AND SUB SLAB SOIL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS INCLUDING THE PHASE II ENVIRONMENTAL ASSESSMENT REPORT AND MEDEP VRAP PLAN.
- THE PROJECT SITE INCLUDES ONGOING TENANT ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, BRICK NORTH & BRICK SOUTH TENANTS, THE DEPOT, CONCERT VENUE, SUBURBAN PROPANE AND NNEPRA, THAT SHALL REMAIN THROUGHOUT THE COURSE OF DEMOLITION & CONSTRUCTION. CONSTRUCTION WORK SHALL BE CONDUCTED IN A MANNER TO MINIMIZE DISRUPTION TO THESE OPERATIONS.

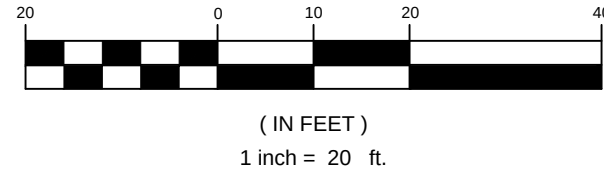
- SITE ACCESS TO ALL ADJACENT PROPERTIES MUST BE MAINTAINED AT ALL TIMES.
- SITE ACCESS IS CURRENTLY THROUGH A PUBLIC RAILROAD CROSSING. NO EXTRA PAYMENT WILL BE MADE FOR SHUTDOWNS OF ANY LENGTH RESULTING FROM RAILROAD OPERATIONS.
- THE CONTRACTOR SHALL MAINTAIN CLEAR FIRE LANES IN ORDER TO ACCESS THE SITE THROUGHOUT THE DURATION OF WORK.
- THE PORTLAND FIRE DEPARTMENT SHOULD BE NOTIFIED PRIOR TO ANY SHUTDOWN OF ONSITE WATER MAINS AND HYDRANTS. IT IS THE OWNER'S INTENT TO MAINTAIN THE HYDRANT SERVICES UPON COMPLETION OF THE DEMOLITION PHASE ACTIVITIES SO THE CONTRACTOR SHALL INCLUDE ALL NECESSARY MEASURES TO SATISFY THIS REQUIREMENT.
- THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS; DOCUMENTING ALL UTILITY STUBS LOCATION, DEPTH, SIZE, TYPE AND CONDITION.
- THIS PLAN REPRESENTS EXISTING CONDITIONS PRIOR TO CONSTRUCTION OF SITE PLAN IMPROVEMENTS ATTENDANT WITH BRICK NORTH & BRICK SOUTH. AS-BUILT PLANS ARE AVAILABLE FROM THE CONTRACTOR (SHAW BROS.) UPON REQUEST.

NOTE TO CONTRACTOR:

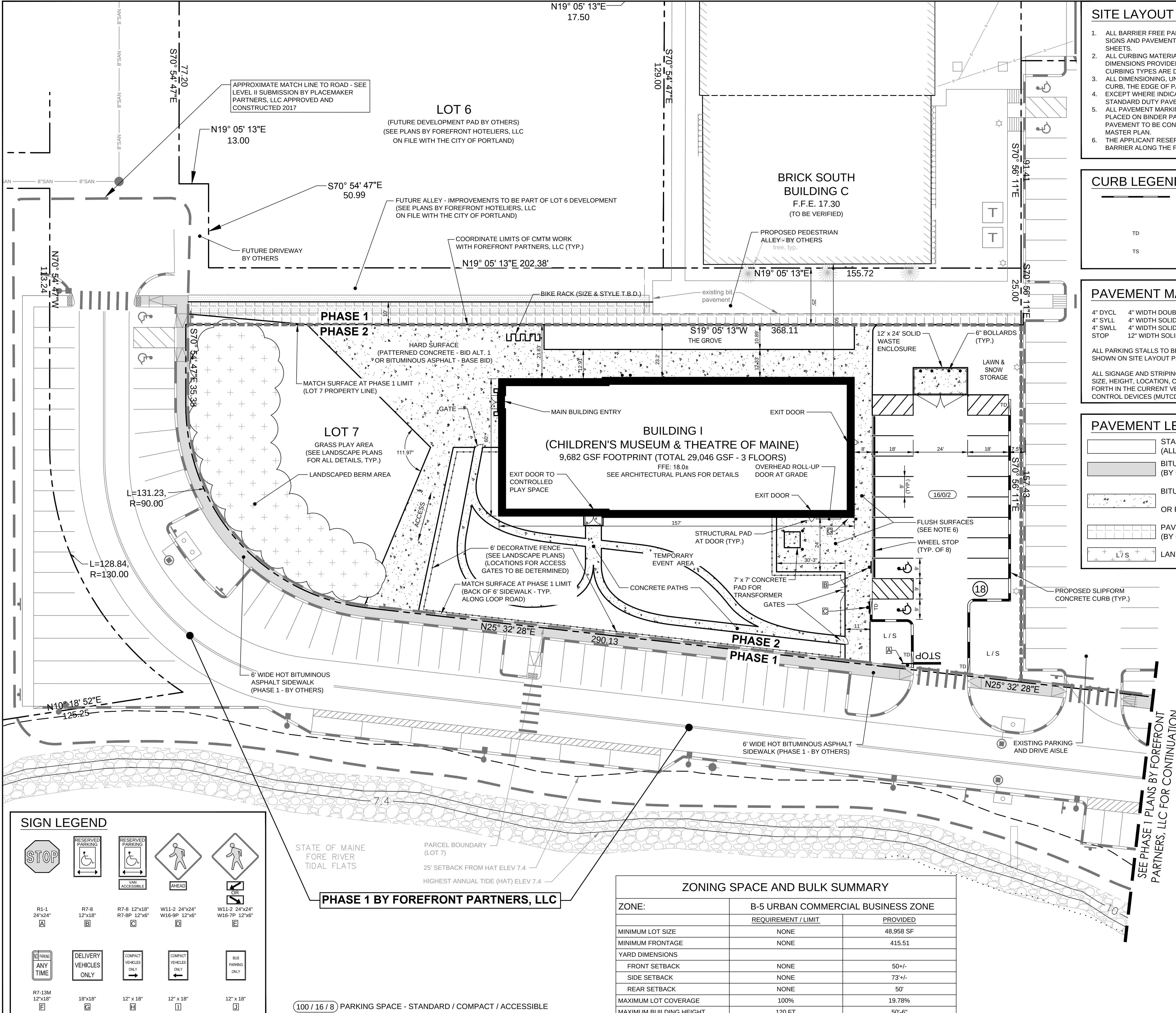
- THE SITE IS AN ACTIVE SITE WITH EXISTING ABUTTERS AND ON SITE TENANTS WITH RIGHTS TO ACCESS AND OPERATE THEIR FACILITIES. THE CONTRACTOR SHALL MAINTAIN REASONABLE VEHICULAR ACCESS TO, BUT NOT LIMITED TO THE FOLLOWING: ALL EXISTING BUILDINGS, HYDRANTS / FIRE PROTECTION APPURTANCES, PARKING LOTS & SUBURBAN PROPANE GATED ENTRANCE
- THIS PLAN REQUIRES THE REMOVAL OF EXISTING UTILITY SERVICES (ELECTRIC, COMMUNICATION, SANITARY SEWER, WATER AND DRAINAGE). ALL EXISTING USERS SHALL BE PROVIDED WITH TEMPORARY OR PERMANENT UTILITY CONNECTIONS PRIOR TO REMOVAL OR DISCONNECTION OF ANY UTILITY LINE AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL COORDINATE ALL SHUT DOWNS WITH CHILDREN'S MUSEUM AND THEATRE OF MAINE AND THE DEVELOPMENT OWNER AND USER 72 HOURS IN ADVANCE WITH A PLAN TO PROVIDE A REPLACEMENT SERVICE.



GRAPHIC SCALE



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- ### SITE LAYOUT NOTES
- ALL BARRIER FREE PARKING SPACES ARE TO RECEIVE BARRIER FREE SIGNS AND PAVEMENT MARKINGS AS ILLUSTRATED ON THE DETAIL SHEETS.
 - ALL CURBING MATERIALS WILL BE SELECTED BY THE OWNER. THE DIMENSIONS PROVIDED ON THE PLAN ARE TO FACE OF CURB. ALL CURBING TYPES ARE DETAILED IN THE PROJECT DETAIL SHEETS.
 - ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB, THE EDGE OF PAVEMENT OR THE FACE OF THE BUILDING.
 - EXCEPT WHERE INDICATED OTHERWISE, THE PAVEMENT IS TO BE STANDARD DUTY PAVEMENT.
 - ALL PAVEMENT MARKINGS SHOWN SHALL BE TEMPORARY PAINT PLACED ON BINDER PAVEMENT. UPON PLACEMENT OF FINAL SURFACE PAVEMENT TO BE CONSISTENT WITH THE APPROVED MARCH 2014 MASTER PLAN.
 - THE APPLICANT RESERVES THE RIGHT TO INSTALL A REMOVABLE BARRIER ALONG THE PARKING LOT EDGE AS NEEDED.

- ### CURB LEGEND
- | | |
|----|--|
| TD | SLIP FORM CONCRETE CURB (VERTICAL, SLOPED OR CAPE COD BERM MOLD - SEE DETAILS) |
| TS | TIP DOWN |
| | TRANSITION STONE (VERTICAL GRANITE TO SLIP FORM CONCRETE) |

- ### PAVEMENT MARKING LEGEND
- | | |
|---------|-----------------------------------|
| 4" DYCL | 4" WIDTH DOUBLE YELLOW CENTERLINE |
| 4" SYLL | 4" WIDTH SOLID YELLOW LANE LINE |
| 4" SWLL | 4" WIDTH SOLID WHITE LANE LINE |
| STOP | 12" WIDTH SOLID WHITE STOP LINE |
- ALL PARKING STALLS TO BE 4" WIDTH SINGLE SOLID WHITE LINE EXCEPT AS SHOWN ON SITE LAYOUT PLAN.
- ALL SIGNAGE AND STRIPING SHALL CONFORM TO THE STANDARDS FOR SIZE, HEIGHT, LOCATION, COLOR, INSTALLATION AND REFLECTIVITY SET FORTH IN THE CURRENT VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

- ### PAVEMENT LEGEND
- | | |
|----------|---|
| [Symbol] | STANDARD DUTY PAVEMENT (ALL BIT. PARKING LOT PAVEMENT ON LOT 7) |
| [Symbol] | BITUMINOUS PAVEMENT SIDEWALK (BY OTHERS) |
| [Symbol] | BITUMINOUS CONCRETE (PHASE 2 C-3) (BASE BID) OR PAVERS OR CONCRETE (BID ALT. 1) * |
| [Symbol] | PAVERS OR OTHER HARD SURFACE (BY OTHERS) |
| [Symbol] | LANDSCAPE AREA |

*OR SIMILAR HARD SURFACE TREATMENT - COORDINATE WITH FOREFRONT PARTNERS, LLC

- ### SIGN LEGEND
- | | | | | |
|-----------------------|--------------------------|-------------------------------|---------------------------------|---------------------------------|
| [STOP SIGN] | [RESERVED PARKING] | [RESERVED PARKING] | [AHEAD] | [OR] |
| R1-1 24"x24" [A] | R7-8 12"x18" [B] | R7-8 12"x18" R7-8P 12"x6" [C] | W11-2 24"x24" W16-9P 12"x6" [D] | W11-2 24"x24" W16-7P 12"x6" [E] |
| [NO PARKING ANY TIME] | [DELIVERY VEHICLES ONLY] | [COMPACT VEHICLES ONLY] | [COMPACT VEHICLES ONLY] | [BUS PARKING ONLY] |
| R7-13M 12"x18" [F] | 18"x18" [G] | 12" x 18" [H] | 12" x 18" [I] | 12" x 18" [J] |

ZONING SPACE AND BULK SUMMARY		
ZONE:	B-5 URBAN COMMERCIAL BUSINESS ZONE	
	REQUIREMENT / LIMIT	PROVIDED
MINIMUM LOT SIZE	NONE	48,958 SF
MINIMUM FRONTAGE	NONE	415.51
YARD DIMENSIONS		
FRONT SETBACK	NONE	50'+/-
SIDE SETBACK	NONE	73'+/-
REAR SETBACK	NONE	50'
MAXIMUM LOT COVERAGE	100%	19.78%
MAXIMUM BUILDING HEIGHT	120 FT	50'-6"

Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
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Consultants

Notes									
4	FINAL LEVEL II SITE PLAN APPLICATION	17.03.01	SRB	17.08.01	SRB	17.07.28	SRB	17.05.09	Y.M.A.M.D.D.
3	REVISED SUBMISSION - LETTER OF RESPONSE 1		SRB		SRB		SRB		
2	REVISED SUBMISSION - LETTER OF RESPONSE 2		SRB		SRB		SRB		
1	REVISED FOR CLIENT REVIEW		SRB		SRB		SRB		
	Revision		By	Appr.					

File Name: 195350337_site_layout CDD DWN SRB CHK'D SRB DSGN 16.11.29

Permit-Seal

Client/Project
BRUNER/COTT

CHILDREN'S MUSEUM & THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
SITE LAYOUT PLAN

Project No.
195350337

Scale
1" = 20'

Sheet
PHASE 2
C-3.0



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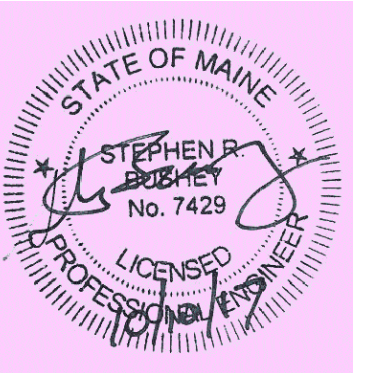
Consultants

Notes

4	FINAL LEVEL 3 SITE PLAN APPLICATION	CDD	17.10.10
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	PBF	17.08.01
2	REVISED RESUBMISSION TO CITY	PBF	17.07.26
1	REVISED FOR CLIENT REVIEW	PBF	17.05.09
Revision		By	YY-MM-DD
		Appd.	

File Name: 195350337_utility	CDD	SRB	SRB	16.11.29
	DWN.	CHKD.	DSGN.	DATE

Permit-Seal



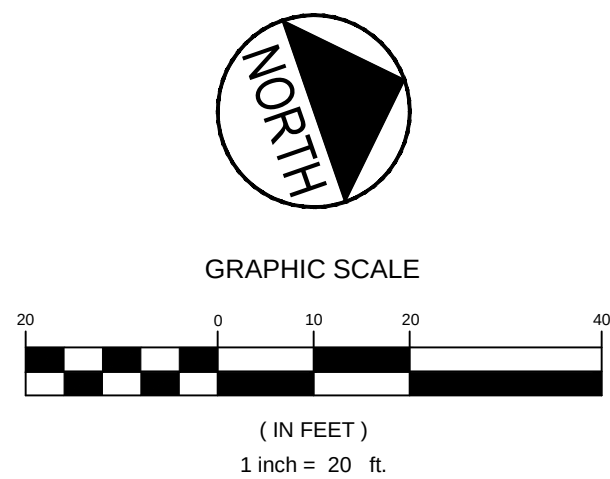
Client/Project
BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
UTILITY PLAN

Project No.	Scale
195350337	1" = 20'

Sheet **PHASE 2**
C-4.0



PRELIMINARY - NOT FOR CONSTRUCTION

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Notes

4	FINAL LEVEL III SITE PLAN APPLICATION	CDD	\$68	17.10.18
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	PBF	\$68	17.08.01
2	REVISED RESUBMISSION TO CITY	PBF	\$68	17.07.28
1	REVISED FOR CLIENT REVIEW	PBF	\$68	17.05.09
Revision			By	Appd.
				YYMMDD

File Name: 195350337_grading	CDD	SRB	SRB	16.11.29
	DWN.	CHKD.	DSGN.	DATE

A circular professional engineer seal for the State of Maine. The outer ring contains the text "STATE OF MAINE" at the top and "LICENSED PROFESSIONAL ENGINEER" at the bottom, separated by two stars. In the center, the name "STEPHEN R. DUBNEY" is printed above the license number "No. 7429". A stylized signature is written across the center of the seal.

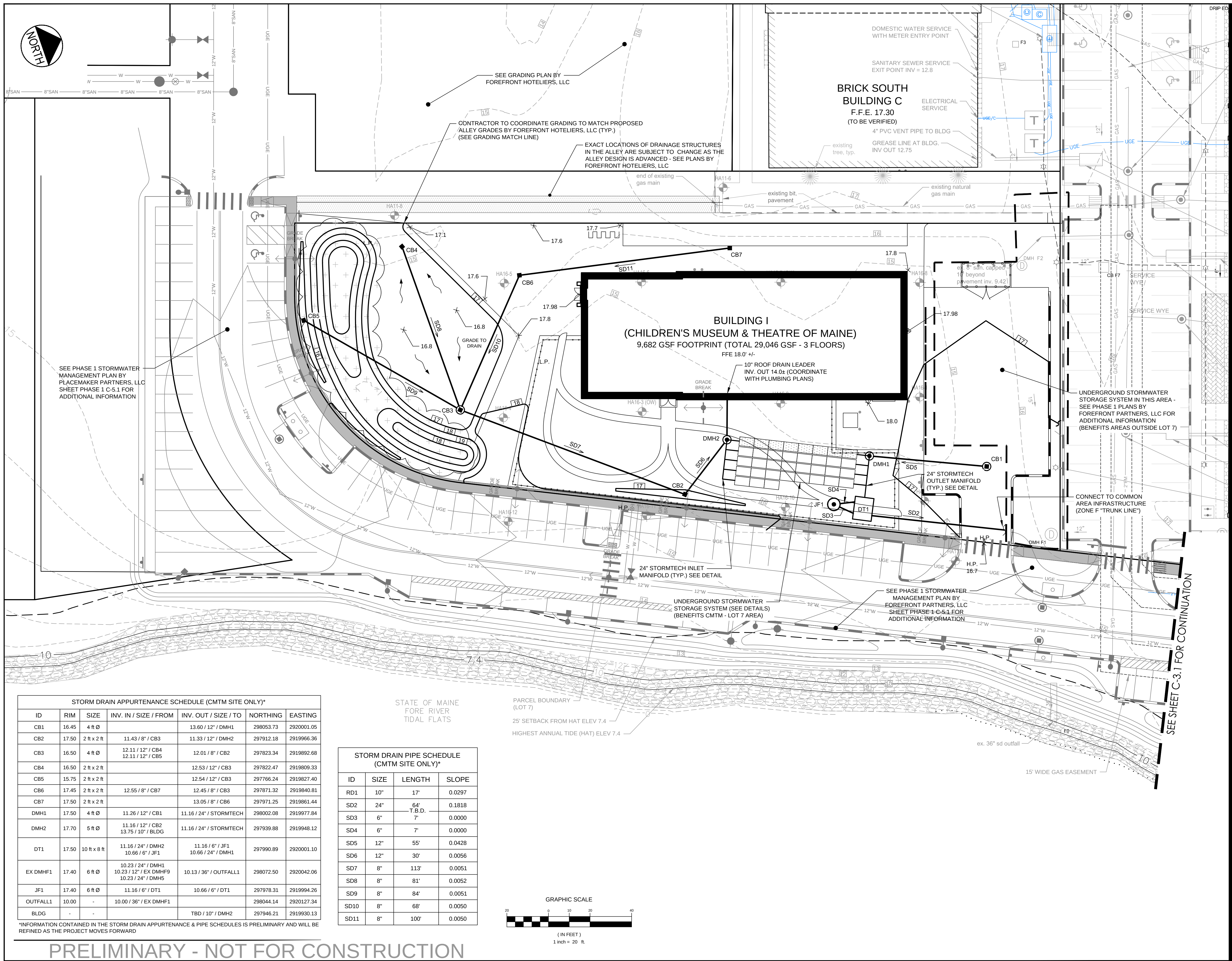
CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
GRADING & DRAINAGE PLAN

Project No.	Scale
195350337	1" = 20'

Sheet **PHASE 2**

PHASE 2
C-5.0





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Notes

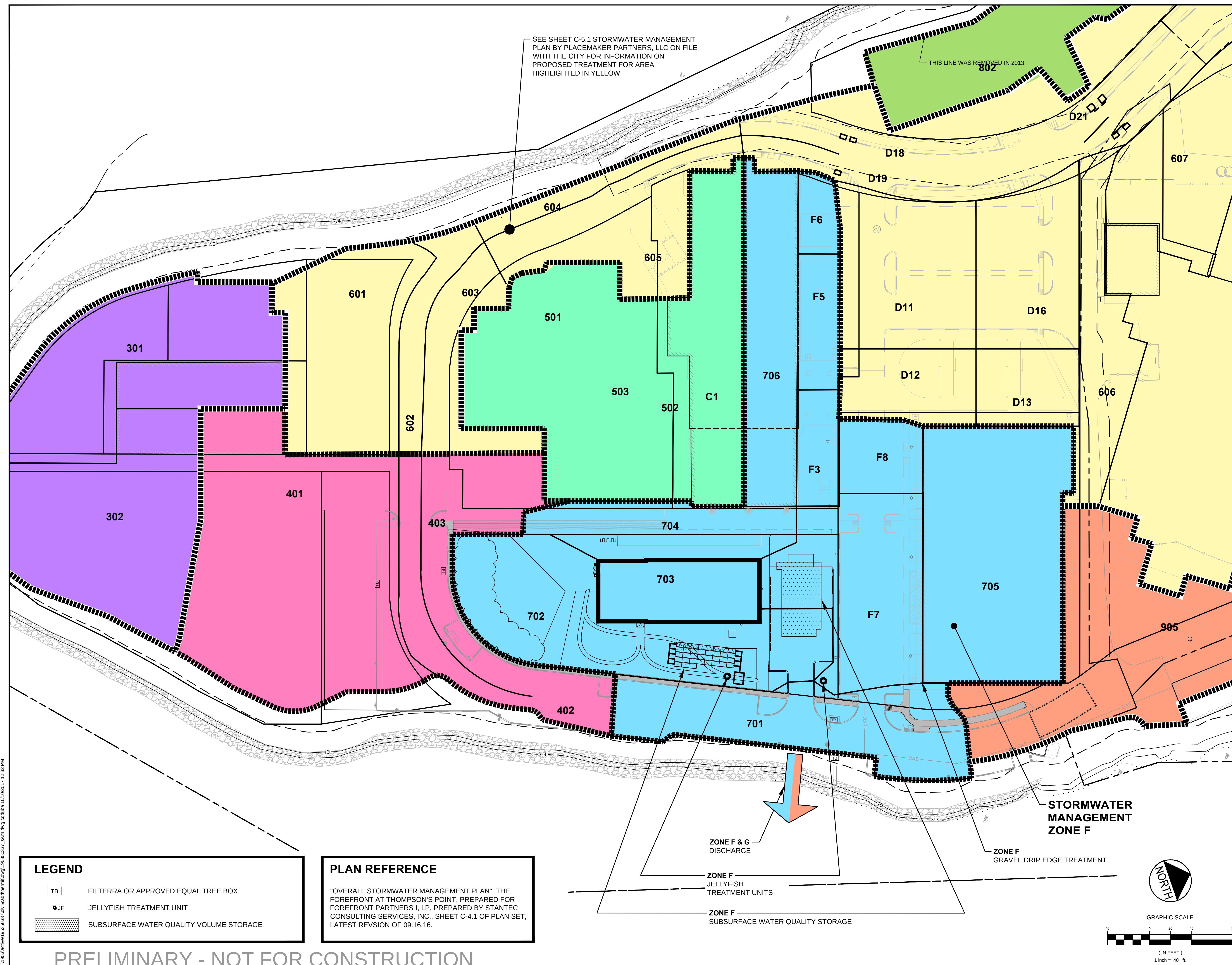
Decision	By	Assd.	YY/MM/DD
1. REVISED FOR CLIENT REVIEW	PMF	\$68	17.05.09
2. REVISED RESUBMISSION TO CITY	PMF	\$68	17.07.28
3. REVISED SUBMISSION - LETTER OF RESPONSE I	PMF	\$68	17.08.01
4. FINAL LEVEL 1 SITE PLAN APPLICATION	CDD	\$68	17.10.10

File Name: 195350337_swm	CDD	SRB	SRB	16.11.29
	DWN	CHKD	DSGN	DATE

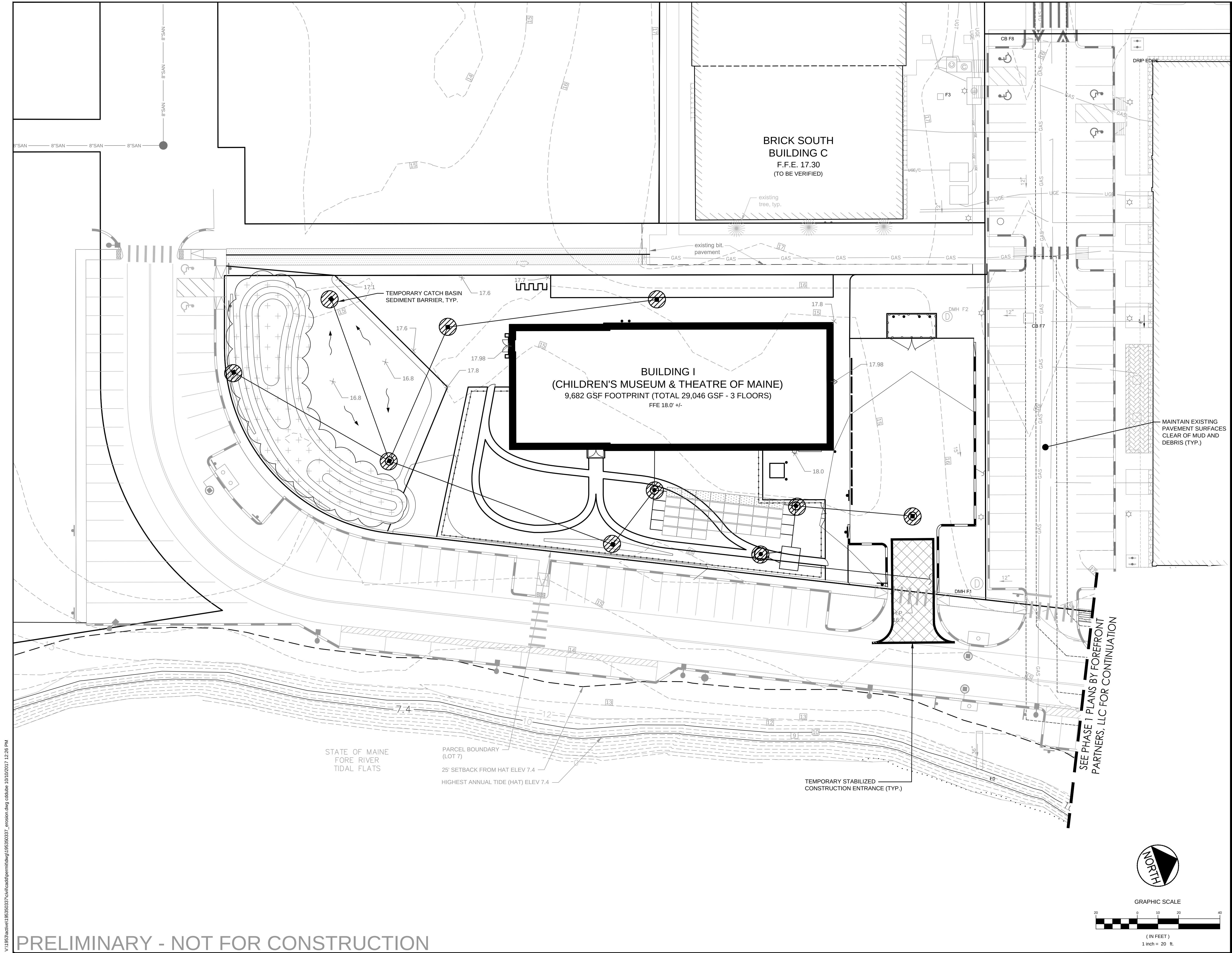
CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Project No.	Scale
195350337	1" = 40'

Sheet **PHASE 2**
C-5.1



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Consultants

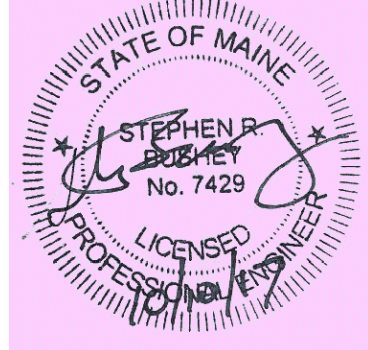
Notes

MAINTAIN EXISTING PAVEMENT SURFACES CLEAR OF MUD AND DEBRIS (TYP.)

SEE PHASE 1 PLANS BY FOREFRONT PARTNERS, LLC FOR CONTINUATION

File Name: 195350337_erosion	CDD DWN.	SRB CHK'D.	SRB DSGN.	16.11.29
				DATE

Permit-Seal



Client/Project

BRUNER/COTT

CHILDREN'S MUSEUM & THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title

EROSION CONTROL PLAN

Project No.

195350337

Sheet

Scale

1" = 20'

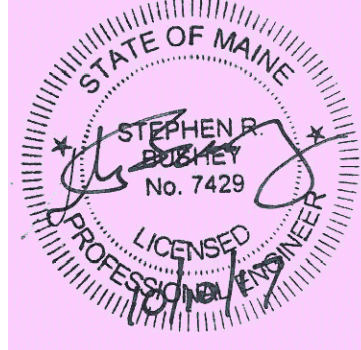
PHASE 2
C-6.0

Revision	By	Appr.	Date
4	CDD	SRB	17.03.10
3	PRF	SRB	17.08.01
2	PRF	SRB	17.07.28
1	PRF	SRB	17.05.09

17.03.10	17.08.01	17.07.28	17.05.09	17.04.00
SRB	SRB	SRB	SRB	YJAM/DD
By	Appr.			
CDD	PRF	PRF	PRF	
4	FINAL LEVEL II REVIEW APPLICATION			
3	REVISED SUBMISSION - LETTER OF RESPONSE 1			
2	REVISED SUBMISSION TO CITY			
1	REVISED FOR CLIENT REVIEW			
Revision				

File Name: 195350337 DETAILS	CDD	SRB	SRB	16.11.29
	DWN.	CHKD.	DSGN.	DATE

Permit-Seal



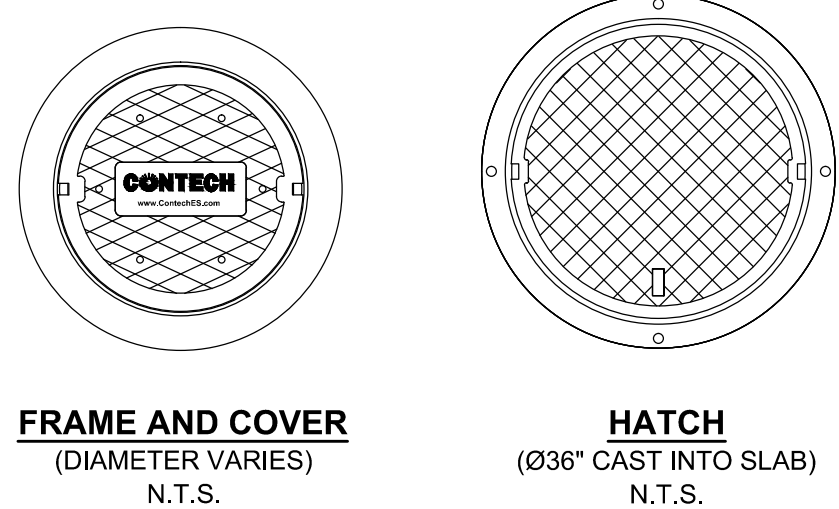
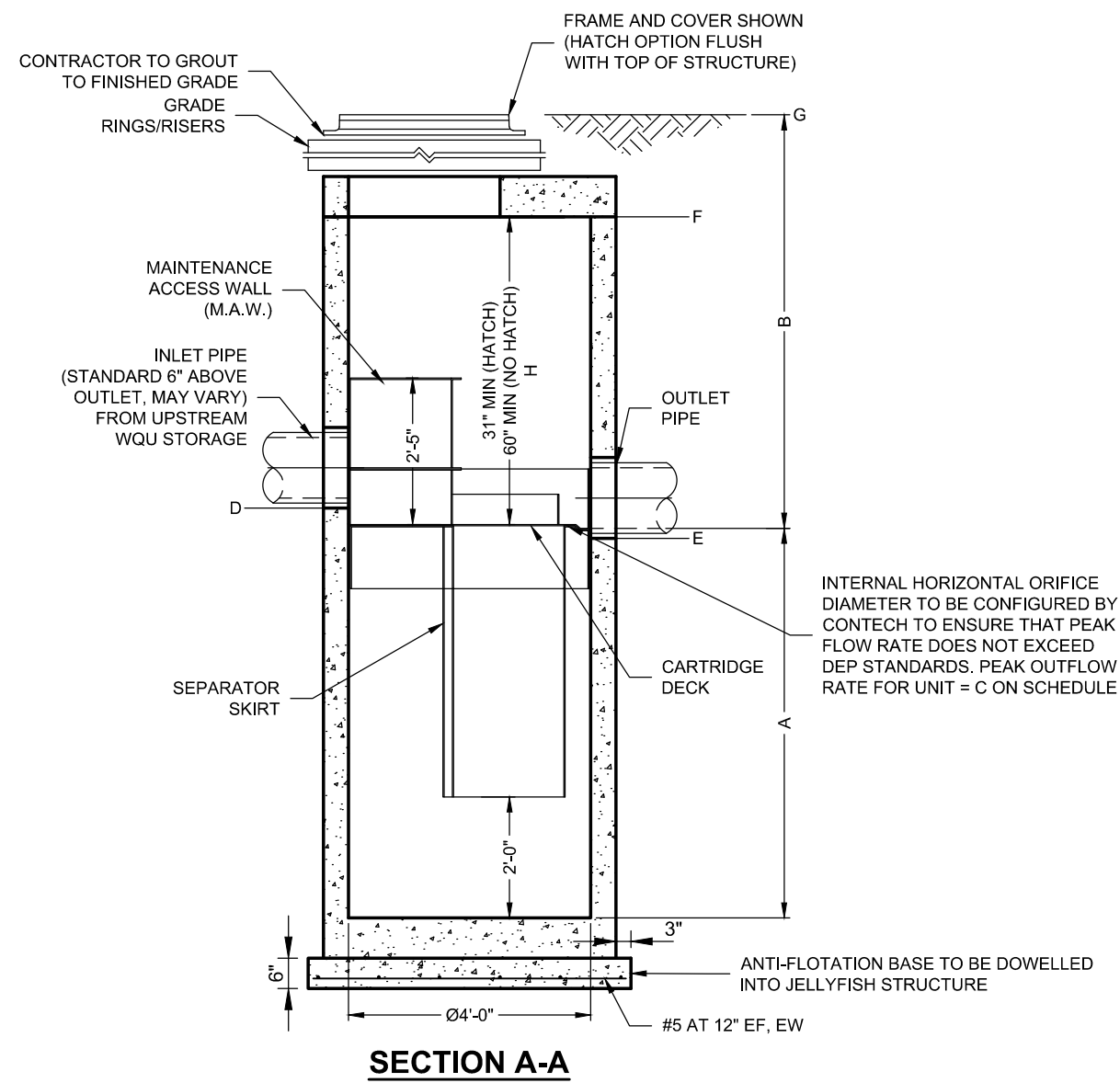
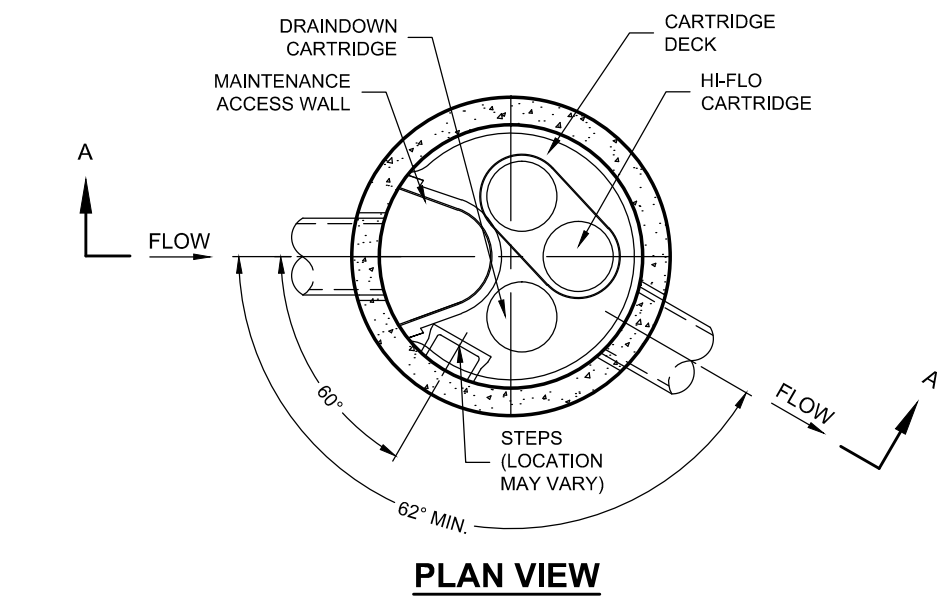
Client/Project
BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
STORMWATER DETAILS -
JELLYFISH SYSTEMS

Project No. 195350337
Scale AS NOTED

Sheet
PHASE 2
C-7.0

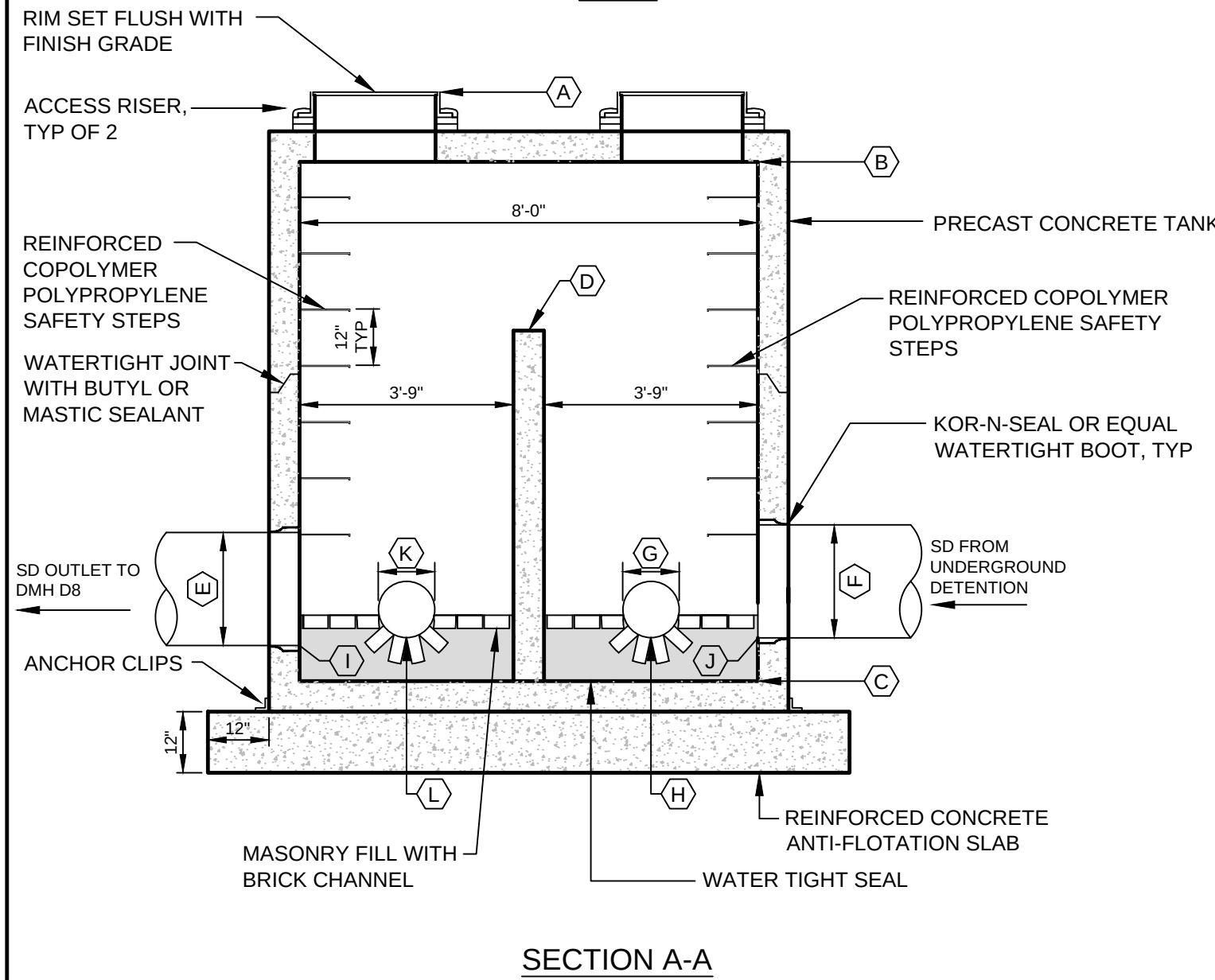
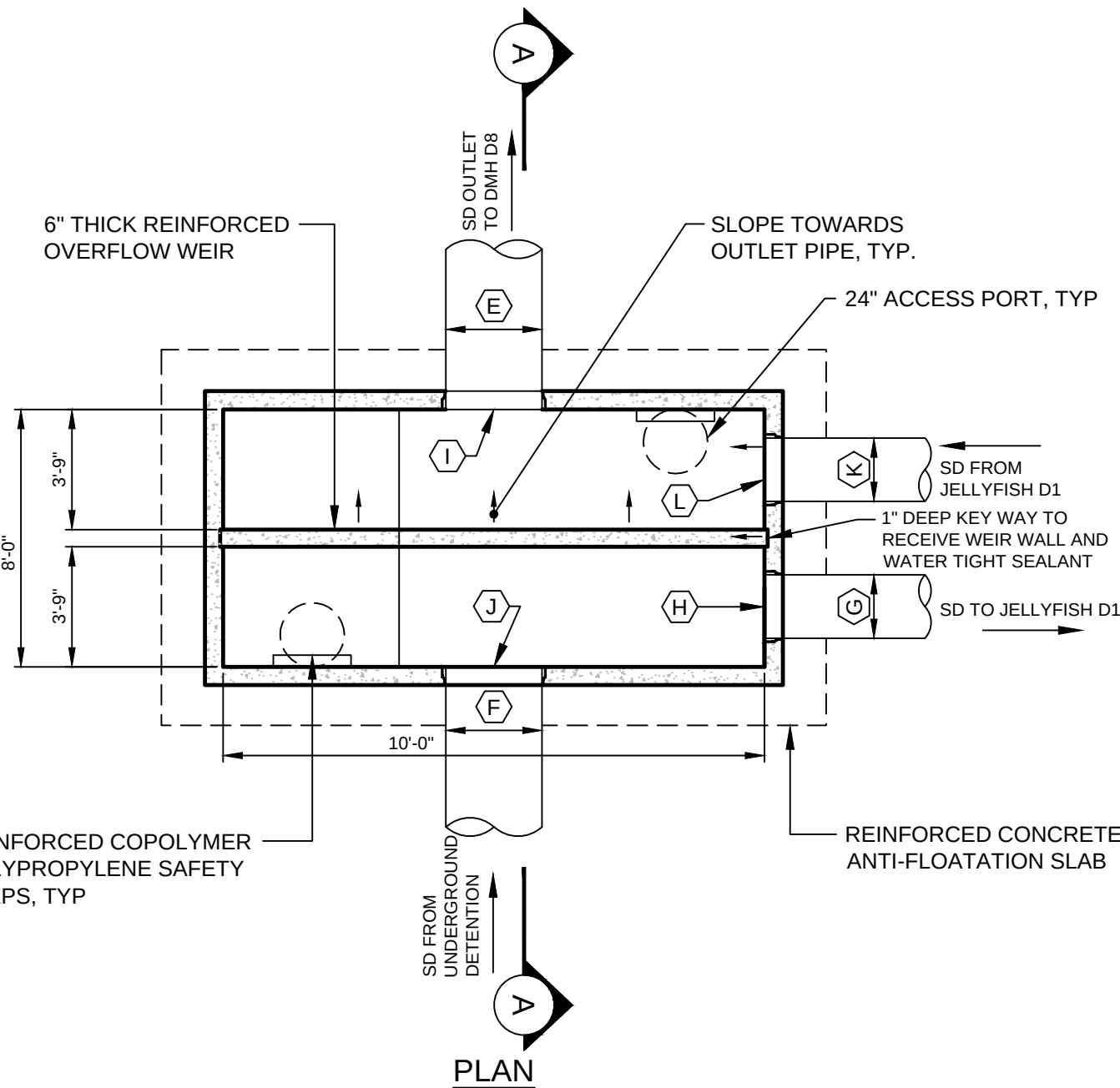


JELLYFISH DESIGN NOTES				
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø48\"/>				
CARTRIDGE SELECTION	54"	40"	27"	15"
CARTRIDGE DEPTH	6'-5"	5'-3"	4'-2"	3'-2"
OUTLET INVERT TO STRUCTURE INVERT (A)	0.18 / 0.09	0.13 / 0.065	0.09 / 0.045	0.05 / 0.025
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	2 / 1			
MAX. CARTS. HIGH-FLO / DRAINDOWN				

THIS PROJECT

SEE SCHEDULE IN DETAIL 'D'

A JELLYFISH JF4 STANDARD DETAIL
N.T.S.



- NOTES:
- ALL CONCRETE TO HAVE A MINIMUM OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
 - DESIGN LOAD FOR H-20 WHEEL LOAD
 - STRUCTURE TO CONFORM TO ASTM-C478 SPECIFICATIONS
 - SET STRUCTURE ON 12" THICK CRUSHED STONE

OVERFLOW DIVERSION STRUCTURE SCHEDULE	
ITEM DESCRIPTION	ZONE F
(A) APPROXIMATE RIM ELEVATION	16.00
(B) TOP OF INSIDE OF TANK	14.5
(C) BOTTOM OF INSIDE OF TANK	8.92
(D) TOP OF WEIR WALL	13.02
(E) DIAMETER OF OVERFLOW OUTLET PIPE	24"
(F) DIAMETER OF INLET PIPE	24"
(G) DIAMETER OF OUTLET PIPE TO JELLYFISH	12"
(H) INV OF OUTLET PIPE TO JELLYFISH	10.52
(I) INV OF OVERFLOW OUTLET PIPE	9.92
(J) INV OF INLET PIPE	10.52
(K) DIAMETER OF OUTLET PIPE FROM JELLYFISH	12"
(L) INVERT OF OUTLET PIPE FROM JELLYFISH	10.02

B OVERFLOW DIVERSION STRUCTURE D1
N.T.S.

ZONE D-1 DATA REQUIREMENTS	
STRUCTURE ID	D1
WATER QUALITY FLOW RATE (cfs)	0.066
PEAK FLOW RATE (cfs)	5.50
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	2 / 1
CARTRIDGE SIZE	54"
PIPE DATA:	I.E. MATERIAL DIAMETER
INLET PIPE #1	* HDPE 12"
INLET PIPE #2	* HDPE 12"
OUTLET PIPE	* HDPE 24"
RIM ELEVATION	17.00
ANTI-FLOTATION SOIL	WIDTH HEIGHT
	1' 13.75
NOTES/SPECIAL REQUIREMENTS: MAINE DEP REQUIRES UPSTREAM WQU TO DRAIN IN 24-48 HOURS. CONTECH RESPONSIBLE FOR SIZING INTERNAL ORIFICE TO CONTROL PEAK WATER QUALITY OUTFLOW TO REQUIRED RATE * PER ENGINEER OF RECORD	

C JELLYFISH TREATMENT UNIT DATA REQUIREMENTS
N.T.S.

Jellyfish Unit Schedule	
Schedule ID	Zone
Schedule	D
A-Outlet Inv. to Bottom of Structure (ft)	6.42
B-Finished Grade to Outlet Inv.	6.98
C-Required Outflow (cfs)	0.066
D-Inlet Inv. From Water Quality Storage	10.52
E-Outlet Inv.	10.02
F-Underside of Slab	15.33
G-Rim Elevation	17
H-Underside of Slab to Outlet Inv. (ft)	5.31
Hatch Required?	NO

D JELLYFISH UNIT SCHEDULE
N.T.S.

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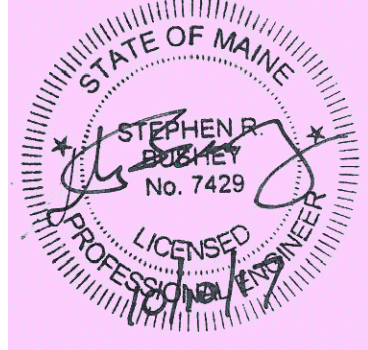
Notes

4	FINAL LEVEL II SITE PLAN APPLICATION	CDD	SRB	17.10.10
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	PFE	SRB	17.08.01
2	REVISED SUBMISSION - LETTER OF RESPONSE 2	PFE	SRB	17.07.28
1	REVISED FOR CLIENT REVIEW	PFE	SRB	17.05.09
	By		Appr.	YYMMDD

Revision

File Name:	195350337 DETAILS	CDD	SRB	SRB	16.11.29
		DWN.	CHKD.	DSGN.	DATE

Permit-Seal



Client/Project
BRUNER/COTT

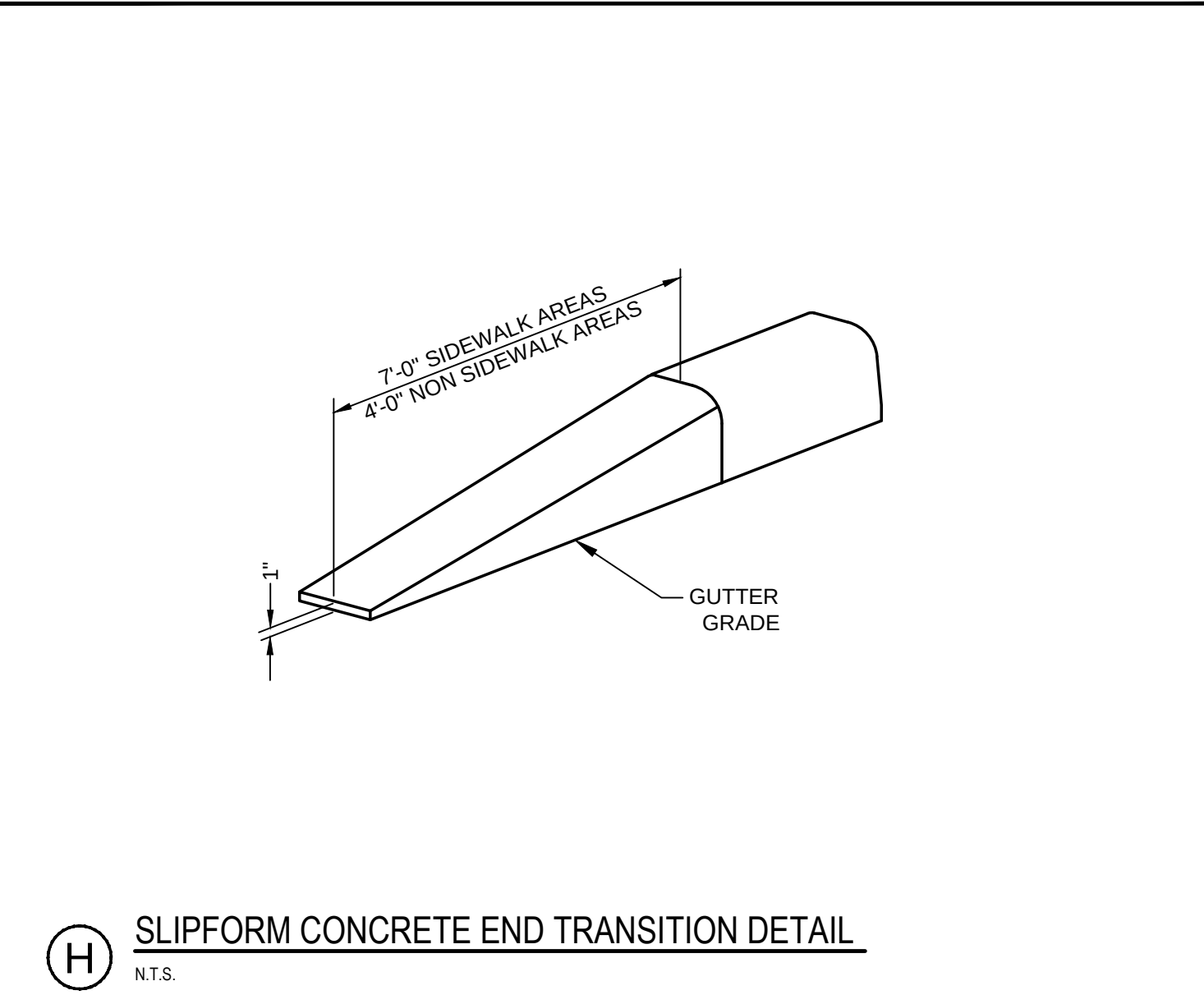
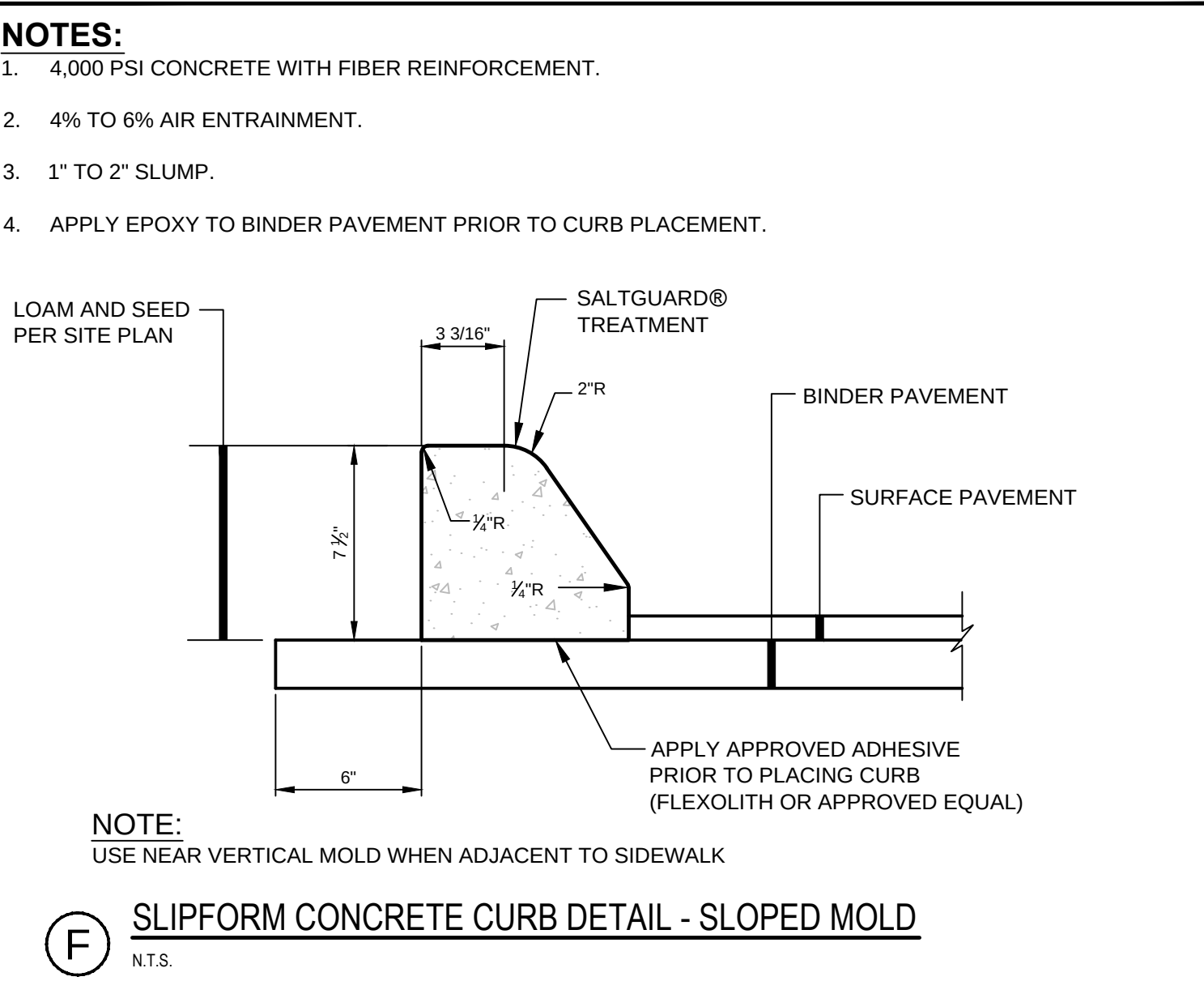
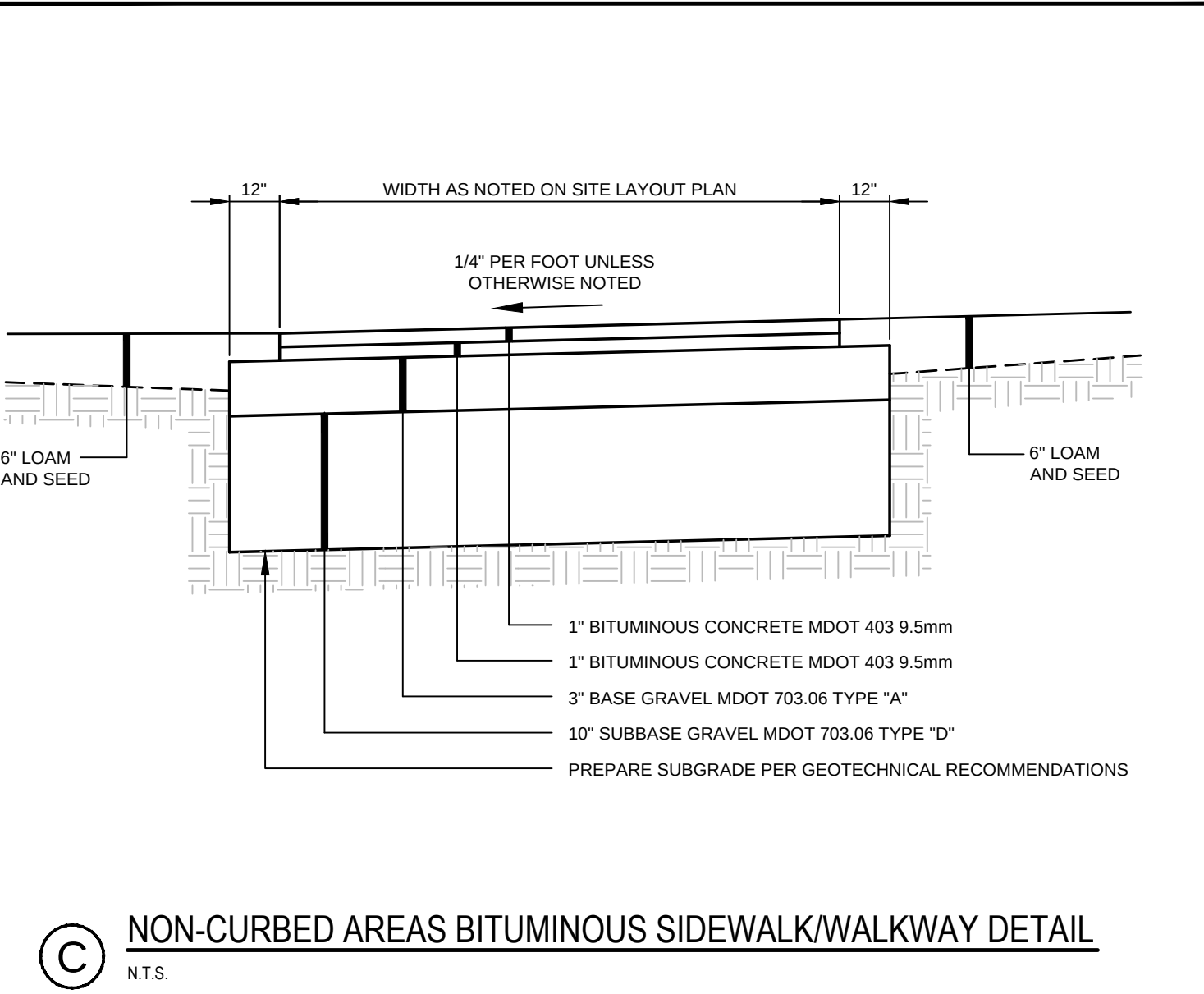
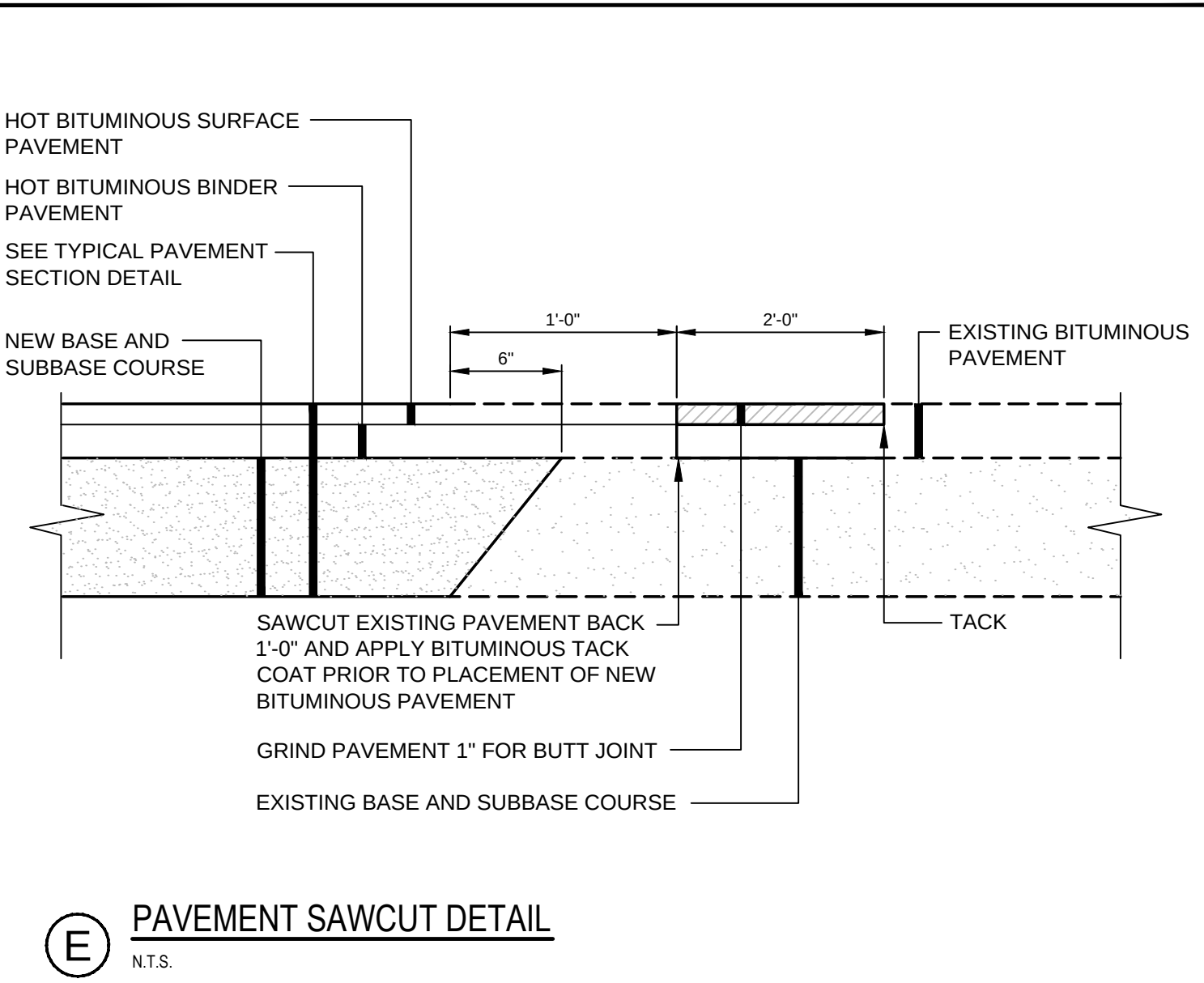
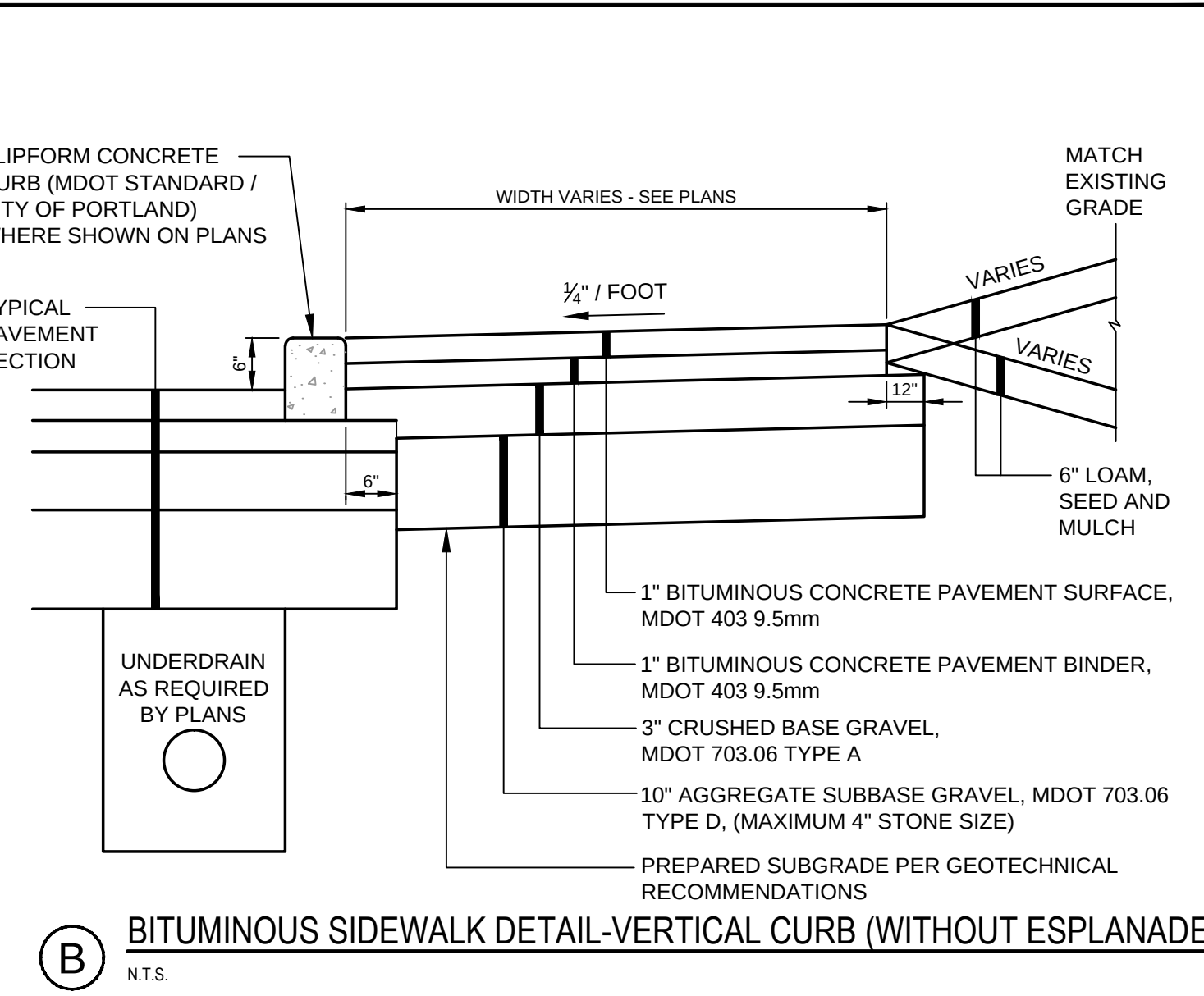
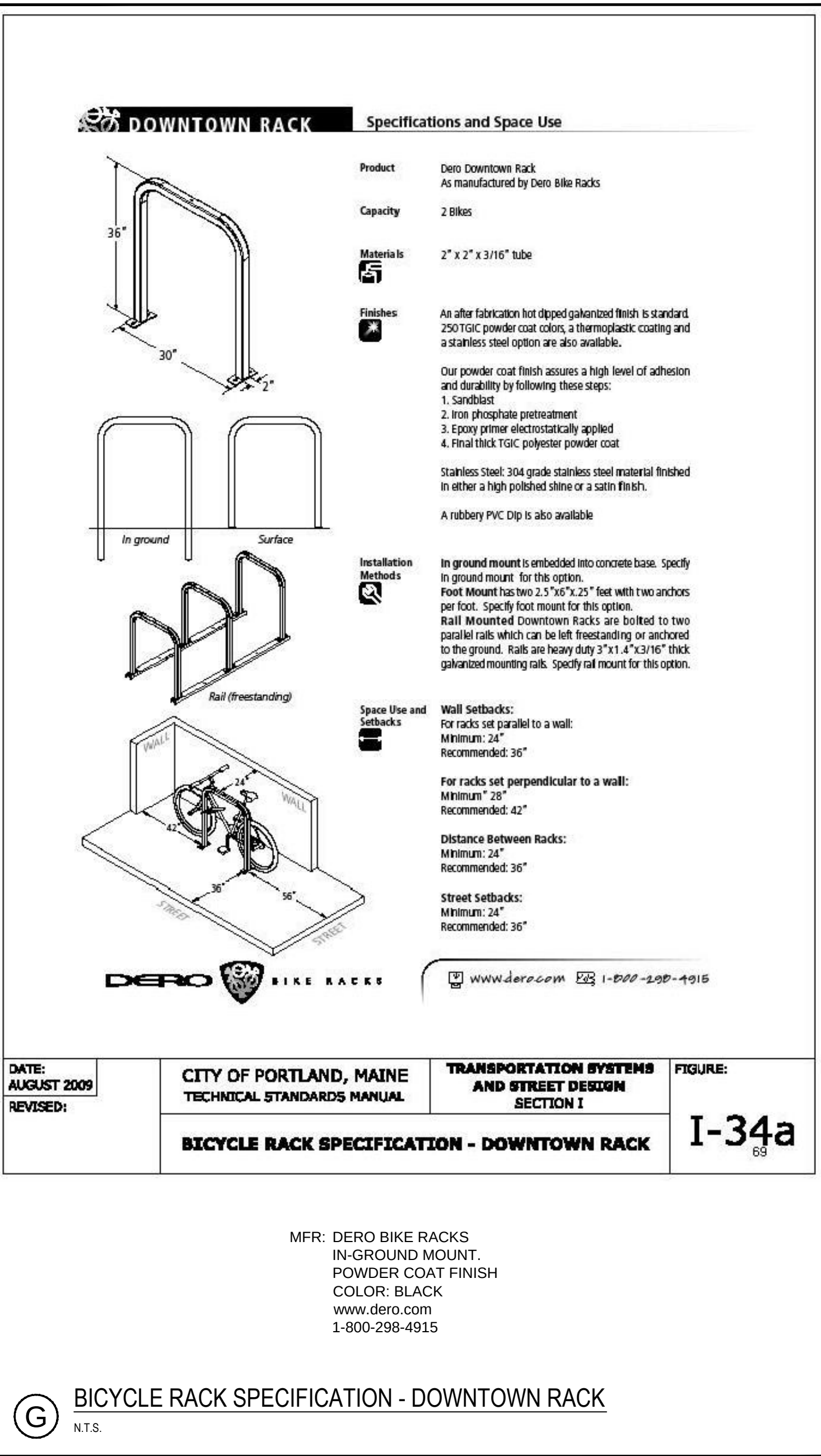
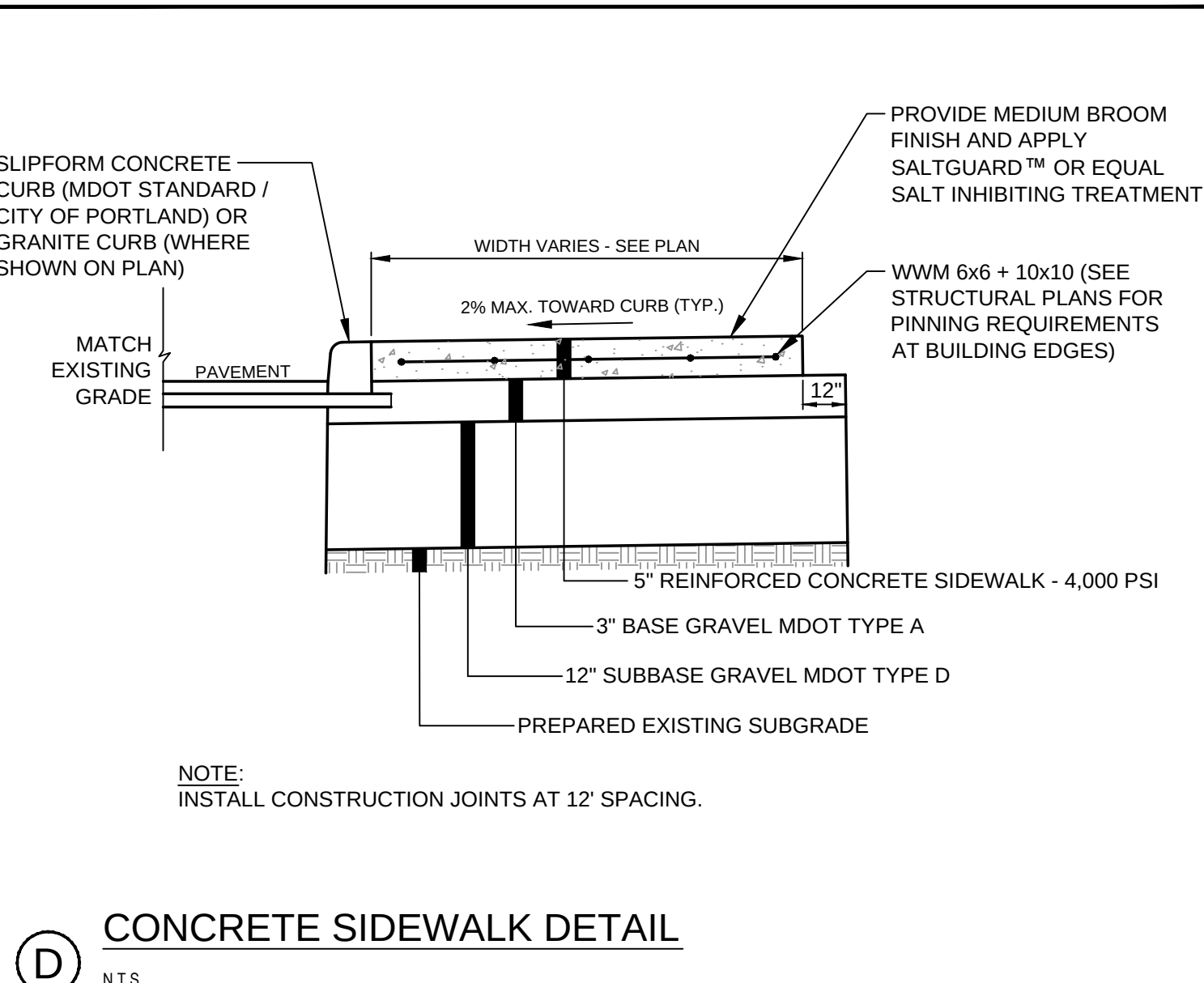
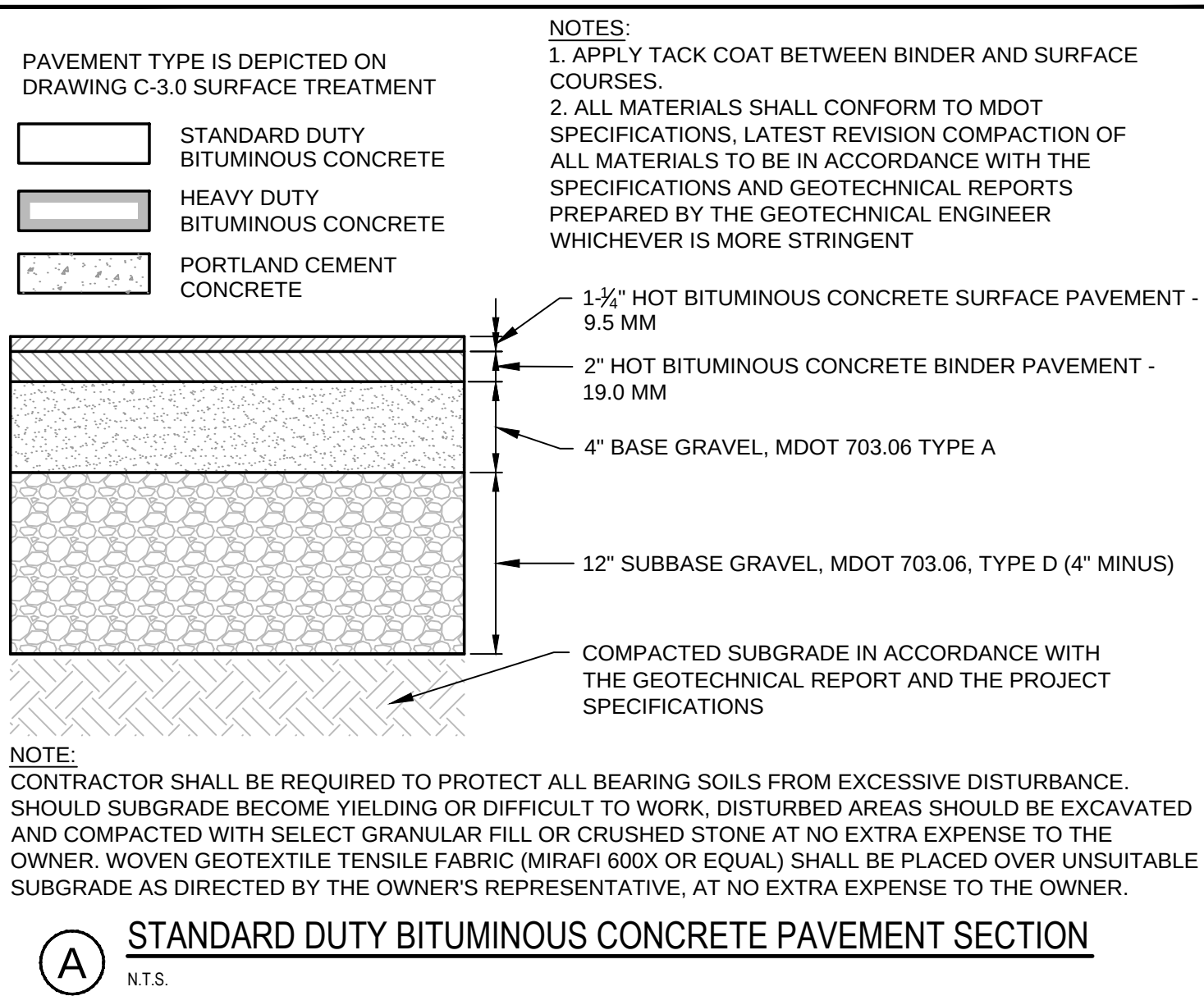
CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

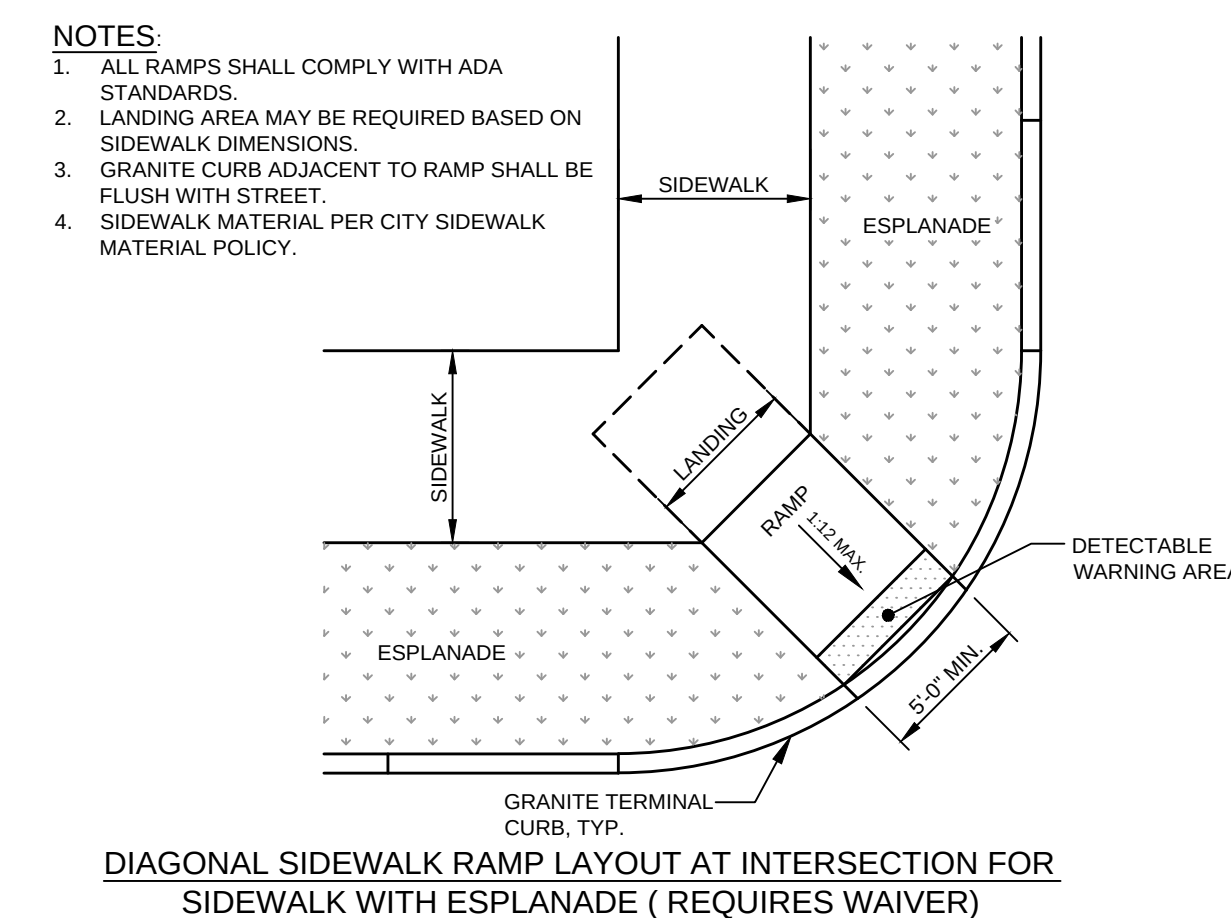
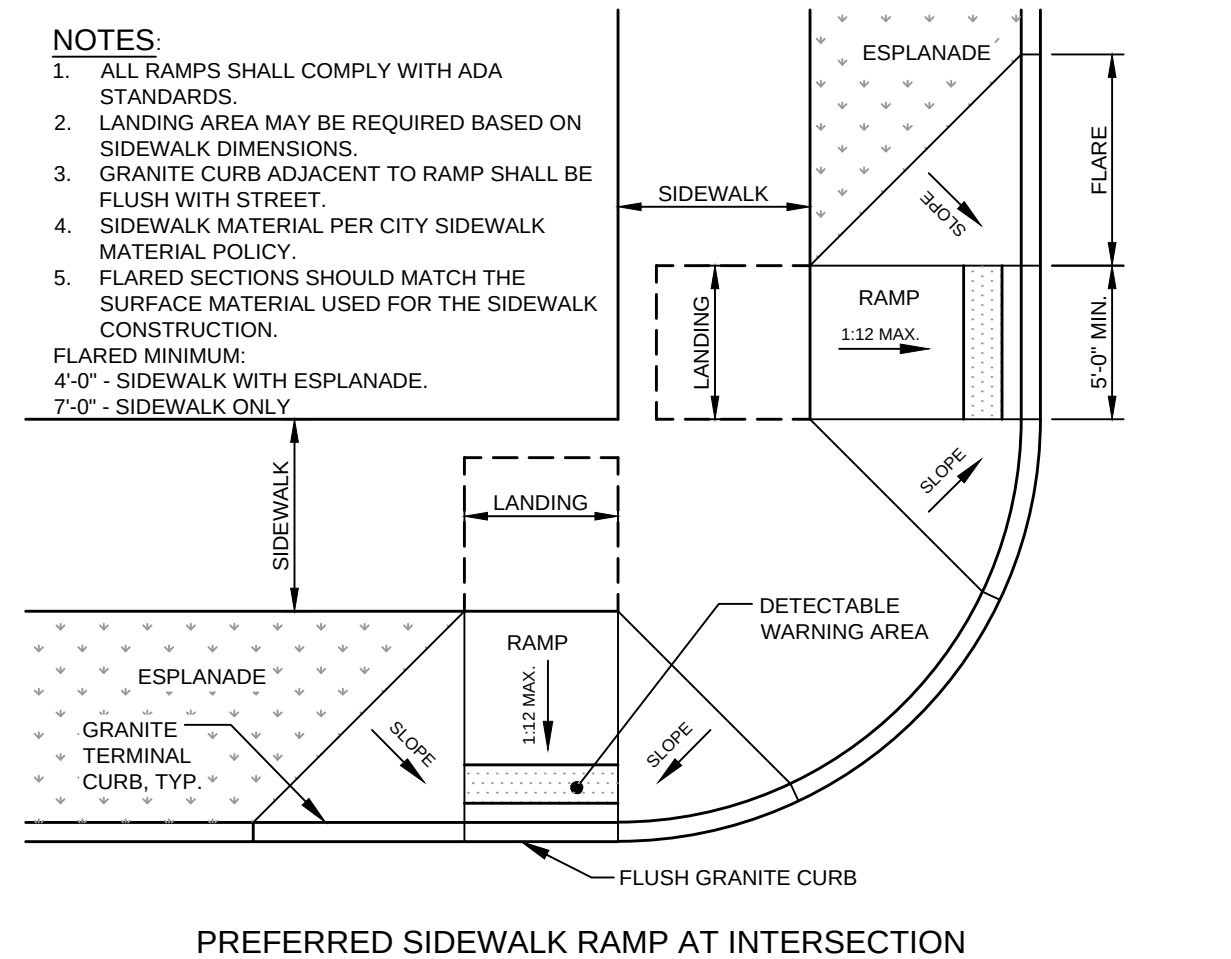
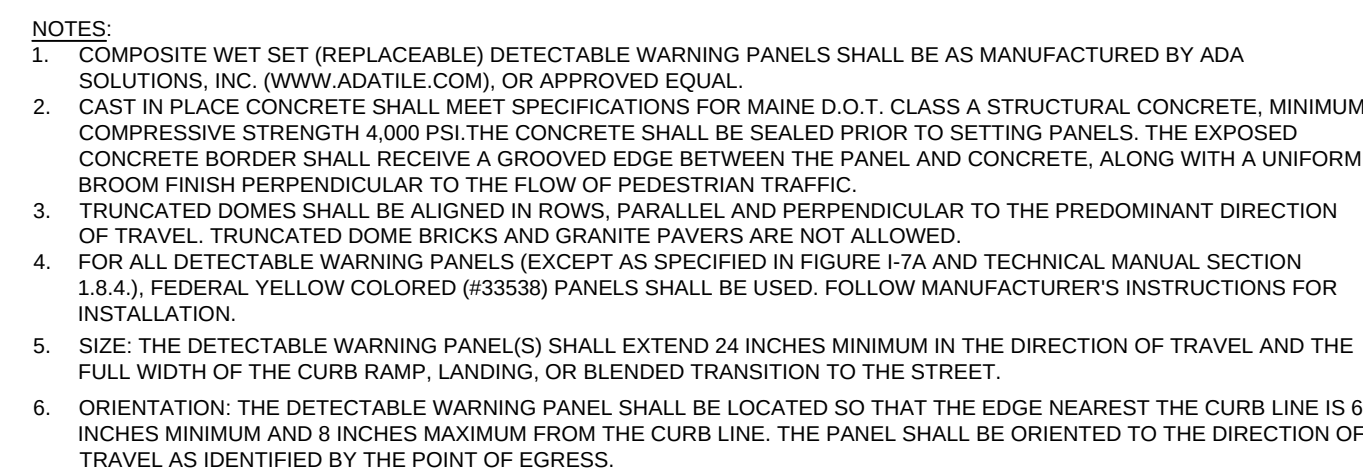
Title
PAVEMENT SECTIONS AND
SIDEWALK DETAILS

Project No.
195350337

Scale
AS NOTED

Sheet
PHASE 2
C-8.0





2"x4" PRESSURE TREATED FENCE FRAME

4"x4"x8' LG. PRESSURE TREATED POST (8 PLACES)

4"x4" WOOD POSTS BOLTED TO U-SHAPED, 7GA. 2" WIDE GALV. POST BASES WITH 2-5/8" GALV. BOLTS (#8B44 AS MANUFACTURED BY SIMPSON STRONG TIE COMPANY, INC., OR EQUAL)

VERTICAL GRANITE

#5'S T & B

SECTION A-A

6d GALV. NAILS

1/2" x 5" LG. GALV. BOLTS COUNTERSUNK INTO 2"x4" BLOCKING

2"x4" P.T. WOOD BLOCKING

2"x2" SCH. 40 GALV. GATE FRAME

REFER TO DETAIL 'A'

1" x 6" P.T. FENCE PICKETS ATTACHED TO WOOD BLOCKING WITH GALV. NAILS

18" LG. CANE BOLT (ONE PER SET OF GATES)

SECTION B-B

NOTE:

1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT (ADA).
2. ALL RAMPS WITHIN THE CITY OF PORTLAND RIGHT-OF-WAY (SEWALL STREET AND THOMPSON POINT CONNECTOR ROAD) SHALL HAVE DETECTABLE WARNINGS OF THE FULL DEPTH AND WIDTH OF THE RAMP PER SECTION 4.29 OF THE ADA. DETECTABLE WARNING STRIPS CONSIST OF RAISED TRUNCATED DOMES A DIAMETER OF 0.90 INCHES, A HEIGHT OF NOMINAL 0.20 INCHES AND A SPACING OF 2.35 INCHES CENTER TO CENTER. THESE SHALL CONTRAST VISUALLY WITH ADJACENT SURFACES.
3. A TACTILE WARNING STRIP IS REQUIRED WHERE RAMP ABUTS AREA USED BY MOTORIZED VEHICLES.
4. ALL TACTILE WARNING STRIPS SHALL BE SET PERPENDICULAR TO DIRECTION OF CROSS WALK.

Sheet **PHASE 2**
C-8.1

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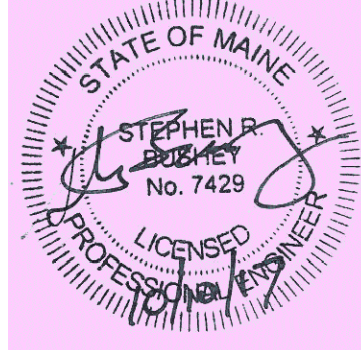
Notes

17.0.10	17.0.01	17.0.28	17.0.09	17.0.00
SRB	SRB	SRB	SRB	YAM/DD
By	Appr.			
CDD	PRE	PRE	PRE	
4	FINAL LEVEL 11 SHEET PLAN APPLICATION			
3	REVISED SUBMISSION - LETTER OF RESPONSE 1			
2	REVISED SUBMISSION TO CITY			
1	REVISED FOR CLIENT REVIEW			

Revision

File Name: 195350337 DETAILS	CDD	SRB	SRB	16.11.29
	DWN.	CHKD.	DSGN.	DATE

Permit-Seal

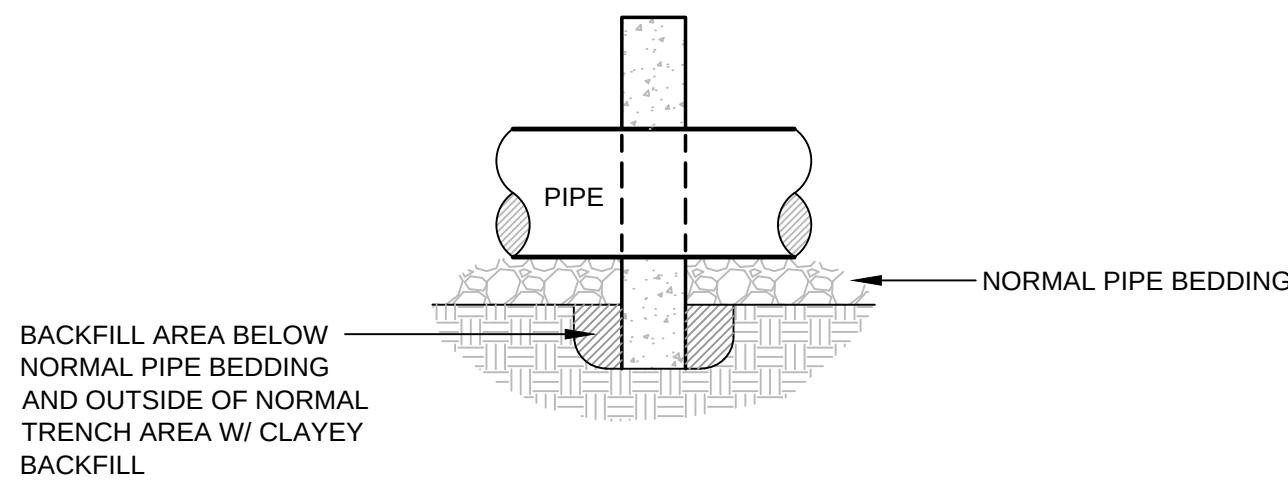
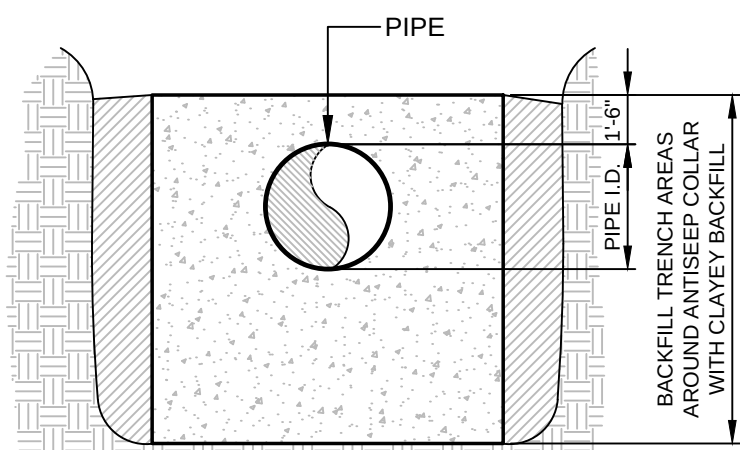
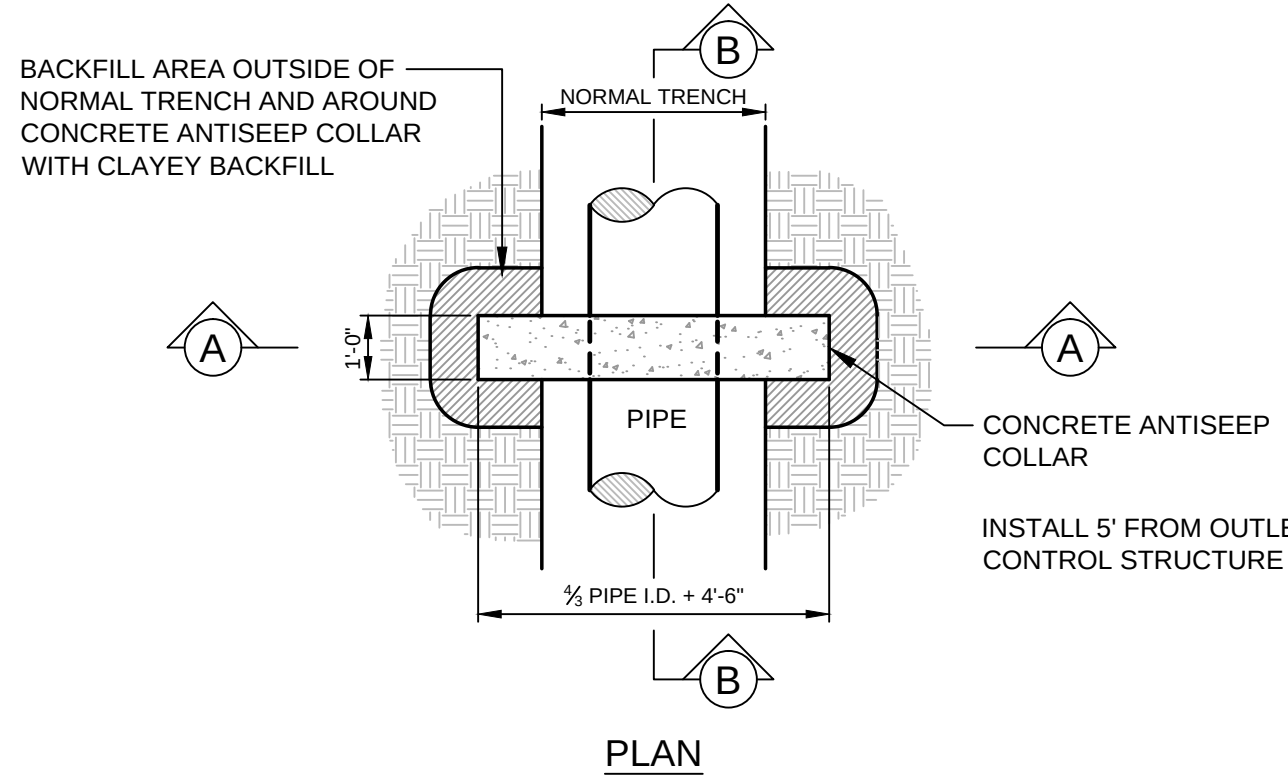


Client/Project
BRUNER/COTT

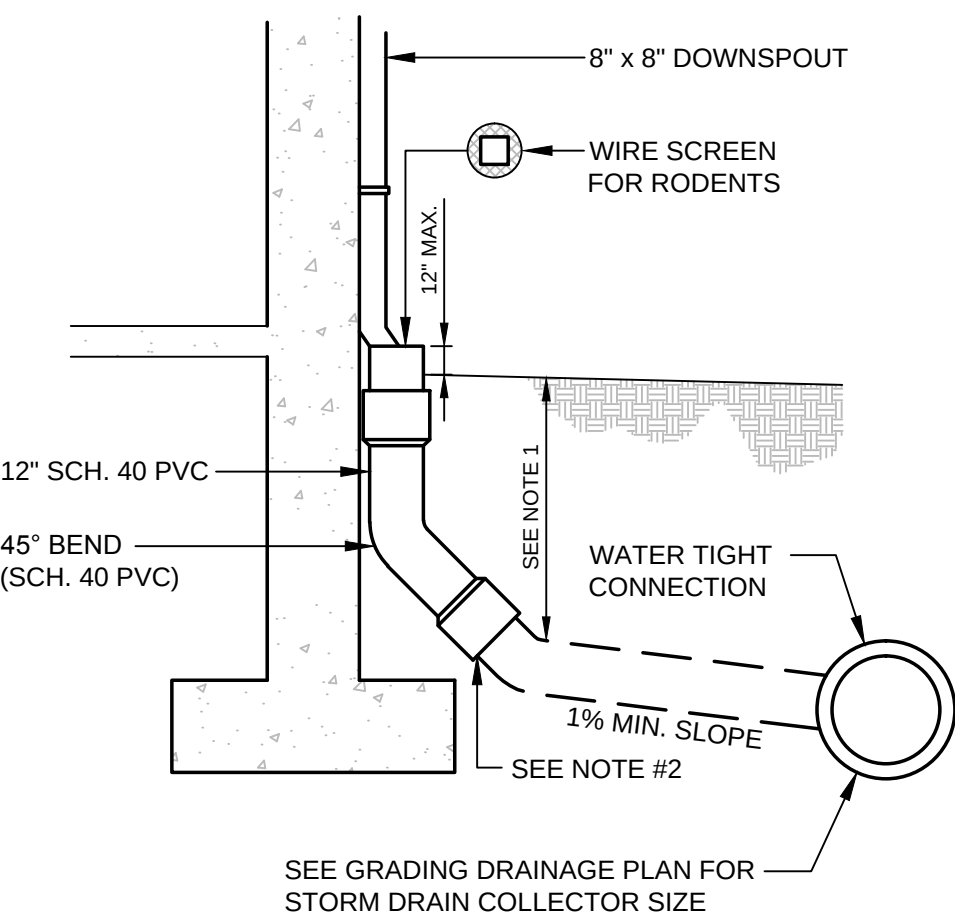
CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
STORM DRAIN DETAILS

Project No. 195350337	Scale AS NOTED
Sheet	PHASE 2 C-8.3



A ANTISEEP COLLAR
N.T.S.



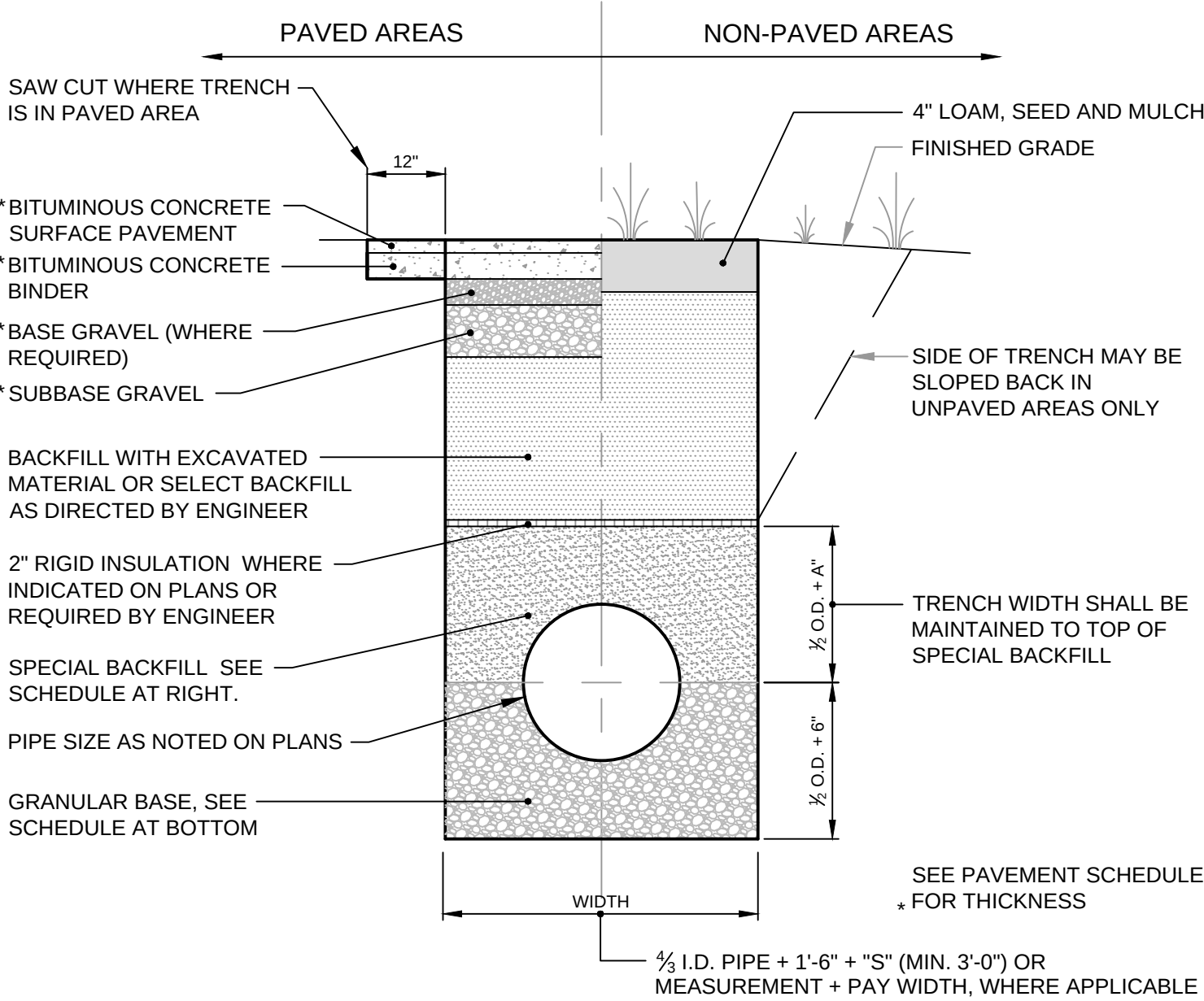
B ROOF DRAIN DETAIL
N.T.S.

NOTES:

1. FOR ALL DEPTHS OF COVER LESS THAN TWO (2) FEET, PIPE MUST BE SCHEDULE 40 PVC. FOR DEPTHS OF COVER GREATER THAN TWO (2) FEET, FLEXIBLE PIPE MAY BE USED. REFER TO SPECIFICATIONS FOR ALLOWABLE PIPE TYPES.
2. A WATERTIGHT CONNECTION SHALL BE MAINTAINED WITH ANY TRANSITION FROM SCHEDULE 40 PVC PIPE TO ANY OTHER PIPE TYPE.
3. THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITE WORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN.

NOTE:
ARCHITECT MAY ELECT TO USE INTERNAL ROOF DRAINS - REFER TO ARCHITECTURAL PLANS

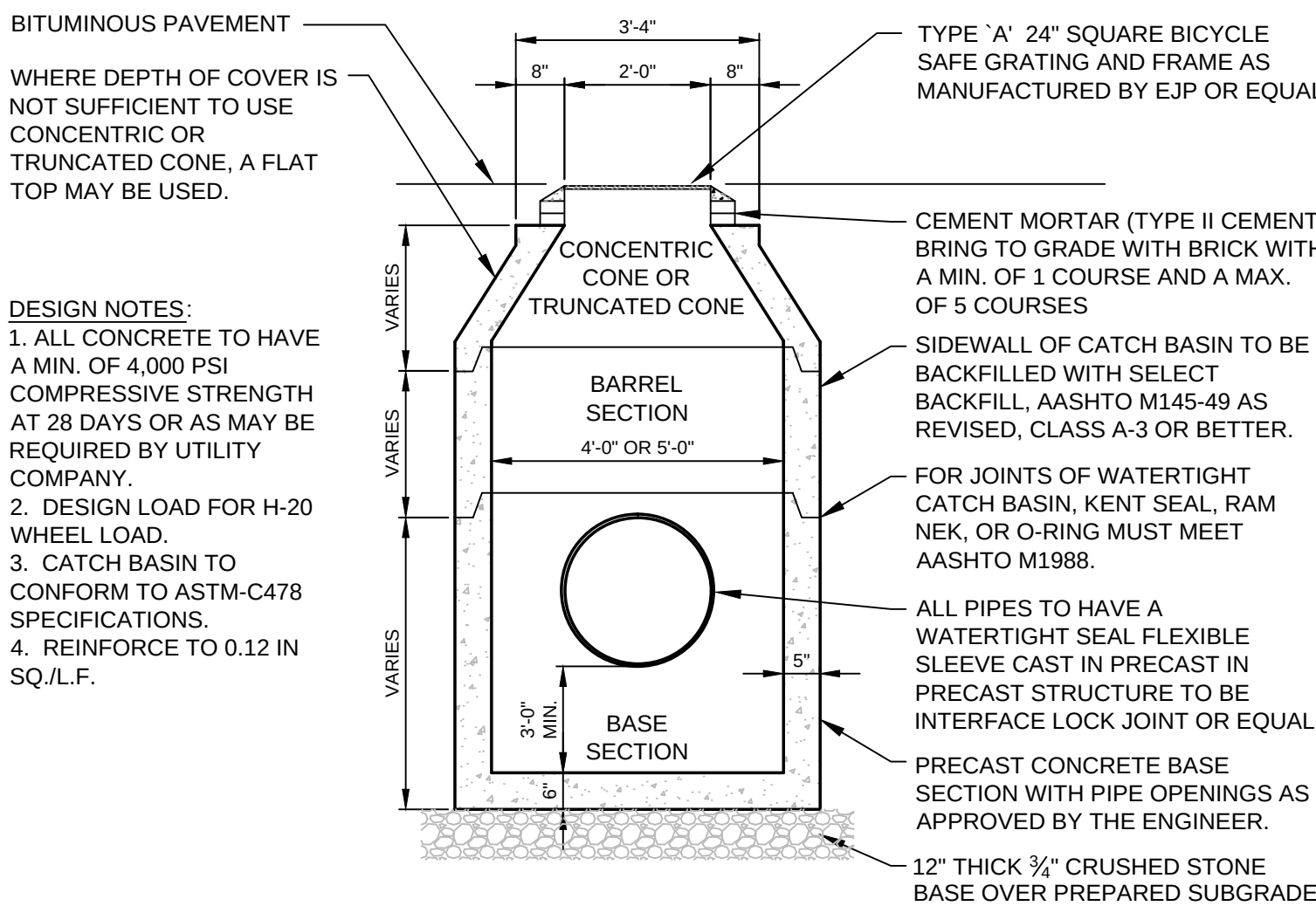
TRENCH SECTION BACKFILL SCHEDULE				
TYPE OF PIPE	GRANULAR BASE MATERIAL	SPECIAL BACKFILL	SPECIAL BACKFILL COVER "A" (IN)	SELECT BACKFILL
CONCRETE	GRANULAR AASHTO M145-49 A-3 OR BETTER	GRANULAR AASHTO M145-49 A-3 OR BETTER	12"	GRANULAR AASHTO M145-49 A-3 OR BETTER
PVC	3/4" CRUSHED STONE	GRANULAR AASHTO M145-49 A-3 OR BETTER	6"	GRANULAR AASHTO M145-49 A-3 OR BETTER
DUCTILE IRON	GRANULAR AASHTO M145-49 A-3 OR BETTER	GRANULAR AASHTO M145-49 A-3 OR BETTER	6"	GRANULAR AASHTO M145-49 A-3 OR BETTER
UNDER-DRAINS	3/4" CRUSHED STONE	3/4" CRUSHED STONE	6"	GRANULAR AASHTO M145-49 A-3 OR BETTER



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. WHERE APPLICABLE, SERVICES TO BE SIMILAR EXCEPT MINIMUM PAY WIDTH IS 2 1/2 FT.

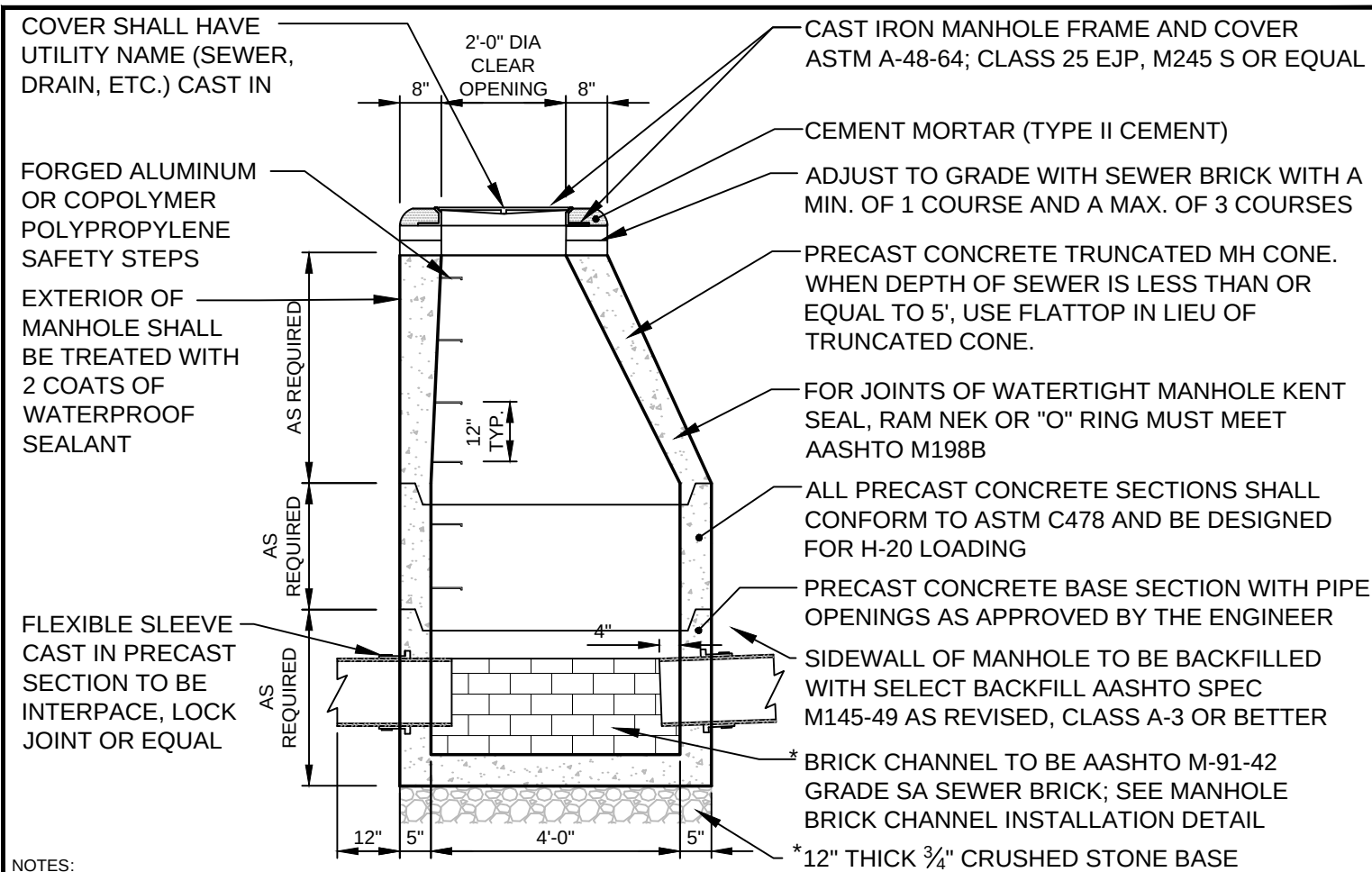
C TYPICAL UTILITY PIPE TRENCH SECTION DETAIL
N.T.S.



DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS OR AS MAY BE REQUIRED BY UTILITY COMPANY.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./L.F.

D 4'-0" OR 5'-0" PRECAST CATCH BASIN
N.T.S.



NOTES:

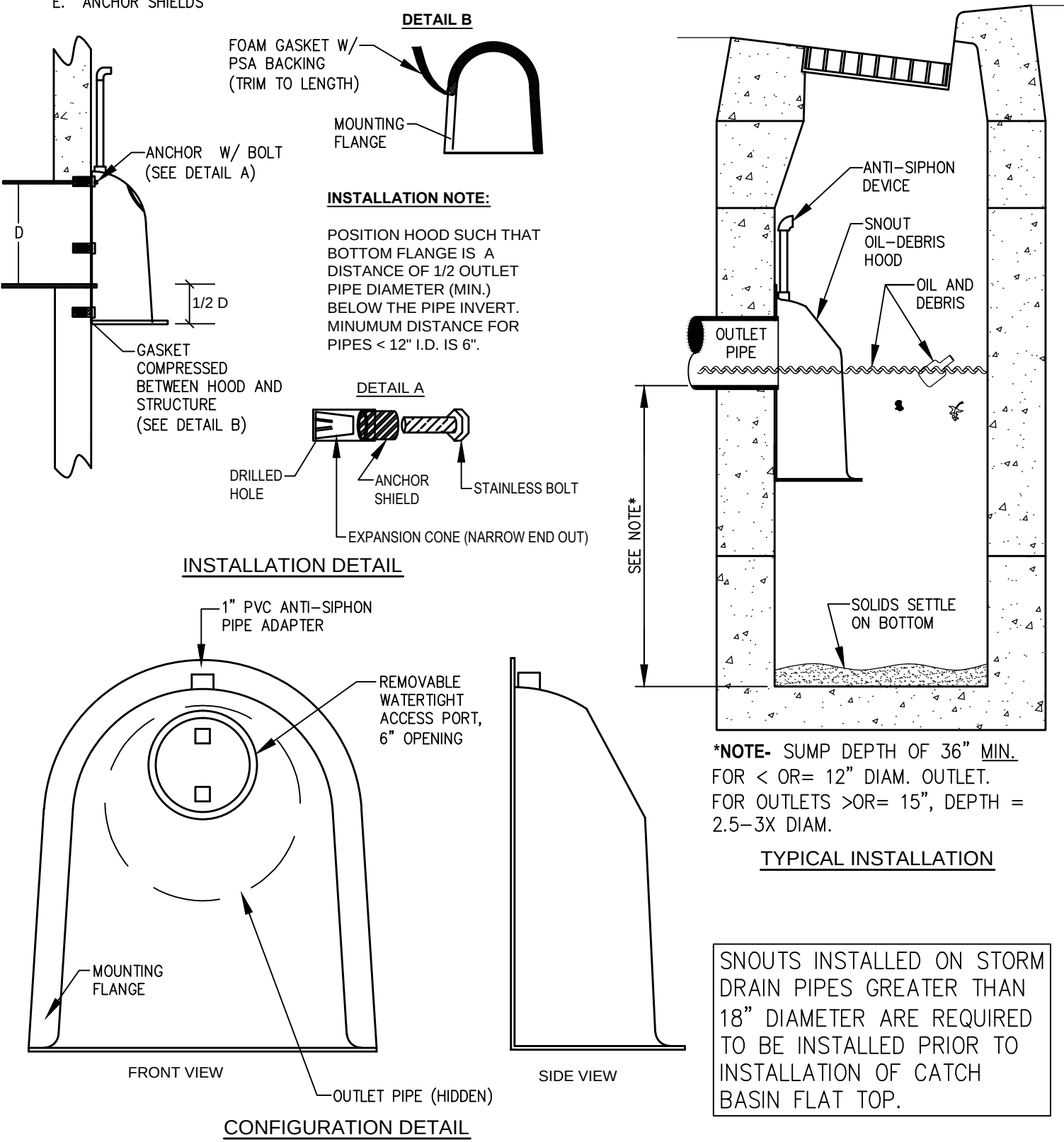
1. WHEN THIS MANHOLE DETAIL IS USED FOR SANITARY SEWER INSTALLATIONS MAKE THE FOLLOWING CHANGES:
1. THE HEIGHT OF THE TRUNCATED CONE SHALL BE 2'-0"
2. A POLYFROST BARRIER CONSISTING OF A MIN. OF 4 LAYERS, (EACH 6 MIL) SHALL BE PLACED AROUND THE STRUCTURE FROM THE SURFACE TO 5'-1" MIN. BELOW GRADE.
3. THE BACKFILL AROUND THE MANHOLE SHALL BE COMPACTED GRAVEL, A MIN. OF 24" OUTSIDE THE STRUCTURE.
4. THE CASTING SHALL BE GASKETED.

E 4'-0" PRECAST SANITARY SEWER AND STORM DRAIN MANHOLE
N.T.S.

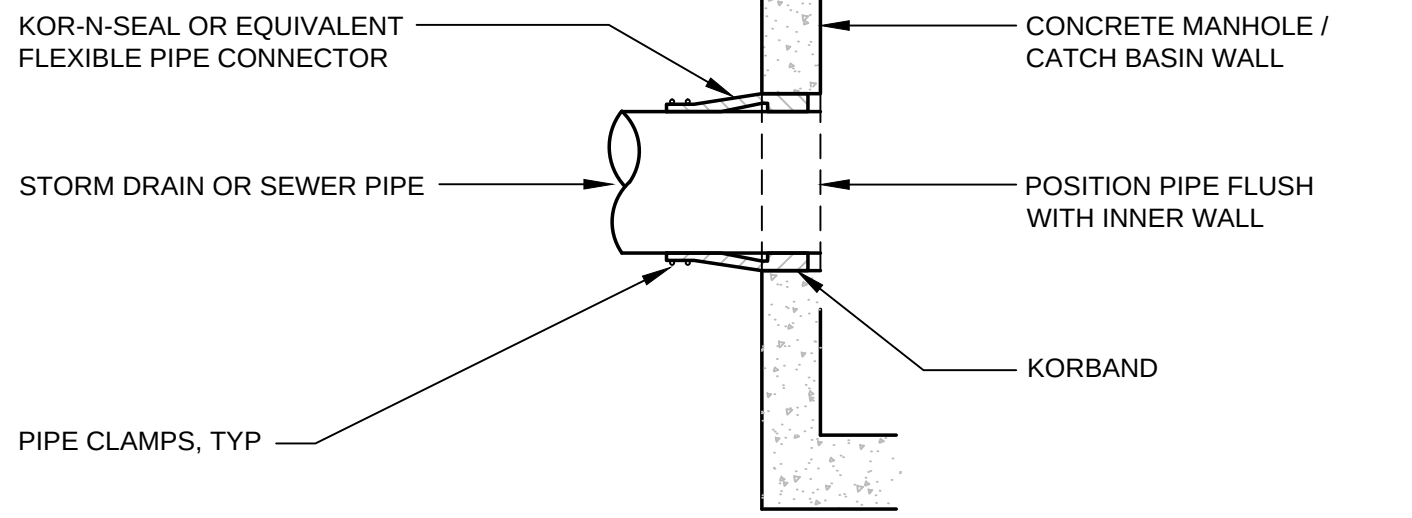
NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY BEST MANAGEMENT PRODUCTS, INC. TOLL FREE: (800) 504-8008 OR (888) 354-7585 WEB SITE: www.bmpinc.com OR PRE-APPROVED EQUAL.
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, & AN ANTI-SIPHON VENT AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE IN ACCORDANCE WITH THE FOLLOWING TABLE:

STRUCTURE OUTLET HOLE SIZE	SNOUT SIZE
11.9" O.D. OR LESS	12 F or R
12.0"-17.9" O.D.	18 F or R
18.0"-23.9" O.D.	24 F or R
24.0"-29.9" O.D.	30 F or R
30.0"-47.9" O.D.	48 F
48.0"-95.9" O.D.	96 F
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 24" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
9. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT, WHICH INCLUDES:
 - A. INSTALLATION INSTRUCTIONS
 - B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
 - C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
 - D. 3/8" STAINLESS STEEL BOLTS
 - E. ANCHOR SHIELDS



F SNOUT OIL-WATER-DEBRIS SEPARATOR DETAIL
N.T.S.

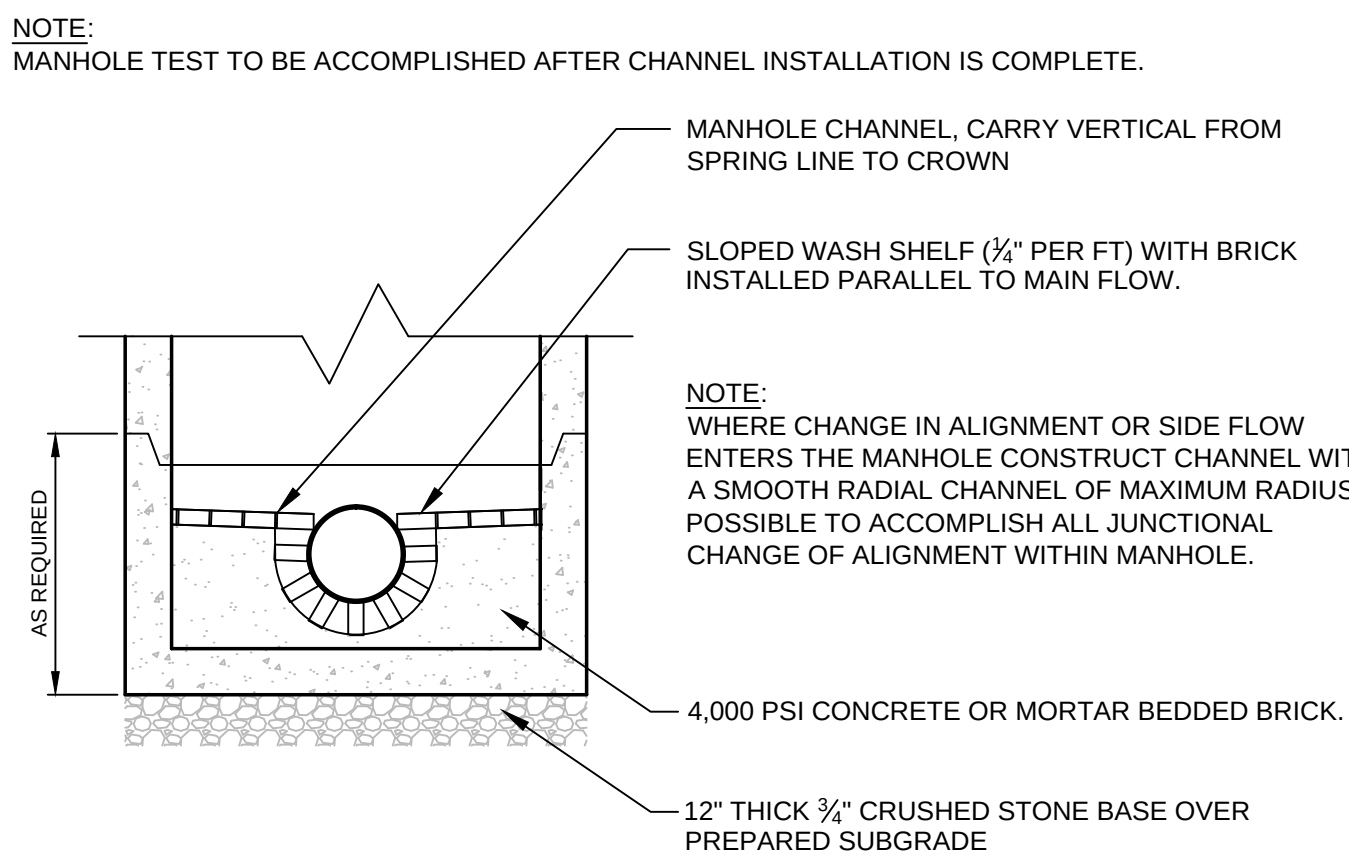


NOTES:

1. A FLEXIBLE PIPE TO MANHOLE CONNECTOR SHALL BE EMPLOYED IN THE CONNECTION OF ALL PIPE TO MANHOLE JUNCTIONS.
2. THE CONNECTOR SHALL BE KOR-N-SEAL AS MANUFACTURED BY NPC SYSTEMS, INC., OF MILFORD, NH, OR EQUAL.
3. THE CONNECTOR SHALL BE THE SOLE ELEMENT RELIED ON TO ASSURE A FLEXIBLE WATERTIGHT SEAL OF THE PIPE TO MANHOLE. NO ADHESIVES OR LUBRICANTS SHALL BE EMPLOYED IN THE INSTALLATION OF THE CONNECTOR TO THE MANHOLE. THE RUBBER FOR THE CONNECTOR SHALL COMPLY TO ASTM C443 AND ASTM C923 AND CONSIST OF EPDM AND ELASTOMERS KNOWN TO BE RESISTANT TO OZONE, WEATHER ELEMENTS, CHEMICALS, INCLUDING ACIDS, ALKALIS, ANIMAL AND VEGETABLE FATS, OILS AND PETROLEUM PRODUCTS FROM SPILLS.
4. ALL STAINLESS STEEL ELEMENTS OF THE CONNECTOR SHALL BE TOTALLY NON-MAGNETIC SERIES 304 STAINLESS, EXCLUDING THE WORM SCREW USED FOR TIGHTENING THE STEEL BAND AROUND THE PIPE WHICH SHALL BE SERIES 305 STAINLESS. THE WORM SCREW USED FOR TIGHTENING THE STEEL BAND SHALL BE TORQUED BY A BREAK-AWAY TORQUE WRENCH AVAILABLE FROM THE PRECAST MANHOLE SUPPLIER, AND SET AT 60/70 in/ft.
5. THE CONNECTOR SHALL BE INSTALLED IN THE MANHOLE WALL BY ACTIVATING THE EXPANDING MECHANISM IN STRICT ACCORDANCE WITH THE RECOMMENDATION OF THE CONNECTOR MANUFACTURER.
6. THE CONNECTOR SHALL BE OF A SIZE SPECIFICALLY DESIGNED FOR THE PIPE MATERIAL AND SIZE BEING UTILIZED ON THE PROJECT.
7. ALL CONNECTORS WHICH ARE CAPPED AWAITING PIPE INSTALLATION AT A LATER DATE MUST BE RESTRAINED.

**PIPE CONNECTION TO PRECAST CONCRETE
SANITARY SEWER AND STORM DRAINAGE STRUCTURE**

A
N.T.S.

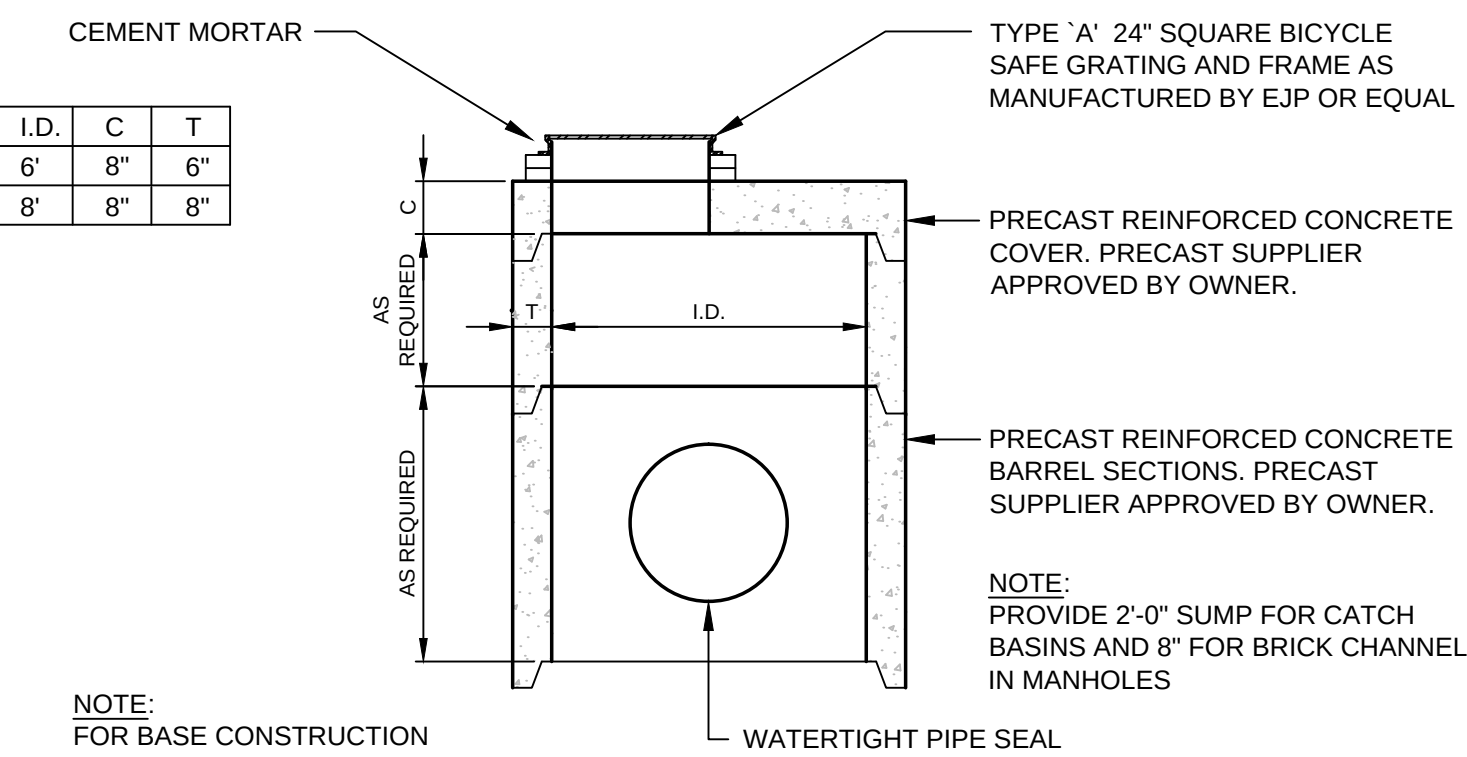


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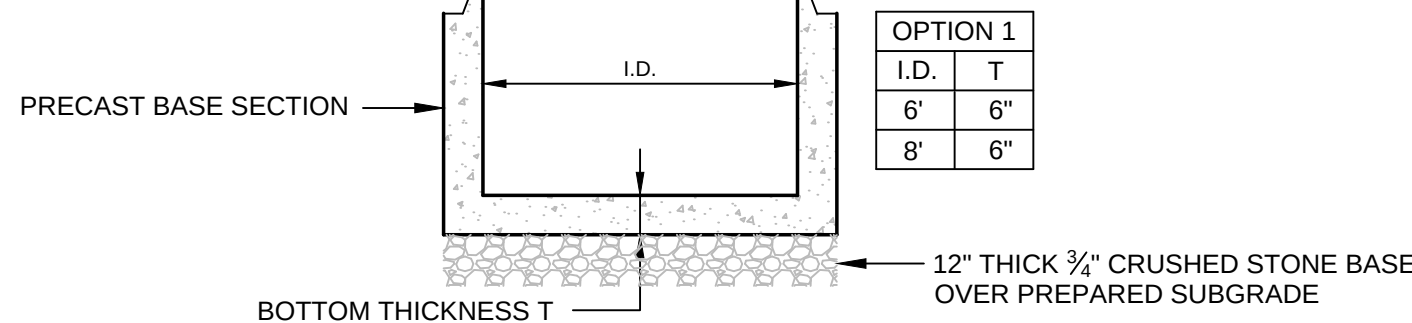
1. BRICK CHANNEL TO BE AASHTO M-91-42 GRADE AS SEWER BRICK OR, IF APPROVED BY ENGINEER, A PREFABRICATED FIBERLINER 2000 CHANNEL, AS MANUFACTURED BY GDT, INC. ESSEX, CT OR EQUAL MAY BE USED.
2. SLOPE CHANNEL DOWN FROM INLET TO OUTLET.
3. TOOL ALL JOINTS IN CHANNEL AND ON TABLE.

STORM AND SANITARY MANHOLE CHANNEL DETAIL

C
N.T.S.

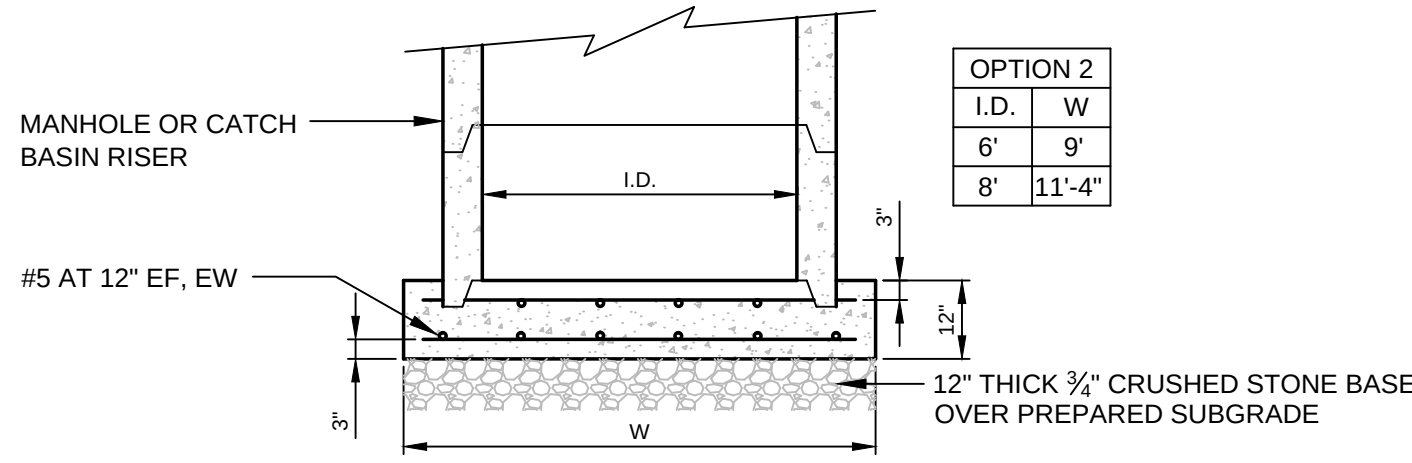


NOTE:
FOR BASE CONSTRUCTION
SEE BASE DETAIL



BASE DETAIL OPTION 1

NOTE:
THE CONTRACTOR SHALL USE BASE OPTION 2 UNLESS ANTIFLOATATION COMPUTATIONS ARE PROVIDED BY THE CONTRACTOR DEMONSTRATING OPTION 1 CAN BE USED AT THIS SITE. APPROVAL IS SUBJECT TO APPROVAL OF THE ENGINEER.



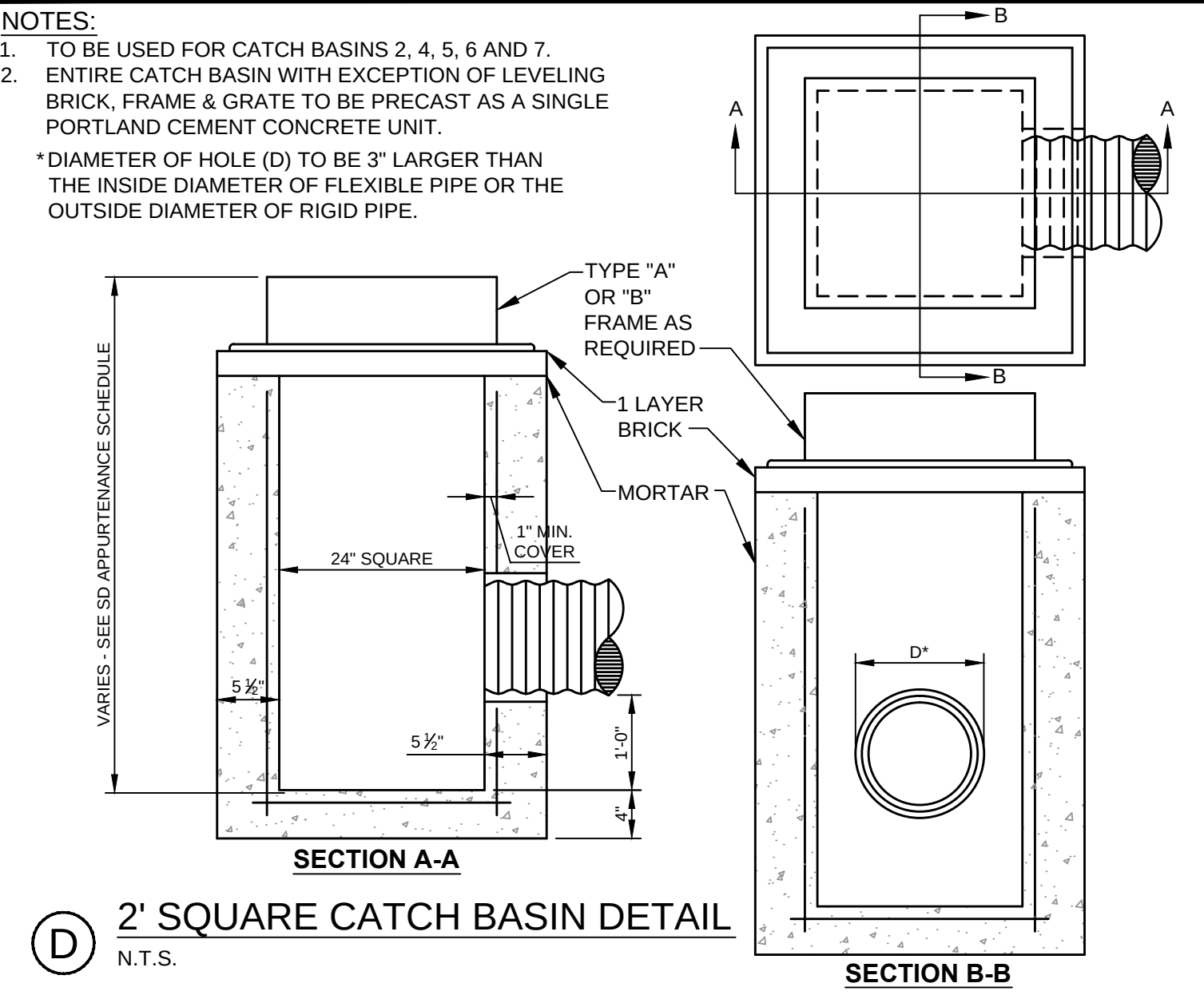
BASE DETAIL OPTION 2

DESIGN NOTES

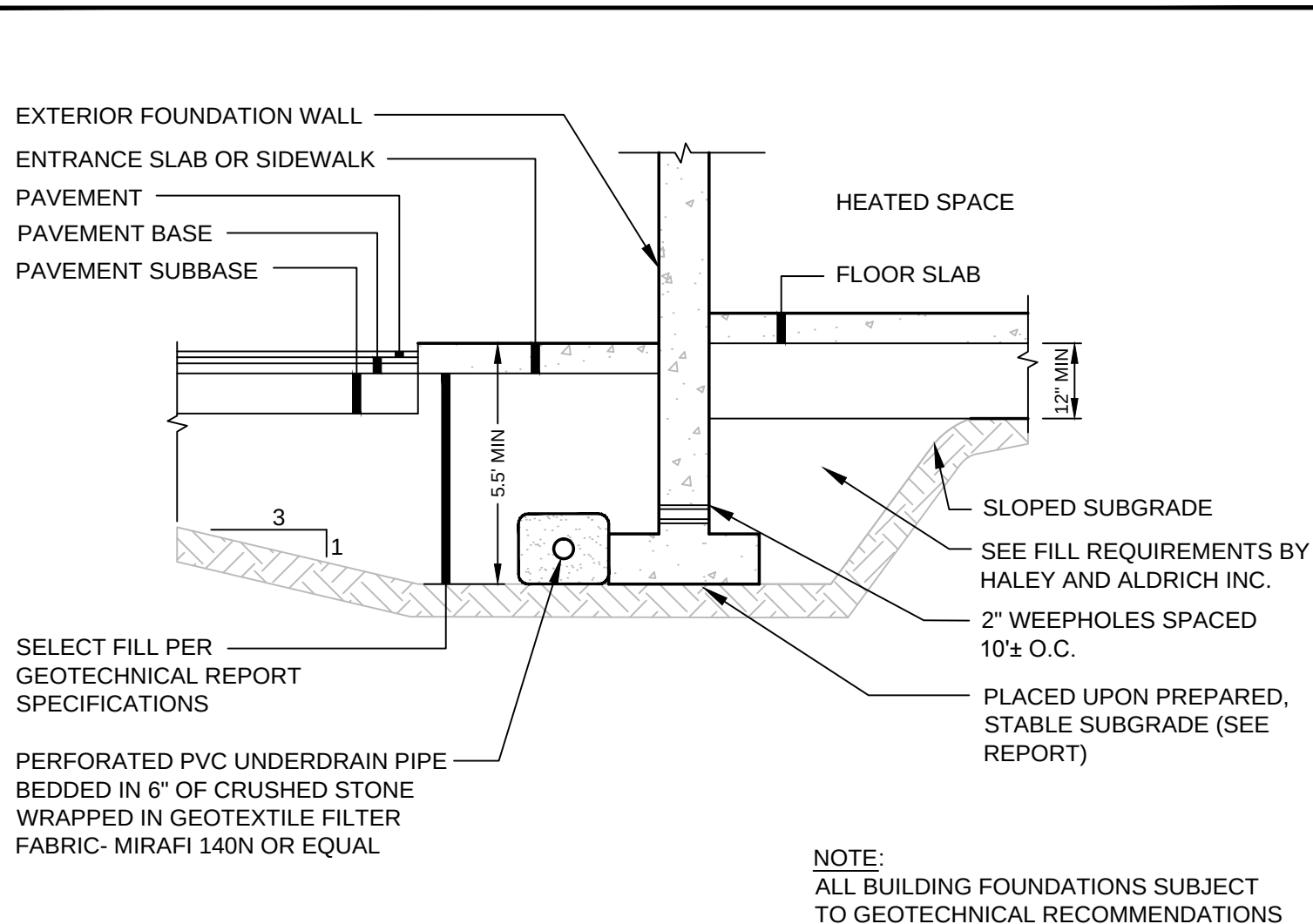
1. ALL CONCRETE TO HAVE A MIN. 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
2. DESIGN FOR H-20 WHEEL LOADING
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS
4. REINFORCE TO .12 IN. SQ./L.F.

**LARGE DIAMETER
STORM DRAIN MANHOLE & CATCH BASIN WITH FLAT TOP**

B
N.T.S.



D
N.T.S.

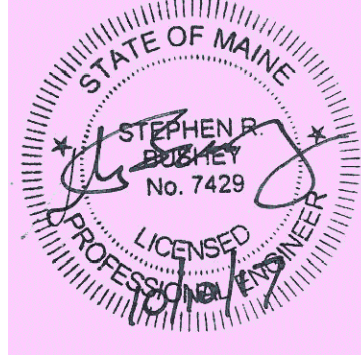


E
N.T.S.

4	FINAL LEVEL II SITE PLAN APPLICATION	17.03.10	YJAM/DD
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	17.08.01	
2	REVISED SUBMISSION TO CITY	17.07.28	
1	REVISED FOR CLIENT REVIEW	17.05.09	
	By	Appr.	

File Name:	195350337 DETAILS	CDD	SRB	SRB	16.11.29
		DWN.	CHKD.	DSGN.	DATE

Permit-Seal



Client/Project
BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
STORM DRAIN AND SANITARY
SEWER DETAILS

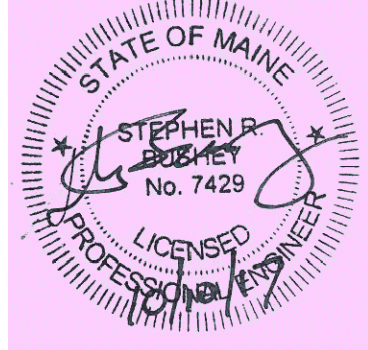
Project No.	Scale
195350337	AS NOTED

Sheet
**PHASE 2
C-8.4**

17.03.01	17.08.01	17.07.28	17.05.09	17.04.00
SRB	SRB	SRB	SRB	Appr.
CD	PRF	PRF	PRF	By
4	FINAL LEVEL II SITE PLAN APPLICATION			
3	REVISED SUBMISSION - LETTER OF RESPONSE 1			
2	REVISED SUBMISSION TO CITY			
1	REVISED FOR CLIENT REVIEW			
Revision				

File Name: 195350337 DETAILS	CD	SRB	16.11.29
	DWN.	CHKD.	DSGN.

Permit-Seal



Client/Project
BRUNER/COTT

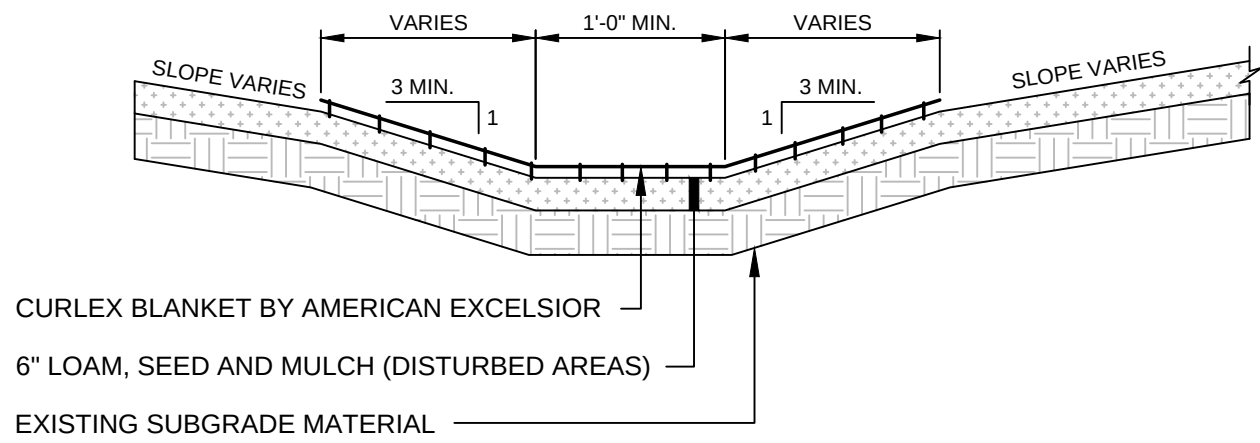
CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
EROSION AND SEDIMENT CONTROL
DETAILS

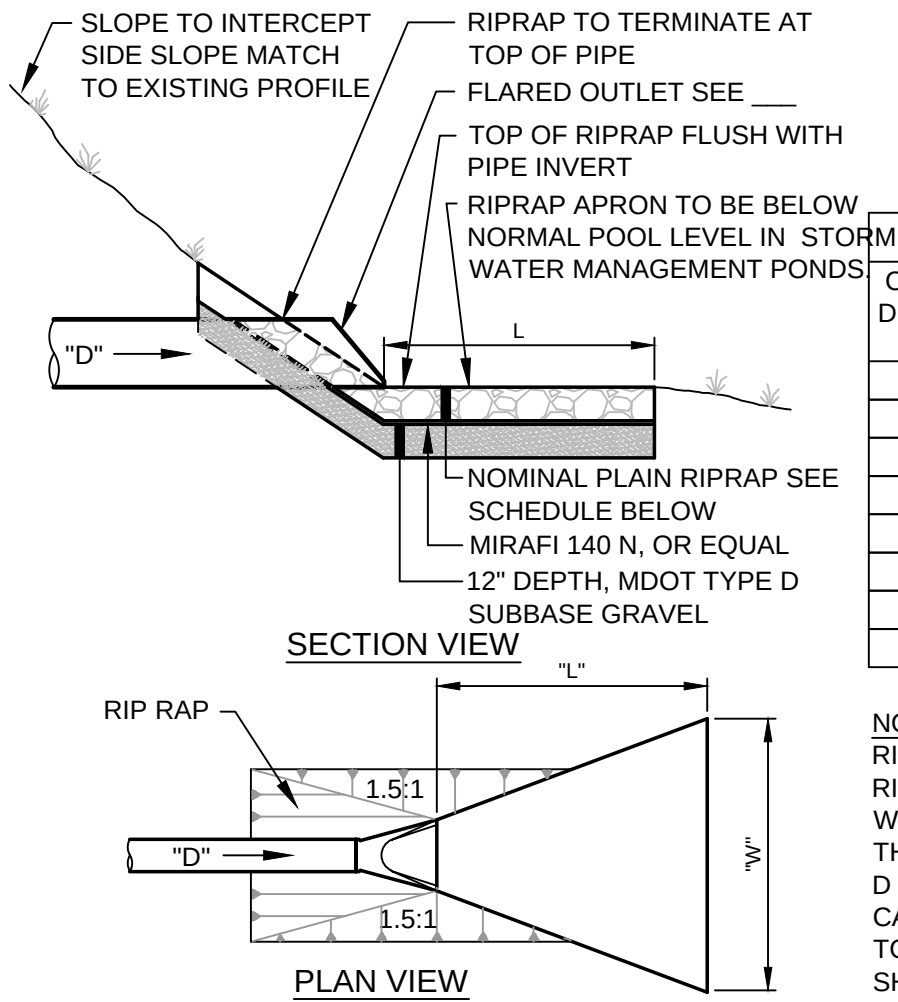
Project No. 195350337
Scale AS NOTED

Sheet
PHASE 2
C-8.5

NOTE:
REFER TO GRADING PLAN FOR DITCH WIDTH AND SIDE SLOPES.



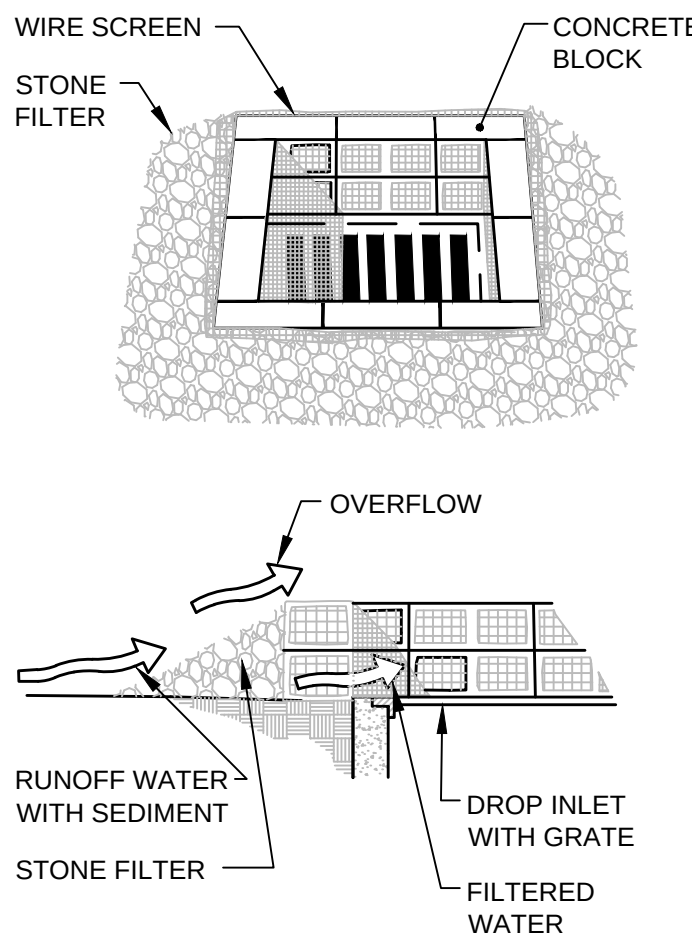
A VEGETATED DRAINAGE SWALE
N.T.S.



SCHEDULE				
CULVERT DIAMETER (D)	WIDTH (W)	LENGTH (L)	STONE D ₅₀	RIPRAP THICKNESS
12"	8'	10'	6"	14"
15"	8'	10'	6"	14"
18"	10'	14'	6"	14"
24"	12'	16'	9"	21"
30"	12'	16'	12"	27"
36"	20'	24'	12"	27"
42"	24'	26'	12"	27"
48"	28'	32'	12"	27"

NOTE:
RIPRAP GRADATION AND PLACEMENT - THE RIPRAP GRADATION SHALL BE A WELL-GRADED MIX FROM ABOUT 1.5 TIMES THE D SIZE TO ABOUT 25 PERCENT OF THE D SIZE. THE RIPRAP STONES SHALL BE CAREFULLY PLACED WORKING FROM THE TOE OF THE SLOPE UPWARD. THE STONES SHOULD BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12 INCHES ONTO THE GEOTEXTILE. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH UNIFORMLY SLOPED SURFACE.

B PIPE/CULVERT OUTLET APRON
N.T.S.



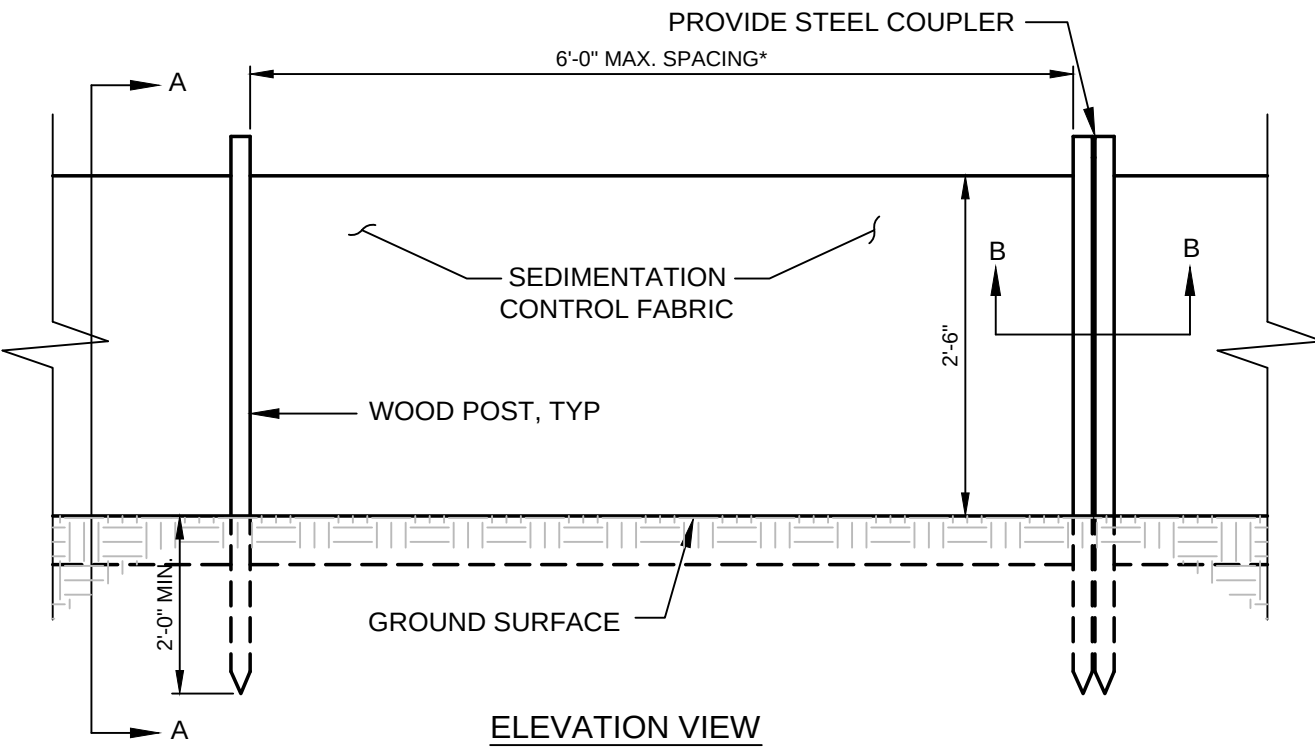
C STONE SEDIMENT BARRIER
N.T.S.

SPECIFIC APPLICATION

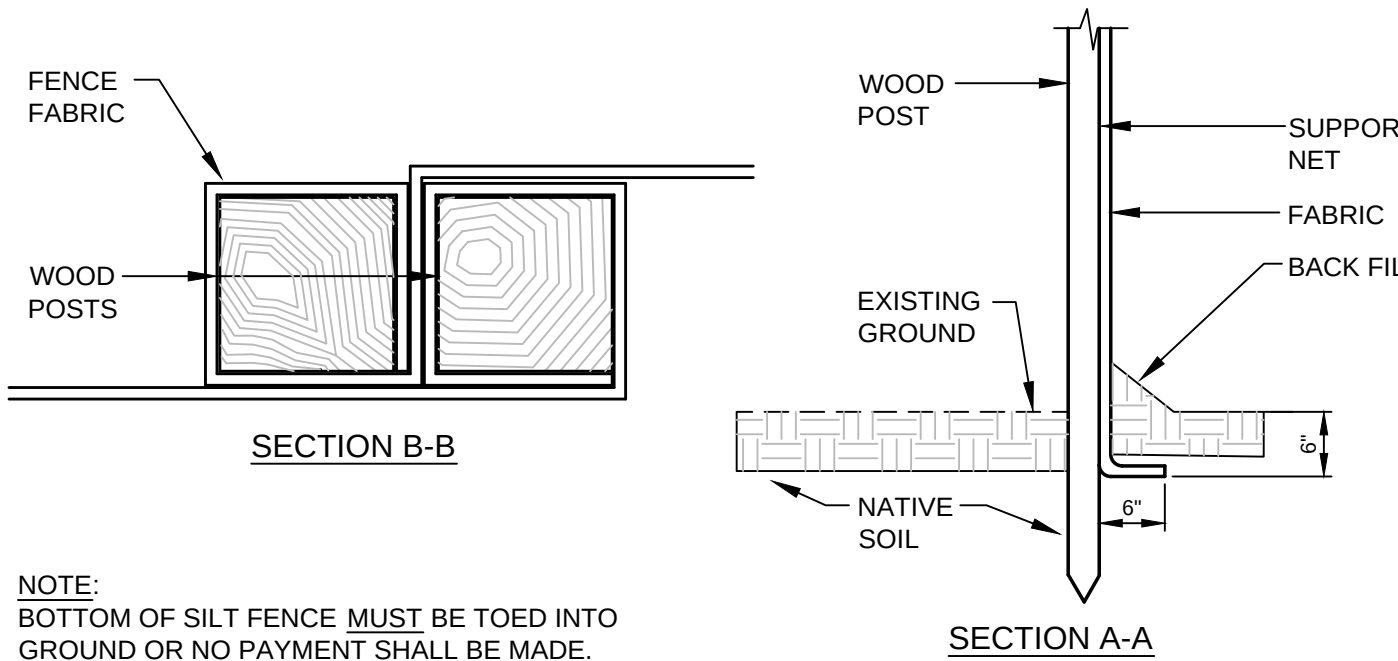
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

NOTES:

1. PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4", 8" AND 12" WIDE BLOCKS. THE BARRIER OF BLOCKS SHALL BE AT LEAST 12 INCHES HIGH, AND NO GREATER THAN 24" HIGH.
2. WIRE MESH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS SHALL BE USED.
3. STONE SHALL BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER, AS SHOWN IN DETAIL. THE STONE FILTER SHALL BE 3/4" CRUSHED STONE.
4. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND REPLACED.
5. PREMANUFACTURED SILT-SACKS™ MAY BE USED AS AN EQUIVALENT TO STONE SEDIMENT BARRIERS.

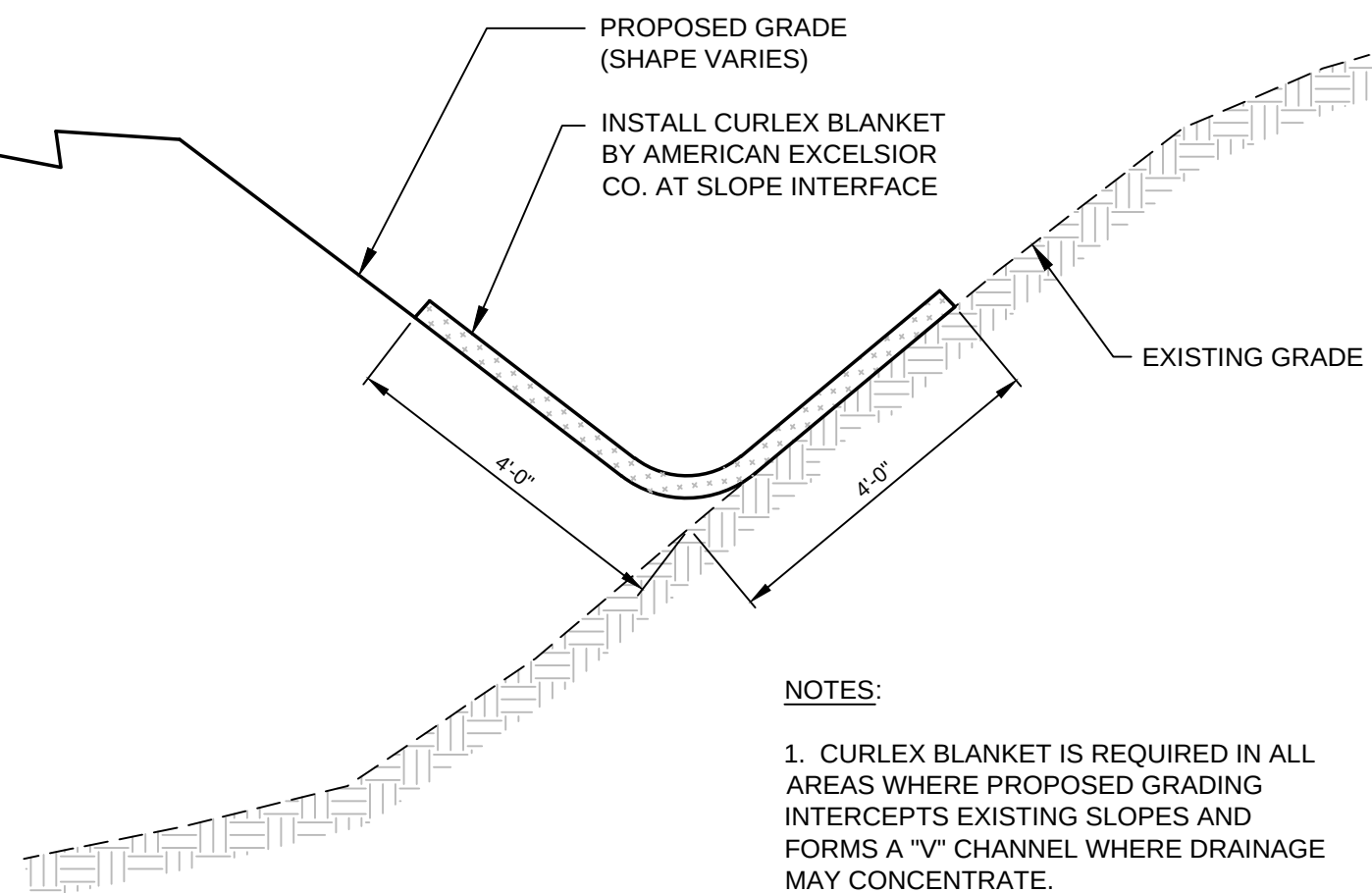


*NOTE:
THE SILT FENCE SHOULD HAVE A MAXIMUM STAKING DISTANCE OF 6' UNLESS THE FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT A MAXIMUM 14 GAUGE AND WITH A MINIMUM MESH SPACING OF 6".



NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND OR NO PAYMENT SHALL BE MADE. SEE EROSION / SEDIMENT CONTROL PLAN DRAWINGS FOR SILT FENCE INSTALLATION SCHEDULE.

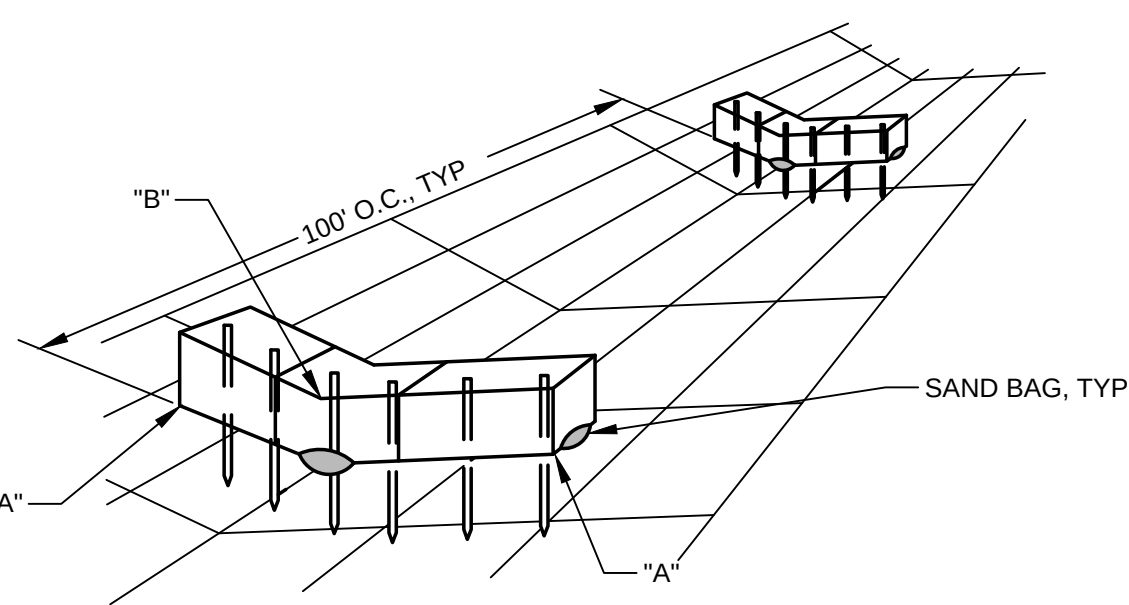
D SILTATION FENCE DETAIL
N.T.S.



NOTES:

1. CURLEX BLANKET IS REQUIRED IN ALL AREAS WHERE PROPOSED GRADING INTERCEPTS EXISTING SLOPES AND FORMS A "V" CHANNEL WHERE DRAINAGE MAY CONCENTRATE.
2. STAPLE SIZE AND DISTRIBUTION PER MANUFACTURERS SPECIFICATION.

E CURLEX BLANKET DETAIL
N.T.S.



NOTE:

EROSION CHECKDAM TO BE OF BALES OF HAY SECURED TO THE GROUND WITH 2'-3' LONG GRADE STAKES FOR EACH BALE. SAND BAG AS REQUIRED. PLACE SUFFICIENT BALES TO ESTABLISH ELEVATIONS AT "A" AT LEAST 6" ABOVE OVERFLOW AT "B".

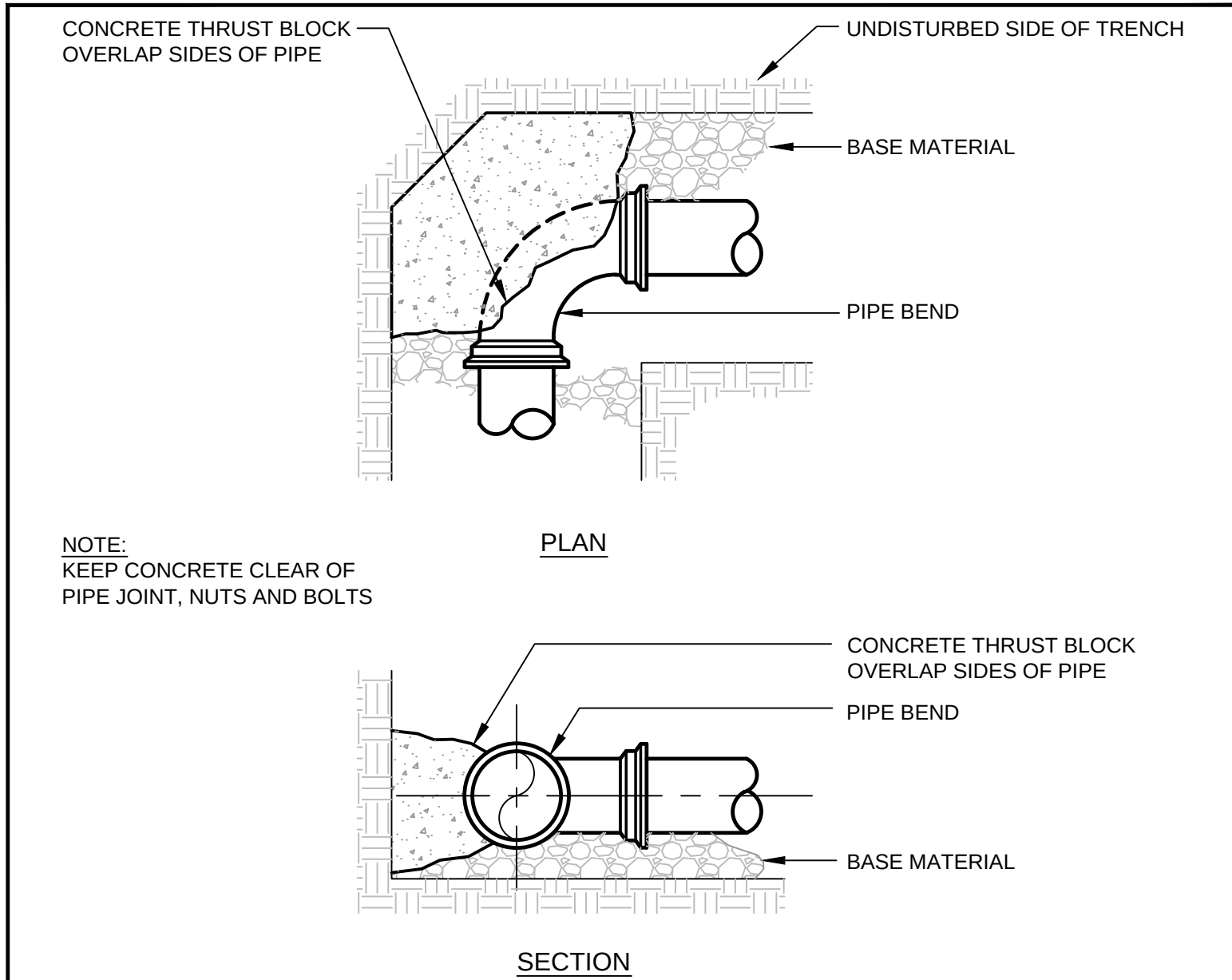
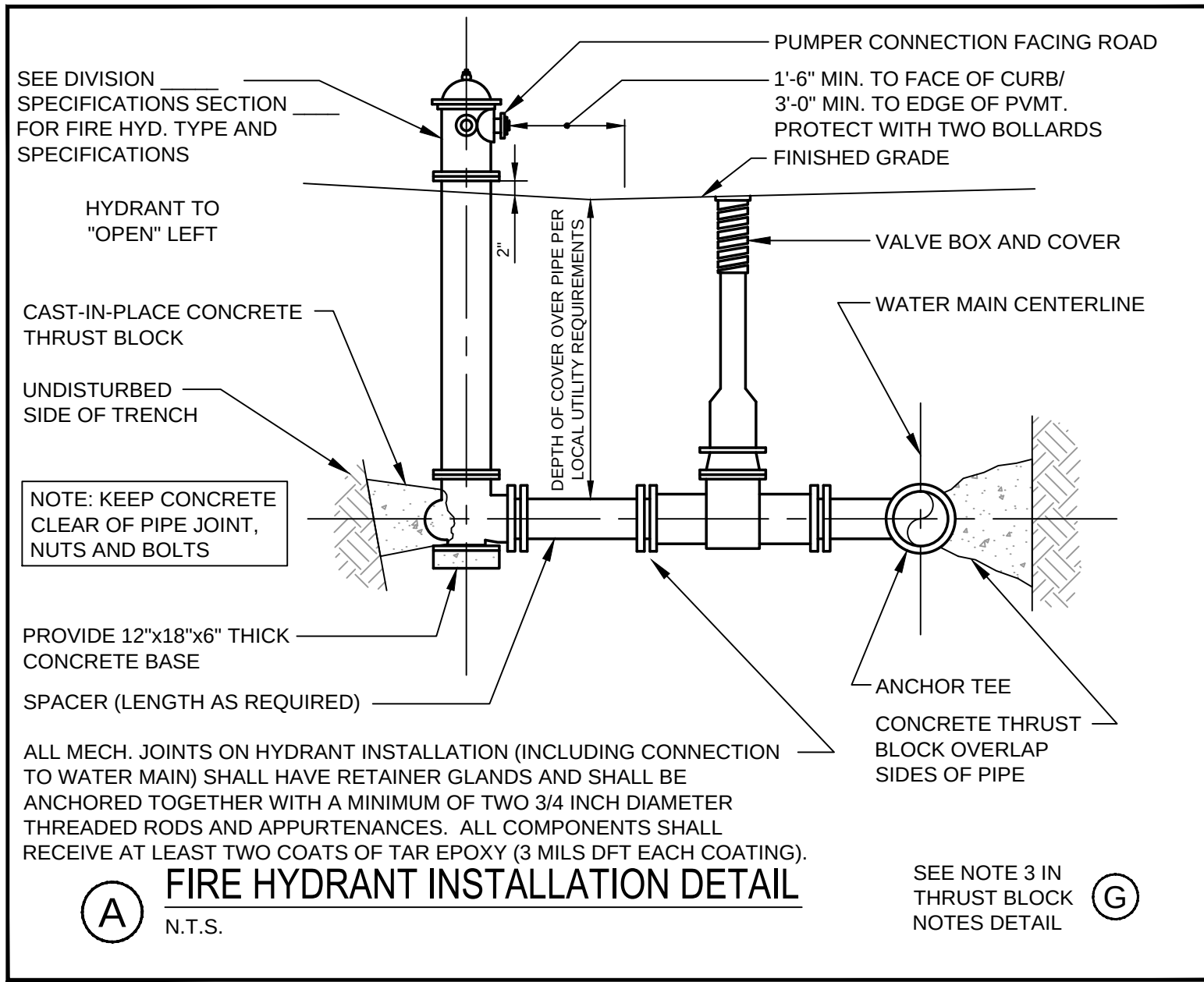
H HAYBALE CHECKDAM DETAIL
N.T.S.

Project No.	Scale
195350337	AS NOTED
Sheet	PHASE 2



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PRELIMINARY - NOT FOR CONSTRUCTION

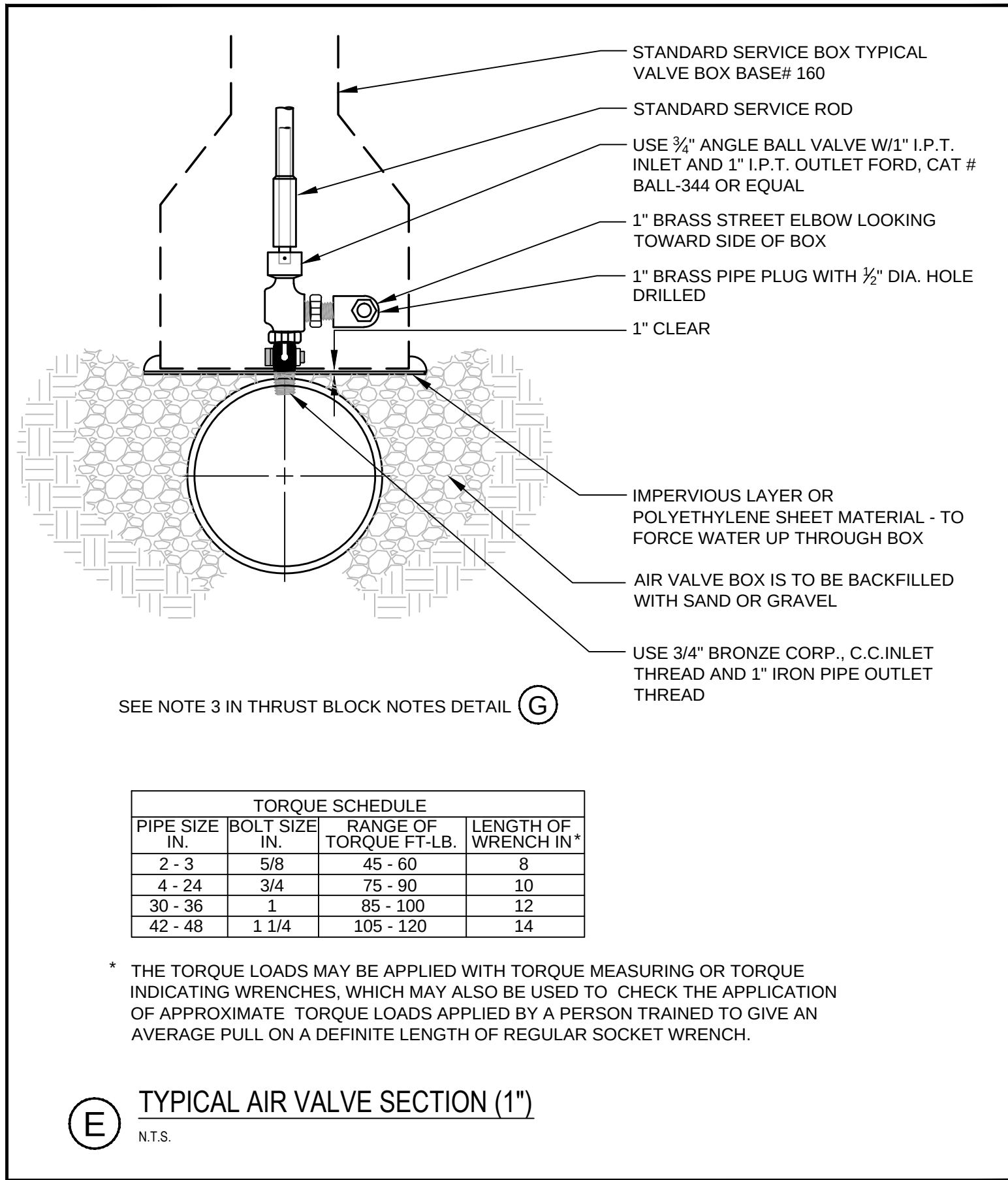
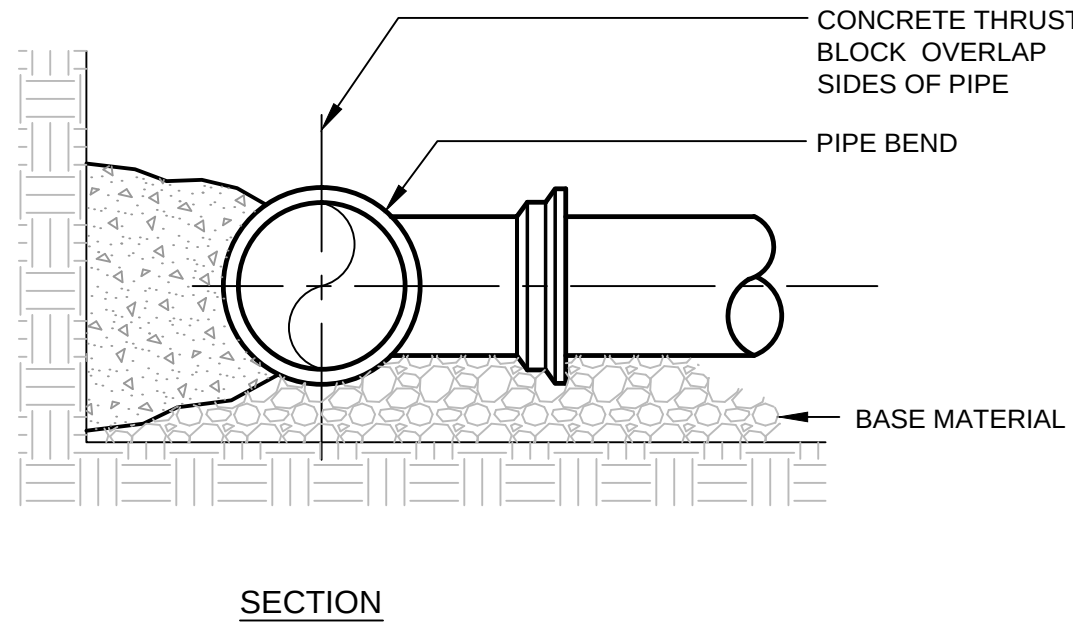
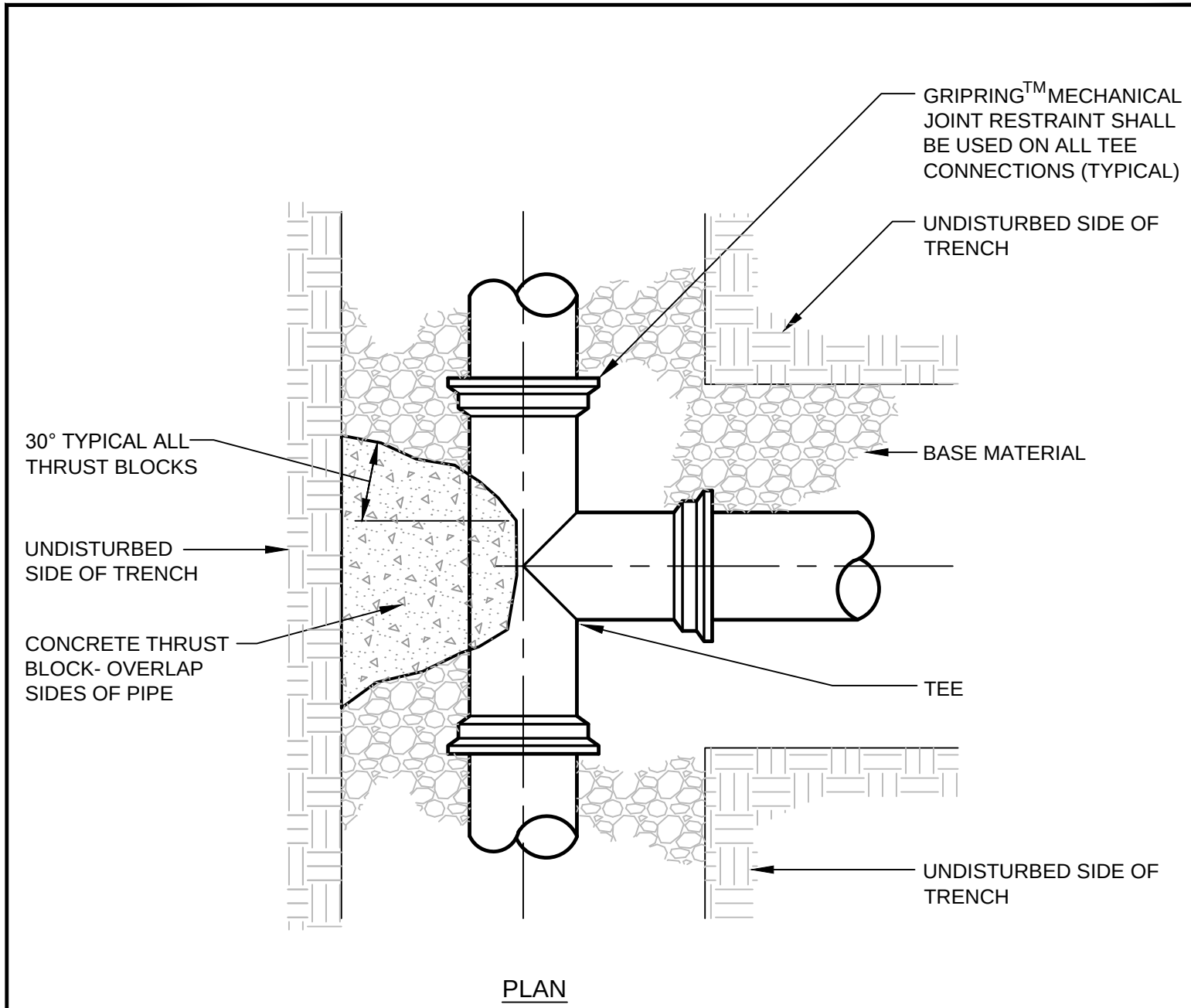
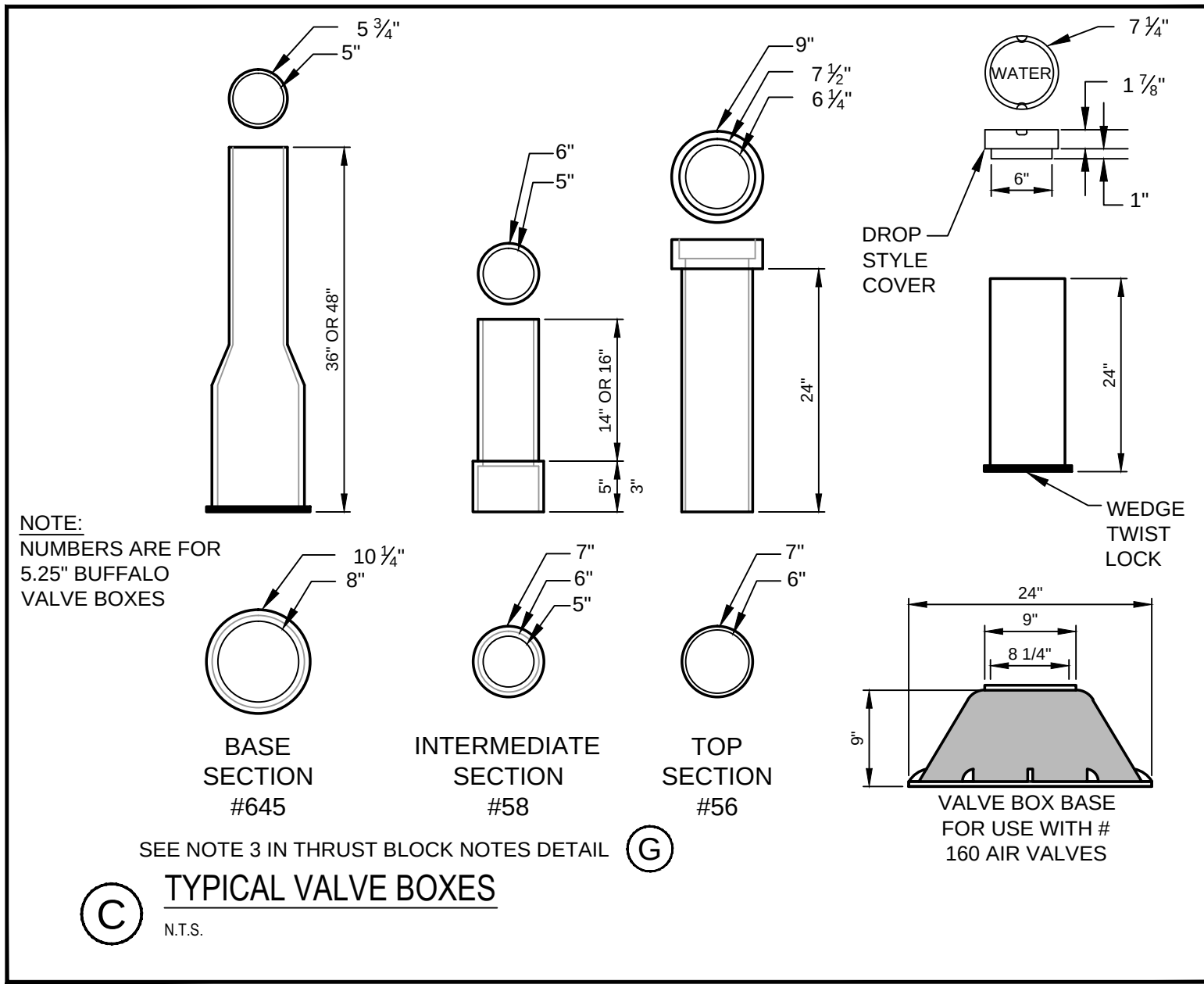


THRUST/RETAINER GLAND SCHEDULE		
¼ BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK WITH GRIPRING™ MECHANICAL JOINT RESTRAINT
⅓ BEND	(45°)	THRUST BLOCK w/ GRIPRING™
⅕ BEND	(22 ½°)	THRUST BLOCK w/ GRIPRING™
⅙ BEND	(11 ¼°)	THRUST BLOCK w/ GRIPRING™

THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE ON-SITE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

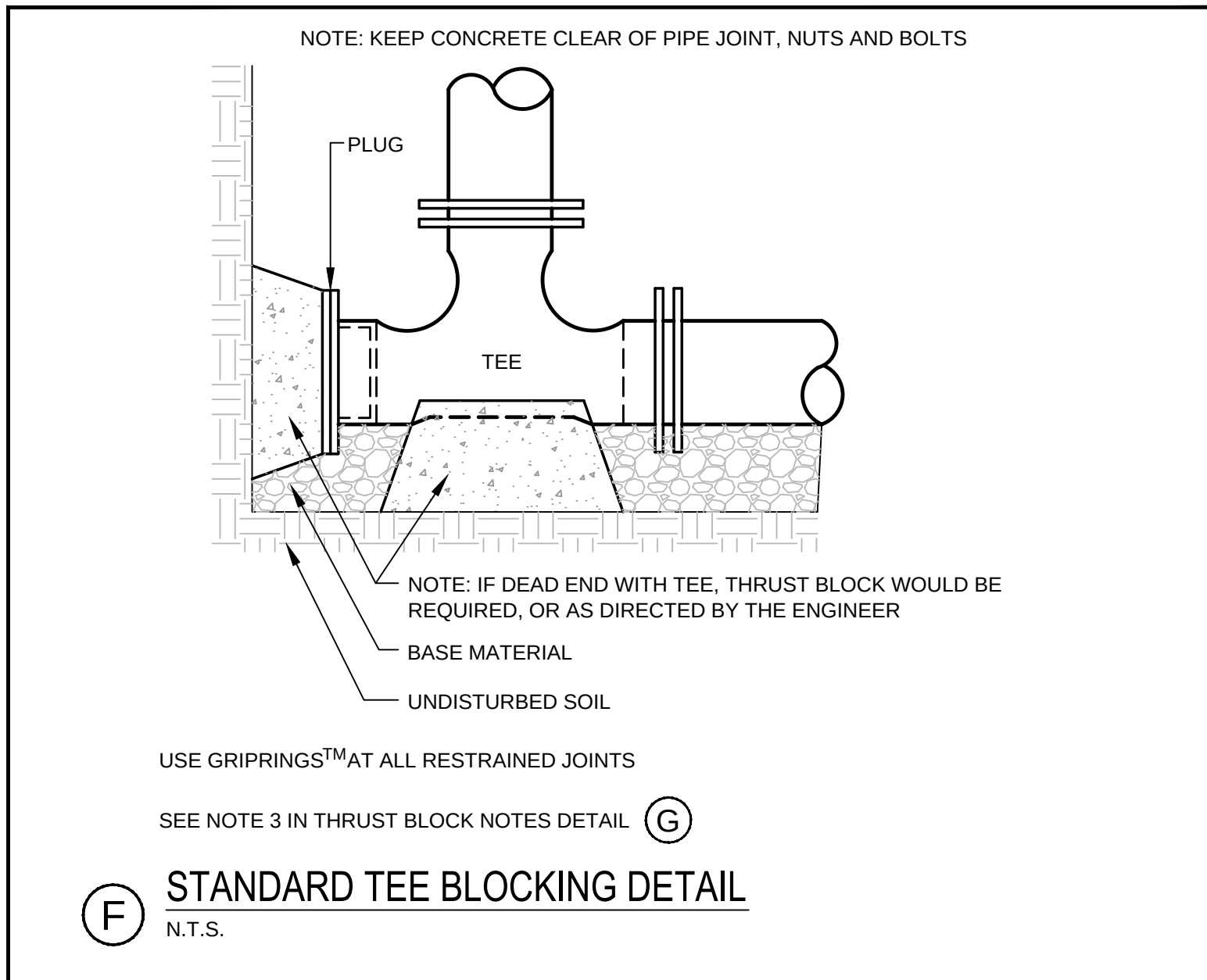
NOTES:

- THE PORTLAND WATER DISTRICT MAY HAVE INSPECTION FEES AND REQUIRE OBSERVATION OF ALL PIPING INSTALLATION BEFORE BURIAL. REFER TO SPECIFICATIONS.
- FOR WATER MAIN LAYOUT SEE DRAWINGS C-4.0
- FOR WATER MAIN PROFILE SEE CONSTRUCTION DRAWINGS C-11.0
- FOR WATER MAIN TRENCH SEE DETAILS ON THIS SHEET
- REFER TO PORTLAND WATER DISTRICT SPECIFICATIONS FOR TESTING AND CHLORINATION REQUIREMENTS.
- ALL HYDRANTS AND VALVES TO BE EPOXY COATED, NUTS AND BOLTS TO BE STAINLESS STEEL.
- SERVICE RODS FOR DOMESTIC SERVICE OR AIR VALVES TO BE STAINLESS STEEL.



TORQUE SCHEDULE			
PIPE SIZE IN.	BOLT SIZE IN.	RANGE OF TORQUE FT-LB.	LENGTH OF WRENCH IN*
2 - 3	5/8	45 - 60	8
4 - 24	3/4	75 - 90	10
30 - 36	1	85 - 100	12
42 - 48	1 1/4	105 - 120	14

* THE TORQUE LOADS MAY BE APPLIED WITH TORQUE MEASURING OR TORQUE INDICATING WRENCHES, WHICH MAY ALSO BE USED TO CHECK THE APPLICATION OF APPROXIMATE TORQUE LOADS APPLIED BY A PERSON TRAINED TO GIVE AN AVERAGE PULL ON A DEFINITE LENGTH OF REGULAR SOCKET WRENCH.



- INSTALL POLY BARRIER BETWEEN PIPE AND ALL THRUST BLOCKS.
- ANY MODIFICATION TO THRUST BLOCK SIZING OR PIPE RESTRAINT REVISIONS SHALL BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD.
- ANY WORK RELATING TO WATER PIPING OR DETAILS SHALL BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS.
- ALL RESTRAINED JOINTS MUST HAVE GRIPRING™.

BEARING SURFACE REQUIRED IN SQUARE FEET

PIPE SIZE	1/32 BEND	1/16 BEND	1/8 BEND	1/4 BEND	TEES/CAPS
6"/8"	5.0	5.0	5.0	6.5	5.0
12"	11.5	11.5	11.5	20.0	22.0



Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
Tel. 207.883.3355
www.stantec.com

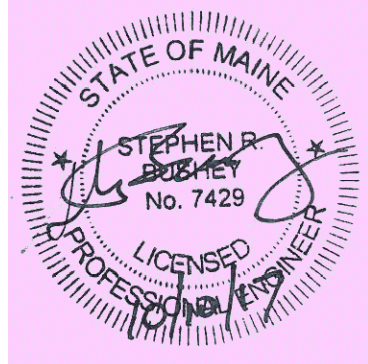
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Notes

File Name:	195350337 DETAILS	CDD DWN.	SRB CHKD.	SRB DSGN.	16.11.29
Permit-Seal					DATE



Client/Project
BRUNER/COTT

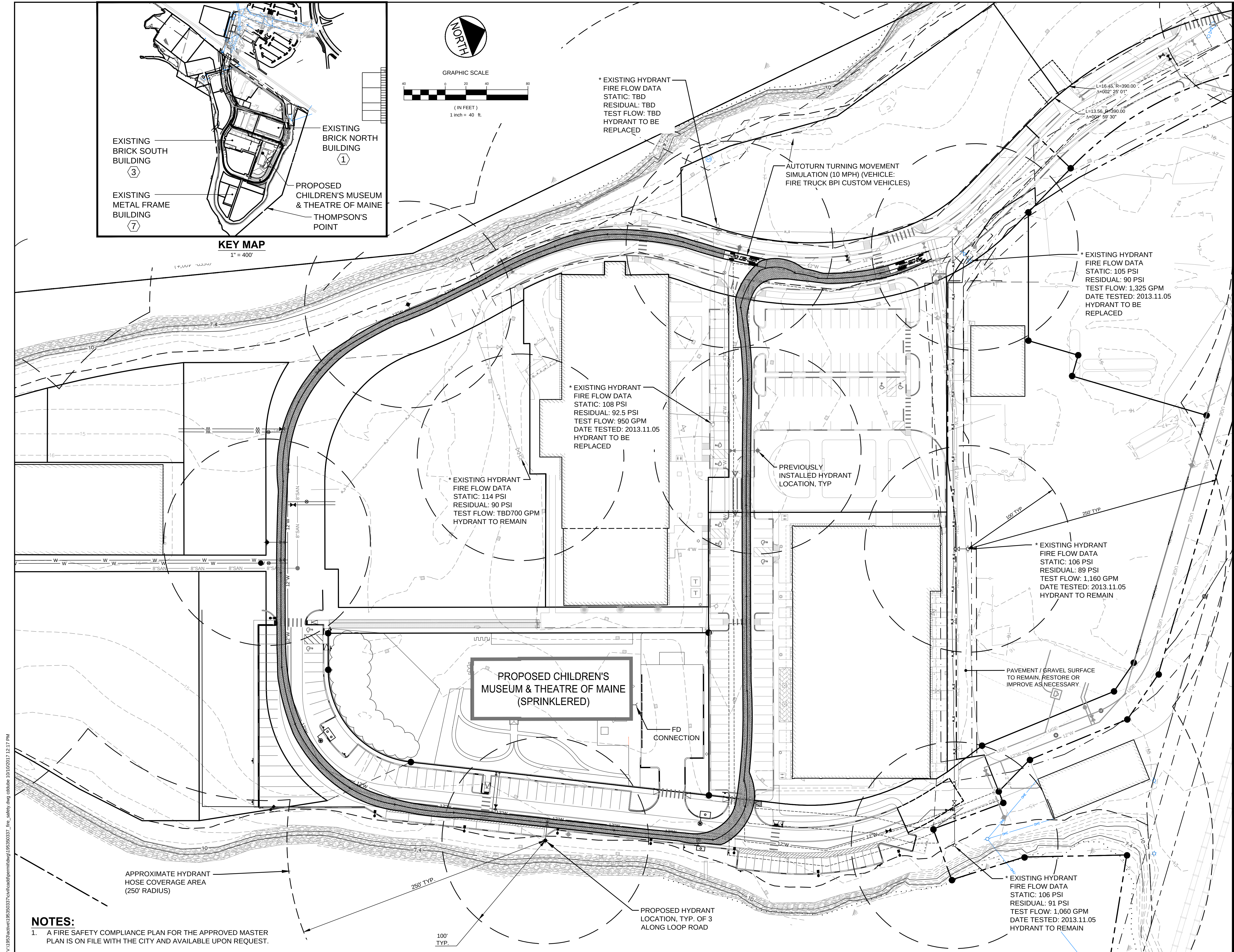
CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
WATER SERVICE DETAILS

Project No.	Scale
195350337	AS NOTED
Sheet	PHASE 2 C-8.8

4	FINAL REVIEW	17.10.10	Y.M.A.M.D.D.
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	17.08.01	
2	REVISED SUBMISSION TO CITY	17.07.28	
1	REVISED FOR CLIENT REVIEW	17.05.09	
	By		
	Appr.		

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NOTES:
1. A FIRE SAFETY COMPLIANCE PLAN FOR THE APPROVED MASTER PLAN IS ON FILE WITH THE CITY AND AVAILABLE UPON REQUEST.



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482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
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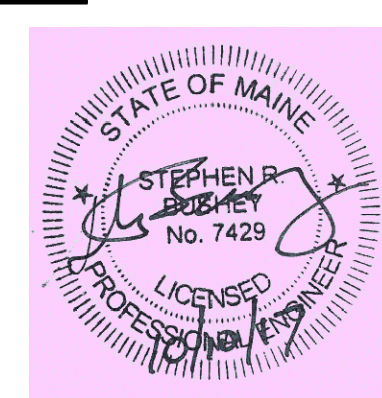
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Notes

4	FINAL LEVEL II SITE PLAN APPLICATION	17.03.10
3	REVISED SUBMISSION - LETTER OF RESPONSE 1	17.08.01
2	REVISED SUBMISSION TO CITY	17.07.28
1	REVISED FOR CLIENT REVIEW	17.05.09
	By	Appr.
		Y.M.A.M.D.D

File Name:	195350337_fire_safety	CDD	SRB	SRB	16.11.29
		DWN.	CHKD.	DSGN.	DATE

Permit-Seal



Client/Project
BRUNER/COTT

CHILDREN'S MUSEUM &
THEATRE OF MAINE
THOMPSON'S POINT - PORTLAND, MAINE

Title
FIRE SAFETY COMPLIANCE PLAN

Project No.
195350337

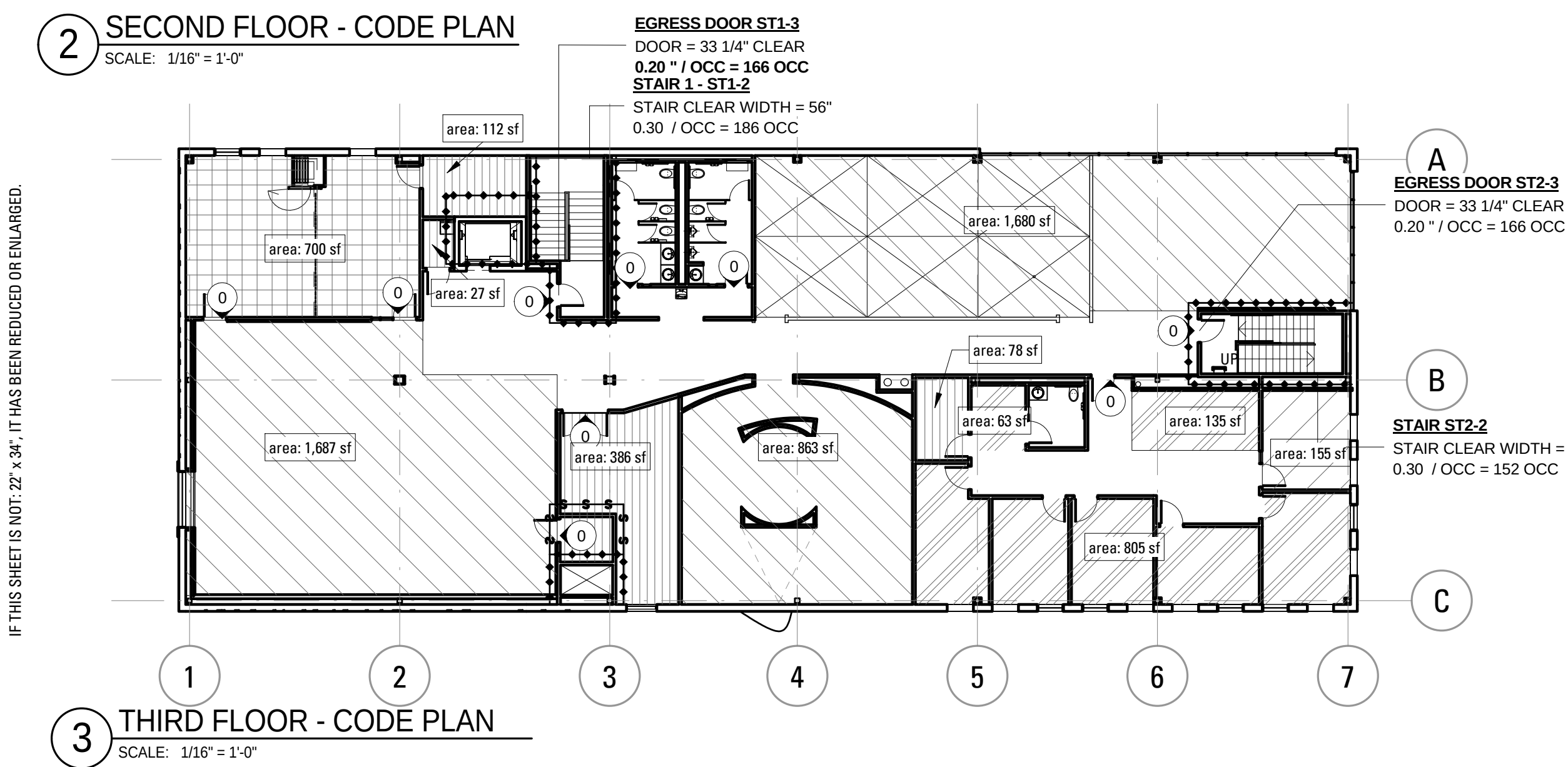
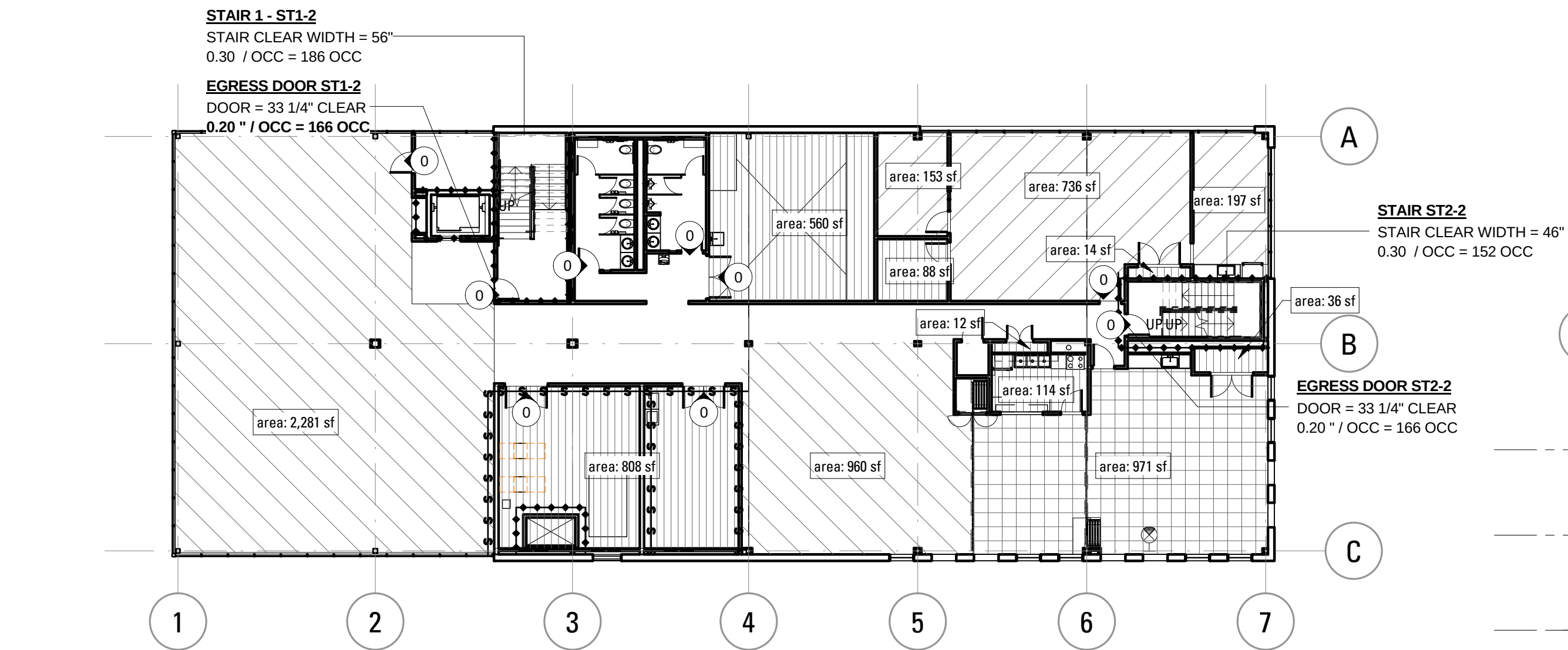
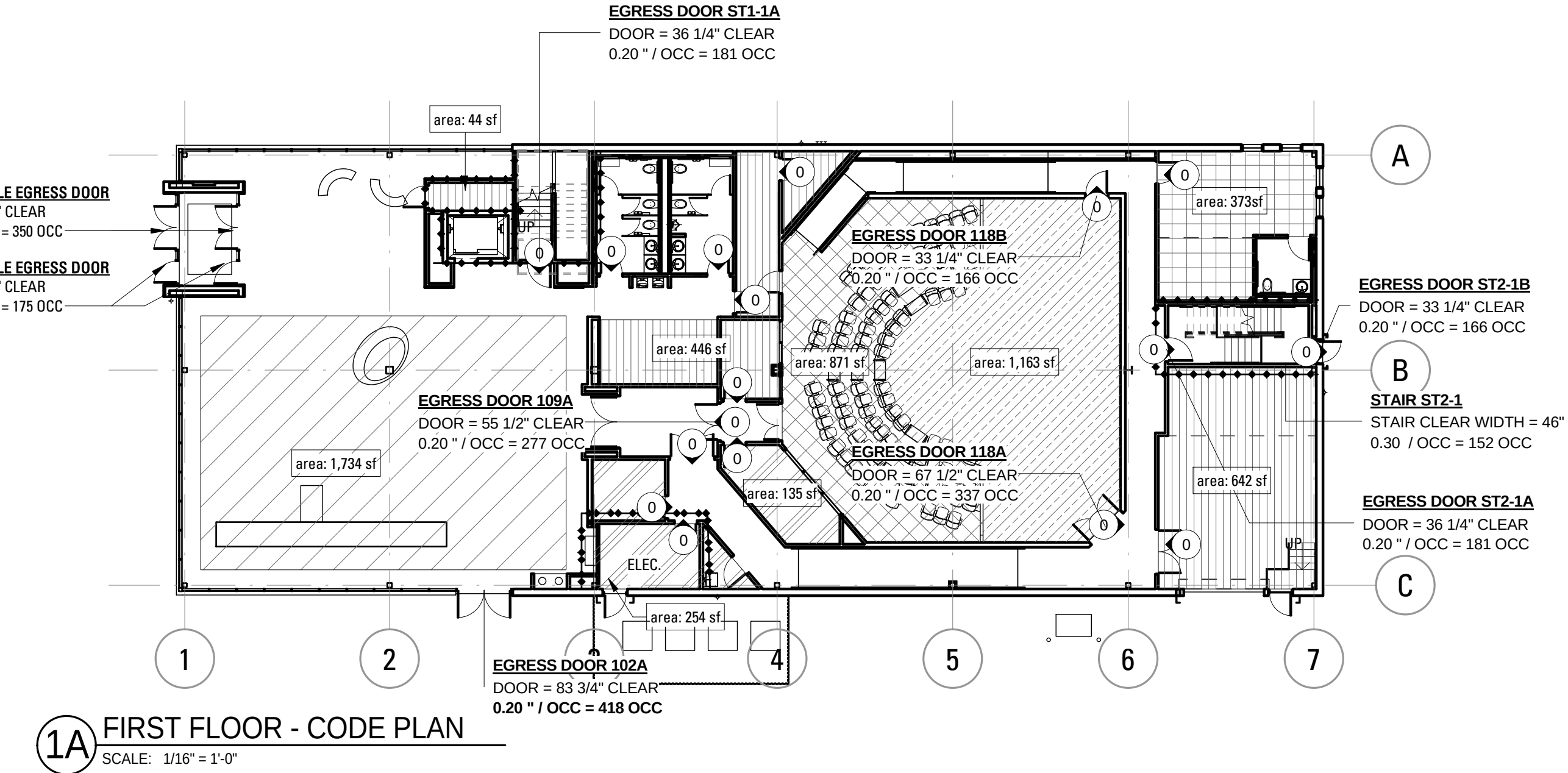
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Sheet

PHASE 2
C-9.0

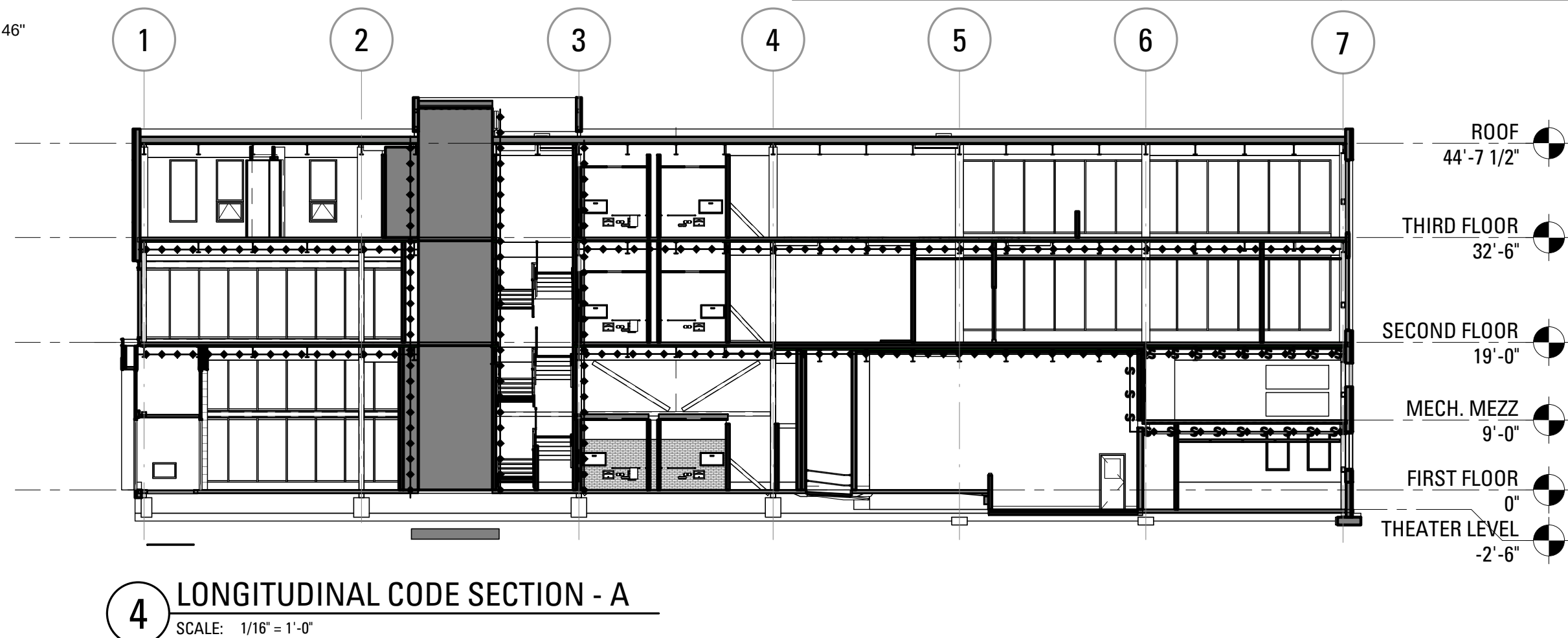
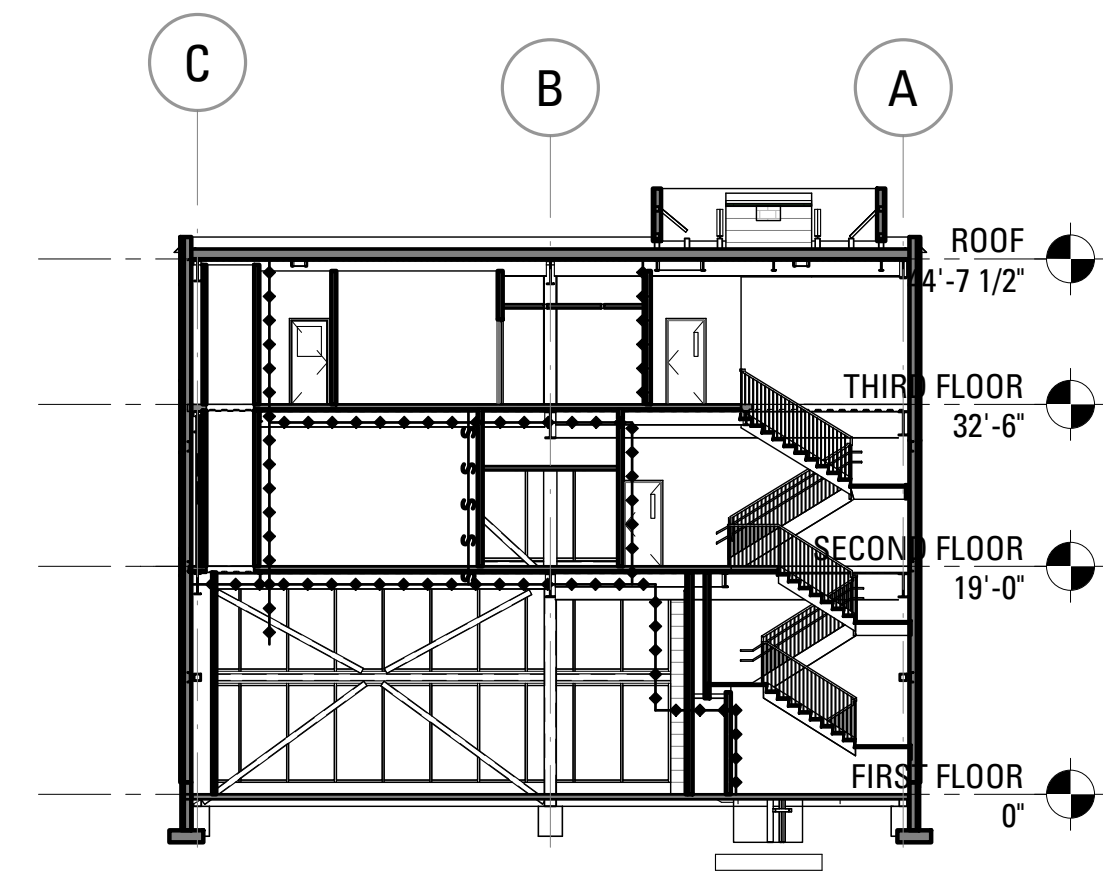
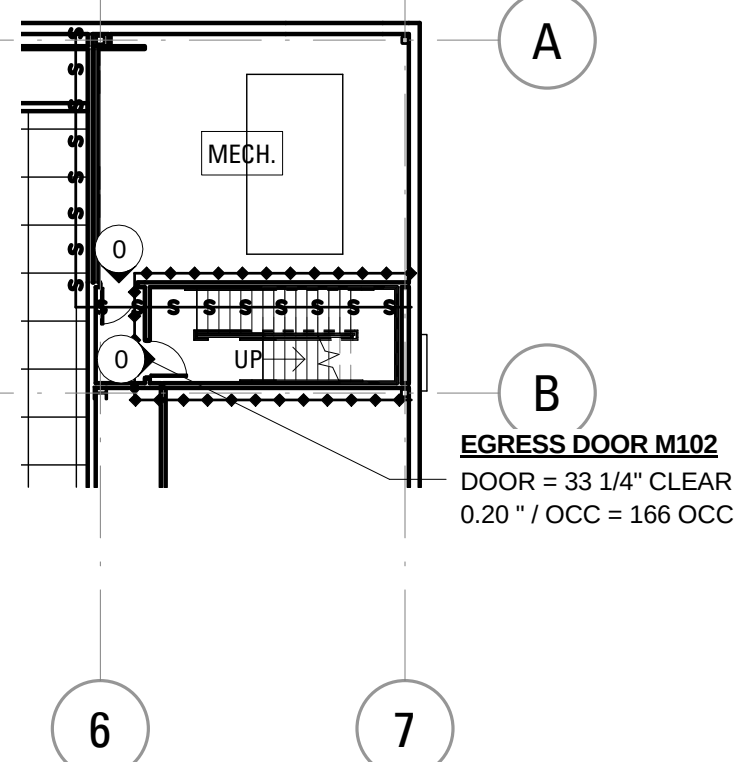
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OCCUPANCY HATCH KEY

	ASSEMBLY: UNCONCENTRATED		ASSEMBLY: FIXED SEATING		CLASSROOMS		STORAGE / MECHANICAL
	ASSEMBLY: STAGE		ASSEMBLY: MUSEUM		BUSINESS		



CODE SUMMARY

The project consists of a new museum and theater consisting of interactive museum and exhibit space with a 100-person theater located on the First Floor. The building is three stories, 46' - 6", in height with exhibit, theatre, and storage spaces on the First Floor and exhibit, office, and mechanical/storage spaces on the mezzanine through Third Floors. The building has a maximum footprint area of approximately 10,000 sf.

APPLICABLE CODES

BUILDING	Maine Uniform Building and Energy Code (MUBEC), which is an amended version of the 2015 Edition of the International Building Code (IBC). The MUBEC Technical Codes and Standards Board submitted amendments to the Governor's Office for the adoption of the 2015 IBC in May of 2016. As of February, approval of those amendments has not yet been granted, although it is anticipated that the adoption of the 2015 IBC, IEBC, and IECC will be promulgated before building permit application. As such, the following analysis will be based on the base 2015 IBC and IECC. The code adoption should be confirmed to not have been delayed before building permit application such that the 2009 IBC would be applicable.
FIRE	Maine Fire Prevention Code (MFPC), which adopts the 2006 Edition of NFPA 1, <i>Uniform Fire code</i> and the 2009 Edition of NFPA 101, the <i>Life Safety Code</i>
ACCESSIBILITY	2010 ADA Standards for Accessible Design. Note that the current adoption of the MUBEC deletes Chapter 11 of the IBC entirely
ELECTRICAL	2017 Edition of NFPA 70, <i>National Electrical Code (NEC)</i> The adoption of the 2017 NFPA 70 is anticipated in mid-2017 and therefore the design and analysis of building electrical system should be based on the 2017 NEC. The code adoption should be confirmed to not have been delayed before building permit application such that the 2014 NEC would be applicable.
MECHANICAL	1969 BOCA National Mechanical Code
PLUMBING	2015 Uniform Plumbing Code (UPC)
ENERGY	2015 Edition of the International Energy Conservation Code (IECC)
ELEVATOR	ASME A17.1, 2013 Edition, Safety Code for Elevators & Escalators
OTHER	National Fire Protection Association (NFPA) Standards, as referenced by the above codes

USE AND OCCUPANCY CLASSIFICATIONS (MUBEC 301)

DESCRIPTION	MUBEC CLASSIFICATION
Theatre	Group A-1
Museum / Exhibit	Group A-3
Offices	Group B
Storage / Mechanical	Group S-2

HEIGHT, AREA, & CONSTRUCTION TYPE

CONSTRUCTION TYPE CLASSIFICATION & OCCUPANCY APPROACH
The construction type of the building is **Type IIA (Type II(11))**. Protected, noncombustible (MUBEC 602.2 & NFPA 101 Table 12.1.6).
Note that the restriction on assembly space at the Third Floor per the requirements of NFPA 101 are dictating the construction type of the building.

BUILDING HEIGHT & AREA
The building will not exceed the limitations of MUBEC Sections 504 & 506 for Type IIA construction. For the purposes of the height analysis, a 1 story (30') increase is assumed to be provided. For the purposes of the area analysis, a 200% area increase for automatic sprinkler protection is assumed to be provided.

CONSTRUCTION TYPE	OCCUPANCY (LIMITING)	TABULAR MAX FLOOR AREA (SPRINKLERED)	ACTUAL FLOOR AREA	COMPLIANT ¹
IIA	A-1	46,500 sqft	10,000 sqft	YES

CONSTRUCTION TYPE	OCCUPANCY (LIMITING)	TABULAR MAX FLOOR HEIGHT (SPRINKLERED) (sqft)	ACTUAL HEIGHT (sqft)	COMPLIANT ¹
IIA	A-1 & A-3	4 stories / 85'	3 stories / 48'-6"	YES

MEZZANINE
One separate mechanical floor areas is located between the First and Second Floors. This area is directly accessed by an enclosed exit stairs. This floor area is considered mezzanines since the floor area is less than one third of the floor area of the space in which it shares a volume (MUBEC 505.2.1) and the mezzanine is permitted to be enclosed since the occupant load of the enclosed space is less than 10 (MUBEC 505.2.3).

FIRE RESISTANCE RATING OF BUILDING ELEMENTS

BUILDING ELEMENT	FIRE RESISTANCE RATING
Primary structural frame	1 hour
Exterior bearing walls	1 hour
Interior bearing walls	1 hour
Nonbearing exterior walls	based on Fire Separation Distance (see table below)
Nonbearing interior walls	0 hour
Floor construction & secondary members	1 hour
Roof construction & secondary members	1 hour

FIRE RESISTANCE RATING FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

FIRE SEPARATION DISTANCE	FIRE RESISTANCE RATING
Less than 10 feet	1 hour
10 feet or greater	0 hour

ALLOWABLE EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE

FIRE SEPARATION DISTANCE	ALLOWABLE OPENING AREA % ¹
0 to less than 3 feet	Not Permitted
3 feet to less than 5 feet	15%
5 feet to less than 10 feet	25%
10 feet or greater	25%

¹ Based on the facility being fully sprinkler protected and unprotected openings

INTERIOR REQUIREMENTS

INTERIOR WALLS & PARTITIONS - FIRE/SMOKE RESISTIVE ASSEMBLIES

Refer to code report Table 8 for wall construction requirements by wall type.

TYPE OF ASSEMBLY	CONSTRUCTION	CODE REFERENCE
Dry Type Transformer Room > 35,000 V	3 hour fire barrier	NFPA 70, 450.4.2
Elevator Machine Room / Controls Room	1 hour fire barrier	MUBEC 2005.4
Nonsprinklered Electrical Room	2 hour fire barrier	NFPA 13, 8.15.10.3
Dry Type Transformer Room > 112.5 kVA	1 hour fire barrier	NFPA 70, 450.21(B)
Boiler Room where the largest piece of equipment is > 15 psi and 10 horsepower	Wall capable of resisting the passage of smoke	MUBEC Table 509
Furnace room where any piece of equipment is over 400,000 Btu/hr input	Wall capable of resisting the passage of smoke	MUBEC Table 509
Shafts Connecting 3 or fewer stories	1 hour fire barrier	MUBEC 713.4

INTERIOR FINISHES

Interior wall and ceiling finish ratings are classified in accordance with ASTM E 84 or UL 723 (MUBEC 803.1.1). The flame spread and smoke-developed indexes must not be greater than that specified in the table below based on the occupancy.
In all areas, interior floor covering materials are required to comply with the requirements of the DOC FF-1 "pill test" (CPSC 16 CFR Part 1630) (MUBEC 804.4.1).

MINIMUM INTERIOR WALL & CEILING FINISH REQUIREMENTS

Interior finishes are grouped in the following classes:

Class A - flame spread index 0-25
Class B - flame spread index 26-75
Class C - flame spread index 76-200
All classes must have a smoke-developed index that does not exceed 450.

OCCUPANCY CLASSIFICATION	EXIT ENCLOSURES	CORRIDORS, EXIT ACCESS, STAIRWAYS / RAMPS	ROOMS & ENCLOSED SPACES
A-1 & A-3	B	B	C
B	B	C	C
S-2	C	C	C

MEANS OF EGRESS

OCCUPANT LOAD ANALYSIS

FLOOR	SPACE	AREA (sqft)	FUNCTION	FACTOR (sqft/occ)	OCCUPANT LOAD
1	Theater	894	Assembly Fixed Seating	Fixed	94
	Lobbies	1794	Assembly Unconcentrated	15 net	120
	Performing Spaces	1157	Assembly Stage	15 net	78
	Green Room	388	Classroom	20 net	20
	Business Areas	125	Office Area	100 net	2
	Storage / MEP	1414	Storage / MEP	300 gross	5
FLOOR 1 TOTAL					342
M	Storage / MEP	771	Storage / MEP	300 gross	3
	MEZZANINE TOTAL				3
	Classrooms	1007	Classroom	20 net	54
	Museum / Exhibit	3118	Assembly Exhibit	30 net	104
2	Office	720	Office Area	100 net	8
	Office	361	Assembly Unconcentrated	15 net	25
	Storage / MEP	1424	Storage / MEP	300 gross	5
FLOOR 2 TOTAL					198
3	Classrooms	640	Classroom	20 net	32
	Museum / Exhibit	4219	Assembly Exhibit	30 net	141
	Office	947	Office Area	100 net	10
	Storage / MEP	856	Storage / MEP	300 gross	3
FLOOR 3 TOTAL					198

EXITS

The number of exits required from every story cannot be less than that specified by MUBEC Table 1006.3.1

OCCUPANT LOAD	# OF REQUIRED EXITS
1-500	2
501-1,000	3
>1,000	4

EXIT DISCHARGE

Exits shall discharge directly to exterior except where permitted. A maximum of 50% of the number and capacity of exit enclosures are permitted to egress through either (1) areas on the level of exit of discharge or (2) a vestibule.

Accessible means of egress are required to be provided from all accessible spaces within the facility. When more than one means of egress are required to be provided from any accessible space, the space must be serviced by not less than two accessible means of egress.
Exit stairways will serve as both the accessible means of egress from the stories located above the level of exit discharge. The stairs are not required to be accessed from an area of refuge in order to be considered an accessible means of egress since the facility will be fully sprinkler protected.

PLUMBING FIXTURE CALCULATION

	THEATER	MUSEUM	BUSINESS	TOTAL
WC	M 1	M 3	M 5	M 9
URINAL	1	NA	3	NA
SINK	1	2	2	4
DRINKING FOUNTAINS				TOTAL: 4
SERVICE SINKS				TOTAL: 3

Bruner/Cott

Bruner/Cott & Associates, Inc.
130 Prospect Street
Cambridge, Massachusetts 02139
617 492 8400
www.brunercott.com

Architecture/Urban Design
Preservation/Landscape Architecture
Space Planning/Interior Design

Rev	Date	Remarks

Date	31 March, 2017
Scale	As indicated
Project Number	15.052
Drawn By	Author

Children's
Museum &
Theater of Maine

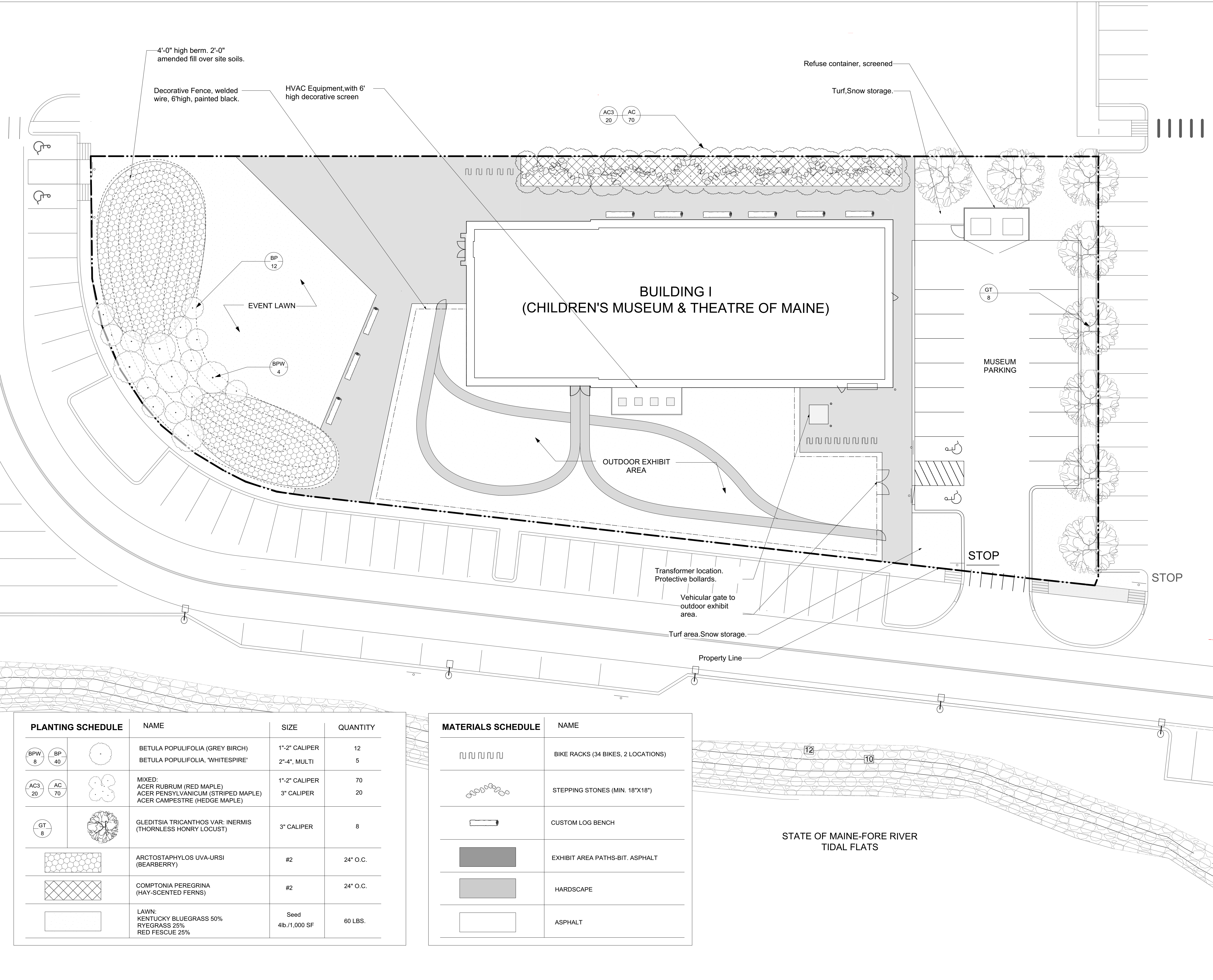
Thompson's Point
Portland, ME

DESIGN DEVELOPMENT

CODE SUMMARY, PLANS
& SECTIONS

NOT FOR CONSTRUCTION

G-100



THE CHILDREN'S
MUSEUM AND
THEATER OF
MAINE

PORTLAND, MAINE

ARCHITECTURE:

Bruner/Cott
architects and planners

LANDSCAPE ARCHITECTURE:

LEMON | BROOKE

LEMON BROOKE LANDSCAPE ARCHITECTURE
31 OXBOW ROAD
CONCORD, MA 01472
978.222.3700
www.lemonbrooke.com

Issue Date: OCTOBER 12, 2017
Project Status: SITE PLAN REVIEW
Project No: 16-007
Scale: 1/16"=1'-0"

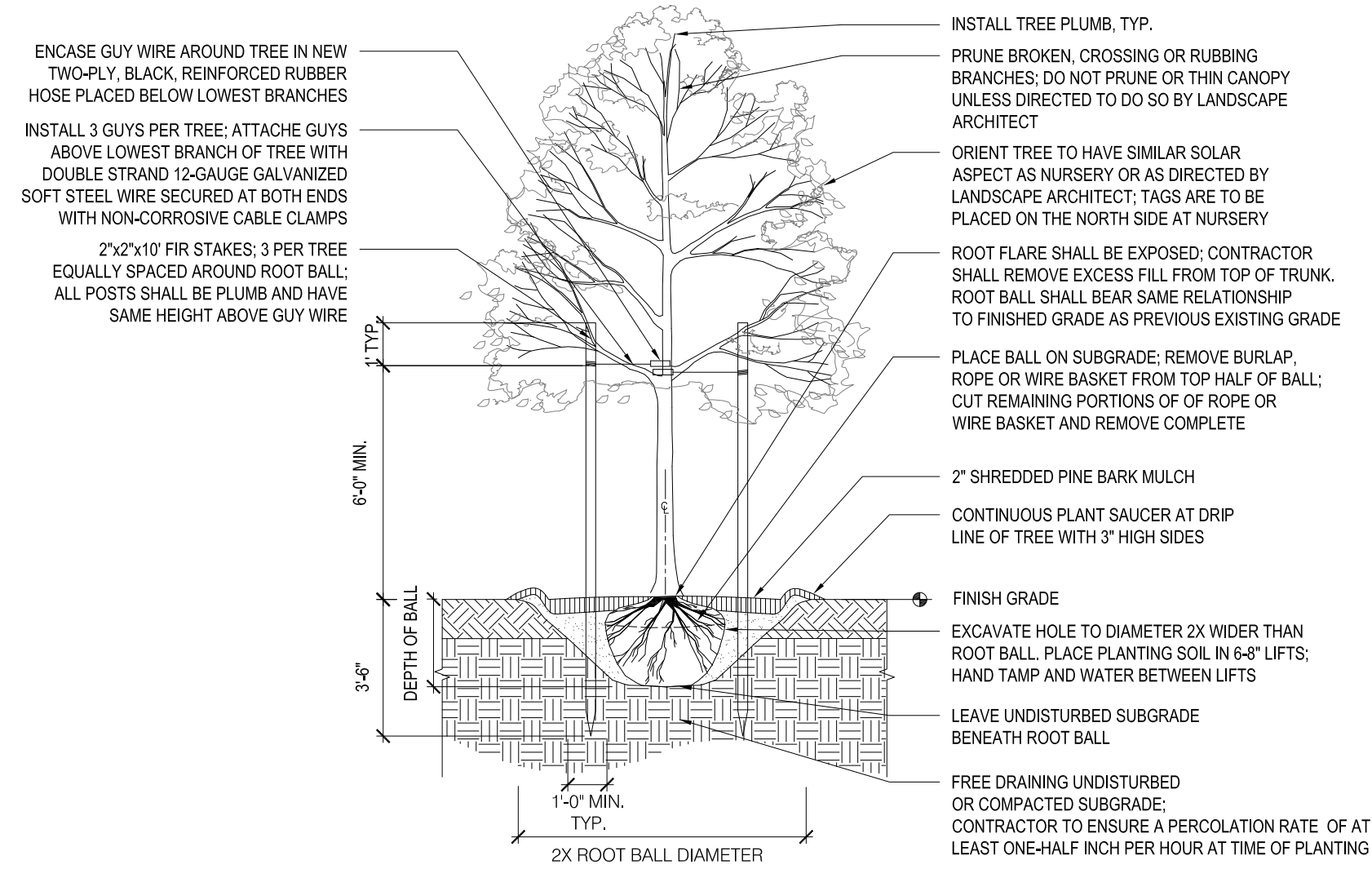
Revisions	

DRAWING TITLE:

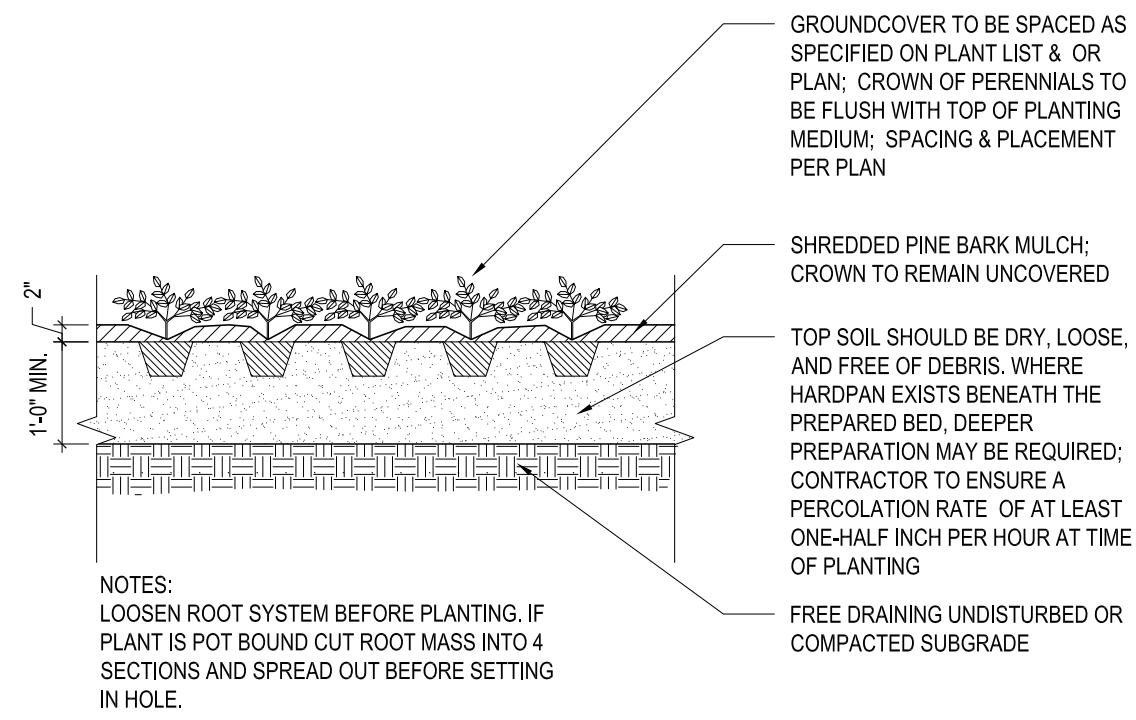
LANDSCAPE SITE
PLAN

DRAWING NUMBER:

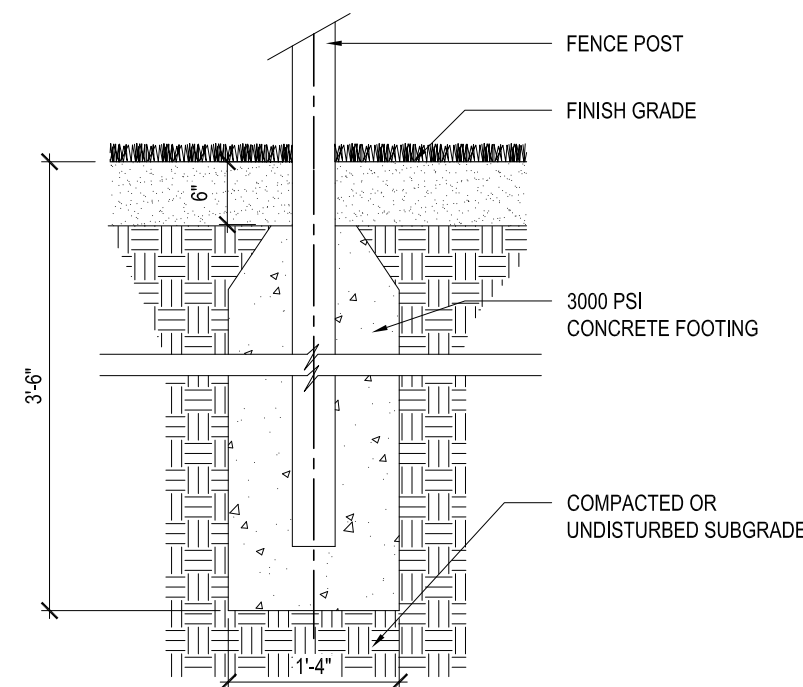
L-001



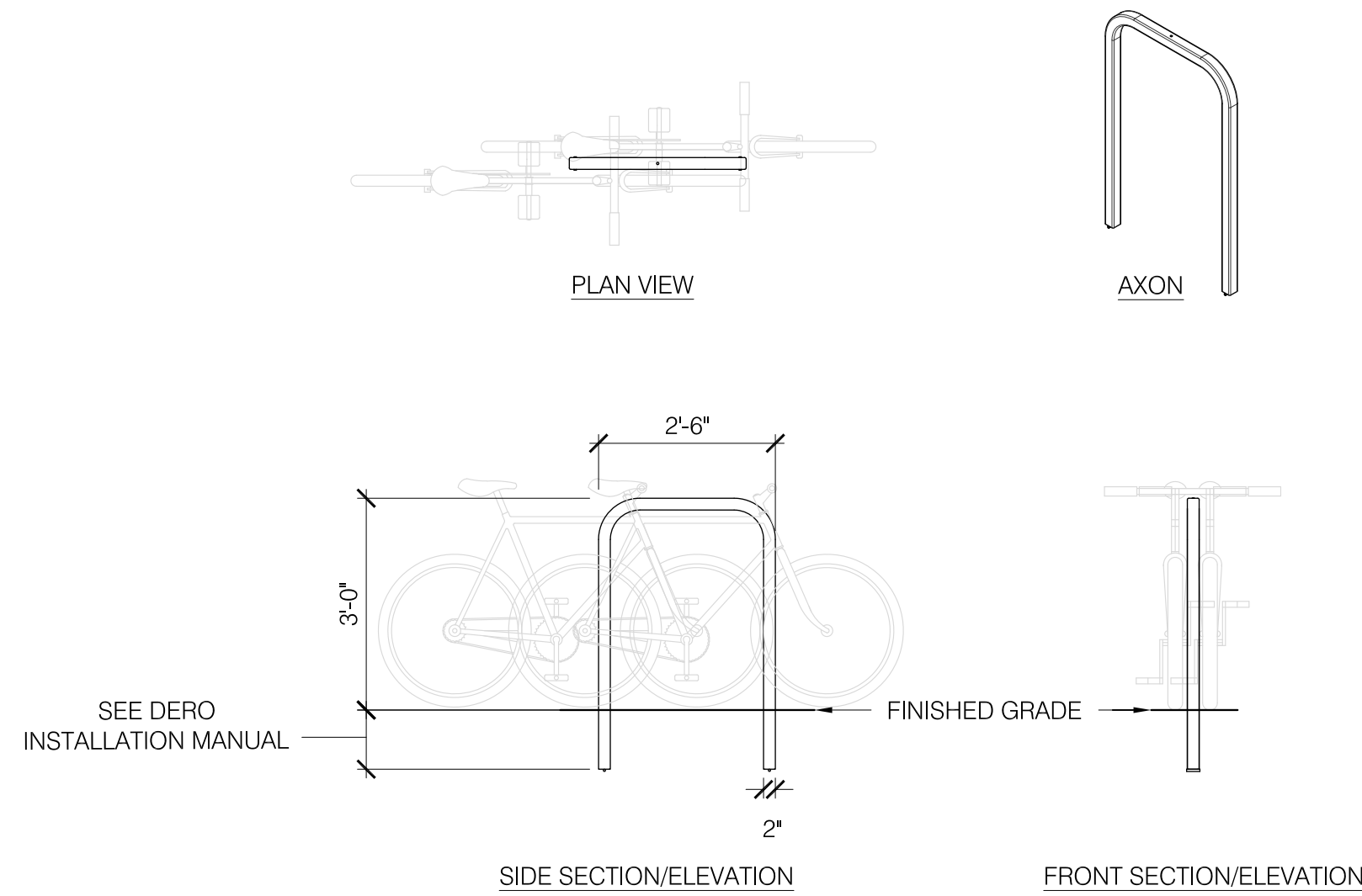
1 TYPICAL TREE PLANTING DETAIL
N.T.S.



2 TYPICAL GROUND COVER PLANTING DETAIL
N.T.S.



3 TYPICAL FENCE POST FOOTING DETAIL
N.T.S.



4 TYPICAL BIKE RACK - DERO "DOWNTOWN"
N.T.S.

PERSON GATE, PAINTED BLACK HARDWARE (LOCKABLE)



BLACK PAINTED STEEL POSTS (6'-0" HIGH)

VEHICLE GATE, PAINTED BLACK HARDWARE (LOCKABLE)

WOOD INFILL PANEL (CEDAR OR SIMILAR)

5 REFUSE DUMPSTER ENCLOSURE INTENT
N.T.S.

THE CHILDREN'S MUSEUM AND THEATER OF MAINE

PORTLAND, MAINE

ARCHITECTURE

Bruner/Cott
architects and planners

LANDSCAPE ARCHITECTURE

LEMON | BROOKE

LEMON BROOKE LANDSCAPE ARCHITECTURE
31 OXBOW ROAD
CONCORD, MA 01472
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www.lemonbrooke.com

Issue Date:	OCTOBER 12, 2017
Project Status:	SITE PLAN REVIEW
Project No:	16-007
Scale:	Not to Scale

Revisions	

DRAWING TITLE:

LANDSCAPE SITE DETAILS

DRAWING NUMBER:

L-002

SITE LAYOUT NOTES

1. ALL BARRIER FREE PARKING SPACES ARE TO RECEIVE BARRIER FREE SIGNS AND PAVEMENT MARKINGS AS ILLUSTRATED ON THE DETAIL SHEETS.
2. ALL CURBING MATERIALS WILL BE SELECTED BY THE OWNER. THE DIMENSIONS PROVIDED ON THE PLAN ARE TO FACE OF CURB. ALL CURBING TYPES ARE DETAILED IN THE PROJECT DETAIL SHEETS.
3. ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB, THE EDGE OF PAVEMENT OR THE FACE OF THE BUILDING.
4. EXCEPT WHERE INDICATED OTHERWISE, THE PAVEMENT IS TO BE STANDARD DUTY PAVEMENT.

CURB LEGEND

SLIP FORM CONCRETE CURB (VERTICAL, SLOPED OR CAPE COD BERM MOLD - SEE DETAILS)

TYPE 1 VERTICAL GRANITE CURB

TD TIP DOWN

TS TRANSITION STONE (VERTICAL GRANITE TO SLIP FORM CONCRETE)

PAVEMENT MARKING LEGEND

4" DYCL 4" WIDTH DOUBLE YELLOW CENTERLINE

4" SYLL 4" WIDTH SOLID YELLOW LANE LINE

4" SWLL 4" WIDTH SOLID WHITE LANE LINE

STOP 12" WIDTH SOLID WHITE STOP LINE

ALL PARKING STALLS TO BE 4" WIDTH SINGLE SOLID WHITE LINE EXCEPT AS SHOWN ON SITE LAYOUT PLAN.

ALL SIGNAGE AND STRIPING SHALL CONFORM TO THE STANDARDS FOR SIZE, HEIGHT, LOCATION, COLOR, INSTALLATION AND REFLECTIVITY SET FORTH IN THE CURRENT VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

PAVEMENT LEGEND

HEAVY DUTY PAVEMENT

STANDARD DUTY PAVEMENT

LIGHT DUTY PAVEMENT

BITUMINOUS PAVEMENT SIDEWALK

1" BITUMINOUS PAVEMENT OVERLAY (RECLAIM, GRAVEL SHIM, 1 1/2" PAVE.)

SIGN LEGEND

STOP

RESERVED PARKING

RESERVED PARKING

WALK ACCESSIBLE

WALK AHEAD

NO PARKING ANY TIME

NO PARKING ANY TIME

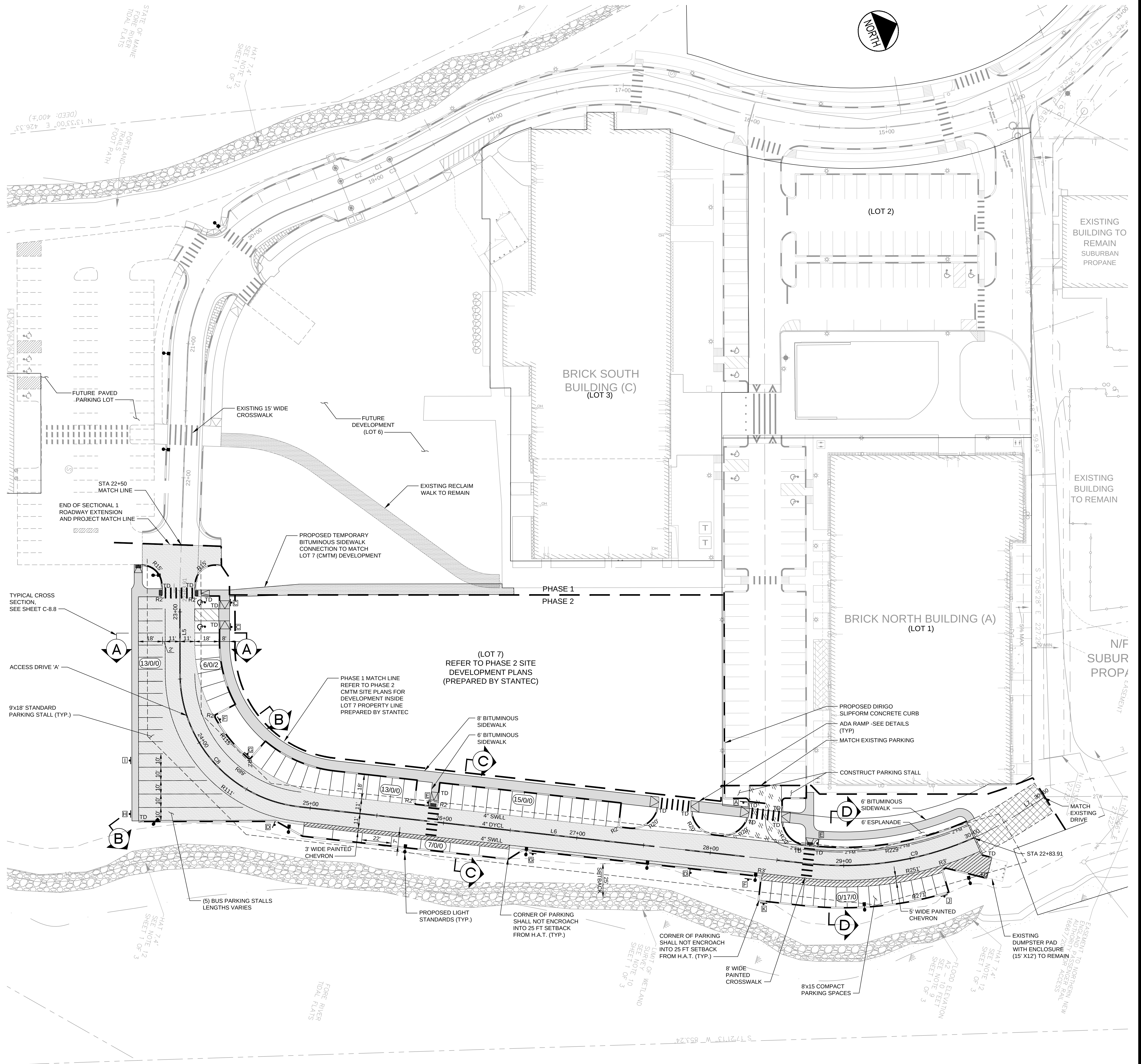
BUS PARKING ONLY

BUS PARKING ONLY

EMPLOYEE PARKING ONLY

EMPLOYEE PARKING ONLY

100 / 16 / 8 PARKING SPACE - STANDARD / COMPACT / ACCESSIBLE



PRELIMINARY – NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	REVISIONS
2	11/07/2017	REVISED PER CITY COMMENTS	
1	10/20/2017	FINAL SITE PLAN APPLICATION	

STATE OF MAINE
KENNEDY
No. 11994
Professional Seal

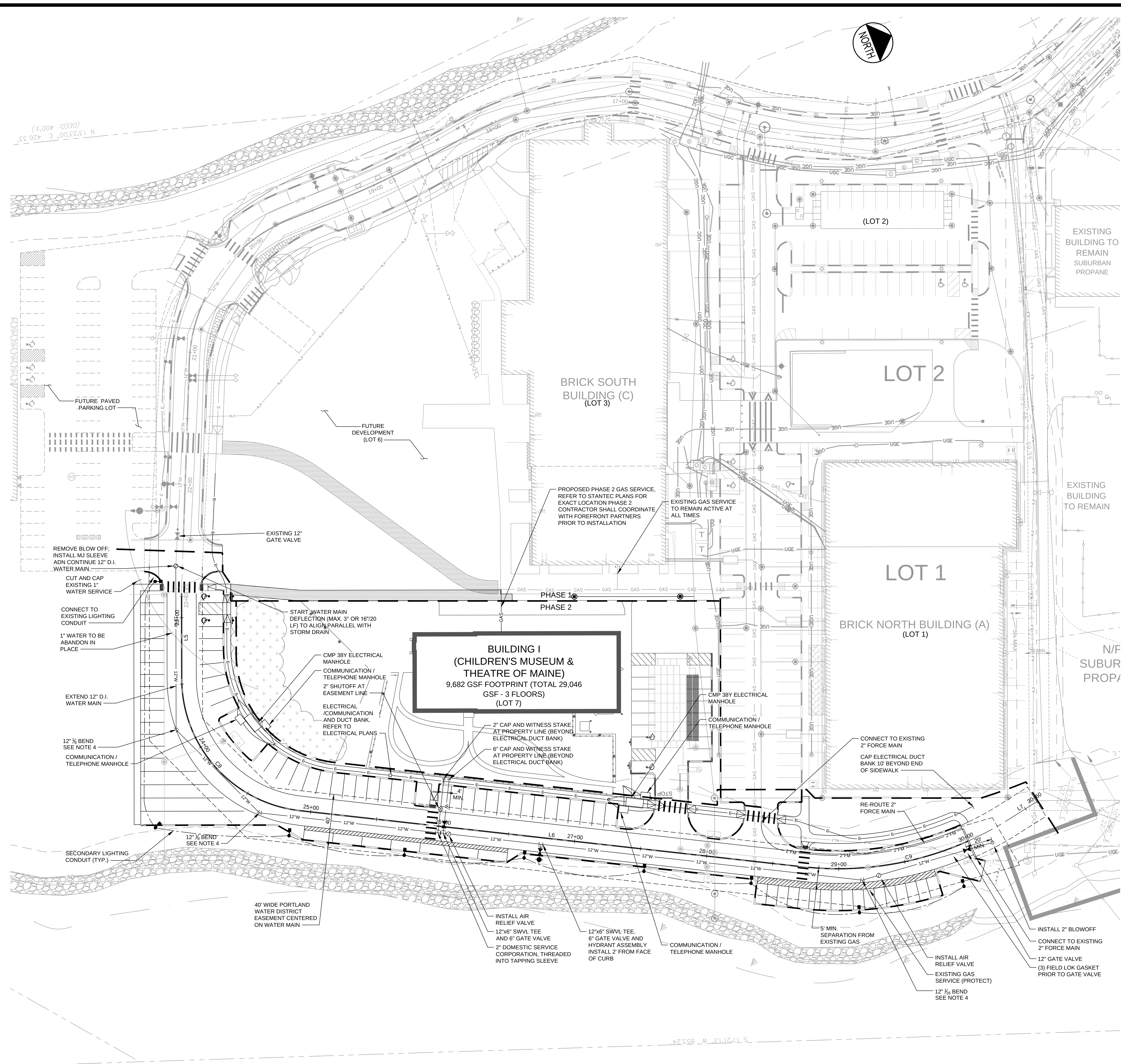
PROJECT: THE FOREFRONT AT THOMPSON'S POINT
SECTIONAL 2 ROADWAY EXTENSION
STA. 22+50 TO STA. 30+00

SHEET TITLE: PHASE 1 SITE LAYOUT PLAN

CLIENT: FOREFRONT PARTNERS, LLC

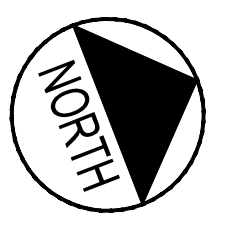
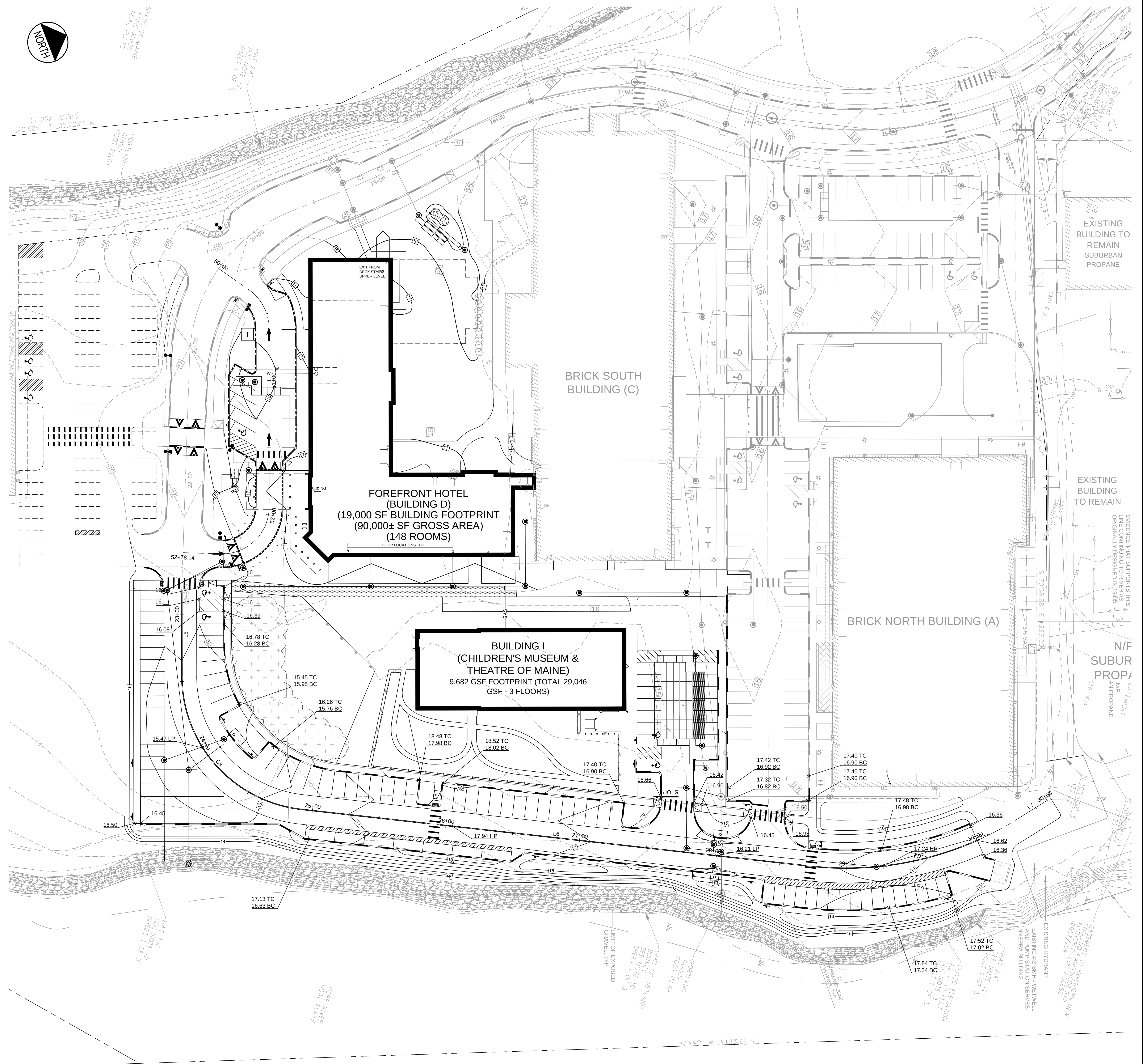
DRAWN: DB DATE: APR. 2017
DESIGNED: BEK SCALE: 1" = 30'
FILE NAME: CMTM-ROAD-SITE LAYOUT.dwg
SHEET: PHASE 1 C-3.0

PLACEMAKER PARTNERS, LLC
501 DANFORTH STREET
PORTLAND, ME 04102
bo@placemakerpartners.com



PRELIMINARY — NOT
FOR CONSTRUCTION

				PROJECT THE FOREFRONT AT THOMPSON'S POINT SECTIONAL 2 ROADWAY EXTENSION STA. 22: 50 TO STA. 30: 00	PLACEMAKER PARTNERS, LLC 501 DANFORTH STREET PORTLAND, ME 04102 bo@placemakerpartners.com
				SHEET TITLE PHASE 1 UTILITY PLAN	
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION		CLIENT	DRAWN: DB DATE: OCT. 2017
REV	DATE	DESCRIPTION	P.E. BO KENNEDY LIC. #11194	FOREFRONT PARTNERS, LLC	DESIGNED: BEK SCALE: 1" = 30'
		REVISIONS			FILE NAME: CMTM-ROAD-UTILITIES.dwg
					SHEET PHASE 1 C-4.0



STATE OF MAINE
FORE RIVER
TIDAL FLATS

HAT 7.4'
SEE NOTE 12
SHEET 1 OF 3

PORTLAND
TRAILS
FOOT PATH

BRICK SOUTH
BUILDING (C)

FOREFRONT HOTEL
(BUILDING D)
(19,000 SF BUILDING FOOTPRINT
(90,000± SF GROSS AREA)
(148 ROOMS)

BUILDING I
(CHILDREN'S MUSEUM &
THEATRE OF MAINE)
9,682 GSF FOOTPRINT (TOTAL 29,046
GSF - 3 FLOORS)

BRICK NORTH BUILDING (A)

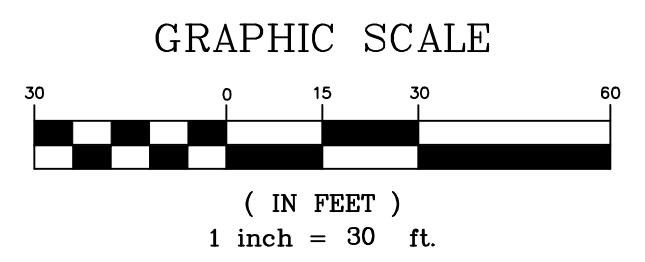
EXISTING
BUILDING TO
REMAIN
SUBURBAN
PROPANE

EXISTING
BUILDING TO
REMAIN

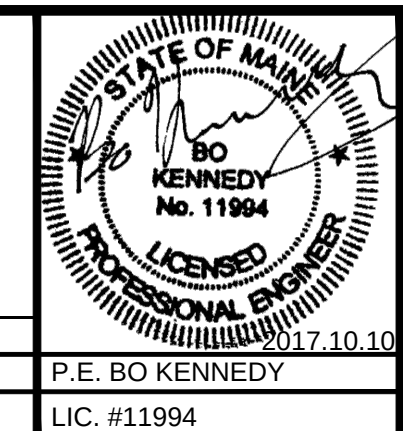
N/F
SUBUR
PROP/
AN PROPANE

EXISTING HYDRANT
EXISTING 40" SIAM - WETWELL
AND PUMP STATION SERVES
NEMRA BUILDING

PRELIMINARY — NOT
FOR CONSTRUCTION

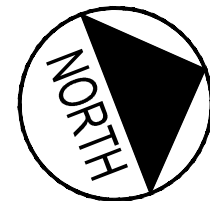


REVISIONS			DESCRIPTION
REV	DATE	DESCRIPTION	
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION	



PROJECT THE FOREFRONT AT THOMPSON'S POINT SECTIONAL 2 ROADWAY EXTENSION STA. 22: 50 TO STA. 30: 00	
SHEET TITLE GRADING PLAN	
CLIENT FOREFRONT PARTNERS, LLC	

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DESIGNED: BEK		SCALE: 1" = 30'	
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C-5.0			



EXISTING ZONE D
DISCHARGE

STORMWATER
MANAGEMENT
ZONE D-2

STORMWATER
MANAGEMENT
ZONE C

D25 (EX.
ROOF)

BRICK SOUTH
BUILDING (C)

BRICK NORTH BUILDING (A)

**BUILDING I
(CHILDREN'S MUSEUM &
THEATRE OF MAINE)**
9,682 GSF FOOTPRINT (TOTAL 29,046
GSF - 3 FLOORS)

F13 SUBSURFACE WATER
QUALITY VOLUME STORAGE
AREA (61) SC-740 STORMTECH
CHAMBERS, 10 CHAMBERS IN
2 ROWS OF PRETREATMENT
ISOLATOR ROWS. SEE
DETAILS ON SHEET C-7.1

STORM DRAIN STUB
TO PHASE 2
6x10' FILTERRA

ZONE B
DISCHARGE B0

STORMWATER
MANAGEMENT
ZONE B

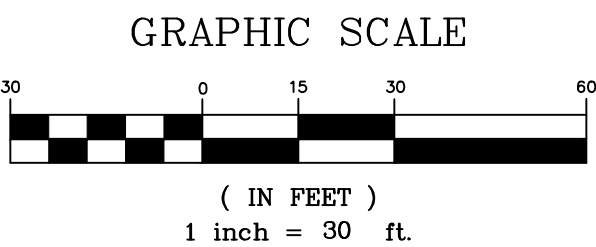
SUBCATCHMENT
BOUNDARY (TYP.)

STORMWATER
MANAGEMENT
ZONE F

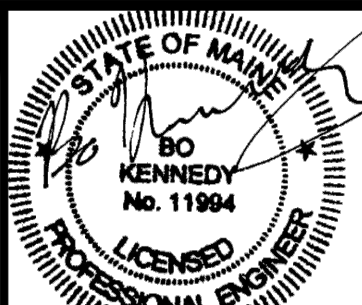
EXISTING ZONE F
DISCHARGE F0

6'x 6' FILTERRA

PRELIMINARY – NOT
FOR CONSTRUCTION

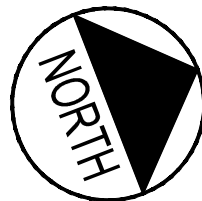


REVISIONS			P.E. BO KENNEDY LIC. #11994
REV	DATE	DESCRIPTION	
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION	



PROJECT THE FOREFRONT AT THOMPSON'S POINT SECTIONAL 2 ROADWAY EXTENSION STA. 22: 50 TO STA. 30: 00	
SHEET TITLE PHASE 1 STORMWATER MANAGEMENT PLAN -1	
CLIENT FOREFRONT PARTNERS, LLC	

PLACEMAKER PARTNERS, LLC 501 DANFORTH STREET PORTLAND, ME 04102 to@placemakerpartners.com	
DRAWN: DB	DATE: OCT. 2017
DESIGNED: BEK	SCALE: 1" = 30'
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SHEET PHASE 1	C-5.1



Summary of Water Quality Treatment - Lot 3 and Common Area Road (Excluding CMTM/LOT 7 AND BRICK NORTH BUILDING)

Zone	Inlet ID	Impervious Area (sf)	Pervious Area (sf)	Total Area (sf)	Total Area (Acres) ¹	Required Water Quality Volume (CF) ²	Existing Developed Area Mitigation Credits (SF) ⁹	Treatment Approach ⁶	Filterra Size Required ⁶ (SF)	Jellyfish Unit Provided ⁵	1 Yr 24-hr Storm Event Peak Flow Rate (cfs) ³	Required Isolator Row Chambers (Stormtech SC-740)	Provided Water Quality Volume (CF) ⁷	Isolator Row Chambers (Stormtech SC-740) Provided (EA) ⁶
Zone B	B-3	23,926.00	1,034.00	24,960.00	0.57	2028.30	-	Filterra	1-(7'x13')	N/A	1.19	N/A	N/A	N/A
	Disturbed Perimeter Area	0.00	3,945.00	3,945.00	0.09	-	-	None	-	-	-	-	-	-
Zone B Totals (Roadway Portion)		23,926.00	4,979.00	28,905.00	0.66	2,028.30	0.00	-	-	-	-	-	-	-
Zone F Developed Area	F3	3,060.00	500.00	3,560.00	0.08	271.67	0.00	Contech Jellyfish Filter	N/A	JF4 2-1	0.19	0.97	3744 CF	14
	F4 (excl. ex roof)	532.00	2,231.00	2,763.00	0.06	118.70	0.00				0.06	0.31		
	F5 (excl. ex roof)	365.00	3,230.00	3,595.00	0.08	138.08	0.00				0.06	0.32		
	F6 (excl. ex roof)	1,594.00	128.00	1,722.00	0.04	137.10	0.00				0.10	0.49		
	F7	15,142.00	724.00	15,866.00	0.36	1285.97	0.00				0.93	4.67		
	F8	6,092.00	879.00	6,971.00	0.16	536.97	0.00				0.38	1.92		
	F11	6,431.00	2,737.00	9,168.00	0.21	627.15	0.00	Filterra	1-(6'x6')	N/A	0.43	N/A	N/A	N/A
	F12	11,032.00	3,082.00	14,114.00	0.32	1022.07	0.00	Filterra	1-(6'x10')	N/A	0.71	N/A	N/A	N/A
	F14	4,302.00	2,468.00	6,770.00	0.16	440.77	1.00	None- To be provided in a Future Phase	-	-	0.29	-	-	-
	Disturbed Perimeter Area	0.00	5,935.00	5,935.00	0.14	197.83	-	None	-	-	-	-	-	-
Zone F Developed Area Subtotals		48,550.00	21,914.00	70,464.00	1.62	4,776.30	1.00	-	-	-	3.17	8.67	N/A	N/A
Zone F Existing Building (Brick South)	F-4 BS-North Side (Partial)	5,318.00	0.00	5,318.00	0.12	443.17	3,190.80	Contech Jellyfish Filter	N/A	JF4 2-1 (included in above)	0.32	1.62		
	F-5 BS-North Side (Partial)	6,792.00	0.00	6,792.00	0.16	566.00	4,075.20				0.41	2.07		
	F-6 BS-North Side (Partial)	2,813.00	0.00	2,813.00	0.06	234.42	1,687.80				0.17	0.86	Included in Zone F above	Included in Zone F above
Zone F Existing Building Subtotal		-	0.00	14,923.00	0.34	1,243.58	8,953.80	-	-	-	0.91	4.56	0.00	-
Zone F Totals		-	63,473.00	21,914.00	85,387.00	1.96	6,019.88	8,954.80	-	0.00	4.08	13.23	N/A	N/A

**Previously Approved Filterra Box

Developed Area Breakdown	
A.) Total New Developed Area Treated (SF)	82,719.00
B.) Total New Developed Area untreated (SF)	16,650.00
C.) Total New Developed Area (SF) = A+B	99,369.00
D.) Existing Developed Area Treated (SF)	14,923.00
E.) Adjusted Existing Developed Area Treated (SF)	8,953.80
F.) Total Net Developed Area Treated (SF) = A+E	91,672.80
Impervious Area Breakdown	
G.) Total New Impervious Area treated (SF)	68,174.00
H.) Total New Impervious Area untreated (SF)	4,302.00
I.) Total New Impervious Area (SF) = G+H	72,476.00
J.) Existing Impervious Area Treated (SF)	14,923.00
K.) Adjusted Existing Impervious Area Treated (SF)	8,953.80
L.) Total Net Impervious Area Treated (SF) = G+K	77,127.80

1.90
0.38
2.28
0.34
0.21
2.10

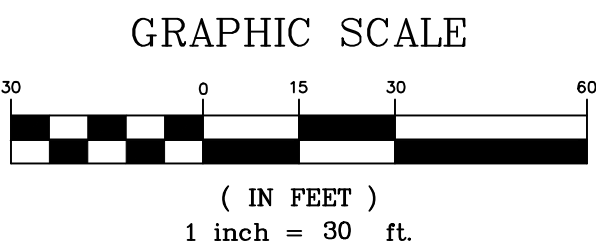
1.57
0.10
1.66
0.34
0.21
1.77

Treatment Breakdown	Required	Provided
% of Net Developed Area Treated = F/C	80.00%	92.25%
% of Net Impervious Area Treated = L/I	95.00%	106.42%

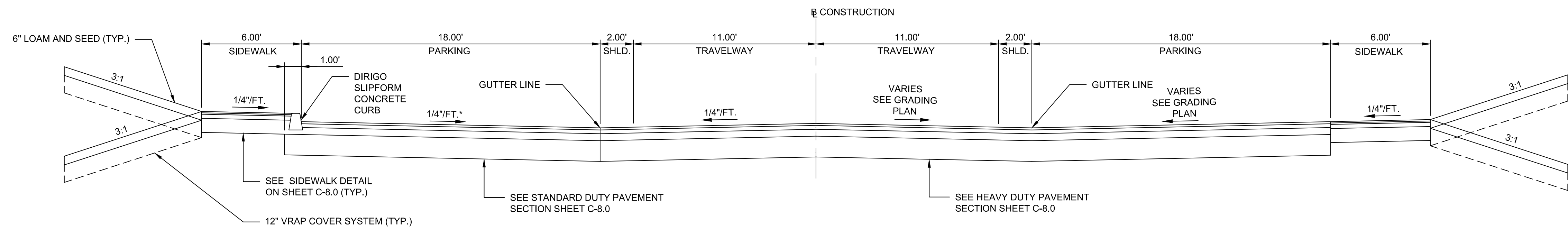
NOTES AND ASSUMPTIONS:

- All areas are based on the Placemaker Partners Permit drawings dated October 2017
- The required water quality volumes have been computed based on Sections 7.4, 7.5 and 7.6 of the Maine DEP Volume III BMP's Technical Design Manual. The volume is computed to be 1" times the subcatchments impervious area and 0.4" times the subcatchments vegetated area. Existing buildings to remain are not required to be treated.
- The 1 year peak flow rates have been computed using the rational method. The rainfall intensities are derived from the Cumberland County IDF curve.
- Subsurface storage system sizing is based on a Stormtech SC-740 chamber system. All isolator rows have been computed per a 7/29/2016 letter from State of Maine to Stormtech re: Pretreatment Isolator Row of the Maine DEP Volume III BMP's Technical Manual. One chamber is required for each 0.2 cfs of the computed tributary 1 year peak flow rate.
- The required number of Jelly Fish treatment units have been computed based on Contech Sizing requirements. The water quality volume for each unit is storage up stream and the amount of treatment cartridges are computed based sediment mass loading.
- The owner reserves the right to use an alternate tree box filter device provided it has been approved by the Maine DEP Chapter 500 delegated review authority of the City of Portland.
- Provided Water Quality Volume for stormtreat storage system computed using 61.38 CF of storage per chamber based on Storm Tech Chamber Design Manual
- Vacant
- According to Chapter 500 Maine DEP stormwater rules Dated 2015; the department allows applicants to take credit for the treatment of existing impervious areas on site. For existing roofs the credit can be calculated by multiplying the total treated area by 0.6. The overall project was approved using this methodology.
- The MEDEP will now accept a Filterra tree box filter as a stand alone treatment unit and does not require an Isolator Row for eligible projects. This project meets the eligibility criteria noted in a letter dated June 27th, 2014 from the MEDEP

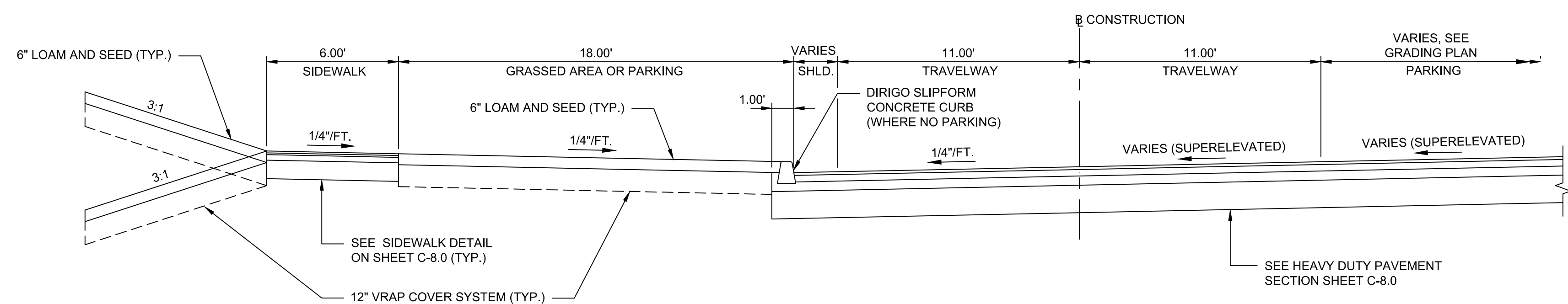
PRELIMINARY – NOT FOR CONSTRUCTION



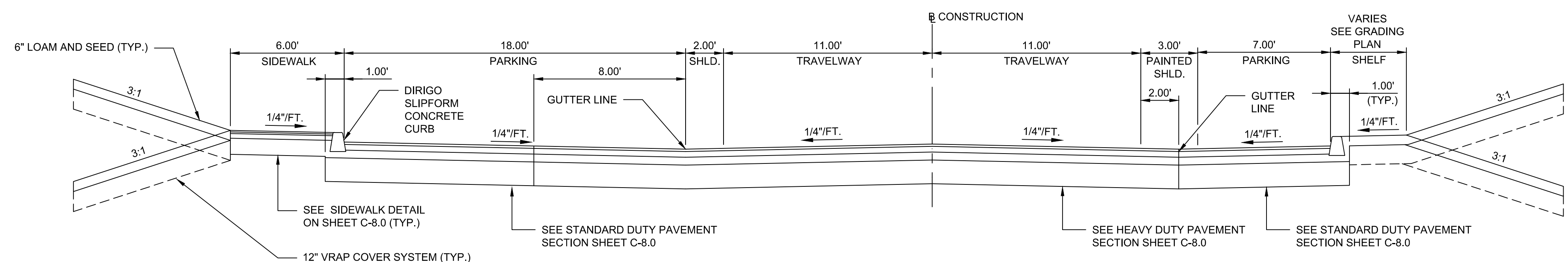
				PROJECT THE FOREFRONT AT THOMPSON'S POINT SECTIONAL 2 ROADWAY EXTENSION STA. 22+50 TO STA. 30+00	PLACEMAKER PARTNERS, LLC 501 DANFORTH STREET PORTLAND, ME 04102 bo@placemakerpartners.com
				SHEET TITLE PHASE 1 STORMWATER MANAGEMENT PLAN - 2	
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION	P.E. BO KENNEDY LIC. #11904	CLIENT FOREFRONT PARTNERS, LLC	DRAWN: DB DESIGNED: BEK FILE NAME: CMTM-ROAD-SMP.dwg SHEET PHASE 1
REV	DATE	DESCRIPTION			DATE: OCT. 2017 SCALE: N.T.S. C-5.2
REVISIONS					



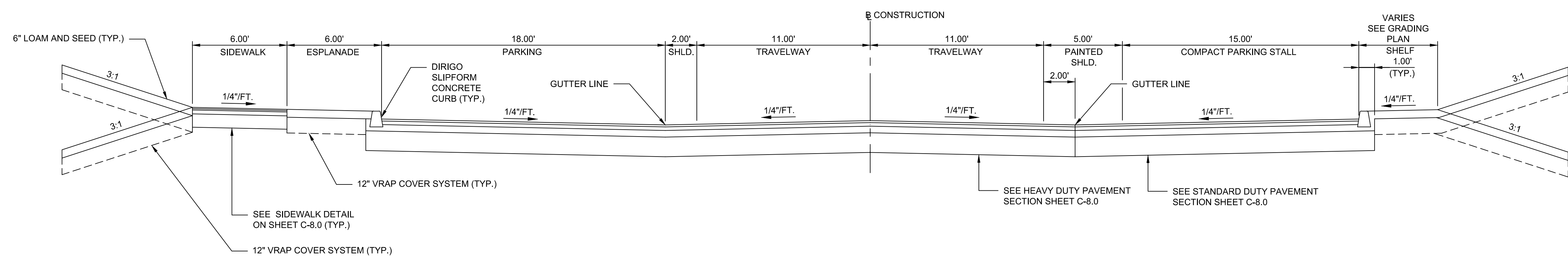
TYPICAL ROADWAY SECTION A-A
STA. 22+50 TO STA. 23+50
NOT TO SCALE



TYPICAL ROADWAY SECTION B-B
STA. 23+50 TO STA. 25+00
NOT TO SCALE



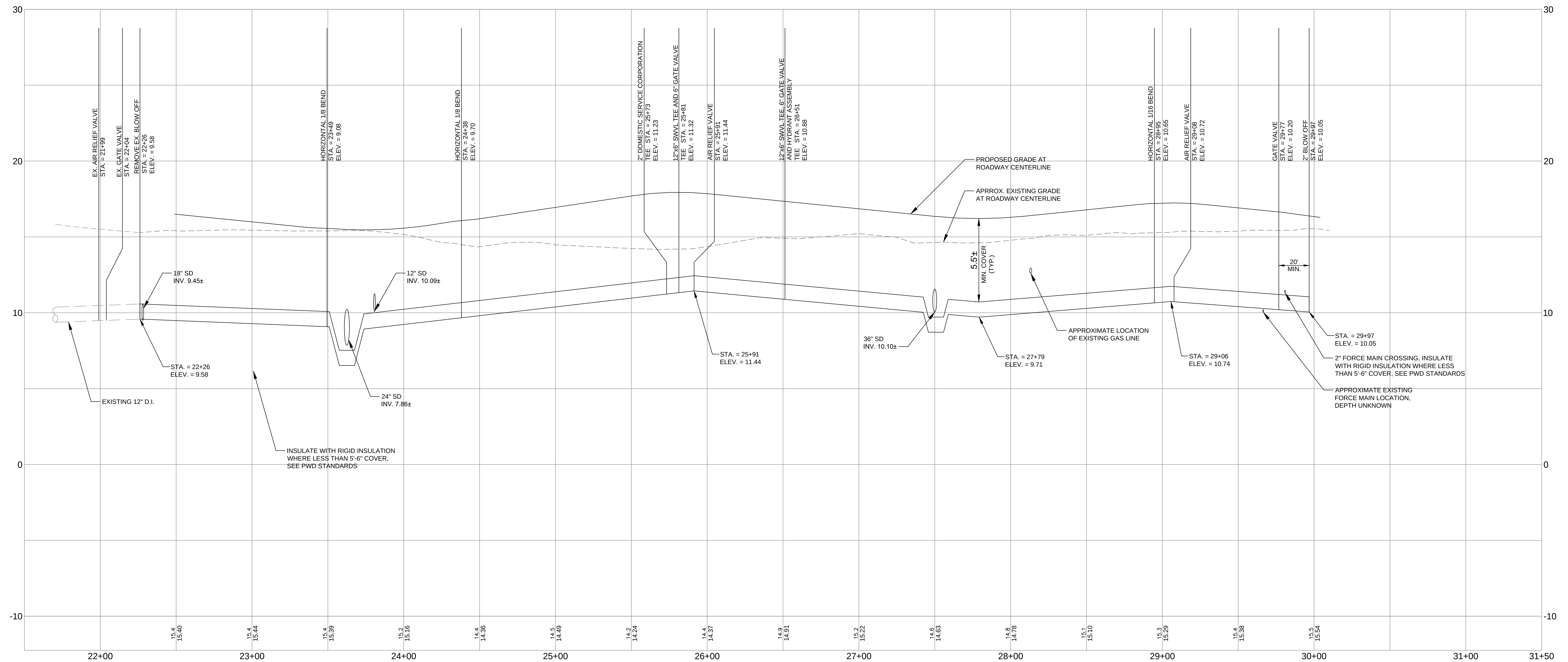
TYPICAL ROADWAY SECTION C-C
STA. 25+00 TO STA. 23+50
NOT TO SCALE



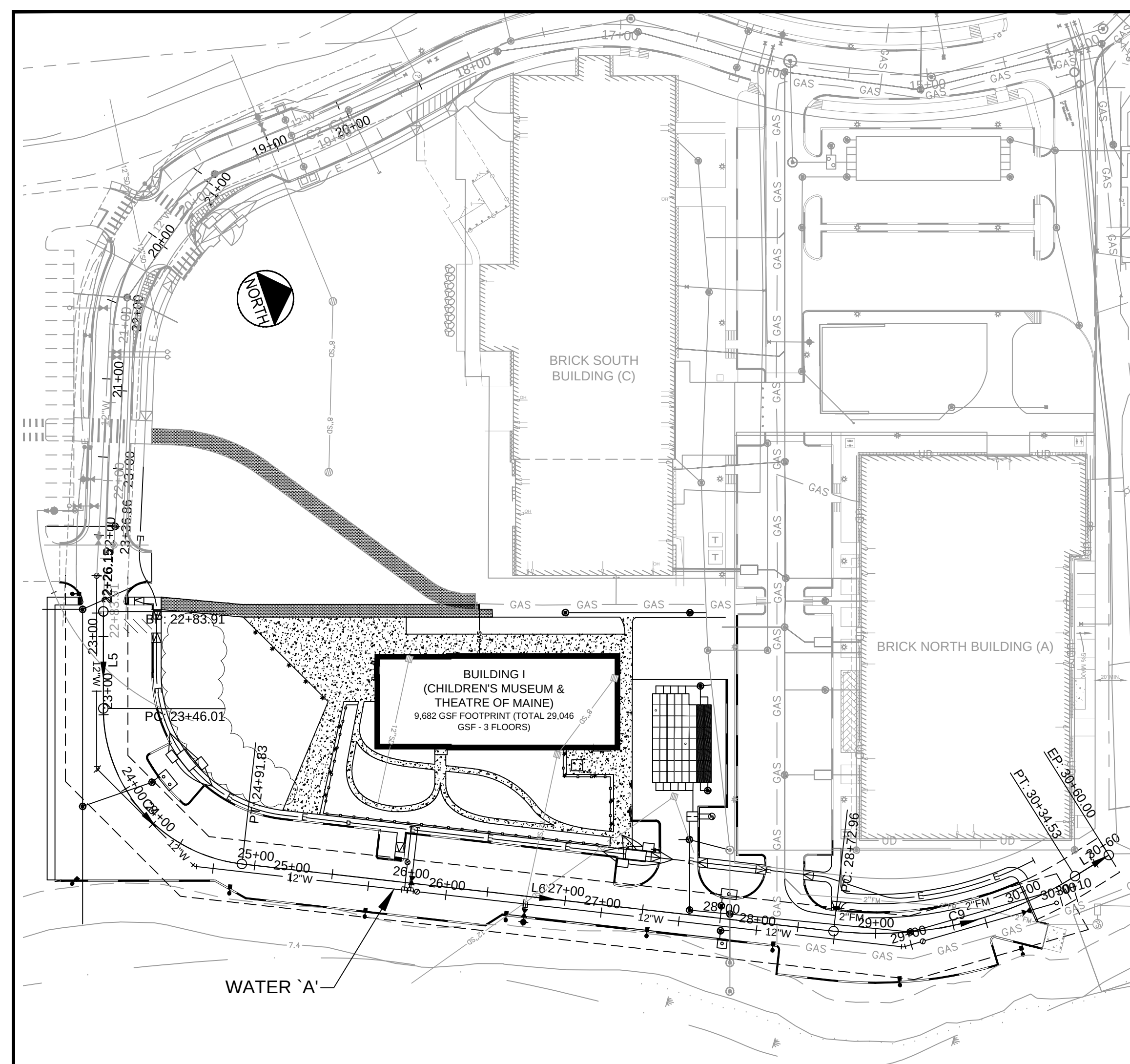
TYPICAL ROADWAY SECTION D-D
STA. 28+40 TO STA. 30+00
NOT TO SCALE

PRELIMINARY – NOT
FOR CONSTRUCTION

				PROJECT THE FOREFRONT AT THOMPSON'S POINT SECTIONAL 2 ROADWAY EXTENSION STA. 22: 50 TO STA. 30: 00		PLACEMAKER PARTNERS, LLC 501 DANFORTH STREET PORTLAND, ME 04102 bo@placemakerpartners.com					
				SHEET TITLE PHASE 1 TYPICAL SECTIONS		DRAWN: DB DESIGNED: BEK FILE NAME: CMTM-ROAD-TYPSECT.dwg					
				CLIENT FOREFRONT PARTNERS, LLC		DATE: OCT. 2017 SCALE: N.T.S.					
				P.E. BO KENNEDY LIC. #11994		SHEET PHASE 1 C-8.8					
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION									
REV	DATE	DESCRIPTION									
			REVISIONS								



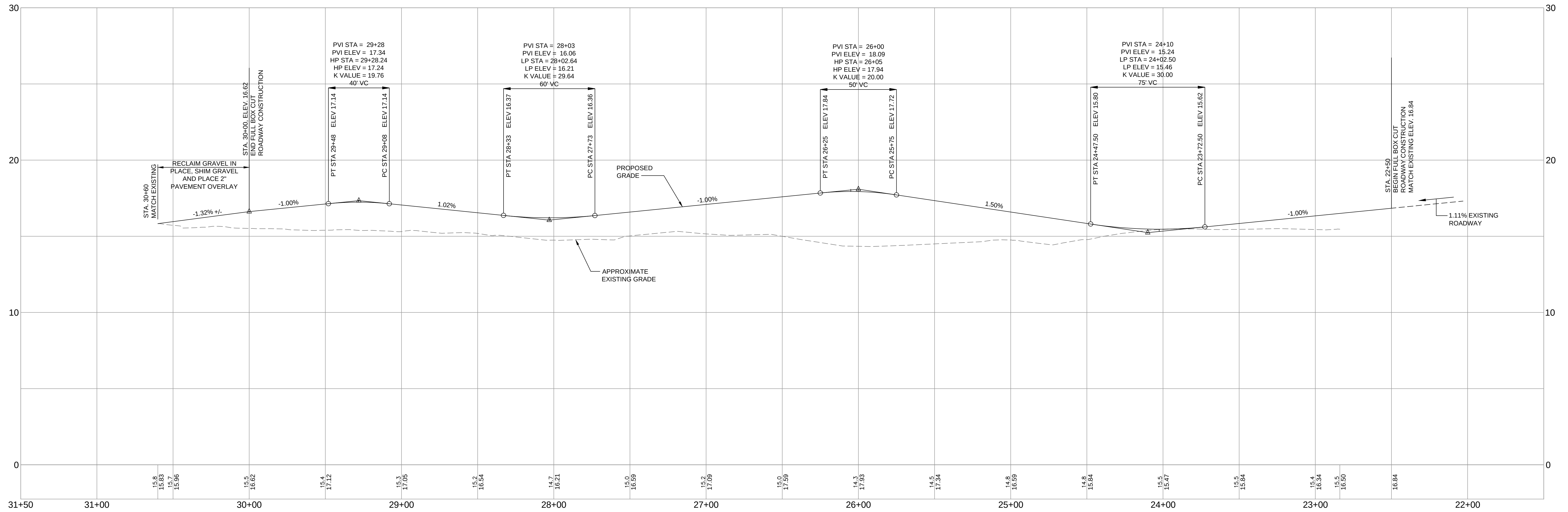
TERPRO I E
SCALE: H 1" = 30'
V 1" = 3'



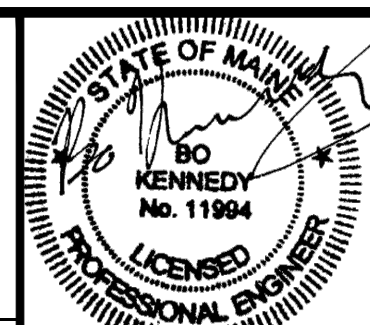
ORIENTATION SET
N.T.S.

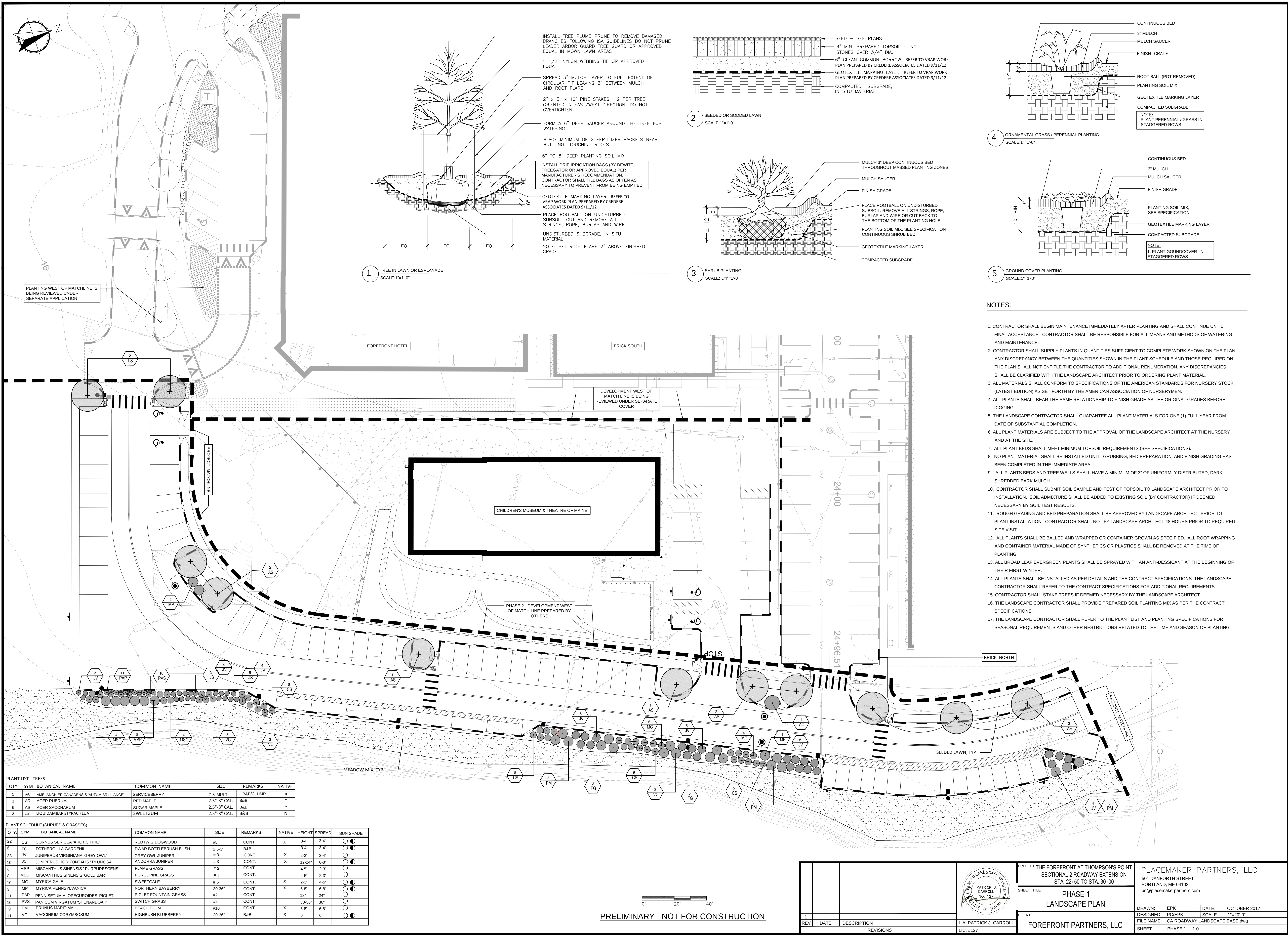
PRELIMINARY — NOT
FOR CONSTRUCTION

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				SHEET TITLE	SANITARY SEWER AND WATER PROFILES		DRAWN: DB DESIGNED: BEK FILE NAME: C:\M\UTIL-PROFILE.dwg		
				CLIENT	FOREFRONT PARTNERS, LLC		DATE: OCT. 2017 SCALE: AS SHOWN		
							SHEET PHASE 1 C-11.0		
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION	P.E. BO KENNEDY LIC. #11994	2017.10.10					
REV	DATE	DESCRIPTION							
		REVISIONS							



PRELIMINARY – NOT
FOR CONSTRUCTION

				PROJECT THE FOREFRONT AT THOMPSON'S POINT SECTIONAL 2 ROADWAY EXTENSION STA. 22: 50 TO STA. 30: 00		PLACEMAKER PARTNERS, LLC 501 DANFORTH STREET PORTLAND, ME 04102 bo@placemakerpartners.com			
				SHEET TITLE PHASE 1 ACCESS DRIVE PROFILES		DRAWN: DB DATE: OCT. 2017			
				CLIENT FOREFRONT PARTNERS, LLC		DESIGNED: BEK SCALE: AS NOTED			
				FILE NAME: CMTM-ROAD-PROFILE.dwg		SHEET PHASE 1 C-14.0			
1	2017.10.10	LEVEL III SITE PLAN SUBMISSION	P.E. BO KENNEDY LIC. #11994	REVISIONS					
REV	DATE	DESCRIPTION							



PLAN GENERAL NOTES

- FLOOR LEVELS DENOTE TOP OF STRUCTURAL SLAB
- ELEVATOR BASIS OF DESIGN:
CANTON 2500 #
8'-4" X 5'-10" CLEAR HOISTWAY
MR (IN GROUND HYDRAULIC)
SIDE (NOT CENTER) OPENING - STRETCHER COMPLIANT
- IN ACCORDANCE WITH MUBEC, PRIMARY STRUCTURE MUST HAVE 1-HOUR FIRE-RESISTANCE RATING. FIRE RESISTANCE SHALL BE SPRAY-APPLIED FIRE-PROOFING OR FIRE-RATED GWB (PER DETAIL 10/A-802) WITH THE EXCEPTION OF THE FOLLOWING COLUMNS, WHICH SHALL BE RATED WITH INTUMESCENT PAINT:
FIRST FLOOR: A1, A2, B1, B2, C1, C2
SECOND FLOOR: A1, A2, B1, C1, C2
- EXHIBIT FITOUTS SHOWN FOR REFERENCE ONLY. PLEASE REFER TO EXHIBIT DESIGNER DRAWINGS FOR THE FOLLOWING EXHIBIT SPACES:
200 OUR COMMUNITY
207 LIFE SAFETY SYSTEMS ('LSS') - SEE EXHIBIT DRAWINGS FOR MEP REQUIREMENTS
212 CULTURAL EXHIBIT
304 NATURE EXPLORATION
309 LIGHT & COLOR
313 WATER PLAY
324 AIR & RAMPS

PLAN LEGEND

- HOSE BIBB
- ROOF DAVIT
- ROOF PENETRATIONS
- FIRE ALARM CONTROL PANEL
- WALL AT WET AREA - REPLACE GWB WITH GREENBOARD
- EXHIBIT FITOUT WALL, SEE EXHIBIT DRAWINGS

Rev	Date	Remarks

Date	31 March, 2017
Scale	1/8" = 1'-0"
Project Number	15.052
Drawn By	Author

Children's
Museum &
Theater of Maine

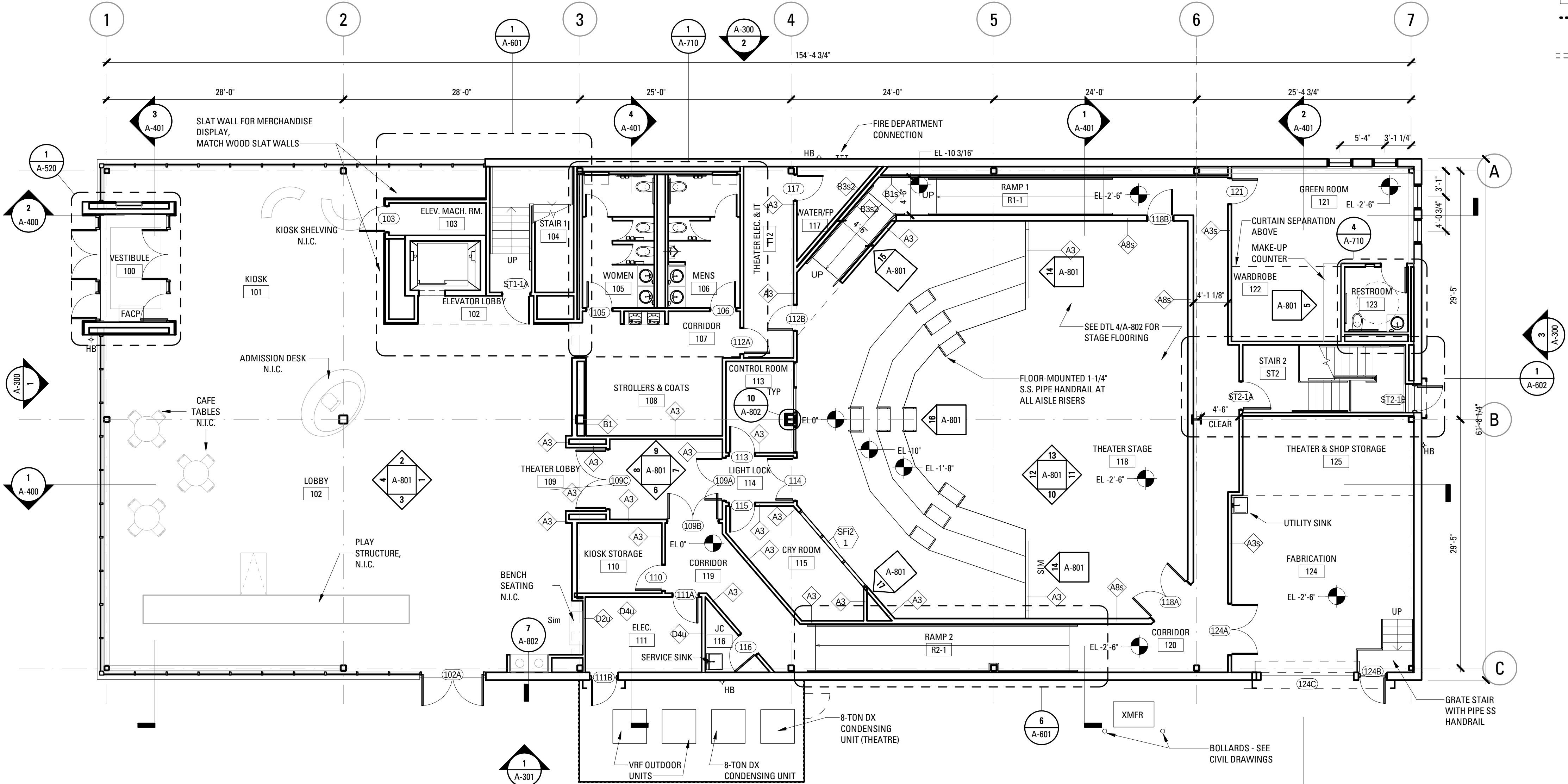
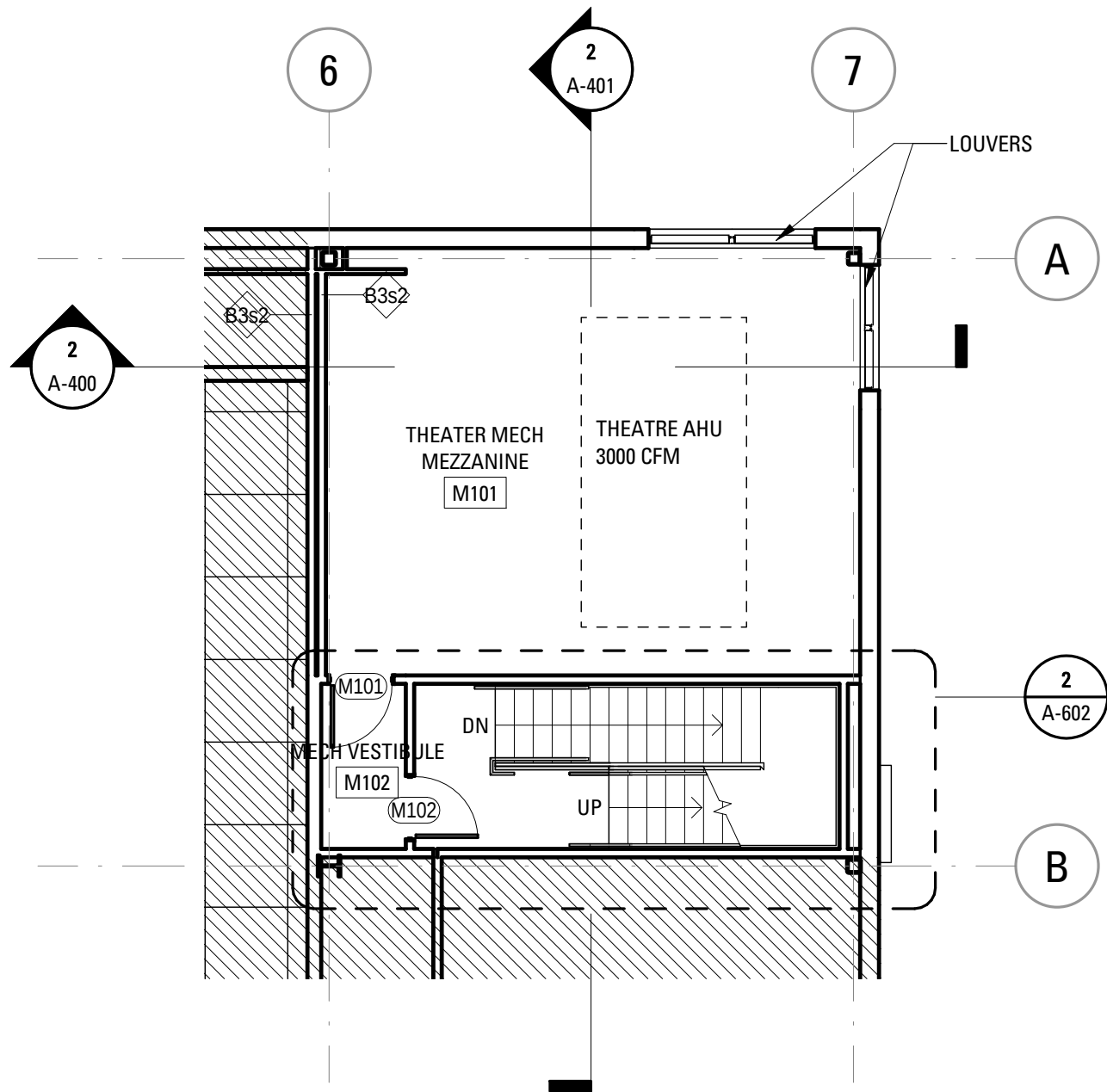
Thompson's Point
Portland, ME

DESIGN DEVELOPMENT

FIRST FLOOR PLAN +
MECHANICAL
MEZZANINE

NOT FOR CONSTRUCTION

A-101



PLAN GENERAL NOTES

- FLOOR LEVELS DENOTE TOP OF STRUCTURAL SLAB
- ELEVATOR BASIS OF DESIGN:
CANTON 2500 #
8'-4" X 5'-10" CLEAR HOISTWAY
MR (IN GROUND HYDRAULIC)
SIDE (NOT CENTER) OPENING - STRETCHER COMPLIANT
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FIRST FLOOR: A1, A2, B1, B2, C1, C2
SECOND FLOOR: A1, A2, B1, C1, C2
- EXHIBIT FITOUTS SHOWN FOR REFERENCE ONLY. PLEASE REFER TO EXHIBIT DESIGNER DRAWINGS FOR THE FOLLOWING EXHIBIT SPACES:
200 OUR COMMUNITY
207 LIFE SAFETY SYSTEMS ('LSS') - SEE EXHIBIT DRAWINGS FOR MEP REQUIREMENTS
212 CULTURAL EXHIBIT
304 NATURE EXPLORATION
309 LIGHT & COLOR
313 WATER PLAY
324 AIR & RAMPS

PLAN LEGEND

- HOSE BIBB
- ROOF DAVIT
- ROOF PENETRATIONS
- FIRE ALARM CONTROL PANEL
- WALL AT WET AREA - REPLACE GWB WITH GREENBOARD
- EXHIBIT FITOUT WALL, SEE EXHIBIT DRAWINGS

Rev	Date	Remarks

Date	31 March, 2017
Scale	1/8" = 1'-0"
Project Number	15.052
Drawn By	Author

Children's
Museum &
Theater of Maine

Thompson's Point
Portland, ME

DESIGN DEVELOPMENT

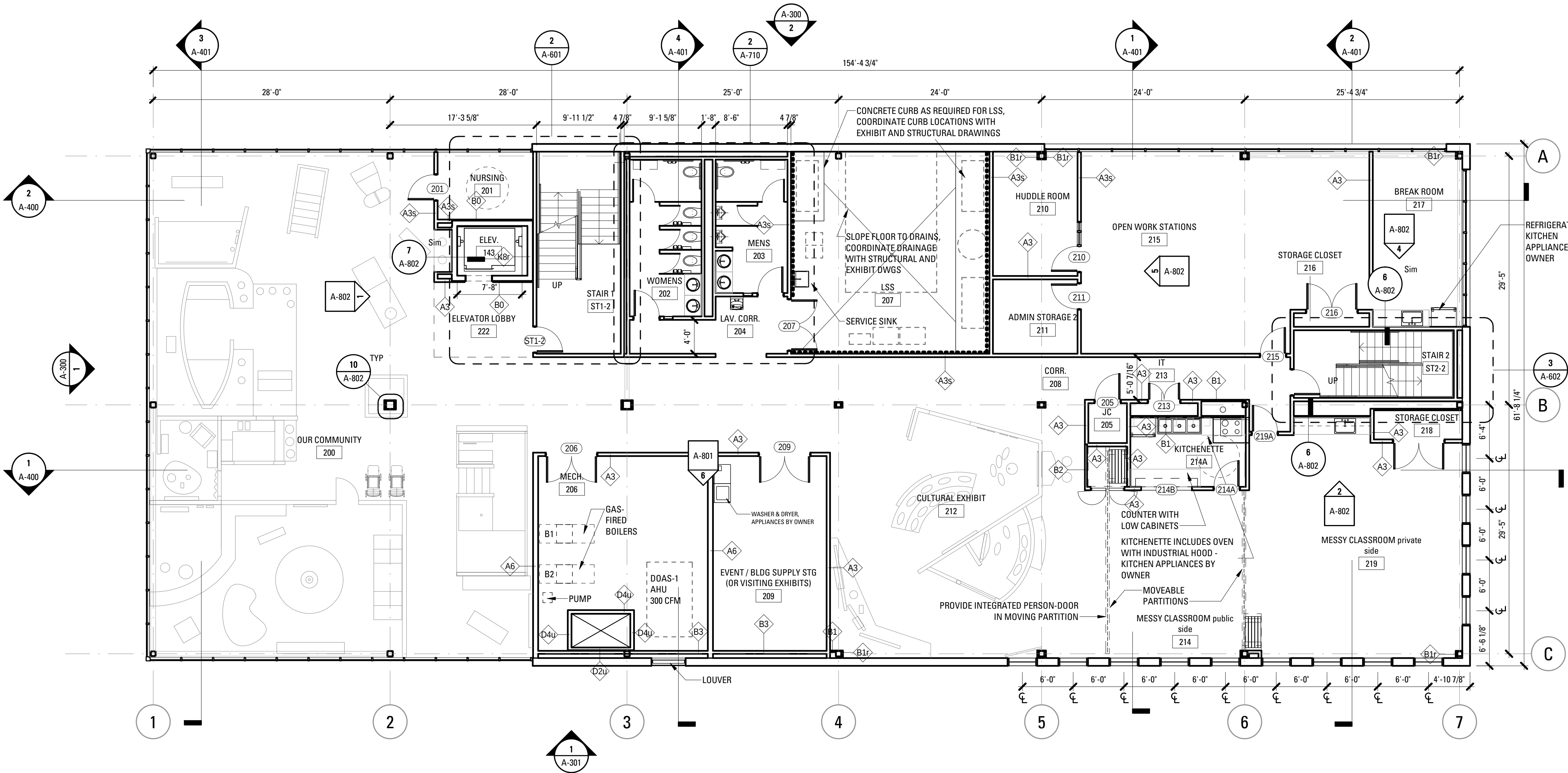
SECOND FLOOR PLAN

NOT FOR CONSTRUCTION

A-102

IF THIS SHEET IS NOT: 22" x 34", IT HAS BEEN REDUCED OR ENLARGED.

3/31/2017 11:54:41 AM



PLAN GENERAL NOTES

- FLOOR LEVELS DENOTE TOP OF STRUCTURAL SLAB
- ELEVATOR BASIS OF DESIGN:
CANTON 2500 #
8'-4" X 5'-10" CLEAR HOISTWAY
MR (IN GROUND HYDRAULIC)
SIDE (NOT CENTER) OPENING - STRETCHER COMPLIANT
- IN ACCORDANCE WITH MUBEC, PRIMARY STRUCTURE MUST HAVE 1-HOUR FIRE-RESISTANCE RATING. FIRE RESISTANCE SHALL BE SPRAY-APPLIED FIRE-PROOFING OR FIRE-RATED GWB (PER DETAIL 10/A-802) WITH THE EXCEPTION OF THE FOLLOWING COLUMNS, WHICH SHALL BE RATED WITH INTUMESCENT PAINT:
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SECOND FLOOR: A1, A2, B1, C1, C2
- EXHIBIT FITOUTS SHOWN FOR REFERENCE ONLY. PLEASE REFER TO EXHIBIT DESIGNER DRAWINGS FOR THE FOLLOWING EXHIBIT SPACES:
200 OUR COMMUNITY
207 LIFE SAFETY SYSTEMS ("LSS") - SEE EXHIBIT DRAWINGS FOR MEP REQUIREMENTS
212 CULTURAL EXHIBIT
304 NATURE EXPLORATION
309 LIGHT & COLOR
313 WATER PLAY
324 AIR & RAMPS

PLAN LEGEND

- HOSE BIBB
- ROOF DAVIT
- ROOF PENETRATIONS
- FIRE ALARM CONTROL PANEL
- WALL AT WET AREA - REPLACE GWB WITH GREENBOARD
- EXHIBIT FITOUT WALL, SEE EXHIBIT DRAWINGS

Rev	Date	Remarks

Date	31 March, 2017
Scale	1/8" = 1'-0"
Project Number	15.052
Drawn By	Author

Children's
Museum &
Theater of Maine

Thompson's Point
Portland, ME

DESIGN DEVELOPMENT

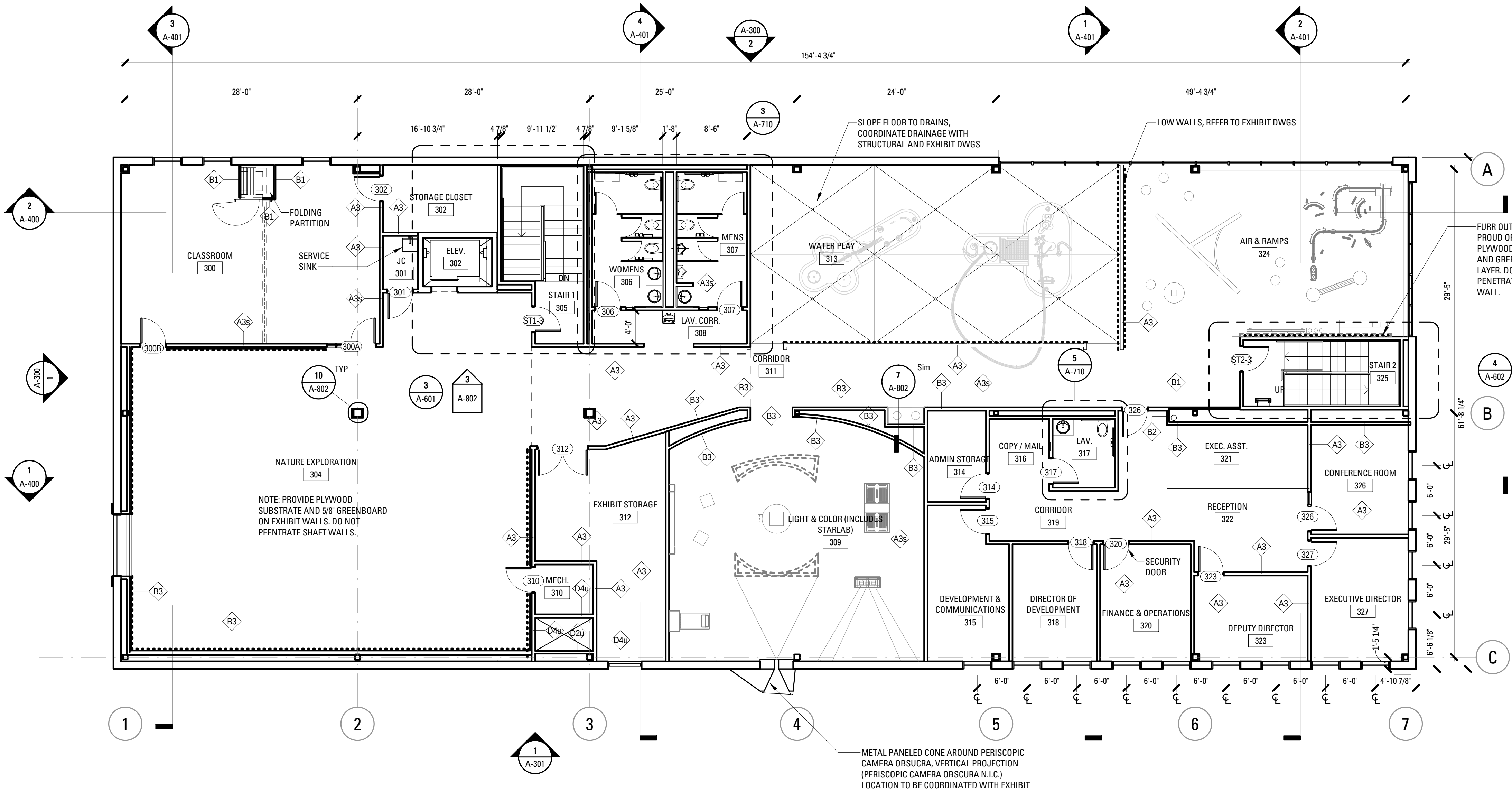
THIRD FLOOR PLAN

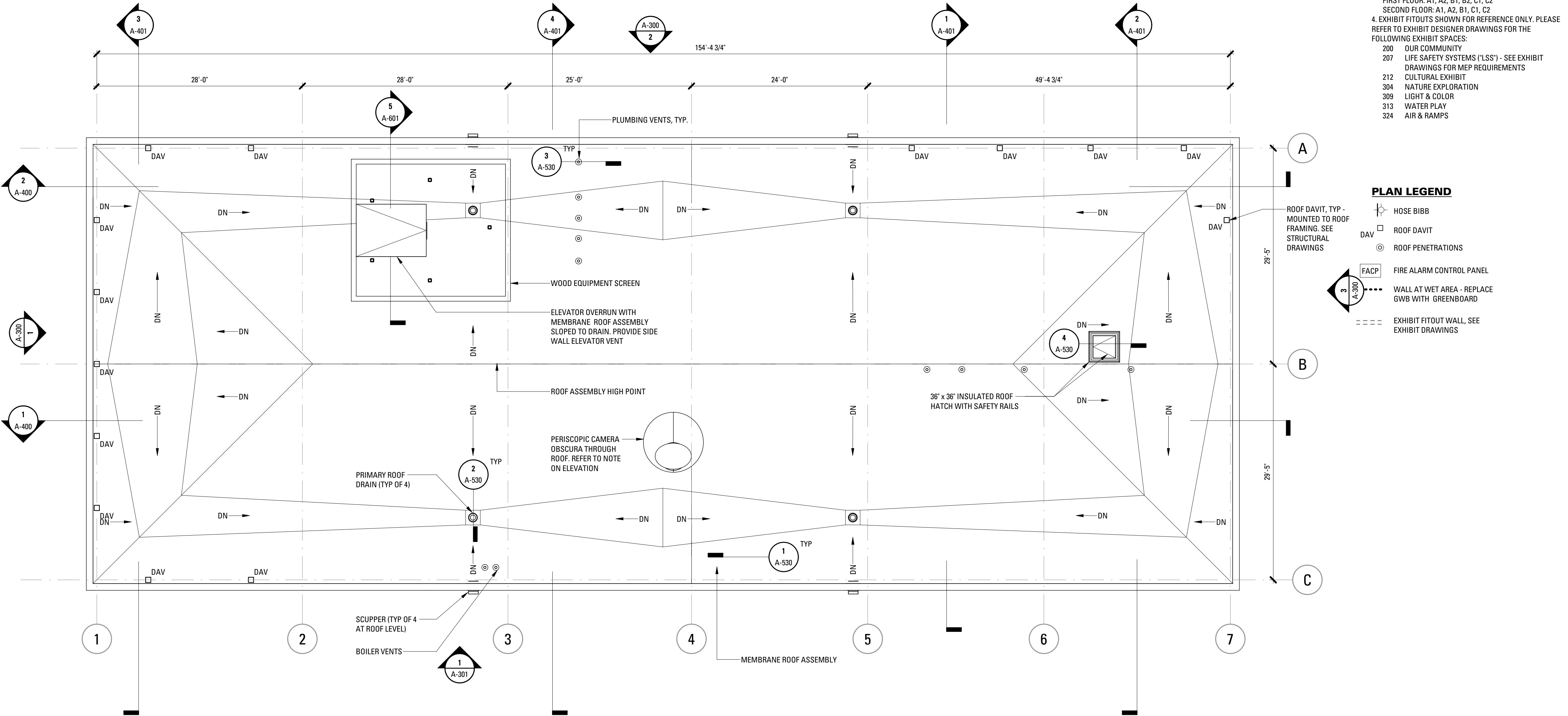
NOT FOR CONSTRUCTION

A-103

IF THIS SHEET IS NOT: 22" x 34", IT HAS BEEN REDUCED OR ENLARGED.

3/31/2017 11:54:45 AM





- PLAN GENERAL NOTES**
- FLOOR LEVELS DENOTE TOP OF STRUCTURAL SLAB
 - ELEVATOR BASIS OF DESIGN:
CANTON 2500 #
8'-4" X 5'-10" CLEAR HOISTWAY
MR (IN GROUND HYDRAULIC)
SIDE (NOT CENTER) OPENING - STRETCHER COMPLIANT
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SECOND FLOOR: A1, A2, B1, C1, C2
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212 CULTURAL EXHIBIT
304 NATURE EXPLORATION
309 LIGHT & COLOR
313 WATER PLAY
324 AIR & RAMPS

- PLAN LEGEND**
- HOSE BIBB
 - ROOF DAVIT
 - ROOF PENETRATIONS
 - FIRE ALARM CONTROL PANEL
 - WALL AT WET AREA - REPLACE GWB WITH GREENBOARD
 - EXHIBIT FITOUT WALL, SEE EXHIBIT DRAWINGS

Rev	Date	Remarks

Date	31 March, 2017
Scale	1/8" = 1'-0"
Project Number	15.052
Drawn By	Author

Children's
Museum &
Theater of Maine

Thompson's Point
Portland, ME

DESIGN DEVELOPMENT

ROOF PLAN

NOT FOR CONSTRUCTION

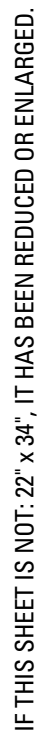
A-104

Date	31 March, 2017
Scale	1/8" = 1'-0"
Project Number	15.052
Drawn By	Author

Thompson's Point
Portland, ME

EAST ELEVATION & ENLARGED ELEVATIONS

A-301



2017-09-28 11:51:44

Google Groups

Fwd: (no subject)

Shukria Wiar <shukriaw@portlandmaine.gov>

Nov 13, 2017 9:51 AM

Posted in group: **Planning Board**

----- Forwarded message -----

From: <KDidonato@aol.com>

Date: Fri, Nov 10, 2017 at 12:18 PM

Subject: (no subject)

To: shukriaw@portlandmaine.gov

Cc: bigcountryjack@yahoo.com

I am writing about proposals for thompson Point. I do not object to the childrens museum. it is a great resource, but only 18 parking spaces seems like a problem. now a hotel.there is a limited space there and the point was never meant for so much development. We here i libbytown treasure the point but feel this is too much for the area. when the plans were proposed to us we were told there would be no neighborhood parking and when they left events they could only turn right an no left turn to congress where traffic is already an issue. congress cannot continue to handle more and more traffic. we can not get out of our streets now any time of day. and the parking needs to be addressed before development is to continue. they holds concerts for up to 7300. people with very limited parking and noe they installed meter to further force people off the point and into the neighborhood. when concerts get out at 10.00 there are swamps of people everywhere in the neighborhood. we were told this would not happen.now that the planning board approved thompson point development, thye are not adhering to being good neighbors. how do i see the original thompson point proposal? I would appreciate a response thank you mary didonato

--

Shukria Wiar, Planner

Planning Division

City of Portland 389 Congress Street

Portland, ME 04101

Ph: 207.756.8083

Fax: 207.756.8258

Google Groups

Re: Thompsons Point - Proposed Hotel - Parking

me <jmy@portlandmaine.gov>

Nov 14, 2017 1:14 PM

Posted in group: **Planning Board**

Good Afternoon,

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

If you have any further questions, please contact me.

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

On Monday, November 13, 2017 at 9:53:01 AM UTC-5, Shukria Wiar wrote:

----- Forwarded message -----

From: **Margaret Gaertner** <margaret.gaertner@gmail.com>

Date: Sun, Nov 12, 2017 at 6:26 PM

Subject: Thompsons Point - Proposed Hotel - Parking

To: shukriaw@portlandmaine.gov, Christine Grimando <CDG@portlandmaine.gov>

Dear Shukria Wiar -

Please note I have cc'd Christine Grimando in the Planning Department as earlier this year (July, 2017) I requested information from her regarding parking requirement evolution at Thompson's Point. My questions of July, 2017 remain largely unanswered.

My first (new) question (regarding only this latest issues, the hotel) is: **what parking will be provided on-site at Thompson's Point for the proposed hotel?** The hotel, as per the Public Notice, will have 148 rooms. The Public Notice does not mention parking. As per this article in the Press Herald, which is of course, not an official submission to the Planning Department, parking for the hotel parking will be as follows:

"Valet parking would be offered for guests, using existing parking lots in Thompson's Point."

Second question: If this is an accurate statement, and only existing parking is to be utilized, I would like to have a copy of a study that justifies this number or some explanation of the process that determined that the **existing parking at Thompson's Point is adequate for a 148 room hotel, in addition to the extant uses and their parking requirements.**

Finally, I would like to express my observation and concern for the record that the parking at Thompson's Point is NOT keeping pace with the added uses. I am also concerned that my past requests about the plans and studies for parking at Thompson's Point have still not been answered.

As added uses and tenant's come on line at Thompson's Point, is critical that parking for the new uses keep pace so as to minimize traffic impacts on adjacent neighborhoods.

Thank you for your attention to this matter,

Margaret Gaertner, Portland Resident

11 Stevens Avenue

--

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

Google Groups

Re: Thompson's Point - Proposed Children's Musuem

me <jmy@portlandmaine.gov>

Nov 14, 2017 1:14 PM

Posted in group: **Planning Board**

Good Afternoon,

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

If you have any further questions, please contact me.

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

On Monday, November 13, 2017 at 9:54:31 AM UTC-5, Shukria Wiar wrote:

----- Forwarded message -----

From: **Margaret Gaertner** <margaret.gaertner@gmail.com>
Date: Sun, Nov 12, 2017 at 8:27 PM
Subject: Thompson's Point - Proposed Children's Musuem
To: shukriaw@portlandmaine.gov

Dear Shukria Wiar -

I would like to know how the 18 parking spots for the proposed Children's Museum at Thompson's Point was determined.

As stated in the Public Notice, the museum will have 29,046 square feet of space. Per the Children's Museum's website (<http://www.kitetails.org/about-us/our-staff/>), they presently have 21 staff members.

As stated in the recent article in the Portland Press Herald, "About 114,000 people visited the museum in 2016, and the museum expects to double that attendance figure in five years."

Source: <http://www.pressherald.com/2017/03/02/move-to-thompsons-point-positions-childrens-museum-for-growth/>

It is hard to believe that 18 parking spaces is adequate for 21 staff members and 114,00 to 228,000 annual visitors. Quick math shows the museum, as stated in its website, is open approximately 306 days a year. 228,000 people divided by 306 days is 745 people per day. Even if each visitor stays for only an hour, that is over 100 visitors per hour. Plus of course the staff, who would be there all day.

Division 20 of the City Zoning ordinance establishes off-street parking requirements for new construction. I am aware that Thompson' Point is a B-5 zone and thus has no off-street parking requirements, which is ridiculous for any completely new development. However, other zones would require parking as follows:

"Auditoriums, theaters, assembly halls, funeral homes: One (1) parking space for reach one hundred (100) square feet, or major fraction thereof, of assemblage space if no fixed seats."

OR

"Places of assembly (which includes private club and fraternal halls, places of religious assembly, and community halls): One (1) parking space for reach one hundred and twenty five (125) square feet, or major fraction thereof, of floor area used for assembly area not including bathrooms, bulk storage, stairways, closets or other non-assembly areas."

OR

"Offices; professional and public buildings: One (1) parking space for each four hundred (400) square feet, or major fraction thereof, of floor area exclusive of cellar not used for bulk storage....."

I am not exactly sure which category a Musuem belongs to. Which ever it is, parking spaces would be at best 72 spaces, for "a professional or public building" or at the worst 290 spaces for a " Auditoriums, theaters, assembly halls, funeral homes" in any other zone (other than B-5).

This, I find the 18 spaces to be completely questionable. I look forward to hearing how this number was arrived at.

Sincerely,

Margaret Gaertner, Portland Resident
11 Stevens Ave.

--

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

Google Groups

CBL # 201 A005001 - Proposed Children's Museum, Proposed Hotel, Thompson's Point

Margaret Gaertner <margaret.gaertner@gmail.com>

Nov 14, 2017 1:46 PM

Posted in group: **Planning Board**

To the members of the Portland Planning Board:

I would like my comments to be please entered into the official record as follows. I live in the vicinity of Thompson's Point and have been following the proposals and approvals and attending Planning Board meetings for the site since 2012. Obviously, the plan has changed substantially since the initial proposal in 2012. In many ways the changes are for the better.

I realize tonight's review is about the Children's Museum proposal, but that project can't be reviewed without considering the many other recent and concurrent projects on the site that are entwined with it.

The earliest (2012) proposals for Thompson's Point called for a two-phase plan, and a **parking garage** was to be part of **Phase One**. The revised, 2014 Master Site Plan also shows a Parking Garage. To date, no parking garage has been built.

Since 2012, a large outdoor concert venue (7,500 attendees), a brewery, a wine tasting room, a small museum, a large gathering space ("Brick South") hosting large events of up to 2,500 attendees, and the circus space have come online. On-site parking has NOT kept pace with the growth of the site and the adjacent residential neighborhood is forced to host the overflow. Neighbors are fed up with the traffic, the late night noise, and the parking tickets resulting from event- and concert-goers parking in the adjacent, residential neighborhood.

The concert venue now holds as many as 7,500 people (source: <http://www.centralmaine.com/2017/07/09/thompsons-point-is-well-on-its-way-to-becoming-portlands-newest-neighborhood/>) I was one of the people who called about shuttle bus/remote parking for a concert at Thompson's Point and was told it wasn't available and "You can park in the neighborhood." Please note the remote parking at Mercy and the shuttle bus service was discontinued and not provided over the summer of 2017.

Now, a new hotel and a 29,000 s.f. museum are proposed. The Children's Museum expects to double its visitorship to 228,000 a year in the next five years (<http://www.pressherald.com/2017/03/02/move-to-thompsons-point-positions-childrens-museum-for-growth/>) . The submitted proposal for the Museum calls for 18 parking spaces. The Planning Report also notes 64 spaces will be provided on the loop road, but there is no indication if these will be dedicated to museum visitors during museum hours. The museum has a staff of 21 (as listed on its website) and the staff certainly will grow if visitorship doubles.

In other land use zones, the Portland Land Use Ordinance, Division 20 states a new, 29,000 s.f. museum would require at a minimum 72 spaces (if classified as business use) and at worst case 290 spaces (for assembly use -- I am not clear which use a museum falls under). I am not a parking expert, but I can read zoning ordinances, and I have to ask if 18 spaces for 29,000 sf and 228,000 visitors a year is really enough?

Although this is reviewed as a separate project, it should be noted that another major tenant - a hotel - is proposed and still, no parking garage. In other land use zones, the Land Use Ordinance, Division 20 would require a 148 room hotel to provide 37 parking spaces. Yet, as reported in the Portland Press Herald, the proposed hotel will use "existing parking on the site. "

I ask the Planning Board to look hard at the balance of users coming online vs. available, on-site parking at Thompson's Point. In July, 2017 I tried to get a parking analysis from City planning staff and got no answers. I have reopened my questions and await answers.

My questions are:

1. What is the review / evaluation process for ensuring that on-site parking is keeping pace with new uses at Thompson's Point?
2. When will the parking garage, promised since 2012, be built?

3. As the developer claims that he wishes to promote public transit, what is the timeline for a bus line extension and bus stop at Thompson's Point? The existing stop at the Transportation Center is too far for Children's Musuem guests with strollers and diaper bags or hotel guests with luggage.

Dumping the overflow parking into the adjacent, residential neighborhood contradicts past feedback and recommendations from the Planning Board and is negatively affecting traffic, noise, ticketing, and general quality of life in the neighborhood.

Sincerely,

Margaret Gaertner
11 Stevens Avenue



PLANNING BOARD REPORT PORTLAND, MAINE

Update of ADA Detectable Sidewalk Ramp Detail for Technical Manual
City of Portland, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: November 14, 2017	Prepared by: Barbara Barhydt, Development Review Services Manager Date: Nov. 9, 2017
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I. TECHNICAL MANUAL UPDATE FOR ADA PANEL

The enabling language for the Technical Manual is contained in Section 14-498 of the Land Use Code and states the following:

(a) Adoption and amendment of standards: The public works authority and the planning authority may promulgate technical and design standards for subdivisions and site plans. Such technical and design standards or any amendments thereto shall become effective only upon approval of the Planning Board following a public hearing before the Planning Board. In approving the technical and design standards, the Planning Board may direct staff to make changes with respect to format and text but, to the extent that standards are based upon sound engineering practice, shall not direct changes in the standards themselves. Such standards shall be additional to and consistent with the provisions of this article and shall be necessary and reasonable and shall be in accord with sound engineering practice. The public works authority and planning authority shall maintain for public inspection current copies of the effective standards.

The technical standards for sidewalks and driveway aprons are contained in Section 1.8 of Portland's Technical Manual. The specific standards for Sidewalk Ramp Design are contained in 1.8.4. The current standards for the detectible warning panels are as follows:

- (4) Detectable warning panels shall be composite wet set (replaceable) as manufactured by ADA Solutions, Inc (www.Adatile.com), or equivalent.
- (5) Distinct standards for curb ramp construction apply for locations (1) within and immediately adjacent to Historic Districts and/or Historic Landscapes (Figure 1-7A) and (2) all other locations with the City (Figure 1-7).
 - For locations within Historic Districts and Historic Landscapes and the areas immediately adjacent where detectable warning panels are required, "Dark Gray" (#36118) panels shall be used (Figure 1-7A).
 - For all other areas, "Federal Yellow" (#33538) panels shall be used (Figure 1-7).

The Department of Public Works has found that these panels have not held up under winter maintenance conditions. Public Works and Planning are recommending that more durable panels be substituted for the current panels. The recommendation is to delete the existing panel specification from the Technical Manual along with the accompanying figures and to substitute the specifications for an uncoated cast iron plate. The same panel and installation specifications would be the same throughout the city, including within Historic Districts. The Historic Preservation Board reviewed and approved the use of the cast iron detectable warning panels with the four (4) inch border within Historic Districts.

The proposed text amendments are as follows:

- (4) Detectable warning panels shall be ~~composite wet set (replaceable) as manufactured by ADA Solutions, Inc (www.Adatile.com), or equivalent~~ uncoated cast iron, following manufacturer's instruction for installation and meeting Portland's specifications for Sidewalk Ramp Detectable Warning Panel, Figure 1-7.
- (5) ~~Reserved~~ Distinct standards for curb ramp construction apply for locations (1) within and immediately adjacent to Historic Districts and/or Historic Landscapes (Figure 1-7A) and (2) all other locations with the City (Figure 1-7).
 - ~~For locations within Historic Districts and Historic Landscapes and the areas immediately adjacent where detectable warning panels are required, "Dark Gray" (#36118) panels shall be used (Figure 1-7A).~~
 - ~~For all other areas, "Federal Yellow" (#33538) panels shall be used (Figure 1-7).~~

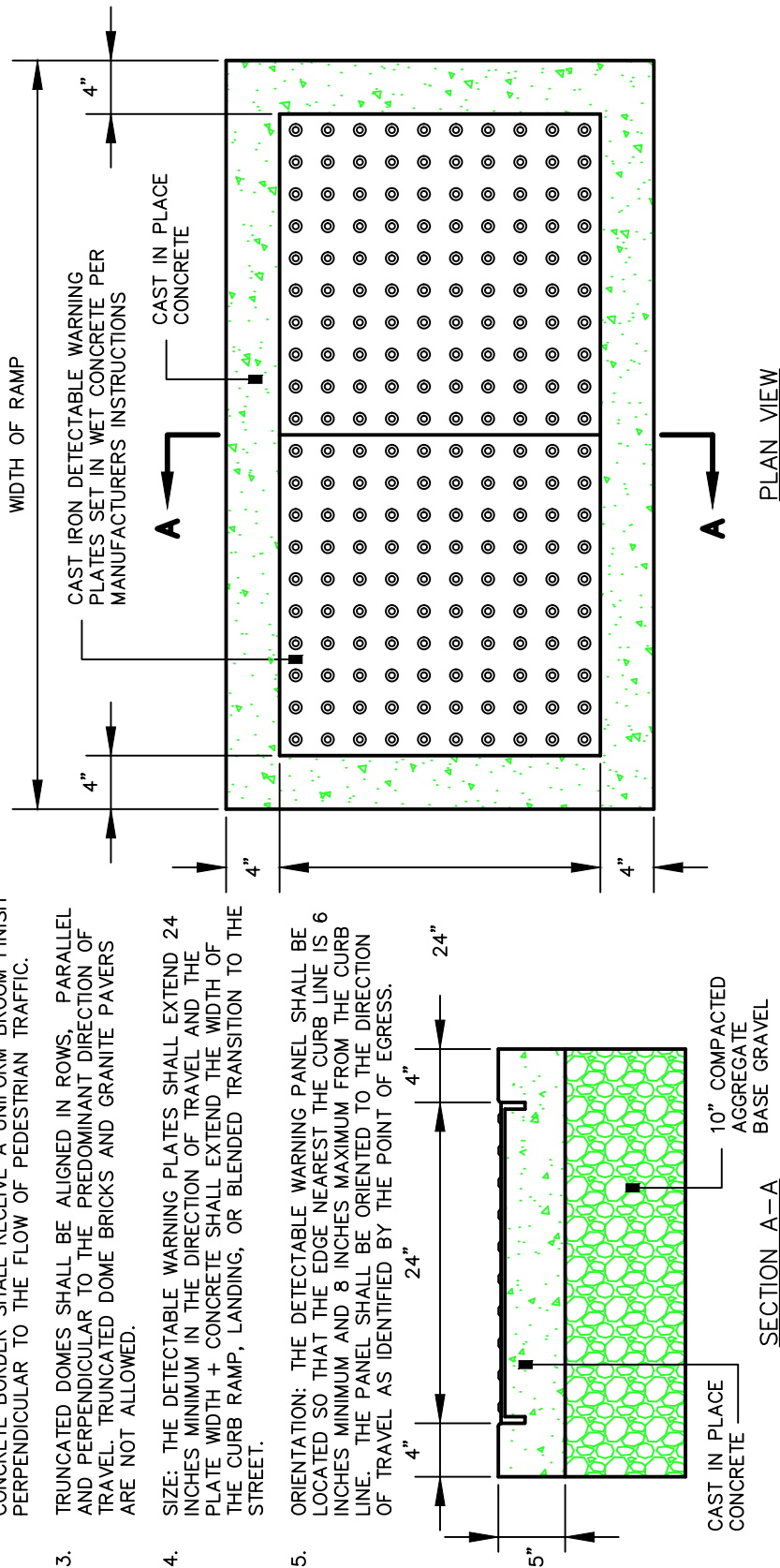
The proposed technical detail, Figure 1-7 (shown on next page) would replace the current Figures 1-7 and 1-7A.

II. PROPOSED MOTION

Based upon the material provided in Planning Board Report for Update of ADA Detectable Sidewalk Ramp Detail for Portland's Technical Manual and the associated text amendments to Chapter 1, Section 1.8.4 and the replacement of Figures I-7 and I-7A with the proposed Figure I-7, public testimony, a review of applicable policies, and other information, the Planning Board finds that the proposed text amendments to Chapter 1 of the Portland Technical Manual **[are/are not consistent]** with the Comprehensive Plan and **[are/are not]** necessary, reasonable, and in accord with sound engineering practice. Thus, the Planning Board **[approves/does not approve]** the proposed text and figure amendment to Portland's Technical Manual.

NOTES:

1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE PLATE WIDTH + CONCRETE SHALL EXTEND THE WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



SIDEWALK RAMP DETECTABLE WARNING PANEL

NOT TO SCALE

DATE:
OCTOBER 2017
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION SYSTEMS
AND STREET DESIGN**
SECTION I

FIGURE:

SIDEWALK RAMP DETECTABLE WARNING PANEL

I-7



PLANNING BOARD REPORT PORTLAND, MAINE

Conversion of Office Space to 28 Residential Units
443 Congress Street
Amended Inclusionary Zoning Conditional Use
2017-254
Northland Enterprises, LLC, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: November 14, 2017	Prepared by: Barbara Barhydt, Development Review Services Manager Date: November 9, 2017
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I. INTRODUCTION

On March 8, 2016, the Planning Board approved a Level III subdivision and site plan for the conversion of upper floor office space to 28 residential units at 443 Congress. This project was also reviewed and approved as a conditional use under the newly adopted Ensure Workforce Housing Ordinance. Northland Enterprises LLC is seeking to amend the Conditional Use application to allow for a financial contribution to the Housing Trust Fund rather than providing affordable units on site ([Attachment 1](#)).

II. CONDITIONAL USE APPROVAL -2016

The project approved in 2016 (approval letter, [Attachment 3](#)) allowed for the conversion of floors 4 through 7 to be converted from office space to 28 residential units. The bedroom mix included 16 one-bedroom units and 8 two-bedroom units. The conditional use review conducted by Tyler Norod, former Portland Housing Planner, was as follows:

Conditional Use is authorized by Division 30, Section 14-487, Ensuring Workforce Housing, to secure the creation of Workforce Housing Units as part of new residential projects that propose 10 or more units. The ordinance requires a minimum of 10% of the project to be restricted for Workforce Households and that the number of bedrooms required under Section 14-487(e)3 be at least 10% of the total number of bedrooms made available as part of the project. The project located at 443 Congress Street proposes the creation of 28 units of rental housing consisting of four (4) studios, sixteen (16) one-bedroom units, and eight (8) two-bedroom units. As apartments for rent, the designated Workforce Units will be restricted to households earning up to 100% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the project is required to provide a minimum of two (2) workforce units and four (4) bedrooms. The Applicant has elected to provide four (4) Workforce Units on-site consisting of two (2) studios and two (2) one-bedroom units to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the

City enter into an agreed upon Affordable Housing Agreement (AHA) before a Building Permit may be issued. The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the Workforce Units and will be filed as covenant to the property's deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued. It should be noted that this project filed its application prior to the Board's recent approval of the Inclusionary Zoning Implementation Regulations on February 23, 2016. Staff has been working with the Applicant to establish clear expectations for what the AHA will entail. It is expected that the AHA will align closely with the draft regulations reviewed and approved by the Board.

The Board voted unanimously (4-0, Dundon and Morrisette absent) to approve the Inclusionary Zoning application with two conditions of approval:

1. That the Applicant and the City shall enter into an agreed upon Affordable Housing Agreement (AHA) prior to the issuance of a building permit. The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the Workforce Units; and
2. That the Affordable Housing Agreement shall be files as a covenant to the property's deed with the Cumberland County Registry of Deeds prior to the issuance of a Certificate of Occupancy.

The applicant met condition #1 and renovation of the building began in March of 2017. No certificates of occupancy have been issued.

III. AMENDED CONDITIONAL USE APPLICATION – 2017

Prior to the completion of the project, the applicant is seeking to fulfill the inclusionary zoning requirements by paying a fee-in-lieu rather than providing the four units on site. The applicant is changing the unit count from 8 two-bedroom to 8 one-bedroom units with the total number of units remaining at 28. Thus, a contribution of \$280,000 is required to the City's Housing Trust Fund to meet the City's ordinance requirements. Attachment 2 is Victoria Volent's, Housing Planner, review and recommendation to approve the application with the following condition of approval:

The applicant shall be a fee-in-lieu of \$280,000 into the City's Housing Trust Fund before a Certificate of Occupancy may be issued. The Applicant and the City may enter into a written agreement to codify this requirement and a Certificate of Compliance may be issued by the Planning Authority at the Applicant's request once the full payment has been received by the City.

IV. PROPOSED MOTION

On the basis of the amended conditional use application, plans, reports and other information submitted by the applicant, findings to the Ensure Workforce Housing and recommendations contained in the Planning Board Report, relevant to Portland's Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing:

The Planning Board finds the proposed conditional use for workforce housing [**does** or **does not**] meet the standards of Section 14-484 with the following conditions:

The applicant shall be a fee-in-lieu of \$280,000 into the City's Housing Trust Fund before a Certificate of Occupancy may be issued. The Applicant and the City may enter into a written agreement to codify this requirement and a Certificate of Compliance may be

issued by the Planning Authority at the Applicant's request once the full payment has been received by the City.

Attachments;

1. Applicant's Cover Letter and Conditional Use Application
2. Memorandum from Victoria Volent, re: 443 Congress Street, Nov 3, 2017
3. Original Approval Letter, 443 Congress Street – March 10, 2016

October 19, 2017

Ms. Barbara Barhydt
City of Portland
Planning Division
Portland City Hall, 4th Floor
389 Congress Street
Portland, ME 04101



RE: Conditional Use Amendment Application: 443 Congress Apartments at 443 Congress Street, Portland, 04101

Dear Ms. Barhydt,

Enclosed please find a completed Conditional Use Amendment Application for the above referenced project.

This amendment proposes to pay "fee in-lieu" for owed workforce units based on Inclusionary Zoning Ordinance.

A more complete project description addressing specific submission requirements of this amendment application is included in the following pages.

Sincerely,

A handwritten signature in black ink, appearing to read "Pandika Pleqi", with a stylized flourish at the end.

Pandika Pleqi,
Senior Associate
Winton Scott Architects, PA

For:

Owner: JJR 443 Congress, LLC

Applicant: Northland Enterprises, LLC

1. Written Project Description:

A. General Context and Project Intent:

The project involves renovation of upper 4 floors of the existing building at 443 Congress Street and conversion of business space to 28 apartments, consisting of 4 studio apartments, and 24 one bedroom apartments. Please note that the unit type count has changed from the original application as the owner has made the change of 8 two-bedroom units to one-bedroom units.

As shown on drawings attached to Site Plan Review Application the space to be renovated is a business use, currently vacant. Floors 1 thru 3 are business use and will be remaining as such. The current tenants are Chamber of Commerce on the 1st floor and Planned Parenthood of New England on the 2nd and 3rd floors.

The business floors will continue to use the existing front entrances. A new entrance is proposed on the North side of the building on the current driveway. This will be the primary residential entrance, however the business space has access to this for additional exit.

2. Evidence of Right, Title, and Interest:

The property is owned by JJR 443 Congress, LLC. Information and documentation on the property rights are attached to this Application. See document "Deed of Sale by Trustees"

3. Conditional Use Standards:

Conditional Use is authorized by Division 30, Section 14-487 - Inclusionary Zoning, Ensuring Workforce Housing.

The ordinance requires a minimum of 10% of the project to be restricted for Workforce Households and that the number of bedrooms required under Section 14-487(e)3 be at least 10% of the total number of bedrooms made available as part of the project. The project proposes creation of 28 Units: 4-Studio, and 24-one bedroom units with a total of 28 bedrooms. Based on the total number of units the project will be required to provide at least two (2) workforce units.

The project is proposing with this **amendment** to pay the fee-in-lieu to meet the requirements of this ordinance. The fee is \$100,000 per owed workforce unit. In this case, the amount owed is 10% of 28 units = 2.8 x \$100,000 or \$280,000 to be paid into the City's Housing Trust Fund.



Conditional Use for Ensuring Workforce Housing Inclusionary Zoning Planning Board Review Application Portland, Maine

Planning and Urban Development Department
Planning Division and Housing and Community Development

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Conditional Use review of applications to ensure workforce housing in development projects that create ten or more new dwelling units. The units may be for rent or for sale and created through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. At least ten percent (10%) of the units in the project shall meet the definition of workforce housing unit for sale or rent. All developments of ten units or more a conditional uses subject to Planning Board review on the condition that they comply with the requirements of section 14-487.

A. Ensuring Workforce Housing: Standards -Section 14-484

(d) Workforce Housing Minimum At least ten percent (10%) of the units in the project shall meet the definition of workforce housing unit for sale or for rent. The number of units required is rounded down to a whole number if providing units on- or off-site, or shall include a fractional value in cases where a project prefers to pay a fee-in-lieu as per (e)3. below.

(e) Standards

1. Projects shall not be segmented or phased to avoid compliance with these provisions. In cases where projects are completed in phases, affordable units shall be provided in proportion to the development of market rate units unless otherwise permitted through regulations.
2. Workforce units are encouraged to be integrated with the rest of the development, should use a common entrance and should provide no indications from common areas that these units are workforce housing units.
3. Workforce units need not be the same size as other units in the development but the number of bedrooms in such units, either on- or off-site, shall be 10 percent of the total number of bedrooms in the development. For the purposes of this section, for every 400 square feet in a market rate unit will count as a bedroom if the actual number of bedrooms in the unit is lower.
4. As an alternative to providing workforce housing units, projects may pay a fee in lieu of some or all of the units. In-lieu fees shall be paid into the Housing Trust Fund as defined in Sec. 14-489. The fee for affordable units not provided shall be \$100,000 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement.
5. Workforce housing units for sale, if converted to workforce housing units for rent, shall become subject to the income limits and other requirements of such units.
6. If at least 33 percent of the units in a development are workforce units, the development is eligible for subsidy through an Affordable Housing TIF, subject to City Council approval.

7. The term of affordability for the required 10 percent workforce units provided shall be defined as follows:

Percentage of Workforce Units Provided	Minimum Term of Affordability for Required Workforce Units
10%	Longest term permitted under federal, state and local laws and ordinances
25%	30 years
50%	20 years
100%	10 years

(f) Implementing Regulations. Regulations to further specify the details of this section shall be developed, including, but not limited to:

1. Specific methodology for income verification;
2. Situations where less than permanent affordability might be considered; and
3. Guidelines for meeting the requirement that off-site units be “in the same neighborhood”.

B. Site Plan Application: Please submit the Conditional Use Application in addition to the applicable Site Plan Application.

Portland’s development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: <http://me-portland.civicplus.com/DocumentCenter/Home/View/1080>

Design Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2355>

Technical Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2356>

Planning Division

Fourth Floor, City Hall
389 Congress Street
(207)874-8719

Housing and Community Development

Room 313, Third Floor, City Hall
389 Congress Street
(207)482-5028

Office Hours

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

PROJECT NAME:

443 CONGRESS

PROPOSED DEVELOPMENT ADDRESS:

443 CONGRESS STREET, PORTLAND ME, 04101

CHART/BLOCK/LOT (s): 027 B002001**Applicable Zone:** B3 - EXISTING**CONTACT INFORMATION:**

Applicant – must be owner, Lessee or Buyer Name: NORTHLAND ENTERPRISES, LLC Business Name, if applicable: Address: 17 SOUTH STREET, 3RD FLOOR City/State : PORTLAND, ME Zip Code: 04101	Applicant Contact Information Work # 207-780-0223 Home# Cell # Fax# e-mail: BRAD@NORTHLANDUS.COM
Owner – (if different from Applicant) Name: JJR 443 CONGRESS, LLC Address: 17 SOUTH STREET, 3RD FLOOR City/State : PORTLAND, ME Zip Code: 04101	Owner Contact Information Work # 207-780-0223 Home# Cell # Fax# e-mail: JOSH@NORTHLANDUS.COM
Billing Information Name: JJR 443 CONGRESS, LLC Address: 17 SOUTH STREET, 3RD FLOOR City/State : PORTLAND, ME Zip Code: 04101	Billing Information Work # 207-780-0223 Cell # Fax# e-mail: BRAD@NORTHLANDUS.COM
Designated person/person(s) for uploading to e-Plan: Name: PANDIKA PLEQI e-mail: PPLEQI@WINTONSCOTT.COM Name: e-mail: Name: e-mail:	

RIGHT, TITLE OR INTEREST:

OWNER - SEE ATTACHED DOCUMENT "DEED OF SALES BY TRUSTEES"

(Please identify the status provide documentary evidence, attached to this application, of the applicant's right, title, or interest in the subject property (ex: deed, option or contract to purchase or lease the property.)

EXISTING USE: Describe the existing use of the subject property.

CURRENT USE IS BUSINESS: FIRST FLOOR IS OCCUPIED BY CHAMBER OF COMMERCE AND SECOND AND THIRD FLOORS BY PLANNED PARENTHOOD OF NEW ENGLAND. FOURTH THRU SEVENTH FLOORS ARE ALSO BUSINESS USE, CURRENTLY VACANT

PROJECT DESCRIPTION:

PROPOSED USE: MIX OF BUSINESS AND RESIDENTIAL: FIRST THRU THIRD FLOOR DO NOT CHANGE. FOURTH THRU SEVENTH FLOORS ARE BEING PROPOSED TO CHANGE USE TO RESIDENTIAL. THE PROPOSED PROJECT CONSISTS OF RENOVATION OF 4-7 FLOORS AND CONVERSION TO 28 APARTMENT UNITS.

THIS AMENDMENT PROPOSES TO PROVIDE FEE IN-LIEU FOR IZ UNITS, 10% of total 28 units x \$100,000.

INCLUSIONARY ZONING:		
# IZ Units		
On-Site IZ Units		
Off-Site IZ Units		
# IZ Homeownership Units		
# IZ Rental Units		
# IZ Efficiencies		
# IZ 1-Beds		
# IZ 2-Beds		
# IZ 3-Beds		
IZ Fee In-Lieu	●	\$280,000

APPLICATION FEES:

✓ Conditional Use Review to Ensure Workforce Housing (\$100.00) (Please submit a separate application for the applicable site plan review. Fees and charges are listed within the application)	The City invoices separately for the following: • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$50.00 hour) • Legal Review (\$75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.
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INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.
2. An invoice for the application fee will be e-mailed to you. Payments can be made on-line at [Pay Your Invoice](#), by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.
3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

[Applying Online Instructions](#)

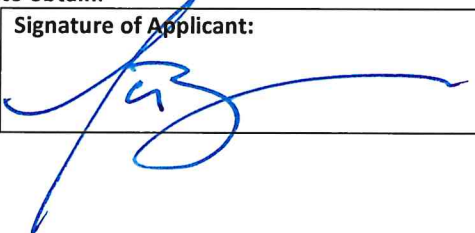
5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
√		1	Completed Application Form
√		1	Cover letter stating the nature of the project.
√		1	Evidence of right, title and interest.
		1	Written Submittals that address the conditional use standards of Sec. 14-484, including unit size and bedroom count
		1	Proposed Marketing Strategy
√ - letter		1	Written Proposal for providing workforce units on-site, off-site, or payment of fee-in-lieu.
		1	If the project is to be phased, provide written description of project phasing and accommodation of workforce units.
			Plans and Construction Details Submission Checklist
		1	An accompanying site plan application, as applicable.
		1	Floor Plans of all units and identifying proposed designated workforce housing units
		1	Interior Standards for Units for market rate and workforce housing units, including kitchen, bathroom, flooring and closet amenities
		1	If workforce units are proposed off-site, provide vicinity map with project location and workforce unit locations within the applicable census block group map or within 1500 feet of the project.

APPLICANT SIGNATURE:

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

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

Signature of Applicant: 	Date: <i>10.19.17</i>
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DEED OF SALE BY TRUSTEES

MAINE REAL ESTATE TAX PAID

KNOW ALL PERSONS BY THESE PRESENTS, THAT SIDNEY St. F. THAXTER and ROBERT E. STEVENS, TRUSTEES OF THE MARY J. E. CLAPP TRUST under the will of Mary J. E. Clapp dated July 14, 1917, having been appointed trustees by orders of Judges of the Probate Court of Cumberland County, copies of which appointment orders being recorded in Cumberland County Registry of Deeds in Book 1379, Page 277 and Book 1443, Page 579, by the power conferred by the Probate Code and pursuant to authorization of sale by the order of February 4, 2011 of the Judge of Probate in the matter titled In Re CLAPP ESTATE TRUST, Probate Court Docket No. 1912-0220, whose mailing address is c/o Curtis Thaxter, One Canal Plaza, Portland, Maine, 04101 FOR CONSIDERATION PAID, grant to JJR 443 CONGRESS STREET, LLC, a Maine limited liability company, whose mailing address is 134 Sheridan Street, Portland, Maine 04101 the following described real property located in Portland, Cumberland County, Maine:

Beginning at the easterly corner of Elm Street where it adjoins and marks a corner at back street (n/k/a Congress Street); thence running by the easterly side of Elm Street to Cumberland Street, n/k/a Cumberland Avenue; thence by Cumberland Street to the land now or formerly of the Reverend Dr. Deane; thence by land now or formerly of said Reverend Deane to back street aforesaid; thence by said back street to the corner first begun at.

The property is subject to the following outconveyances:

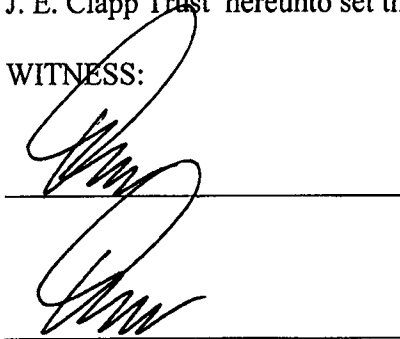
1. Deed from Asa W.H. Clapp to Nathaniel W. Morse, dated January 28, 1890 and recorded in the Cumberland County Registry of Deeds in Book 564, Page 438.
2. Taking by City of Portland against Sidney St. Felix Thaxter III and Robert E. Stevens, Successor Trustees under the Will of Mary J.E. Clapp, dated July 31, 1978 and recorded in said Registry of Deeds in Book 4289, Page 240.
3. Taking by City of Portland against Estate of Mary J.E. Clapp, dated July 18, 1988 and recorded in said Registry of Deeds in Book 8388, Page 267.

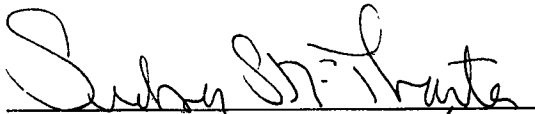
Meaning and intending to convey and hereby conveying a portion of the premises conveyed by Daniel Davis to Asa Clapp, dated April 20, 1804 and recorded in said Registry of Deeds in Book 52, Page 77. Mary J.E. Clapp derived her title as only living heir of Asa William Henry Clapp, who died on March 22, 1891. Asa William Henry Clapp derived his title as a surviving heir of Asa Clapp with his brother Charles Q. Clapp. Charles Q. Clapp released his interest to Asa William Henry Clapp by virtue of a deed, dated February 6, 1854 and recorded in said Registry of Deeds in Book 252, Page 66.

The property is conveyed subject to the requirement that the memorial plaque to the Clapp family, as described in the will of Mary J.E. Clapp, presently in place on the exterior of the building to the right hand side of the front entrance, be maintained there so long as the building exists.

IN WITNESS WHEREOF Sidney St. F. Thaxter and Robert E. Stevens, Trustees of the Mary J. E. Clapp Trust hereunto set their hands and seals this 24th day of February, 2011.

WITNESS:




Sidney S. F. Thaxter, and

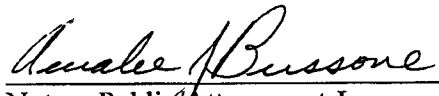

Robert E. Stevens,
both as Trustees of the Mary J. E. Clapp Trust

STATE OF MAINE
COUNTY OF CUMBERLAND, SS.

February 24, 2011

Personally appeared the above-named Sidney S. F. Thaxter and Robert E. Stevens, Trustees of the Mary J. E. Clapp Trust as aforesaid, and acknowledged the foregoing instrument to be their free acts and deeds in their said capacity.

Before me,


Notary Public ~~Attorney at Law~~

AURALEE J. BUSSONE
Notary Public, Maine
My Commission Expires July 11, 2012

SEAL

O:\SST\Clapp Estate 15751-400\Trustee's Deed.doc

Received
Recorded Register of Deeds
Feb 24, 2011 12:10:11P
Cumberland County
Pamela E. Lovley



To: Shukria Wiar Planner, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: November 3, 2017

Subject: 443 Congress Street – Inclusionary Zoning Conditional Use

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Division 30, Section 14-487, Ensuring Workforce Housing, requires at least ten percent (10%) of the dwelling units in the development shall meet the definition of Workforce Housing units for sale or for rent. The ordinance under Section 14-487 e 3 also requires the number of bedrooms in the Workforce units shall be at least 10% of the total number of bedrooms made available as part of the development.

As an alternative to providing workforce housing units, developers shall pay a fee-in-lieu of some or all of the units. The fee for affordable units not provided shall be \$100,000 per unit. The calculation of dwelling units not provided will be calculated on a fractional value to one tenth. For example, if a developer prefers to pay a fee-in-lieu on a proposed 28 unit project, the developer would be required to pay 2.8 times the fee. The in-lieu fee shall be paid into the Housing Trust Fund as defined in Sec. 14-489, on or before the date upon which a certificate of occupancy is issued.

The project located at 443 Congress Street proposes the creation of 28 dwelling units of rental housing. The Applicant has chosen to fulfill the inclusionary zoning requirements by paying a fee-in-lieu. The proposed project would thus be required to pay a total fee of \$280,000 into the City's Housing Trust Fund in-lieu of the creation of actual housing units for workforce households. Should at a later date any change in total unit count be considered, a revised proportional fee-in-lieu payment will also be required. As such, the project has met the minimum requirements set forth in Sec. 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant agrees to pay a fee-in-lieu of \$280,000 into the City's Housing Trust Fund before a Certificate of Occupancy may be issued. The Applicant and the City may enter into a written agreement to codify this requirement and a Certificate of Compliance may be issued by the Planning Authority at the Applicant's request once the full payment has been received by the City.

Sincerely,

Victoria Volent
Housing Program Manager

CITY OF PORTLAND, MAINE

PLANNING BOARD

Elizabeth Boepple, Chair
 Sean Dundon, Vice Chair
 Bill Hall
 Carol Morrisette
 Jack Soley
 Dave Eaton

March 10, 2016

Northland Enterprises LLC
 Attention: Brad Fries
 17 South Street, 3rd Floor
 Portland, ME 04101

Winton Scott Architects
 Attention: Pandika Pleqi
 5 Milk Street
 Portland, ME 04101

Project Name:	Conversion of Office Space into Apartments	Project ID:	2016-010
Address:	443 Congress Street	CBL:	027 B002001
Applicant:	Northland Enterprises, LLC		
Planner:	Shukria Wiar		

Dear Mr. Fries:

On March 8, 2016, the Planning Board considered a Level III Site Plan and Subdivision application and a Conditional Use application to Ensure Workforce Housing. The proposed development converts the fourth through seventh floors of the building to twenty-eight (28) residential apartments at 443 Congress Street. The Planning Board reviewed the proposal for conformance with the standards of the Ensure Workforce Housing Conditional Use Review, Subdivision Ordinance and Site Plan Ordinance. The Planning Board voted unanimously 4-0 (Dundon and Morrisette absent) to approve the application with the following waivers and conditions as presented below.

CONDITIONAL USE

The Planning Board voted unanimously 4-0 (Dundon and Morrisette absent) that the proposed plans are in conformance with the 14-484 of the Land Use Code, subject to the following conditions:

1. That the Applicant and the City shall enter into an agreed upon Affordable Housing Agreement (AHA) prior to the issuance of a building permit. The Affordable Housing Agreement shall outline the details of the affordability restrictions placed on the Workforce Units; and
2. That the Affordable Housing Agreement shall be filed as covenant to the property's deed with the Cumberland County Registry of Deeds prior to the issuance of a Certificate of Occupancy.

WAIVERS

Due to site constraints, The Planning Board voted unanimously 4-0 (Dundon and Morrisette absent) to waive Section 14-526 (b) (2) (b) (iii) Street Trees to allow the applicant to make a contribution of \$5,600 to the City's Street Tree Fund for trees in the vicinity of the site to be substituted for the provision of on-site street trees.

SUBDIVISION REVIEW

The Planning Board voted unanimously 4-0 (Dundon and Morrisette absent) that the plan is in conformance with the subdivision standards of the Land Use Code, subject to the following conditions of approval:

1. The Subdivision Plat shall be finalized to the satisfaction of the Planning Authority, Department of Public Works and Corporation Counsel; and
2. The recording plat shall be revised noting all waivers and conditions for review and approval by the Planning Authority prior to recording. All waivers shall be recorded within 90 days of the Planning Board approval.

LEVEL III SITE PLAN REVIEW

The Planning Board voted unanimously 4-0 (Dundon and Morrisette absent) that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following conditions of approval:

1. The applicant shall contribute \$5,000 towards the ADA ramp improvements at the corner of Congress and Elm Streets.

The approval is based on the submitted plans and the findings related to site plan and subdivision review standards as contained in Planning Report for application 2016-010 which is attached.

STANDARD CONDITIONS OF APPROVAL

Please note the following standard conditions of approval and requirements for all approved site plans:

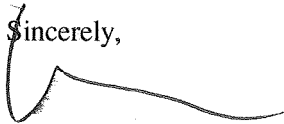
1. **Subdivision Recording Plat** A revised recording plat listing all conditions of subdivision approval must be submitted for review and signature prior to the issuance of a performance guarantee. The performance guarantee must be issued prior to the release of the recording plat for recording at the Cumberland County Registry of Deeds.
2. **Subdivision Waivers** Pursuant to 30-A MRSA section 4406(B)(1), any waiver must be specified on the subdivision plan or outlined in a notice and the plan or notice must be recorded in the Cumberland County Registry of Deeds within 90 days of the final subdivision approval).
3. **Develop Site According to Plan** The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning Board or the Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.
4. **Separate Building Permits Are Required** This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Inspection Division.
5. **Site Plan Expiration** The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.
6. **Subdivision Plan Expiration** The subdivision approval is valid for up to three years from the date of Planning Board approval.

7. **Performance Guarantee and Inspection Fees** A performance guarantee covering the site improvements as well as an 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 subdivision plat for recording at the Cumberland County of Deeds, and prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.
8. **Defect Guarantee** A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
9. **Preconstruction Meeting** Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator, Public 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.
10. **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.)
11. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*.dwg), release AutoCAD 2005 or greater.
12. **Mylar Copies** Mylar copies of the as-built drawings for the public streets and other public infrastructure in the subdivision must be submitted to the Public Services Dept. prior to the issuance of a certificate of occupancy.

The Development Review Coordinator must be notified five (5) working days prior to date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please Shukria Wiar at 756-8083 or via shukriaw@portlandmaine.gov.

Sincerely,



Elizabeth Boepple, Chair
Portland Planning Board

Attachments:

1. Planning Board Report
2. Performance Guarantee Packet

Electronic Distribution:

Jeff Levine, AICP, Director of Planning and Urban Development
Stuart G. O'Brien, City Planning Director
Barbara Barhydt, Development Review Services Manager
Shukria Wiar, Planner
Philip DiPierro, Development Review Coordinator, Planning
Ann Machado, Zoning Administrator, Inspections Division
Tammy Munson, Inspections Division Director
Jonathan Rioux, Inspections Division Deputy Director
Jeanie Bourke, Plan Reviewer/CEO, Inspections Division
Brad Saucier, Administration, Inspections Division
Katherine Earley, Engineering Services Manager, Public Services
Bill Clark, Project Engineer, Public Services
David Margolis-Pineo, Deputy City Engineer, Public Services
Doug Roncarati, Stormwater Coordinator, Public Services

Greg Vining, Associate Engineer, Public Services
Michelle Sweeney, Associate Engineer
John Low, Associate Engineer, Public Services
Rhonda Zazzara, Field Inspection Coordinator, Public Services
Mike Farmer, Project Engineer, Public Services
Jane Ward, Administration, Public Services
Jeff Tarling, City Arborist, Public Services
Jeremiah Bartlett, Public Services
Keith Gautreau, Fire Department
Jennifer Thompson, Corporation Counsel
Thomas Errico, P.E., TY Lin Associates
David Senus, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File



Memorandum

Planning and Urban Development Department

Planning Division

To: Chair Boepple and Members of the Portland Planning Board
From: Matthew Grooms, Planner
Date: November 9, 2017
Re: 37 Front Street (99-Unit Affordable Housing Project)
Project #: 2017-224
Meeting Date: November 14, 2017

I. INTRODUCTION

The Portland Housing Authority has submitted a preliminary Level III Site Plan and Subdivision Application with Conditional Use application for redevelopment of its Front Street residential complex, which consists of a 19-building campus with 50 residential units, a community center and 59 off-street parking spaces. The site would be redeveloped in two phases, and would consist of six Planned Residential Unit Development (PRUD) style buildings with 99 residential units, a modern community center,



Figure 1: Proposed Redevelopment Site. Proposed phasing is geographically based, with Phase I being the portion east of W. Presumpscot Street and Phase II being the area to the west.

comprehensive redesign of the pedestrian network, community amenities including a playground and several passive use green spaces, and 102 off-street parking spaces. The entire site is located within the R-5 Residential Zoning District and this proposal is further subject to the City's Inclusionary Zoning ordinance.

Text changes to Division 30, Affordable Housing, adopted in September of 2017, provide mechanisms that incentivize the development of affordable housing projects in Portland, by increasing the allowable density of units, relieving certain building dimensional standards and reducing the required open-space per unit requirement. Similarly, Division 20, Off-Street Parking Standards, also reduces the parking requirement for affordable housing projects. These incentives are key components of the proposed project.

This Workshop was noticed to 174 neighbors and interested parties, and the public notice appeared in the *Portland Press-Herald* on November 6 & 7, 2017. The applicant held a Neighborhood Meeting on November 7, 2017.

Applicant: Jay Waterman, Front Street Housing Redevelopment, LP

Agent and Landscape Architect: Pat Carroll, Carroll Associates

Engineer: John Mahoney, P.E., Ransom Consulting

Architect: Utile Architects

II. REQUIRED REVIEWS AND REQUESTED WAIVERS:

Applicant's Proposal	Applicable Standards
New development of 99 dwelling units	Subdivision Review
Multifamily building of 47,800 sq ft	Level III Site Plan Review and PRUD Design Review
New PRUD style development with six buildings and 99 dwelling units	Inclusionary Zoning Section 14-484
Overhead utilities – To allow existing overhead utility lines located on Front, W. Presumpscot and Illsely Street to remain due to excessive cost. <u>Staff Recommendation:</u> The review staff is asking that the applicant provide a cost estimate to underground vicinity utilities prior to making a formal recommendation	Site Plan Ordinance, Section 14-526(c)(3)(b) - Electrical service shall be underground unless otherwise specified for industrial uses, or if it is determined to be unfeasible due to extreme cost, the need to retrofit properties not owned by the applicant or complexity of revising existing overhead facilities. Subdivision Ordinance, Section 14-499(h) - All utility lines shall be placed underground unless otherwise approved by the Planning Board.

III. PROJECT DATA

Existing Zoning	R-5 Residential District				
Existing Use	50 units of affordable multi-family housing within 19 two-story buildings				
Proposed Use	99 residential units within six PRUD style buildings and a central community center				
Proposed Unit Mix	One-Bedroom	Two-Bedroom	Three-Bedroom	Four-Bedroom	Five-Bedroom
	45	15	20	11	8
Parcel Size	171,509 SF (3.94 acres)				

	Existing	Proposed	Net Change
Building Footprint	29,005 SF	48,400 SF	19,395 SF
Building Floor Area	58,010 SF	116,500 SF	58,490 SF
Impervious Surface Area	66,230 SF	122,884 SF	56,654 SF
Parking Spaces (on site)	59	102	43
Bicycle Parking Spaces	0	50	50
Estimated Cost of Project	\$21,370,000		

IV. EXISTING CONDITIONS

Portland Housing Authority's Front Street Campus is located on two parcels totaling 3.94 acres with frontage on Front Street, West Presumpscot Street and Illsley Street in the East Deering Neighborhood. The surrounding context is predominantly residential with the majority of homes in the area being one and two-family structures. Washington Avenue, the neighborhood's principal arterial roadway, is located one block north of the complex and features a mixture of multi-family structures and commercial land uses. METRO Bus Line 9A travels down Washington Avenue and is served by an existing bus stop located at the intersection of West Presumpscot Street and Washington Avenue. Immediately to the south of the Front Street Campus is the Seaside Healthcare assisted living facility and Payson Park, a large multi-use city park with trails, sports facilities and a community garden.

The development consists of nineteen (19) two-story residential buildings containing fifty (50) apartments, ranging in size from one-bedroom to five-bedroom units, a central community center, active and passive open-space areas and fifty-nine (59) off-street parking spaces. Extensive vegetation is located around the perimeter of the site which provides some visual buffering between adjacent uses with properties being further separated by an existing chain-link fence. Community residents are able to walk between the various buildings and on-site amenities using an existing curvilinear pathway system that provides internal circulation. The campus incorporates numerous design and connectivity features which are intended to integrate the development into the surrounding neighborhood. These include town-house style buildings with gabled roofs and individual stoops whose scale and architectural style are compatible with the surrounding context. A number of buildings are designed to front the street with direct access off of the sidewalk.

According to the applicant, PHA's Front Street campus was constructed in 1971 as temporary housing to serve residents being relocated from Portland's peninsula during a period of extensive urban renewal. The existing buildings and on-site infrastructure were never intended for permanent habitation and use and have subsequently surpassed their intended life-span. PHA has also identified that the existing unit composition does not serve current needs, with substantially more four and five-bedroom units than required by the market. Similarly, while the campus was originally designed to be integrated into the surrounding community, the reality is that the existing development feels largely disconnected, a result of having many buildings oriented away from the street and limited site permeability. These factors have prompted PHA to pursue redevelopment of their Front Street property as the next phase in its strategic vision to increase the affordable housing supply within the city.

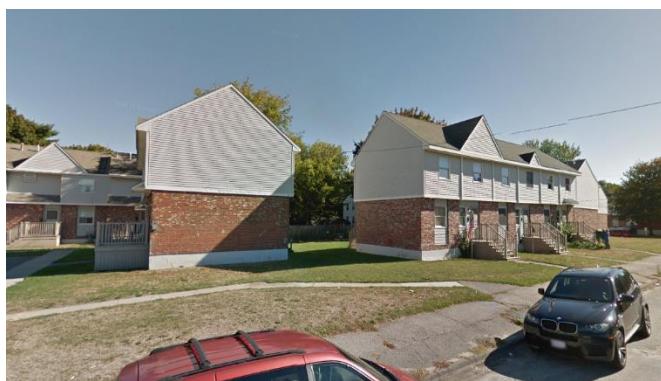


Figure 3: View of Site from Front Street showing typical building dispositions

Figure 4: View of Site from W. Presumpscot Street including waste management area and community center

V. PROPOSED DEVELOPMENT

resident displacement, with the first phase being the area east of West Presumpscot Street and the second phase being the area to the west. Six (6) new two to three-story PRUD style buildings will replace the nineteen (19) existing buildings, and will contain ninety-nine (99) residential apartments, with a mixture of one through five-bedroom units. A Planned Residential Unit Development or PRUD for short, as defined under the city's zoning ordinance is a residential structure that consists of horizontally attached dwelling units such as a townhouse development. The proposed buildings are between 112' feet and 170' feet in length, contain between thirteen (13) and twenty (20) units and range from between 33.21' feet to 34.42' feet above average grade. The minimum finished floor elevation would be 13.5' feet (project datum), outside of the 100-year floodplain. The redeveloped campus will also feature a central community center, several passive use community green spaces, a playground and a comprehensively redesigned linear pedestrian pathway system.

As mentioned previously, the existing site does not integrate well with the surrounding neighborhood as there is limited site permeability and the site layout is predominantly internally focused. The redesigned campus orients all buildings towards the street with unit entrances similarly oriented, accessible via individual pathways connecting to the public sidewalk. Both public and private pedestrian infrastructure would in turn be improved with public sidewalk widths increasing to between 6' and 7' feet. The applicant also intends to construct several curb extensions and one raised cross-walk in order to calm traffic and increase pedestrian comfort. The internal and private pedestrian pathway system has been redesigned to more effectively integrate with the public street network and is anchored by a central spine that traverses the entirety of the site running east to west. Under this proposal, off-street parking would be relocated farther away from the public view and would in part be met through the construction of a private thru-street with parallel parking on both sides, which also achieves improved site permeability. Three new curb cuts are being proposed, with two located off of Front Street and one located off of Illsley Street. A total of one-hundred and two (102) off-street parking spaces are being provided, replacing an existing supply of fifty-nine (59).

Given the scope of this redevelopment project, only one existing tree, located at the southeast corner of the site, is proposed for preservation. The proposed landscaping plan proposes the planting of one-hundred fifty-six (156) new trees, including Red Maple, Serviceberry, Honeylocust, Tulip Tree, London Planetree

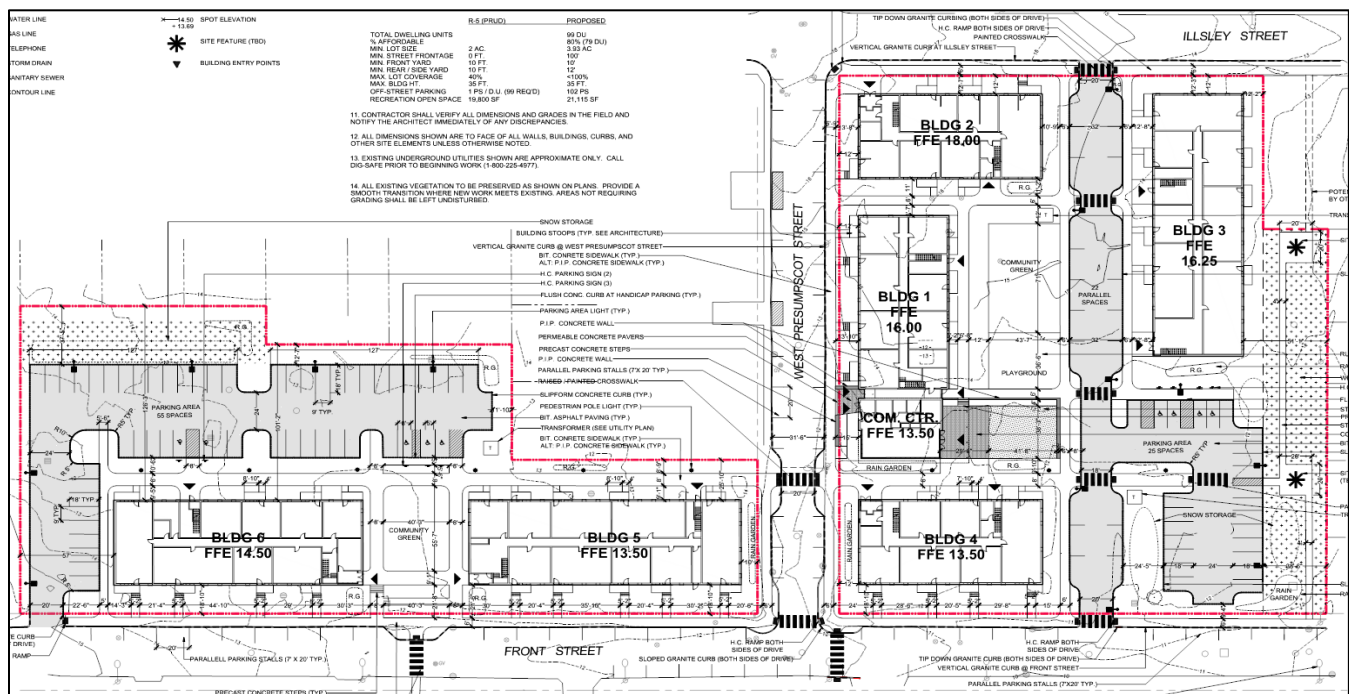


Figure 5: Proposed site plan for PHA's Front Street Campus

‘Exclamation’, Green Giant Arborvitae and Zelkova. The site will also feature regularly interspersed rain gardens intended to provide stormwater quality treatment. These gardens will feature Winterberry, Blue Fescue Grass, Reed Grass, Sea Lavender, Switchgrass and Big Bluestem. Once treated, stormwater will discharge through underdrains into existing stormdrains located within West Presumpscot and Front Streets. Other site improvements include the installation of new high efficiency site lighting and the undergrounding of electrical service from existing overhead utility poles.

In terms of unit affordability, 65% of all proposed units will be for households making at or below 50% of the Area Median Income (AMI), approximately \$41,500 for a family of 4. A further 15% of the units are restricted to households earning up to 60% AMI and 20% of the units would be market rate. The applicant proposes to set aside 10% of the units for homeless households and a further 10% would have a preference for homeless or disabled households. The market rate units will feature rents 5-10% below market rate, so as to appeal to ‘workforce housing’ households, a target of the City of Portland in its housing needs study. The proposed composition is intended to foster income diversity within the development.

VI. PUBLIC COMMENT

The Planning Division has received two written comments in regards to this project, one opposed to the project and one in support (*Attachment 8*). The public comment in opposition cited the size of the proposed redevelopment as incongruous with the surrounding neighborhood and also raised concerns regarding the traffic impacts being generated by more housing units. Meanwhile, the public comment in support discussed the need for additional affordable housing within Portland and specifically the need for market-rate housing off-peninsula. The neighborhood meeting for this project was held on November 7, 2017 at the Front Street Community Room located at 34 West Presumpscot Street. Documentation regarding this meeting will be available for the public hearing.

The applicant held an on-site meeting on November 3, 2017 with City staff and residents of the neighborhood to discuss traffic calming strategies including curb extensions and the installation of a stop sign at the intersection of West Presumpscot Street and Illsley Street. Residents have raised concerns that vehicles are speeding down West Presumpscot Street. Staff recommended that a speed analysis be completed to demonstrate the need for additional traffic calming along this street segment. Additional discussions from this meeting were in regards to visual buffering along the easterly property line and designation of open space on the site for more active uses such as a basketball court.

VII. RIGHT, TITLE & INTEREST

The applicant has provided the deed to the property which demonstrates that at present the Portland Housing Authority owns the property in question. They have also provided the purchase and sale agreement which indicates that the Portland Housing Authority is selling the property to the Portland Housing Development Corporation (*Attachment H*).

VIII. FINANCIAL & TECHNICAL CAPACITY

The estimated cost of the development is \$21,370,000.00. The applicant has applied to the Housing for Everyone Program at the TD Charitable Foundation to assist in paying for the costs of demolition and temporary relocation of residents at Front Street Phase 1. Bath Savings Bank has supplied a letter outlining an agreement under which the bank would provide construction financing in an amount up to \$7,500,000 for construction financing. In regards to permanent financing, the PHDC has applied for \$750,000 of direct subsidy from the Federal Home Loan Bank of Boston’s AHP program with additional subsidy buying down the rate of a permanent loan from Bath Savings Bank in the amount of \$3,400,000. Additional resources may be provided under Low Income Housing Tax Credits (LIHTC) (*Attachment M*)

IX. STAFF REVIEW

A. ZONING ASSESSMENT

The proposed development is located within the R5 Residential. The R5 zone is intended to encourage and accommodate medium-density residential development characterized by single-family and low-intensity multifamily dwellings on individual lots, though it does also encourage planned residential unit developments on substantially sized parcels. Such PRUD developments are further required to respond to the physical qualities of a given site and complement the scale, character and style of the surrounding neighborhood.

The applicant has submitted a Zoning Analysis (*Attachment I*) in which it is stated that the project will exceed several of the PRUD dimensional standards for the R-5 including unit density, building setbacks, building lengths and required open space, through bonus mechanisms recently approved by the Planning Board and City Council found in Section 14-488(d) under Division 30, Affordable Housing, of the City's Land Use Code. Section 14-332.2 under Division 20, Off-Street Parking Standards, states that parking requirements for affordable housing projects shall not exceed one parking space per residential unit. Subsequently, the maximum requirement would be ninety-nine (99) parking spaces, whereas the applicant is providing one-hundred and two (102).

In reviewing the proposed development against the applicable PRUD dimensional standards for the R-5 District in conjunction with the dimensional bonuses and reductions as listed under Division 30 and categorical exceptions as listed under Division 20, staff has found that the project meets all applicable zoning standards. Please see the table below for more detail.

		R-5 Residential (PRUD)	Div. 30 Exception	Front Street Proposal
Lot Area		2 acres (contiguous)	Not required to be contiguous	3.93 acres
Lot Area/D.U.		3,000 square feet	1,500 square feet	1,730 square feet
Structure Height Maximum		35' feet	35' feet	34.42' feet with average of 33.91' feet
Max Units/Building		12	Established by Planning Board	Maximum of 20 with average of 16.5
Building Length		140' feet	Established by Planning Board	Maximum of 170' feet with average of 145' feet
Min. Building Setback from Subdivision Property Line	<=100' Foot Building Length	25' feet	10' feet	N/A
	>100' Foot Building Length	35' feet	10' feet	10' feet with average of 12.8' feet
Open Space/D.U.		300 square feet	200 square feet	200 square feet
Habitable Area Below Grade		0	0	0

Housing Replacement

Division 29, Housing Preservation and Replacement, of the City's Land Use Code, requires that where three (3) or more dwelling units are eliminated in a five (5) year period, that they be replaced at a 1:1 ratio. Under this redevelopment proposal, existing units will be demolished in both phases of this project and shall be replaced at a ratio of 1.98:1, which qualifies this project as exempt per Section 14-483(d)(2).

B. SUBDIVISION STANDARDS

14-496. Subdivision Plat Requirements

The applicant has submitted a draft plat which has not been reviewed in detail.

14-497. General Requirements (a) Review Criteria

Water, Air Pollution and Soil Erosion

The applicant has requested an 'ability to serve' letter from the Portland Water District (*Attachment S*). Additionally, grading and drainage plans have been provided which list out erosion control measures being implemented. The aforementioned plans and documents were peer-reviewed by Lauren Swett, engineering consultant with Woodard and Curran, who offered the following comment (*Attachment 5*):

- *Per the application form, the project will disturb 3.94 acres of area and will create 1.3 acres of new impervious surface. The stormwater management report identifies only an increase of 0.93 acres of new impervious surface. The disturbed land area does not appear to include the road area that will be impacted by the installation of a new stormwater system. The project areas should be clarified. If the project disturbs more than 5 acres in total or creates over an acre of impervious surface, it will qualify for a Maine DEP Stormwater permit and will be reviewed by the City as part of their delegated review authority. The project will impact over an acre of land area and will require a Notice of Intent to Comply with the Maine Construction General Permit.*
- *Basic Standard: Housekeeping notes and erosion and sedimentation control details have been provided. Please provide locations of erosion control measures on the drawings in accordance with Appendix A, B, & C of MaineDEP Chapter 500.*

It is not anticipated that this project will result in reduced air quality.

Traffic

The applicant has submitted a Traffic Assessment (*Attachment 3*) and the City's consulting Traffic Engineer, Tom Errico, has offered the following comments:

- *The trip generation refers to studies conducted on-peninsula and therefore the traffic evaluation reflects that. The Front Street site may not have similar trip generating characteristics. I would also note that it is my understanding that some units will be market rate.*
- *There were two Hight Crash Locations identified on Washington Avenue and I need to discuss conditions with City staff.*

Parking

The applicant has indicated that there will be one-hundred and two (102) on-site parking spaces, including nine (9) handicap spaces. Per Division 20, Off-Street Parking Standards, the project is required to provide a minimum of ninety-nine (99) off-street parking spaces, calculated at one space per unit for affordable housing projects where at least 50% of the project is considered affordable. A parking assessment has been also been provided and reviewed by Mr. Errico who offers the following comments (*Attachment 3*):

- *A parking analysis was conducted and also refers to on-peninsula studies. The applicant did conduct some Front Street site surveys that I am reviewing. The City generally does not permit the use of on-street parking spaces for parking requirements, although the project appears to meet all or most parking needs on-site.*
- *Given monthly parking fees, does PHA have a sense of how many will park on-street to avoid the monthly fee?*

Sanitary Sewer/Soils

The application has been reviewed by the DPW Senior Engineer, Keith Gray (*Attachment 6*) and is acceptable subject to minor revisions and confirmation of wastewater capacity.

Storm water

The applicant proposes to manage stormwater impacts by collecting and treating the stormwater in a series of rain gardens interspersed throughout the development. Raingardens will provide stormwater quality treatment, prior to discharging the stormwater by means of underdrains into the city's combined sewer network. Ms. Swett has reviewed the applicant's stormwater plan and report and offers the following comments (*Attachment 5*):

- *Per the application form, the project will disturb 3.94 acres of area and will create 1.3 acres of new impervious surface. The stormwater management report identifies only an increase of 0.93 acres of new impervious surface. The disturbed land area does not appear to include the road area that will be impacted by the installation of a new stormwater system. The project areas should be clarified. If the project disturbs more than 5 acres in total or creates over an acre of impervious surface, it will qualify for a Maine DEP Stormwater permit and will be reviewed by the City as part of their delegated review authority. The project will impact over an acre of land area and will require a Notice of Intent to Comply with the Maine Construction General Permit.*
- *General Standard: The Applicant will be increasing impervious surface area as noted above and will be required to meet the General Standard. The Applicant has proposed to install rain gardens with FocalPoints throughout the site. The MaineDEP has approved the use of FocalPoint systems with the use of an approved in-line subsurface chamber-based treatment row. It is our understanding that the R-Tank system is not yet approved by the MaineDEP. I know that the Manufacturer of the FocalPoint and R-Tank Systems has been working to obtain approvals from the Maine DEP. The Applicant should provide an update on the status of DEP approvals of this system. For a project requiring a MaineDEP Stormwater Permit, the City cannot approve a system that is not accepted by the MaineDEP.*
- *Flooding Standard: Post-development peak runoff rates exceed pre-development rates for the 2-year, 10-year and 25-year storm events. The applicant is requesting a waiver from the City. We note that the stormwater model does not include the individual stormwater treatment systems, and the storage provided by these systems likely results in flow reductions. Approval of a waiver will require coordination with Public Works on the available downstream capacity.*

Scenic Beauty and Street Trees

The Landscape Plan indicates that sixty-seven (67) new street trees are being provided for this development with significant additional landscaping (in the form of low lying shrubs, ornamental grasses and perimeter trees). The applicant has indicated a willingness to plant additional trees in Payson Park in order to meet their street tree requirement of ninety-nine (99) trees. Jeff Tarling, City Arborist, has asked that additional trees be planted within the proposed passive-use community green spaces located around the development. City staff are also coordinating with the applicant on future work to improve the connection between this site and Payson Park, as well as on the construction of a pedestrian path located on City Property which abuts the northeast corner of the project site.

Comprehensive Plan

The project is consistent with both the state and local Housing Goals and Policies of the Comprehensive Plan and specifically is supportive of the following goals:

- Increase, preserve, and modify the overall supply of housing City-wide to meet the needs, preferences and financial capabilities of all Portland Households; and
- 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; and
- Pursue policies to enable people who work in Portland to have the option to live in Portland.

Electrical Service

The applicant has supplied a letter requesting an ‘ability to serve’ letter from CMP. Staff has asked that a copy of the letter be provided when available.

The Subdivision ordinance requires that all utility lines be placed underground unless otherwise approved by the Planning Board. The applicant is proposing to underground electrical service on the applicant’s property, however it has been indicated that the relocation of three-phase utility lines underground would be cost prohibitive to the project and is asking for a waiver of this standard. Staff is asking that the applicant provide a cost estimate of the proposed work.

C. SITE PLAN STANDARDS

14-526 Site Plan Standards

Traffic - Access, Circulation, Loading and Servicing

Staff have not identified any concerns with the proposed site layout as it related to access, circulation, loading and servicing.

Sidewalks

The applicant is proposing to reconstruct sidewalks along the entirety of the property’s frontage. These sidewalks will range in width from between 6’ and 7’ feet, and will feature curb extensions within the public right-of-way at three locations along Front Street and two locations along West Presumpscot Street. The intent of these curb extensions is to calm traffic and increase pedestrian comfort. Similarly, a raised cross-walk is proposed mid-block on West Presumpscot Street to serve the principal pedestrian pathway traversing the site from east to west. These pedestrian improvements would reduce the street width of West Presumpscot Street, a two-way street, down to 20’ feet. Both the Fire Department and DPW have raised concerns with this proposal, and are still evaluating whether or not the design is safe and practicable. At a meeting between staff and the applicant held on November 7, 2017, Mike Thompson, representative from the Fire Department, suggested that the curb line and sidewalk along the east side of West Presumpscot Street be shifted further to the east to provide additional travel width. Additional information has been requested regarding detectable warning strips, cross-slope information and driveway apron details.

Public Transit Access - This project is not located along a transit route. The nearest transit shelter is further than 0.25 miles from this development, the required limit as listed under the site plan ordinance. The City’s Transportation Program Manager, Bruce Hyman, has stated that the City is working with METRO to obtain an easement on the site of the United Korean Methodist Church, located just west of the intersection between Washington Avenue and West Presumpscot for the development of a transit shelter. This shelter would satisfy the site plan ordinance, thus no new shelters or contributions are being requested of the applicant at this time.

Parking

see discussion under Subdivision Review above.

Bicycle Parking

The site plan ordinance bicycle parking at a rate of two (2) bicycle spaces for every five (5) residential units for a total requirement of forty (40) spaces. The proposal includes interior bicycle storage rooms capable of accommodating up to fifty (50) bicycles which meets the site plan requirement. Staff has asked that the applicant consider installing exterior bicycle racks to serve visitors.

Snow Storage

Snow storage areas are clearly indicated on the site plan.

Transportation Demand Management

The Site Plan ordinance does not require a TDM for developments of this scale and scope within the R-5 District.

Landscape Preservation / Site Landscaping and Screening

The project site is a previously developed urban site. There are no significant plant species, communities or specimens within the site. Given the proposed extent of the redevelopment, only one existing tree, located at the southeast corner of the site is to be preserved.

The landscape schedule for this project includes a variety of tree species such as Serviceberry, Honeylocust, Red Maple and London Planetree distributed across the site, specifically along pedestrian pathways, around parking areas and within internal landscape features. Green Giant Arborvitae are proposed around the perimeter of the project site as a form of visual buffering between adjacent properties. The site will also feature two meadow areas totaling approximately 10,000 square feet, with one along the eastern property line, and the other at the northwest corner of the site. These areas will feature wildflower beds native to the region. Perennials and ornamental grasses will be planted around each of the buildings and as well within proposed landscape islands. Jeff Tarling, the City's City Arborist, has reviewed the proposed landscape plan and recommended minimal additional landscaping and has recommended some kind of additional landscape buffer to shield headlights along the easterly property line (*Attachment 7*).

Street Trees

The applicant is providing sixty-seven street trees and is required under the site plan ordinance to require one street tree per residential unit for a total of ninety-nine street trees. The applicant has indicated a willingness to plant additional trees within Payson Park to help meet the street tree requirement. Staff will continue to work with the applicant in regards to this requirement.

Water quality, Stormwater Management and Erosion Control - see discussion under Subdivision Review above.

Public Safety

The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime. The applicant has indicated that such design standards have been incorporated into this site.

Fire Prevention

The Fire Department has reviewed the proposed plans and offers the following comments (*Attachment 1*):

- *A new fire hydrant is needed at West Presumpscot and Illsley Street.*
- *The proposed curb bump-outs at the end of West Presumpscot Street, at Front Street would obstruct fire apparatus turns.*
- *West Presumpscot Street becomes too narrow for Fire Dept. access with the proposed parking on both sides of the street.*

Public Utilities

The applicant has supplied utility capacity letters from utility providers in order to demonstrate sufficient capacity to serve this development. A copy of those letters has been requested and will be required either with the final application or as a condition of approval. Staff have also asked that the applicant provide a cost estimate to underground vicinity electrical service in order to facilitate a staff recommendation to waive the requirement for underground utilities.

Massing, Ventilation and Wind Impact

The maximum building height in the R-5 zone is 35 feet. The preliminary elevations show building heights for all six buildings that fall within the allowable limits. The design review of this project raised concerns over the massing of the proposed development, specifically the relationship between the two and three-story portions of the buildings. For a more detailed analysis, please see the design review section below.

Shadows

No detrimental shadow impacts are anticipated.

Historic Resources- This site is not located within a historic district and is not known to contain historic or archaeological resources.

Exterior Lighting including Street Lighting

The applicant has submitted light specifications for proposed site lighting. The plan proposes fourteen (14) Viper S Series fixtures with a 55-Watt LED bulb, and nine (9) Universe Collection fixtures with a 48-Watt LED bulb. The proposed site lighting will be located within proposed parking areas and along pedestrian pathways. These fixtures will be full cut-off down lights. Additional information has been requested regarding existing street lighting and as to how building entrances will be illuminated for resident safety. The photometric plan submitted as part of this application demonstrates acceptable light trespass as permitted under Section 12 of the Technical Manual.

Noise and Vibration

The applicant has confirmed that rooftop appurtenances will be located on the roof setback away from the building's edge. Additional information has been requested to determine compliance with applicable site plan standards.

D. DESIGN STANDARDS**Planned Residential Unit Development (PRUDs) in the R-5 Residential Zones**

The applicant has submitted a narrative outlining how the proposal meets the architectural standards (*Attachment V*). The following preliminary staff comments from Caitlin Cameron, Urban Designer, relate to the initial elevations and renderings below (*Attachment 2*):



Figure 8: Perspective Images of Residential Buildings and Community Center



Figure 7: Perspective Images of Residential Buildings and Pedestrian Interface



Figure 6: Typical Building Elevation (Bldg. 1) with Community Center

Standard (1) b. Internal Design Character and Relationship to the Surrounding Neighborhood Context – The surrounding neighborhood is predominantly residential with occasional multi-family buildings, but mostly early 20th century single-family homes.

- *Form and Scale:* The project strategically varies the massing of the multi-family buildings between three and two-story units to break the larger buildings into a scale similar to the surrounding residential forms. What rationale determines the placement of the three-story masses and the two-story masses? Staff are still trying to evaluate whether the specific massing placement is successful in relationship with the overall streetscape. IS the rhythm and pattern of massing appropriate? Some images that render the proposal in the context (aerial or street view) might be helpful.
- *Character:* The overall design character is cohesive. Multi-family buildings should not be expected to mimic single-family homes, however, some cues or references from the surrounding vernacular could be better incorporated into the design.
- *Façade Composition:* The proportion of the three story and two-story masses are too different in height – the three-story forms are too tall and therefore are too conspicuous and top-heavy. More information is requested regarding the design decision about window

size, proportion, and placement – again, are these window types, sizes, proportions found in the neighboring context?

E. CONDITIONAL USE STANDARDS

Inclusionary zoning conditional use

This project proposes to provide ninety-nine (99) residential units, which under Section 14-487, triggers the City's Inclusionary Zoning requirements to ensure workforce housing. The city is requesting that the applicant provide a formal conditional use application to satisfy this requirement.

The city's Housing Program Manager, Victoria Volent, has reviewed the material provided and offers the following comment (*Attachment 4*):

The development located at 37 Front Street is proposing the creation of 99 units of rental housing. The applicant has elected to provide seventy-nine (79) units of low-income housing. Of those units, seventy (70) are targeted towards households earning 50% AMI, and nine (9) units target households earning 60% AMI. Twenty (20) out of the 99 units will remain unrestricted. Forty-five (45) will be one-bedroom, fifteen (15) will be two-bedroom, twenty (20) will be three-bedroom, eleven (11) will be four bedroom, and eight (8) will be five bedroom units.

The applicant proposes to complete this project in two phases. The first phase will be comprised of sixty (60) units of which forty-eight (48) will be low-income housing. Phase two will create thirty-nine (39) units of housing of which thirty-one (31) will be low-income housing.

The applicant has satisfied the Inclusionary Zoning requirement that all developments of ten or more units comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

X. NEXT STEPS

- A. Address Staff and Planning Board Comments
- B. The final submission will need to include the following information:
 - Capacity of water, electrical and wastewater service

XI. ATTACHMENTS:

Attachments to Memorandum

1. Preliminary Planning and Fire Review Comments
2. Design Review Preliminary Comments
3. Traffic Engineering Review Comments
4. Housing Program Manager Comments
5. Engineering Review Comments
6. DPW Comments
7. Preliminary Landscape Comments
8. Public Comment
 - a. PC1: Susan Abt (10/20/17)
 - b. PC2: Travis Heynen (10/20/17)

Applicant's Submittal

- A. Application Cover
- B. Table of Contents
- C. Cover Letter
- D. Site Plan/Subdivision Application
- E. IZ Application
- F. Location Maps
- G. Project Description
- H. Right, Title & Interest
- I. State and Federal Permits
- J. Zoning Assessment
- K. Easements
- L. Waivers
- M. Financial Capacity
- N. Technical Capacity
- O. Traffic and Parking
- P. Significant Natural Features
- Q. Stormwater
- R. City Master Plans
- S. Utility Capacity Letters
- T. Solid Waste
- U. Fire Safety and Code Summary
- V. City Design Manual Standards
- W. HVAC
- X. Geotechnical Report
- Y. Soils Management Plan
- Z. Site Lighting
- AA. Neighborhood Meeting

Plans

- 1. Cover Page
- 2. Survey
- 3. Building Views
- 4. Building 1 Elevations
- 5. Building 2 Elevations
- 6. Building 3 Elevations
- 7. Building 4 Elevations
- 8. Building 5 Elevations
- 9. Building 6 Elevations
- 10. Site Demolition and Site Preparation
- 11. Site Plan
- 12. Subdivision Plan
- 13. Grading and Drainage Plan – West
- 14. Grading and Drainage Plan - East
- 15. Utility Plan – West
- 16. Utility Plan – East
- 17. Stormwater Plan
- 18. Civil Details I
- 19. Civil Details II
- 20. Erosion and Sediment Control Notes
- 21. Landscape and Lighting Plan

22. Photometrics Plan
23. Site Details I
24. Site Details II

Planning and Urban Development Department Planning Division



November 6, 2017

Jay Waterman
Portland Housing Development Corp.
14 Baxter Blvd.
Portland, ME 04101

Pat Carroll, P.E.
Carroll Associates
217 Commercial Street, Suite 200
Portland, ME 04101

RE: Staff Review Comments for 37 Front Street – 99-Unit Affordable PRUD Housing Development (2017-224) – Planning Board Review

Project Name:	Front Street Redev.	Project ID:	(2017-224)
Project Address:	37 Front Street	CBL:	166-B001, 167 E001
Applicant:	Jay Waterman		
Planner:	Matthew Grooms		

Dear Mr. Waterman and Mr. Carroll,

Thank you for submitting a preliminary Level III Site Plan application for the two-phased redevelopment of the Portland Housing Authority's Front Street property, replacing 50 affordable housing units in 19 buildings with a 99-unit PRUD development consisting of six new 2-3 story residential buildings, a new community center, 102 off-street parking spaces and 21,115 square feet of open space. Additional improvements include new green infrastructure for stormwater management and improved access to Payson Park. This project is being reviewed as a preliminary plan subject to the following applicable Land Use Code provisions:

- Subdivision Ordinance, Article IV
- Site Plan Ordinance, Article V
- Division 4, R-3 Residential Zone
- Division 20, Off-Street Parking Standards
- Division 30, Affordable Housing Standards
- Neighborhood Meeting Regulations, Section 14-32

Preliminary Plan for Planning Board Review: Staff Review Comments

I. SITE PLAN, SUBDIVISION AND ZONING REVIEW

1. The site plan includes a signature block for members of the Planning Board. This is not required and may be removed.

2. The proposed development appears to be located further than 1,320 feet from the nearest transit shelter. The applicant should work with Bruce Hyman, Transportation Program Manager to satisfy the Public Transit Access requirement as listed under Section 14-526(a)(3).
3. The applicant has indicated that bicycle parking for 50 bicycles is being provided on-site via interior bicycle storage rooms. Would the applicant consider the installation of exterior bicycle racks? Applicable standards are listed under Section 1.15 of the Technical Manual, with relevant rack details being provided under Figures I-32 – I-34C.
4. The City's site plan ordinance, under Section 14-526(c)(3)(b) requires that electrical service be placed underground. Similarly, the City's subdivision ordinance, under Section 14-499(h) requires that all utility lines be placed underground. The submitted utility plans identify certain overhead wires to be removed. The applicant shall specify whether or not any overhead utilities will remain, and if so, submit a waiver request to the Planning Board citing waiver criteria as listed under the site plan and subdivision ordinances.
5. The applicant has indicated that existing pole-mounted street lamps are to remain as part of this redevelopment project. As stated in comment 4, it is not clear which if any utility poles are to be retained. Please provide additional information regarding street lighting, including placement, fixture and lamp typology, and photometrics.
6. Building elevations appear to show roof-mounted mechanical equipment visible from the public right-of-way. The submitted site plan indicates that all mechanical equipment shall be screened from view. Can the applicant provide a more detailed explanation of how this equipment will be screened?
7. The applicant should coordinate with the City's Parks Department on construction of an improved connection to Payson Park. Approval by the Parks Commission may be required.
8. 'Ability to Serve' letters for applicable utility providers shall be provided prior to issuance of any building permits. If these letters are not available prior to the public hearing, their submission will be made a condition of approval.
9. The subdivision plan provided identifies an existing sewer easement however the dimensions of that easement are difficult to determine from the plan. Please accentuate the easement boundaries and/or list relevant dimensions.
10. The subdivision plan states that the provided maximum lot coverage is less than 100%. The applicant should provide an exact figure for lot coverage.
11. Per the City's subdivision ordinance, Section 14-496(17), the applicant shall provide a phasing plan for this development with accompanying narrative explaining the anticipated timeline.
12. The applicant is required to provide a minimum of 99 street trees (or acceptable equivalent) at a rate of one street tree per residential unit as required by Section 14-526(b)(2)(b)(iii). The applicant shall work with the City Arborist to meet this standard.
13. In regards to building design, a contextual narrative should be provided which explains the rationale for proposed design choices in line with applicable design standards as listed in the City's Design Manual:
 - a. (h) Planned Residential Unit Developments (PRUDS) in the R-3, R-5, and R-5A Residential Zones and Manufactured Housing Parks in Any Zone

II. FIRE DEPARTMENT REVIEW

1. A new fire hydrant is needed at West Presumpscot and Illsley Street.
2. The proposed curb bump-outs at the end of West Presumpscot Street, at Front Street would obstruct fire apparatus turns.

3. West Presumpscot Street becomes too narrow for Fire Dept. access with the proposed parking on both sides of the street.

Additional Submittals Required:

Please upload the digital plans and documents to address staff comments. Upon receipt of the revised material, the City of Portland will review the additional plans and information for conformance with applicable ordinances. Please be aware that an application expires within 120 days of the date upon which this written request for additional information was made and only one set of revised plans may be submitted for review. This item is scheduled to go before the Planning Board for a workshop on November 14, 2017. Following the workshop process, this item will be scheduled for a public hearing at the Planning Board's next available meeting and the staff will provide the Planning Board with a recommendation to approve, approve with conditions, or deny the final site plan.

If you have any questions, feel free to contact me at (207) 874-8725 or by email at mgrooms@portlandmaine.gov.

Sincerely,
Matthew Grooms
Planner

Planning and Urban Development Department Planning Division



Subject: R-5 PRUD Design Review – 37 Front Street
Written by: Caitlin Cameron, Urban Designer
Date of Review: Friday, November 3 2017

The planned residential unit development project at 37 Front Street was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Matt Grooms, Planner against the standards of the *Planned Residential Unit Developments in the R5 Residential Zones* (Section (h) of the Design Manual).

Design Review Comments:

(h) Planned Residential Unit Development (PRUDs) in the R-5 Residential Zones

Standard (1) a. Design Relationship to the Site

Building placement is responsive to the site conditions which are urban residential. The site fronts onto Front Street and Payson Park with a narrow local street, West Presumpscot Street bisecting the project, and Illsley Street makes the third boundary. There are some edges that abut residential properties. The overall layout, including building placement, roadway and drive location, creates a more contextual building relationship to the street than is existing. The layout also provides internal walkways and landscaped open spaces that provide buffers between buildings and are designed in a way that they are likely to be comfortable and functional. The building orientation gives priority to the street (rather than solar orientation) which is appropriate in this case. The residential buildings in this context have front yards of varying depths and predominantly single-family homes – the proposed layout is sensitive to the scale, placement, and orientation of that context.

Standard (1) b. Internal Design Character and Relationship to the Surrounding Neighborhood

Context – The surrounding neighborhood is predominantly residential with occasional multi-family buildings, but mostly early 20th century single-family homes.

- **Form and Scale:** The project strategically varies the massing of the multi-family buildings between three and two-story units to break the larger buildings into a scale similar to the surrounding residential forms. **What rationale determines the placement of the three-story masses and the two-story masses? Staff are still trying to evaluate whether the specific massing placement is successful in relationship with the overall streetscape. IS the rhythm and pattern of massing appropriate? Some images that render the proposal in the context (aerial or street view) might be helpful.**
- **Character:** The overall design character is cohesive. Multi-family buildings should not be expected to mimic single-family homes, however, **some cues or references from the surrounding vernacular could be better incorporated into the design.**

- Façade Composition: The proportion of the three story and two-story masses are too different in height – the three-story forms are too tall and therefore are too conspicuous and top-heavy. More information is requested regarding the design decision about window size, proportion, and placement – again, are these window types, sizes, proportions found in the neighboring context?

Standard (1) c. Recreation and Open Space

1. External buffers: The project provides landscaping buffers between surface parking areas and neighboring properties.
2. Internal buffers: Units at the street have a front yard buffer with stoops and plantings. A street tree is provided in front of each unit between the building and the street. In most cases there is a landscape buffer or street between each building.
3. Passive recreational open space: Lawn, tree bosque, and some landscape seating areas are provided throughout the site.
4. Active recreational open space: A playground and lawn areas are provided. There will also be a pedestrian connection to the neighboring Payson Park.
5. Private open spaces: Street-facing units have stoops and yards. Internal-facing units have stoops and small planted areas.



Matthew Grooms <mgrooms@portlandmaine.gov>

37 Front Street (2017-224) - PB Nov. 14

Tom Errico <thomas.errico@tylin.com>

Mon, Nov 6, 2017 at 2:21 PM

To: Bruce Hyman <bhyman@portlandmaine.gov>

Cc: Matthew Grooms <mgrooms@portlandmaine.gov>

Hi Matt/Bruce – In general, I find the project information to be acceptable and therefore I don't have major comments. I do want some clarification on the following:

- The trip generation refers to studies conducted on-peninsula and therefore the traffic evaluation reflects that. The Front Street site may not have similar trip generating characteristics. I would also note that it is my understanding that some units will be market rate.
- A parking analysis was conducted and also refers to on-peninsula studies. The applicant did conduct some Front Street site surveys that I am reviewing. The City generally does not permit the use of on-street parking spaces for parking requirements, although the project appears to meet all or most parking needs on-site.
- Given monthly parking fees, does PHA have a sense of how many will park on-street to avoid the monthly fee.
- There were two High Crash Locations identified on Washington Avenue and I need to discuss conditions with City staff.
- I generally find the site plan to be acceptable with some minor comments that I can discuss tomorrow.

If you have questions, please contact me.

Thanks

Thomas A. Errico, PE

Senior Associate

Traffic Engineering Director

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"One Vision, One Company"

From: Bruce Hyman [mailto:bhyman@portlandmaine.gov]

Sent: Monday, November 6, 2017 12:44 PM

To: Tom Errico <thomas.errico@tylin.com>

Cc: Matthew Grooms <mgrooms@portlandmaine.gov>

Subject: Re: 37 Front Street (2017-224) - PB Nov. 14

[Quoted text hidden]



Matthew Grooms <mgrooms@portlandmaine.gov>

PEZ 2017.224 Front Street Redevelopment - PHA

Bruce Hyman <bhyman@portlandmaine.gov>

Mon, Nov 6, 2017 at 2:21 PM

To: Matthew Grooms <mgrooms@portlandmaine.gov>

Cc: Tom Errico <thomas.errico@tylin.com>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

Below are my preliminary comments in advance of tomorrow's 11 AM meeting with the applicant, primarily focusing on pedestrian accessibility and street design topics.

Sheet L-3.0, Site Details

- Item 2 - Bituminous Concrete Paving (Pedestrian) - please show that the maximum cross-slope allowed is 2%
- Item 7 - Detectable Warning Strip: ADA Tile is not the manufacturer of the cast iron panels - see DPW for the correct detail
- Item 13 - Light Pole Base: for street lights within the public ROW (if applicable), please use a light pole base 2"-3" above the finished grade
- I did not see a Site Detail (or I missed it) for a driveway detail along a public street, showing a maximum 2% cross-slope for the pedestrian access route across the driveway

Sheet L-1 Landscape and Lighting Plan

- In conjunction with the Photometrics Plan (Sheet L-2), no lighting or lighting analysis/photometrics is shown along the Public ROW - particularly with the pedestrian crossing of West Presumpscot Street and the other public street crossings - please update the plans to show the location of other/existing lighting, focusing on those locations with pedestrian crossings- please note that the city has an LED light fixture replacement program for most cobra head lights in the city slated for 2018.

Sheet C-2.0 Site Plan

- Please show the use of radius curb (not butted vertical curb) where curb extensions meet the curb line
- We will need turning templates for design vehicles for the corner of Front and West Presumpscot Street. I suggest the close examination and review by the Fire Dept of the NW corner along with the assessment of the on-street parking within the intersection to allow for emergency vehicle/fire dept vehicle access - right turns with curb extensions can be problematic for larger fire department equipment
- A public easement may be required for public access at the SE corner of West Presumpscot-Illsley for the landing area at the top of the curb ramp - the provision of two ramps at this corner should be explored per the city typical/preferred standard for two ramps per corner.
- A detail is needed for the proposed raised mid-block crosswalk across West Presumpscot Street.
- Please provide dimensions for the treed esplanade fronting Illsley Street - it appears less than 4' on the plan but with an overall sidewalk-esplanade of ~10'.

Bruce

--

Bruce Hyman
Transportation Program Manager
Transportation Division

Department of Planning & Urban Development
389 Congress Street
Portland, Maine 04101
(207) 874-8717 phone

bhyman@portlandmaine.gov
<http://www.portlandmaine.gov/1363/Transportation-Division>
Yes! Transportation's Good Here

**Matthew Grooms** <mgrooms@portlandmaine.gov>

37 Front Street - IZ Application (2017-236)

Victoria Volent <vvolent@portlandmaine.gov>
To: Matthew Grooms <mgrooms@portlandmaine.gov>

Thu, Nov 9, 2017 at 11:15 AM

Matthew,

The development located at 37 Front Street is proposing the creation of 99 units of rental housing. The applicant has elected to provide seventy-nine (79) units of low-income housing.

Of those units, seventy (70) are targeted towards households earning 50% AMI, and nine (9) units target households earning 60% AMI. Twenty (20) out of the 99 units will remain unrestricted.

Forty-five (45) will be one-bedroom, fifteen (15) will be two-bedroom, twenty (20) will be three-bedroom, eleven (11) will be four bedroom, and eight (8) will be five bedroom units.

The applicant proposes to complete this project in two phases. The first phase will be comprised of sixty (60) units of which forty-eight (48) will be low-income housing.

Phase two will create thirty-nine (39) units of housing of which thirty-one (31) will be low-income housing.

The applicant has satisfied the Inclusionary Zoning requirement that all developments of ten or more units comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Please let me know if I may be of further assistance.

Victoria Volent

Victoria Volent
Housing Program Manager
Housing and Community Development
Phone: 207-482-5028
Fax: 207-874-8949
www.portlandmaine.gov

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MEMORANDUM



TO: Matt Grooms, Planner
FROM: Lauren Swett, P.E., and Amy LeBel, E.I.T.
DATE: November 7, 2017 (updated)
RE: Front Street Redevelopment Peer Review, Level III Site Plan

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed Front Street Redevelopment Project located at 37 Front Street in Portland, Maine. The project involves construction of six 2-story apartment buildings (99 units), fourteen rain garden systems and shared community space.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Application and attachments, dated October 16, 2017, prepared by Carrol Associates Landscape Architects, on behalf of Front Street Housing Redevelopment, LP.
- Engineering Plans, Sheets C1.0, C2.0, C3.0 - C3.2, C4.1 - 4.2, C5.0, C6.0, C7.0 and C8.0, dated September 28, 2017, prepared by Carroll Associates Landscape Architects and Ransom Consulting, Inc., on behalf of Front Street Housing Redevelopment, LP.
- Boundary and Topographic Survey, dated December 30, 2015, prepared by Owen Haskell, Inc., on behalf of Front Street Housing Redevelopment, LP.

Comments

- 1) Per the application form, the project will disturb 3.94 acres of area and will create 1.3 acres of new impervious surface. The stormwater management report identifies only an increase of 0.93 acres of new impervious surface. The disturbed land area does not appear to include the road area that will be impacted by the installation of a new stormwater system. The project areas should be clarified. If the project disturbs more than 5 acres in total or creates over an acre of impervious surface, it will qualify for a Maine DEP Stormwater permit and will be reviewed by the City as part of their delegated review authority. The project will impact over an acre of land area and will require a Notice of Intent to Comply with the Maine Construction General Permit.
- 2) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. The Applicant has provided a stormwater management plan, and we offer the following comments
 - a) Basic Standard: Housekeeping notes and erosion and sedimentation control details have been provided. Please provide locations of erosion control measures on the drawings in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
 - b) General Standard: The Applicant will be increasing impervious surface area as noted above and will be required to meet the General Standard. The Applicant has proposed to install rain gardens with FocalPoints throughout the site. The MaineDEP has approved the use of FocalPoint systems with the use of an approved in-line subsurface chamber-based treatment row. It is our understanding that the R-Tank system is not yet approved by the MaineDEP. I know that the Manufacturer of the FocalPoint and R-Tank Systems has been working to obtain approvals from the Maine DEP. The Applicant should provide an update on the status of DEP approvals of this system. For a project requiring a MaineDEP Stormwater Permit, the City cannot approve a system that is not accepted by the MaineDEP.
 - c) Flooding Standard: Post-development peak runoff rates exceed pre-development rates for the 2-year, 10-year and 25-year storm events. The applicant is requesting a waiver from the City. We note that the stormwater model does not include the individual stormwater treatment systems, and the storage provided by these systems likely results in flow reductions. Approval of a waiver will require coordination with Public Works on the available downstream capacity.



- 3) The Applicant has noted a desire to work with the City on a design for a separated stormdrain in Front Street and West Presumpscot Street. The current design includes connections to catch basins, and storm drain pipes installed along the street curblines. While this is not the City standard, we understand that there may be some leeway in the design standards with collaboration between the City and the Applicant. Additional review by Public Works will be required for the proposed system.
- 4) All details for systems within the City Right-of-Way should be in conformance with the City's Technical Manual. Note that City of Portland pavement standards do not allow for 9.5 mm HMA as surface paving course within roadways.
- 5) The Applicant has submitted requests for ability to serve for utilities. Final approvals should be provided from the contacted utilities when they are available.

Front Street Redevelopment (2017-224)

Jeff Tarling <jst@portlandmaine.gov>

Mon, Nov 6, 2017 at 9:03 AM

To: Matthew Grooms <mgrooms@portlandmaine.gov>

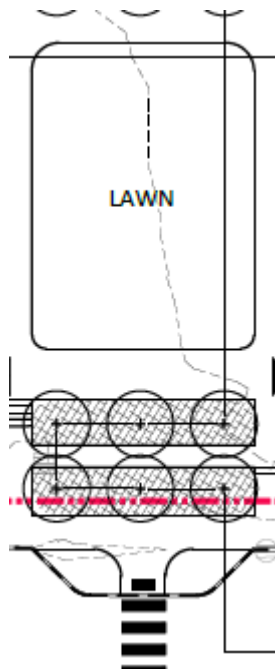
Hi Matt -

The overall tree & landscape plan looks pretty good, we have a few areas in question that could require additional tree and landscape elements.

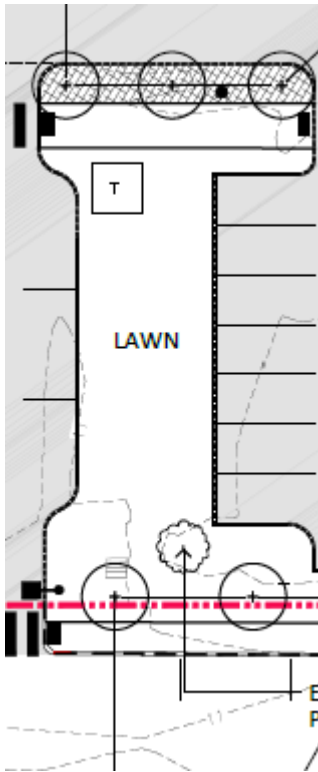
Tree preservation wise, the scale of the project makes 'tree saves' more unlikely. We did not see a lot of high value trees on this site.

Focus areas include:

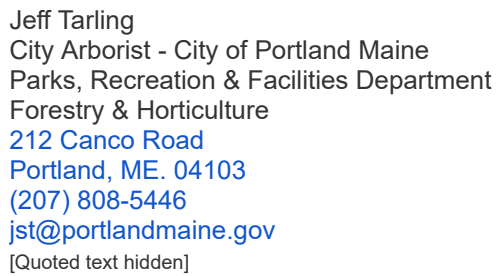
Between Building 5 & 6 - keep this space 'open' or landscape?



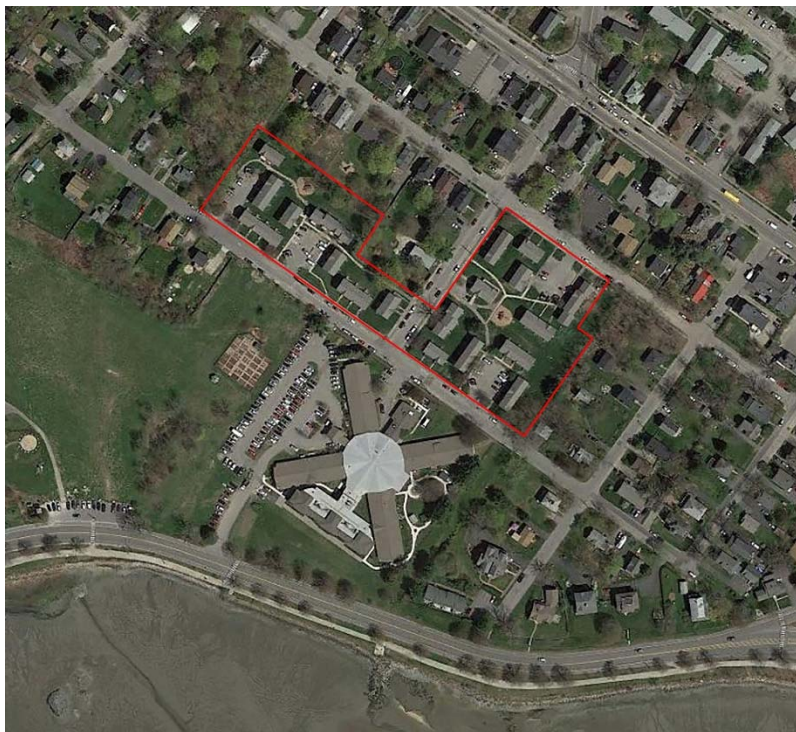
Next to Building 4 and the parking lot to the right, the lawn area should have landscape treatment.



On the right side of Building 3 along the project edge of the neighboring properties, buffer treatment in the form of fencing or landscape should be considered along with a regular spacing of trees where possible.



FRONT STREET HOUSING REDEVELOPMENT



Level III Final Site Plan Application

September 28, 2017

Submitted To:

City of Portland Planning Department

Applicant:

Front Street Housing Redevelopment, LP

14 Baxter Blvd., Portland, Maine 04101

Owner:

Portland Housing Authority

14 Baxter Blvd., Portland, Maine 04101

Prepared by:

Carroll Associates

217 Commercial Street, Portland, ME 04101

Ransom Consulting Engineers and Scientists

400 Commercial Street, Portland, ME 04101

Utile Architects

115 Kingston Street, Boston, MA 02111

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Drawings (Under Separate Cover)

SHEET#	SHEET TITLE
1A	COVER SHEET
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C-3.0	SUBDIVISION PLAN
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C-3.2	GRADING & DRAINAGE – EAST PARCEL
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C-5.0	STORMWATER AND EROSION CONTROL PLAN
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A-2.3	BUILDING ELEVATIONS
A-2.4	BUILDING ELEVATIONS
A-2.5	BUILDING ELEVATIONS
A-2.6	BUILDING ELEVATIONS



October 16, 2017

Ms. Barbara Barhydt
Mr. Tuck O'Brien
City of Portland Planning Authority
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

**RE: Front Street Redevelopment
34 W. Presumpscot Street Portland ME 04103
Tax Map 166 Block B Lot #1 & Tax Map 167 Block E Lot #1**

Dear Barbara / Tuck,

On behalf of The Portland Housing Authority and Front Street Housing Redevelopment, LP we are pleased to submit this Level III - Site Plan and Subdivision Application along with supporting materials relating to a new affordable housing project to be located at 34 W. Presumpscot Street.

The site is located in an R-5 district in East Deering Neighborhood bisected by West Presumpscot Street, and bounded on the north side by Illsley Street, Cummings (paper street) to the west, and Front Street to the South. The site currently provides for 50 affordable apartments in 19 buildings on two parcels totaling approximately 3.93 acres in size. Three existing parking lots are accessed from Front Street and Illsley Streets and contain approximately 40 off-street parking spaces. The property is gently sloping from the northwest and southeast.

The current proposal calls for six new (2) story buildings which will contain 99 units of apartment style housing, along with shared community space, a community building, and internal trash and bike storage. A full description of the housing program is included in the Project Description section of this application. The building footprints vary, with a total floor area of approximately 48,358 sf. Off-street parking for 102 cars is accommodated within the site and will be accessed from Front and Illsley Streets.

In September 2017 the City Council adopted changes to Division 30 of the City's zoning code providing height bonuses, density bonuses and other incentives for affordable housing for households earning less than 100% of the Area Median Income. The project's affordability targeting meets the requirements of the Division 30 changes. This project utilizes several of these affordable housing bonuses offered in the new Division 30 regulations including the following:

- Section 14-488(a) density bonus, allowing an additional 25% density for projects meeting 25% or more affordable income or workforce housing units (we are proposing 80%).
- Section 14-488(c) PRUD requirements. We are utilizing all items in this category, including
 1. Minimum lot area reduction of 50%
 2. Maximum number and length of buildings
 3. Minimum building setback reduction to 10.0 ft.
 4. Crossing right-of-way lines to include both parcels as a PRUD development
 5. Reduction in Recreation Open Space Area to 200 sf/ DU

- 14-488 (d) Required Public Process. The revisions to Division 30 require a public meeting prior to an application for Site Plan Review. The Applicant held this meeting on May 17, 2017, and documentation of this meeting is attached to the Application for Site Plan Review.

The project is also required to submit an Inclusionary Zoning Conditional Use Application, which is to be reviewed in concert with the Level III Application. This Application has been submitted as part of this overall application. The IZ CU Application Checklist requires several items which coincide with the Level III Application requirements and are found in the support documents for that application- additional requirements specific to the IZ CU Application are described below:

- 14-487 (e) Standards. The project will include a total of 99 new apartments, of which 20 apartments will be designated market rate units and the remaining 79 units will be designated affordable units. There will be no differentiation in the unit size of location on the project site between the market-rate and affordable apartments. All affordable housing is provided on-site. All standards of the Division 30 will apply to this project.
- Marketing Study. Portland Housing Authority owns and manages rental properties throughout the City and has a long waiting list for available apartments. All vacancies and availability postings are managed by the Portland Housing Authority through its office on Baxter Boulevard in Portland.
- The project will be constructed in two distinct phases, with the first phase containing 60 apartments and the second phase containing the remaining 39 apartments. This phasing is proposed to accommodate the relocation of the existing Front Street tenants. All existing residents will be offered relocation at other PHA properties or given housing vouchers, and will be welcomed back to the project once the new buildings are completed.

The Applicant is proposing to apply to MaineHousing for LIHTC funding for this project. The Application to MH is due February 8, 2018 and securing local Site Plan approval by January 8, 2018 is critical to receiving a positive review and potential funding in this cycle. We look forward to working closely with you, the Planning Staff and Planning Board in the review of this project so these deadlines can be met.

Please feel free to contact me to discuss any questions or concerns you may have regarding the attached application materials.

Sincerely,
CARROLL ASSOCIATES



Patrick J. Carroll
Principal

Enc.

Cc: Jay Waterman, Portland Housing Authority / 58 Boyd Street, LP
Katie Wirtz, Utile Architects
John Mahoney, Ransom Consulting Engineers



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

Planning and Urban Development Department
Planning Division

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

Level III: Site Plan Development includes:

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

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

Planning Division

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

Office Hours

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

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

Project Name:	Front Street Re-development
Proposed Development Address:	37 and 63 W. Presumpscot Street Portland ME 04103
Project Description:	Redevelopment of 50 existing units to 99 new units of affordable housing on 2 lots
Chart/Block/Lot:	Tax Map 166 Block B Lot #1 & Tax Map167 Block E Lot #1
Preliminary Plan	
Final Plan	X

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

Name:	Jay Waterman
Business Name:	Front Street Housing Redevelopment, LP, c/o Portland Housing Development Corporation
Address:	14 Baxter Blv
City/State:	Portland ME
Zip Code:	04101
Work #:	207.221.8009
Home #:	n/a
Cell #:	207.272.2562
Fax #:	207.761.5886
E-mail:	jwaterman@porthouse.org

OWNER

Name:	Portland Housing Authority
Address:	14 Baxter Blv
City/State:	Portland ME
Zip Code:	04101
Work #:	207.221.8009
Home #:	n/a
Cell #:	207.272.2562
Fax #:	207.761.5886
E-mail:	jwaterman@porthouse.org

AGENT/REPRESENTATIVE

Name:	Carroll Associates Landscape Architects
Address:	217 Commercial Street, Suite 200
City/State:	Portland, ME
Zip Code:	04101
Work #:	207.772.1552
Home #:	n/a
Cell #:	207.329.8976
Fax #:	n/a
E-mail:	pcarroll@carroll-assoc.com

BILLING (to whom invoices will be forwarded to)

Name:	Front Street Housing Redevelopment, LP
Address:	14 Baxter Blv
City/State:	Portland ME
Zip Code:	04101
Work #:	207.221.8009
Home #:	n/a
Cell #:	207.272.2562
Fax #:	n/a
E-mail:	jwaterman@porthouse.org

ENGINEER

Name:	Ransom Consulting
Address:	400 Commercial St. Suite 404
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 772-2891
Home #:	n/a
Cell #:	n/a
Fax #:	n/a
E-mail:	john.mahoney@ransomenv.com

SURVEYOR

Name:	Owen Haskell
Address:	390 US Route 1, Suite 10
City/State:	Falmouth, Maine
Zip Code:	04105
Work #:	(207) 774-0424
Home #:	n/a
Cell #:	n/a
Fax #:	F:(207) 774-0511
E-mail:	jschwanda@owenhaskell.com

ARCHITECT

Name:	Utile
Address:	115 Kingston Street
City/State:	Boston, MA
Zip Code:	02111
Work #:	617-423-7200
Home #:	617-423-7200
Cell #:	n/a
Fax #:	n/a
E-mail:	wirtz@utiledesign.com

ATTORNEY

Name:	Drummond Woodsum
Address:	84 Marginal Way, Suite 600
City/State:	Portland, ME
Zip Code:	04101
Work #:	207.772.1941
Home #:	n/a
Cell #:	n/a
Fax #:	207.772.3627
E-mail:	n/a

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Pat Carroll - Carroll Associates
E-mail:	pcarroll@carroll-assoc.com
Name:	Seth Kimball - Carroll Associates
E-mail:	skimball@carroll-assoc.com
Name:	John I. Mahoney - Ransom Consulting
E-mail:	john.mahoney@ransomenv.com

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

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

PLAN AMENDMENTS (check applicable review)

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

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	\$1,500.00
☒	Stormwater Quality	\$250.00
☒	Subdivision	\$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [99] x \$25.00 each	\$ 2,475
☐	Site Location	\$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [] x \$200.00 each	\$
☐	Change of Use	\$5,225 - 25% discount (\$1,306.25)=\$3,918.75
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		\$ 3,918.75

IV. FEES ASSESSED AND INVOICED SEPARATELY

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

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

TOTAL AREA OF SITE	171,509	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	171,509	sq. ft.
<i>If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.</i>		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	66,230	sq. ft.
Impervious Area (Total Proposed)	122,884	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	29,005 ESTIMATED	sq. ft.
Building Footprint (Total Proposed)	48,400	sq. ft.
Building Floor Area (Total Existing)	58,010 ESTIMATED	sq. ft.
Building Floor Area (Total Proposed)	116,500	sq. ft.
ZONING		
Existing	R-5	
Proposed, if applicable	n/a	
LAND USE		
Existing	Multi unit Housing	
Proposed	PRUD Housing	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	50	
# of Residential Units (Total Proposed)	99	
# of Lots (Total Proposed)	2	
# of Affordable Housing Units (Total Proposed)	79	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	0	
# of One-Bedroom Units (Total Proposed)	45	
# of Two-Bedroom Units (Total Proposed)	15	
# of Three-Bedroom Units (Total Proposed)	20	
# of Four-Bedroom Units: # of Five-Bedroom Units:	(11) 4 bedroom units (8) 5 bedroom units	
PARKING SPACES		
# of Parking Spaces (Total Existing)	59+/-	
# of Parking Spaces (Total Proposed)	102	
# of Handicapped Spaces (Total Proposed)	9	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	Unknown	
# of Bicycle Spaces (Total Proposed)	50	
ESTIMATED COST OF THE PROJECT		
	\$21,370,000	

VI. APPLICANT SIGNATURE

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

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

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

Signature of Applicant:	
Date:	9/13/17

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
X		1	Completed Application form
X		1	Application fees
X		1	Written description of project
X		1	Evidence of right, title and interest
X		1	Evidence of state and/or federal approvals, if applicable
X		1	Written assessment of proposed project's compliance with applicable zoning requirements
X		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
X		1	Written requests for waivers from site plan or technical standards, if applicable.
X		1	Evidence of financial and technical capacity
X		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	SITE PLAN SUBMISSIONS CHECKLIST
X		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)
X			Proposed grading and contours;
X			Existing structures with distances from property line;
X			Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;
X			Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);
X			Preliminary infrastructure improvements;
X			Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;
X			Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);
X			Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);
X			Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;
X			Exterior building elevations.

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

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

- Continued on next page -

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

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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



Bradley Roland, P.E.
Water Resources Division

Date: 9/22/17

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

Site Address: 34 W. Presumpscot Street, Portland, Maine 04103

Chart Block Lot Number: Tax Map 166 Block B Lot # 1 and Tax Map 167 Block E Lot # 1

Proposed Use: Residential Apartments

Previous Use: Residential Apartments

Existing Sanitary Flows: 7,470 GPD

Existing Process Flows: N/A GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

See utility plan

Site Category
Commercial (see part 4 below)
Industrial (complete part 5 below)
Governmental
Residential
Other (specify)

☐
☐
☐
☐
☐

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

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____

Owner/Developer Name: Portland Housing Authority

Owner/Developer Address: 14 Baxter Boulevard, Portland, Maine 04101

Phone: 207-773-4753

Fax: 207.761.5886

E-mail: 207.761.5886

Engineering Consultant Name: jwaterman@porthouse.org

Engineering Consultant Address: 400 Commercial Street, Suite 404, Portland, Maine 04101

Phone: 207-772-2891

Fax: 207-773-4753

E-mail: jwaterman@porthouse.org

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: 20,360 GPD

Peaking Factor/ Peak Times: N/A

Specify the source of design guidelines: (i.e. ☐ "Handbook of Subsurface Wastewater Disposal in Maine," ☐ "Plumbers and Pipe Fitters Calculation Manual," ☐ Portland Water District Records, Other (specify) _____

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values:	<u>N/A</u>
Size of External Grease Interceptor:	<u>N/A</u>
Retention Time:	<u>N/A</u>
Peaking Factor/ Peak Times:	<u>N/A</u>

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.

207.761.5886

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated:	<u>N/A</u>	<u> </u>	GPD
Do you currently hold Federal or State discharge permits?	Yes <u> </u>	No <u> </u>	<u>N/A</u>
Is the process wastewater termed categorical under CFR 40?	Yes <u> </u>	No <u> </u>	<u>N/A</u>
OSHA Standard Industrial Code (SIC):	<u>(http://www.osha.gov/oshstats/sicser.html)</u>		
Peaking Factor/Peak Process Times:	<u>N/A</u>	<u> </u>	

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

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

***See attached for Wastewater Calculations

Wastewater usage calculations:

Building # 1				
7	1 Bedroom Unit	X	90 gpd	= 630
3	2 Bedroom Unit	X	180 gpd	= 540
4	3 Bedroom Unit	X	270 gpd	= 1,080
1	5 Bedroom Unit	X	450 gpd	= 450
Community Room (1946sf, 15sf/occupant)				
130	Occupants	X	5 gpd	= 650
Building # 1 Subtotal				3,350

Building # 4				
5	1 Bedroom Unit	X	90 gpd	= 450
3	2 Bedroom Unit	X	180 gpd	= 540
3	3 Bedroom Unit	X	270 gpd	= 810
1	4 Bedroom Unit	X	360 gpd	= 360
1	5 Bedroom Unit	X	450 gpd	= 450
Building # 4 Subtotal				2,610

Building # 2				
5	1 Bedroom Unit	X	90 gpd	= 450
3	2 Bedroom Unit	X	180 gpd	= 540
3	3 Bedroom Unit	X	270 gpd	= 810
1	4 Bedroom Unit	X	360 gpd	= 360
1	5 Bedroom Unit	X	450 gpd	= 450
Building # 2 Subtotal				2,610

Building # 5				
8	1 Bedroom Unit	X	90 gpd	= 720
4	2 Bedroom Unit	X	180 gpd	= 720
2	3 Bedroom Unit	X	270 gpd	= 540
2	4 Bedroom Unit	X	360 gpd	= 720
3	5 Bedroom Unit	X	450 gpd	= 1,350
Building # 5 Subtotal				4,050

Building # 3				
8	1 Bedroom Unit	X	90 gpd	= 720
2	2 Bedroom Unit	X	180 gpd	= 360
3	3 Bedroom Unit	X	270 gpd	= 810
4	4 Bedroom Unit	X	360 gpd	= 1,440
2	5 Bedroom Unit	X	450 gpd	= 900
Building # 3 Subtotal				4,230

Building # 6				
12	1 Bedroom Unit	X	90 gpd	= 1,080
5	3 Bedroom Unit	X	270 gpd	= 1,350
3	4 Bedroom Unit	X	360 gpd	= 1,080
Building # 5 Subtotal				3,510

Total Usage:	20,360	gpd
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**PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST**



A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
2. **FRONT STREET HOUSING REDEVELOPMENT, LP, 14 BAXTER BLVD, PORTLAND 773.4753**
3. Name address, telephone number of architect
KATIE WIRTZ (617) 423-7200 UTILE 115 Kingston St., Boston, MA 02111
4. Proposed uses of any structures [NFPA and IBC classification]
5. **RESIDENTIAL APTS, OFFICE SPACE, AND MEETING SPACE**
6. Square footage of all structures [total and per story]
TOTAL FLOOR AREA OF ALL BUILDINGS IS 116,500 SF (SEE ATTACHED BUILDING SUMMARY)
7. Elevation of all structures
BUILDING #1 FFE 16 & 13.5 BUILDING #2 18 BUILDING #3 16.25 BUILDING #4 13.5 BUILDING #5 13.5 BUILDING #6 14.5
(SEE ATTACHED SITE PLAN & BLD ELEV.)
8. Proposed fire protection of all structures
 - **As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code.(NFPA 101 2009 ed.)**
9. Hydrant locations
1 AT INTERSECTION OF FRONT & W.PRESUMPCOT STREETS
10. Water main[s] size and location
8" MAIN IN FRONT STREET 6" MAIN IN W. PRESUMPCOT STREET
11. Access to all structures [min. 2 sides]
YES: THREE SIDES AT BLOCK B YES: TWO SIDES AT BLOCK E
12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards. **SEE ATTACHED CODE SUMMARY, EXHIBIT #21**
Some structures may require Fire flows using annex H of NFPA 1

Some structures may require Fire flows using annex H of NFPA 1



A Guide to Holding Neighborhood Meetings Portland, Maine

Planning and Urban Development Department
Planning Division and Planning Board

In order to improve communication between applicants and neighbors, the City of Portland requires applicants who are proposing certain types of development review projects, to hold a neighborhood meeting.

Developments requiring a neighborhood meeting

- Proposed map amendments, contract zones and zoning text amendments that would result in major development;
- Subdivisions of five or more units or lots;
- Master Development Plans; and
- Level III site plan proposals as defined in Section 14-523.

(The Land Use Code, including Article II (Planning Board) and Article V (Site Plan – which contains the neighborhood meeting requirements), are available on the City's web site at www.portlandmaine.gov/citycode/chapter014.pdf)

Timing of meeting

- **Subdivisions of 5 or more units or lots, zone changes, contract zones, zoning text amendments and Level III site plans:**
 - Preliminary Site Plan - The meeting should be held within 30 calendar days of filing the application.
 - Final Site Plan – If only a final plan is submitted, the meeting should be held within 21 calendar days of filing the application and no less than 7 calendar days before the public hearing.
- **Master Plan Development:**
 - The meeting should be held within 30 calendar days of filing the application.
 - The meeting should be held on a date no less than 7 calendar days before a public workshop or public hearing.
 - The meeting shall not be combined with any required neighborhood meeting for the Level III applications.

Location of meeting

- The meeting should be held in the evening, during the week, at a convenient location within the Portland neighborhood surrounding the proposed site. Community meeting spaces at libraries, schools or other places of assembly are recommended. Neighborhood schools are usually available for evening meetings.
- Meetings should not be held on the same day as scheduled Planning Board or City Council meetings. The City Council generally meets on the 1st and 3rd Monday of each month and the Planning Board generally meets on the 2nd and 4th Tuesday of each month; however additional meetings may be scheduled. An updated schedule may be found on the City's website: www.portlandmaine.gov

Invitation List

- Property owners within 500 feet of the proposed development (1000 feet for proposed industrial subdivisions and industrial zone changes)
- Interested citizens and neighborhood groups.

The Planning Division provides the mailing labels. We require at least 48 hours notice to generate the mailing labels and a charge of \$1.00 per sheet will be payable upon receipt of the labels. An electronic version (excel or word format) of the labels can also be e-mailed upon request.

A digital copy of the notice must be provided to the Planning Office (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner, which will then be forwarded to those on the interested citizen list who receive e-mail notices.

When to Send Invitations

- Invitations must be sent **no less than 10 days (to include weekends)** prior to the neighborhood meeting.
- Notices may be sent by regular mail and do not need to be sent by certified mail.

Notice Description

A recommended invitation format is included in this packet of material.

Attendance Sheet and Meeting Minutes

- Sign-in sheet must be circulated for those in attendance.
- Applicant shall take accurate minutes of the meeting.
- The sign-in sheet and minutes shall be submitted to the Planning Division.

A public hearing will not be scheduled until the meeting minutes and sign-up sheet are submitted to the Planning Division.

A Certification form is included with this packet to be completed and signed by the applicant.

Please call the Planning Division at 874-8721 or 874-8719 if you have any questions.

Attachments

1. Neighborhood Meeting Invitation Format
2. Neighborhood Meeting Certification

EXAMPLE: Neighborhood Meeting Invitation Format

**Applicant/Consultant
Letterhead**

(Date)

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for a (development proposal) located at (location/number and street address).

Meeting Location: _____

Meeting Date: _____

Meeting Time: _____

(The City code requires that property owners within 500 feet (1000 feet for proposed industrial subdivisions and industrial zone changes) of the proposed development and residents on an “interested parties list”, be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.)

If you have any questions, please call (telephone number of applicant or consultant).

Sincerely,

(Applicant)

Note:

Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

EXAMPLE: Neighborhood Meeting Certification

I, (applicant/consultant) hereby certify that a neighborhood meeting was held on (date) at (location) at (time).

I also certify that on (date at least ten (10) days prior to the neighborhood meeting), invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change.
2. Residents on the "interested parties" list.
3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

_____ (date)

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes



Conditional Use for Ensuring Workforce Housing Inclusionary Zoning Planning Board Review Application Portland, Maine

Planning and Urban Development Department
Planning Division and Housing and Community Development

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Conditional Use review of applications to ensure workforce housing in development projects that create ten or more new dwelling units. The units may be for rent or for sale and created through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. At least ten percent (10%) of the units in the project shall meet the definition of workforce housing unit for sale or rent. All developments of ten units or more a conditional uses subject to Planning Board review on the condition that they comply with the requirements of section 14-487.

A. Ensuring Workforce Housing: Standards -Section 14-484

(d) Workforce Housing Minimum At least ten percent (10%) of the units in the project shall meet the definition of workforce housing unit for sale or for rent. The number of units required is rounded down to a whole number if providing units on- or off-site, or shall include a fractional value in cases where a project prefers to pay a fee-in-lieu as per (e)3. below.

(e) Standards

1. Projects shall not be segmented or phased to avoid compliance with these provisions. In cases where projects are completed in phases, affordable units shall be provided in proportion to the development of market rate units unless otherwise permitted through regulations.
2. Workforce units are encouraged to be integrated with the rest of the development, should use a common entrance and should provide no indications from common areas that these units are workforce housing units.
3. Workforce units need not be the same size as other units in the development but the number of bedrooms in such units, either on- or off-site, shall be 10 percent of the total number of bedrooms in the development. For the purposes of this section, for every 400 square feet in a market rate unit will count as a bedroom if the actual number of bedrooms in the unit is lower.
4. As an alternative to providing workforce housing units, projects may pay a fee in lieu of some or all of the units. In-lieu fees shall be paid into the Housing Trust Fund as defined in Sec. 14-489. The fee for affordable units not provided shall be \$100,000 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement.
5. Workforce housing units for sale, if converted to workforce housing units for rent, shall become subject to the income limits and other requirements of such units.
6. If at least 33 percent of the units in a development are workforce units, the development is eligible for subsidy through an Affordable Housing TIF, subject to City Council approval.

7. The term of affordability for the required 10 percent workforce units provided shall be defined as follows:

Percentage of Workforce Units Provided	Minimum Term of Affordability for Required Workforce Units
10%	Longest term permitted under federal, state and local laws and ordinances
25%	30 years
50%	20 years
100%	10 years

(f) Implementing Regulations. Regulations to further specify the details of this section shall be developed, including, but not limited to:

1. Specific methodology for income verification;
2. Situations where less than permanent affordability might be considered; and
3. Guidelines for meeting the requirement that off-site units be “in the same neighborhood”.

B. Site Plan Application: Please submit the Conditional Use Application in addition to the applicable Site Plan Application.

Portland’s development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: <http://me-portland.civicplus.com/DocumentCenter/Home/View/1080>

Design Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2355>

Technical Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2356>

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207)874-8719

Housing and Community Development
Room 313, Third Floor, City Hall
389 Congress Street
(207)482-5028

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

PROJECT NAME:

Front Street Redevelopment

PROPOSED DEVELOPMENT ADDRESS:

37 and 63 W. Presumpscot Street, Portland, ME 04103

CHART/BLOCK/LOT (s): Map 166, Block B, Lot 1
Map 167, Block E, Lot 1**Applicable Zone:** R-5**CONTACT INFORMATION:**

Applicant – must be owner, Lessee or Buyer Name: Jay Waterman Business Name, if applicable: Front Street Redevelopment, LP c/o Portland Housing Development Corporation Address: 14 Baxter Blvd City/State : Portland, ME Zip Code: 04103	Applicant Contact Information Work # 207.221.8009 Home# Cell # 207.272.2562 Fax# 207.761.5886 e-mail: jwaterman@porthouse.org
Owner – (if different from Applicant) Name: Portland Housing Authority Address: 14 Baxter Blvd City/State : Portland, ME Zip Code: 04103	Owner Contact Information Work # same as above Home# Cell # Fax# e-mail:
Billing Information Name: same as above Address: City/State : Zip Code:	Billing Information Work # same as above Cell # Fax# e-mail:
Designated person/person(s) for uploading to e-Plan: Name: Patrick Carroll e-mail: pcarroll@carroll-assoc.com Name: Seth Kimball skimball@carroll-assoc.com e-mail: Name: John Mahoney john.mahoney@ransomenv.com e-mail:	

Property is owned by Portland Housing Authority and will be developed through its subsidiary the Portland
RIGHT, TITLE OR INTEREST: Housing Development Corporation and the Front Street Housing Redevelopment, LP.
Copies of deeds and other evidence of right, title, and interest are included in the accompanying Level III
Site Plan and Subdivision Application.

(Please identify the status provide documentary evidence, attached to this application, of the applicant's right, title, or
interest in the subject property (ex: deed, option or contract to purchase or lease the property.)

EXISTING USE: Describe the existing use of the subject property.

Multi-family rental apartments (50 affordable units)

PROJECT DESCRIPTION:

Replacement of 50 existing affordable rental apartments with 99 new rental apartments (79 affordable/ 20 market rate units))

INCLUSIONARY ZONING:	
# IZ Units	79
On-Site IZ Units	79
Off-Site IZ Units	0
# IZ Homeownership Units	0
# IZ Rental Units	79
# IZ Efficiencies	0
# IZ 1-Beds	27
# IZ 2-Beds	9
# IZ 3-Beds/4-beds/ 5-beds	20/11/8
IZ Fee In-Lieu	n/a

APPLICATION FEES:

☒ Conditional Use Review to Ensure Workforce Housing (\$100.00) (Please submit a separate application for the applicable site plan review. Fees and charges are listed within the application)	The City invoices separately for the following: • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$50.00 hour) • Legal Review (\$75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.
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INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov
(Please be sure to designate a person who will be responsible for uploading documents and drawings.)
This step will generate the project ID number for your project.
2. An invoice for the application fee will be e-mailed to you. Payments can be made on-line at [Pay Your Invoice](#), by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.
3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

[Applying Online Instructions](#)

5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
x		1	Completed Application Form
x		1	Cover letter stating the nature of the project.
x		1	Evidence of right, title and interest.
x		1	Written Submittals that address the conditional use standards of Sec. 14-484, including unit size and bedroom count
x		1	Proposed Marketing Strategy
x		1	Written Proposal for providing workforce units on-site, off-site, or payment of fee-in-lieu.
x		1	If the project is to be phased, provide written description of project phasing and accommodation of workforce units.
			Plans and Construction Details Submission Checklist
x		1	An accompanying site plan application, as applicable.
x		1	Floor Plans of all units and identifying proposed designated workforce housing units
x		1	Interior Standards for Units for market rate and workforce housing units, including kitchen, bathroom, flooring and closet amenities
n/a		1	If workforce units are proposed off-site, provide vicinity map with project location and workforce unit locations within the applicable census block group map or within 1500 feet of the project.

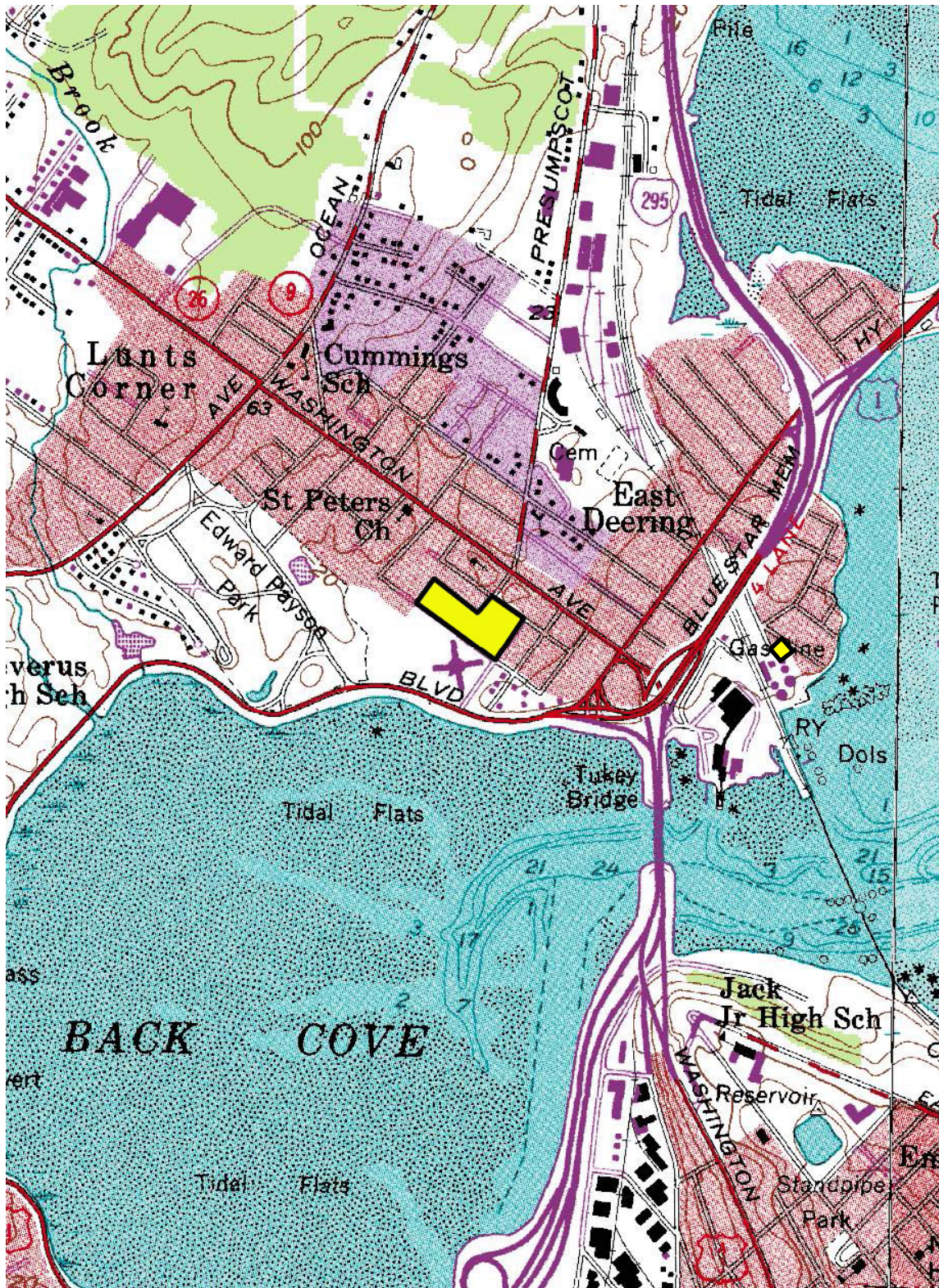
APPLICANT SIGNATURE:

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

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

Signature of Applicant: 	Date: 10.03.2017
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5. Location Map – USGS



USGS map of approximate subject property (outlined in black and filled with yellow).

Front Street Redevelopment

City of Portland - Level III Site Plan + Subdivision Application

Location Map – Aerial photograph



Aerial photograph of approximate subject property (outlined in red and filled with yellow).

6. Description of Project

Overview of Development Proposal

Portland Housing Development Corporation is initiating its next phase of redevelopment in the East Deering neighborhood to continue one of its strategic planning goals of increasing the supply of affordable housing in the City of Portland. For the front Street Redevelopment Project the PHDC is proposing to replace the existing 50 family apartments at Front Street with a new multi-family apartment project containing a total of 99 new apartments in six (6) buildings for families with the following tentative unit mix:

- 1 bedroom – 45 units;
 - 2 bedroom – 15 units;
 - 3 bedroom – 20 units;
 - 4 bedroom - 11 units;
 - 5 bedroom - 8 units
- TOTAL - 99 dwelling units

The Goal of the project is to replace the aging existing housing, but also increasing the number of dwelling units on the property to better reflect the development potential of the property. Key to this project's success will be its compatibility with the existing neighborhood, and a tremendous effort has been made to understand the neighborhood issues and provide design solutions that benefit the residents and neighbors.

The site is located in an existing residential neighborhood with a mix of owner-occupied and rental housing. Multifamily rental is appropriate for and compatible with the site. Front Street Apartments' design is consistent with the style and type of construction historically found in East Deering Neighborhood and other residential neighborhoods in the area. The building organization relates to the local context with 2-3 story buildings relating to the street and off street parking pulled back to reinforce the building edges. The proposed site plan reinforces strong pedestrian connections through the project and along its perimeters, provides traffic calming measures along the public streets, appropriate off-street parking for the residents, reinforces the street edge of the neighborhood by placing all buildings oriented on a 'street' and adding front "porches" to encourage neighborhood interaction, and provides significant open space and other community facilities that help integrate the development with the existing neighborhood.

The project provides significant recreational open space for the residents and neighborhood. Passive recreation open space includes perimeter sidewalks, benches and other site amenities, common lawn areas and shaded sitting areas, pathway connections between Front and Illsley Streets, and an improved pedestrian connection into Payson Park and the nearby Community Gardens. Active recreation improvements include multiple open play areas, a central lawn, and multi-functional space at the Community Room.

Units are designed to serve the needs of residents. The existing Front Street project is very much family oriented, and contains a number of large (4-5 BR) apartments. The proposed redevelopment maintains this unit mix assuring that these large families can return to the neighborhood once the project is complete. Amenities include interior and exterior community facilities, common laundry rooms and community meeting space. The Front Street Apartments' design will meet and significantly exceed the City's Green Building Code. Front Street Apartments employs the *Passive House* principles to dramatically reduce energy demand and simplify overly complex and expensive multifamily mechanical systems.

The project will provide a mix of affordable and market-rate apartments with the goal of integrating the residents into the existing neighborhood. A total of 70 apartments (80%) will be maintained as affordable units, allowing residents meeting the following criteria:

- 65% of the units will be for households making at or below 50% of the Area Median Income (about \$41,500 for a family of 4).
- Of the 65%, half of the units (28) will have Project Based Rental Assistance.
- 15% of the units would be for households earning up to 60% AMI.
- 10% of the units will have a set-aside for homeless households
- Another 10% of the units will have a preference for homeless or disabled households

The program includes 20 market rate units (20%) in a census tract that had 54% of its residents living below the poverty line as of the 2010 Census. We have also discounted our market rate rents by 5%-10% below what a recent market study showed for market-rate rents. By doing this, we are trying to reach the "workforce housing" households that the City is targeting in their recent housing needs study. Remaining units are targeted to households earning below 50% and 60% of area median income allowing for additional income diversity.

To minimize relocation impacts on the residents the project is intended to be constructed in two distinct phases. Phase One will be on the block east of West Presumpscot Street and will consist of 60 units in four buildings. This Phase also includes construction of a Community Space and outdoor amenities for the entire development. Phase Two will likely occur immediately following completion of Phase One and will add another 39 apartments and associated site improvements.

The financial projections for the Project have been developed directly with our architectural design team and looking at current development and operating budgets of active projects. Hard and soft costs of development are based on both the specifics of the design as well as analyzing comparable developments in Portland. Operating expenses are consistent with area developer experience and using data from partners on the Bayside Anchor project. Rents are projected to be 11% to 64% below market ensuring a strong competitive position within the market. Finally, the financial projections - including prefunded replacement and operating reserves - conform to MSHA underwriting standards and the project characteristics should yield an extremely competitive application in the upcoming LIHTC round at MSHA.

The development team assembled for Front Street Development Apartments features many of the most experienced and capable players in affordable housing in Portland and Maine.

Owner/Developer **PHDC** is the development subsidiary of Portland Housing Authority (PHA). PHA is the largest landlord in Portland and also manages the largest Section 8 program in Maine. **Jay Waterman**, PHDC's Director of Development, brings 6 years of experience as Avesta Housing's Director of Development and another 6 years as a leader in green building construction. Jay recently completed the Bayside Anchor project for the Housing Authority.

The project's Management Agent, **Hallkeen Management Corporation** manages properties and reviews operating budgets for over 2,400 units in New England including over a hundred in Portland, including our 100 State Street senior housing development. PHDC will work closely with Hallkeen to ensure a financially viable project for the long-term.

Utile Architects has been retained to provide overall Architectural Design for the Project. Sub-consultants to Utile include **Carroll Associates Landscape Architects, Gorrill Palmer Consulting Engineers, and Ransom Consulting**.

Front Street Apartments is well positioned to move from planning and design into production upon receipt of City and LIHTC funding. Site Plan and Subdivision Approval is critical to being awarded funding from MaineHousing and it is anticipated this will be completed by mid-December, 2017. The team is submitting a site plan application to MaineHousing for LIHTC Funding in early February, 2018 and, pending approval of MaineHousing tax credits, the first Phase of the Project (60 DU) will be ready for construction in the Fall of 2018.

7. Right, Title, or Interest

Site Control: Portland Housing Authority (owner)
 Front Street Redevelopment, LP. (applicant) with option to buy.

making an included angle of 90° 00' with the southwesterly direction of the last described course, a distance of 258.79 feet to an iron pipe and an intersection with the easterly street line of Presumpscot Street; thence southwesterly along the easterly street line of Presumpscot Street and making an included angle of 90° 00' with the southeasterly direction of the southerly street line of Illsley Street, a distance of 350.00 feet to an iron pipe and intersection with the northerly street line of Front Street and the point of beginning, containing about 100,329 square feet.

Reserving to the Grantor a Right-of-Way on the easterly side of said above described parcel for future sewer construction, bounded and described as follows:

Beginning at an iron pipe on the northerly street line of Front Street, said iron being distant 297.25 feet southeasterly along the northerly street line of Front Street from the iron pipe at the northeast corner of Front Street and Presumpscot Street, thence northwesterly along the northerly street line of Front Street, a distance of 38.46 feet to a point; thence northeasterly and making an included angle of 90° 00' with the southeasterly direction of the last described course, a distance of 250.00 feet to an iron pipe; thence southeasterly and making an included angle of 90° 00' with the southwesterly direction of the last described course, a distance of 39.56 feet to an iron pipe; thence southwesterly and making an included angle through the northwest of 89° 45' with the northwesterly direction of the last described course, a distance of 250.00 feet to an iron pipe and an intersection with the northerly street line of Front Street and the point of beginning.

And to enter upon said Right-of-Way at any and all times for the foregoing purpose, reserving to the Grantee, its successors and assigns, the use and enjoyment of said Right-of-Way for such purposes as will in no way interfere with the perpetual use thereof by the Grantor, its successors and assigns for the foregoing purpose, provided that no building or any kind of permanent structure shall be erected on said Right-of-Way by the Grantee, its successors or assigns.

Said lots or parcels of land being portions of the premises conveyed to the Grantor by deed of Carrie M. Dyer, dated April 24, 1929, recorded in the Cumberland County Registry of Deeds in Book 1316, Page 223.

~~On and to hold~~ the same, together with all the privileges and appurtenances thereunto belonging, to it the said Portland Housing Authority, its successors

~~Heirs and Assigns forever.~~

And the said Grantor Corporation does ~~return~~ with the said Portland Housing Authority, its successors

~~Heirs and Assigns~~, that it will ~~Warrant and Arrure Defend~~ the premises to it the said Grantee, its successors

~~Heirs and Assigns forever~~, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND

has caused this instrument to be sealed with its corporate seal and signed in its corporate name by JOHN G. DE PALMA,

. its Director of Finance

thereunto duly authorized, this 5th day of November in the year one thousand nine hundred and Seventy.

Signed, Sealed and Delivered
in presence of

Patricia E. Meady

CITY OF PORTLAND

By *John G. De Palma*
Director of Finance



State of Maine. CUMBERLAND ss.

November 5 1970 .

Personally appeared the above named JOHN G. DE PALMA, Director of Finance
of said Grantor Corporation
as aforesaid, and acknowledged the foregoing instrument to be his
free act and deed in his said capacity, and the free act and deed of
said corporation.

Before me,

Patricia E. Meady
Justice of the Peace
Natany L. DePalma

NOV 9 1970

REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 1 H 14 M P.M. and recorded in

BOOK 3150 PAGE 101 *Margaret L. DePalma* Deputy Register

Know All Men by these Presents,

THAT We, William C. King and Nancy S. King, both of Westford, County of Middlesex, Commonwealth of Massachusetts
in consideration of Twenty Thousand and 00/100 (\$20,000.00)

paid by CASCO BANK & TRUST COMPANY, a banking institution duly organized and existing by law and having a principal place of business at Portland in the County of Cumberland and State of Maine.

the receipt whereof is hereby acknowledged, do hereby give, grant, bargain, sell and convey, unto the said CASCO BANK & TRUST COMPANY, its Successors and Assigns, forever, the following described real estate, with the buildings and improvements now or hereafter situated thereon:

The following parcel of land, situated in Bridgton, County of Cumberland, State of Maine, being cottage lot #69 (Sixty-nine) in the Knights Hill Subdivision, so-called, as depicted on plan entitled "Subdivision Plan of Knights Hill Section I" surveyed by Earl Hotchkiss, Registered Land Surveyor, dated January 3, 1969, duly recorded in Cumberland County Registry of Deeds, Plan Book 78, Page 32, reference to which is made for more particular description of the cottage lot hereby conveyed.

This conveyance is intended to include the same appurtenances, and to be subject to the same use restrictions, easements and covenants as set forth or referred to in our deed of said premises from Knights Hill Corporation, ~~as set forth in our deed of said premises~~ and to be duly recorded in said Registry of Deeds, in Book 3123, Page 282.

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3221
240

Also, beginning at an iron pipe at the northeast corner of Presumpscot Street and Front Street; thence southeasterly along the northerly street line of Front Street, a distance of two hundred ninety-seven and twenty-five hundredths (297.25) feet to an iron pipe; thence northeasterly and making an included angle through the north of 90° 15' with the northwesterly direction of the northerly street line of Front Street, a distance of two hundred fifty (250) feet to an iron pipe; thence northwesterly and making an included angle through the west of 89° 45' with the southwesterly direction of the last described course, a distance of thirty-nine and fifty-six hundredths (39.56) feet to an iron pipe; thence northeasterly and making an included angle of 90° 00' with the southeasterly direction of the last described course, a distance of one hundred (100) feet to an iron pipe and an intersection with the southerly street line of Illsley Street; thence northwesterly along the southerly street line of Illsley Street and making an included angle of 90° 00' with the southwesterly direction of the last described course, a distance of two hundred fifty-eight and seventy-nine hundredths (258.79) feet to an iron pipe and an intersection with the easterly street line of Presumpscot Street; thence southwesterly along the easterly street line of Presumpscot Street and making an included angle of 90° 00' with the southeasterly direction of the southerly street line of Illsley Street, a distance of three hundred fifty (350) feet to an iron pipe and the intersection with the northerly street line of Front Street and the point of Beginning, containing about 100,329 square feet.

Reserving to the City of Portland a right of way on the easterly side of said above described parcel for future sewer construction, bounded and described as follows:

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said

PORTLAND HOUSING AUTHORITY

its successors

~~beats~~ and assigns, to it and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the

said Grantee, ^{its successors} ~~beats~~ and assigns, that it is lawfully seized

in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said

Grantee to hold as aforesaid; and that it and its successors,

shall and will WARRANT AND DEFEND the same to the said Grantee,

^{successors} its ~~beats~~ and assigns forever, against the lawful claims and

demands of all persons.

Beginning at an iron pipe on the northerly street line of Front Street, said iron being distant two hundred ninety-seven and twenty-five hundredths (297.25) feet southeasterly along the northerly street line of Front Street from the iron pipe at the northeast corner of Front Street and Presumpscot Street, thence northwesterly along the northerly street line of Front Street, a distance of thirty-eight and forty-six hundredths (38.46) feet to a point; thence northeasterly and making an included angle of 90° 00' with the southeasterly direction of the last described course, a distance of two hundred fifty (250) feet to an iron pipe; thence southeasterly and making an included angle of 90° 00' with the southwesterly direction of the last described course, a distance of thirty-nine and fifty-six hundredths (39.56) feet to an iron pipe; thence southwesterly and making an included angle through the northwest of 89° 45' with the northwesterly direction of the last described course, a distance of two hundred fifty (250) feet to an iron pipe and an intersection with the northerly street line of Front Street and the point of beginning.

And for the said City of Portland to enter upon said right of way at any and all times for the foregoing purpose, reserving to the Grantee, its successors and assigns, the use and enjoyment of said right of way for such purposes as will in no way interfere with the perpetual use thereof by the City of Portland, its successors and assigns for the foregoing purpose, provided that no building or any kind of permanent structure shall be erected on said right of way by the Grantee, its successors or assigns.

The Grantee herein, by the acceptance of this deed, hereby acknowledges that STIRLING HOMEX CORPORATION has fully performed all of the conditions set forth in a deed from the PORTLAND HOUSING AUTHORITY to STIRLING HOMEX CORPORATION dated December 7, 1970 and recorded in the Cumberland County Registry of Deeds in Book 3179, Page 619, and hereby discharges STIRLING HOMEX CORPORATION from all of the obligations contained in said deed, to wit: that STIRLING HOMEX CORPORATION herein shall, within one (1) year from the date thereof, enter into a valid and binding Department of Housing and Urban Development approved Turn-Key Contract with PORTLAND HOUSING AUTHORITY to build fifty (50) units of modular housing upon the herein described premises in accordance with the plans and specifications approved for PORTLAND HOUSING AUTHORITY Project ME 3-10; and should this condition be broken, or should the construction of said fifty (50) units not be completed within two (2) years from the date hereof, the PORTLAND HOUSING AUTHORITY shall have the option to repurchase said premises for the same consideration received herefor plus a reasonable price for any improvements thereon. Said option shall remain open for a period of six (6) months.

Being the same premises conveyed by the PORTLAND HOUSING AUTHORITY to STIRLING HOMEX CORPORATION by deed dated December 7, 1970 and recorded in the Cumberland County Registry of Deeds in Book 3169, Page 619.

In Witness Whereof, the said STIRLING HOMEX CORPORATION
has caused this instrument to be sealed with its corporate seal
and signed in its corporate name by
REUBEN K. DAVIS, JR., its Vice President
thereunto duly authorized, this 15 day of October
in the year one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered
in presence of

STIRLING HOMEX CORPORATION

By Reuben K. Davis
Its Vice President



State of Maine

County of Cumberland ss. October 15, 1971.

Then personally appeared the above named

REUBEN K. DAVIS, Vice President of said Grantor
Corporation as aforesaid, and acknowledged the foregoing instrument
to be his free act and deed in his said capacity, and the free act
and deed of said corporation.

Before me,

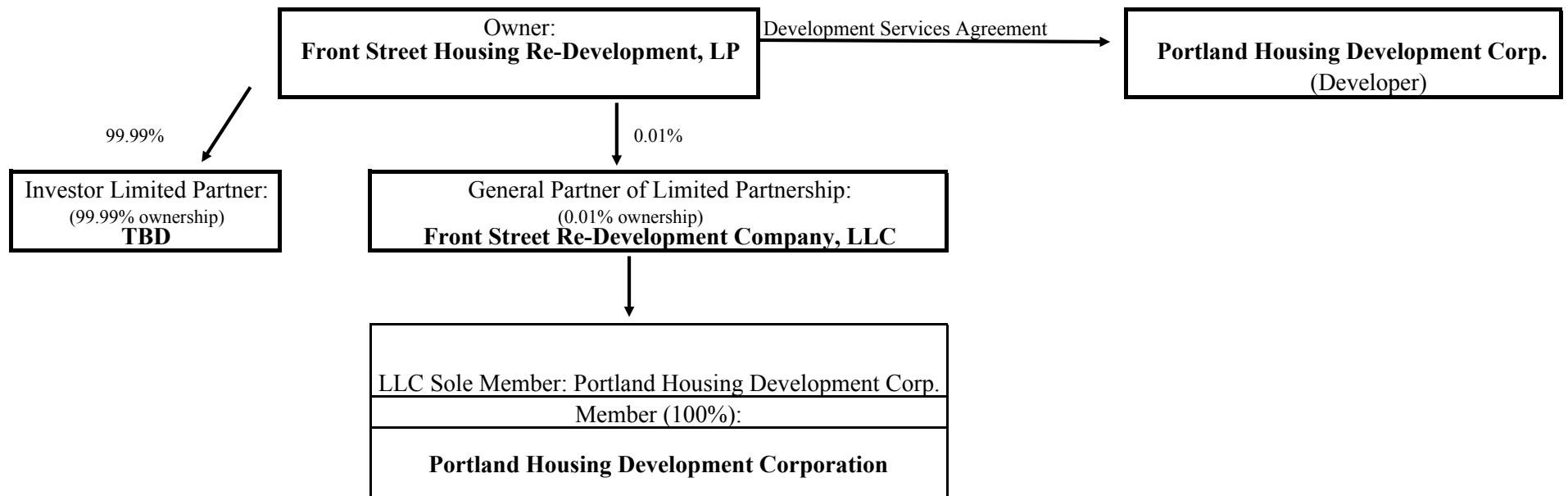
Paul Fisher

Justice of the Peace.

~~Notary Public~~

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE OCT 22 1971
Received at 10 H 12 M A M and recorded in
BOOK 3196 PAGE 834 Walter Hughes Register

**Front Street Re-Development - Phase I
Ownership Organizational Chart**



OPTION TO PURCHASE AGREEMENT

THIS OPTION TO PURCHASE AGREEMENT dated this 5th day of January, 2017, is by and among PORTLAND HOUSING AUTHORITY, a Maine municipal housing authority having a mailing address of 14 Baxter Boulevard, Portland, ME 04101 (the "Seller"), and FRONT STREET HOUSING REDEVELOPMENT, LP, a Maine limited partnership having a mailing address of 14 Baxter Boulevard, Portland, ME 04101 or its assigns ("Buyer").

RECITALS

WHEREAS, Seller is the owner of a certain parcel of land, and all improvements, buildings and fixtures presently on the real estate, at the corner of Presumpscott and Front Streets in the City of Portland, Maine and being the housing project designated as ME36P003010 by the U.S. Department of Housing and Urban Development ("HUD") as more fully described on Exhibit A attached hereto (the "Premises"); and

WHEREAS, Seller wishes to grant to Buyer, and Buyer wishes to accept, an option to purchase (the "Option") with respect to the Premises upon the terms and conditions as set forth herein.

NOW, THEREFORE, in consideration of one dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Option Period; Extension; Exercise of Option. Seller hereby grants Buyer the option to purchase the Premises for a period extending through June 30, 2019 (the "Option Period"). Buyer must exercise the option prior to the expiration of the Option Period.

- a. The Option and the obligation of each of the Seller and Buyer shall be conditional upon (i) approval by HUD of a demolition disposition by Portland Housing Authority in order to remove the Premises from the Declaration of Trust currently encumbering the real estate and authority to transfer the Premises to Buyer or its assigns, for the development of low and moderate income multi-family housing thereon; (ii) receipt of all required municipal and state approvals for the development of a mixed-income family housing project of not less than 50 units to be located on the Premises; and (iii) and an award of Low Income Housing Tax Credits for such development.
- b. Buyer may exercise the Option at any time during the Option Period by giving written notice to Seller of its intent to exercise the Option (the "Purchase Notice"). Notice delivered to Seller or sent to Seller by certified mail, return receipt requested, at the above address shall be sufficient.

2. Purchase Price. Subject to adjustment as set forth below, Buyer shall pay Seller a purchase price of One Dollar (\$1.00) (the "Purchase Price") plus any additional amount that HUD may require be paid to Seller in connection with the disposition of the Premises.

3. Closing. If Buyer exercises the Option, closing shall take place at a date and time and at a location agreed upon by the Buyer and the Seller, within ninety (90) days after the date of the Purchase Notice. The date of the closing may extend beyond the date of the Option Period if the Purchase Notice is given less than ninety (90) days prior to the end of the Option Period.

4. Conditions to Sale. If Buyer exercises the Option, the following terms and provisions shall apply:

- a. Title to the Premises shall be conveyed to Buyer by good and sufficient Quitclaim Deed with covenants, which deed shall convey good and marketable title to the Premises, free from encumbrances except provisions of existing building and zoning laws and any covenants and/or easements of record provided same do not interfere with Buyer's intended use of the Premises; such real estate taxes for the then current tax period which are not due and payable on the date of delivery of such deed; utility and access easements in common with Seller's adjoining developments, and any matters of record which in Buyer's opinion do not interfere with Buyer's plans to develop the property. Buyer shall notify Seller of any defects in title that would make Seller unable to give title to the Premises as herein stipulated. Seller shall be obligated to proceed in good faith to cure any such title defect(s). If required, the closing shall be extended to allow Seller time to cure any such title defects, but in no event shall the closing be extended more than thirty (30) days for such purposes. If a title defect exists, Buyer may elect, by written notice to Seller, either (i) to accept title to the Premises subject to any uncured defects in title or (ii) to terminate the Option, whereupon any extension fee(s) paid by Buyer to Seller shall be immediately refunded to Buyer, the obligations of all parties hereunder shall cease, and neither party shall have any claim against the other by reason of this Agreement.
- b. Each party shall pay one-half of the Maine real estate transfer tax, unless one of the parties is exempt, in which case no transfer tax shall be due from the exempt party.

5. Representations. Seller represents, covenants and warrants to and agrees with Buyer as follows:

- a. Seller is the current owner of the Premises, and; subject to approval by HUD, has the legal right, power and authority to enter into this Agreement and to perform all of its obligations hereunder, and the execution and delivery of this Agreement and the performance by Seller of the obligations hereunder will not conflict with, or result in breach of any regulation, order, judgment, injunction or decree of any court or governmental authority or any agreement or instrument to which Seller is a party or by which Seller is bound.

- b. There are no agreements or contracts affecting the Premises or any use of the Premises that would not be terminable at will by Buyer without penalty from and after the Closing, other than those for which Seller will be seeking approval from HUD in connection with its demolition disposition application.

Buyer represents, covenants and warrants to Seller that Buyer has the legal right, power and authority to enter into this Agreement and to perform all of its obligations hereunder, and the execution and delivery of this Agreement and the performance by Buyer of its obligations hereunder: (i) have been duly authorized by all requisite action; and (ii) will not conflict with, or result in a breach of, any of the terms, covenants and provisions of the by-laws or articles of organization of Buyer or any law or any regulation, order, judgment, writ, injunction or decree of any court or governmental authority, or any agreement or instrument to which Buyer is a party or by which it is bound.

6. Notice. Whenever notice is given or required to be given by either of the parties hereto to the other, it shall be deemed to have been given if in writing and mailed by certified or registered mail, return receipt requested, postage prepaid, or hand delivered, addressed to the parties at the address set forth in the first paragraph above or to such other address(es) as either party shall have last designated by like notice in writing. All notices shall be effective upon hand delivery or mailing, whichever first occurs.

7. Further Assurances. The parties agree that up to and after the date of closing, they shall do such things and execute, acknowledge and deliver any and all additional instruments, documents and materials as either party may reasonably request to fully effectuate the purposes of this Agreement.

8. Buyer's Access. Buyer and others whom Buyer may designate shall have the right, at all reasonable times, at Buyer's sole cost and expense, risk and hazard, to enter upon the Premises to examine and/or show the same and make, or cause to be made, engineering studies with respect thereto, including, without limitation, surveying, conducting test borings in order to determine sub-soil conditions, and in general conducting all other tests, analysis and studies of the Premises which Buyer deems prudent in connection with Buyer's intended development or use of the Premises. Buyer shall restore the Premises following any testing as reasonably as possible to its pre-existing condition, unless otherwise agreed by Seller.

9. Construction of Agreement. This instrument, executed in duplicate, is to be construed as a Maine contract, is to take effect as a sealed instrument, sets forth the entire contract between the parties, is binding upon and inures to the benefit of the parties hereto and their respective heirs, devisees, executors, administrators, successors and assigns, and may be canceled, modified or amended only by a written instrument executed by both the Seller and Buyer. The captions are used only as a matter of convenience and are not to be considered a part of this Agreement or to be used in determining the intent of the parties to it. Time is of the essence with respect to all dates set forth in this Agreement.

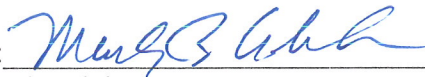
10. Risk of Loss. The risk of loss shall remain on Seller at all times until closing.

11. Assignment. Buyer may assign this Agreement to any party affiliated with Buyer on in which Buyer or an affiliate of Buyer has an interest.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

SELLER:

PORTLAND HOUSING AUTHORITY

By: 
Mark Adelson
Its Executive Director

BUYER:

FRONT STREET HOUSING
REDEVELOPMENT, LP
By Front Street Redevelopment Company, LLC
Its General Partner
By Portland Housing Development Corporation
Its Sole Member

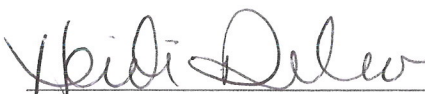
By: 
Mark Adelson
Its President

STATE OF MAINE
COUNTY OF CUMBERLAND, SS.

January 5, 2017

Personally appeared the above-named, Mark Adelson, Executive Director of Portland Housing Authority and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of said Portland Housing Authority.

Before me,


Notary Public/Attorney at Law
Heidi Deleo
Printed Name

HEIDI DELEO
NOTARY PUBLIC, MAINE
MY COMMISSION EXPIRES FEBRUARY 27, 2022

EXHIBIT A

FRONT STREET
Book 8541/Page 0011, 0012
ME3-10

Certain lots or parcels of land situated in Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at an iron pipe at the northeast corner of Cummings Street and Front Street; thence southeasterly along the northerly street line of Front Street a distance of 450.12 feet to an iron pipe at the northwest corner of Front Street and Presumpscot Street; thence northeasterly along the westerly street line of Presumpscot Street and making an included angle of $90^{\circ} 00'$ with the northerly street line of Front Street, a distance of 100.0 feet to an iron pipe; thence northwesterly and making an included angle of $90^{\circ} 00'$ with the southerly direction of the westerly street line of Presumpscot Street, a distance of 150.0 feet to an iron pipe; thence northeasterly and making an included angle of $90^{\circ} 00'$ with the southeasterly direction of the last described course, a distance of 75.0 feet to an iron pipe; thence northwesterly and making an included angle of $90^{\circ} 00'$ with the southwesterly direction of the last described course, a distance of 150.0 feet to an iron pipe; thence northeasterly and making an included angle of $90^{\circ} 00'$ with the southeasterly direction of the last described course, a distance of 25.0 feet to an iron pipe; thence northwesterly and making an included angle of $90^{\circ} 00'$ with the southwesterly direction of the last described course, a distance of 150.0 feet to an iron pipe and an intersection with the easterly street line of Cummings Street; thence southwesterly along the easterly street line of Cummings Street and making an included angle through the south $90^{\circ} 01'$ with the southeasterly direction of the last described course, a distance of 200.0 feet to an iron pipe and an intersection with the northerly street line of Front Street and the point of beginning, containing about 71,271.0 square feet.

Also, beginning at an iron pipe at the northeast corner of Presumpscot Street and Front Street; thence southeasterly along the northerly street line of Front Street, a distance of 297.25 feet to an iron pipe; thence northeasterly and making an included angle through the north of $90^{\circ} 15'$ with the northwesterly direction of the northerly street line of Front Street, a distance of 250.0 feet to an iron pipe; thence northwesterly and making an included angle through the west of $89^{\circ} 45'$ with the southwesterly direction of the last described course, a distance of 39.56 feet to an iron pipe; thence northeasterly and making an included angle of $90^{\circ} 00'$ with the southeasterly direction of the last described course, a distance of 100.0 feet to an iron pipe and an intersection with the southerly street line of Illsley Street; thence northwesterly along the southerly street line of Illsley Street and making an included angle of $90^{\circ} 00'$ with the southwesterly direction of the last described course, a distance of 258.79 feet to an iron pipe and an intersection with the easterly street line of Presumpscot Street; thence southwesterly along the easterly street line of Presumpscot Street and making an included angle of $90^{\circ} 00'$ with the southeasterly direction of the southerly street line of Illsley Street, a distance of 350.0 feet to an iron pipe and the intersection with the northerly street line of Front Street and the point of beginning, containing about 100,329.0 square feet.

Reserving to the City of Portland a right of way on the easterly side of said above described parcel of future sewer construction, bounded and described as follows:

Beginning at an iron pipe on the northerly street line of Front Street, said iron being distance 297.25 feet southeasterly along the northerly street line of Front Street from the iron pipe at the northeast corner of Front Street and Presumpscot Street; thence northwesterly along the northerly street line of Front Street, a distance of 38.46 feet to a point; thence northeasterly and making an included angle of $90^{\circ} 00'$ with the southeasterly direction of the last described course, a distance of 250.0 feet to an iron pipe; thence southeasterly and making an included angle of $90^{\circ} 00'$ with the southwesterly direction of the last described course, a distance of 39.56 feet to an iron pipe; thence southwesterly and making an included angle through the northwest of $89^{\circ} 45'$ with the northwesterly direction of the last described course, a distance of 250.0 feet to an iron pipe and an intersection with the northerly street line of Front Street and the point of beginning.

And for the said City of Portland to enter upon said right of way at any and all times for the foregoing purpose, reserving to the Grantee, its successors and assigns, the use and enjoyment of said right of way for such purposes as will in no way interfere with the perpetual use thereof by the City of Portland, its successors and assigns for the foregoing purpose, provided that no building or any kind of permanent structure shall be erected on said right of way by the Grantee, its successors and assigns.

Being the same premises conveyed by Stirling Homex Corporation to the Portland Housing Authority by deed dated October 15, 1971 and recorded in the Cumberland County Registry of Deeds in Book 3196, Page 834.

8. State and/or Federal Permits

- **No State or Federal permits are anticipated as part of this project due to the City's delegated review authority over the stormwater component. See attached Stormwater Narrative and Plans.**

- **No State or Federal permits are anticipated as part of this project due to the low number of trips being generated by the development. The City has delegated review authority over the traffic component. See attached Traffic Memorandum prepared by Gorrill-Palmer.**

9. Zoning Requirements:

R-5 Residential

The project is located within the R-5 Residential Zone District subject to following Dimensional and Use requirements:

Sec. 14-117. Permitted Uses.

The project is proposed to be reviewed as a Planned Residential Unit Development (PRUD) as defined in Sec. 14-117(a).3. Planned residential unit development (PRUD). Note no dimensional Requirements contained in 14-120 shall apply with respect to such development, except those requirements specifically denoted for PRUD.

Sec. 14-120. Overall Dimensional requirements.

<i>Criteria</i>	<i>Required</i>	<i>Proposed</i>
1. Minimum Lot Size:	2 acres gross are	171,341 sf (3.93 ac)
2. Minimum Lot Area Per Dwelling Unit:	1,500 sf *	1730 SF/ DU
3. Minimum Street Frontage:	None *	1158.87 ft
4. Minimum Yard Dimension:	None *	
a. Front yard:	none *	10.0 ft
b. Rear and side yard:	none*	99.0 ft
c. Side yard on side street:	none *	12.2 ft
5. Maximum lot coverage:	40%	28.2%
6. Minimum Lot Width:	None*	100.0 ft
7. Maximum Building Height:	35 ft	35 ft.
8. Maximum #of units in a building (PRUD):	none *	12 DU
9. Maximum length of building (PRUD):	none *	183.0 ft
10. Maximum length of accessory garage structure (PRUD): Sixty (60) feet.		
Not Applicable		
11. Minimum setback from external subdivision property lines (PRUD):		
a. Building length <(100) feet:	10 feet. *	10.0 ft
b. Building length > (100) feet:	10 feet. *	12.2 ft
12. Min recreation open space area (PRUD):	200 sf/ DU*	200 sf/ DU
13. Below Grade Habitable space	0 sf	0 sf

* Per Sec 14-488 Low Income & Workforce Housing Dimensional Bonuses as adopted September, 2017

Dimensional Requirements Per Building

	BUILDING #1	BUILDING #2	BUILDING #3	BUILDING #4	BUILDING #5	BUILDING #6
Minimum Yard Dimension:						
front yard:	12 ft	12 ft	12 ft	12 ft	10 ft	18.83 ft
side yard:	191.87 ft	NA	12.17 ft	173.46 ft	26 ft	57 ft
rear yard:	NA	134.61 ft	NA	NA	101.17 ft	126.25 ft
Maximum Building Height:	34.42 ft	34.25 ft	34.32 ft	33.72 ft	33.51 ft	33.21 ft
Maximum Number of Units in a Building (PRUD):	15	13	19	13	19	20
Maximum Length of Building (PRUD):	158 ft	112 ft	170 ft	112 ft	166 ft	152 ft
Below Grade Habitable Space:	0	0	0	0	0	0

Sec. 14-121. Other requirements.

(a) *Off-street parking: Off-street parking is required as provided in division 20 (off-street parking) of this article.*

<u>Criteria</u>	<u>Required</u>	<u>Proposed</u>
1. Off Street Parking	99 PS (1 PS/ D)	102 PS (1.03 PS/DU)
2. Bicycle Parking	40 (2.0/ 5 DU)	50

DIVISION 30. AFFORDABLE HOUSING

The project is subject to Division 30 Affordable Housing Requirements and Standards as defined below:

Eligibility.

The project envisions replacement of 50 existing affordable apartments with a total of 99 new apartments. The apartments will contain a total of 79 affordable units and 20 market rate apartments, based on the following breakdown:

- 65% of the units will be for households making at or below 50% of the Area Median Income (about \$41,500 for a family of 4).
- Of the 65%, half of the units (28) will have Project Based Rental Assistance.
- 15% of the units would be for households earning up to 60% AMI.
- 20% of the units would be market rate.
- 10% of the units will have a set-aside for homeless households
- Another 10% of the units will have a preference for homeless or disabled households

Sec. 14-486. Reduction of fees.

The proposed Project contains approximately 80% affordable apartments and is therefore eligible for reduction of Development and Building Permit Fees as described in the following Table:

Percentage of new units that are low-income or workforce units	Percentage discount of development fees	Cost of Work (Building Permit) Fees in lieu of Section 617 (a) 1 & 3
5% up to but not including 10%	5% reduction	\$10.50 per \$1,000
10% up to but not including 15%	10% reduction	\$9.90 per \$1,000
15% up to but not including 20%	15% reduction	\$9.35 per \$1,000
20% up to but not including 25%	20% reduction	\$8.80 per \$1,000
25% or more	25% reduction	\$8.25 per \$1,000

Sec. 14-487. Ensuring Workforce Housing.

The proposed Project meets all criteria and requirements in Sec 14-487.

Sec. 14-488. Density, parking and dimensional bonuses and reductions.

The proposed Project is eligible for the following Dimensional Bonuses as described in Sec 14-488:

1. Eligible Projects

Percentage Low Income Units for Sale/Rent	Percentage Workforce Units for Sale/Rent	Density Permitted*	Additional Height Permitted	Setback Reductions **
10%	20%	1.1 x base	N/A	N/A
20%	40%	1.2 x base	10 feet	N/A
30%	60%	1.3 x base	10 feet	5'
50%	100%	2.0 x base	15 feet	5'
75%	N/A	2.5 x base	25 feet	10'

2. Planned Residential Unit Developments

The Proposed Project is considered a PRUD containing 80% affordable units and is therefore eligible for the following dimensional bonuses and changes:

- Minimum Lot Area reduced by 50%
- Max number of units and length of building do not apply and are set by Planning Board.
- Minimum Building Setbacks can be reduced to 10 ft.
- PRUD can cross public right-of ways.
- Minimum Recreation Open Space is reduced to 200 sf/ DU and size/ configuration dimensions do not apply.

These bonuses are reflected in the proposed dimensional requirements indicated above.

All other requirements of this Section are met with this proposed Project.

10. Existing & Proposed Easements

A.) Existing easements, encumbrances, and other burdens:

- **Portland Water Sewer District Easement**
- **Maintenance Easement to City of Portland**

B.) Proposed easements, encumbrances, and other burdens:

- No easements, encumbrances, or other burdens are proposed.

11. Requests for Waivers

No waivers are being requested at this time.

12. Financial Capacity

The following documents verify the financial capacity for this project.



BOARD OF DIRECTORS

Mark B. Adelson, President
Shirley Peterson, Vice-President
Siyad Ahmed, Director
Mariar Balow, Director
Evan Carroll, Director
Christian MilNeil, Director
Faith McLean, Director
Thomas Valteau, Director

14 Baxter Boulevard
Portland, ME 04101

Office: 207-773-4753
Fax: 207-761-5886

September 22, 2017

Barbara Bayhydt
City of Portland - Planning Division
389 Congress Street
Portland, Maine 04101

**Subject: Front Street Re-Development
Financial Capacity to Develop Affordable Housing**

Dear Barbara,

The purpose of this letter is to certify that Front Street Housing Redevelopment, LP, the Applicant in the Site Plan application for Front Street Re-Development and an affiliate of Portland Housing Development Corporation (PHDC) and Portland Housing Authority, has the financial capacity to re-develop the Front Street Phase 1 and 2 affordable housing development.

Pre-Development:

Portland Housing self-finances pre-development expenses with unrestricted funds, and is then reimbursed at the construction loan closing.

Construction Financing:

Portland Housing Authority has applied to the Housing for Everyone Program at the TD Charitable Foundation to assist in paying for the costs of demolition and temporary relocation of residents at Front Street Phase 1.

Portland Housing Development Corporation has a Term Sheet (see attached) for construction financing in the amount of \$7,500,000 from Bath Savings Bank. Bath Savings acted as our sponsor bank for our Federal Home Loan Bank of Boston AHP application.

Permanent Financing

PHDC has applied for \$750,000 of direct subsidy from the Federal Home Loan Bank of Boston's AHP program with additional subsidy buying down the rate for a permanent loan from in the amount of \$3,400,000 from Bath Savings Bank. See Bath Savings' term sheet attached.

Regarding our capacity to win Low Income Housing Tax Credits, Portland Housing Development Corporation scored the second highest score of all LIHTC applications to MaineHousing in the 2014 application round for our Bayside Anchor project. We missed the credits in 2016 for 58 Boyd Street by 1 point. We understand the competitive nature of the LIHTC funding rounds and have maximized our points for Front Street under the latest Qualified Allocation Plan (QAP). Planning board approval will provide us with 4 critically needed points in the competition. See the attached Letter of Interest from Northern New England Housing Investment Fund.

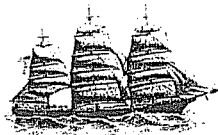
Portland Housing Authority has committed a portion of its reserves to the Front Street project as well.

As the Director of Development, I have been developing affordable housing for over 15 years and was the Director of Development at Avesta Housing when that agency developed Logan Place, Fore River Apartments and the first phase of Pearl Place, among other Portland area projects. I have successfully secured funding from various financing sources for affordable housing including Low Income Housing Tax Credits, Federal HOME funds, Federal Home Loan Bank Affordable Housing Program grants and subsidized advances, HUD 202 grants, RD 515 funds and local and national foundation grants.

Respectfully Submitted,



Jay Waterman
Director of Development



Benj. F. Packard

September 1, 2017

Bath Savings Institution

Since 1852

Jay Waterman, Development Director
Portland Housing Development Corporation
14 Baxter Blvd.
Portland, ME 04101

For discussion purposes only

Dear Jay,

In response to your request for financing, I offer the following general terms and conditions under which Bath Savings Institution would consider financing. The actual terms and conditions of financing are subject to satisfactory completion of due diligence, satisfactory review of documentation, and such other items and conditions as determined by Bath Savings Institution.

LOAN 1:

BORROWER: Front Street Housing Re-Development, LP

PURPOSE: The loan proceeds will be used to fund the construction of 60 residential units, known as Front Street Redevelopment - Phase I (the "Project")

AMOUNT: A non-revolving commercial construction line of credit up to \$7,500,000 not to exceed eighty percent (80%) of the value as determined by a bank ordered appraisal

TERM: The term of the construction loan will be up to 18 months

INTEREST RATE: At the discretion of the borrower the interest rate will be either
i) variable at WSJ Prime plus 0%, currently 4.25%, or
ii) fixed at the time of commitment equal to WSJ Prime plus 0%

ORIGINATION FEE: \$6,500

LOAN 2:

BORROWER: Front Street Housing Re-Development, LP

PURPOSE: The loan proceeds will be used to refinance debt incurred in the construction of 60 residential units, known as Front Street Redevelopment -Phase I (the "Project")

AMOUNT: Commercial mortgage up to \$3,400,000

TERM: The term of the loan shall be 20 years, with an amortization of 30 years

INTEREST RATE: The interest rate will be fixed at time of commitment and will 2.25% over the Federal Home Loan Bank subsidized advance rate.

ORIGINATION FEE: \$2,500

LOAN 3:

BORROWER: Front Street Housing Re-Development, LP

PURPOSE: A non-revocable stand-by letter of credit in favor of the City of Portland, as required for the construction of 60 residential units, known as Front Street Redevelopment -Phase I (the "Project")

AMOUNT: Up to \$500,000. This amount will be reserved against the available balance of Loan 1.

TERM: The expiration of the letter of credit will be 2 years or as required by the City of Portland.

INTEREST RATE: The interest rate, if drawn, will be the interest rate of Loan 1

ORIGINATION FEE: Waived

ALL FINANCING IS SUBJECT TO THE FOLLOWING

CLOSING COSTS: Third party fees are generally not controlled by Bath Savings Institution but the Bank endeavors to minimize the costs associated with this transaction. The borrower is responsible for closing costs incurred, including but not limited to bank fees, bank attorney fees, title work, title insurance, Bank Construction Supervisor, recording fees, and a real estate appraisal.

SECURITY: The loans will be secured by the following collateral:

- a. A first mortgage and security agreement on the land and improvements connected with the Project,
- b. A first priority assignment of all leases and rentals,
- c. A collateral assignment of all construction contracts, architects and engineers contracts, and all permits and approvals, necessary for construction and operation of the project,
- d. An assignment of all contracts and agreements for the provision of tenant services, if any
- e. A first security interest in all syndication proceeds due under the Limited Partnership Agreement
- f. An assignment of all reserves and other cash deposit affiliated with the project including those required by permanent financing commitments
- g. An assignment of the Limited Partners obligation to pay its capital contributions and any security interest securing the same
- h. An assignment of tax credits from Maine State Housing Authority, subject to conditions imposed by Maine State Housing Authority
- i. An assignment of the General Partner's partnership interest

INSURANCE MATTERS: All insurance policies shall indicate Bath Savings Institution as loss payee, as applicable;

- a. Public Liability
- b. All-Risk Casualty
- c. Workers' Compensation
- d. Business Auto Liability
- e. Comprehensive General
- f. Builders Risk Policy

DEPOSIT RELATIONSHIP:

The borrower shall be required to maintain a deposit relationship with Bath Savings Institution, including reserve accounts and any applicable construction escrows related to the Project.

OTHER CONDITIONS:

- a. The Bank will order a summary appraisal which will be required to contain an "As- complete" value and include consideration of the added value of the equity from the tax credits, as proposed. The loan amount will be limited to no more than 80% of the total cost or 80% of the appraised value, whichever is lower.
- b. Subject to award of Low Income Housing Tax Credits from Maine State Housing in an amount sufficient to fully fund the construction project and pay off the balance of the construction loan at the time of permanent closing.
- c. Subject to approval of a Federal Home Loan Bank Subsidized AHP Advance sufficient to support 100% of the full term (20 years) interest on an up-to \$3,400,000 Bank borrowing from FHLBB. (up to \$500,000 interest rate subsidy).
- d. Subject to approval of a \$500,000 Federal Home Loan Bank Affordable Housing Program Direct subsidy (FHLBB AHP), a \$200,000 Maine Housing Direct subsidy and all other funding required to complete the project, including an Maine Housing Interest only loan.
- e. Subject to a review of a detailed budget for the cost of constructing the Project,
- f. Subject to a financial analysis of cash flow that will support the long term financing,
- g. Additional encumbrances on any of the properties pledged to Bath Savings Institution shall be prohibited during the life of the loan without prior written bank consent,
- h. Any contract for construction of the proposed improvements will contain a "Guaranteed Not To Exceed Price,"
- i. The contractor and all major subcontractors must be acceptable to the Bank; financial statements will be required of all contractors,
- j. The Bank will be paid a monthly fee to cover inspections of the improvements as they are constructed,
- k. The Bank may require receipt of a Phase I Environmental Report prior to closing.

FINANCIAL STATEMENTS:

The Borrower will be required to submit annual financial statements to Bath Savings Institution each year by April 30.

Please note that this should not be construed as a commitment by Bath Savings Institution but as an indication of our interest in financing this project subject to the outlined conditions. Such commitment can only be issued after satisfactory credit, cash flow analysis, and collateral investigations have been completed and the Bank grants approval.

The above stated terms are the framework for a possible loan. It is effective for 120 days from the date of this letter.

We are looking forward to continuing our discussions about this project. Please contact me if you have any questions regarding this term sheet.

Sincerely,



Julie A. Wagoner
Senior Vice President



8/31/17

Jay Waterman
Development Director
Portland Housing Development Corporation
14 Baxter Boulevard
Portland, Maine

RE: Letter of Interest – Front Street, LP (“Partnership”)

Dear Jay:

We are pleased to provide this letter of interest for the new construction of affordable housing in Portland, Maine. As you know, Northern New England Housing Investment Fund (“NNEHIF”) invests in community-based projects receiving the federal Low Income Housing Tax Credit. We understand that you anticipate a reservation of 2018 credit in the amount of \$795,000 from MaineHousing.

Upon satisfactory resolution of addressing the current funding needs, we would be interested in investing \$6,836,316 in exchange for a 99.99% limited partnership interest in the Partnership. Approximately 30% of these funds would be available from CLC and throughout construction.

This letter of interest is conditioned on the Fund conducting all customary underwriting and due diligence and receipt of a final pro-forma, approved by MaineHousing, that addresses any additional loans, grants, fees or other sources.

A more detailed letter of interest will be provided once all the capital sources have been identified.

We wish you great success in your application and look forward to our continued work together.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tom MacDonald", is written over a light blue horizontal line.

Tom MacDonald
Vice President, Acquisitions
NNEHIF

13. Technical Capacity

The applicant has assembled a highly qualified team of professionals for the preparation of this project. All members of this team have significant experience with this type of project and many have worked together on other similar projects. The project is being designed by a multi-disciplinary team of design professionals. All members of the design team have proven experience working on projects located in the City of Portland.

Portland Housing Authority **Owner**

14 Baxter Blvd.
Portland, ME 04101
207-773-4753
Contact: Jay Waterman

Front Street Redevelopment, LP **Applicant/Developer**

14 Baxter Blvd.
Portland, ME 04101
207-773-4753
Contact: Jay Waterman

Utile Architects **Architect**

115 Kingston Street
Boston, MA 02111
617-423-7200
Contact: Katie Wirtz

Carroll Associates **Landscape Architect**

217 Commercial Street, Suite 200
Portland, ME 04101
207-772-1552
Contact: Pat Carroll / Matthew Phillips

Ransom Consulting Engineers **Consulting Engineer (Civil)**

400 Commercial Street, Suite 404
Portland, ME 04101
207-772-2891
Contact: John Mahoney

Gorrill-Palmer Consulting Engineers **Consulting Engineer (Traffic)**

15 Shaker Road
Gray Road, ME 04039
207-657-6910
Contact: Randy Dunton

Owen Haskell, Inc. **Surveyor**

390 US Route One, Unit 10
Falmouth, ME 04105
207-774-0424
Contact: Randy Loubier

Drummond Woodsum **Attorney**

84 Marginal Way, Suite 600
Portland, ME 04101-2480
207-772-1941
Contact: Gary Vogel

Front Street Redevelopment

City of Portland · Level III Site Plan + Subdivision Application

15. Traffic

The following documents have been provided by Gorrill Palmer Consulting Engineers Inc.

Relationships.
Responsiveness.
Results.



**Traffic Forecast,
Parking Assessment
and TDM Plan
Front Street
Redevelopment
Portland, Maine**

PREPARED FOR:
Portland Housing
Corporation
14 Baxter Boulevard
Portland, ME 04101

September 2017

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

Traffic / Parking Evaluation Front Street Redevelopment Portland, Maine

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Trip Generation Calculations
MaineDOT Crash Data
Parking Occupancy Map
Neighborhood Meeting Minutes

Executive Summary

The following Executive Summary is prepared for the reader's convenience, but is not intended to be a substitute for reading the full report.

Gorrill Palmer was retained by the Portland Housing Development Corporation (PHDC) to prepare this traffic forecast, parking study, neighborhood responses, and Transportation Demand Management Plan for their proposed Front Street Redevelopment project. The project consists of razing 50 outdated affordable residential housing units and replacing them with 100 modern and up to date affordable residential units. The proposed units are to be located in numerous buildings between Front Street and Illsley Street. Based on this study, our office has determined the following:

1. The additional traffic forecast as a result of the expansion is 13 and 16 trip ends in the weekday AM and PM peak hours respectively. Total (existing + expansion) for the development after completion of the expansion is forecast at 26 AM and 31 PM peak hour trip ends. A trip end is either a trip in or out of the site, thus a round trip would equal two trip ends. Because the additional trips are less than the 99 trip end threshold per peak hour, this project does not require a Maine Department of Transportation (MaineDOT) Traffic Movement Permit.
2. Based on the crash history provided by MaineDOT, there are two high crash locations on Washington Avenue in the immediate vicinity of the site. However, it is our understanding that the City is currently completing improvement projects on Washington Avenue where the high crash locations are located, so any crash patterns may change.
3. Based on the parking evaluation, comparisons, and additional research completed as part of this assessment, it is our opinion that the proposed project is providing sufficient parking to accommodate the residential units after expansion.
4. Neighborhood concerns include traffic volumes, speeds, parking, and the proposed development integrating into the surrounding neighborhood. The traffic volumes and parking for the site are not anticipated to significantly impact the surrounding neighborhood. PHA is working with the City to address what options they have available to address maintaining reasonable speeds throughout the neighborhood without encouraging traffic diversion.
5. A Transportation Demand Management (TDM) Plan has been prepared that will support the City's transportation and environmental sustainability goals by encouraging and promoting bicycling, walking, and use of transit.

Based on these findings, it is the opinion of Gorrill Palmer that the proposed project can be accommodated by the surrounding roadway network and the City's transportation system.

I. Existing and Proposed Site

The proposed site is located between Front Street and Illsley Street in Portland, Maine and currently includes 19 detached buildings containing 50 affordable housing units and 182 bedrooms. The proposed redevelopment will replace these buildings with new semi-connected buildings and increase the number of housing units and bedrooms to 100 and 221 respectively. Parking for the project will be accommodated by a total of 100 off-street parking spaces, an increase of approximately 50 spaces.

II. Background Conditions

Gorrill Palmer (GP) has based this study on the following information

- A site plan prepared by Carroll Associates
- Trip Generation methodology used in the Bayside Anchor study completed by our office in May 2014 and the 58 Boyd Street study completed by our office in November 2016
- Crash data for 2014-2016 provided by MaineDOT
- A parking inventory performed for the Bayside Anchor study at the existing East Bayside PHA properties, the adjacent streets, and at similar projects in Portland
- A parking count completed within the neighborhood on Sunday, July 9, 2017 at approximately 10:30 in the evening.

III. Trip Generation

Residential Units Trip Generation

GP used the Institute of Transportation Engineers' (ITE) publication *Trip Generation*, 9th Edition to estimate the potential trip generation for the proposed 100 affordable housing units (net increase of 50 units). Based on Land Use Code (LUC) 220 – Apartment, the proposed 100 units of housing is forecast to generate the following trip ends:

Weekday:	665 trip ends
AM Peak Hour:	51 trip ends
PM Peak Hour:	62 trip ends

A trip end is a trip into or out of the site, thus a round trip is equal to two trip ends.

ITE trip rates are based on surveys of predominantly suburban locations rather than urban. In addition, more importantly, these surveys do not take into account whether the units are affordable units, which typically has a lower trip generation. Therefore, GP reviewed a trip generation count for Pearl Place which was taken on Tuesday, October 5, 2010 from 3:30 PM to 5:30 PM. Based on the counts, the actual trip generation for

Pearl Place was lower than the ITE forecast trip generation. Twenty peak hour trips were recorded at the site driveway for the 60 units in place when the count was completed, and no on-street parking associated with the facility was observed during the count. It should be noted that significant pedestrian trips to and from the site were observed, which is also anticipated for the Front Street project. This resulted in a PM peak hour trip generation rate of 0.33 trip ends per unit for the existing facility.

Given these results and the fact that the project is in an urban area, and the area is bikeable, walkable, and located near Portland METRO Routes 9a and 9b on Washington Avenue, our office has reduced the rates derived from ITE LUC 220 for apartments by 50% resulting in the following trip generation forecast for the 100 proposed affordable housing units:

Weekday:	334 trip ends
AM Peak Hour:	26 trip ends
PM Peak Hour:	31 trip ends

It should be noted that this is the same trip generation methodology used in the recent Bayside Anchor study completed by GP in May 2014 and approved by the City. This methodology was also used in the 58 Boyd Street study completed by GP in November 2016.

Trip Generation Credit

Typically, trip generation credit is given for any on-site use within the last ten years. Therefore, trips generated by the existing 50 affordable housing units can be subtracted from the forecasted future trip generation when determining the need for a MaineDOT Traffic Movement Permit. Since the existing development is also affordable housing units, the same methodology used to forecast the proposed site trip generation was used to estimate the trip generation credit. GP used ITE LUC 220 – Apartment and reduced the trip generation rates by half to estimate the traffic generated by the existing 50 affordable housing units. The following summarizes the trip generation credit:

Weekday:	167 trip ends
AM Peak Hour:	13 trip ends
PM Peak Hour:	15 trip ends

Total Site Trip Generation

The trip generation credit (50 units) has been subtracted from the forecast trip generation (100 units) to yield the net trip generation. The following table summarizes the trip generation for the site:

Net Trip Generation Summary

	Weekday	AM Peak Hour	PM Peak Hour
Proposed Trip Generation	334	26	31
Trip Generation Credit	167	13	15
Net Trip Generation	167	13	16

As shown in the table, the net trip generation for the site is forecast to be 13 trip ends during the AM peak hour and 15 trip ends during the PM peak hour. This level of trip generation does not require a MaineDOT Traffic Movement Permit since it is less than the 99 trip end threshold during a peak hour.

It should be noted that this is likely a conservative increase in trip generation because while the number of affordable housing units is doubling (50 units to 100 units), the number of bedrooms is only increasing by approximately 21 percent (182 bedrooms to 221 bedrooms).

IV. [Crash Data](#)

GP obtained the crash data for the immediate area from MaineDOT for the period of 2014-2016, the most recent period available at the time this study was prepared (attached). 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 classify as an HCL.

1. A critical rate factor of 1.00 or more for a three year period. A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate of less than average; and
2. A minimum of eight crashes over the same three-year period.

Based on a review of the crash report from MaineDOT, there are two HCLs in the immediate vicinity of the site, both of which are segments of Washington Avenue. Additionally, there are two intersections on Washington Avenue that experienced high numbers of crashes over the past three years, although they do not have a CRF of 1.00 or greater. The following table summarizes the four locations, the number of crashes, the CRF, and whether or not it is a HCL.

Crash Summary

Location	# Crashes	CRF	HCL
Intersections			
Bates / Veranda / Washington	34	0.94	No
Presumpscot / Washington	27	0.89	No
Roadway Segments			
Washington Ave – Bates to Galvin	12	1.73	Yes
Washington Ave – Presumpscot to Cummings	12	1.51	Yes

As shown in the table, the two intersections of interest do not meet the criteria for a HCL, but the two roadway segments do. Typically, GP would examine the police reports for the collisions that occurred to identify crash patterns. However, it is our understanding that the City is currently exploring improvements for this area of Washington Avenue, so crash patterns may be changed as a result of those efforts. It should also be reiterated that the proposed expansion is only increasing traffic by 13 and 16 trip ends during the AM and PM peak hours respectively.

V. **Parking Evaluation**

While PHA wants to provide adequate parking for the project, parking results in a loss of open space, increases stormwater impacts, and uses valuable urban land. At the same time, providing too little parking would have adverse effects on residents and the surrounding neighborhood. The applicant's goal through the parking demand analysis process is to find the appropriate ratio of parking spaces. Our office has data suggesting actual parking demand at 100% capacity will be below the one space per unit. To estimate the parking demand for the proposed project, GP consulted two sources; a parking use inventory of the existing East Bayside PHA properties that was conducted for the Bayside Anchor study, and other relevant parking studies GP has completed. These are summarized below:

Parking Study of Existing East Bayside PHA Properties and On Street Parking

In support of the 58 Boyd Street project, GP completed an inventory of occupied and available parking spaces for the East Bayside PHA properties as well as the adjacent neighborhood streets on Sunday evening, September 10th 2017 every 45 minutes from approximately 9 PM to midnight. This represents a time period when most residents would be parked in the neighborhood. The peak period, when the highest number of vehicles were parked throughout the neighborhood, occurred at midnight. A summary of the results for the peak period is presented below:

Parking Survey Results within East Bayside PHA Properties

- Highest Demand observed in PHA Parking Lots: 96 spaces
- Total Parking Lot Spaces: 162 Spaces
- Total Available Spaces in Parking Lots: 66 spaces

According to occupancy information furnished by PHA, 197 units of the 201 total units were occupied as of September 19, 2017. Therefore, the overall parking ratio within the PHA off street lots was 0.49 (96/197) spaces per unit. It should be noted that 144 units have parking stickers to allow them to park in PHA lots, but the peak demand in the lots was 96 vehicles, which is less than the number of stickered vehicles. The peak demand is approximately 0.67 (96/144) spaces used per sticker.

On Street Parking for Area Bounded by Anderson, Cumberland, Greenleaf, Oxford, Madison and Boyd Streets

- Highest On Street Demand Observed: 212 spaces
- Total On Street Spaces: 348 spaces
- Total Available Spaces On Street: 136 spaces

This data shows there was substantial available parking within the neighborhood. While 66 spaces were available within the PHA parking lots, some residents may be parking on the street. Therefore, to estimate the total parking demand associated with the existing PHA properties, GP included the number of occupied spaces adjacent to PHA properties, which were estimated to be 80 spaces. Adding these additional spaces to the 96 spaces occupied in the existing PHA lots results in an overall existing parking ratio of 0.89 spaces per occupied unit for the PHA housing properties. This is conservatively high since the inventory was generous when attributing the on street parking to the PHA properties.

GP also determined the number of unoccupied on and off street parking spaces within 300 and 500 feet of 58 Boyd Street. The data summarized below is for 12 midnight, which was the peak period observed:

Unoccupied parking within 300 feet of the site:

- Parking lots: 8 spaces
- On Street spaces: 17 spaces
- Total: 25 spaces

Unoccupied parking within 500 feet of the site:

- Parking lots: 38 spaces
- On Street spaces: 41 spaces
- Total: 79 spaces

Other Relevant Parking Studies

GP reviewed data from other projects that were on file to estimate an appropriate parking ratio for this project which is summarized below:

Island View Apartments in Portland, Maine

This inventory was performed on July 12, 2004 from 6:00 PM to 9:00 PM. Island View Apartments is a 70-unit apartment building on the corner of North Road and Walnut Road in Portland. It contains a total of 84 parking spaces, 29 of which are designated visitor parking only, and two of which are handicap parking. In the peak half hour period, a maximum of 49 parking spaces were occupied. This gives a demand of 0.70 parking spaces per dwelling unit.

Previous Parking Occupancy Study

As part of studies for similar projects in the past, GP examined the parking occupancy of apartment buildings in downtown Portland with dedicated parking lots, either behind or within the building as part of another application. GP completed parking occupancy counts from 10-11 PM (within the peak period, based on ITE and Urban Land Institute {ULI} data) at 53 Danforth Street, 645 Congress Street, and Walker Terrace (at the corner of Congress Street and Walker Street) on Tuesday, October 26, 2010.

In addition, GP referenced the parking supply for Franklin Towers and Oak Street Lofts. Franklin Towers has 200 units and, based on aerial data, a parking supply of 58 spaces. Oak Street Lofts has 37 units and 16 parking spaces, although it should be noted that half of the spaces (eight) are for motorcycles. For the purposes of this assessment it is assumed that the peak demand at both of these facilities is at 100% occupancy. The following table summarizes the calculated parking demand for each facility based on the occupancy counts:

Parking Demand Studies Summary

Facility	Number of Units	Peak Demand (occupied spaces)	Demand Rate (spaces per unit)
53 Danforth	43	29	0.67
645 Congress	56	28	0.50
Walker Terrace	40	20	0.50
Oak Street Lofts	37	16*	0.43
Franklin Towers	200	58**	0.29
Average Parking Demand (spaces per unit)			0.48

*Assumes 100% occupancy at Oak Street Lofts

**Assumes 58 spaces based on aerial imagery and 100% occupancy at Franklin Towers

As shown in the table, the parking occupancy counts for various facilities in Portland indicate an average need for 0.48 parking spaces per apartment unit within the Portland Peninsula.

Recommended Parking Ratio

Based on the level of parking demand at the above referenced studies, and the planned implementation of the Transportation Demand Management Plan, it is the opinion of GP that an appropriate parking demand rate for the proposed Front Street project is 0.75 spaces per unit to achieve 100% capacity. This is consistent with the parking rate used for the recent Bayside Anchor and 58 Boyd Street projects.

Existing Availability Parking Study

To understand more about the current parking conditions, GP completed a general review of off-street parking within the neighborhood (see attached Parking Occupancy Map). In addition, we also field reviewed the four primary parking lots associated with the existing 50 units. The parking evaluation was completed at approximately 10:30 PM on a Sunday night (July 9, 2017). Sunday nights are typically a good time to gather this type of data since most people are at home at this time on a Sunday starting to prepare for the up coming week. The streets are not striped for parking spaces, so to complete this evaluation, we based the on-street parking capacity on information provided by the City. For purposes of determining spaces, they assume a parking space is 20 feet in length, parking stops 5 feet from a driveway, and 20 feet from the centerline of a crosswalk. We also eliminated those areas where parking was not allowed. The following table summarizes the results of the evaluation. The results of the parking evaluation are also shown on the attached Figure 1.

Parking Evaluation Summary

Segment	Counted	Capacity	Available
Front St. (Johansen St. to West Presumpscot St.)	22	65	43
Front St. (West Presumpscot St. to Randall St.)	5	34	29
Illsley St. (West of Cummings St.)	0	1	1
Illsley St. (Cummings St. to West Presumpscot St.)	11	22	11
Illsley St. (West Presumpscot St. to Randall St.)	10	35	25
West Presumpscot St. (Washington Ave. to Illsley St.)	5	13	8
West Presumpscot St. (Illsley St. to Front St.)	13	25	12
Randall St. (Illsley St. to Front St.)	3	21	18
Illsley St. Parking Lot	6	13	7
Front St. Western Parking Lot	4	13	9
Front St. Eastern Parking Lot	5	13	8
Front Street Parking Lot	9	11	2
Total	93	266	173

As can be seen, there is ample existing on-street parking availability. The existing on-street parking availability combined with the the proposed off-street parking spaces for the proposed development, which will remove vehicles from the street, will provide more than enough parking for neighborhood residences. The attached Figure I shows the percent occupancy of each street and lot. As can be seen from the Figure, with the exception of one short section of West Presumpscot Street (which is still less than 75% capacity), the adjacent roadway network is less than 50% occupied. This includes the streets that are directly adjacent to the existing site.

Concerns were raised at a recent neighborhood meeting that residences may not want to pay to be able to park within the parking lots, and instead opt to park on the street. It is my understanding that PHA reviewed how many of their residences had paid for an off-street parking pass to park within the parking lots and that all 50 residences had a sticker. There is a potential that some units have more than one vehicle, and do park on the street; however, from the above on-street parking evaluation, it is clear there is still more than enough on-street parking.

VI. Neighborhood Comments

The applicant hosted a neighborhood meeting on May 17, 2017 to provide the neighborhood with details on the proposed project and to listen to the comments and concerns regarding the redevelopment. The minutes from the meeting are attached. The primary traffic comments from the neighborhood are summarized as follows with preliminary responses:

Comment: Several attendees voiced a concern regarding anticipated increases in traffic volumes.

Response: As detailed in Section III of this Study, the development is forecast to increase the existing site trip generation by 13 AM peak hour trip ends and 16 PM peak hour trip ends. This level of trip generation is not anticipated to significantly impact the operation of the adjacent roadway network

Comment: Attendees were concerned with the speed of traffic through the neighborhood

Response: Although not discussed in this study, PHA has expressed a willingness to explore potential traffic calming measures for the immediate neighborhood and is pursuing this with the City. They recognize the importance of maintaining reasonable speeds throughout the neighborhood. They are also sensitive to consistency of speed throughout the neighborhood and not try to slow traffic in one area only to have drivers divert and speed through other areas.

Comment: The neighborhood feels parking on Front Street is overused and hazardous. Additional concern that there will not be enough parking provided off-street.

Response: Parking is detailed in Section V of this study. Based on that evaluation the parking demand for 100% capacity is forecast at approximately 75 parking spaces.

VII. Transportation Demand Management (TDM) Plan

PHA has requested the development of a Transportation Demand Management (TDM) Plan for this project that will support the City's transportation and environmental sustainability goals as well as the PHA's Green Policy by encouraging and promoting bicycling, walking, and use of transit. Avesta Housing Management will be managing the project for PHA and is very familiar with the importance of a TDM Plan. The following is a description of the elements of the TDM Plan.

TDM Coordinator

Avesta has a Property Manager who will coordinate the TDM Plan. The TDM Coordinator will be responsible for posting changes and updates to the METRO schedule and potential UHaulCarshare information in the lobby as well as other information relevant to promoting and encouraging the greater use of bicycling, walking, and bus-based transit. Portland Housing is also striving to have a Transportation Demand Management line item approved for the operating budget to help further subsidize METRO passes and potentially a UHaulCarShare system and Lyft personal ride share service.

PHA Goals for Parking

In addition to adopting the philosophy of the City in trying to reduce the need for parking spaces and encourage other modes of travel, PHA has also identified internal goals as follows:

- Provide limited, safe, well managed parking for PHA / PHDC residents
- Reduce agency costs of maintaining parking areas
- Reduce vehicle congestion
- Increase tenants use of public transportation
- Utilize PHA land more efficiently, making it available for other purposes
- Reduce the costs of new housing development by building / providing less parking
- Reduce the cost of housing to tenants
- Reduce fuel usage and carbon emissions, consistency with PHA Green Policy
- Increase resident wellness

Parking Requirements in Lease

The following are key parking requirements that will be detailed in the lease agreement:

- One parking space per household provided (if available at site)
- Tenants must register vehicle with PHA
- Vehicle must be kept operable, inspected and registered with State of Maine
- Eligible registered vehicles receive a PHA sticker to be displayed
- Tenants will be charged an annual \$60.00 Parking Reservation Fee to help off-set costs of maintaining parking areas and administering parking rules. Monthly \$5 charge on one vehicle allowed to be parked on site

Automobile Parking Reduction Strategies

The Applicant proposes to take the following measures to reduce the demand for vehicles:

Bicycle Parking

PHA Housing is proposing to provide a total of 50 parking spaces for bicycles on-site, with 40 of these within the buildings and others on outside racks. The bicycle shelter will provide increased bicycle security and protection from the weather.

Encourage Use of Local Transit

The Front Street housing development is a walkable distance of 0.2 miles away from the closest METRO bus stop, which is located on Washington Avenue. Avesta's TDM Coordinator will provide route maps, schedules, and ticket information in packets along with their lease agreement. As PHA does for its public housing residents, Front Street will potentially provide discounted monthly Metro bus passes to households, with a preference to families with no vehicle, depending on MaineHousing requirements for subsidizing METRO passes with parking fees. If allowed, Front Street would propose the following:

- \$45 monthly passes will be reduced to \$25
- Maximum of 2 passes per household
- Work with Metro on development and implementation of bus pass program

UHaulCarShare

In Portland, the UHaulCarShare service currently provides a total of seven vehicles, one of which is utilized by Avesta Housing at their 409 Cumberland development. This service is a shared car program that allows people to rent the vehicle for various trips. Based on a review of June 2015 to May 2016 data, the vehicle used by residents of 409 Cumberland Avenue was used for an average of 30 trips per month with an average distance of 39 miles per trip. The closest vehicle to the Front Street development is located at 115 Congress Street, which is approximately a 1.5 mile walk from the site. These vehicles are available on an hourly or daily basis. PHA will make residents aware of and encourage use of this service, which will allow for use of a car for certain trips, which can reduce the need for an owned car. Information will be provided to each incoming resident with their lease agreement.

Sidewalk Facilities

Sidewalks surround the proposed project encouraging walking to and from the site. In addition, the site is in close proximity to the Back Cove Trail and to Payson Park, part of the Portland Trail system. PHA is also working with the Parks Department to establish a better connection to Payson Park.

Tenant Packets

Upon signing a lease, each tenant will be provided with an extensive packet which will include information on transportation incentives and resources. Tenant packets will, at a minimum, include:

- Information on METRO pass reduced fees or free ride tickets to be provided by PHA
- The Greater Portland Transit Guide and other bus transit trip planning resources
- Registration and program information for UHaulCarShare
- Bicycle commuting information and other resources gathered from the Bicycle Coalition of Maine, the Portland Gear Hub Bicycles for All Mainers Program, and Bicycle Meet Up commuter program
- Portland Trails map

Education

Work with Portland Metro and Greater Portland Council of Governments to educate and market the use of public transit in the Portland area to PHA residents. It is our understanding that the following information will be provided to tenants:

- Metro plans to increase the number of bus shelters along routes
- Metro has expanded service to Yarmouth and Brunswick
- Metro will be launching “real time bus arrival information” via website, text message and mobile applications
- Educate potential users on the average annual costs associated with owning a car (approximately \$5,822/year) and the savings if they were to use the bus

Monitoring

As part of the TDM Plan monitoring program, Avesta Property Management will assess the utilization of its on and off site parking on an ongoing basis and will monitor the operation of the parking areas. Demand for handicapped parking will be monitored on a monthly basis. Avesta Property Management will track tenant requests for additional on-site bicycle and scooter/motorcycle parking.

One year after initial occupancy and annually thereafter, Avesta Property Management will revisit the TDM Plan, taking into account the following:

- Tenant vehicle ownership (bicycle, scooter/motorcycle, automobile)
- Tenant parking utilization of on and off street parking, including nearby parking garages and on-street parking spaces
- The means of travel by tenants (bus, walk, bicycle, automobile, scooter/motorcycle, car share, carpool, or other)

Avesta Property Management will update the TDM Plan and submit a draft plan to the City's TDM Manager for review and comments. Should the vehicle ownership of the tenants exceed 1.0 spaces per unit or 100 spaces, or specific parking issues are identified, additional TDM measures and/or parking measures will be considered.

Timetable for Action Items

This project will be managed by Avesta Property Management. The applicant will work with the City in establishing expected timelines for each of the action items.

Appendix

Trip Generation Calculations
MaineDOT Crash Data
Parking Occupancy Map
Neighborhood Meeting Minutes

JN: 3323
 Project Description: Front Street Affordable Housing
 Project Location: Portland, Maine
 Date: 6/13/2017

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

**Apartment
 Land Use Code (LUC) 220**

Dwelling Units: Proposed 100

Average Rate

Time Period	ITE Trip Rate	Sample Size	Trip Ends	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 6.65 (X)	88	665	50%	50%	333	332	N/A
AM Peak Hour of Adj. Street Traffic	T = 0.51 (X)	78	51	20%	80%	10	41	N/A
PM Peak Hour of Adj. Street Traffic	T = 0.62 (X)	90	62	65%	35%	40	22	N/A
AM Peak Hour of Generator	T = 0.55 (X)	83	55	30%	70%	17	38	N/A
PM Peak Hour of Generator	T = 0.67 (X)	85	67	60%	40%	40	27	N/A
Saturday	T = 6.39 (X)	15	639	50%	50%	320	319	N/A
Saturday Peak Hour of Gen.	T = 0.52 (X)	14	52	**	50%	26	26	N/A

* Percentages rounded to nearest 5%

** Not Available (Assumption)

Fitted Curve Equation

Time Period	ITE Trip Rate	Sample Size	Trip Ends	Directional Split *		Directional Distribution		R ²
				IN	OUT	IN	OUT	
Weekday	T = 6.06 (X) + 123.56	88	730	50%	50%	365	365	0.87
AM Peak Hour of Adj. Street Traffic	T = 0.49 (X) + 3.73	78	53	20%	80%	11	42	0.83
PM Peak Hour of Adj. Street Traffic	T = 0.55 (X) + 17.65	90	73	65%	35%	47	26	0.77
AM Peak Hour of Generator	T = 0.54 (X) + 2.45	83	56	30%	70%	17	39	0.82
PM Peak Hour of Generator	T = 0.60 (X) + 14.91	85	75	60%	40%	45	30	0.80
Saturday	T = 7.85 (X) - 256.19	15	529	50%	50%	264	265	0.85
Saturday Peak Hour of Gen.	T = 0.41 (X) + 19.23	14	60	**	50%	30	30	0.56

* Percentages rounded to nearest 5%

** Not Available (Assumption)

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

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

REPORT DESCRIPTION

Rt 26 area

REPORT PARAMETERS

Year 2014, Start Month 1 through Year 2016 End Month: 12

Route: 0026X	Start Node: 18737 End Node: 17040	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☐ Exclude Last Node
Route: 0560403	Start Node: 13537 End Node: 13547	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☒ Exclude Last Node
Route: 0560302	Start Node: 13534 End Node: 13537	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☒ Exclude Last Node
Route: 0560307	Start Node: 13534 End Node: 17036	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560391	Start Node: 13538 End Node: 13552	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☐ Exclude Last Node
Route: 0560609	Start Node: 13549 End Node: 17037	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560609	Start Node: 13553 End Node: 13535	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☒ Exclude Last Node
Route: 0560599	Start Node: 13550 End Node: 17038	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560599	Start Node: 13536 End Node: 13550	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 0560176	Start Node: 13551 End Node: 17039	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

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

REPORT DESCRIPTION

Rt 26 area

REPORT PARAMETERS

Year 2014, Start Month 1 through Year 2016 End Month: 12

Route: **0560609**

Start Node: **13535**

Start Offset: **0**

☒ Exclude First Node

End Node: **13549**

End Offset: **0**

☒ Exclude Last Node

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary I

Nodes																
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury A	Crashes B	Crashes C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF		
18737	0026X - 1.21	Int of BATES ST VERANDA ST WASH AV SB WASHINGTO	9	34	0	1	2	6	24	27.3	11.233	1.01	1.07	0.00		
												Statewide Crash Rate:	0.71			
17036	0026X - 1.27	Int of GALVIN ST, WASHINGTON AV	2	7	0	0	0	2	5	28.6	8.689	0.27	0.29	0.00		
												Statewide Crash Rate:	0.13			
17037	0026X - 1.32	Int of RANDALL ST WASHINGTON AV	2	5	0	0	1	2	2	60.0	8.769	0.19	0.29	0.00		
												Statewide Crash Rate:	0.13			
13583	0026X - 1.35	Int of CHURCHILL ST, WASHINGTON AV	2	6	0	0	0	2	4	33.3	8.732	0.23	0.29	0.00		
												Statewide Crash Rate:	0.13			
17038	0026X - 1.41	Int of PRESUMPCOT ST W PRESUMPCOT ST WASHINC	9	27	0	1	2	6	18	33.3	9.134	0.99	1.11	0.00		
												Statewide Crash Rate:	0.71			
17039	0026X - 1.50	Int of CUMMINGS ST WASHINGTON AV	2	2	0	0	0	0	2	0.0	6.859	0.10	0.31	0.00		
												Statewide Crash Rate:	0.13			
A13547	0026X - 1.55	Int of JOHANSEN ST, WASHINGTON AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00		
												Statewide Crash Rate:	0.13			
P17040	0026X - 1.56	Int of OAKLEY ST WASHINGTON AV	2	3	0	0	0	1	2	33.3	6.691	0.15	0.31	0.00		
												Statewide Crash Rate:	0.13			
13537	0560403 - 0	Int of FRONT ST JOHANSEN ST	2	0	0	0	0	0	0	0.0	0.085	0.00	0.09	0.00		
												Statewide Crash Rate:	0.14			
13534	0560302 - 0	Int of FRONT ST GALVIN ST	2	0	0	0	0	0	0	0.0	0.040	0.00	-1.25	0.00		
												Statewide Crash Rate:	0.14			
13535	0560302 - 0.04	Int of FRONT ST RANDALL ST	2	0	0	0	0	0	0	0.0	0.088	0.00	0.12	0.00		
												Statewide Crash Rate:	0.14			
13536	0560302 - 0.15	Int of FRONT ST W PRESUMPCOT ST	2	1	0	0	0	0	1	0.0	0.102	3.27	0.25	13.15		
												Statewide Crash Rate:	0.14			
13538	0560307 - 0.08	0503952 POR,ILLSLEY,GALVIN ST.	2	0	0	0	0	0	0	0.0	0.069	0.00	-0.15	0.00		
												Statewide Crash Rate:	0.14			
13549	0560391 - 0.04	0503963 POR,ILLSLEY,RANDALL ST.	2	0	0	0	0	0	0	0.0	0.118	0.00	0.35	0.00		
												Statewide Crash Rate:	0.14			
13550	0560391 - 0.14	Int of ILLSLEY ST W PRESUMPCOT ST	2	0	0	0	0	0	0	0.0	0.156	0.00	0.48	0.00		
												Statewide Crash Rate:	0.14			
13551	0560391 - 0.24	0503965 POR,ILLSLEY,CUMMINGS ST.	2	0	0	0	0	0	0	0.0	0.051	0.00	-0.66	0.00		
												Statewide Crash Rate:	0.14			
13552	0560391 - 0.27	0503966 POR,ILLSLEY ST,END	2	0	0	0	0	0	0	0.0	0.011	0.00	-10.20	0.00		
												Statewide Crash Rate:	0.14			
13553	0560609 - 0	0503967 POR,,RANDALL ST,END	2	0	0	0	0	0	0	0.0	0.017	0.00	-5.33	0.00		
												Statewide Crash Rate:	0.14			
Study Years: 3.00		NODE TOTALS:		85	0	2	5	19	58	30.6	60.844	0.47	0.43	1.08		

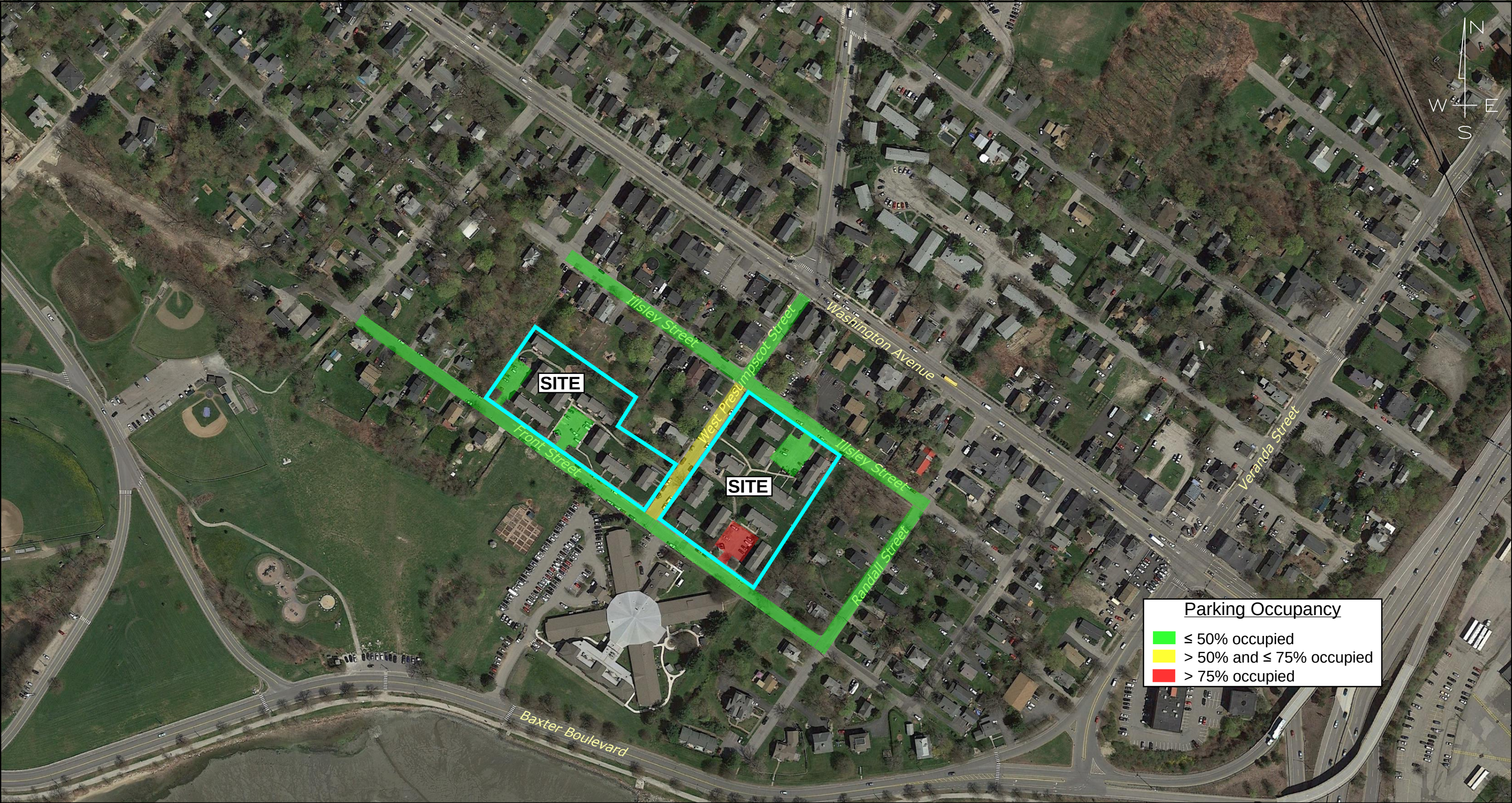
Crash Summary I

Sections																	
Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	Injury A	Crashes B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF	
17036	18737	3123985	0 - 0.06	0026X - 1.21 ST RTE 26	0.06	2	12	0	0	1	0	11	8.3	0.00515	776.24	448.69	1.73
Int of GALVIN ST, WASHINGTON AV														Statewide Crash Rate: 193.12			
17036	17037	3120740	0 - 0.05	0026X - 1.27 ST RTE 26	0.05	2	2	0	0	0	1	1	50.0	0.00436	153.02	467.99	0.00
Int of GALVIN ST, WASHINGTON AV														Statewide Crash Rate: 193.12			
13583	17037	3123939	0 - 0.03	0026X - 1.32 ST RTE 26	0.03	2	1	0	0	0	0	1	0.0	0.00261	127.56	533.65	0.00
Int of CHURCHILL ST, WASHINGTON AV														Statewide Crash Rate: 193.12			
13583	17038	3130464	0 - 0.06	0026X - 1.35 ST RTE 26	0.06	2	5	0	0	0	1	4	20.0	0.00521	319.80	447.44	0.00
Int of CHURCHILL ST, WASHINGTON AV														Statewide Crash Rate: 193.12			
17038	17039	3129290	0 - 0.09	0026X - 1.41 ST RTE 26	0.09	2	12	0	0	2	0	10	16.7	0.00618	647.14	429.04	1.51
Int of PRESUMPSCOT ST W PRESUMPSCOT ST WASHINGTON AV														Statewide Crash Rate: 193.12			
13547	17039	188353	0 - 0.05	0026X - 1.50 ST RTE 26	0.05	2	4	0	0	1	2	1	75.0	0.00340	391.74	498.42	0.00
Int of JOHANSEN ST, WASHINGTON AV														Statewide Crash Rate: 193.12			
13547	17040	3130189	0 - 0.01	0026X - 1.55 ST RTE 26	0.01	2	0	0	0	0	0	0	0.0	0.00066	0.00	745.15	0.00
Int of JOHANSEN ST, WASHINGTON AV														Statewide Crash Rate: 193.12			
13537	13547	188337	0 - 0.12	0560403 - 0 RD INV 05 60403	0.12	2	0	0	0	0	0	0	0.0	0.00012	0.00	1732.01	0.00
Int of FRONT ST JOHANSEN ST														Statewide Crash Rate: 401.45			
13534	13535	188330	0 - 0.04	0560302 - 0 RD INV 05 60302	0.04	2	0	0	0	0	0	0	0.0	0.00001	0.00	-5673.21	0.00
Int of FRONT ST GALVIN ST														Statewide Crash Rate: 401.45			
13535	13536	188332	0 - 0.11	0560302 - 0.04 RD INV 05 60302	0.11	2	1	0	0	0	0	0	0.0	0.00004	7412.68	1138.86	6.51
Int of FRONT ST RANDALL ST														Statewide Crash Rate: 401.45			
13536	13537	188335	0 - 0.16	0560302 - 0.15 RD INV 05 60302	0.16	2	1	0	0	0	0	1	0.0	0.00012	2897.34	1730.97	1.67
Int of FRONT ST W PRESUMPSCOT ST														Statewide Crash Rate: 401.45			
13534	13538	188331	0 - 0.08	0560307 - 0 RD INV 05 60307	0.08	2	0	0	0	0	0	0	0.0	0.00004	0.00	1021.50	0.00
Int of FRONT ST GALVIN ST														Statewide Crash Rate: 401.45			
13538	17036	188339	0 - 0.04	0560307 - 0.08 RD INV 05 60307	0.04	2	2	0	0	0	0	2	0.0	0.00003	21847.89	333.98	65.42
0503952 POR, ILLSLEY, GALVIN ST.														Statewide Crash Rate: 401.45			
13538	13549	188338	0 - 0.04	0560391 - 0 RD INV 05 60391	0.04	2	1	0	0	0	0	1	0.0	0.00000	81539.47	-	0.00
0503952 POR, ILLSLEY, GALVIN ST.														Statewide Crash Rate: 25630.05			
13549	13550	188355	0 - 0.10	0560391 - 0.04 RD INV 05 60391	0.10	2	3	0	0	0	0	3	0.0	0.00004	26599.28	828.23	32.12
0503963 POR, ILLSLEY, RANDALL ST.														Statewide Crash Rate: 401.45			
13550	13551	188357	0 - 0.10	0560391 - 0.14 RD INV 05 60391	0.10	2	0	0	0	0	0	0	0.0	0.00004	0.00	884.43	0.00
Int of ILLSLEY ST W PRESUMPSCOT ST														Statewide Crash Rate: 401.45			
13551	13552	188359	0 - 0.03	0560391 - 0.24 RD INV 05 60391	0.03	2	0	0	0	0	0	0	0.0	0.00001	0.00	-	0.00
0503965 POR, ILLSLEY, CUMMINGS ST.														Statewide Crash Rate: 14016.71			
13549	17037	188356	0 - 0.04	0560609 - 0.15 RD INV 05 60609	0.04	2	0	0	0	0	0	0	0.0	0.00005	0.00	1167.02	0.00
0503963 POR, ILLSLEY, RANDALL ST.														Statewide Crash Rate: 401.45			
13535	13553	188334	0 - 0.07	0560609 - 0 RD INV 05 60609	0.07	2	0	0	0	0	0	0	0.0	0.00002	0.00	-457.55	0.00
Int of FRONT ST RANDALL ST														Statewide Crash Rate: 401.45			

Crash Summary I

Sections																	
Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	Injury A	Crashes B	Percent C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF	
13550	17038	188358	0 - 0.05	0560599 - 0.08	0.05	2	2	0	0	0	2	0.0	0.00007	9201.43	1601.95	5.74	
Int of ILLSLEY ST W PRESUMPCOT ST				RD INV 05 60599										Statewide Crash Rate: 401.45			
13536	13550	188336	0 - 0.08	0560599 - 0	0.08	2	3	0	0	0	3	0.0	0.00007	13698.63	1606.05	8.53	
Int of FRONT ST W PRESUMPCOT ST				RD INV 05 60599										Statewide Crash Rate: 401.45			
13551	17039	188360	0 - 0.05	0560176 - 0	0.05	2	2	0	0	0	1	0	100.0	0.00002	31491.10	-994.82	0.00
0503965 POR,ILLSLEY,CUMMINGS ST.				RD INV 05 60176										Statewide Crash Rate: 401.45			
13535	13549	188333	0 - 0.08	0560609 - 0.07	0.08	2	0	0	0	0	0	0.0	0.00006	0.00	1442.38	0.00	
Int of FRONT ST RANDALL ST				RD INV 05 60609										Statewide Crash Rate: 401.45			
Study Years:		3.00	Section Totals:		1.54		51	0	0	4	5	40	17.6	0.02832	600.26	317.23	1.89
			Grand Totals:		1.54		136	0	2	9	24	98	25.7	0.02832	1600.69	440.28	3.64

Parking Occupancy Map



Front Street Development
PORTLAND, MAINE

Front Street Re-Development Meeting Minutes May 17, 2017, Presumpscot Elementary School

Team Members Present:

PHA - Mark Adelson (Executive Director), Jay Waterman (Director of Development), Trevor Nugent (Dir. Of public Housing), Emily Mancini-Fitch (Housing Services Manager), Shirley Peterson (PHA Board President)
Utile Architecture and Design - Jonathan Evans, Katie Wirtz, Evan Parkinson
Government Strategies - Kim Cook
Carroll Associates Landscape Architecture - Pat Carroll

Portland Housing Authority hosted a neighborhood meeting regarding the re-development of the Front Street public housing project in Portland's East Deering neighborhood. The meeting was held at the Presumpscot Elementary School on May 17, 2017 from 6:30-8:00pm.

The meeting was noticed by mail to property owners within 500 feet of the proposed development using the City Planning Department's mailing list. PHA also noticed all Front Street Public Housing residents with flyers

Sign-in sheets and the flyer that was sent are attached.

Mark Adelson, Executive Director, opened the meeting with introductions and gave some background on the Housing Authority and PHA's Strategic Vision Plan for renovation or re-development of its 1,000+ housing units in Portland

Jonathan Evans from Utile Architecture and Design, presented the project, the neighborhood context. Jonathan gave a history of project, noted it is at the end of its useful life. Discussed the needs of the neighborhood. There are currently 182 bedrooms in 18 bldgs plus the community room. He said it is important to look at the community needs, listed from previous meetings. Opportunities:

- meet needs of project but respectful of neighborhood
- scale of housing
- traffic calming measures on Presumpscot St.

Jonathan showed existing and proposed views of project.

Jay Waterman discussed the process at the planning board, the schedule, and next steps. Pat Carroll, Landscape Architect, presented the site plan.

Comments from attendees (responses or discussion in italics):

- It appears that most residents of current development have more than 1 car. Sharon Kiley offered to sell her property to use as parking lots. Traffic speed on Presumpscot is fast and dangerous.

- Area needs more parking, residents have more than 1 car, parking on Front St and neighboring streets.
- Too many Front Street residents park on the street and the streets do not get plowed.
- Concern for location of school bus stop around development as it blocks traffic.
- Area resident wants it to be pedestrian friendly, enhance sidewalks, curb flares, improved pedestrian safety.
 - *Design team explained some of the ideas of pedestrian friendly design and connection to Payson Park; making all sidewalks that are in rough shape new and safe; better crosswalks and potential bump-outs for a shorter distance from curb to curb.*
- Concept design shown, the architecture is not in keeping with neighborhood. Looking for 'Maine' archtype, project is in 1922 neighborhood.
- The design shown with the flat roofs is too modern looking. We want brick exterior and a design that is in keeping with the neighborhood.
- It is a problem that people are cutting through the nursing home to Baxter Blvd.
- Wants to change neighborhood traffic habits, cut thru nursing home driveway to Baxter Blvd, wants some kind of blvd access. Other concern that senior housing would cut off access to the Blvd. if this were used too much.
- Need for a traffic study
 - *This is pending and will be submitted with the Site Plan application to the planning board*
 - *Jay Waterman gave an estimated timeframe for the project of a site plan application submission in Summer 2017 with a construction start in Fall of 2018 and occupancy in Fall of 2019.*
- Traffic Study should be done at different times of day to show the different usage and different cars.
- Changing nature of neighborhood; this is not India St or West End, different than other neighborhoods; there are challenges and opportunities; didn't like flat roofs
- Concern about design as too urban and would change the feel of the neighborhood; concern it is too dense.
- Concern about sewer capacity and school capacity for more children
 - *Jay noted that utilities (sewer/water) are through the City and Portland Water District. Unit mix has not been determined but there will be some 4-5 BR units and many more studios and 1BR units. It will also be mixed income at 80% affordable and 20% market rate.*
- Concern about new height being taller than current building height.
 - *It was noted that the 2-3 story buildings will not be any taller than the pitched roofs and will meet the zoning requirements for R-5 PRUD.*
- Playgrounds too close to windows, move away from buldings.
- Concern that buildings are too close to the road and need larger front yards for playing and neighbor interaction
 - *There will be setbacks and small front yards and stoops*
- Concern that distance from parking to unit entry is too far.
- An area resident asked the timing of project and the need for traffic study.
 - *Team noted that the project is going to planning board Fall 2017. Pat Carrol noted a traffic study is part of that submission to the planning board and that will*

help the planning board impose a number of off-street parking spaces

- Questioned scale of project, doubling number of units on site. Questioned speed table on Presumpscot; described using Cummings as escape to Washington Ave. Need to slow traffic on Randall and Johannsen.
- Too many cars parked on the street and people drive too fast in the neighborhood.
 - *This is something the team would like work with the area residents and the City on to find solutions because PHA does not want too many cars on the street or unsafe streets.*
- Need 2nd exit onto Washington Ave; questioned school population; questioned similarity to Washington Gardens; Issues with sewer system on Washington Avenue
- A Front Street resident asked about basements.
There will be no basements if Front Street is re-developed.
- Concern about sewer capacity and soils on this site.
 - *There is public sewer in the area and the Portland Water District said that it has the capacity to serve the proposed new project size and BR mix.*
- How is trash handled; school buses; questioned who takes care of housing.
 - *Trash service will take trash from rooms in buildings. No dumpsters.*
- Questioned ownership of property; where can she read about project; lack of outdoor space for individual residents
 - *There will be information on PHA's website soon. More information after submission to the planning board.*
- Questioned occupancy rate/ bedroom occupancy of 60% valid?
 - *The 60% only refers to the maximum number of people per bedroom under HUD rules. PHA tracks this and our occupancy is less than the maximum of 2 persons per bedroom by about 55% or about 1 person per bedroom.*
- Residents parking on streets, not in parking lots; main issues traffic, parking ,school impact
 - *There was discussion about existing number of bedrooms increasing only by 21% even though the number of units is going from 50 to 99.*
- Preference for community play areas to be separated from residential areas. Area resident has kids that have broken a window when using the play space close to her residence.
- There are only parking outlets to Front Street planned. There should be parking outlets to other streets.
 - *Design team noted driveways onto Illsley as well as Front Street.*
- Concern about doubling number of units and the amount of traffic.
- Could Cummings Street be built to ease traffic? Speed bumps on Johannsen and Randall a possibility?
 - *These are City issues that we could help the neighbors discuss with the City.*
 - *Discussion about Cummings street and turning it into a real street*
- Area resident asked if the management company will do a better job of keeping the trash picked up. Trash is a problem.
 - *Design Team noted that there will be indoor trash rooms and a trash service that picks up trash. The dumpsters and their enclosures will go away.*
- Concern for who manages the property.
- Would like to see a digital or hard copy of the presentation
 - *It was noted that the presentation and the meeting minutes would be on the PHA website.*

- Does not like the aesthetics of residents storing things outdoors. They should have storage. Prefer fenced back yards. Residents should all have private outdoor space.
- Having individualized outdoor spaces is important to residents. Residents in surrounding neighborhood have access to outdoor spaces.
- What is required for site plan application to the City planning board?
 - *Pat Carroll explained the level of plan details, performance guidelines, utilization rates, construction management plans, etc. that need to be submitted.*
- Traffic is too fast; Would like to feel invited into the new development and have areas for kids to play; wants to strengthen the sense of community.
 - *Team explained they want as much integration with the neighborhood as possible and make the design of the new development “permeable” so that area residents feel welcome walking through.*
- When is the next community meeting?
 - *2-3 months from this meeting after site plan submission. There is also a required public hearing at the planning board for anyone to come and give comments.*

END OF MEETING MINUTES

Note: This memorandum represents our understanding of the events which transpired and the actions which were taken. If they do not conform to a recipient's understanding, prompt written notice must be communicated to the writer. If no corrections or objections are made, this memorandum will be relied upon as a factual interpretation of this meeting.

16. Significant Natural Features

The project site is a previously developed urban site. There are no significant plant species, communities, or specimens within the site.

There are no significant natural features on the site.

17. Stormwater

Stormwater Management:

Surface stormwater from roofs parking areas and green space will be directed towards multiple rain garden areas dispersed throughout the site. These rain gardens will be underdrained and designed to remove pollutants and sediment and to cool stormwater before it is discharged into the Back Cove, which discharges to Casco Bay. In general, the existing surface drainage patterns will be retained. Overflows from the rain gardens during heavy rain events will drain into catch basins. During extreme rain events, the rain gardens will overflow to the surface and the site will be graded to direct overflows towards the roadways and away from the buildings.

The site's existing stormwater system is connected to the City's combined drainage system, which is often overwhelmed during heavy rain events, resulting in Combined Sewer Overflows (CSO), the discharge of untreated sewerage into Casco Bay. The proposed stormdrain system will be completely separate from the sewer system, which will reduce the strain on the combined sewer system during heavy rains and, in turn, help to reduce the duration and frequency of CSO's.

Please see the Stormwater Management Narrative and attachments for additional information.

Front Street Stormwater Management Narrative

Date: October 10, 2017
To: City of Portland
From: John Mahoney, P.E.
Peer Review: Tom Nosal, EIT & Steve Bradstreet, P.E.
Location: Front Street, Portland, Maine

Executive Summary:

Surface stormwater runoff from roofs, parking areas and green space will be directed towards multiple rain garden areas distributed throughout the site. These rain gardens will be underdrained and designed to remove pollutants and sediment and to cool stormwater before it is discharged into the Back Cove, which discharges to Casco Bay. In general, the existing surface drainage patterns will be retained. Overflows from the rain gardens during heavy rain events will drain into catch basins. During extreme rain events, the rain gardens will overflow to the surface and the site will be graded to direct overflows towards the roadways and away from the buildings.

The site's existing stormwater system is connected to the City's combined sewer system, which is often overwhelmed during heavy rain events, resulting in the discharge of untreated sewerage into Casco Bay, Combined Sewer Overflows (CSO). The proposed stormdrain system will be completely separate from the sewer system, which will reduce the strain on the combined sewer system during heavy rains and, in turn, help to reduce the duration and frequency of CSOs.

Existing Conditions:

The Site consists of two parcels on Front Street at the intersection of West Presumpscot Street. The Western Parcel at 63 Front Street contains 71,256 square feet, while the Eastern Parcel at 37 Front Street contains 100,253 square feet. The site is currently occupied by 19 buildings (50 residential apartments and a community space), along with associated parking lots and walkways, with the remaining portion of the property being lawn area.

The site generally drains from the back of the lots towards Front Street and along Front Street, from northwest to southeast. Both parcels contain closed stormdrain systems that are combined with sewer services for the existing buildings. These combined drainage systems discharge to the City's combined sewers at various locations along Front Street and on West Presumpscot Street. The entire Front Street Site currently drains to combined sewers.

Based on the Cumberland County USDA soil survey GIS data, the existing soils on this site are all hydrological group D (poorly drained).

Proposed Development:

The applicant, Front Street Housing Redevelopment, LP, proposes to construct 6 new buildings (100 residential apartments and a community space), along with associated parking, walkways and landscaped areas. The proposed development will increase the site's impervious area from 68,532 square feet to 109,012 square feet. The Western Parcel's impervious area will increase by 14,636 square feet, and the Eastern Parcel's will increase by 25,844 square feet.

In order to reduce the Site's impact on the City's combined drainage system, the applicant proposes to work with the City to construct a new separated stormdrain system within Front Street and West Presumpscot Street. This system, shown schematically on the civil plans, is proposed to discharge to an existing 48" stormdrain that crosses Front Street at the eastern edge of the site. In order to minimize long term maintenance and to maximize the potential for future separation projects, the applicant proposes to work in collaboration with the City on the final configuration/design of the new stormdrain system.

Stormwater Management – Basic Standards:

Erosion and sedimentation control measures are described on Sheet C8.0. Good housekeeping practices shall be in accordance with Maine DEP Best Management Practices. A post construction stormwater management plan and a stormwater BMP inspection and maintenance log are included with this submission.

Stormwater Management - Quality:

As shown on Sheet C5.0, stormwater treatment will be provided by 14 rain gardens distributed throughout the Site. Thirteen of the rain gardens will utilize the FocalPoint system. Focal Point is a high-flow biofiltration media, engineered to provide a permeability rate in excess of 100 inches/hour. This high permeability facilitates treatment of relatively large impervious areas with small rain gardens making the FocalPoint system ideal for constrained sites and for minimizing excavation/removal of urban soils.

All but one of the Focal Point systems have been sized to treat 1.6-inches of runoff from their respective contributing impervious areas and 0.4-inches of runoff from corresponding landscaped areas. See attached spreadsheets and table on Sheet C5.0 for additional detail.

The FocalPoint systems will be underdrained by R-Tanks, which is a modular system for stormwater storage and conveyance. The proposed R-Tanks will contain a maintenance row (see attached cut sheet). The maintenance row is proposed as an "approved equal" for the Maine DEP's "Isolator Row" requirement for FocalPoint.

The remaining rain garden (#6) will be a standard *underdrained soil filter*, as it has a relatively small contributing drainage area. The ponding volume for this rain garden exceeds the sum of 1.6-inches of runoff over its contributing impervious areas plus 0.4-inches of runoff over contributing landscaped areas. All rain gardens will include stone energy dissipaters to disperse concentrated flows. Rain gardens that receive runoff from parking areas will have sediment forebays to pre-treat stormwater by capturing sand/sediment upstream of the rain garden filter media.

Stormwater Management - Quantity:

The applicant is requesting a waiver from the flooding standard for the following reasons.

- Because the proposed Site will drain to a separated stormdrain system that discharges directly to Back Cove, our stormwater management approach focuses on stormwater treatment; i.e. removing pollutants and cooling runoff before discharging to Back Cove.
- While our primary focus has been treatment, as indicated above, a substantial volume of stormwater storage is proposed; 1,287 CF from rain garden ponding areas.
- In order to strictly meet the flooding standard, sizable detention ponds would be needed. The construction of which would require removing significant volumes of soil from the Site. Based on initial environmental investigations, onsite soils would be considered *special waste* per Maine DEP Solid Waste Management Rules. Tipping fees for offsite disposal of *special waste* would substantially increase the cost of providing stormwater detention.
- The project will remove approximately 4 acres of surface runoff from the City's combined drainage system, which will reduce loading on local combined sewers, which in turn, will help to reduce the frequency, intensity and duration of combined sewer overflows.
- The site will drain to a large (48" diameter) public stormdrain that will drain directly to Back Cove and into the Atlantic Ocean.

Hydraulic Analysis:

Stormwater runoff calculations for quantity were made using the HydroCAD 10.0 computer program, which is based on the Soil Conservation Service's TR-20 methodology. Runoff hydrographs are generated based on a standard Type III 24 hour storm.

Runoff Curve numbers were determined based on land coverage and hydro-geological group. A minimum time of concentration (Tc) of 6 minutes was set in the HydroCAD model.

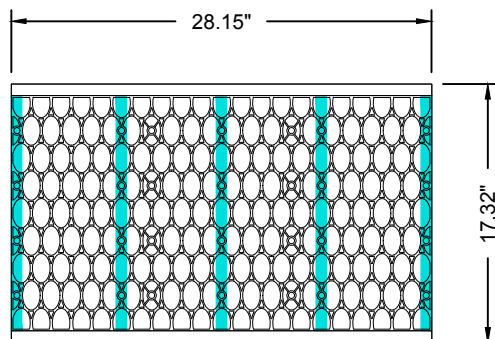
Peak runoff flow rates and runoff volumes for the pre-development conditions are provided at Analysis Point A, which is a 30" combined sewer in Front Street at the eastern edge of the site. Peak runoff flow rates and runoff volumes for the post-development conditions are provided at Analysis point A', which is the 48" separated stormdrain that crosses Front Street at the eastern edge of the site. These analysis points are essentially in the same location, see Sheet C5.0.

The following hydraulic analysis is conservative in that it does not factor in any of the onsite storage we are proposing. Three storm events were modeled as follows (rainfall data extracted by the Maine DEP from the Northeast Regional Climate Center Extreme Precipitation Tables).

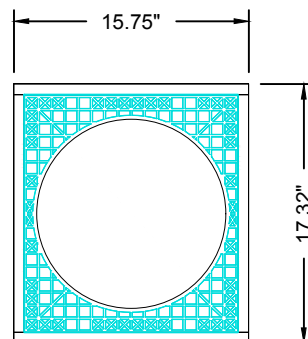
1. 2-year frequency flood event: 3.1" rainfall
2. 10-year frequency flood event: 4.6" rainfall
3. 25-year frequency flood event: 5.8" rainfall

Storm Event	PRE-Development Peak Runoff RATES cubic feet per second (CFS)
	Analysis Point A 30" Combined Sewer
2 Year Frequency Storm	8.58
10 Year Frequency Storm	14.69
25 Year Frequency Storm	19.60

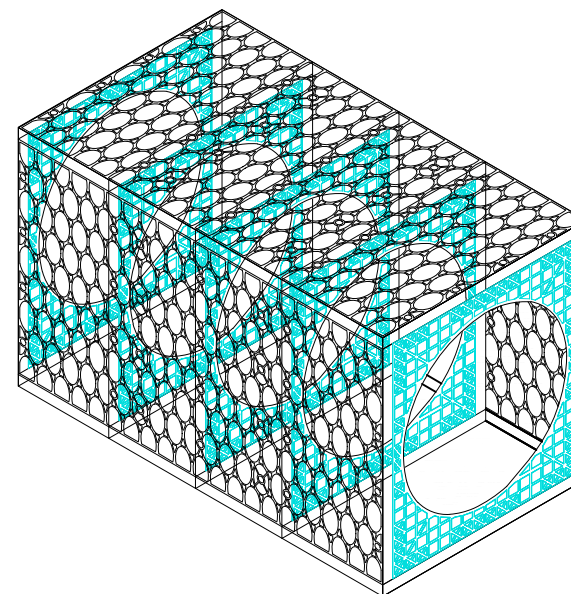
Storm Event	POST-Development Peak Runoff RATES cubic feet per second (CFS)
	Analysis Point A' 48" Stormdrain
2 Year Frequency Storm	9.84
10 Year Frequency Storm	15.97
25 Year Frequency Storm	20.83



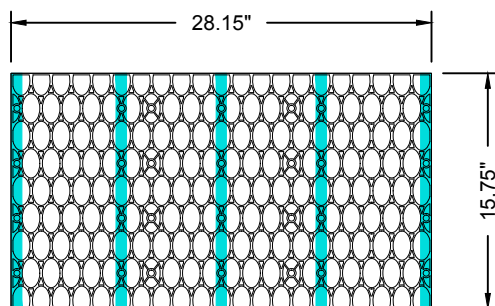
SIDE



END



ISOMETRIC



TOP

MODULE DATA

GEOMETRY:

LENGTH = 28.15 IN. (715 MM)
 WIDTH = 15.75 IN. (400 MM)
 HEIGHT = 17.32 IN. (440 MM)
 TANK VOLUME = 4.44 CF
 STORAGE VOLUME = 4.22 CF
 VOID INTERNAL VOLUME: 95%
 VOID SURFACE AREA: 90%

LOAD RATING:

33.4 PSI, (MODULE ONLY)
 HS20, (WITH ACF COVER SYSTEM)

MATERIAL:

100% RECYCLED
 POLYPROPYLENE

SMALL PLATES PER SEGMENT/TOTAL:

5/5



R-TANK^{HD} - SINGLE MAINTENANCE MODULE

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

09/25/2017

Front Street: Stormwater BMP Inspection Log

**The City of Portland, ME requires ongoing annual inspections to ensure the proper maintenance and operation of stormwater management facilities.
Inspections must be conducted by third parties qualified by the City.**

A. General Information

Use only one Cover Sheet per site with as many specific structural BMP Inspection Report attachments as needed. Attach required color digital photos of site, structures and devices as applicable with captions.

Project Name:	Front Street Housing Redevelopment	Inspection Date:	
Parcel Map, Block and Lot:	Map 166 Block B Lot 1; Map 167 Block E Lot 1	Current Weather:	
BMP Owner:	Portland Housing Authority	Date / Amount Last Precip:	
Owner Mailing Address:	14 Baxter Boulevard Portland, Maine	3PI Company:	
Owner Phone #:	207-773-4753	3PI Mailing Address:	
Owner Email:	jwaterman@porthouse.org	Inspector Name:	
		Inspector Phone #:	
		Inspector Email:	

B. Inspection Report Attachments

Please document the number of each structural BMP type found at this site in the blank spaces provided below. Use additional Attachments if / as needed and submit all Attachments together with the Cover Sheet as a single report.

BMP Type	Number BMPs at site
Vegetated Areas	-
Parking Lot	2
Stormdrain Field Inlets/Catch Basins: Harco Drain with Stormsack	15
FocalPoint High Flow Biofiltration Unit	13
R-Tank Subsurface Detention-Infiltration System	13

Other (describe

C. Inspection Results

FAIL**

☐

** If any one item on an Inspection Report attachment is coded as "Work Needed" then entire BMP fails inspection.

** If a site has multiple BMPs and one fails inspection, mark as "Fail" until all BMPs pass inspection.

Note: Applicable BMP Inspection Reports and confirmatory color digital photos summarizing required repairs must be submitted to the City following completion of the preliminary inspection. A re-inspection and certification must be completed within 60 days of the failed preliminary report. It is recommended that the inspector be part of the repair / maintenance process to ensure that repairs are performed properly.

PASS

☐

Note: a qualified professional (as determined by the City) must sign below and include all applicable Inspection Report attachments and confirmatory digital color photos with captions.

D. Professional Certification (as qualified by City of Portland Stormwater Program Coordinator)

To be completed only when all BMPs at this site are functioning as designed with no outstanding maintenance issues.

I, _____, as a duly qualified third party inspector attest that a thorough inspection has been completed for ALL applicable BMPs that are associated with this particular site. All inspected structural BMPs are performing as designed and intended and are in compliance with the provisions of the City Portland's Standards

Signature: _____

Date: _____

Owner: Portland Housing Authority	Operator:
Location & Parcel Id: Map 166 Block B Lot 1; Map 167 Block E Lot 1	Inspector:
	Date:
General Information	Observations
Inspection duration (hours)	
Days since last precipitation	
Quantity of last precipitation (in)	
Type of inspection	
Storm event	
Current weather	
Photos taken	☐ Yes ☐ No ☐ NA
Nearby natural resources	☐ Yes ☐ No ☐ NA
Copy of ESC plan	☐ Yes ☐ No ☐ NA
MEDEP Permit # (if applicable)	
General info notes	
Vegetated Areas	Observations
Condition of slopes and embankment is good	☐ Yes ☐ No ☐ NA
No bare areas (< 90% covered) with sparse growth	☐ Yes ☐ No ☐ NA
Armored areas have no rill erosion or the flow diverted to onsite areas can withstand concentrated flows	☐ Yes ☐ No ☐ NA
Vegetated area notes	
Parking Lot	Observations
Accumulated winter sand has been cleared	☐ Yes ☐ No ☐ NA
Pavement swept to help remove sediment	☐ Yes ☐ No ☐ NA
No stormwater is impeded by accumulations of material	☐ Yes ☐ No ☐ NA
Parking lot notes:	

Stormdrain Structures (Require inspection TWICE per year)	Observations
Accumulated sediments from inflow channels, pipes and sumps between basins have been removed and legally disposed of.	☐ Yes ☐ No ☐ NA
Floating debris and floating oils have been removed.	☐ Yes ☐ No ☐ NA
Debris and Sediment Removed From Harco Stormsack	☐ Yes ☐ No ☐ NA
Stormdrain Structure system notes	
The Harco Stormsack in the overflow drain shall be inspected every three months for the first year and twice annually after that. It is CRITICAL THAT THE STORMSACK BE MAINTAINED IN ORDER TO PREVENT DEBRIS AND SEDIMENT FROM ENTERING THE R-TANKs.	

FocalPoint High Flow Biofiltration and R-Tank System	Observations
Bark Mulch Layer Removed Replaced Annually	☐ Yes ☐ No ☐ NA
Accumulated sediments and debris (trash) within the surrounding ponding (rain garden) area have been removed and legally disposed of	☐ Yes ☐ No ☐ NA
Water level observed in inspection all 3 inspection port to ensure that the infiltration area is draining adequately and excessive sediment has not built up.	☐ Yes ☐ No ☐ NA
Eroded areas have been repaired.	☐ Yes ☐ No ☐ NA
<i>FocalPoint/R-Tank notes</i> If sediment accumulates beyond an acceptable level in the R-Tank storage system, it will be necessary to flush the underdrain. This can be done by pumping water into the Observation/Maintenance Port or adjacent overflow structure, allowing the turbulent flows through the underdrain to re- suspend the fine sediments. The proposed R-Tanks include a maintenance plate row to facilitate this process. Measures shall be taken to capture sediment before discharge to the City's stormdrain system; i.e. sediment laden water vacuumed from the R-Tanks SHALL NOT be discharged to the stormdrain but rather hauled offsite and disposed of based on applicable Maine DEP regulations.	
Other Comments	Observations
Corrective action needed	☐ Yes ☐ No ☐ NA
<i>If corrective action in needed, please explain detail</i>	
Verbal notification provided to responsible party	☐ Yes ☐ No
Verbal notification contact	
Follow up required	☐ Yes ☐ No
<i>Final comment notes</i>	

Photos (use additional pages as needed)

Review Notes

Date Reviewed:
Reviewed by:
Date entered:
Date edited:
Edited by:

Front Street Housing Redevelopment: Post-Construction Stormwater Compliance Requirements

The Applicant shall maintain the BMPs in accordance with the approved plan and shall demonstrate compliance with the plan as follows:

- (a) *Inspections.* The owner or operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, rain gardens, pervious pavers, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post- construction stormwater management plan.
- (b) *Maintenance and repair.* If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action(s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action(s) to the department of public services ("DPS") in the annual report.
- (c) *Annual report.* The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPS in a form provided by DPS, certifying that the person has inspected the BMP(s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective action(s) taken.
- (d) *Filing fee.* Any persons required to file an annual certification under this section shall include with the annual certification a filing fee established by DPS to pay the administrative and technical costs of review of the annual certification.
- (e) *Right of entry.* In order to determine compliance with this article and with the post-construction stormwater management plan, DPS may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs.

**Front Street Housing Redevelopment
Portland, Maine**

**STORMWATER DRAINAGE SYSTEM
MAINTENANCE AGREEMENT AND
RELEASE FROM LIABILITY**

IN CONSIDERATION OF the site plan and subdivision approval granted by the Planning Board of the City of Portland to a plan entitled **Front Street: C-5.0 Stormwater & Erosion Control Plan** prepared for **Front Street Housing Redevelopment, LP**, by **Ransom Consulting, Inc.** dated , **2017** recorded in the Cumberland County Registry of Deeds in Plan Book , Page (the “Plan”) and pursuant to a condition thereof, **Front Street Housing Redevelopment, LP** (owner) having a mailing address of **14 Baxter Boulevard, Portland, ME 04101**, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the “Owner”), as follows:

Maintenance Agreement

That it will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the stormwater drainage system, as shown on said plan, including but not limited to the **rain garden, FocalPoint systems, R-Tanks and catch basins** in strict compliance with the Maintenance of Facilities as described in **Front Street Stormwater Management Narrative and the Front Street Stormwater Inspection and Maintenance Log** (Stormwater Management Plan) dated , **2017** and Chapter 32 of the Portland City Code. Owner of the subject premises further agrees to keep a Stormwater Maintenance Log that will be made available for inspection by the City of Portland upon reasonable notice and request.

This Agreement is for the benefit of the said City of Portland and all persons in lawful possession of the property; further, that the said City of Portland may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice as described in this Agreement, and a stated time to perform, that the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon the property in question to maintain, repair, or replace said stormwater drainage system, including but not limited to the **rain garden, FocalPoint systems, R-Tanks and catch basins** thereon in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand. Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear. The Owner agrees to provide a copy of this Agreement to any successor or assign and to forward to the City an Addendum signed by any successor or assign in which the successor or assign states that the successor or assign has read the Agreement, agrees to all its terms and conditions.

For the purpose of this Agreement the real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and lien if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the Owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by this Agreement shall be complete on the date the notice is mailed to the owner of record as shown on the tax roles on file in the City Assessor's Office. If the property has more than one owner on said tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this Agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this _____ day of _____, 20__.

By: _____
Its: _____

STATE OF MAINE
CUMBERLAND, ss.

Date: _____

Personally appeared the above-named _____, and
acknowledged the foregoing instrument to be his/his free act and deed in his/her said capacity,
and the free act and deed of said _____.

Before me,

Notary Public/Attorney at Law

Print name: _____

This calculator is designed to provide sizing and performance guidance for the FocalPoint Bio-Filtration and RTank Underground Storage Systems based on TR-55 protocol and distribution curves. There are three types of cells the user will want to be familiar with: White Cells are intended for user input, Green Cells require a selection off of the dropdown toggle switch and the Blue Cells contain the calculated result.

Contact: John Mahoney
Company: Ransom Consulting Inc.
Phone:
Email:

Project Name: Front Street Housing Redevelopment
Location: Portland Maine

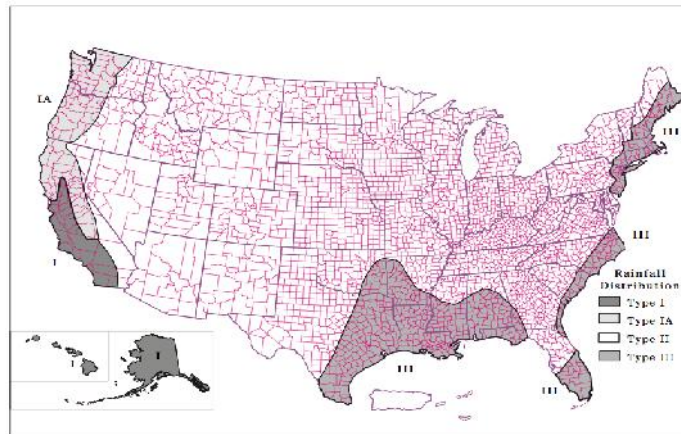
Water Quality Volume Calculator

Step 1 - Rainfall Distribution

1.1 - SCS Type

Type III

See TR-55 Map Tab below to determine which type event is appropriate for your area



Step 2 - Basis for Water Quality Volume

2.1 - Enter Methodolgy

Maine

Scroll Down

Directions

Select one of the following from Toggle:
Manual if WQv is already calculated
TR-55 to Calculate WQv and use that volume in one step
New York to Calculate WQv off Figure 4.1 of NY SWM Manual
Maine to Calculate WQv as 1" off Impervious and 0.4" off pervious

Step 3 - Enter Data As Described For Basis for Water Quality Chosen in Step 2 Highlighted in Blue Below

3 - Manual Input

3.1 If "Manual", enter Water Quality volume

10,000

ft³

3.2 If "Manual", enter Design Event volume

25,000

ft³

Directions

Enter the Water Quality Volume (WQv) here.
Enter the Design Event here (if different than WQv).

Note: If FocalPoint not being used and runoff will be routed directly to RTank, enter "No" in cell E10 on FocalPoint Design worksheet

3.2 - TR-55 Input

Enter Methodology Toggle W.Q. Volume

Runoff (First Flush) or Rainfall (W.Q. Volume) Depth 7.54

Design Event Rainfall Depth 7.54

Directions

Use Toggle to select first flush of full event volume

Depth of First Flush treatment Requirement - in inches

Depth of total rainfall event in inches

Subarea	Cover Condition	Area to BMP (ft ²)	TR-55 CN Value
Post Cover 1	Roof	2,919	98
Post Cover 2			
Post Cover 3			
	Total	2,919	
	W.Q. Even	Design Event	
Post Cover 1	1,776	1,776	ft ³
Post Cover 2	0	0	ft ³
Post Cover 3	0	0	ft ³
RESULTS	1,776	1,776	ft ³

Enter cover conditions and CNs

3.3 - New York

90% Rainfall Amount (P)

1.00

inches

Enter rainfall depth from Figure 4.1, page 4-2 of NY SWM Design Man.

Impervious cover (I)	55.00%		Enter % of Impervious Cover
Drainage Area (A)	103,456	ft ²	Enter Drainage Area
Water Quality Volume (WQ _v)	4,699	ft ³	
Design Event Volume (Manual Entry)	10,000	ft ³	Enter Design Event Volume

3.4 - Maine

Rain Garden 1

Impervious Cover	13,066	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	8,134	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	2,013	ft ³	

Rain Garden 2

Impervious Cover	9,575	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	4,332	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	1,421	ft ³	

Rain Garden 3

Impervious Cover	8,420	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	443	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	1,137	ft ³	

Rain Garden 4

Impervious Cover	9,180	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	383	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	1,237	ft ³	

Rain Garden 5

Impervious Cover	1,849	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	2,669	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	336	ft ³	

Rain Garden 6

Impervious Cover	103	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	1,184	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	53	ft ³	

Rain Garden 7

Impervious Cover	6,322	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	404	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	856	ft ³	

Rain Garden 8

Impervious Cover	9,066	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	923	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	1,240	ft ³	

Rain Garden 9

Impervious Cover	4,426	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	171	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	596	ft ³	

Rain Garden 10

Impervious Cover	6,300	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	4,562	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	677	ft ³	

Rain Garden 11

Impervious Cover	6,224	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	192	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	836	ft ³	

Rain Garden 12

Impervious Cover	3,674	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	1,660	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	545	ft ³	

Rain Garden 13

Impervious Cover	15,640	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	8,089	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	2,355	ft ³	

Rain Garden 14

Impervious Cover	9,855	ft ²	Enter ft3 of Impervious Cover
Pervious Cover	7,320	ft ²	Enter ft3 of Pervious Cover
Water Quality Volume	1,558	ft ³	

Water Quality Volume and Design Event

Water Quality Volume (WQv)
Design Event

2,013 ft³
2,013 ft³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

110

ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

152

ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24

hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:

Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

2,013

ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	4	4	Flow through	4	0	0	0
0.4	0.00	8	4	Flow through	4	0	0	0
0.6	0.01	12	4	Flow through	4	0	0	0
0.8	0.01	16	4	Flow through	4	0	0	0
1.0	0.01	20	4	Flow through	4	0	0	0
1.2	0.01	24	4	Flow through	4	0	0	0
1.4	0.01	28	4	Flow through	4	0	0	0
1.6	0.02	32	4	Flow through	4	0	0	0
1.8	0.02	36	4	Flow through	4	0	0	0
2.0	0.02	40	4	Flow through	4	0	0	0
2.2	0.02	44	4	Flow through	4	0	0	0
2.4	0.02	49	4	Flow through	4	0	0	0
2.6	0.03	53	4	Flow through	4	0	0	0
2.8	0.03	57	4	Flow through	4	0	0	0
3.0	0.03	62	5	Flow through	5	0	0	0
3.2	0.03	67	5	Flow through	5	0	0	0
3.4	0.04	71	5	Flow through	5	0	0	0
3.6	0.04	76	5	Flow through	5	0	0	0
3.8	0.04	81	5	Flow through	5	0	0	0
4.0	0.04	87	5	Flow through	5	0	0	0
4.2	0.05	92	5	Flow through	5	0	0	0
4.4	0.05	97	5	Flow through	5	0	0	0
4.6	0.05	103	6	Flow through	6	0	0	0
4.8	0.05	109	6	Flow through	6	0	0	0
5.0	0.06	114	6	Flow through	6	0	0	0
5.2	0.06	120	6	Flow through	6	0	0	0
5.4	0.06	126	6	Flow through	6	0	0	0
5.6	0.07	132	6	Flow through	6	0	0	0
5.8	0.07	138	6	Flow through	6	0	0	0
6.0	0.07	145	6	Flow through	6	0	0	0
6.2	0.08	152	7	Flow through	7	0	0	0
6.4	0.08	159	7	Flow through	7	0	0	0
6.6	0.08	166	7	Flow through	7	0	0	0
6.8	0.09	174	8	Flow through	8	0	0	0
7.0	0.09	182	8	Flow through	8	0	0	0
7.2	0.09	191	9	Flow through	9	0	0	0
7.4	0.10	200	9	Flow through	9	0	0	0
7.6	0.10	209	9	Flow through	9	0	0	0
7.8	0.11	219	10	Flow through	10	0	0	0
8.0	0.11	229	10	Flow through	10	0	0	0
8.2	0.12	240	11	Flow through	11	0	0	0
8.4	0.13	252	12	Flow through	12	0	0	0
8.6	0.13	265	13	Flow through	13	0	0	0
8.8	0.14	279	14	Flow through	14	0	0	0
9.0	0.15	293	15	Flow through	15	0	0	0
9.2	0.15	309	16	Flow through	16	0	0	0
9.4	0.16	326	17	Flow through	17	0	0	0
9.6	0.17	343	17	Flow through	17	0	0	0
9.8	0.18	361	18	Flow through	18	0	0	0
10.0	0.19	380	19	Flow through	19	0	0	0
10.2	0.20	401	21	Flow through	21	0	0	0
10.4	0.21	424	23	Flow through	23	0	0	0
10.6	0.22	448	25	Flow through	25	0	0	0
10.8	0.24	475	27	Flow through	27	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	1,421	ft ³
Design Event	1,421	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety	1	
4.2 - FocalPoint bed area	60	ft ²
4.3 - Storage volume above FocalPoint provided	170	ft ³
4.4 - Desired treatment time	24	hours
4.5 - Water Quality Volume treated prior to overflow?	☒ Yes	
4.6 - FocalPoint drain within desired time?	☒ Yes	
4.7 - Flow in excess of storage volume above	To RTank	

Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	1,421	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	3	3	Flow through	3	0	0	0
0.4	0.00	6	3	Flow through	3	0	0	0
0.6	0.01	9	3	Flow through	3	0	0	0
0.8	0.01	11	3	Flow through	3	0	0	0
1.0	0.01	14	3	Flow through	3	0	0	0
1.2	0.01	17	3	Flow through	3	0	0	0
1.4	0.01	20	3	Flow through	3	0	0	0
1.6	0.02	23	3	Flow through	3	0	0	0
1.8	0.02	26	3	Flow through	3	0	0	0
2.0	0.02	28	3	Flow through	3	0	0	0
2.2	0.02	31	3	Flow through	3	0	0	0
2.4	0.02	34	3	Flow through	3	0	0	0
2.6	0.03	37	3	Flow through	3	0	0	0
2.8	0.03	40	3	Flow through	3	0	0	0
3.0	0.03	44	3	Flow through	3	0	0	0
3.2	0.03	47	3	Flow through	3	0	0	0
3.4	0.04	50	3	Flow through	3	0	0	0
3.6	0.04	54	3	Flow through	3	0	0	0
3.8	0.04	57	4	Flow through	4	0	0	0
4.0	0.04	61	4	Flow through	4	0	0	0
4.2	0.05	65	4	Flow through	4	0	0	0
4.4	0.05	69	4	Flow through	4	0	0	0
4.6	0.05	73	4	Flow through	4	0	0	0
4.8	0.05	77	4	Flow through	4	0	0	0
5.0	0.06	81	4	Flow through	4	0	0	0
5.2	0.06	85	4	Flow through	4	0	0	0
5.4	0.06	89	4	Flow through	4	0	0	0
5.6	0.07	93	4	Flow through	4	0	0	0
5.8	0.07	98	4	Flow through	4	0	0	0
6.0	0.07	102	5	Flow through	5	0	0	0
6.2	0.08	107	5	Flow through	5	0	0	0
6.4	0.08	112	5	Flow through	5	0	0	0
6.6	0.08	117	5	Flow through	5	0	0	0
6.8	0.09	123	6	Flow through	6	0	0	0
7.0	0.09	129	6	Flow through	6	0	0	0
7.2	0.09	135	6	Flow through	6	0	0	0
7.4	0.10	141	6	Flow through	6	0	0	0
7.6	0.10	148	7	Flow through	7	0	0	0
7.8	0.11	155	7	Flow through	7	0	0	0
8.0	0.11	162	7	Flow through	7	0	0	0
8.2	0.12	170	8	Flow through	8	0	0	0
8.4	0.13	178	8	Flow through	8	0	0	0
8.6	0.13	187	9	Flow through	9	0	0	0
8.8	0.14	197	10	Flow through	10	0	0	0
9.0	0.15	207	10	Flow through	10	0	0	0
9.2	0.15	218	11	Flow through	11	0	0	0
9.4	0.16	230	12	Flow through	12	0	0	0
9.6	0.17	242	12	Flow through	12	0	0	0
9.8	0.18	255	13	Flow through	13	0	0	0
10.0	0.19	269	14	Flow through	14	0	0	0
10.2	0.20	283	15	Flow through	15	0	0	0
10.4	0.21	299	16	Flow through	16	0	0	0
10.6	0.22	316	17	Flow through	17	0	0	0
10.8	0.24	335	19	Flow through	19	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	1,137	ft ³
Design Event	1,137	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety	1	
4.2 - FocalPoint bed area	80	ft ²
4.3 - Storage volume above FocalPoint provided	47	ft ³
4.4 - Desired treatment time	<input checked="" type="text" value="24"/>	hours
4.5 - Water Quality Volume treated prior to overflow?	<input checked="" type="text" value="Yes"/>	
4.6 - FocalPoint drain within desired time?	<input checked="" type="text" value="Yes"/>	
4.7 - Flow in excess of storage volume above	<input checked="" type="text" value="To RTank"/>	

Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	1,137	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	2	2	Flow through	2	0	0	0
0.4	0.00	5	2	Flow through	2	0	0	0
0.6	0.01	7	2	Flow through	2	0	0	0
0.8	0.01	9	2	Flow through	2	0	0	0
1.0	0.01	11	2	Flow through	2	0	0	0
1.2	0.01	14	2	Flow through	2	0	0	0
1.4	0.01	16	2	Flow through	2	0	0	0
1.6	0.02	18	2	Flow through	2	0	0	0
1.8	0.02	20	2	Flow through	2	0	0	0
2.0	0.02	23	2	Flow through	2	0	0	0
2.2	0.02	25	2	Flow through	2	0	0	0
2.4	0.02	27	2	Flow through	2	0	0	0
2.6	0.03	30	3	Flow through	3	0	0	0
2.8	0.03	32	3	Flow through	3	0	0	0
3.0	0.03	35	3	Flow through	3	0	0	0
3.2	0.03	38	3	Flow through	3	0	0	0
3.4	0.04	40	3	Flow through	3	0	0	0
3.6	0.04	43	3	Flow through	3	0	0	0
3.8	0.04	46	3	Flow through	3	0	0	0
4.0	0.04	49	3	Flow through	3	0	0	0
4.2	0.05	52	3	Flow through	3	0	0	0
4.4	0.05	55	3	Flow through	3	0	0	0
4.6	0.05	58	3	Flow through	3	0	0	0
4.8	0.05	61	3	Flow through	3	0	0	0
5.0	0.06	64	3	Flow through	3	0	0	0
5.2	0.06	68	3	Flow through	3	0	0	0
5.4	0.06	71	3	Flow through	3	0	0	0
5.6	0.07	75	3	Flow through	3	0	0	0
5.8	0.07	78	4	Flow through	4	0	0	0
6.0	0.07	82	4	Flow through	4	0	0	0
6.2	0.08	86	4	Flow through	4	0	0	0
6.4	0.08	90	4	Flow through	4	0	0	0
6.6	0.08	94	4	Flow through	4	0	0	0
6.8	0.09	98	4	Flow through	4	0	0	0
7.0	0.09	103	5	Flow through	5	0	0	0
7.2	0.09	108	5	Flow through	5	0	0	0
7.4	0.10	113	5	Flow through	5	0	0	0
7.6	0.10	118	5	Flow through	5	0	0	0
7.8	0.11	124	6	Flow through	6	0	0	0
8.0	0.11	130	6	Flow through	6	0	0	0
8.2	0.12	136	6	Flow through	6	0	0	0
8.4	0.13	142	7	Flow through	7	0	0	0
8.6	0.13	150	7	Flow through	7	0	0	0
8.8	0.14	157	8	Flow through	8	0	0	0
9.0	0.15	166	8	Flow through	8	0	0	0
9.2	0.15	175	9	Flow through	9	0	0	0
9.4	0.16	184	9	Flow through	9	0	0	0
9.6	0.17	194	10	Flow through	10	0	0	0
9.8	0.18	204	10	Flow through	10	0	0	0
10.0	0.19	215	11	Flow through	11	0	0	0
10.2	0.20	227	12	Flow through	12	0	0	0
10.4	0.21	239	13	Flow through	13	0	0	0
10.6	0.22	253	14	Flow through	14	0	0	0
10.8	0.24	268	15	Flow through	15	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	1,237	ft ³
Design Event	1,237	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

4.2 - FocalPoint bed area ft²

4.3 - Storage volume above FocalPoint provided ft³

4.4 - Desired treatment time hours

4.5 - Water Quality Volume treated prior to overflow? ☒ Yes

4.6 - FocalPoint drain within desired time? ☒ Yes

4.7 - Flow in excess of storage volume above

Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	1,237	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	2	2	Flow through	2	0	0	0
0.4	0.00	5	2	Flow through	2	0	0	0
0.6	0.01	7	2	Flow through	2	0	0	0
0.8	0.01	10	2	Flow through	2	0	0	0
1.0	0.01	12	2	Flow through	2	0	0	0
1.2	0.01	15	2	Flow through	2	0	0	0
1.4	0.01	17	2	Flow through	2	0	0	0
1.6	0.02	20	2	Flow through	2	0	0	0
1.8	0.02	22	2	Flow through	2	0	0	0
2.0	0.02	25	2	Flow through	2	0	0	0
2.2	0.02	27	2	Flow through	2	0	0	0
2.4	0.02	30	3	Flow through	3	0	0	0
2.6	0.03	33	3	Flow through	3	0	0	0
2.8	0.03	35	3	Flow through	3	0	0	0
3.0	0.03	38	3	Flow through	3	0	0	0
3.2	0.03	41	3	Flow through	3	0	0	0
3.4	0.04	44	3	Flow through	3	0	0	0
3.6	0.04	47	3	Flow through	3	0	0	0
3.8	0.04	50	3	Flow through	3	0	0	0
4.0	0.04	53	3	Flow through	3	0	0	0
4.2	0.05	56	3	Flow through	3	0	0	0
4.4	0.05	60	3	Flow through	3	0	0	0
4.6	0.05	63	3	Flow through	3	0	0	0
4.8	0.05	67	3	Flow through	3	0	0	0
5.0	0.06	70	3	Flow through	3	0	0	0
5.2	0.06	74	4	Flow through	4	0	0	0
5.4	0.06	78	4	Flow through	4	0	0	0
5.6	0.07	81	4	Flow through	4	0	0	0
5.8	0.07	85	4	Flow through	4	0	0	0
6.0	0.07	89	4	Flow through	4	0	0	0
6.2	0.08	93	4	Flow through	4	0	0	0
6.4	0.08	97	4	Flow through	4	0	0	0
6.6	0.08	102	5	Flow through	5	0	0	0
6.8	0.09	107	5	Flow through	5	0	0	0
7.0	0.09	112	5	Flow through	5	0	0	0
7.2	0.09	117	5	Flow through	5	0	0	0
7.4	0.10	123	6	Flow through	6	0	0	0
7.6	0.10	129	6	Flow through	6	0	0	0
7.8	0.11	135	6	Flow through	6	0	0	0
8.0	0.11	141	6	Flow through	6	0	0	0
8.2	0.12	148	7	Flow through	7	0	0	0
8.4	0.13	155	7	Flow through	7	0	0	0
8.6	0.13	163	8	Flow through	8	0	0	0
8.8	0.14	171	8	Flow through	8	0	0	0
9.0	0.15	180	9	Flow through	9	0	0	0
9.2	0.15	190	10	Flow through	10	0	0	0
9.4	0.16	200	10	Flow through	10	0	0	0
9.6	0.17	211	11	Flow through	11	0	0	0
9.8	0.18	222	11	Flow through	11	0	0	0
10.0	0.19	234	12	Flow through	12	0	0	0
10.2	0.20	247	13	Flow through	13	0	0	0
10.4	0.21	260	14	Flow through	14	0	0	0
10.6	0.22	275	15	Flow through	15	0	0	0
10.8	0.24	292	16	Flow through	16	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)
Design Event

336 ft³
336 ft³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

10

ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

86

ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24

hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:

Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

336

ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	1	1	Flow through	1	0	0	0
0.4	0.00	1	1	Flow through	1	0	0	0
0.6	0.01	2	1	Flow through	1	0	0	0
0.8	0.01	3	1	Flow through	1	0	0	0
1.0	0.01	3	1	Flow through	1	0	0	0
1.2	0.01	4	1	Flow through	1	0	0	0
1.4	0.01	5	1	Flow through	1	0	0	0
1.6	0.02	5	1	Flow through	1	0	0	0
1.8	0.02	6	1	Flow through	1	0	0	0
2.0	0.02	7	1	Flow through	1	0	0	0
2.2	0.02	7	1	Flow through	1	0	0	0
2.4	0.02	8	1	Flow through	1	0	0	0
2.6	0.03	9	1	Flow through	1	0	0	0
2.8	0.03	10	1	Flow through	1	0	0	0
3.0	0.03	10	1	Flow through	1	0	0	0
3.2	0.03	11	1	Flow through	1	0	0	0
3.4	0.04	12	1	Flow through	1	0	0	0
3.6	0.04	13	1	Flow through	1	0	0	0
3.8	0.04	14	1	Flow through	1	0	0	0
4.0	0.04	14	1	Flow through	1	0	0	0
4.2	0.05	15	1	Flow through	1	0	0	0
4.4	0.05	16	1	Flow through	1	0	0	0
4.6	0.05	17	1	Flow through	1	0	0	0
4.8	0.05	18	1	Flow through	1	0	0	0
5.0	0.06	19	1	Flow through	1	0	0	0
5.2	0.06	20	1	Flow through	1	0	0	0
5.4	0.06	21	1	Flow through	1	0	0	0
5.6	0.07	22	1	Flow through	1	0	0	0
5.8	0.07	23	1	Flow through	1	0	0	0
6.0	0.07	24	1	Flow through	1	0	0	0
6.2	0.08	25	1	Flow through	1	0	0	0
6.4	0.08	26	1	Flow through	1	0	0	0
6.6	0.08	28	1	Flow through	1	0	0	0
6.8	0.09	29	1	Flow through	1	0	0	0
7.0	0.09	30	1	Flow through	1	0	0	0
7.2	0.09	32	1	Flow through	1	0	0	0
7.4	0.10	33	2	Flow through	2	0	0	0
7.6	0.10	35	2	Flow through	2	0	0	0
7.8	0.11	37	2	Flow through	2	0	0	0
8.0	0.11	38	2	Flow through	2	0	0	0
8.2	0.12	40	2	Flow through	2	0	0	0
8.4	0.13	42	2	Flow through	2	0	0	0
8.6	0.13	44	2	Flow through	2	0	0	0
8.8	0.14	47	2	Flow through	2	0	0	0
9.0	0.15	49	2	Flow through	2	0	0	0
9.2	0.15	52	3	Flow through	3	0	0	0
9.4	0.16	54	3	Flow through	3	0	0	0
9.6	0.17	57	3	Flow through	3	0	0	0
9.8	0.18	60	3	Flow through	3	0	0	0
10.0	0.19	64	3	Flow through	3	0	0	0
10.2	0.20	67	3	Flow through	3	0	0	0
10.4	0.21	71	4	Flow through	4	0	0	0
10.6	0.22	75	4	Flow through	4	0	0	0
10.8	0.24	79	4	Flow through	4	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	53	ft ³
Design Event	53	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety	1	
4.2 - FocalPoint bed area	135	ft ²
4.3 - Storage volume above FocalPoint provided	45	ft ³
4.4 - Desired treatment time	24	hours
4.5 - Water Quality Volume treated prior to overflow?	☒ Yes	
4.6 - FocalPoint drain within desired time?	☒ Yes	
4.7 - Flow in excess of storage volume above	To RTank	

Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	53	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0	0		0	0	0	0
0.2	0.00	0	0	Flow through	0	0	0	0
0.4	0.00	0	0	Flow through	0	0	0	0
0.6	0.01	0	0	Flow through	0	0	0	0
0.8	0.01	0	0	Flow through	0	0	0	0
1.0	0.01	1	0	Flow through	0	0	0	0
1.2	0.01	1	0	Flow through	0	0	0	0
1.4	0.01	1	0	Flow through	0	0	0	0
1.6	0.02	1	0	Flow through	0	0	0	0
1.8	0.02	1	0	Flow through	0	0	0	0
2.0	0.02	1	0	Flow through	0	0	0	0
2.2	0.02	1	0	Flow through	0	0	0	0
2.4	0.02	1	0	Flow through	0	0	0	0
2.6	0.03	1	0	Flow through	0	0	0	0
2.8	0.03	2	0	Flow through	0	0	0	0
3.0	0.03	2	0	Flow through	0	0	0	0
3.2	0.03	2	0	Flow through	0	0	0	0
3.4	0.04	2	0	Flow through	0	0	0	0
3.6	0.04	2	0	Flow through	0	0	0	0
3.8	0.04	2	0	Flow through	0	0	0	0
4.0	0.04	2	0	Flow through	0	0	0	0
4.2	0.05	2	0	Flow through	0	0	0	0
4.4	0.05	3	0	Flow through	0	0	0	0
4.6	0.05	3	0	Flow through	0	0	0	0
4.8	0.05	3	0	Flow through	0	0	0	0
5.0	0.06	3	0	Flow through	0	0	0	0
5.2	0.06	3	0	Flow through	0	0	0	0
5.4	0.06	3	0	Flow through	0	0	0	0
5.6	0.07	3	0	Flow through	0	0	0	0
5.8	0.07	4	0	Flow through	0	0	0	0
6.0	0.07	4	0	Flow through	0	0	0	0
6.2	0.08	4	0	Flow through	0	0	0	0
6.4	0.08	4	0	Flow through	0	0	0	0
6.6	0.08	4	0	Flow through	0	0	0	0
6.8	0.09	5	0	Flow through	0	0	0	0
7.0	0.09	5	0	Flow through	0	0	0	0
7.2	0.09	5	0	Flow through	0	0	0	0
7.4	0.10	5	0	Flow through	0	0	0	0
7.6	0.10	6	0	Flow through	0	0	0	0
7.8	0.11	6	0	Flow through	0	0	0	0
8.0	0.11	6	0	Flow through	0	0	0	0
8.2	0.12	6	0	Flow through	0	0	0	0
8.4	0.13	7	0	Flow through	0	0	0	0
8.6	0.13	7	0	Flow through	0	0	0	0
8.8	0.14	7	0	Flow through	0	0	0	0
9.0	0.15	8	0	Flow through	0	0	0	0
9.2	0.15	8	0	Flow through	0	0	0	0
9.4	0.16	9	0	Flow through	0	0	0	0
9.6	0.17	9	0	Flow through	0	0	0	0
9.8	0.18	10	0	Flow through	0	0	0	0
10.0	0.19	10	1	Flow through	1	0	0	0
10.2	0.20	11	1	Flow through	1	0	0	0
10.4	0.21	11	1	Flow through	1	0	0	0
10.6	0.22	12	1	Flow through	1	0	0	0
10.8	0.24	13	1	Flow through	1	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)
Design Event

856 ft³
856 ft³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

40

ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

84

ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24

hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:

Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

856

ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	2	2	Flow through	2	0	0	0
0.4	0.00	3	2	Flow through	2	0	0	0
0.6	0.01	5	2	Flow through	2	0	0	0
0.8	0.01	7	2	Flow through	2	0	0	0
1.0	0.01	9	2	Flow through	2	0	0	0
1.2	0.01	10	2	Flow through	2	0	0	0
1.4	0.01	12	2	Flow through	2	0	0	0
1.6	0.02	14	2	Flow through	2	0	0	0
1.8	0.02	15	2	Flow through	2	0	0	0
2.0	0.02	17	2	Flow through	2	0	0	0
2.2	0.02	19	2	Flow through	2	0	0	0
2.4	0.02	21	2	Flow through	2	0	0	0
2.6	0.03	23	2	Flow through	2	0	0	0
2.8	0.03	24	2	Flow through	2	0	0	0
3.0	0.03	26	2	Flow through	2	0	0	0
3.2	0.03	28	2	Flow through	2	0	0	0
3.4	0.04	30	2	Flow through	2	0	0	0
3.6	0.04	32	2	Flow through	2	0	0	0
3.8	0.04	35	2	Flow through	2	0	0	0
4.0	0.04	37	2	Flow through	2	0	0	0
4.2	0.05	39	2	Flow through	2	0	0	0
4.4	0.05	41	2	Flow through	2	0	0	0
4.6	0.05	44	2	Flow through	2	0	0	0
4.8	0.05	46	2	Flow through	2	0	0	0
5.0	0.06	49	2	Flow through	2	0	0	0
5.2	0.06	51	3	Flow through	3	0	0	0
5.4	0.06	54	3	Flow through	3	0	0	0
5.6	0.07	56	3	Flow through	3	0	0	0
5.8	0.07	59	3	Flow through	3	0	0	0
6.0	0.07	62	3	Flow through	3	0	0	0
6.2	0.08	64	3	Flow through	3	0	0	0
6.4	0.08	67	3	Flow through	3	0	0	0
6.6	0.08	71	3	Flow through	3	0	0	0
6.8	0.09	74	3	Flow through	3	0	0	0
7.0	0.09	77	4	Flow through	4	0	0	0
7.2	0.09	81	4	Flow through	4	0	0	0
7.4	0.10	85	4	Flow through	4	0	0	0
7.6	0.10	89	4	Flow through	4	0	0	0
7.8	0.11	93	4	Flow through	4	0	0	0
8.0	0.11	98	4	Flow through	4	0	0	0
8.2	0.12	102	5	Flow through	5	0	0	0
8.4	0.13	107	5	Flow through	5	0	0	0
8.6	0.13	113	5	Flow through	5	0	0	0
8.8	0.14	119	6	Flow through	6	0	0	0
9.0	0.15	125	6	Flow through	6	0	0	0
9.2	0.15	131	7	Flow through	7	0	0	0
9.4	0.16	138	7	Flow through	7	0	0	0
9.6	0.17	146	7	Flow through	7	0	0	0
9.8	0.18	154	8	Flow through	8	0	0	0
10.0	0.19	162	8	Flow through	8	0	0	0
10.2	0.20	171	9	Flow through	9	0	0	0
10.4	0.21	180	10	Flow through	10	0	0	0
10.6	0.22	191	10	Flow through	10	0	0	0
10.8	0.24	202	11	Flow through	11	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	1,240	ft ³
Design Event	1,240	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety	1	
4.2 - FocalPoint bed area	70	ft ²
4.3 - Storage volume above FocalPoint provided	109	ft ³
4.4 - Desired treatment time	24	hours
4.5 - Water Quality Volume treated prior to overflow?	☒ Yes	
4.6 - FocalPoint drain within desired time?	☒ Yes	
4.7 - Flow in excess of storage volume above	To RTank	

Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	1,240	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	2	2	Flow through	2	0	0	0
0.4	0.00	5	2	Flow through	2	0	0	0
0.6	0.01	7	2	Flow through	2	0	0	0
0.8	0.01	10	2	Flow through	2	0	0	0
1.0	0.01	12	2	Flow through	2	0	0	0
1.2	0.01	15	2	Flow through	2	0	0	0
1.4	0.01	17	2	Flow through	2	0	0	0
1.6	0.02	20	2	Flow through	2	0	0	0
1.8	0.02	22	2	Flow through	2	0	0	0
2.0	0.02	25	2	Flow through	2	0	0	0
2.2	0.02	27	2	Flow through	2	0	0	0
2.4	0.02	30	3	Flow through	3	0	0	0
2.6	0.03	33	3	Flow through	3	0	0	0
2.8	0.03	35	3	Flow through	3	0	0	0
3.0	0.03	38	3	Flow through	3	0	0	0
3.2	0.03	41	3	Flow through	3	0	0	0
3.4	0.04	44	3	Flow through	3	0	0	0
3.6	0.04	47	3	Flow through	3	0	0	0
3.8	0.04	50	3	Flow through	3	0	0	0
4.0	0.04	53	3	Flow through	3	0	0	0
4.2	0.05	57	3	Flow through	3	0	0	0
4.4	0.05	60	3	Flow through	3	0	0	0
4.6	0.05	63	3	Flow through	3	0	0	0
4.8	0.05	67	3	Flow through	3	0	0	0
5.0	0.06	70	3	Flow through	3	0	0	0
5.2	0.06	74	4	Flow through	4	0	0	0
5.4	0.06	78	4	Flow through	4	0	0	0
5.6	0.07	81	4	Flow through	4	0	0	0
5.8	0.07	85	4	Flow through	4	0	0	0
6.0	0.07	89	4	Flow through	4	0	0	0
6.2	0.08	93	4	Flow through	4	0	0	0
6.4	0.08	98	4	Flow through	4	0	0	0
6.6	0.08	102	5	Flow through	5	0	0	0
6.8	0.09	107	5	Flow through	5	0	0	0
7.0	0.09	112	5	Flow through	5	0	0	0
7.2	0.09	118	5	Flow through	5	0	0	0
7.4	0.10	123	6	Flow through	6	0	0	0
7.6	0.10	129	6	Flow through	6	0	0	0
7.8	0.11	135	6	Flow through	6	0	0	0
8.0	0.11	141	6	Flow through	6	0	0	0
8.2	0.12	148	7	Flow through	7	0	0	0
8.4	0.13	155	7	Flow through	7	0	0	0
8.6	0.13	163	8	Flow through	8	0	0	0
8.8	0.14	172	8	Flow through	8	0	0	0
9.0	0.15	181	9	Flow through	9	0	0	0
9.2	0.15	190	10	Flow through	10	0	0	0
9.4	0.16	201	10	Flow through	10	0	0	0
9.6	0.17	211	11	Flow through	11	0	0	0
9.8	0.18	222	11	Flow through	11	0	0	0
10.0	0.19	234	12	Flow through	12	0	0	0
10.2	0.20	247	13	Flow through	13	0	0	0
10.4	0.21	261	14	Flow through	14	0	0	0
10.6	0.22	276	15	Flow through	15	0	0	0
10.8	0.24	293	16	Flow through	16	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)
Design Event

596 ft³
596 ft³
Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

30 ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

75 ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24 hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:

Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

596 ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	1	1	Flow through	1	0	0	0
0.4	0.00	2	1	Flow through	1	0	0	0
0.6	0.01	4	1	Flow through	1	0	0	0
0.8	0.01	5	1	Flow through	1	0	0	0
1.0	0.01	6	1	Flow through	1	0	0	0
1.2	0.01	7	1	Flow through	1	0	0	0
1.4	0.01	8	1	Flow through	1	0	0	0
1.6	0.02	10	1	Flow through	1	0	0	0
1.8	0.02	11	1	Flow through	1	0	0	0
2.0	0.02	12	1	Flow through	1	0	0	0
2.2	0.02	13	1	Flow through	1	0	0	0
2.4	0.02	14	1	Flow through	1	0	0	0
2.6	0.03	16	1	Flow through	1	0	0	0
2.8	0.03	17	1	Flow through	1	0	0	0
3.0	0.03	18	1	Flow through	1	0	0	0
3.2	0.03	20	1	Flow through	1	0	0	0
3.4	0.04	21	1	Flow through	1	0	0	0
3.6	0.04	23	1	Flow through	1	0	0	0
3.8	0.04	24	1	Flow through	1	0	0	0
4.0	0.04	26	2	Flow through	2	0	0	0
4.2	0.05	27	2	Flow through	2	0	0	0
4.4	0.05	29	2	Flow through	2	0	0	0
4.6	0.05	30	2	Flow through	2	0	0	0
4.8	0.05	32	2	Flow through	2	0	0	0
5.0	0.06	34	2	Flow through	2	0	0	0
5.2	0.06	36	2	Flow through	2	0	0	0
5.4	0.06	37	2	Flow through	2	0	0	0
5.6	0.07	39	2	Flow through	2	0	0	0
5.8	0.07	41	2	Flow through	2	0	0	0
6.0	0.07	43	2	Flow through	2	0	0	0
6.2	0.08	45	2	Flow through	2	0	0	0
6.4	0.08	47	2	Flow through	2	0	0	0
6.6	0.08	49	2	Flow through	2	0	0	0
6.8	0.09	51	2	Flow through	2	0	0	0
7.0	0.09	54	2	Flow through	2	0	0	0
7.2	0.09	57	3	Flow through	3	0	0	0
7.4	0.10	59	3	Flow through	3	0	0	0
7.6	0.10	62	3	Flow through	3	0	0	0
7.8	0.11	65	3	Flow through	3	0	0	0
8.0	0.11	68	3	Flow through	3	0	0	0
8.2	0.12	71	3	Flow through	3	0	0	0
8.4	0.13	75	4	Flow through	4	0	0	0
8.6	0.13	78	4	Flow through	4	0	0	0
8.8	0.14	83	4	Flow through	4	0	0	0
9.0	0.15	87	4	Flow through	4	0	0	0
9.2	0.15	91	5	Flow through	5	0	0	0
9.4	0.16	96	5	Flow through	5	0	0	0
9.6	0.17	101	5	Flow through	5	0	0	0
9.8	0.18	107	5	Flow through	5	0	0	0
10.0	0.19	113	6	Flow through	6	0	0	0
10.2	0.20	119	6	Flow through	6	0	0	0
10.4	0.21	125	7	Flow through	7	0	0	0
10.6	0.22	133	7	Flow through	7	0	0	0
10.8	0.24	141	8	Flow through	8	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)

677

ft³

Design Event

677

ft³
Directions

Water Quality Volume calculated from previous Sheet

Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

50

ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

20

ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24

hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

677

ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	1	1	Flow through	1	0	0	0
0.4	0.00	3	1	Flow through	1	0	0	0
0.6	0.01	4	1	Flow through	1	0	0	0
0.8	0.01	5	1	Flow through	1	0	0	0
1.0	0.01	7	1	Flow through	1	0	0	0
1.2	0.01	8	1	Flow through	1	0	0	0
1.4	0.01	9	1	Flow through	1	0	0	0
1.6	0.02	11	1	Flow through	1	0	0	0
1.8	0.02	12	1	Flow through	1	0	0	0
2.0	0.02	14	1	Flow through	1	0	0	0
2.2	0.02	15	1	Flow through	1	0	0	0
2.4	0.02	16	1	Flow through	1	0	0	0
2.6	0.03	18	1	Flow through	1	0	0	0
2.8	0.03	19	1	Flow through	1	0	0	0
3.0	0.03	21	2	Flow through	2	0	0	0
3.2	0.03	22	2	Flow through	2	0	0	0
3.4	0.04	24	2	Flow through	2	0	0	0
3.6	0.04	26	2	Flow through	2	0	0	0
3.8	0.04	27	2	Flow through	2	0	0	0
4.0	0.04	29	2	Flow through	2	0	0	0
4.2	0.05	31	2	Flow through	2	0	0	0
4.4	0.05	33	2	Flow through	2	0	0	0
4.6	0.05	35	2	Flow through	2	0	0	0
4.8	0.05	36	2	Flow through	2	0	0	0
5.0	0.06	38	2	Flow through	2	0	0	0
5.2	0.06	40	2	Flow through	2	0	0	0
5.4	0.06	42	2	Flow through	2	0	0	0
5.6	0.07	44	2	Flow through	2	0	0	0
5.8	0.07	47	2	Flow through	2	0	0	0
6.0	0.07	49	2	Flow through	2	0	0	0
6.2	0.08	51	2	Flow through	2	0	0	0
6.4	0.08	53	2	Flow through	2	0	0	0
6.6	0.08	56	3	Flow through	3	0	0	0
6.8	0.09	58	3	Flow through	3	0	0	0
7.0	0.09	61	3	Flow through	3	0	0	0
7.2	0.09	64	3	Flow through	3	0	0	0
7.4	0.10	67	3	Flow through	3	0	0	0
7.6	0.10	70	3	Flow through	3	0	0	0
7.8	0.11	74	3	Flow through	3	0	0	0
8.0	0.11	77	3	Flow through	3	0	0	0
8.2	0.12	81	4	Flow through	4	0	0	0
8.4	0.13	85	4	Flow through	4	0	0	0
8.6	0.13	89	4	Flow through	4	0	0	0
8.8	0.14	94	5	Flow through	5	0	0	0
9.0	0.15	99	5	Flow through	5	0	0	0
9.2	0.15	104	5	Flow through	5	0	0	0
9.4	0.16	109	6	Flow through	6	0	0	0
9.6	0.17	115	6	Flow through	6	0	0	0
9.8	0.18	121	6	Flow through	6	0	0	0
10.0	0.19	128	6	Flow through	6	0	0	0
10.2	0.20	135	7	Flow through	7	0	0	0
10.4	0.21	143	8	Flow through	8	0	0	0
10.6	0.22	151	8	Flow through	8	0	0	0
10.8	0.24	160	9	Flow through	9	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)
Design Event

836 ft³
836 ft³
Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

60 ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

44 ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24 hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:

Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

836 ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	2	2	Flow through	2	0	0	0
0.4	0.00	3	2	Flow through	2	0	0	0
0.6	0.01	5	2	Flow through	2	0	0	0
0.8	0.01	7	2	Flow through	2	0	0	0
1.0	0.01	8	2	Flow through	2	0	0	0
1.2	0.01	10	2	Flow through	2	0	0	0
1.4	0.01	12	2	Flow through	2	0	0	0
1.6	0.02	13	2	Flow through	2	0	0	0
1.8	0.02	15	2	Flow through	2	0	0	0
2.0	0.02	17	2	Flow through	2	0	0	0
2.2	0.02	18	2	Flow through	2	0	0	0
2.4	0.02	20	2	Flow through	2	0	0	0
2.6	0.03	22	2	Flow through	2	0	0	0
2.8	0.03	24	2	Flow through	2	0	0	0
3.0	0.03	26	2	Flow through	2	0	0	0
3.2	0.03	28	2	Flow through	2	0	0	0
3.4	0.04	30	2	Flow through	2	0	0	0
3.6	0.04	32	2	Flow through	2	0	0	0
3.8	0.04	34	2	Flow through	2	0	0	0
4.0	0.04	36	2	Flow through	2	0	0	0
4.2	0.05	38	2	Flow through	2	0	0	0
4.4	0.05	40	2	Flow through	2	0	0	0
4.6	0.05	43	2	Flow through	2	0	0	0
4.8	0.05	45	2	Flow through	2	0	0	0
5.0	0.06	47	2	Flow through	2	0	0	0
5.2	0.06	50	3	Flow through	3	0	0	0
5.4	0.06	52	3	Flow through	3	0	0	0
5.6	0.07	55	3	Flow through	3	0	0	0
5.8	0.07	58	3	Flow through	3	0	0	0
6.0	0.07	60	3	Flow through	3	0	0	0
6.2	0.08	63	3	Flow through	3	0	0	0
6.4	0.08	66	3	Flow through	3	0	0	0
6.6	0.08	69	3	Flow through	3	0	0	0
6.8	0.09	72	3	Flow through	3	0	0	0
7.0	0.09	76	3	Flow through	3	0	0	0
7.2	0.09	79	4	Flow through	4	0	0	0
7.4	0.10	83	4	Flow through	4	0	0	0
7.6	0.10	87	4	Flow through	4	0	0	0
7.8	0.11	91	4	Flow through	4	0	0	0
8.0	0.11	95	4	Flow through	4	0	0	0
8.2	0.12	100	5	Flow through	5	0	0	0
8.4	0.13	105	5	Flow through	5	0	0	0
8.6	0.13	110	5	Flow through	5	0	0	0
8.8	0.14	116	6	Flow through	6	0	0	0
9.0	0.15	122	6	Flow through	6	0	0	0
9.2	0.15	128	6	Flow through	6	0	0	0
9.4	0.16	135	7	Flow through	7	0	0	0
9.6	0.17	142	7	Flow through	7	0	0	0
9.8	0.18	150	8	Flow through	8	0	0	0
10.0	0.19	158	8	Flow through	8	0	0	0
10.2	0.20	167	9	Flow through	9	0	0	0
10.4	0.21	176	9	Flow through	9	0	0	0
10.6	0.22	186	10	Flow through	10	0	0	0
10.8	0.24	197	11	Flow through	11	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)
Design Event

545 ft³
545 ft³
Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used?

Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety

1

Enter optional factor-of-safety

4.2 - FocalPoint bed area

40 ft²

Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)

4.3 - Storage volume above FocalPoint provided

19 ft³

Enter available surface storage volume (See Step 4.5)

4.4 - Desired treatment time

24 hours

Select 24, 48, 72 or 96 hrs from toggle

4.5 - Water Quality Volume treated prior to overflow?

Yes

If Yes = WQv has been treated

If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required

4.6 - FocalPoint drain within desired time?

Yes

If Yes = time goal has been met

If No = larger FocalPoint bed (Step 4.2) required

4.7 - Flow in excess of storage volume above

To RTank

Select routing location for overflow/bypass vol. from toggle:

Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow

No Overflow

ft³

Result = Volume ft³ treated prior to overflow/bypass

5.2 - Total volume treated

545

ft³

Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	1	1	Flow through	1	0	0	0
0.4	0.00	2	1	Flow through	1	0	0	0
0.6	0.01	3	1	Flow through	1	0	0	0
0.8	0.01	4	1	Flow through	1	0	0	0
1.0	0.01	5	1	Flow through	1	0	0	0
1.2	0.01	7	1	Flow through	1	0	0	0
1.4	0.01	8	1	Flow through	1	0	0	0
1.6	0.02	9	1	Flow through	1	0	0	0
1.8	0.02	10	1	Flow through	1	0	0	0
2.0	0.02	11	1	Flow through	1	0	0	0
2.2	0.02	12	1	Flow through	1	0	0	0
2.4	0.02	13	1	Flow through	1	0	0	0
2.6	0.03	14	1	Flow through	1	0	0	0
2.8	0.03	16	1	Flow through	1	0	0	0
3.0	0.03	17	1	Flow through	1	0	0	0
3.2	0.03	18	1	Flow through	1	0	0	0
3.4	0.04	19	1	Flow through	1	0	0	0
3.6	0.04	21	1	Flow through	1	0	0	0
3.8	0.04	22	1	Flow through	1	0	0	0
4.0	0.04	23	1	Flow through	1	0	0	0
4.2	0.05	25	1	Flow through	1	0	0	0
4.4	0.05	26	1	Flow through	1	0	0	0
4.6	0.05	28	2	Flow through	2	0	0	0
4.8	0.05	29	2	Flow through	2	0	0	0
5.0	0.06	31	2	Flow through	2	0	0	0
5.2	0.06	33	2	Flow through	2	0	0	0
5.4	0.06	34	2	Flow through	2	0	0	0
5.6	0.07	36	2	Flow through	2	0	0	0
5.8	0.07	37	2	Flow through	2	0	0	0
6.0	0.07	39	2	Flow through	2	0	0	0
6.2	0.08	41	2	Flow through	2	0	0	0
6.4	0.08	43	2	Flow through	2	0	0	0
6.6	0.08	45	2	Flow through	2	0	0	0
6.8	0.09	47	2	Flow through	2	0	0	0
7.0	0.09	49	2	Flow through	2	0	0	0
7.2	0.09	52	2	Flow through	2	0	0	0
7.4	0.10	54	2	Flow through	2	0	0	0
7.6	0.10	57	3	Flow through	3	0	0	0
7.8	0.11	59	3	Flow through	3	0	0	0
8.0	0.11	62	3	Flow through	3	0	0	0
8.2	0.12	65	3	Flow through	3	0	0	0
8.4	0.13	68	3	Flow through	3	0	0	0
8.6	0.13	72	3	Flow through	3	0	0	0
8.8	0.14	75	4	Flow through	4	0	0	0
9.0	0.15	79	4	Flow through	4	0	0	0
9.2	0.15	84	4	Flow through	4	0	0	0
9.4	0.16	88	4	Flow through	4	0	0	0
9.6	0.17	93	5	Flow through	5	0	0	0
9.8	0.18	98	5	Flow through	5	0	0	0
10.0	0.19	103	5	Flow through	5	0	0	0
10.2	0.20	109	6	Flow through	6	0	0	0
10.4	0.21	115	6	Flow through	6	0	0	0
10.6	0.22	121	7	Flow through	7	0	0	0
10.8	0.24	129	7	Flow through	7	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	2,354	ft ³
Design Event	2,354	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety	1	
4.2 - FocalPoint bed area	120	ft ²
4.3 - Storage volume above FocalPoint provided	198	ft ³
4.4 - Desired treatment time	24	hours
4.5 - Water Quality Volume treated prior to overflow?	☒ Yes	
4.6 - FocalPoint drain within desired time?	☒ Yes	
4.7 - Flow in excess of storage volume above	To RTank	

Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	2,354	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	5	5	Flow through	5	0	0	0
0.4	0.00	9	5	Flow through	5	0	0	0
0.6	0.01	14	5	Flow through	5	0	0	0
0.8	0.01	19	5	Flow through	5	0	0	0
1.0	0.01	24	5	Flow through	5	0	0	0
1.2	0.01	28	5	Flow through	5	0	0	0
1.4	0.01	33	5	Flow through	5	0	0	0
1.6	0.02	38	5	Flow through	5	0	0	0
1.8	0.02	42	5	Flow through	5	0	0	0
2.0	0.02	47	5	Flow through	5	0	0	0
2.2	0.02	52	5	Flow through	5	0	0	0
2.4	0.02	57	5	Flow through	5	0	0	0
2.6	0.03	62	5	Flow through	5	0	0	0
2.8	0.03	67	5	Flow through	5	0	0	0
3.0	0.03	73	5	Flow through	5	0	0	0
3.2	0.03	78	5	Flow through	5	0	0	0
3.4	0.04	84	6	Flow through	6	0	0	0
3.6	0.04	89	6	Flow through	6	0	0	0
3.8	0.04	95	6	Flow through	6	0	0	0
4.0	0.04	101	6	Flow through	6	0	0	0
4.2	0.05	107	6	Flow through	6	0	0	0
4.4	0.05	114	6	Flow through	6	0	0	0
4.6	0.05	120	7	Flow through	7	0	0	0
4.8	0.05	127	7	Flow through	7	0	0	0
5.0	0.06	133	7	Flow through	7	0	0	0
5.2	0.06	141	7	Flow through	7	0	0	0
5.4	0.06	148	7	Flow through	7	0	0	0
5.6	0.07	155	7	Flow through	7	0	0	0
5.8	0.07	162	7	Flow through	7	0	0	0
6.0	0.07	169	8	Flow through	8	0	0	0
6.2	0.08	177	8	Flow through	8	0	0	0
6.4	0.08	185	8	Flow through	8	0	0	0
6.6	0.08	194	9	Flow through	9	0	0	0
6.8	0.09	203	9	Flow through	9	0	0	0
7.0	0.09	213	10	Flow through	10	0	0	0
7.2	0.09	223	10	Flow through	10	0	0	0
7.4	0.10	234	11	Flow through	11	0	0	0
7.6	0.10	245	11	Flow through	11	0	0	0
7.8	0.11	256	12	Flow through	12	0	0	0
8.0	0.11	268	12	Flow through	12	0	0	0
8.2	0.12	281	13	Flow through	13	0	0	0
8.4	0.13	295	14	Flow through	14	0	0	0
8.6	0.13	310	15	Flow through	15	0	0	0
8.8	0.14	326	16	Flow through	16	0	0	0
9.0	0.15	343	17	Flow through	17	0	0	0
9.2	0.15	361	18	Flow through	18	0	0	0
9.4	0.16	381	19	Flow through	19	0	0	0
9.6	0.17	401	20	Flow through	20	0	0	0
9.8	0.18	422	21	Flow through	21	0	0	0
10.0	0.19	445	23	Flow through	23	0	0	0
10.2	0.20	469	24	Flow through	24	0	0	0
10.4	0.21	496	26	Flow through	26	0	0	0
10.6	0.22	524	29	Flow through	29	0	0	0
10.8	0.24	555	31	Flow through	31	0	0	0

Water Quality Volume and Design Event

Water Quality Volume (WQv)	1,558	ft ³
Design Event	1,558	ft ³

Directions

Water Quality Volume calculated from previous Sheet
Total event volume calculated from previous sheet

System Configuration

Is FocalPoint used? ☒ Yes

Enter Yes if FocalPoint used. Enter No if runoff flows directly into RTank and proceed to RTank Design worksheet

Step 4 - FocalPoint Configuration

4.1 - FocalPoint Factor of Safety	1	
4.2 - FocalPoint bed area	80	ft ²
4.3 - Storage volume above FocalPoint provided	136	ft ³
4.4 - Desired treatment time	24	hours
4.5 - Water Quality Volume treated prior to overflow?	☒ Yes	
4.6 - FocalPoint drain within desired time?	☒ Yes	
4.7 - Flow in excess of storage volume above	To RTank	

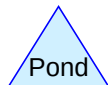
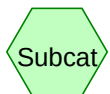
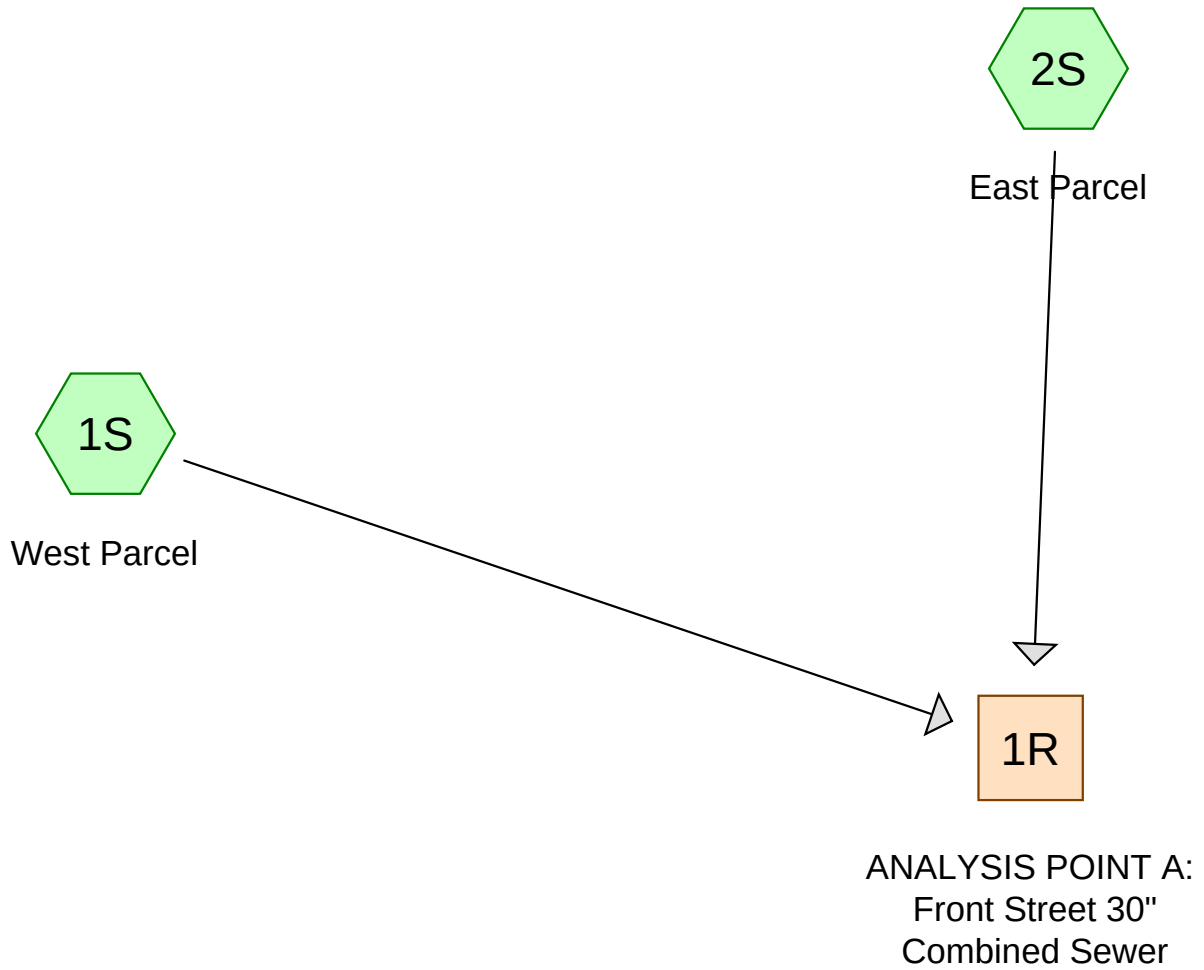
Enter optional factor-of-safety
Enter target FocalPoint footprint, 20 SF min. (See Step 4.5)
Enter available surface storage volume (See Step 4.5)
Select 24, 48, 72 or 96 hrs from toggle
If Yes = WQv has been treated
If No = larger FocalPoint bed (Step 4.2) and/or surface storage volume (Step 4.3) required
If Yes = time goal has been met
If No = larger FocalPoint bed (Step 4.2) required
Select routing location for overflow/bypass vol. from toggle:
Off site to disregard flow, RTank to store for retention / detention, harvesting, or infiltration

Step 5 - Evaluation of Design

5.1 - Volume treated prior to overflow	No Overflow	ft ³
5.2 - Total volume treated	1,558	ft ³

Result = Volume ft³ treated prior to overflow/bypass
Result = Total Volume ft³ treated

Time (hrs)	Rainfall Distribution	Cumulative Rainfall (ft ³)	Incremental Runoff into FocalPoint (ft ³)	FocalPoint Test (-)	Incremental Volume thru FocalPoint (ft ³)	Incremental Volume to Storage Above (ft ³)	Total Volume in Storage Above (ft ³)	Incremental Volume Overflow (ft ³)
0.0	0.00	0						
0.2	0.00	3	3	Flow through	3	0	0	0
0.4	0.00	6	3	Flow through	3	0	0	0
0.6	0.01	9	3	Flow through	3	0	0	0
0.8	0.01	12	3	Flow through	3	0	0	0
1.0	0.01	16	3	Flow through	3	0	0	0
1.2	0.01	19	3	Flow through	3	0	0	0
1.4	0.01	22	3	Flow through	3	0	0	0
1.6	0.02	25	3	Flow through	3	0	0	0
1.8	0.02	28	3	Flow through	3	0	0	0
2.0	0.02	31	3	Flow through	3	0	0	0
2.2	0.02	34	3	Flow through	3	0	0	0
2.4	0.02	38	3	Flow through	3	0	0	0
2.6	0.03	41	3	Flow through	3	0	0	0
2.8	0.03	44	3	Flow through	3	0	0	0
3.0	0.03	48	4	Flow through	4	0	0	0
3.2	0.03	52	4	Flow through	4	0	0	0
3.4	0.04	55	4	Flow through	4	0	0	0
3.6	0.04	59	4	Flow through	4	0	0	0
3.8	0.04	63	4	Flow through	4	0	0	0
4.0	0.04	67	4	Flow through	4	0	0	0
4.2	0.05	71	4	Flow through	4	0	0	0
4.4	0.05	75	4	Flow through	4	0	0	0
4.6	0.05	80	4	Flow through	4	0	0	0
4.8	0.05	84	4	Flow through	4	0	0	0
5.0	0.06	88	4	Flow through	4	0	0	0
5.2	0.06	93	5	Flow through	5	0	0	0
5.4	0.06	98	5	Flow through	5	0	0	0
5.6	0.07	102	5	Flow through	5	0	0	0
5.8	0.07	107	5	Flow through	5	0	0	0
6.0	0.07	112	5	Flow through	5	0	0	0
6.2	0.08	117	5	Flow through	5	0	0	0
6.4	0.08	123	5	Flow through	5	0	0	0
6.6	0.08	129	6	Flow through	6	0	0	0
6.8	0.09	135	6	Flow through	6	0	0	0
7.0	0.09	141	6	Flow through	6	0	0	0
7.2	0.09	148	7	Flow through	7	0	0	0
7.4	0.10	155	7	Flow through	7	0	0	0
7.6	0.10	162	7	Flow through	7	0	0	0
7.8	0.11	170	8	Flow through	8	0	0	0
8.0	0.11	178	8	Flow through	8	0	0	0
8.2	0.12	186	8	Flow through	8	0	0	0
8.4	0.13	195	9	Flow through	9	0	0	0
8.6	0.13	205	10	Flow through	10	0	0	0
8.8	0.14	216	11	Flow through	11	0	0	0
9.0	0.15	227	11	Flow through	11	0	0	0
9.2	0.15	239	12	Flow through	12	0	0	0
9.4	0.16	252	13	Flow through	13	0	0	0
9.6	0.17	265	13	Flow through	13	0	0	0
9.8	0.18	280	14	Flow through	14	0	0	0
10.0	0.19	294	15	Flow through	15	0	0	0
10.2	0.20	311	16	Flow through	16	0	0	0
10.4	0.21	328	17	Flow through	17	0	0	0
10.6	0.22	347	19	Flow through	19	0	0	0
10.8	0.24	368	21	Flow through	21	0	0	0



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.364	80	>75% Grass cover, Good, HSG D (1S, 2S)
1.573	98	Paved parking, HSG D (1S, 2S)
3.937	87	TOTAL AREA

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Soil Listing (all nodes)

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

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.364	0.000	2.364	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.000	1.573	0.000	1.573	Paved parking	1S, 2S
0.000	0.000	0.000	3.937	0.000	3.937	TOTAL AREA	

Front Street Pre Development

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

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Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3

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

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

Subcatchment1S: West Parcel

Runoff Area=71,262 sf 42.61% Impervious Runoff Depth>1.79"

Tc=6.0 min CN=88 Runoff=3.65 cfs 0.243 af

Subcatchment2S: East Parcel

Runoff Area=100,252 sf 38.07% Impervious Runoff Depth>1.71"

Tc=6.0 min CN=87 Runoff=4.93 cfs 0.327 af

Reach 1R: ANALYSISPOINT A: Front Street 30" Combined Sewer

Inflow=8.58 cfs 0.571 af

Outflow=8.58 cfs 0.571 af

Total Runoff Area = 3.937 ac Runoff Volume = 0.571 af Average Runoff Depth = 1.74"

60.04% Pervious = 2.364 ac 39.96% Impervious = 1.573 ac

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

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Summary for Subcatchment 1S: West Parcel

Runoff = 3.65 cfs @ 12.09 hrs, Volume= 0.243 af, Depth> 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
30,368	98	Paved parking, HSG D
40,894	80	>75% Grass cover, Good, HSG D
71,262	88	Weighted Average
40,894		57.39% Pervious Area
30,368		42.61% Impervious Area

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

Summary for Subcatchment 2S: East Parcel

Runoff = 4.93 cfs @ 12.09 hrs, Volume= 0.327 af, Depth> 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
38,164	98	Paved parking, HSG D
62,088	80	>75% Grass cover, Good, HSG D
100,252	87	Weighted Average
62,088		61.93% Pervious Area
38,164		38.07% Impervious Area

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

Summary for Reach 1R: ANALYSIS POINT A: Front Street 30" Combined Sewer

Inflow Area = 3.937 ac, 39.96% Impervious, Inflow Depth > 1.74" for 2-Year event

Inflow = 8.58 cfs @ 12.09 hrs, Volume= 0.571 af

Outflow = 8.58 cfs @ 12.09 hrs, Volume= 0.571 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

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

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Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3

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

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

Subcatchment1S: West Parcel

Runoff Area=71,262 sf 42.61% Impervious Runoff Depth>3.10"

Tc=6.0 min CN=88 Runoff=6.19 cfs 0.423 af

Subcatchment2S: East Parcel

Runoff Area=100,252 sf 38.07% Impervious Runoff Depth>3.00"

Tc=6.0 min CN=87 Runoff=8.49 cfs 0.576 af

Reach 1R: ANALYSISPOINT A: Front Street 30" Combined Sewer

Inflow=14.69 cfs 0.998 af

Outflow=14.69 cfs 0.998 af

Total Runoff Area = 3.937 ac Runoff Volume = 0.998 af Average Runoff Depth = 3.04"

60.04% Pervious = 2.364 ac 39.96% Impervious = 1.573 ac

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

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Summary for Subcatchment 1S: West Parcel

Runoff = 6.19 cfs @ 12.09 hrs, Volume= 0.423 af, Depth> 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
30,368	98	Paved parking, HSG D
40,894	80	>75% Grass cover, Good, HSG D
71,262	88	Weighted Average
40,894		57.39% Pervious Area
30,368		42.61% Impervious Area

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

Summary for Subcatchment 2S: East Parcel

Runoff = 8.49 cfs @ 12.09 hrs, Volume= 0.576 af, Depth> 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
38,164	98	Paved parking, HSG D
62,088	80	>75% Grass cover, Good, HSG D
100,252	87	Weighted Average
62,088		61.93% Pervious Area
38,164		38.07% Impervious Area

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

Summary for Reach 1R: ANALYSIS POINT A: Front Street 30" Combined Sewer

Inflow Area = 3.937 ac, 39.96% Impervious, Inflow Depth > 3.04" for 10-Year event

Inflow = 14.69 cfs @ 12.09 hrs, Volume= 0.998 af

Outflow = 14.69 cfs @ 12.09 hrs, Volume= 0.998 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

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

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Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3

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

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

Subcatchment1S: West Parcel

Runoff Area=71,262 sf 42.61% Impervious Runoff Depth>4.19"

Tc=6.0 min CN=88 Runoff=8.23 cfs 0.571 af

Subcatchment2S: East Parcel

Runoff Area=100,252 sf 38.07% Impervious Runoff Depth>4.08"

Tc=6.0 min CN=87 Runoff=11.37 cfs 0.783 af

Reach 1R: ANALYSISPOINT A: Front Street 30" Combined Sewer

Inflow=19.60 cfs 1.354 af

Outflow=19.60 cfs 1.354 af

Total Runoff Area = 3.937 ac Runoff Volume = 1.354 af Average Runoff Depth = 4.13"

60.04% Pervious = 2.364 ac 39.96% Impervious = 1.573 ac

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

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Summary for Subcatchment 1S: West Parcel

Runoff = 8.23 cfs @ 12.09 hrs, Volume= 0.571 af, Depth> 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
30,368	98	Paved parking, HSG D
40,894	80	>75% Grass cover, Good, HSG D
71,262	88	Weighted Average
40,894		57.39% Pervious Area
30,368		42.61% Impervious Area

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

Summary for Subcatchment 2S: East Parcel

Runoff = 11.37 cfs @ 12.09 hrs, Volume= 0.783 af, Depth> 4.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
38,164	98	Paved parking, HSG D
62,088	80	>75% Grass cover, Good, HSG D
100,252	87	Weighted Average
62,088		61.93% Pervious Area
38,164		38.07% Impervious Area

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

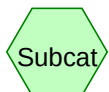
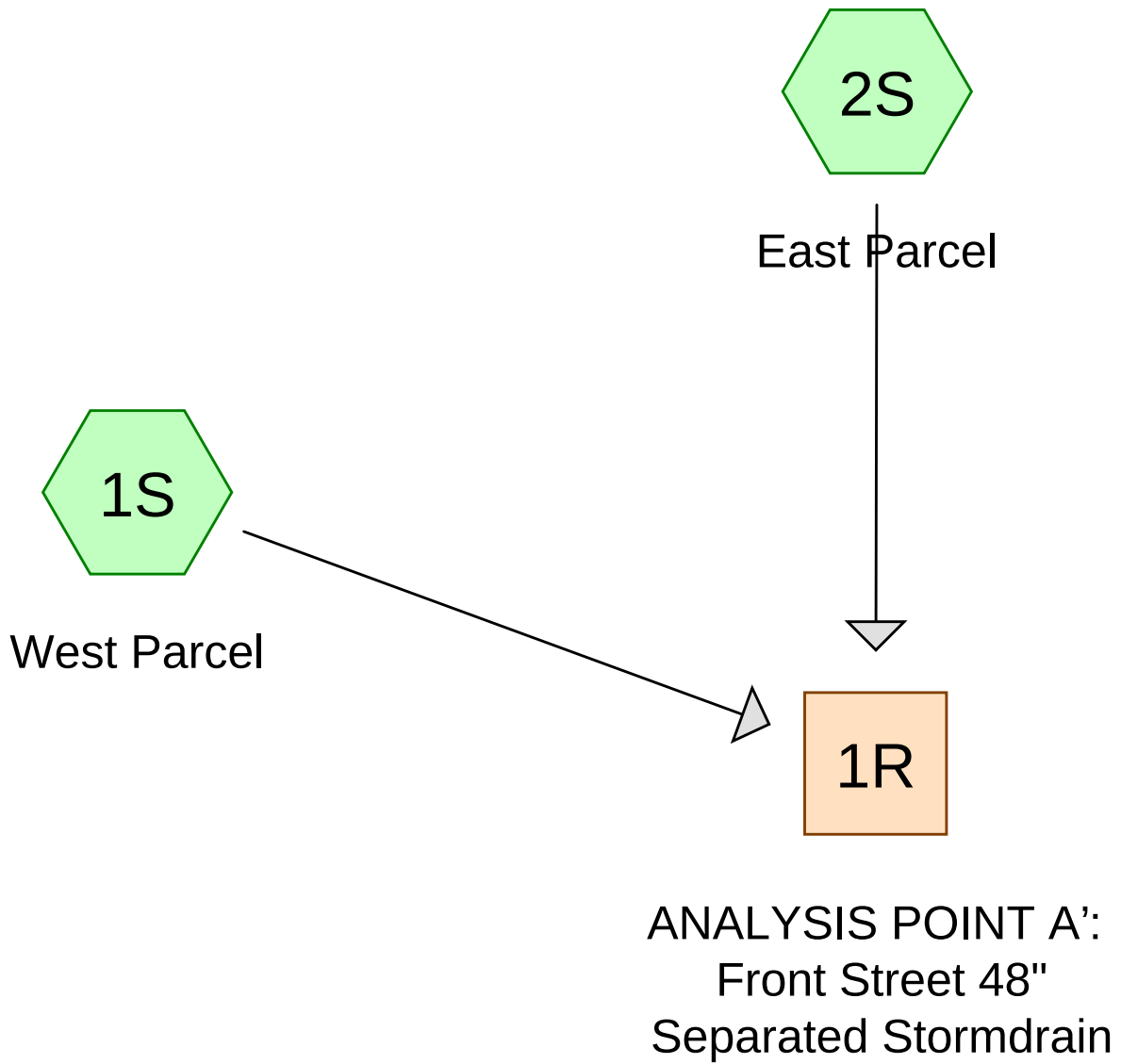
Summary for Reach 1R: ANALYSIS POINT A: Front Street 30" Combined Sewer

Inflow Area = 3.937 ac, 39.96% Impervious, Inflow Depth > 4.13" for 25-Year event

Inflow = 19.60 cfs @ 12.09 hrs, Volume= 1.354 af

Outflow = 19.60 cfs @ 12.09 hrs, Volume= 1.354 af, Atten= 0%, Lag= 0.0 min

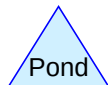
Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3



Subcat



Reach



Pond



Link

Routing Diagram for Front Street Post Development
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.435	80	>75% Grass cover, Good, HSG D (1S, 2S)
2.503	98	Paved parking, HSG D (1S, 2S)
3.937	91	TOTAL AREA

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Soil Listing (all nodes)

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

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	1.435	0.000	1.435	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.000	2.503	0.000	2.503	Paved parking	1S, 2S
0.000	0.000	0.000	3.937	0.000	3.937	TOTAL AREA	

Front Street Post Development

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

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Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3

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

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

Subcatchment1S: West Parcel

Runoff Area=71,256 sf 63.16% Impervious Runoff Depth>2.04"

Tc=6.0 min CN=91 Runoff=4.09 cfs 0.278 af

Subcatchment2S: East Parcel

Runoff Area=100,253 sf 63.85% Impervious Runoff Depth>2.04"

Tc=6.0 min CN=91 Runoff=5.75 cfs 0.391 af

Reach 1R: ANALYSISPOINT A': Front Street 48" Separated Stormdrain

Inflow=9.84 cfs 0.668 af

Outflow=9.84 cfs 0.668 af

Total Runoff Area = 3.937 ac Runoff Volume = 0.668 af Average Runoff Depth = 2.04"

36.44% Pervious = 1.435 ac 63.56% Impervious = 2.503 ac

Front Street Post Development

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

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Summary for Subcatchment 1S: West Parcel

Runoff = 4.09 cfs @ 12.09 hrs, Volume= 0.278 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
45,004	98	Paved parking, HSG D
26,252	80	>75% Grass cover, Good, HSG D
71,256	91	Weighted Average
26,252		36.84% Pervious Area
45,004		63.16% Impervious Area

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

Summary for Subcatchment 2S: East Parcel

Runoff = 5.75 cfs @ 12.09 hrs, Volume= 0.391 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
64,008	98	Paved parking, HSG D
36,245	80	>75% Grass cover, Good, HSG D
100,253	91	Weighted Average
36,245		36.15% Pervious Area
64,008		63.85% Impervious Area

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

Summary for Reach 1R: ANALYSIS POINT A': Front Street 48" Separated Stormdrain

Inflow Area = 3.937 ac, 63.56% Impervious, Inflow Depth > 2.04" for 2-Year event

Inflow = 9.84 cfs @ 12.09 hrs, Volume= 0.668 af

Outflow = 9.84 cfs @ 12.09 hrs, Volume= 0.668 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Front Street Post Development

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

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Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3

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

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

Subcatchment1S: West Parcel

Runoff Area=71,256 sf 63.16% Impervious Runoff Depth>3.40"

Tc=6.0 min CN=91 Runoff=6.64 cfs 0.463 af

Subcatchment2S: East Parcel

Runoff Area=100,253 sf 63.85% Impervious Runoff Depth>3.40"

Tc=6.0 min CN=91 Runoff=9.34 cfs 0.652 af

Reach 1R: ANALYSISPOINT A': Front Street 48" Separated Stormdrain

Inflow=15.97 cfs 1.115 af

Outflow=15.97 cfs 1.115 af

Total Runoff Area = 3.937 ac Runoff Volume = 1.115 af Average Runoff Depth = 3.40"
36.44% Pervious = 1.435 ac 63.56% Impervious = 2.503 ac

Front Street Post Development

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

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Summary for Subcatchment 1S: West Parcel

Runoff = 6.64 cfs @ 12.08 hrs, Volume= 0.463 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
45,004	98	Paved parking, HSG D
26,252	80	>75% Grass cover, Good, HSG D
71,256	91	Weighted Average
26,252		36.84% Pervious Area
45,004		63.16% Impervious Area

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

Summary for Subcatchment 2S: East Parcel

Runoff = 9.34 cfs @ 12.08 hrs, Volume= 0.652 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
64,008	98	Paved parking, HSG D
36,245	80	>75% Grass cover, Good, HSG D
100,253	91	Weighted Average
36,245		36.15% Pervious Area
64,008		63.85% Impervious Area

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

Summary for Reach 1R: ANALYSIS POINT A': Front Street 48" Separated Stormdrain

Inflow Area = 3.937 ac, 63.56% Impervious, Inflow Depth > 3.40" for 10-Year event

Inflow = 15.97 cfs @ 12.08 hrs, Volume= 1.115 af

Outflow = 15.97 cfs @ 12.08 hrs, Volume= 1.115 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

Front Street Post Development

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

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Time span=2.00-20.00 hrs, dt=0.01 hrs, 1801 points x 3

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

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

Subcatchment1S: West Parcel

Runoff Area=71,256 sf 63.16% Impervious Runoff Depth>4.51"

Tc=6.0 min CN=91 Runoff=8.66 cfs 0.615 af

Subcatchment2S: East Parcel

Runoff Area=100,253 sf 63.85% Impervious Runoff Depth>4.51"

Tc=6.0 min CN=91 Runoff=12.18 cfs 0.865 af

Reach 1R: ANALYSISPOINT A': Front Street 48" Separated Stormdrain

Inflow=20.83 cfs 1.480 af

Outflow=20.83 cfs 1.480 af

Total Runoff Area = 3.937 ac Runoff Volume = 1.480 af Average Runoff Depth = 4.51"
36.44% Pervious = 1.435 ac 63.56% Impervious = 2.503 ac

Front Street Post Development

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

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Summary for Subcatchment 1S: West Parcel

Runoff = 8.66 cfs @ 12.08 hrs, Volume= 0.615 af, Depth> 4.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
45,004	98	Paved parking, HSG D
26,252	80	>75% Grass cover, Good, HSG D
71,256	91	Weighted Average
26,252		36.84% Pervious Area
45,004		63.16% Impervious Area

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

Summary for Subcatchment 2S: East Parcel

Runoff = 12.18 cfs @ 12.08 hrs, Volume= 0.865 af, Depth> 4.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
64,008	98	Paved parking, HSG D
36,245	80	>75% Grass cover, Good, HSG D
100,253	91	Weighted Average
36,245		36.15% Pervious Area
64,008		63.85% Impervious Area

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

Summary for Reach 1R: ANALYSIS POINT A': Front Street 48" Separated Stormdrain

Inflow Area = 3.937 ac, 63.56% Impervious, Inflow Depth > 4.51" for 25-Year event

Inflow = 20.83 cfs @ 12.08 hrs, Volume= 1.480 af

Outflow = 20.83 cfs @ 12.08 hrs, Volume= 1.480 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-20.00 hrs, dt= 0.01 hrs / 3

18. City Master Plans

All portions of the proposed site plan have, to the best of our knowledge, been designed to be consistent / compliant with City related Master Plans, the current Comprehensive Plan (2017), as well as with off premises infrastructure, including sewer and stormwater, streets, trails, pedestrian and bicycle network, environmental management or other public facilities.

The Project is consistent with and complements the following Goals as outlined in the Portland Plan, as adopted in June, 2017:

HOUSING

The proposed Project meets the Local Goals for Housing in the following ways:

- *Increase, preserve, and modify the overall supply of housing City-wide to meet the needs, preferences, and financial capabilities of all Portland Residents. **This project replaces an aging housing complex with new housing stock, doubling the number of units and providing a mix of affordable and market rate apartments for its residents.***
- *Encourage additional contextually appropriate housing density to neighborhood centers, concentration of services and transportation nodes and corridors as a means of supporting complete neighborhoods. **The proposed project increases the density of the existing Front Street project, providing critical housing in a neighborhood that is within walking distance of Metro bus routes, Public open space (Payson Park) and existing commercial services on Washington Ave.***
- *Pursue policies that enable people that work in Portland to have the option to live in Portland. **The project builds on the existing family oriented apartments and is phasing the project to guarantee those relocated during construction can return to this neighborhood once the project is completed.***
- *Encourage quality sustainable design in new housing development. **The project is designed to meet the most stringent building requirements for efficiency, air quality, and long term maintenance and sustainability. The Owner and project design team are committed to meeting or exceeding these goals .***

The project also meets the future strategies for Housing, specifically :

1. ***Build on Existing Programs. This project takes advantage of new Affordable Housing bonuses defined in Division 30 as recently amended.***
2. ***Remove Housing Barriers. This Project provides for increased density while still compatible with existing neighborhood patterns and uses. It provides a wide range of housingtypes to meet individual needs of the residents.***
3. ***Promote Sustainability. The project replaces aging inefficient apartments with new, energy efficient, sustainable units. The design has accounted for resiliency and sea-level rise to insure future climate change impacts are accounted for.***

4. *Adapt affordable Housing.* **The project adapts an existing affordable Housing development to provide improved housing, increase density, and strengthen neighborhood connections and opportunities for social interaction with the surrounding neighborhood.**

RECREATION AND OPEN SPACE

The proposed project will meet the Local Goals for Recreation and Open Space in the following ways:

- *Provide high quality, well designed, safe and integrated parks, trails, public open spaces, and recreational opportunities accessible to all residents.* **The Proposed Project envisions passive and active recreation and open space within the project that integrates with the pedestrian circulation to provide easily accessible space for all residents. The spaces are flexible and usable by all residents and encourage social interaction with the adjacent residential neighborhood.**
- *Strengthen connections between open spaces.* **The project provides linkages to the existing neighborhood as well as Payson Park and encourages interaction between residents as well as neighbors.**

19. Utility Capacity to Serve Letters

We have requested letters from the appropriate utility companies expressing their ability to serve the project, and will submit these to the City once received.

The following utilities will service the project:

<u>Utility</u>	<u>Provider</u>	<u>Location</u>
Water Service	Portland Water District	<u>Front St. / ILLsley St. / West Presumpscot St.</u>
Sanitary Sewer	City of Portland	<u>Front St. / ILLsley St. / West Presumpscot St.</u>
Stormdrain	City of Portland	<u>Front St. / ILLsley St. / West Presumpscot St.</u>
Power	Central Maine Power	<u>Front St. / ILLsley St. / West Presumpscot St.</u>

Peak Flow Based on Fixture Count

Customer	Portland Housing Development Cooperation
Street Address	63 and 37 Front Street
City	Portland
Building	1

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	8	x	16	=	128
Bedpan Washers	10	x	0	=	0
Bidet	2	x	0	=	0
Dental Unit	2	x	0	=	0
Drinking Fountain - Public	2	x	2	=	4
Kitchen Sink	2.2	x	16	=	35.2
Lavatory	1.5	x	22	=	33
Showerhead (Shower Only)	2.5	x	0	=	0
Service Sink	4	x	1	=	4
Toilet -Flush Valve	35	x	2	=	70
-Tank Type	4	x	20	=	80
Urinal -Pedestal Flush Valve	35	x	0	=	0
-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)	4	x	1	=	4
Dishwasher	2	x	0	=	0
Washing Machine	6	x	3	=	18
Hose (50 ft. Wash Down) -1/2 in.	5	x	0	=	0
-5/8 in.	9	x	0	=	0
-3/4 in.	12	x	4	=	48

Combined Fixture Value Total 424.2

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)	
Irrigation Factor (1.16-Spray Systems, 0.40-Rotary Systems)	
Hose Bibs for Irrigation:	
Size	Fixture Value No. of Fixtures
1/2"	
5/8"	
3/4"	

Total Fixed Demand (Peak Flow) 0 gpm

Peak Flow Based on Fixture Count

Customer	Portland Housing Development Cooperation
Street Address	63 and 37 Front Street
City	Portland
Building	2

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	8	x	15	=	120
Bedpan Washers	10	x	0	=	0
Bidet	2	x	0	=	0
Dental Unit	2	x	0	=	0
Drinking Fountain - Public	2	x	0	=	0
Kitchen Sink	2.2	x	13	=	28.6
Lavatory	1.5	x	18	=	27
Showerhead (Shower Only)	2.5	x	0	=	0
Service Sink	4	x	1	=	4
Toilet -Flush Valve	35	x	0	=	0
-Tank Type	4	x	18	=	72
Urinal -Pedestal Flush Valve	35	x	0	=	0
-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)	4	x	1	=	4
Dishwasher	2	x	0	=	0
Washing Machine	6	x	3	=	18
Hose (50 ft. Wash Down) -1/2 in.	5	x	0	=	0
-5/8 in.	9	x	0	=	0
-3/4 in.	12	x	2	=	24

Combined Fixture Value Total 297.6

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)	
Irrigation Factor (1.16-Spray Systems, 0.40-Rotary Systems)	
Hose Bibs for Irrigation:	
Size	Fixture Value
1/2"	
5/8"	
3/4"	

Total Fixed Demand (Peak Flow) 0 gpm

Peak Flow Based on Fixture Count

Customer	Portland Housing Development Cooperation
Street Address	63 and 37 Front Street
City	Portland
Building	3

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	8	x	25	=	200
Bedpan Washers	10	x	0	=	0
Bidet	2	x	0	=	0
Dental Unit	2	x	0	=	0
Drinking Fountain - Public	2	x	0	=	0
Kitchen Sink	2.2	x	19	=	41.8
Lavatory	1.5	x	28	=	42
Showerhead (Shower Only)	2.5	x	0	=	0
Service Sink	4	x	1	=	4
Toilet -Flush Valve	35	x	0	=	0
-Tank Type	4	x	28	=	112
Urinal -Pedestal Flush Valve	35	x	0	=	0
-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)	4	x	1	=	4
Dishwasher	2	x	0	=	0
Washing Machine	6	x	5	=	30
Hose (50 ft. Wash Down) -1/2 in.	5	x	0	=	0
-5/8 in.	9	x	0	=	0
-3/4 in.	12	x	4	=	48

Combined Fixture Value Total 481.8

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)	
Irrigation Factor (1.16-Spray Systems, 0.40-Rotary Systems)	
Hose Bibs for Irrigation:	
Size	Fixture Value No. of Fixtures
1/2"	
5/8"	
3/4"	

Total Fixed Demand (Peak Flow) 0 gpm

Peak Flow Based on Fixture Count

Customer	Portland Housing Development Cooperation
Street Address	63 and 37 Front Street
City	Portland
Building	4

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	8	x	15	=	120
Bedpan Washers	10	x	0	=	0
Bidet	2	x	0	=	0
Dental Unit	2	x	0	=	0
Drinking Fountain - Public	2	x	0	=	0
Kitchen Sink	2.2	x	13	=	28.6
Lavatory	1.5	x	18	=	27
Showerhead (Shower Only)	2.5	x	0	=	0
Service Sink	4	x	1	=	4
Toilet -Flush Valve	35	x	0	=	0
-Tank Type	4	x	18	=	72
Urinal -Pedestal Flush Valve	35	x	0	=	0
-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)	4	x	1	=	4
Dishwasher	2	x	0	=	0
Washing Machine	6	x	3	=	18
Hose (50 ft. Wash Down) -1/2 in.	5	x	0	=	0
-5/8 in.	9	x	0	=	0
-3/4 in.	12	x	2	=	24

Combined Fixture Value Total 297.6

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)	
Irrigation Factor (1.16-Spray Systems, 0.40-Rotary Systems)	
Hose Bibs for Irrigation:	
Size	Fixture Value
1/2"	
5/8"	
3/4"	

Total Fixed Demand (Peak Flow) 0 gpm

Peak Flow Based on Fixture Count

Customer	Portland Housing Development Cooperation
Street Address	63 and 37 Front Street
City	Portland
Building	5

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	8	x	24	=	192
Bedpan Washers	10	x	0	=	0
Bidet	2	x	0	=	0
Dental Unit	2	x	0	=	0
Drinking Fountain - Public	2	x	0	=	0
Kitchen Sink	2.2	x	19	=	41.8
Lavatory	1.5	x	26	=	39
Showerhead (Shower Only)	2.5	x	0	=	0
Service Sink	4	x	1	=	4
Toilet -Flush Valve	35	x	0	=	0
-Tank Type	4	x	26	=	104
Urinal -Pedestal Flush Valve	35	x	0	=	0
-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)	4	x	1	=	4
Dishwasher	2	x	0	=	0
Washing Machine	6	x	5	=	30
Hose (50 ft. Wash Down) -1/2 in.	5	x	0	=	0
-5/8 in.	9	x	0	=	0
-3/4 in.	12	x	4	=	48

Combined Fixture Value Total 462.8

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)		
Irrigation Factor (1.16-Spray Systems, 0.40-Rotary Systems)		
Hose Bibs for Irrigation:		
	Size	Fixture Value
	1/2"	
	5/8"	
	3/4"	

Total Fixed Demand (Peak Flow) 0 gpm

Peak Flow Based on Fixture Count

Customer	Portland Housing Development Cooperation
Street Address	63 and 37 Front Street
City	Portland
Building	6

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	8	x	23	=	184
Bedpan Washers	10	x	0	=	0
Bidet	2	x	0	=	0
Dental Unit	2	x	0	=	0
Drinking Fountain - Public	2	x	2	=	4
Kitchen Sink	2.2	x	20	=	44
Lavatory	1.5	x	28	=	42
Showerhead (Shower Only)	2.5	x	0	=	0
Service Sink	4	x	1	=	4
Toilet -Flush Valve	35	x	2	=	70
-Tank Type	4	x	28	=	112
Urinal -Pedestal Flush Valve	35	x	0	=	0
-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)	4	x	1	=	4
Dishwasher	2	x	0	=	0
Washing Machine	6	x	5	=	30
Hose (50 ft. Wash Down) -1/2 in.	5	x	0	=	0
-5/8 in.	9	x	0	=	0
-3/4 in.	12	x	4	=	48

Combined Fixture Value Total

542

Customer Peak Demand From Fig. 4-2 or 4-3

Pressure Factor From Table 4-1

No. of Irrigation Sections (Areas of 100 sq. ft.)	
Irrigation Factor (1.16-Spray Systems, 0.40-Rotary Systems)	
Hose Bibs for Irrigation:	
Size	Fixture Value
1/2"	
5/8"	
3/4"	

Total Fixed Demand (Peak Flow)

0 gpm



Consulting
Engineers
and Scientists

October 10, 2017

Project 151.06170

MEANS Division, Portland Water District
225 Douglass Street
PO Box 3553
Portland, Maine 04104-3553

RE: Request for Capacity to Serve Determination.
Proposed 99 Unit Apartment Development
63 & 37 Front Street, Portland

To whom it may concern:

This letter is requesting a determination of whether the Portland Water District has the capacity to serve a proposed development located at 63 and 37 Front Street in Portland. The development will include six two-story buildings with a community space in Building 1. Please see the attached *Peak Flow Based on Fixture Count Spreadsheet*.

Enclosed, to assist in your review, are utility and drainage plans. It is our understanding that four (4) 4-inch water services currently serve the existing buildings. We propose to reuse these services to provide domestic water service for Buildings 1, 4, 5 and 6. New domestic services are proposed for Buildings 2 and 3 and a new fire service is proposed for each of the 6 buildings. Each service will have its own valve for independent operation; the only exception being a single fire service feeding Buildings 2 and 3.

Please let us know whether this proposed configuration is acceptable in terms of capacity and operation, and provide us with any specific service connection requirements. This development will have a sprinkler system for fire protection.

Please let me know if you have any questions or would like additional information: (207) 772-2891.

Sincerely,

A handwritten signature in blue ink that reads "John Mahoney". The signature is fluid and cursive, with the first name "John" and last name "Mahoney" clearly legible.

John Mahoney, P.E.
Project Engineer

Enclosure: Peak Flow Based on Fixture Count Spreadsheet & Utility Plans for the Front Street Redevelopment.

400 Commercial Street, Suite 404, Portland, Maine 04101, Tel (207) 772-2891, Fax (207) 772-3248
Pease International Tradeport, 112 Corporate Drive, Portsmouth, New Hampshire 03801, Tel (603) 436-1490
12 Kent Way, Suite 100, Byfield, Massachusetts 01922, Tel (978) 465-1822
2127 Hamilton Avenue, Hamilton, New Jersey 08619, Tel (609) 584-0090
60 Valley Street, Building F, Suite 106, Providence, Rhode Island 02909, Tel (401) 433-2160

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Consulting
Engineers
and Scientists

October 10, 2017

Project 151.06170

Jaime Cough
Central Maine Power Company
162 Canco Road
Portland, Maine 04103

RE: Electric Service for:
Proposed 99 Unit Redevelopment
63 & 37 Front Street, Portland
Account #: 4411941586001
Work Order#: 10300401291

Dear Jaime:

We are working with Front Street Housing Redevelopment, LP on the redevelopment of Portland Housing Authority's property located at 63 and 37 Front Street in Portland. This site currently contains 50 units within 19 buildings. The proposed development will consist of 6 buildings containing 99 residential apartment units.

All of the new buildings are currently proposed as walk-ups; however we would like to preserve the potential for an elevator in Building 6. All utilities will be underground and we are proposing three transformers. Please refer to the attached utility plans for additional information. We are currently working through load calculations and CMP's Easement Information Worksheet and will forward this information as it becomes available.

Please let us know you have any comments or concerns or if this proposed electric configuration is acceptable. Also, any guidance on next steps would be most appreciated.

Please let me know if you have any questions or would like additional information: (207) 772-2891.

Sincerely,

A handwritten signature in blue ink that reads "John Mahoney". The signature is fluid and cursive, with the first name "John" and last name "Mahoney" clearly legible.

John Mahoney, P.E.
Project Engineer

Enclosure: Utility Plans for the Front Street Redevelopment.

400 Commercial Street, Suite 404, Portland, Maine 04101, Tel (207) 772-2891, Fax (207) 772-3248
Pease International Tradeport, 112 Corporate Drive, Portsmouth, New Hampshire 03801, Tel (603) 436-1490
12 Kent Way, Suite 100, Byfield, Massachusetts 01922, Tel (978) 465-1822
2127 Hamilton Avenue, Hamilton, New Jersey 08619, Tel (609) 584-0090
60 Valley Street, Building F, Suite 106, Providence, Rhode Island 02909, Tel (401) 433-2160

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20. Solid Waste

All residential and office waste will be stored in appropriate trash/recycling containers internally in a trash rooms located within each building. These containers will be serviced by an independent solid waste contractor, on a regular basis. It will be the job of the building maintenance to move the trash/recycling receptacles out for the independent contractor.

All waste generated from the site preparation and general site work will be collected and sorted/separated on-site and disposed of properly, off-site, by a private contractor.

All construction waste will be collected and sorted/separated on-site in containers and managed by the general contractor.

21. Fire Safety Plan & Code Summary

Enclosed are a summary / analysis of the following building and fire codes:

1. NFPA 1 - 2006
2. IBC - 2015 + NFPA 101 - 2009

Date: September 28, 2017
 Project: Front Street Development
 Client: Front Street Redevelopment, LP

CODE ANALYSIS

Architecture
& Planning

115 Kingston St.
 Boston, MA 02111
 utilitedesign.com

Applicable Codes and Regulations

	Local Code	Model Code
Building	MUBEC	2015 IRC and IBC
Energy Code		2015 IECC
Mechanical		2013 ASHRAE
Plumbing	ME State Plumbing Code	IAMPO 2000 Uniform Plumbing Code
Electrical		NEC 2011
Radon		ASTM E-1465-08A
Life Safety		NFPA 101 - Life Safety Code
		NFPA 211 2003 (Chimneys, etc.)
		NFPA 1 - Fire Prevention Code
Accessibility and Fair Housing	2016 - Maine State Housing Authority- Quality Standards and Procedures Manual (2016-MSHA)	
	State Fair Housing - Maine Human Rights Act	
	Americans With Disabilities Act	
	Accessible and Usable Buildings and Facilities ICC / ANSI A-117.1 2009	
	Fair Housing Act (design manual)	
	Section 504	
	Uniform Physical Conditions Standards (UPCS)	

Height and Area Limitations

USE AND OCCUPANCY CLASSIFICATION		
	Apartments	
IBC 2015, Chapter 3, Section 310.4	R-2	Sleeping units with more than two dwellings, primarily permanent in nature
	Community Center	
IBC 2015 Chapter 3, Section 303.4	A-3	Community Halls
	Storage	
IBC 2015, Chapter 3, Section 311.2	S-1	Moderate Hazard
IBC 2015 Chapter 3, Section 311.1.1	Accessory Storage	Less than 100 SF, aggregate area not to exceed limits in Section 508.2
IBC 2015, Chapter 5, Section 503.1.2, IBC 2015, Chapter 5, Section 508	Buildings on the Same Lot	
IBC 2015, Chapter 4, Section 424	Children's Play Structures	

OCCUPANCY ALLOWABLE BUILDING HEIGHT			
Construction Type	Type VA		
Occupancy	A-3	R-2	S-1
Sprinkler System	NFPA-13	NFPA-13	NFPA-13
Allowable Height (IBC 2015, T504.3)	60'-0"	60'-0"	60'-0"
Allowable Stories (IBC 2015, 504.4)	2	3	3
Allowable Area (IBC 2015, T506.2)**	34,500 SF (I-Story)	36,000 SF	42,000 SF

**The allowable area listed does not include an area increase; the maximum allowable area increase will not exceed the current area of each building.

NFPA-13 system allows for 36,000SF at R-2 occupancy and VA construction.

Fire Resistant Construction

FIRE RESISTANT CONSTRUCTION

IBC 2015, Chapter 4, Section 420.2	Separation Walls:	Dwelling unit separation walls shall be constructed as FIRE PARTITIONS (See Section 708)
IBC 2015, Chapter 4, Section 420.3	Horizontal Separation:	Dwelling Unit Separation floors shall be constructed as HORIZONTAL ASSEMBLIES (See
IBC 2015, Chapter 5, Section 509	Incidental Uses	See for furnace and boiler limitations.

FIRE SUPPRESSION SYSTEM

IBC 2015, Chapter 4, Section 420.5	Automatic Sprinkler System	Equiped through out in accordance with SECTION 903.2.8, QUICKRESPONSE 903.3.2
Narrative	The building shall be fitted with fully automatic and supervised sprinkler systems. Provide design and components as necessary to meet NFPA 13 and local codes. Zone supervision will be provided for each story. Fire department connection type and location shall be per Portland Fire Department requirements. A hydrant flow test will be performed to confirm the municipal water supply.	

2016-MSHA

SMOKE ALARMS

IBC 2015, Chapter 4, Section 420.6	Fire Alarm & Smoke Alarms	Fire and smoke alarms shall be provided in accordance with SECTION 907.2.6, 907.2.8, 907.2.9, 907.2.10.
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FIRE-RESISTANCE RATING REQUIREMENTS

Table 601	Primary Structural Frame	1 Hour
	Bearing Walls	1 Hour
	Floor Construction	1 Hour
	Roof Construction	1 Hour
Section 711.2.4.3, exp.	Unit Horizontal Separation	1/2 Hour
Section 708.3, exp.2	Unit Separation Walls	1/2 Hour
Section 708.3, exp 1	Corridor Walls	1/2 Hour
Table 508.2.5	Boiler Rooms over 400,000 BTU/Hr	1 Hour or Sprinkered
Table 508.2.5	Laundry Rooms over 100 SF	1 Hour or Sprinkered
Table 508.2.5	Waste Collection over 100 SF	1 Hour or Sprinkered
Table 716.5	Opening, Corridor Doors	1/3 Hour

Means of Egress and Dimensional Requirements

IBC 2015, Chapter 10, Section 1007.1.1	1/3 separation distance with automatic sprinkler system		
Section 1011.2	44" minimum stairway width		
Table 1020.2	44" minimum corridor width		
IBC 2015, Chapter 12, Section 1208.2	Occupiable Ceiling Hts	7'-6"	
	Other Ceiling Heights	7'-0"	Bathrooms, Kitchens, Storage, Laundry, and Corridors

Energy Code

ENVELOPE EFFICIENCY

IECC 2015	Climate Zone: 6		
		Req'd	Provided
2016-MSHA		Whole Building Blower Door Testing	Air seal each unit and test each unit.
IBC 2015, Chapter 12, Table 1203.3	Unvented Attics and Unvented Enclosed Rafter Assemblies	R-25 Air Impermeable Insulation	R-26 Air Impermeable Insulation

IECC 2015, T402.1.2

Required R-Values

Req'd

Provided (Insulation Only)

Fenestration U-Factor	U-0.32	to meet or exceed req'd
Roof	R-49	R-58 (26+32)
Exterior Walls	R-20+5 or R13+10	R-40
Mass Walls	R-20	R-39
Floor	R-30	N/A
Slab on Grade	R-10	R-20

HVAC EMISSIONS REQUIREMENTS

The building HVAC will utilize Mitsubishi "Hyperheat" electric heat pumps with variable speed compressors. There will be no fossil fuel HVAC. The domestic hot water will be heated by high-efficiency natural gas water heaters with direct venting to the outside.

Sound Attenuation Requirements

Unit to Unit Floor and Wall Assemblies

IBC 2015, SECTION 1207	Req'd	Provided	
STC (non-site tested)	50		Dwelling and Sleeping Unit Separation
IIC (non-site tested)	50		Dwelling and Sleeping Unit Separation

Elevators

Section 713.4	Shaft Construction	1 Hour
Section 3006.2	Elevator Lobby Separation	Not required, connects 3-stories or less
Section 1009.2.1	Elevator Required in Accessible Means of Egress	Not required, accessible floor less than 4-stories above the level of exit discharge
Section 3002.4	Car Size	Not required to accommodate ambulance stretcher, connects less than 4-stories
Section 403.6.1	Fire Service Access	Not required less than 120 feet

NFPA 1 - Code Analysis

Use Group

6.1.8.1.5	Apartment Building	99 Total Units
6.1.2.1	A-2 Assembly	

Fire Protection Markings

10.12.1.1	Premises shall be marked
10.12.2	Shaftways to be Marked for Fire Safety
10.12.3	Stairway Identification

Building Construction

12.2	Construction: Shall comply with this section and referenced codes.
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Fire Ratings

12.7.1	Fire Barriers per NFPA 101
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Opening Protection

	Wall	Door
Table 12.7.4.2	Corridors	1/3 hour
	1-Hour Barriers	3/4 hour
	1-Hour Shafts and Exits	1 hour
	2-Hour Shafts and Exits	1.5 hour

Occupant Load

	Occupancy	
Table 14.8.1.2	Residential	1/200 GSF
	Assembly, Unconcentrated	1/15 Net
	Business Areas	1/100 GSF

Means of Egress

	Capacity Factor	
Table 14.8.3.1	Stair	0.3 in per person
	Other	0.2 in per person

Marking of Means of Egress

14.14	Per section
-------	-------------

Fire Suppression

13.3.2.15.2	NFPA 13R	IBC Governs
-------------	----------	-------------

Stand Pipes

13.2.2	Not required
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Fire Alarm System

13.7.1	Fire alarm system requirements
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Smoke Detectors

13.7.2.11.3	in every sleeping area, outside every sleeping area, and on all levels of the dwelling unit.
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Extinguishment Requirements

13.6	Portable Fire Extinguishers	
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Elevators Lobby

149.1.6.1	Shall have access to at least one exit.
-----------	---

Accessibility

	See section 14.10.4
1410.4.1	Shall not have less than two accessible means of egress.

Date: September 28, 2017
Project: Front Street Development
Client: Front Street Redevelopment, LP

CITY OF PORTLAND DESIGN MANUAL APPLICABLE DESIGN STANDARDS

a. Design Relationship to Site

Site Design and Vegetation Selection: The site organization of the buildings relates to and enhances the local context. The buildings are outward facing and set back to mimic adjacent neighbors. Parking areas have been pulled away from primary street edges to give way for more building frontage. A new driveway transects the east site. This new drive is designed to mimic the width of Presumpscot Street and has parallel parking for a street like feel.

Presumpscot Street bisects the developments; speeding local traffic on this street has been a point of concern from the neighborhood. The new design calls for a raised cross walk for traffic calming. This addresses the concern and stitches together the two sides of the development.

The buildings ground floor elevations and entries are located to fit into the existing topography.

The concept for the site pedestrian movement is to create a network of paths. Shared outdoors spaces are located along the pedestrian path network; some of these spaces are a central green, play areas, exterior spill out space from the community building, and a central plaza that leads people to a new street crossing to Payson Park. This pedestrian network and outdoor features are designed to encourage and invite both the Front Street and neighborhood residents through the development instead of around the Front Street development.

Vegetation has been selected from indigenous drought tolerant varieties, and the design is to enhance and strengthen the local street tree and wooded character of the neighborhood. The existing condition have approximately sixteen 'specimen' trees, while the proposed design will increase that count to at least fifty new trees. The pedestrian network is also enhanced by the new planted landscape concept.

Stormwater Management: Surface stormwater from roofs parking areas and green space will be directed towards multiple rain garden areas dispersed throughout the site. These rain gardens will be underdrained and designed to remove pollutants and sediment and to cool stormwater before it is discharged into the Back Cove, which discharges to Casco Bay. In general, the existing surface drainage patterns will be retained. Overflows from the rain gardens during heavy rain events will drain into catch basins. During extreme rain events, the rain gardens will overflow to the surface and the site will be graded to direct overflows towards the roadways and away from the buildings.

The site's existing stormwater system is connected to the City's combined drainage system, which is often overwhelmed during heavy rain events, resulting in Combined Sewer Overflows (CSO), the discharge of untreated sewerage into Casco Bay. The proposed stormdrain system will be completely separate from the sewer system, which will reduce the strain on the combined sewer system during heavy rains and, in turn, help to reduce the duration and frequency of CSO's.

Please see the Stormwater Management Narrative and attachments for additional information.

Disaster Prevention through Flood Resiliency: In order to prevent damage from flooding events, the building finish floor elevations will be at least 2.7 feet above FEMA's proposed Base Flood Elevations. Also, the site will be graded such that during extreme rain/flooding events, stormwater will overflow into the adjacent streets well before reaching the level of building finish floor elevations.

b. Internal Design Character and Relationship to Surrounding Neighborhood: The massing concept of the residential buildings meaningfully engages with the scale and residential fabric of the neighborhood. The height of the buildings undulates between two and three stories, and this is in keeping with the neighborhood's residences. The base massing of the residential buildings is two stories, and has features that echo the scale and variety found in the neighborhood. The projected and raised features animate the building facade, and give the space between the scale of a two story colonial home. Porches have been added to give the project a townhouse feel and encourage conviviality with neighbors.

c. Recreational Open Space

1. *External Buffers:* Recreational open spaces are buffered from neighboring homes with the proposed buildings and screening plant elements.
2. *Internal Buffers:* Ornamental trees screening, like amelanchier, is used between walkways and residential units at the interior elevations. At the street side facades, larger trees, like tulip trees, and grass strips are used to buffer ground floor residential units from the public sidewalk.
3. *Passive recreation open space:* A variety of recreation elements are integrated into the site design, like benches, lawn areas, covered spill out space from the community building, and shaded seating areas.
4. *Active recreation open space:* The proposed project feature multiple play areas, a central lawn for field play, and an improved connection to Payson Park.
5. *Private open space:* Ground floor units feature stoops to encourage conviviality with neighbors.

Date: September 28, 2017
Project: Front Street Development
Client: Front Street Redevelopment, LP

PORTLAND FIRE DEPARTMENT SITE REVIEW CHECKLIST

Client

Front Street Housing Revelopment, LP
c/o Portland Housing Development Corporation
14 Baxter Boulevard
Portland Maine 04101
207 773-4753

Architect

Utile, Inc.
115 Kingston Street
Boston, Massachusetts 02111
617 423-7200

1. See attached code report for building uses.
2. See A2.1 to A2.6 for building areas per story.
3. See A2.1 to A2.6 for elevations.
4. See attached code report for proposed fire protection.
5. See C4.1 to C4.2 for proposed hydrant locations
6. See C4.1 to C4.2 for water main size and locations
7. Access to all structures is provided on at least two sides.
8. See attached code summary

22. City Design Manual Standards

To the best of our knowledge, the proposed site plan adheres to the standards outlined in the City of Portland's Design Manual.

CITY OF PORTLAND DESIGN MANUAL:

(j) MULTIPLEX AND SMALL RESIDENTIAL LOT DEVELOPMENT LOCATED IN THE R-5 ZONE (1)

STANDARDS. Multiplexes and small residential lot development in the R-5 zone shall be designed to be architecturally compatible with the residential buildings in the surrounding neighborhood, as demonstrated by compliance with the R-5 Small Residential Lot Development and Multiplex Design Standards contained in Appendix 6 of this manual.

RESPONSE: To the best of our knowledge the proposed site plan adheres to the standards outlined in Design Manual.

APPENDIX 6 : Planning and Development Design Manual R-5 Small Residential Lot Development Design Standards April 2, 2010

RESPONSE: To the best of our knowledge the proposed site plan adheres to the standards outlined in Design Manual.

23. HVAC Equipment

Condenser units will be located on the roof of proposed buildings. There will be one condenser per unit. Please refer to Architectural Elevations for proposed location, and sequential cut sheets for product specifications.

Job Name:	
System Reference:	Date:



ACCESSORIES:

- Indoor Unit
- Condensate Pump (BlueDiamond X87-711/721; 115/230V)
 - Condensate Pump (Sauermann SI30-115/230; 115/230V)
 - Anti-Allergy Enzyme Filter (MAC-408FT-E)
 - Drain Pan Level Sensor (DPLS2)

- Outdoor Unit
- Outdoor Mounting Pad (ULTRILITE1)
 - 3-1/4" Mounting Base [Pair] (DSD-400P)
 - Air Outlet Guide (MAC-886SG)
 - Wall Mounting Bracket (QSWB2000M-1)

- Controls
- Wireless Controller (MHK1)
 - Wired Remote Controller PAR-32MAA (Requires MAC-333IF-E)
 - Wireless Interface for kumo cloud™ (PAC-WHS01WF-E)
 - Thermostat Interface (PAC-US444CN-1)

SPECIFICATIONS:

Rated Conditions (Capacity / Input)		
Cooling ¹	Btu/h / W	15,000 / 1,120
Heating at 47° F ²	Btu/h / W	18,000 / 1,410

Capacity Range		Minimum	Maximum
Cooling ¹	Btu/h	5,300	19,000
Heating at 47° F ²	Btu/h	5,700	25,000
Heating at 17° F ³	Btu/h	-	20,500
Heating at 5° F ⁴	Btu/h	-	18,000

¹ Cooling | Indoor: 80° F (27° C) DB / 67° F (19° C) WB; Outdoor: 95° F (35° C) DB / 75° F (24° C) WB*
² Heating at 47°F | Indoor: 70° F (21° C) DB / 60° F (16° C) WB; Outdoor: 47° F (8° C) DB / 43° F (6° C) WB*
³ Heating at 17° F | Indoor: 70° F (21° C) DB / 60° F (16° C) WB; Outdoor: 17° F (-8° C) DB / 15° F (-9° C) WB*
⁴ Heating at 5° F | Indoor: 70° F (21° C) DB / 60° F (16° C) WB; Outdoor: 5° F (-15° C) DB / 5° F (-15° C) WB*
* Rating Conditions per AHRI Standard:

Operating Conditons (Indoor Intake Air Temp.) (Max./ Min.)	
Cooling ⁵	90° F (32° C) DB / 67° F (19° C) DB
Heating	80° F (27° C) DB / 70° F (21° C) DB

Operating Conditons (Outdoor Intake Air Temp.) (Max./ Min.)	
Cooling ⁵	115 F (46° C) DB / 14° F (-10° C) DB
Heating	75° F (24° C) DB / -4° F (-20° C) DB**

⁵ Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.
** System cuts out at -18° F (-28° C) to avoid thermistor error and automatically restarts at -14° F (-26° C).

AHRI Efficiency Ratings	
SEER / HSPF	21.8 / 11.6
COP at 47° F / 17° F	3.7 / 2.71
Energy Star®	Yes

ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.

Specifications are subject to change without notice.

Electrical		
Electrical Power Requirements		208 / 230V, 1-Phase, 60 Hz
MCA: Indoor Outdoor	A	1 16
Recommended Fuse/ Breaker Size	A	20

Indoor Unit		
Blower Motor ECM Output		0.62 F.L.A. 30 W
SHF Moisture Removal		0.66 3.9 pt./h
Field Drainpipe Size O.D.	In.(mm)	5/8 (15)

Outdoor Unit		
Compressor		DC INVERTER-driven Twin Rotary
Fan Motor (ECM)	F.L.A.	0.93

Airflow Rate (Quiet - Lo - Med - Hi - Super Hi)			
Indoor (Cooling)	DRY	CFM	198-254-311-392-431
	WET		168-216-264-333-366
Indoor (Heating)	DRY		212-268-328-399-470
Outdoor			1,653 / 1,730

Sound Pressure Level (Quiet - Lo - Med - Hi - Super Hi)		
Indoor: Cooling Heating	dB(A)	28-33-38-43-47 29-35-40-45-49
Outdoor: Cooling Heating		51 55

Unit Dimensions		
Indoor Outdoor (H x W x D)	In.	23-5/8 x 29-17/32 x 8-15/32 34-5/8 x 33-1/16 x 13
	mm	600 x 750 x 215 880 x 840 x 330

Package Dimensions		
Indoor Outdoor (H x W x D)	In.	27-3/4 x 32-3/4 x 12 39 x 38-3/4 x 16-3/4
	mm	693 x 816 x 275 990 x 980 x 420

Unit/Package Weight		
Unit: Indoor Outdoor	Lbs.(kg)	33 (15) 124 (56)
Package: Indoor Outdoor	Lbs.(kg)	41 (18.5) 144 (65)

External Finish	
Indoor Outdoor	Munsell 1.0Y 9.2 / 0.2 Munsell No. 3Y 7.8 / 1.1

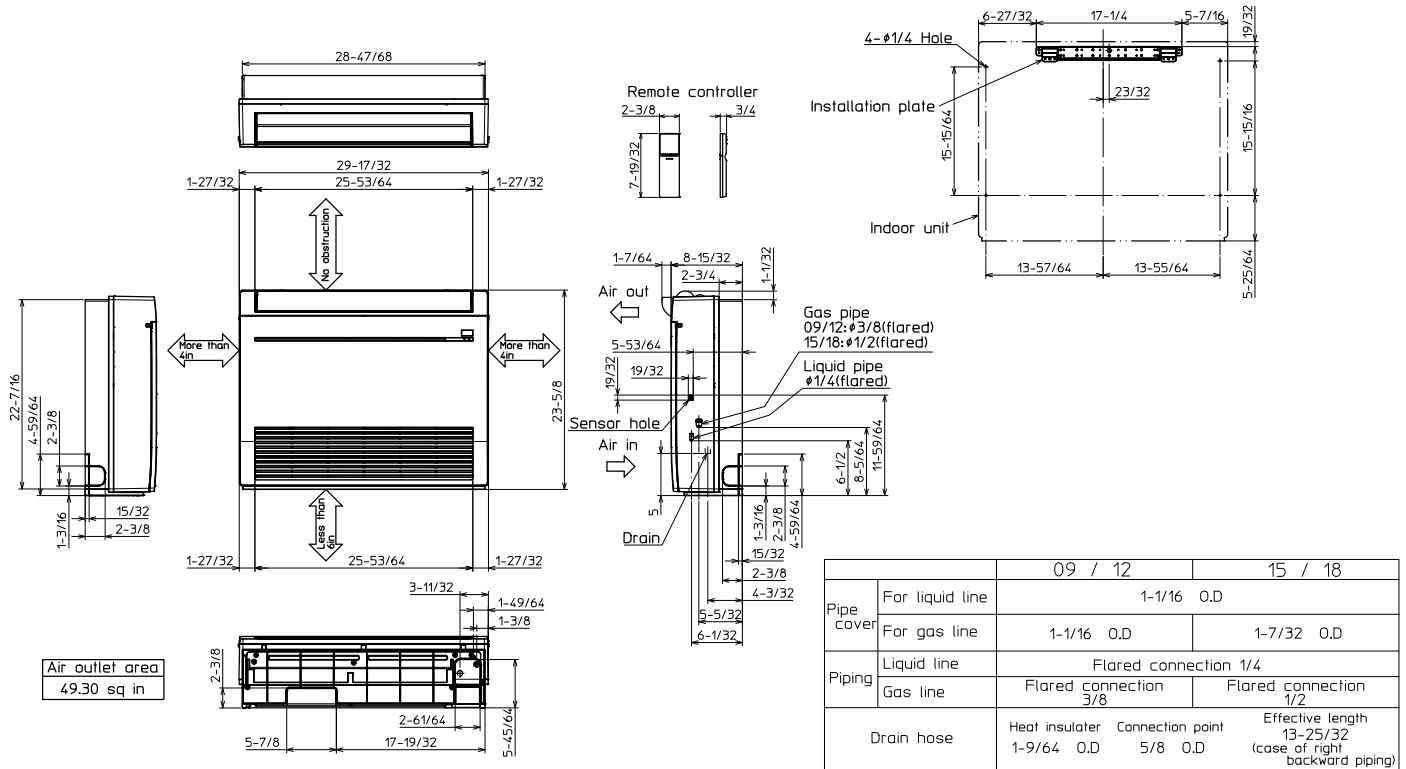
Refrigerant	R410A; 3 lb. 5 oz.
-------------	--------------------

Refrigerant Piping (Flared)		
Liquid (High Pressure)	In.(mm)	1/4 (6.35)
Gas (Low Pressure)		1/2 (12.7)
Max. Total Refrigerant Pipe Length (Height Diff.)	Ft. (m)	50 (15)
Max. Total Refrigerant Pipe Length (Length.)		100 (30)

DIMENSIONS: MFZ-KJ15NA-U1 & MUFZ-KJ15NAHZ-U1

MFZ-KJ15NA-U1

Unit: in.

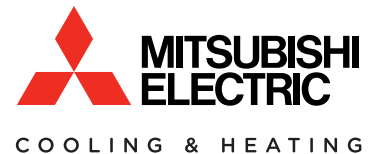
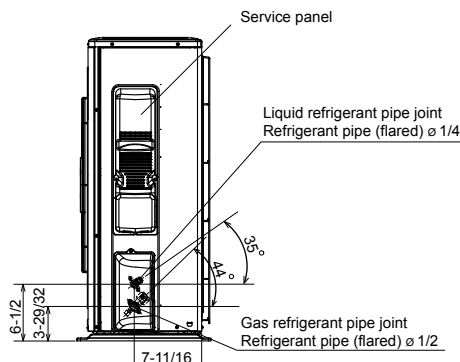
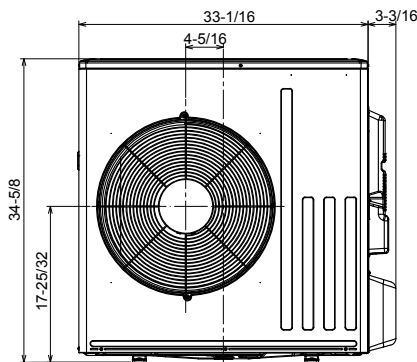
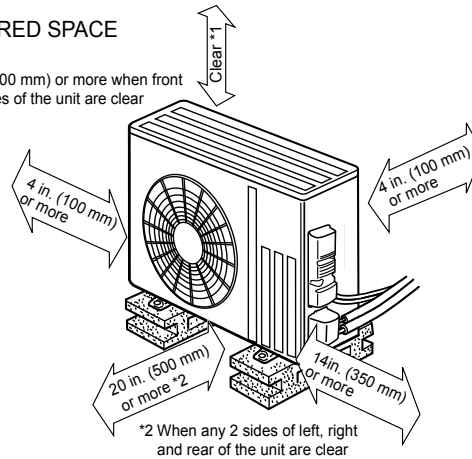
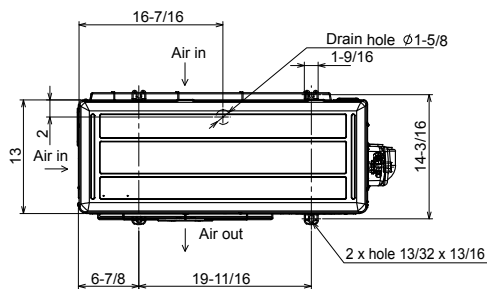


MUFZ-KJ15NAHZ-U1

Unit: in. (mm)

REQUIRED SPACE

*1 20 in. (500 mm) or more when front and sides of the unit are clear



1340 Satellite Boulevard, Suwanee, GA 30024
Toll Free: 800-433-4822 www.mehvac.com



24. Geotechnical Report

Please refer to the following report prepared by Ransom Consulting Inc.

**GEOTECHNICAL ENGINEERING REPORT
FRONT STREET REDEVELOPMENT
FRONT STREET AND WEST PRESUMPCOT STREET
PORTLAND, MAINE**

Prepared for:

Portland Housing Development Corporation
14 Baxter Boulevard
Portland, Maine

Prepared by:

Ransom Consulting, Inc.
Pease International Tradeport
112 Corporate Drive
Portsmouth, New Hampshire
(603) 436-1490

Project 151.06170
September 1, 2016

Jay P. Johonnett, P.E.
Project Engineer

Kenneth W. Milender, C.G., P.E.
Senior Geotechnical Engineer

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FIGURES:

- Figure 1. Site Location Map
Figure 2. Subsurface Exploration Plan

APPENDICES:

- Appendix A. Exploration Logs
Appendix B. Laboratory Test Results

1.0 INTRODUCTION

Ransom Consulting, Inc. (Ransom) has prepared this project Geotechnical Engineering Report for the proposed redevelopment of properties located along Front Street and West Presumpscot Street near Payson Park and the Seaside Healthcare facility in Portland, Maine (referred to as the “Site” in this report). This geotechnical engineering report has been prepared in accordance with our June 28, 2016 Scope of Work and Cost Estimate submitted to you (Ransom Reference no. 151.06170).

This geotechnical engineering evaluation was performed to obtain site-specific subsurface soil information and to make geotechnical evaluations and recommendations for the proposed development project. As completed, Ransom’s scope of services included the following items:

1. Subcontracting and coordinating with a drilling contractor, marking the site for utility clearance, and contacting the underground utility clearance system as required by law.
2. Providing technical monitoring for the subsurface explorations, obtaining soil samples, and preparing test boring logs.
3. Submitting selected soil samples for geotechnical soil tests.
4. Evaluating the field and laboratory data with respect to the proposed development and preparing this report of our findings, evaluations, and recommendations for the proposed design and construction.

2.0 SITE AND PROJECT DESCRIPTIONS

The Site consists of two parcels of land with street addresses of 37 and 63 Front Street in Portland, Maine. The Site parcels are located on the north side of Front Street, nearly bisected by West Presumpscot Street, and total approximately 3.94 acres combined. The Site is identified by the City of Portland Assessor's Office as Lot 1, of Block B, on Tax Map 166 (166-B-1), which corresponds to 37 Front Street; and Lot 1, of Block E on Tax Map 167 (167-E-1), which corresponds to 63 Front Street. A Site Location Map and a Subsurface Exploration Plan showing the existing conditions and the proposed Site layout are provided as Figure 1 and Figure 2, respectively.

2.1 Existing Conditions

The Site is located within the Portland West, Maine, U.S. Geological Survey 7.5-minute topographic quadrangle. Site topography generally slopes down to the south from an approximate elevation of 18 feet above mean sea level (MSL) at the northern Site boundary to approximately 12 feet above MSL at the southern Site boundary. The topography in the vicinity of the Site generally slopes down to the south and east, towards Back Cove and the Atlantic Ocean.

The Site is currently improved with 19 buildings, which include 18 multi-unit residential buildings, and 1 building used as a community center. Each building is a two-story, wood-framed, vinyl-sided structure, with footprints ranging from approximately 1,150 to 2,300 square feet. The Site buildings were constructed in 1971 on concrete mat foundations with full basements and concrete block basement walls. Ransom conducted a reconnaissance of the existing Site buildings and observed indications of significant differential settlement in these structures' foundation systems.

2.2 Proposed Redevelopment

Ransom understands that Portland Housing Development Corporation Authority intends to demolish the existing buildings at the Site and construct eight new buildings containing approximately 100 residential housing units (Figure 2). In addition to the new housing buildings, the redevelopment project will include a new community center, new utility services, parking areas and access driveways, green space, and pedestrian pathways. Our current understanding of the proposed development is based on review of the "Front Street Development" plan (dated August 22, 2016), as prepared by Carroll Associates Landscape Architects of Portland, Maine.

Proposed grading plans were not available for review at the time this report was finalized. Based on existing Site topography, Ransom estimates that cuts and fill generally less than approximately 1 to 2 feet will be required within the proposed building footprints. However, the existing Site buildings have basement levels that will require approximately 6 to 8 feet of fill to reach the design grades. Elsewhere across the Site, cuts and fills of generally less than 1 to 2 feet will likely be required to meet the proposed design elevations. The geotechnical design criteria used in our evaluations are as follows:

1. Load bearing wall loads of 5.5 to 6.3 kips per linear foot (klf), provided by Allied Engineering, Inc. (project structural engineers);
2. Maximum total and differential foundation settlements of 1 and ½ inch, respectively.

It is our understanding that the foundation elements for the proposed building will be interior and exterior strip footings, with no individual column footings.

3.0 SUBSURFACE INVESTIGATION

The geotechnical subsurface exploration program was conducted for the Site on August 10 through 12, 2016 and consisted of 15 test borings (designated B101 through B115) as shown on Figure 2. The explorations were not surveyed; their locations and elevations should be considered approximate.

3.1 Subsurface Explorations

Test drilling was performed by New England Boring Contractors, Inc. of Derry, New Hampshire, with a truck-mounted drill rig using 2.25-inch inside-diameter hollow-stem augers. Split-barrel sampling with standard penetration testing (ASTM D 1586), using a safety drive hammer, was generally conducted continuously from the ground surface to depths of 6 feet below ground surface (bgs), and at 5-foot intervals generally thereafter to the bottoms of the borings. Borings B114 and B115 were advanced as ledge probes from depths deeper than approximately 20 feet. Ledge probes were conducted by pushing the drilling rods to assess the depth to a dense stratum (i.e., glacial till or bedrock); soil samples were not collected in the ledge probe intervals.

A Ransom representative monitored subsurface exploration activities and prepared soil boring logs. Soil samples were placed in sealed containers and returned to Ransom's office for further evaluation. Soil samples were visually classified in general accordance with visual manual procedures (ASTM D 2488) and described using modified Burmister Soil Classification System descriptors. Exploration logs are included as Appendix A.

3.2 Laboratory Testing

Laboratory testing was performed on selected soil samples from the test borings. The geotechnical soil index testing (grain-size distributions, moisture content, Atterberg limits) was performed by ConTest Consultants, Inc. of Goffstown, New Hampshire; the laboratory report is included in Appendix B. The geotechnical laboratory tests were performed in general accordance with the applicable ASTM procedures.

4.0 SUBSURFACE CONDITIONS

Subsurface conditions at the Site were characterized by drilling into the unconsolidated, overburden soil formations at locations approximately within the proposed building footprints at the Site property. Test boring locations were limited to accessible portions of the Site.

Figure 2 illustrates the existing Site features, proposed buildings, and approximate exploration locations. The general characteristics of the subsurface strata are described below; refer to the logs in Appendix A for more detailed soil descriptions at specific locations and depths.

4.1 Subsurface Soils

Test borings were advanced to depths ranging from approximately 22 to 66 feet below existing grades. The subsurface explorations generally encountered surficial layers of asphalt pavement or topsoil overlying Fill Materials, marsh deposits, glaciomarine clay, and bedrock. The general characteristics of the subsurface layers are described below in order of increasing depth encountered below the ground surface.

Surficial Layers

Asphalt pavements or topsoil were penetrated at ground surface in each boring. The pavement consisted of asphalt concrete approximately 4 inches thick. Where encountered, the topsoil was approximately 3 to 6 inches thick (Appendix A).

Fill Materials

Fill Materials were observed in each of the test borings from directly below the surficial layers to depths of approximately 8 to 14 feet below grade. The Fill Materials generally consisted of two separate, distinct units. The upper unit, which was observed to extend to depths of approximately 1 to 9 feet below grade, generally consisted of brown fine to coarse sand with varying amounts of silt, clay, and gravel. A separate, distinct unit of Fill Materials was observed directly underlying the upper layer of Fill Materials notably containing a significant amount of refuse. This lower unit of Fill Materials was observed to extend to depths of approximately 8 to 14 feet below grade. The lower unit of Fill Materials generally consisted of brown to black, silty sand with gravel containing glass, plastic, rubber, wood, and ash. Standard penetration testing indicates that the Fill Materials are in a loose to medium dense condition.

Marsh Deposit

Test borings B102, B103, B107, B108, and B109 encountered a marsh deposit immediately below the Fill Materials (Appendix A). The thickness of the marsh deposit ranged from approximately 4 feet (in B102) to 9 feet (in B103 and B109). The marsh deposit generally consisted of gray silt and clay with sea shells and organics. Standard penetration testing indicates that the marsh deposits are in a very soft to soft condition, and we classify this soil formation as organic silt (USCS designation OL).

Glaciomarine Clay

A native clay deposit was encountered immediately below the Fill Materials or marsh deposit (where present) in each of the test borings. The full thickness of the clay ranged from approximately 36 feet (in B114) to 48 feet (in B115). Based on the results of laboratory testing and visual classification, the native clay is a medium to high plasticity clay (USCS designation: CH). This clay formation is typically

referred to as the Presumpscot Formation, and is encountered in the coastal areas of eastern New England that were formally submerged sea floor.

The Glaciomarine Clay formation is composed of two units: an upper, overconsolidated clay and a deeper, normally consolidated clay. Where the entire thickness of the overconsolidated zone was penetrated, the overconsolidated zone consisted of the uppermost 5 to 13 feet of the clay; standard penetration testing indicated that this zone of the clay is a medium stiff to hard, gray to olive gray silty clay.

The underlying deeper clay was a gray to olive gray silty clay. Standard penetration testing indicates that this zone of the clay is very soft to soft, and is likely normally consolidated.

Laboratory index tests (Appendix B) performed on samples of the Glaciomarine Clay deposit indicate that the clay has the following characteristics.

Property	Overconsolidated Clay Zone	Normally Consolidated Clay Zone
Water content	27%	43%
Liquid limit	58	50
Plastic limit	26	23
Plasticity index	32	27
Liquidity index	0.15	0.42

Drilling Refusal/Bedrock Surface

Drilling refusal, the depth at which the drilling equipment was not able to penetrate the deeper geologic units, was encountered in two soil borings (B1114 and B115). The depths of refusal were approximately 48 to 66 feet below existing grades. These refusals were encountered in ledge probes. It could not be determined whether the drilling refusals were the result of encountering competent bedrock, large boulders, or very dense soils at all locations. Additional geotechnical test drilling is recommended to further assess the drilling refusal surfaces at the Site.

4.2 Groundwater

Groundwater was encountered in each of the Site test borings. The depths to groundwater, as measured in the test borings, ranged from approximately 6 to 18 feet below ground surface; corresponding to elevations ranging from approximately 8 to -4 feet MSL. Note that groundwater levels at the Site will fluctuate due to season, temperature, precipitation, nearby underground utilities, tidal influence, and construction activity. Therefore, water levels at other times may differ from the observations and measurements made during drilling.

5.0 ENGINEERING EVALUATIONS

Evaluation of the subsurface conditions at the Site indicates that the building footprints are proposed for an area underlain by undocumented Fill Materials and soft, compressible Glaciomarine Clay. These subsurface conditions are considered to be unfavorable for the design and construction of a shallow, conventional spread footing foundation system for supporting the proposed structures without improvement of the soil conditions (for example, through preloading or impact piers) or employment of a deep foundation system (such as piles, drilled shafts, or piers).

Based on the soil index properties from our laboratory testing program and the structural loads, we estimate that the stresses imposed by the proposed buildings will cause immediate and long-term consolidation-related settlement exceeding several inches. Several technically feasible alternatives that are capable of supporting the proposed building were briefly evaluated and are outlined below.

Alternative	Benefits	Cons	Conclusion
Excavate and Replace Unsuitable Soils	Removes compressible materials that are the source of the consolidation-related settlement	Deep excavations and dewatering required Extensive lateral support required Export and disposal of geotechnically unsuitable and environmentally impacted soils Import and placement of granular fills required Cost	Infeasible due to cost, and the construction and logistical considerations
Preload surcharge	Mitigates post-construction settlement Relatively inexpensive	Requires excavation and replacement of Fill Materials Can require an extensive time period to compress the clay soils	Infeasible due to presence of thick Fill Materials overlying clay
Ground improvement (impact piers, controlled modulus columns)	Support of structures, roadways, and fills Mitigates post-construction settlement of structures and roadways	Possible obstructions Cost	Ground improvement by impact piers is a viable option for the vast majority of the Site. Additional test drilling will be required to further assess the viability in the southeast corner of the Site
Deep foundations (H piles, pipe piles, concrete piles, drilled piers or shafts)	Direct support of the building; structural loads transferred to underlying bedrock and/or stiff soils	Requires a structural slab and stiffer structural elements Overall costs	Recommend piles as viable option

It is our opinion that ground improvement and deep foundations are all viable options for supporting the proposed structural loads at the Site. The choice of solutions will depend on the final design plans and cost. Where feasible, ground improvement will generally be a more cost-competitive solution than deep foundations.

Note that the test borings drilled within the southeast corner of the Site property (B109 and B115, and possibly B108) did not appear to encounter the stiff, overconsolidated clay zone. We recommend

additional explorations to confirm the presence of the stiff clay zone in this area. If the stiff clay is not present in this area of the Site, buildings in this area would likely need to be supported on a deep foundation.

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6.0 DESIGN RECOMMENDATIONS

Based on the subsurface explorations and our geotechnical evaluations, Ransom presents the following recommendations for the design of the proposed Front Street redevelopment project in Portland, Maine.

6.1 Site Grades

We anticipate that engineered fills will be minimal to achieve the design Site grades outside the proposed building footprints. The presence of undocumented Fill Materials and soft, compressible clay soils below the Site indicates that addition of raise-in-grade fills should be minimized in order to reduce the degree of consolidation, and hence the post-construction settlement that could potentially occur with high fills. Proximity of landscaping berms or other features that require raise-in-grade fills to the building locations should be taken into account in the Site civil design.

6.2 Foundation Systems

The subsurface conditions beneath the Site include undocumented Fill Materials and soft, compressible glaciomarine clay. The subsurface conditions beneath the proposed building footprints are considered to be unsuitable for supporting the proposed buildings on a conventional, shallow foundation system. The conditions encountered and detailed in this Report will require either ground improvement (that would allow the buildings to be supported on a conventional shallow foundation) or a deep foundation system (such as driven piles, drilled shafts, or piers). It is our opinion that ground improvement by impact piers and supporting the buildings on pile foundations are the most feasible methods to support the proposed structural loads.

6.2.1 Ground Improvement Considerations

Ground improvement methods such as impact piers are considered technically feasible and economically viable alternatives capable of sufficiently improving the subsurface soils in-place to support the proposed construction. These alternative ground improvement methods densify the existing soils through lateral displacement methods and reinforce the existing soils by creating relatively stiff columns within the soil mass. Generation of spoils is minimized or eliminated.

We anticipate that 20-inch-diameter grouted impact piers would extend through the full thickness of the Fill Materials below the Site, and would extend to, and derive their strength from the stiff overconsolidated clay.

Footings for the buildings could be supported directly upon the impact piers. Shallow foundation design parameters (such as the soil bearing capacity) would be provided by the impact pier designer in conjunction with the project geotechnical engineer and the project structural engineer during the final design phase. When so prepared, we anticipate that the post-construction total and differential settlements would be less than 1 inch and ½ inch, respectively, following installation of ground improvement. Ransom estimates that ground improvement by impact piers to support the proposed building foundation systems would likely range in cost from \$275,000 to \$350,000 (approximately \$18,000 to \$24,000 per 3,000 square feet of building footprint, plus design and mobilization fees).

Based on the geotechnical test drilling that has been conducted at the Site, ground improvement by impact piers appears feasible in all areas of the Site, with the exception of the southeastern corner of the Site (B109 and B115) where the relatively stiff overconsolidated clay unit was not

observed. Prior to design of an impact pier ground improvement system, additional geotechnical test drilling will be required to further define the thickness of the Fill Materials and the overconsolidated clay unit, and to determine if the stiff overconsolidated clay unit is present at the southeastern corner of the Site. If the stiff clay unit is not present, proposed buildings in this area of the Site will require a deep foundation system.

6.2.2 Deep Foundation Alternatives

A deep foundation system was also identified as a technically feasible and economically viable alternative capable of providing support to the proposed buildings. The support of the structures would be from a pile system penetrating the Fill Materials and the clay deposit and deriving support from the underlying bedrock tied into a network of pile caps and grade beams that support a structural slab. Ransom conducted a preliminary evaluation of driven steel “H” piles and concrete-filled pipe piles for this project. Timber piles are considered to be infeasible for this project due to the likelihood for damage in an end-bearing configuration.

Design capacities of driven, steel, “H” piles, such as HP8x36 and HP10x42, can be expected in the 60 ton to 100 ton range, respectively. Allowable uplift capacities of 50-foot long, driven, steel HP8x36 “H” piles are estimated to be approximately 12 tons (factor of safety of 2.0). Greater uplift capacities can be expected with larger “H” pile sections (HP10x42).

Design capacities of driven, concrete-filled pipe piles, such as 8.625” outside diameter pipe piles with 0.322” wall thickness, can be expected in the 40- to 50-ton range. Allowable uplift capacities of 50-foot long, concrete-filled pipe piles are estimated to be approximately 10 tons (factor of safety of 2.0). Larger diameter pipe piles will provide a higher capacity at increased cost.

Ransom has estimated two potential deep foundation styles:

1. Timber piles driven through the Fill Materials to bearing on the underlying stiff clay would cost approximately \$200,000 to \$250,000 for the entire proposed development of six to eight buildings (40,000 square feet of footprint).
2. Steel “H” piles or concrete-filled pipe piles driven to end-bearing on the bedrock (estimated depths 50 to 60 feet) would cost approximately \$600,000 for the entire proposed development of six to eight buildings (40,000 square feet of footprint).

Pile Lengths

Proposed finished floor elevations have not yet been designed. For this analysis, Ransom has assumed that the proposed finished floor elevations will nearly match the existing Site grades. Assuming a pile cap thickness of 2.5 feet and pile embedment into the pile cap of 0.5 feet, we estimate the piles will be driven until their heads are at approximate elevations ranging from 9 to 16 feet above MSL. The piles should be designed as end-bearing piles that derive their capacity by fully penetrating the clay to termination on the bedrock surface at anticipated depths of 50 to 70 feet.

Negative Skin Friction

It is unlikely that downward-directed friction on the piles due to consolidation or settlement of the soils surrounding the piles will develop because the existing Fill Materials have been in-place for several decades. Accordingly, it is our opinion that the pile design does not need to account for the effects of negative skin friction on the pile shafts.

Rock Socketing

It is our opinion that the piles would not have to be socketed into the bedrock.

Pile Corrosion

Close proximity to the ocean and the marine origin of the clays through which the piles would be driven suggests that groundwater at deep levels below the Site may be brackish. Testing of soil or groundwater from these deep levels was not performed. The deep foundation system should be designed for subsurface conditions in which the corrosion potential is high; design should include reduction of the pile section to simulate the effects of corrosion (corrosion loss of $\frac{1}{8}$ inch (0.125")).

Lateral Loads

Lateral loads could be carried by the horizontal component of batter piles. All the batter piles should be driven to an angle no steeper than three vertical to one horizontal (3V:1H).

Transient lateral loads from seismic forces could also be resisted by the passive pressures generated by engineered fills placed between and against the grade beams. The passive pressures should be computed using the soil unit weights of 120 pcf (if using excavated, compacted native soils) or 135 pcf (if using imported granular structural fill) as the engineered fill.

Obstructions

The test borings drilled within the proposed building footprints did not encounter obstructions (large boulders, granite foundation blocks, for example). We do not anticipate the need for pre-augering through obstructions during driving of the piles.

Additional Geotechnical Analysis

A deep foundation alternative will require additional geotechnical test drilling to further define the depth to competent bedrock and confirm that the drilling refusals encountered in the initial test borings were on the competent bedrock surface.

6.3 Seismic Considerations

For the purposes of seismic design, the soil profile constitutes a "soft soil profile" and we assign a seismic site class of "E" to the Site (based on the conditions encountered to a depth of 66 feet). It is our opinion that the Site soils are not susceptible to liquefaction.

6.4 Groundwater and Drainage Issues

Groundwater was measured in the Site test borings at depths ranging from approximately 6 to 18 feet below the existing grades, corresponding to approximate elevations of 8 to -4 feet MSL. Due to the poor water-transmitting capability of the clay soils, the proposed building should be constructed with a perimeter foundation drainage system. It is our opinion that underslab drainage systems and/or vapor barriers are not necessary at this Site, based on geotechnical considerations.

Foundation Drains

Based on the observed depths to groundwater and poor water-transmitting capability of the clay soils, it is our opinion that the buildings should be constructed with perimeter foundation drainage systems. The perimeter drainage systems should consist of 4-inch diameter, rigid polyvinyl chloride (PVC) SDR35 pipe with perforations of $\frac{1}{4}$ to $\frac{1}{2}$ inch (openings should be oriented downward). The drain lines should be surrounded by a minimum of 6 inches of $\frac{3}{4}$ -inch crushed stone wrapped in a nonwoven geotextile filter fabric (Mirafi 140N or approved equivalent). The foundation drains should be placed adjacent to the exterior sides of the spread footings at a minimum depth of 5 feet below adjacent exterior grades to protect against frost.

Where possible, the foundation drains should be pitched down at a minimum slope of 0.5 percent in the direction of flow. Cleanouts should be provided at every other 90 degree bend in order to provide for future flushing the system as needed.

The foundation drains should be gravity drained to daylight or to a suitable system outlet. The final outlet of the drainage systems should be designed by the project Civil Engineer in consideration of all applicable municipal, state, and federal regulations. Roof downspout drains should not be connected to the foundation drain system, but rather should be separately tightlined to their discharge outlets.

Surrounding Site grades should be sloped away from the building in order to reduce the moisture available for forming frost and ice. Crushed stone drip edges, underlain by a sand drain that provides a hydraulic connection to the perimeter foundation drains, could be installed along the perimeter of the buildings.

7.0 EARTHWORK AND CONSTRUCTION RECOMMENDATIONS

Based on the subsurface explorations and our geotechnical evaluations, Ransom presents the following recommendations for the construction of the proposed Front Street redevelopment project in Portland, Maine.

7.1 Demolition of Existing Structures

The Site is currently occupied by several existing buildings which occupy a large portion of the proposed building footprints, parking and driveway areas. The Site buildings will be demolished as part of the proposed redevelopment. The Site buildings, foundation elements, underground utilities, and backfill soils will require removal to expose the subgrade soils prior to installation of impact piers or deep foundation systems.

All demolition debris, existing surficial or subsurface structural and related elements, floor slabs, basement walls, footings, drywells, drainage structures, septic tanks, catch basins, piping, underground storage tanks, leachfields and abandoned utilities located within the proposed building footprints and foundation bearing zones should be completely removed and disposed of off-site in a legal manner or reused in the on-site construction as recycled or reclaimed materials. In-place building foundation elements and slabs-on-grade may be left in place below parking and landscaped areas if the footings are not disturbed or moved during demolition and if they are at least 2 feet below the design grades. However, installation of ground improvement and/or deep foundations will require removal of these elements in order to allow for unobstructed installation.

7.2 Subgrade Preparation

All topsoil, debris, frozen soils, and loose or disturbed soils should be removed from areas receiving new construction. These materials should be stockpiled for potential reuse in later stages of construction, based on the recommendations of this report.

Existing foundations, slabs, and/or utilities associated with past uses should be removed from below the proposed building footprints. Subgrades should be compacted with at least four complete passes of a 10-ton vibratory drum roller in directions perpendicular to one another. Silty subgrades which are saturated or are observed to pump and weave during rolling should be rolled statically.

Unstable subgrade areas would be characterized by weaving or rutting of more than one inch during proofrolling. Any unstable areas identified should be undercut at least 12 inches, or to competent soil, and replaced with compacted structural fill or crushed stone. The depth of undercutting and type of backfill material should be selected with consideration of proposed use (i.e., building or pavement) and soil and weather conditions encountered during construction.

The contractor is responsible for construction means and methods and should anticipate the need for methods to prevent disturbance, softening, or rutting of subgrades, or damage to overlying soils resulting from construction traffic. Care must be taken to avoid disturbing subgrades by keeping construction traffic off of subgrades during wet conditions and/or inclement weather until a firm fill layer has been placed. Subgrade soils that become unstable should be undercut and replaced with structural fill or crushed stone as necessary.

Final foundation and floor slab subgrade preparation should include re-compaction of bearing surfaces. Care should be taken to limit disturbance to bearing surfaces prior to placement of concrete. Any loose,

softened, or disturbed material should be removed and replaced with compacted structural fill prior to placement of concrete. Excavated subgrades should not be left exposed overnight unless the forecast calls for above-freezing, clear conditions.

7.3 Earthwork in Wet Environments

Foundation subgrade soils will likely consist of the existing Fill Materials. Care must be taken to avoid disturbing subgrades by keeping construction traffic off of silty subgrades during wet conditions and/or inclement weather until a firm fill layer has been placed. To reduce disturbance of exposed subgrade soils, it will be important to divert runoff, provide positive grading to shed seepage and runoff, and to compact exposed subgrades to reduce rutting, ponding, and surface water infiltration.

The existing Fill Materials may be selectively reused as common fill, provided they are relatively dry and their moisture content can be controlled such that they can be compacted to at least 95 percent of the maximum dry density determined from ASTM D 1557. The existing Fill Materials will be sensitive to moisture and difficult to place and compact during wet weather and freezing conditions. Moisture-density relationships (proctor tests) should be determined at the start of construction to determine the appropriate range of working moisture contents.

7.4 Temporary Excavations

Construction Site safety, means and methods, and sequencing of construction activities is the sole responsibility of the Contractor. Under no circumstances should the following information be interpreted to mean that Ransom is assuming responsibility for construction Site safety, trench protection, or the Contractor's responsibilities. Such responsibility is not being implied and should not be inferred.

All temporary excavations should be performed according to Occupational Safety and Health Administration (OSHA) Standards (29 CFR 1926 Subpart P). It is our opinion that the existing Fill Materials that are likely to be excavated are OSHA Type C soils. Accordingly, temporary unbraced excavations should be cut no steeper than 1.5H:1V under dry or dewatered conditions.

7.5 Dewatering and Runoff Control

Groundwater was measured in the Site test borings at depths ranging from approximately 6 to 18 feet below the existing grades, corresponding to approximate elevations of 8 to -4 feet MSL. Because of the poor permeability of the clay soils, groundwater may be encountered in foundation and deep utility excavations and the contractor should be prepared to implement water controls as needed.

The contractor should anticipate the need for controlling runoff during wet periods; pumping from open sumps will likely provide adequate control of water within excavations during construction. Earthwork should be completed "in the dry." Subgrade soils that become unstable should be undercut and replaced with structural fill or crushed stone, as necessary. Excavation side slopes should be monitored for potential seepage and maintained to promote stability, accordingly.

Surface water runoff should be directed away from excavations to reduce dewatering efforts and to protect subgrades from becoming soft and unstable.

Temporary detention ponds, trenches, ditches, and dewatering sumps should not be made in areas to be filled.

7.6 Placement of Granular Engineered Fills

Engineered fills may be required to achieve the final design grades in areas of the proposed Site development. The table below is the gradation specifications for soils used in fills at the Site. Reference is made to materials, described by the Maine Department of Transportation (MDOT) Standard Specifications, as possible alternatives. The different fill types should be used as follows:

1. Structural Fill should be used for engineered fills below building footprint areas and in foundation bearing zones.
2. Common Fill should be used for engineered fills below non-structural areas.

All granular fills should be placed in 12-inch maximum loose lifts and should be compacted to a minimum of 95 percent of the material's maximum dry density, as determined by ASTM D 1557 (modified proctor test) and field density testing (ASTM D 6938 or equivalent method). Lift thickness should be a maximum of 6-inch loose lifts when compacted with hand-guided equipment.

Material	Sieve Size	% Passing
Structural Fill Standard Specification 703.06, Type C	4" (100 mm)	100
	3" (75 mm)	90 - 100
	2" (50 mm)	75 – 100
	1" (25 mm)	50 – 80
	1/2" (12.5 mm)	30 – 60
	No. 4 (4.75 mm)	15 - 40
	No. 200 (75 µm)	0 - 6
Common Fill	8"	100
	No. 200 (75 µm)	0 - 15 when placed within 2.5 feet of finished grade in paved areas

Where subgrades become saturated, unstable, and/or difficult to compact, crushed stone should be placed and compacted in lieu of structural fill. Crushed stone, when used, should be wrapped in a geotextile filter fabric, such as Mirafi 140N or equal. At no time should structural fill or common fill be placed over crushed stone that has not been wrapped in a geotextile filter fabric.

7.7 Reuse of Site Soils

A preliminary assessment of the suitability of using the unconsolidated soils at the Site in the proposed construction is based on the soil classifications and observations at the Site. The suitability of these materials is summarized below.

1. Portions of the existing Fill Materials that will be excavated may be suitable for reuse as common fill below non-structural areas and landscaped areas.
2. The clay soils that might be excavated are not suitable for reuse as structural fill or common fill at the Site.

Materials to be used as structural fill will need to be imported to the Site. Representative samples of all proposed fills should be submitted for testing during construction to compare their gradation

characteristics to the requirements of the project specifications, and to establish their optimum water contents and maximum dry densities (modified proctor testing, ASTM D 1557). The geotechnical engineer must approve use and reuse of on-site or borrow soils for structural and common fills. Use of fills assumes that the moisture content of the material will be strictly controlled in order to allow for proper placement and compaction.

7.8 Underground Utilities

Bedding placed below utilities should be in accordance with the utility and manufacturer requirements. In general, utilities may be supported directly on a minimum 6-inch-thick layer of compacted structural fill, crushed stone, or other suitable pipe bedding materials. Fill placed as backfill for utilities below building floor slabs should consist of compacted structural fill or crushed stone. Elsewhere, fill placed as backfill for utilities should consist of compacted common fill.

7.9 Construction Monitoring

Ransom should observe the earthwork for compliance with the recommendations of this report, identify changes in subsurface conditions as they become apparent, and assist in design changes should subsurface conditions differ from those anticipated in this report. The project geotechnical engineer should be present at the Site, during several critical construction junctures, in order to:

1. If a ground improvement program such as impact piers is selected, Ransom should be provided the opportunity to review the impact pier system design and specifications. Ransom should observe the installation of impact piers to confirm their construction in conformance with the design, and to document and consult should subsurface obstructions be encountered;
2. If a deep foundation system is selected, Ransom should observe the installation of the piles to confirm their construction is in conformance with the design, and to document and consult should subsurface obstructions be encountered;
3. Provide geotechnical observation of foundation and floor slab subgrade preparations following installation of impact piers or piles;
4. Confirm that the soils used as fills and backfills conform to the project specifications; and
5. Document the preparation of foundation bearing surfaces and other subgrades.

8.0 RECOMMENDED ADDITIONAL EXPLORATIONS

This geotechnical engineering investigation provides a general evaluation of subsurface conditions at the Site. Additional geotechnical test drilling and laboratory analyses should be performed to further define the depth to competent bedrock at the Site and to further assess the presence and thickness of the stiff overconsolidated clay.

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9.0 CLOSING COMMENTS

This report has been prepared to assist the site and structural engineers in the design and construction of foundations and Site structures related to the proposed Front Street redevelopment project in Portland, Maine. In the event that changes in the design or location of the proposed structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless they have been reviewed and modified or verified in writing by Ransom. Our recommendations are based in part upon data obtained from widely spaced test borings. Ransom recommends conducting additional geotechnical test drilling prior to preparing the final design plans and project specifications. The nature and extent of variations between explorations will not become evident until construction. If significant variations then appear, it may be necessary to reevaluate and revise the recommendations of this report.

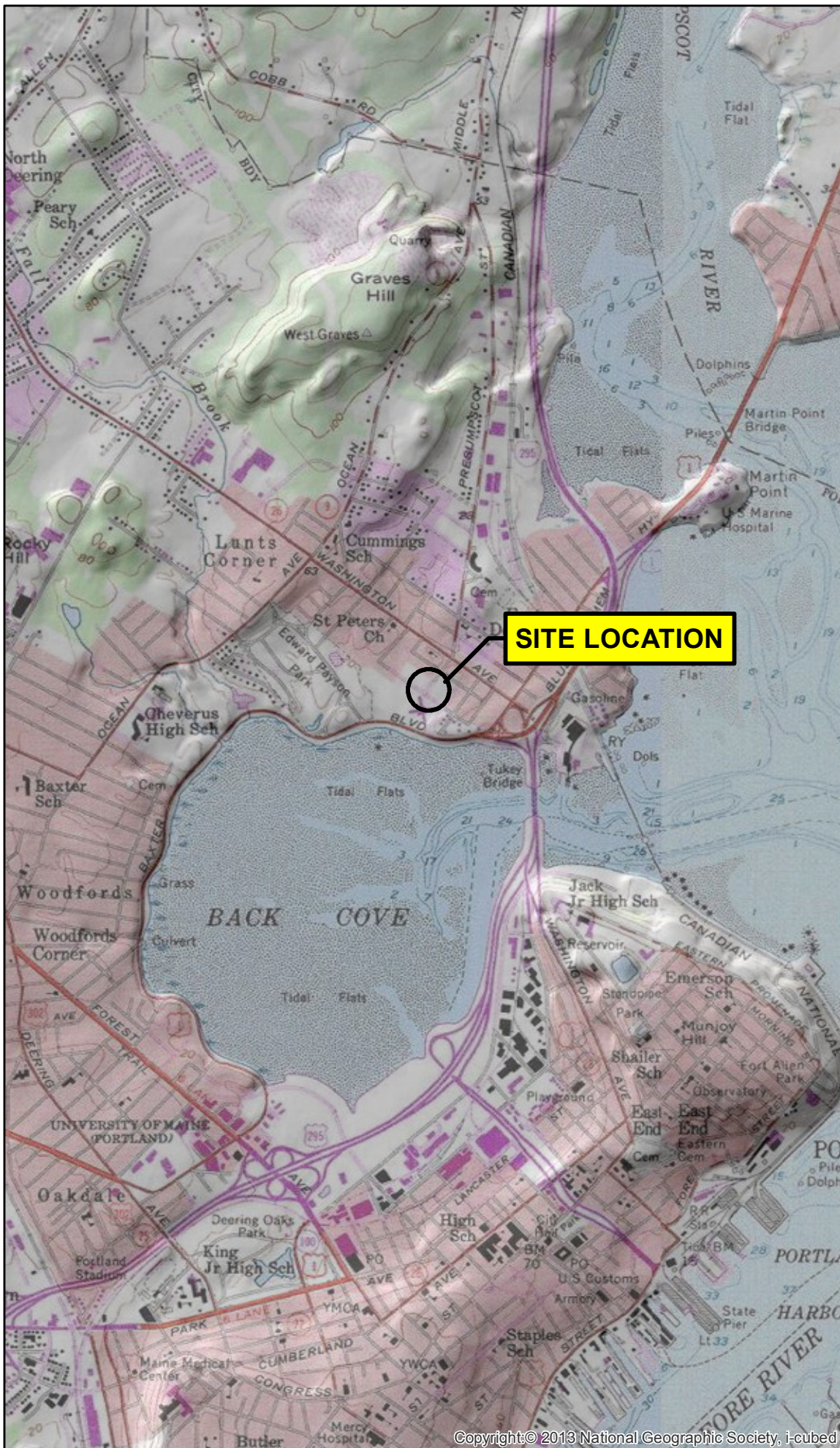
We recommend that Ransom be provided the opportunity to review the final design plans and project specifications in order to confirm that the recommendations made in this report were interpreted and implemented as intended.

The findings, recommendations, specifications, and professional opinions contained within this project geotechnical report have been prepared in accordance with generally accepted professional geotechnical engineering practice. No other warranties are implied or expressed.

Regional Locator Map



Portland



Notes

1. Data Source: USGS National Map Seamless Server, 24K DRG, 1/3" NED
2. USGS Quad Name: Portland-West
3. Latitude: 43° 40' 50" N
Longitude: 70° 15' 42" W
UTM Northing: 4837178 mN
UTM Easting: 398290 mE

Scale and Orientation

0 1,000 2,000

1 inch = 2,000 feet



Prepared For

Portland Housing Development Corporation
14 Baxter Boulevard
Portland, Maine

Site Address

Front Street Redevelopment
Front Street and
West Presumpscot Street
Portland, Maine

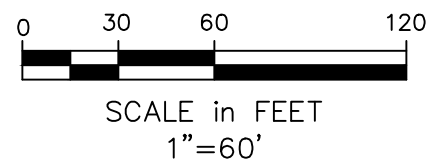
151.06170 Sept 2016

Figure 1
Site Location



NOTES:

1. SITE PLAN BASED ON SITE DESIGN DEVELOPMENT PLAN DATED AUGUST 22, 2016, PROVIDED BY CARROLL ASSOCIATES LANDSCAPE ARCHITECTS MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC. FROM AUGUST 10 TO AUGUST 12, 2016.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR PORTLAND HOUSING DEVELOPMENT CORPORATION. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.



LEGEND:

- B106 APPROXIMATE LOCATION OF TEST BORING
- PROPERTY BOUNDARY

RANSOM Consulting, Inc.

PREPARED FOR:
PORTLAND HOUSING
DEVELOPMENT CORPORATION
14 BAXTER BOULEVARD
PORTLAND, MAINE

SITE:
FRONT STREET DEVELOPMENT
FRONT STREET AND WEST
PRESUMPCOT STREET
PORTLAND, MAINE

SUBSURFACE EXPLORATION PLAN

DATE: SEPTEMBER 2016
PROJECT: 151.06170
FIGURE: 2

APPENDIX A

Exploration Logs

Geotechnical Engineering Report
Proposed Front Street Redevelopment
Portland, Maine

DRAFT



Consulting
Engineers
and Scientists

B101

Reviewed by:	Total Depth: 22 Feet	Logged By: RED
Date Reviewed:	Boring Diameter: 6 Inches	Date Drilled: 08/10/16 to 08/10/16
Surface Elevation: 14 +/-	Well Stickup: NA	Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, Brown, SAND and GRAVEL, moist.	Fill		S1	11-11-7-7	18	24/6	<1	
2	S2 (2-4') Loose, brown SAND and GRAVEL, some Clay, moist.			S2	4-5-5-3	10	24/8	<1	
3	S3 (4-6') Loose, brown SAND and GRAVEL, some Clay, moist.			S3	5-3-4-3	7	24/7	<1	
4	Auger to 10'. Soft drilling at 9'.								
5									
6									
7	S4 (10-12') Very stiff, gray, CLAY, iron staining, moist to wet. WT @ 12'	Clay		S4	11-12-14-15	236	24/20.5	<1	
8									
9									
10	S5 (15-17') Stiff, gray, CLAY, iron staining, wet.	Clay		S5	1-4-5-5	9	24/24	<1	
11									
12									
13	Auger to 20'.								
14									
15									
16	S6 (20-22') 24" Medium stiff, brownish gray CLAY, iron staining, wet.			S6	2-3-2-3	5	24/24	<1	
17									
18									
19	End of Boring 22'.								
20									
21									
22									
23									
24									

WATER LEVELS:

During Drilling 12' End of Boring Date:

WELL LEGEND:

Filter Sand Native Fill Bentonite Bentonite Grout Concrete PVC Screen PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.: 151.06170 Page: 1

RANSOM

Consulting
Engineers
and Scientists

B102

Reviewed by:

Total Depth: 22 Feet

Logged By: EPP

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/10/16 to 08/10/16

Surface Elevation: 13 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION	
1	S1 (0-2') Medium dense, brown, fine to coarse SAND, little gravel, moist.	Fill		S1	5-8-5-4	13	24/7	<1		
2	S2 (2-4') Very dense, brown, fine to coarse SAND and GRAVEL, mixed with glass, coal ash, anthropogenic materials.			S2	8, 50/.2	50+	24/8	<1		
3	S3 (4-6') Loose, brown, fine to coarse SAND, some Gravel, moist.			S3	4-4-2-1	6	24/2	NM		
4	Auger to 10'. Bits of plastic, rubber & glass in drill cuttings.									
5										
6										
7	S4 (10-12') Very soft, gray, marine CLAY, decaying organic odor, moist to wet.	Clay								
8										
9										
10	Auger to 15'.									
11										
12										
13	S5 (15-17') Medium stiff, gray, CLAY, moist to wet.	Clay								
14										
15										
16	Auger to 20'.									
17										
18										
19	S6 (20-22') Soft, gray CLAY, some fine Sand, wet.									
20										
21										
22	End of boring 22'.									
23										
24										

WATER LEVELS:

During Drilling
5.5'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

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Front Street
Portland, Maine

Project No.: 151.06170

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RANSOM

Consulting
Engineers
and Scientists

B103

Reviewed by:

Total Depth: 22 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/10/16 to 08/10/16

Surface Elevation: 12 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2") 6.5" Medium dense, tan SAND and GRAVEL, over 4.5" dark brown SAND, some Clay, moist.	Fill		S1	5-9-9-5	18	24/11	NM	
2	S2 (2-4") Loose, dark brown, SAND, some Gravel and Clay, moist.			S2	5-5-2-3	7	24/6	1.6	
3	S3 (4-6") Loose, dark brown and black SAND, some Clay, demolition debris, moist.			S3	2-4-5-4	9	24/5.5	<1	
4	Auger to 10'.	Clay		S4	4-1-1-1	2	24/0	-	
5	No Recovery.			S5	1-2-1-2	3	24/24	4.8	
6	S4 (12-14") Soft, blackish gray, CLAY, sea shell pieces in sample, wet.			S6	1-1-1-4	2	24/21.5	5.6	
7	Auger to 15'.			S7	3-3-5-5	8	24/24	<1	
8	S5 (15-17") Soft, black/gray, CLAY, sea shell pieces in sample, wet.	Clay							
9	Auger to 20'.								
10	S6 (20-22") Stiff, greenish gray CLAY, iron staining, wet.								
11	End of boring 22'.								
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

WATER LEVELS:

During Drilling
8'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

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Front Street
Portland, Maine

Project No.: 151.06170

Page: 1

Reviewed by:	Total Depth: 22 Feet	Logged By: RED
Date Reviewed:	Boring Diameter: 6 Inches	Date Drilled: 08/10/16 to 08/10/16
Surface Elevation: 13 +/-	Well Stickup: NA	Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Dense, brown SAND and SILT, dry.			S1	6-14- 22-16	36	24/9	<1	
2	S2 (2-4') No recovery. Loose, brown SAND and SILT, little brown gravel, dry (as observed in drill cuttings).			S2	3-7-4- 2	11	24/0	<1	
3									
4	S3 (4-6') Loose, orange-brown SAND and SILT, demolition debris and iron staining, dry.			S3	5-4-4- 5	8	24/12	<1	
5									
6	Auger to 10'.								
7									
8									
9									
10	S4 (10-12') Loose brown SAND and SILT, demolition debris, moist.			S4	4-2-2- 3	4	24/5	<1	
11									
12	Auger to 15'.								
13									
14									
15	S5 (15-17') Stiff, olive gray CLAY, iron staining, wet.			S5	2-5-6- 8	11	24/24	<1	
16									
17	Auger to 20'.								
18									
19									
20	S6 (20-22') Stiff, olive gray CLAY, wet.			S6	2-5-4- 6	9	24/24	<1	
21									
22	End of boring 22'.								
23									
24									

WATER LEVELS:

During Drilling 15' End of Boring Date:

WELL LEGEND:

 Filter Sand
  Native Fill
  Bentonite
  Bentonite Grout
  Concrete
  PVC Screen
  PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

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Portland, Maine

Project No.: 151.06170 Page: 1

RANSOMConsulting
Engineers
and Scientists**B105**

Reviewed by:

Total Depth:

22 Feet

Logged By:

RED

Date Reviewed:

Boring Diameter:

6 Inches

Date Drilled: 08/10/16 to 08/10/16

Surface Elevation:

13 +/-

Well Stickup:

NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OVM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, brown, SAND and SILT, some Gravel, iron staining, dry.	Fill	S1	4-9-8-8	17	24/11	<1	
2	S2 (2-4') Loose, orange-brown, SAND and GRAVEL, some Clay, iron staining, demolition debris, moist.		S2	3-4-1-2	5	24/13	<1	
3	S3 (4-6') Loose, orange CLAY and SILT, iron staining, demolition debris, moist.		S3	4-2-2-8	4	24/8	<1	
4	Auger to 10'.							
5								
6								
7	S4 (10-12') Very loose, black, urban fill materials, strong creosote odor, moist.	Fill						
8								
9								
10	Auger to 15'.							
11								
12								
13	S5 (15-17') Very stiff, greenish-gray, CLAY, iron staining, wet.	Clay						
14								
15								
16	S6 (20-22') Stiff, greenish-gray, CLAY, iron staining, wet.	Clay						
17								
18								
19	End of boring 22'.							
20								
21								
22								
23								
24								

WATER LEVELS:

During Drilling
15'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

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Portland, Maine

Project No.:

151.06170

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Consulting
Engineers
and Scientists

B106

Reviewed by:

Total Depth:

22 Feet

Logged By:

RED

Date Reviewed:

Boring Diameter:

6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation:

13 +/-

Well Stickup:

NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, light brown SAND and SILT, little gravel, dry.	Fill		S1	5-15-13-9	24	24/12	<1	
2	S2 (2-4') Medium dense, brown SAND and SILT, moist.			S2	4-6-6-3	12	24/11	<1	
3	S3 (4-6') Very loose, dark brown, SAND and SILT, moist.			S3	3-1-1-1	2	24/14	<1	
4	Auger to 10'.	Fill		S4	4-3-2-2	5	24/17	42.5	
5									
6									
7	Auger to 15'.	Clay		S5	5-10-13-13	23	24/24	0.8	
8									
9									
10	Auger to 20'.	Clay		S6	5-10-15-15	25	24/24	<1	
11									
12									
13	S4 (10-12') Medium stiff, gray CLAY, saturated, includes anthropogenic waste.	Clay		S5	5-10-13-13	23	24/24	0.8	
14	S5 (15-17') Very stiff, olive green CLAY, iron staining, wet.								
15	S6 (20-22') Very stiff, olive green CLAY, iron staining, wet.								
16	End of boring 22'.								
17									
18									
19									
20									
21									
22									
23									
24									

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

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Project No.:

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RANSOM

Consulting
Engineers
and Scientists

B107

Reviewed by:

Total Depth: 22 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation: 12 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION	
1	S1 (0-2') Medium dense, brown SAND, and SILT, dry.	Fill		S1	3-5-6-6	11	24/12	5.2		
2	S2 (2-4') Medium dense, brown SAND and SILT, little clay, demolition debris, dry.			S2	9-10-7-3	17	24/11	<1		
3										
4	S3 (4-6') Loose brown SAND and SILT, some Gravel, demolition debris, dry.			S3	4-3-5-6	8	24/13	<1		
5										
6	S4 (6-8') Medium dense, brown SAND and CLAY, moist.			S4	9-6-9-6	15	24/12	<1		
7										
8	S5 (8-10') 5" Medium dense, brown SAND over 3" gray CLAY, and demolition debris.	Fill		S5	6-9-6-8	15	24/8	<1		
9										
10	S6 (10-12') Stiff, gray, CLAY, wet.	Clay		S6	4-2-1-1	3	24/12	<1		
11										
12	Auger to 15'.									
13										
14										
15	S7 (15-17') Medium stiff, gray CLAY, sea shells throughout, wet.	Clay		S7	1-3-4-9	7	24/13.5	<1		
16										
17	Auger to 20'.									
18										
19										
20	S8 (20-22') Very stiff, greenish gray CLAY, iron staining, wet.			S8	7-11-13-19	24	24/24	<1		
21										
22	End of boring 22'.									
23										
24										

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

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Front Street
Portland, Maine

Project No.: 151.06170

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RANSOM

Consulting
Engineers
and Scientists

B108

Reviewed by:

Total Depth: 22 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation: 11 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION	
1	S1 (0-2') 11" Medium dense, brown SAND and GRAVEL, some Silt over 3" CLAY, little sand, moist.	Fill		S1	5-21-5-7	26	24/14	<1		
2	S2 (2-4') Medium dense, CLAY and GRAVEL, some Sand, moist.			S2	5-9-6-5	15	24/10	<1		
3	S3 (4-6') COAL ASH mixed with anthropogenic debris, some soft Clay throughout, wet.			S3	4-4-6-9	10	24/17	<1		
4	Auger to 10'.		S4	1-2-1-1	3	24/5	<1			
5										
6										
7	S5 (15-17') Soft, greenish-gray CLAY, sea floor debris, wet.	Clay		S5	1-1-1-1	2	24/18	<1		
8										
9										
10	S6 (20-22') Medium stiff, greenish-gray CLAY, iron staining, wet.	Clay		S6	2-3-4-5	5	24/24	<1		
11										
12										
13	End of boring 22'.									
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

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Consulting
Engineers
and Scientists

B109

Reviewed by:

Total Depth: 22 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation: 12 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, brown SAND and SILT, dry.	Fill	S1	3-5-6-8	11	24/14	<1	
2	S2 (2-4') 5" ANTHROPOGENIC WASTE over 11" very loose SAND and SILT, some Gravel, dry.		S2	3-2-1-1	3	24/16	<1	
3	S3 (4-6') COAL ASH, dry.		S3	2-1-1-7	2	24/11	<1	
4								
5								
6	Auger to 10'.							
7								
8								
9								
10								
11	S4 (10-12') Soft, black CLAY and SILT, little sand, anthropogenic debris throughout, wet.	Fill	S5	1-1-1-1	2	24/9	<1	
12	Auger to 15'.							
13								
14								
15	S5 (15-17') Soft, gray CLAY, some Sea Shells, wet.	Clay	S5	1-2-1-1	3	24/24	<1	
16	Auger to 20'.							
17								
18								
19								
20	S6 (20-22') Soft, gray CLAY, sea floor debris, wet.	Clay	S6	1-1-1-2	2	24/24	<1	
21								
22	End of boring 22'.							
23								
24								

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.: 151.06170

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RANSOM

Consulting
Engineers
and Scientists

B110

Reviewed by:

Total Depth:

22 Feet

Logged By:

RED

Date Reviewed:

Boring Diameter:

6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation:

14 +/-

Well Stickup:

NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') 21" Medium dense, light brown SILT, some Sand, over 1" concrete, dry.	Fill		S1	4-9-14-25	23	24/22	<1	
2	S2 (2-4') Loose, brown SILT, some Sand, over 0.5" coal ash, dry.			S2	3-4-5-3	9	24/11.5	<1	
3	S3 (4-6') 3" Loose SILT, some Sand, over 5" loose SAND and SILT, over 4" coal ash, dry.			S3	2-1-2-1	3	24/12	<1	
4	Auger to 10'.	Clay		S4	4-12-16-20	28	24/14	<1	
5									
6									
7	Auger to 15'.	Clay		S5	4-6-8-10	14	24/21	<1	
8									
9									
10	S4 (10-12') Very stiff, greenish-gray, CLAY, iron staining, moist.	Clay		S6	2-3-2-3	5	24/24	<1	
11	Auger to 20'.								
12	S5 (15-17') Stiff, greenish-gray. CLAY, iron staining, wet.								
13	Auger to 20'.	Clay		S6	2-3-2-3	5	24/24	<1	
14									
15									
16	S6 (20-22') Soft, light gray, CLAY, iron staining, wet.	Clay		S6	2-3-2-3	5	24/24	<1	
17	Auger to 20'.								
18	S6 (20-22') Soft, light gray, CLAY, iron staining, wet.								
19	Auger to 20'.	Clay		S6	2-3-2-3	5	24/24	<1	
20									
21									
22	End of boring 22'.	Clay		S6	2-3-2-3	5	24/24	<1	
23									
24									

WATER LEVELS:

During Drilling
15'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.:

151.06170

Page:

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Consulting
Engineers
and Scientists

B111

Reviewed by:

Total Depth: 22 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation: 15 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, brown SILT, dry.	Fill		S1	4-9-7-7	16	24/15	NM	
2	S2 (2-4') Medium dense, brown, SILT, COAL ASH and DEMOLITION DEBRIS, dry.			S2	6-7-3-2	10	24/11	NM	
3	S3 (4-6') 3" Loose SILT and ANTHROPOGENIC WASTE, over 5" COAL ASH, over 5" soft, greenish-gray CLAY, moist.			S3	2-2-3-2	5	24/13	NM	
4	Auger to 10'.	Clay		S4	4-6-8-11	14	24/16	NM	
5	S4 (10-12') Stiff, brownish-gray CLAY, iron staining, moist.								
6	Auger to 15'.								
7	S5 (15-17') Stiff, greenish-gray CLAY, iron staining, moist.	Clay		S5	3-6-6-8	12	24/19	NM	
8	Auger to 20'.								
9	S6 (20-22') Soft, greenish-gray CLAY, iron staining, wet.								
10	End of boring 22'.	Clay		S6	2-2-2-4	4	24/24	NM	
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

WATER LEVELS:

During Drilling
20'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

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Project No.: 151.06170

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Consulting
Engineers
and Scientists

B112

Reviewed by:

Total Depth:

22 Feet

Logged By:

RED

Date Reviewed:

Boring Diameter:

6 Inches

Date Drilled: 08/11/16 to 08/11/16

Surface Elevation:

18 +/-

Well Stickup:

NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OVM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, SAND and SILT, dry.	Fill		S1	4-8-8-6	16	24/10	NM	
2	S2 (2-4') 15" Medium dense, SAND and SILT, over 3" COAL ASH, over 4" dark brown, SAND and SILT, some Clay, moist.			S2	5-12-10-6	22	24/22	NM	
3	S3 (4-6') 5" Medium dense, dark brown, SAND and SILT, some Clay, over 4" ANTHROPOGENIC DEBRIS and COAL ASH, over 7" loose dark brown, SAND, some Silt. Auger to 10'.			S3	8-3-6-3	9	24/16	NM	
4		Fill							
5	S4 (10-12') 1" ANTHROPOGENIC DEBRIS with iron staining, over 5" gray CLAY, wet.			S4	5-3-3-5	6	24/6	NM	
6	Auger to 15'.								
7		Clay							
8	S5 (15-17') No recovery. Very stiff, gray CLAY, with sea floor debris, wet (as described from drill cuttings). Auger to 20'.			S5	8-11-14-14	25	24/0	NM	
9									
10		Clay							
11	S6 (20-22') Stiff, greenish-gray, CLAY, wet.			S6	3-4-6-6	10	24/24	NM	
12									
13	End of boring 22'.								
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment

Front Street

Portland, Maine

Project No.:

151.06170

Page:

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RANSOMConsulting
Engineers
and Scientists**B113**

Reviewed by:

Total Depth:

22 Feet

Logged By:

RED

Date Reviewed:

Boring Diameter:

6 Inches

Date Drilled: 08/12/16 to 08/12/16

Surface Elevation:

16 +/-

Well Stickup:

NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OVM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, brown, SILT, dry.	Fill		S1	6-8-9-8	17	24/8	<1	
2	S2 (2-4') Loose, brown SILT over 7" dark brown SAND and SILT some Gravel, moist.			S2	3-2-2-3	4	24/17	<1	
3	S3 (4-6') 6" Loose, SAND and SILT, some Clay, over 4" GRAVEL, some Sand, and Gravel, moist.			S3	4-4-5-6	9	24/10	<1	
4	Auger to 10'.	Clay							
5									
6									
7		Clay							
8									
9									
10	S4 (10-12') Hard, gray CLAY, moist,	Clay		S4	17-18-20-15	38	24/6	<1	
11	Auger to 15'.								
12									
13		Clay							
14									
15									
16	S5 (15-17') Stiff, gray, CLAY, iron staining, wet.	Clay		S5	6-7-8-9	15	24/24	<1	
17	Auger to 20'.								
18									
19		Clay							
20									
21	S6 (20-22') Medium stiff, gray, CLAY, iron staining, wet.			S6	1-2-4-3	6	24/24	<1	
22	End of boring 22'.								
23									
24									

WATER LEVELS:

During Drilling
15'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.:

151.06170

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Consulting
Engineers
and Scientists

B114

Reviewed by:

Total Depth: 48.3 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/12/16 to 08/12/16

Surface Elevation: 14 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OVM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') 6" Medium dense, brown SILT, over 5" COAL ASH, over 4" stiff, CLAY and SILT.	Fill		S1	4-5-7-6	12	24/15	<1	
2	S2 (2-4') 7" Stiff, brown, CLAY and SILT, over 4" COAL ASH.			S2	8-8-7-6	15	24/11	<1	
3	S3 (4-6') ANTHROPOGENIC WASTE with COAL ASH, moist.			S3	8-5-4-4	9	24/18.5	<1	
4	Auger to 10'.	Fill							
5									
6									
7		Clay							
8									
9									
10	S4 (10-12') 10" Soft, brown CLAY, over 9" COAL ASH, wet.	Clay		S4	1-2-2-2	4	24/19	2.4	
11	Auger to 15'.								
12									
13		Clay							
14									
15									
16	S5 (15-17') Very stiff, gray, CLAY, iron staining, wet.	Clay		S5	5-11-14-15	25	24/24	<1	
17	Auger to 20'.								
18									
19		Clay							
20									
21									
22	S6 (20-22') Stiff, gray, CLAY, iron staining, wet.	Clay		S6	3-3-5-5	8	24/24	<1	
23									
24									

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.: 151.06170

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1



Consulting
Engineers
and Scientists

B114

Reviewed by:

Total Depth: 48.3 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/12/16 to 08/12/16

Surface Elevation: 14 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OVM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
26	Boring advanced as ledge probe to 48.3' bgs.								
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49	Refusal, end of exploration 48.3'.								

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment

Front Street

Portland, Maine

Project No.:

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RANSOM

Consulting
Engineers
and Scientists

B115

Reviewed by:

Total Depth:

66 Feet

Logged By:

RED

Date Reviewed:

Boring Diameter:

6 Inches

Date Drilled: 08/12/16 to 08/12/16

Surface Elevation:

12 +/-

Well Stickup:

NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6')	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
1	S1 (0-2') Medium dense, brown, SILT, some Gravel, dry.	Fill		S1	4-11-2-3	13	24/16	<1	
2	S2 (2-4') ANTHROPOGENIC WASTE and COAL ASH. Abundant iron staining, wet.			S2	4-8-5-4	13	24/14	<1	
3	S3 (4-6') ANTHROPOGENIC WASTE, moist.			S3	3-3-3-3	6	24/14	<1	
4									
5									
6	Auger to 10'.								
7									
8									
9									
10	S4 (10-12') Black, ANTHROPOGENIC WASTE and CLAY, wet.	Fill		S4	3-2-1-2	3	3	<1	
11									
12	Auger to 15'.								
13									
14									
15	S5 (15-17') Soft, gray, CLAY, sea shell debris, wet.	Clay		S5	3-2-1-1	24/17	3	<1	
16									
17	Auger to 20'.								
18									
19									
20	S6 (20-22') Medium stiff, gray, CLAY, wet.	Clay		S6	1-2-2-2	24/24	4	<1	
21									
22									
23									
24									

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.:

151.06170

Page:

1



Consulting
Engineers
and Scientists

B115

Reviewed by:

Total Depth: 66 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/12/16 to 08/12/16

Surface Elevation: 12 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
26	Boring advanced as ledge probe to 66' bgs.								
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment

Front Street

Portland, Maine

Project No.:

151.06170

Page:

2

RANSOM

Consulting
Engineers
and Scientists

B115

Reviewed by:

Total Depth: 66 Feet

Logged By: RED

Date Reviewed:

Boring Diameter: 6 Inches

Date Drilled: 08/12/16 to 08/12/16

Surface Elevation: 12 +/-

Well Stickup: NA

Driller: NEBC

DEPTH	DESCRIPTION Based on USCS and modified Burmister Soil Classification System	SOIL PROFILE	SAMPLE	SAMPLE NUMBER	BLOWS (per 6")	SPT-N Value	PENETRATION/ RECOVERY	OVM (ppm) / DEXSIL (ppm)	WELL CONSTRUCTION
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									
63									
64									
65									
66	Refusal, end of exploration 66'.								
67									
68									
69									
70									
71									
72									
73									
74									

WATER LEVELS:

During Drilling
10'

End of Boring

Date:

WELL LEGEND:



Filter Sand



Native Fill



Bentonite



Bentonite Grout



Concrete



PVC Screen



PVC Riser

NOTES:

1. Boring advanced using truck-mounted drilling rig with 2 1/4" I.D. hollow-stem augers.
2. Sample designated with solid fill submitted for laboratory analysis.
3. NA=Not applicable; NM=measured.

CLIENT:

Portland Housing Redevelopment

SITE:

Front Street Redevelopment
Front Street
Portland, Maine

Project No.:

151.06170

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APPENDIX B

Laboratory Test Results

Geotechnical Engineering Report
Proposed Front Street Redevelopment
Portland, Maine

DRAFT

ConTest Consultants, Inc.

Providing Inspection/Testing & Consulting Services

LETTER OF TRANSMITTAL

TO: Ransom Consulting

DATE: 8/24/2016

PROJECT: Front Street - Portland, ME 151.0617 (PO 9296)

CTC PROJECT NO.: 216178

Attached are the following for your use:

COPIES	DATE	LAB NUMBER	DESCRIPTION
			Concrete Reports - Cylinders
			Concrete Inspection Report
			Reinforcing Steel Inspection Report
			Field Density Report
			Field Report
2		L-358-16 L-359-16	Particle Size Distribution Report w/ Hydrometer
2		L-358-16 L-359-16	Atterberg Limits

CC: Kenneth Milender & Jay Johonnett

Reviewed By: Donald Walden

The graph displays the grain size distribution of a soil sample. The y-axis represents the percentage of soil finer than a given grain size, ranging from 0 to 100. The x-axis represents the grain size in millimeters on a logarithmic scale, ranging from 100 mm to 0.001 mm. The curve shows that 100% of the soil is finer than approximately 0.075 mm. The distribution is highly uniform, with most of the soil falling between 0.075 mm and 0.006 mm.

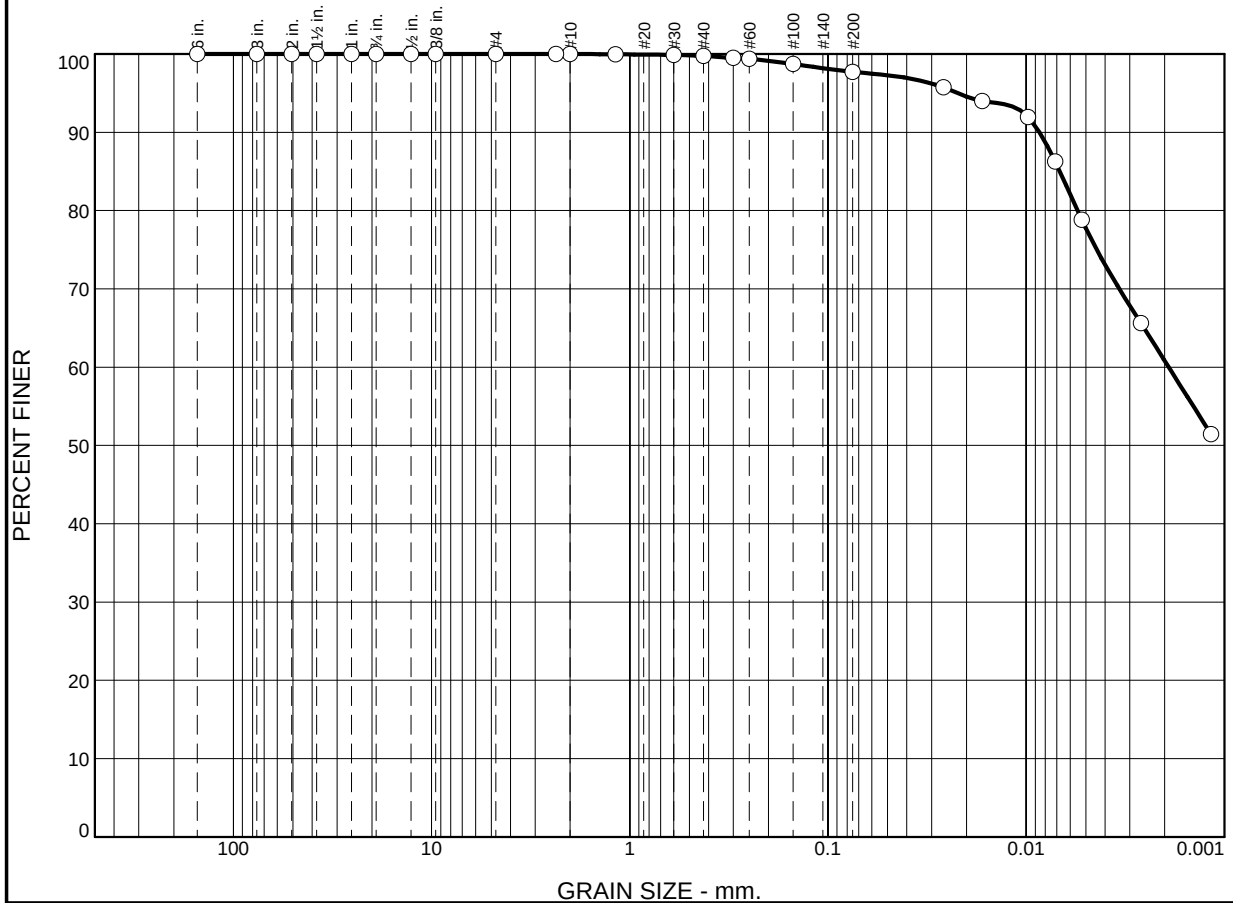
Grain Size (mm)	Percent Finer (%)
100	100
75	100
60	100
47.5	100
37.5	100
30	100
25	100
20	100
15	100
12.5	100
10	100
7.5	100
6.0	100
4.75	100
3.75	100
3.0	100
2.5	100
2.0	100
1.5	100
1.25	100
1.0	100
0.75	100
0.60	100
0.475	100
0.375	100
0.30	100
0.25	100
0.20	100
0.15	100
0.125	100
0.10	100
0.075	100
0.060	100
0.0475	100
0.0375	100
0.030	100
0.025	100
0.020	100
0.015	100
0.0125	100
0.010	100
0.0075	100
0.0060	100
0.00475	100
0.00375	100
0.0030	100
0.0025	100
0.0020	100
0.0015	100
0.00125	100
0.0010	100
0.00075	100
0.00060	100
0.000475	100
0.000375	100
0.00030	100
0.00025	100
0.00020	100
0.00015	100
0.000125	100
0.00010	100
0.000075	100
0.000060	100
0.0000475	100
0.0000375	100
0.000030	100
0.000025	100
0.000020	100
0.000015	100
0.0000125	100
0.000010	100
0.0000075	100
0.0000060	100
0.00000475	100
0.00000375	100
0.0000030	100
0.0000025	100
0.0000020	100
0.0000015	100
0.00000125	100
0.0000010	100
0.00000075	100
0.00000060	100
0.000000475	100
0.000000375	100
0.00000030	100
0.00000025	100
0.00000020	100
0.00000015	100
0.000000125	100
0.00000010	100
0.000000075	100
0.000000060	100
0.0000000475	100
0.0000000375	100
0.000000030	100
0.000000025	100
0.000000020	100
0.000000015	100
0.0000000125	100
0.000000010	100
0.0000000075	100
0.0000000060	100
0.00000000475	100
0.00000000375	100
0.0000000030	100
0.0000000025	100
0.0000000020	100
0.0000000015	100
0.00000000125	100
0.0000000010	100
0.00000000075	100
0.00000000060	100
0.000000000475	100
0.000000000375	100
0.00000000030	100
0.00000000025	100
0.00000000020	100
0.00000000015	100
0.000000000125	100
0.00000000010	100
0.000000000075	100
0.000000000060	100
0.0000000000475	100
0.0000000000375	100
0.000000000030	100
0.000000000025	100
0.000000000020	100
0.000000000015	100
0.0000000000125	100
0.000000000010	100
0.0000000000075	100
0.0000000000060	100
0.00000000000475	100
0.00000000000375	100
0.0000000000030	100
0.0000000000025	100
0.0000000000020	100
0.0000000000015	100
0.00000000000125	100
0.0000000000010	100
0.00000000000075	100
0.00	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
6"	100.0		
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
#4	100.0		
#8	100.0		
#10	100.0		
#16	99.2		
#30	98.0		
#40	97.5		
#50	96.6		
#60	96.0		
#100	93.0		
#200	83.7		
0.0311 mm.	60.1		
0.0204 mm.	50.6		
0.0123 mm.	37.2		
0.0089 mm.	31.4		
0.0064 mm.	25.6		
0.0031 mm.	21.3		
0.0013 mm.	15.5		

Moisture Content as received - 42.8%

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	2.0	20.0	77.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
6"	100.0		
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
#4	100.0		
#8	100.0		
#10	100.0		
#16	99.9		
#30	99.9		
#40	99.7		
#50	99.5		
#60	99.4		
#100	98.7		
#200	97.7		
0.0262 mm.	95.7		
0.0167 mm.	94.0		
0.0098 mm.	91.9		
0.0071 mm.	86.3		
0.0052 mm.	78.8		
0.0026 mm.	65.6		
0.0012 mm.	51.4		

<u>Soil Description</u>		
fat clay		
<u>Atterberg Limits</u>		
PL= 23	LL= 50	PI= 27
<u>Coefficients</u>		
D ₉₀ = 0.0086	D ₈₅ = 0.0068	D ₆₀ = 0.0019
D ₅₀ =	D ₃₀ =	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= CH	AASHTO= A-7-6(30)	
<u>Remarks</u>		
Moisture Content as received = 27.0%		

* (no specification provided)

Location: B-110, S-5
Sample Number: L-359-16

Depth: 15'-17'

Date: 8/24/2016

ConTest Consultants, Inc.

Goffstown, New Hampshire

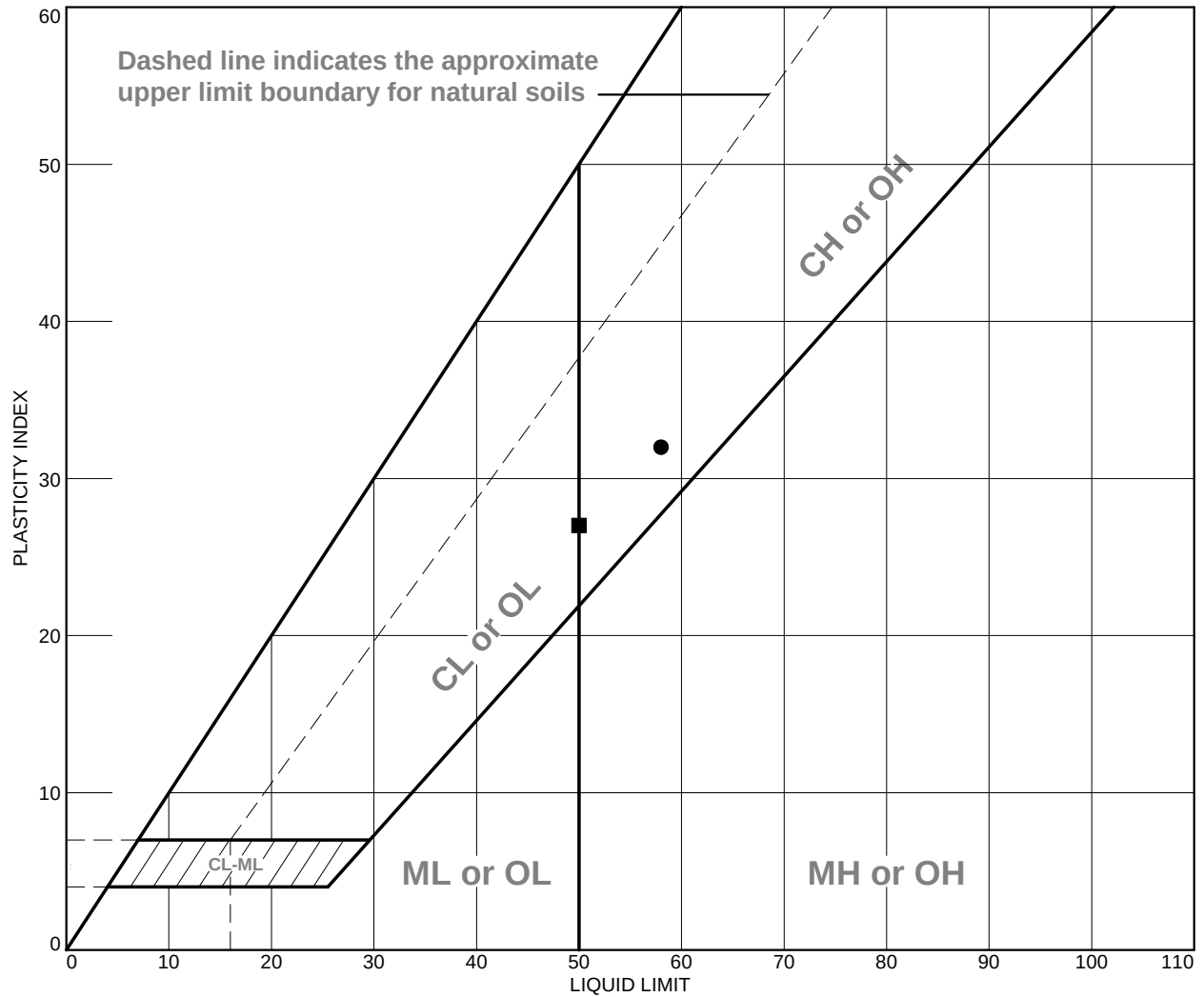
Client: Ransom Consulting, Inc.

Project: Front Street (151.0617)
Portland, Maine

Project No: 216178

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	fat clay with sand	58	26	32	97.5	83.7	CH
■	fat clay	50	23	27	99.7	97.7	CH

Project No. 216178

Client: Ransom Consulting, Inc.

Project: Front Street (151.0617)

Portland, Maine

● **Location:** B-109, S-5

Depth: 15'-17'

Sample Number: L-358-16

■ **Location:** B-110, S-5

Depth: 15'-17'

Sample Number: L-359-16

Remarks:

■ Moisture Content as received:
B-109, S-5, 15'-17' - 42.8%
B-110, S-5, 15'-17' - 27.0%

ConTest Consultants, Inc.

Goffstown, New Hampshire

Figure

25. Site Lighting

Street Lighting

There are no known lighting standards for the R-5.

Site Lighting

The parking lot will be illuminated with 14' LED pole lights. The fixtures will be Viper S Series by Beacon Lighting. See attached cut sheet of the lights and enclosed Photometric Plan.

Pedestrian Pathway Lighting will be illuminated with 12' LED pole lights. The fixtures will be Universe Collection Medium LED by Architectural Area Lighting.

Building Lighting

TBD

VIPER S

STRIKE

SMALL VIPER LUMINAIRE

Cat.#

Job

Type

Approvals



BEACON
design . performance . technology

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is $\geq .90$ at full load.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical arm or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

- DesignLights Consortium (DLC) qualified, consult DLC website for more details: <http://www.designlights.org/QPL>
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: <http://www.beaconproducts.com/products/vipersmall>

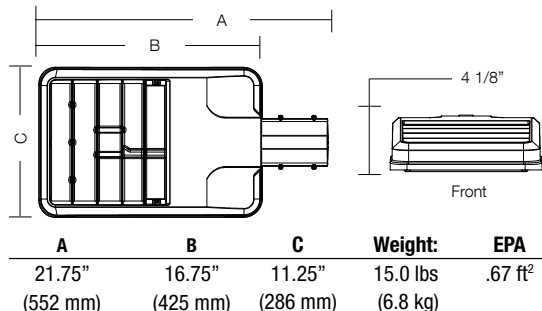
Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

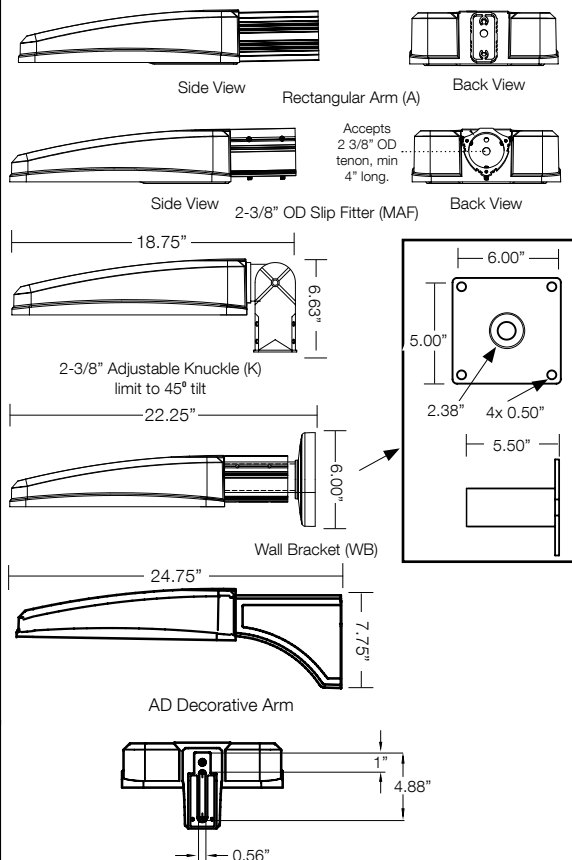
PRODUCT IMAGE(S)



DIMENSIONS



MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS



*3000K and warmer CCTs only



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ORDERING INFORMATION ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS									
SERIES	LED ENGINE	CCT/CRI ¹	ROTATION	VOLTAGE	COLOR	OPTIONS			
VPS Viper	24L-55 55W, LED array 36L-65 65W, LED array 36L-80 80W, LED array 48L-110 110W, LED array 60L-136 136W, LED array	3K7 3000K, 70 CRI 4K7 4000K, 70 CRI 5K7 5000K, 70 CRI	Leave blank for no rotation L ⁵ Optic rotation left R ⁵ Optic rotation right	UNV 120-277V 120 120V 208 208V 240 240V 277 277V 347 347V 480 480V	DBT Dark Bronze Textured BMT Black Matte Textured PS Platinum Silver Smooth WHT White Textured CC Custom Color (RAL#)	F Fusing BSP Bird Spikes BC Backlight control (limited to Type 4W only)			
		DISTRIBUTION		MOUNTING					
		FR Type 1/Front Row 2 Type 2 3 Type 3 4 Type 4 4W Type 4 Wide 5QM Type 5QM 5R Type 5R (rectangular) 5W Type 5W (round wide)		A Rectangular Arm (formerly RA) for square or round pole MAF Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm K Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon WB Wall Bracket AD Universal Arm for square pole AD3 Universal Arm for 2.4"-4.1" round pole AD4 Universal Arm for 4.2" -5.3" round pole AD5 Universal Arm for 5.5" -5.9" round pole AD6 Universal Arm for 6.0"-6.5" round pole					
HOUSE SIDE SHIELD ACCESSORIES									
HSS/VP-S/90-FB/XXX 90° shield front or back									
HSS/VP-S/90-LR/XXX 90° shield left or right									
HSS/VP-S/270-FB/XXX 270° shield front or back									
HSS/VP-S/270-LR/XXX 270° shield left or right									
HSS/VP-S/360/XXX Full shield									

HOUSE SIDE SHIELD ACCESSORIES

- HSS/VP-S/90-FB/XXX** 90° shield front or back
HSS/VP-S/90-LR/XXX 90° shield left or right
HSS/VP-S/270-FB/XXX 270° shield front or back
HSS/VP-S/270-LR/XXX 270° shield left or right
HSS/VP-S/360/XXX Full shield

(Replace XXX with notation for desired finish color)
 (Refer to page 5 for shield images)

MOUNTING ACCESSORIES

- VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
VPL-AD-RPA4 4.2"-5.3" Round Pole Adapter for AD arm
VPL-AD-RPA5 5.5"-5.9" Round Pole Adapter for AD arm
VPL-AD-RPA6 6.0"-6.5" Round Pole Adapter for AD arm

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
 VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

¹ Not available with other wireless control or sensor options

² Specify mounting height; 8=8' or less, 40=9' to 40'

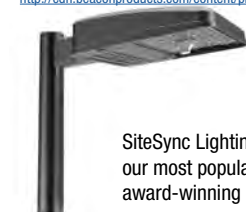
³ Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.

⁴ Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node

⁵ Only available with 1A, 2, 3, 4, 4W and 5R distributions

⁶ Order at least one SCP-REMOTE per project location to program and control

⁷ This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf



SiteSync Lighting Control is available from our most popular brands in a broad range of award-winning product families.



CONTROL OPTIONS

- 7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
7PR-SC 7-Pin Receptacle w/Shorting Cap
7PR-TL 7-Pin Receptacle w/Twist Lock photo control
SCP/_F^{1,2,6} Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
WSP/_F^{1,2} WASP Occupancy Sensor w/ daylight control (347 or 480 volts only)
GENI-XX³ ENERGENI
SWP^{1,4} SiteSync Pre-Commission
SWPM^{1,2,4} SiteSync Pre-Comm w/ Sensor

Accessories and Services (Ordered Separately)

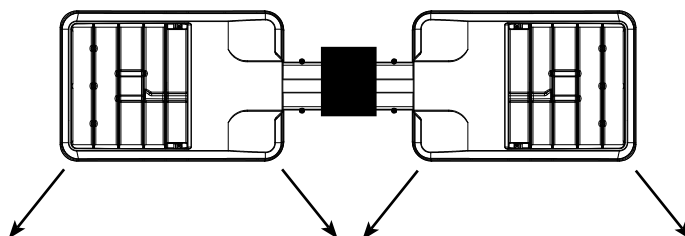
Catalog Number	Description
SCP-REMOTE	Remote control for SCP/_F option. Order at least one per project to program and control.
SWUSB*	SiteSync loaded on USB flash drive (Windows based only)
SWTAB*	SiteSync Windows Tablet
SWBRG*	SiteSync Wireless Bridge Node

*When ordering with SiteSync, one of the interface options must be chosen and ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.

+ If needed, an additional Bridge Node can be ordered.

LEFT ROTATED OPTIC

RIGHT ROTATED OPTIC



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PERFORMANCE DATA

# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5406	100	1	0	2	6041	112	1	0	2	5406	100	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8881	110	1	0	3	9062	112	1	0	3	8109	100	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	12275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11841	110	5	0	5	12083	112	2	0	3	11841	110	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	11825	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14802	109	2	0	3	15104	112	2	0	3	13515	100	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2

PHOTOMETRICS

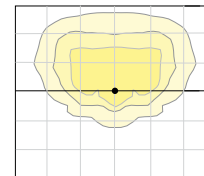
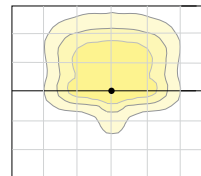
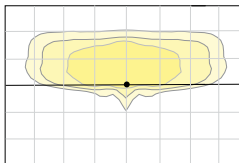
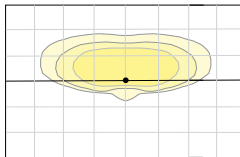
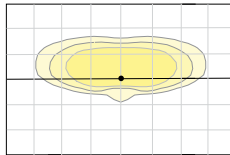
Type FR - Front Row/Auto Optic

Type 2

Type 3

Type 4

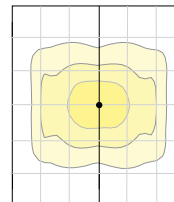
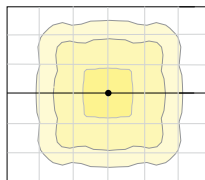
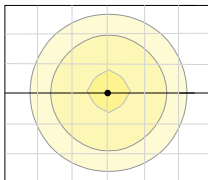
Type 4W



Type 5W

Type 5QM

Type 5R



*Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
	1	700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

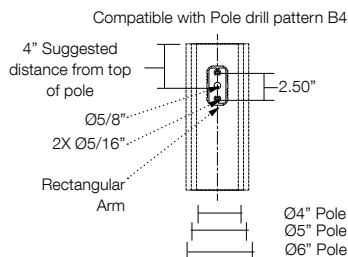
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

¹ Projected per IESNA TM-21-11

Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN



EPA

Config.	EPA	Config.	EPA
1	.67	3 @ 120°	1.68
2 @ 90°	1.06	3 @ 90°	1.73
2 @ 180°	1.34	4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

(2 3/8" OD tenon)

Catalog Number	Description
SETA2-XX ^{1,2}	Square tenon adapter (4 at 90 degrees)
RETA2-XX ^{1,3}	Round tenon adapter (4 at 90 degrees)
TETA2-XX ^{1,2}	Hexagonal tenon adapter (3 at 120 degrees)

1 Replace XX with color choice, eg.: DB for Dark Bronze

2 Only for use with AD mounting option

3 Only for use with AD3 mounting option

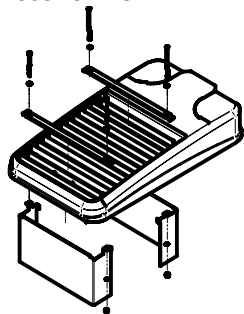


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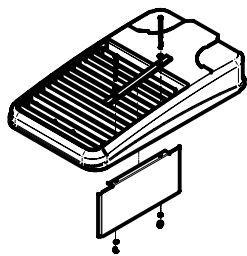
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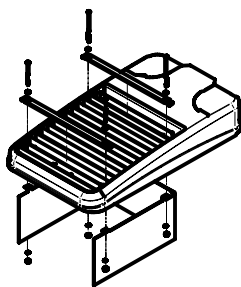
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



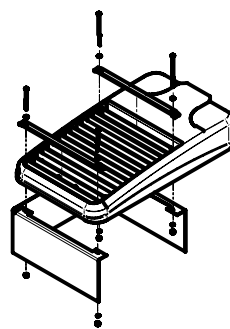
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



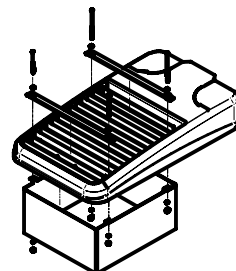
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

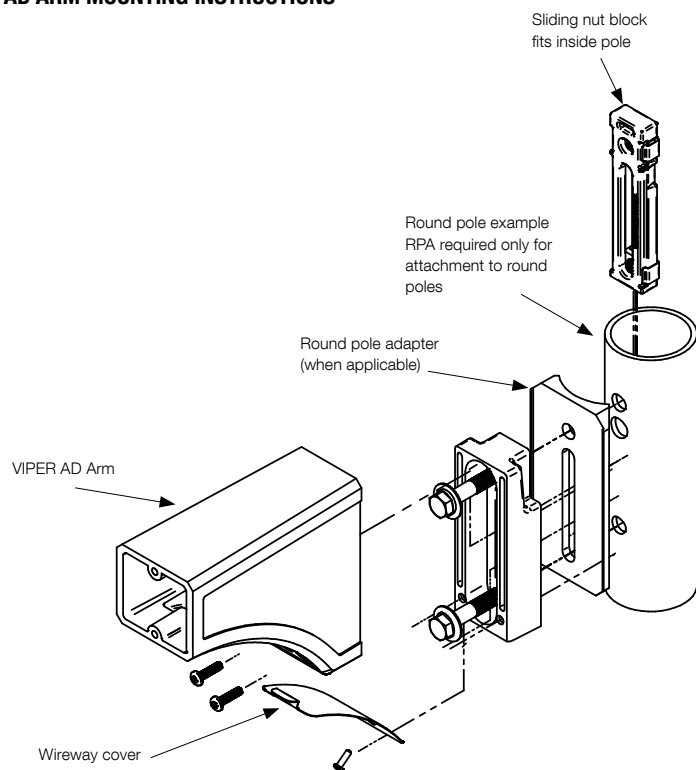


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)



HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



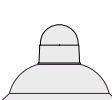
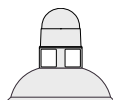
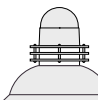
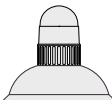
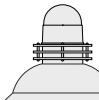
FEATURES

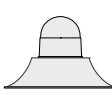
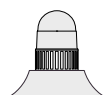
- DLC qualified
- Up to 1000' wireless communication
- Motion sensing up to 40' mounting height
- Superior BUG ratings
- Types II, III, IV, V and custom distributions
- IP66, 3G vibration housing
- 20kV/10kA surge suppression
- 2700 – 5000K CCT
- >560 nm Amber
- Custom lumen packages
- Integral thermal protection
- 0-10V dimmable
- 13 standard powder coat finishes

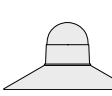
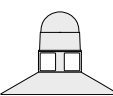


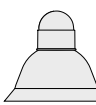
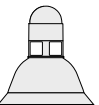
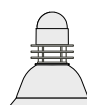
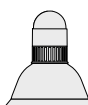
SPECIFICATIONS

					
ANGLED HOOD CONFIGURATION	UCM-ANG	UCM-WND-ANG	UCM-SR-ANG	UCM-VSL-ANG	UCM-LUM-ANG
DIAMETER	20"/508mm	20"/508mm	20"/508mm	20"/508mm	20"/508mm
HEIGHT	14.7"/373mm	20.5"/520mm	20.7"/526mm	20.5"/521mm	20.6"/523mm
WEIGHT	18.25 lbs/8.28kg	21.75 lbs/9.86kg	25 lbs/11.3kg	22.25 lbs/10.1kg	24.25 lbs/11kg
EPA	.60	.72	.74	.72	.74

					
BELL HOOD CONFIGURATION	UCM-BEL	UCM-WND-BEL	UCM-SR-BEL	UCM-VSL-BEL	UCM-LUM-BEL
DIAMETER	24"/610mm	24"/610mm	24"/610mm	24"/610mm	24"/610mm
HEIGHT	15.8"/401mm	21.4"/543mm	21.6"/549mm	19.37"/492mm	21.5"/546mm
WEIGHT	20.25 lbs/9.2kg	23.5 lbs/10.6kg	27 lbs/12.25kg	24.25 lbs/11kg	26 lbs/11.8kg
EPA	.73	.85	.87	.85	.85

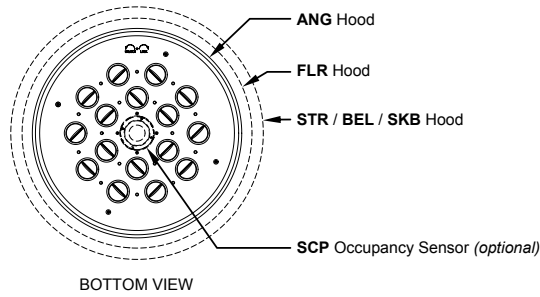
					
FLARE HOOD CONFIGURATION	UCM-FLR	UCM-WND-FLR	UCM-SR-FLR	UCM-VSL-FLR	UCM-LUM-FLR
DIAMETER	22"/559mm	22"/559mm	22"/559mm	22"/559mm	22"/559mm
HEIGHT	14.5"/368mm	19.8"/503mm	20.1"/510mm	19.8"/503mm	20"/508mm
WEIGHT	18.5 lbs/8.4kg	21.75 lbs/9.87kg	25.25 lbs/10.1kg	21.75 lbs/9.86kg	24.25 lbs/11kg
EPA	.53	.65	.67	.65	.67

					
STRAIGHT HOOD CONFIGURATION	UCM-STR	UCM-WND-STR	UCM-SR-STR	UCM-VSL-STR	UCM-LUM-STR
DIAMETER	24"/610mm	24"/610mm	24"/610mm	24"/610mm	24"/610mm
HEIGHT	14"/355mm	19.8"/503mm	20"/508mm	19.8"/503mm	19.9"/505mm
WEIGHT	20 lbs/9.07kg	23.25 lbs/10.55kg	26.75 lbs/12.13kg	23.75 lbs/10.77kg	25.75 lbs/11.68kg
EPA	.59	.71	.73	.71	.73

					
SKIRTED BELL HOOD CONFIGURATION	UCM-SKB	UCM-WND-SKB	UCM-SR-SKB	UCM-VSL-SKB	UCM-LUM-SKB
DIAMETER	24"/610mm	24"/610mm	24"/610mm	24"/610mm	24"/610mm
HEIGHT	19.7"/500mm	23.9"/607mm	24.2"/615mm	23.9"/607mm	24.1"/612mm
WEIGHT	20.5 lbs/9.3kg	23.75 lbs/10.77kg	27 lbs/12.25kg	24.25 lbs/11kg	26.25 lbs/11.9kg
EPA	.90	1.03	1.05	1.03	1.05



3000K unlit or 3000K without luminous element only



ORDERING INFORMATION

1	2	3	4	5	6	7	8	9	10
UCM									
MODEL	Hood	Distribution	CCT	Lumen Package	Finish	Options	Control	Voltage	Mounting

1. MODEL

UCM	Universe medium without luminous element
UCM-WND	Universe medium with luminous window
UCM-SR	Universe medium with luminous solid rings
UCM-VSL	Universe medium with luminous vertical slots
UCM-LUM	Universe medium with luminous rings

2. HOOD (May choose one)

FLR	Flared hood
FLR-STSS	Flared hood in natural brushed stainless steel
FLR-COP	Flared hood in natural brushed copper
ANG	Angled hood
ANG-STSS	Angled hood in natural brushed stainless steel
ANG-COP	Angled hood in natural brushed copper
STR	Straight hood
STR-STSS	Straight hood in natural brushed stainless steel
STR-COP	Straight hood in natural brushed copper
BEL	Bell hood
BEL-STSS	Bell hood in natural brushed stainless steel
BEL-COP	Bell hood in natural brushed copper
SKB	Skirted bell hood
SKB-STSS	Skirted bell hood in natural brushed stainless steel
SKB-COP	Skirted bell hood in natural brushed copper

3. DISTRIBUTION

MicroCore Precision aimed optics

T2-32LED	Type 2
T3-32LED	Type 3
T4-32LED	Type 4
T5-32LED	Type 5
TX-32LED	Custom ¹

4. COLOR TEMPERATURE

3K	3000K
4K	4000K
5K	5000K
27K	2700K ¹
35K	3500K ¹
AM	>560 nm monochromatic amber ¹

5. LUMEN PACKAGE

700	71 watts
450	48 watts
XMA	Custom wattage or drive current ¹

6. FINISH

Standard Color	
WH	Arctic White
BL	Black
BLT	Matte Black
DB	Dark Bronze
DGN	Dark Green
TT	Titanium
WDB	Weathered Bronze
MDB	Bronze Metallic
VBU	Verde Blue
CRT	Corten
MAL	Matte Aluminum
MG	Medium Grey
AGN	Antique Green
LG	Light Grey
Premium Color	
SHK	Shamrock
SPP	Salt and Pepper
SFM	Seafoam
WCP	Weathered Copper
RAL	RAL 4 digit Color
CUSTOM	Custom Color

7. OPTIONS (May choose as noted)

FTG	Flat clear glass lens ³
FLD	Flat diffused glass lens ³
SAG	Sag clear glass lens ^{1,3}
HSS	House Side shield for Type 4
SLC	Unlit (luminous) element
R80	80 CRI minimum ¹
BLU	Blue inner lens
RD	Red inner lens
GRN	Green inner lens

8. CONTROLS – (May choose as noted)

WIR	wiScape connectivity
WIRSC	wiScape connectivity, integral motion sensor
SCP	Integral photo-control and motion sensor ⁴
SCPREMOTE	Handheld commissioning tool ⁴

9. VOLTAGE

120-277	120-277 VAC input
347	347 VAC input
480	480 VAC input

9. MOUNTING POLE MOUNT

SLA2	SLA3	SLA4
SLA4-2	SLA7	SLA7-2
SLA7(5)	SLA7(5)-2	SLA8D
SLA9	SLA9-2	SLA10
SLA10-2	SLA16	SLA16-2
SLA17	SLA17-2	SLA17(5)
SLA17(5)-2	SLA18	SLA18-2
SLA20	SLA20-2	SLA20A
SLA20A-2	SLA20B	SLA20B-2
SLA20C	SLA20C-2	SLA20D
SLA20D-2	SLA22D	SLA24
SLA24-2	SLA24(5)	SLA24(5)-2
TRA4	TRA7	TRA7-2
TRA8	TRA8-2	TRA9
TRA9-2		

WALL MOUNT

WMA4	WMA5	WMA6
WMA8	WMA9D	WMA10
WMA11	WMA12	WMA16
WMA17	WMA18	WMA20
WMA22D	WMA24	WMA37
WMA38	WMA39	

PENDANT MOUNT PMS

¹ Contact factory

² Not for AM color temperature

³ Not for WIR, WIRSC or SCP control options

⁴ Handheld commissioning tool is required to separately configure or adjust any number of SCP sensors.

LUMINAIRE PERFORMANCE Actual measured performance to be within +/-3% of the stated values

Configuration				Ordering Code	32LED-5K-700					32LED-4K-700					32LED-3K-700						
System Watts	Luminous Element	Lens	Distribution		Bright White (5000K)					Neutral White (4000K)					Warm White (3000K)						
					Delivered Lumens	Efficacy (Lm/W)	B	U	G	Delivered Lumens	Efficacy (Lm/W)	B	U	G	Delivered Lumens	Efficacy (Lm/W)	B	U	G		
71	(None)	(None)	Type II	UCM-[HOOD]-T2	6579	93	2	1	2	6561	92	2	1	2	6186	87	2	1	2		
			Type III	UCM-[HOOD]-T3	6560	92	1	1	2	6542	92	1	1	2	6168	87	1	1	2		
			Type IV	UCM-[HOOD]-T4	6467	91	1	1	2	6449	91	1	1	2	6081	86	1	1	2		
			Type V	UCM-[HOOD]-T5	6623	93	3	1	2	6605	93	3	1	2	6227	88	3	1	2		
		Clear Flat	Type IV, HSS	UCM-[HOOD]-T4-(...-HSS)	4781	67	0	1	2	4768	67	0	1	2	4495	63	0	1	2		
			Type II	UCM-[HOOD]-T2-(...-CLR)	5836	82	2	1	2	5820	82	2	1	2	5487	77	2	1	2		
			Type III	UCM-[HOOD]-T3-(...-CLR)	5819	82	1	1	2	5803	82	1	1	2	5471	77	1	1	2		
			Type IV	UCM-[HOOD]-T4-(...-CLR)	5737	81	1	1	1	5721	81	1	1	1	5394	76	1	1	1		
		Diffused Flat	Type V	UCM-[HOOD]-T5-(...-CLR)	5875	83	3	1	1	5859	83	3	1	1	5524	78	3	1	1		
			Type II	UCM-[HOOD]-T2-(...-FLD)	4917	69	2	1	1	4904	69	2	1	1	4623	65	2	1	1		
			Type III	UCM-[HOOD]-T3-(...-FLD)	4903	69	1	1	1	4889	69	1	1	1	4610	65	1	1	1		
			Type IV	UCM-[HOOD]-T4-(...-FLD)	4833	68	1	1	1	4820	68	1	1	1	4544	64	1	1	1		
74	WND 4 Windows	(None)	Type V	UCM-[HOOD]-T5-(...-FLD)	4950	70	2	0	1	4936	70	2	0	1	4654	66	2	0	1		
			Type II	UCM-WND-[HOOD]-T2	6713	91	2	1	2	6695	90	2	1	2	6312	85	2	1	2		
			Type III	UCM-WND-[HOOD]-T3	6694	90	1	1	2	6675	90	1	1	2	6294	85	1	1	2		
			Type IV	UCM-WND-[HOOD]-T4	6599	89	1	1	2	6581	89	1	1	2	6205	84	1	1	2		
			Type V	UCM-WND-[HOOD]-T5	6758	91	3	2	2	6739	91	3	2	2	6354	86	3	2	2		
		Clear Flat	Type IV, HSS	UCM-WND-[HOOD]-T4-(...-HSS)	4878	66	0	1	2	4865	66	0	1	2	4587	62	0	1	2		
			Type II	UCM-WND-[HOOD]-T2-(...-CLR)	5955	80	2	1	2	5939	80	2	1	2	5599	76	2	1	2		
			Type III	UCM-WND-[HOOD]-T3-(...-CLR)	5938	80	1	1	2	5922	80	1	1	2	5583	75	1	1	2		
			Type IV	UCM-WND-[HOOD]-T4-(...-CLR)	5854	79	1	1	2	5838	79	1	1	2	5504	74	1	1	2		
		Diffused Flat	Type V	UCM-WND-[HOOD]-T5-(...-CLR)	5995	81	3	2	1	5979	81	3	2	1	5637	76	3	2	1		
			Type II	UCM-WND-[HOOD]-T2-(...-FLD)	5017	68	2	1	1	5004	68	2	1	1	4718	64	2	1	1		
			Type III	UCM-WND-[HOOD]-T3-(...-FLD)	5003	68	1	1	1	4989	67	1	1	1	4704	64	1	1	1		
			Type IV	UCM-WND-[HOOD]-T4-(...-FLD)	4932	67	1	1	1	4918	66	1	1	1	4637	63	1	1	1		
			Type V	UCM-WND-[HOOD]-T5-(...-FLD)	5051	68	2	2	1	5037	68	2	2	1	4749	64	2	2	1		
		SR Solid Rings	(None)	Type II	UCM-SR-[HOOD]-T2	6610	89	2	1	2	6592	89	2	1	2	6215	84	2	1	2	
				Type III	UCM-SR-[HOOD]-T3	6591	89	1	0	2	6573	89	1	0	2	6197	84	1	0	2	
				Type IV	UCM-SR-[HOOD]-T4	6498	88	1	1	2	6480	88	1	1	2	6109	83	1	1	2	
				Type V	UCM-SR-[HOOD]-T5	6654	90	3	1	2	6636	90	3	1	2	6257	85	3	1	2	
				Type IV, HSS	UCM-SR-[HOOD]-T4-(...-HSS)	4804	65	0	1	2	4790	65	0	1	2	4517	61	0	1	2	
			Clear Flat	Type II	UCM-SR-[HOOD]-T2-(...-CLR)	5864	79	2	1	2	5848	79	2	1	2	5513	75	2	1	2	
				Type III	UCM-SR-[HOOD]-T3-(...-CLR)	5847	79	1	1	2	5831	79	1	1	2	5497	74	1	1	2	
				Type IV	UCM-SR-[HOOD]-T4-(...-CLR)	5764	78	1	1	1	5748	78	1	1	1	5420	73	1	1	1	
				Type V	UCM-SR-[HOOD]-T5-(...-CLR)	5903	80	3	1	1	5887	80	3	1	1	5550	75	3	1	1	
			Diffused Flat	Type II	UCM-SR-[HOOD]-T2-(...-FLD)	4940	67	2	1	1	4927	67	2	1	1	4645	63	2	1	1	
	Type III			UCM-SR-[HOOD]-T3-(...-FLD)	4926	67	1	1	1	4913	66	1	1	1	4632	63	1	1	1		
	Type IV			UCM-SR-[HOOD]-T4-(...-FLD)	4856	66	1	1	1	4843	65	1	1	1	4566	62	1	1	1		
	VSL Vertical Slots	(None)	Type V	UCM-SR-[HOOD]-T5-(...-FLD)	4973	67	2	1	1	4960	67	2	1	1	4676	63	2	1	1		
			Type II	UCM-VSL-[HOOD]-T2	6551	89	2	0	2	6533	88	2	0	2	6159	83	2	0	2		
			Type III	UCM-VSL-[HOOD]-T3	6532	88	1	1	2	6514	88	1	1	2	6142	83	1	1	2		
			Type IV	UCM-VSL-[HOOD]-T4	6439	87	1	1	2	6422	87	1	1	2	6055	82	1	1	2		
			Type V	UCM-VSL-[HOOD]-T5	6595	89	3	1	2	6577	89	3	1	2	6201	84	3	1	2		
		Clear Flat	Type V, HSS	UCM-VSL-[HOOD]-T4-(...-HSS)	4761	64	0	1	2	4748	64	0	1	2	4476	60	0	1	2		
			Type II	UCM-VSL-[HOOD]-T2-(...-CLR)	5811	79	2	1	2	5795	78	2	1	2	5464	74	2	1	2		
			Type III	UCM-VSL-[HOOD]-T3-(...-CLR)	5795	78	1	1	2	5779	78	1	1	2	5448	74	1	1	2		
			Type IV	UCM-VSL-[HOOD]-T4-(...-CLR)	5712	77	1	1	1	5697	77	1	1	1	5371	73	1	1	1		
		Diffused Flat	Type V	UCM-VSL-[HOOD]-T5-(...-CLR)	5850	79	3	1	1	5834	79	3	1	1	5501	74	3	1	1		
			Type II	UCM-VSL-[HOOD]-T2-(...-FLD)	4604	62	2	1	1	4583	66	2	1	1	4896	66	2	1	1		
			Type III	UCM-VSL-[HOOD]-T3-(...-FLD)	4590	62	1	1	1	4569	66	1	1	1	4882	66	1	1	1		
			Type IV	UCM-VSL-[HOOD]-T4-(...-FLD)	4525	61	1	1	1	4800	65	1	1	1	4813	65	1	1	1		
			Type V	UCM-VSL-[HOOD]-T5-(...-FLD)	4634	63	2	1	1	4915	66	2	1	1	4929	67	2	1	1		
			LUM Luminous Rings	(None)	Type II	UCM-LUM-[HOOD]-T2	6670	90	2	1	2	6652	90	2	1	2	6271	85	2	1	2
					Type III	UCM-LUM-[HOOD]-T3	6651	90	1	0	2	6633	90	1	0	2	6253	85	1	0	2
	Type IV	UCM-LUM-[HOOD]-T4			6557	89	1	1	2	6539	88	1	1	2	6165	83	1	1	2		
	Type V	UCM-LUM-[HOOD]-T5			6715	91	3	1	2	6696	90	3	1	2	6314	85	3	1	2		
	Type V, HSS	UCM-LUM-[HOOD]-T4-(...-HSS)			4847	66	0	1	2	4834	65	0	1	2	4558	62	0	1	2		
	Clear Flat	Type II	UCM-LUM-[HOOD]-T2-(...-CLR)	5917	80	2	1	2	5901	80	2	1	2	5563	75	2	1	2			
		Type III	UCM-LUM-[HOOD]-T3-(...-CLR)	5900	80	1	1	2	5883	80	1	1	2	5547	75	1	1	2			
		Type IV	UCM-LUM-[HOOD]-T4-(...-CLR)	5816	79	1	1	2	5800	78	1	1	2	5468	74	1	1	2			
		Type V	UCM-LUM-[HOOD]-T5-(...-CLR)	5956	80	3	1	1	5940	80	3	1	1	5600	76	3	1	1			
	Diffused Flat	Type II	UCM-LUM-[HOOD]-T2-(...-FLD)	4985	67	2	1	1	4971	67	2	1	1	4687	63	2	1	1			
		Type III	UCM-LUM-[HOOD]-T3-(...-FLD)	4971	67	1	1	1	4957	67	1	1	1	4957	67	1	1	1			
		Type IV	UCM-LUM-[HOOD]-T4-(...-FLD)	4900	66	1	1	1	4887	66	1	1	1	4607	62	1	1	1			
Type V		UCM-LUM-[HOOD]-T5-(...-FLD)	5018	68	2	1	1	5005	68	2	1	1	4719	64	2	1	1				

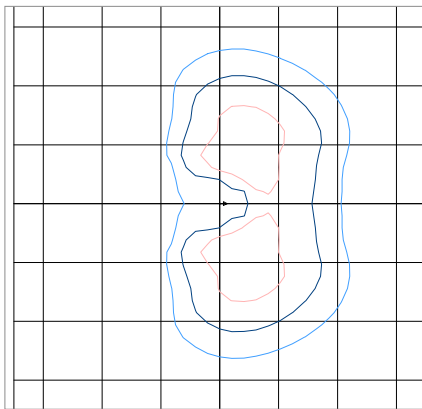
LUMINAIRE PERFORMANCE (CONTINUED) Actual measured performance to be within +/-3% of the stated values

Configuration				Ordering Code	32LED-5K-700					32LED-4K-700					32LED-3K-700				
System Watts	Luminous Element	Lens	Distribution		Bright White (5000K)					Neutral White (4000K)					Warm White (3000K)				
					Delivered Lumens	Efficacy (Lm/W)	B	U	G	Delivered Lumens	Efficacy (Lm/W)	B	U	G	Delivered Lumens	Efficacy (Lm/W)	B	U	G
47	(None)	(None)	Type II	UCM-[HOOD]-T2	4844	103	2	0	2	4830	103	2	0	2	4607	98	2	0	2
			Type III	UCM-[HOOD]-T3	4805	102	1	0	2	4791	102	1	0	2	4570	97	1	0	2
			Type IV	UCM-[HOOD]-T4	4805	102	1	0	2	4791	102	1	0	2	4570	97	1	0	2
			Type V	UCM-[HOOD]-T5	4839	103	3	0	1	4825	103	3	0	1	4602	98	3	0	1
		Clear Flat	Type IV, HSS	UCM-[HOOD]-T4-(-HSS)	3539	75	0	0	2	3529	75	0	0	2	3327	71	0	0	2
			Type II	UCM-[HOOD]-T2-(-CLR)	4180	89	1	1	1	4168	89	1	1	1	3976	85	1	1	1
			Type III	UCM-[HOOD]-T3-(-CLR)	4147	88	1	1	1	4135	88	1	1	1	3944	84	1	1	1
			Type IV	UCM-[HOOD]-T4-(-CLR)	4147	88	1	1	1	4135	88	1	1	1	3944	84	1	1	1
		Diffused Flat	Type V	UCM-[HOOD]-T5-(-CLR)	4176	89	2	0	1	4164	89	2	0	1	3972	85	2	0	1
			Type II	UCM-[HOOD]-T2-(-FLD)	3376	72	1	1	1	3367	72	1	1	1	3211	68	1	1	1
			Type III	UCM-[HOOD]-T3-(-FLD)	3349	71	1	1	1	3340	71	1	1	1	3185	68	1	1	1
			Type IV	UCM-[HOOD]-T4-(-FLD)	3349	71	1	1	1	3340	71	1	1	1	3185	68	1	1	1
49	WND 4 Windows	(None)	Type V	UCM-[HOOD]-T5-(-FLD)	3373	72	1	0	1	3363	72	1	0	1	3208	68	1	0	1
			Type II	UCM-WND-[HOOD]-T2	4772	97	2	1	2	4758	97	2	1	2	4538	93	2	1	2
			Type III	UCM-WND-[HOOD]-T3	4820	98	1	1	2	4806	98	1	1	2	4584	94	1	1	2
			Type IV	UCM-WND-[HOOD]-T4	4792	98	1	1	2	4778	98	1	1	2	4558	93	1	1	2
		Clear Flat	Type V	UCM-WND-[HOOD]-T5	4783	98	3	2	2	4769	97	3	2	2	4549	93	3	2	2
			Type IV, HSS	UCM-WND-[HOOD]-T4-(-HSS)	3552	72	0	1	2	3542	72	0	1	2	3378	69	0	1	2
			Type II	UCM-WND-[HOOD]-T2-(-CLR)	4269	87	1	1	1	4256	87	1	1	1	4060	83	1	1	1
			Type III	UCM-WND-[HOOD]-T3-(-CLR)	4159	85	1	1	1	4147	85	1	1	1	3956	81	1	1	1
		Diffused Flat	Type IV	UCM-WND-[HOOD]-T4-(-CLR)	3944	80	1	1	1	3932	80	1	1	1	3751	77	1	1	1
			Type V	UCM-WND-[HOOD]-T5-(-CLR)	4235	86	1	2	1	4223	86	1	2	1	4028	82	1	2	1
			Type II	UCM-WND-[HOOD]-T2-(-FLD)	3394	69	1	1	1	3384	69	1	1	1	3228	66	1	1	1
			Type III	UCM-WND-[HOOD]-T3-(-FLD)	3425	70	1	1	1	3415	70	1	1	1	3257	66	1	1	1
	SR Solid Rings	(None)	Type IV	UCM-WND-[HOOD]-T4-(-FLD)	3335	68	1	1	1	3325	68	1	1	1	3171	65	1	1	1
			Type V	UCM-WND-[HOOD]-T5-(-FLD)	3450	70	2	1	1	3440	70	2	1	1	3281	67	2	1	1
			Type II	UCM-SR-[HOOD]-T2	4716	96	2	1	2	4702	96	2	1	2	4485	92	2	1	2
			Type III	UCM-SR-[HOOD]-T3	4763	97	1	1	2	4750	97	1	1	2	4530	92	1	1	2
		Clear Flat	Type IV	UCM-SR-[HOOD]-T4	4736	97	1	1	2	4722	96	1	1	2	4504	92	1	1	2
			Type V	UCM-SR-[HOOD]-T5	4727	96	3	1	2	4713	96	3	1	2	4496	92	3	1	2
			Type IV, HSS	UCM-SR-[HOOD]-T4-(-HSS)	3537	72	0	1	2	3527	72	0	1	2	3364	69	0	1	2
			Type II	UCM-SR-[HOOD]-T2-(-CLR)	4785	98	1	1	1	4771	97	1	1	1	4551	93	1	1	1
		Diffused Flat	Type III	UCM-SR-[HOOD]-T3-(-CLR)	4663	95	1	1	1	4649	95	1	1	1	4435	91	1	1	1
			Type IV	UCM-SR-[HOOD]-T4-(-CLR)	4421	90	1	1	1	4408	90	1	1	1	4205	86	1	1	1
			Type V	UCM-SR-[HOOD]-T5-(-CLR)	4192	86	2	1	1	4180	85	2	1	1	3987	81	2	1	1
			Type II	UCM-SR-[HOOD]-T2-(-FLD)	3364	69	1	1	1	3355	68	1	1	1	3200	65	1	1	1
	VSL Vertical Slots	(None)	Type III	UCM-SR-[HOOD]-T3-(-FLD)	3395	69	1	1	1	3385	69	1	1	1	3229	66	1	1	1
			Type IV	UCM-SR-[HOOD]-T4-(-FLD)	3306	67	1	1	1	3296	67	1	1	1	3144	64	1	1	1
			Type V	UCM-SR-[HOOD]-T5-(-FLD)	3420	70	1	1	1	3410	70	1	1	1	3253	66	1	1	1
			Type II	UCM-VSL-[HOOD]-T2	4725	96	2	0	2	4711	96	2	0	2	4494	92	2	0	2
		Clear Flat	Type III	UCM-VSL-[HOOD]-T3	4772	97	1	1	2	4759	97	1	1	2	4539	93	1	1	2
			Type IV	UCM-VSL-[HOOD]-T4	4745	97	1	1	2	4731	97	1	1	2	4513	92	1	1	2
			Type V	UCM-VSL-[HOOD]-T5	4736	97	3	0	2	4722	96	3	0	2	4504	92	3	0	2
			Type V, HSS	UCM-VSL-[HOOD]-T4-(-HSS)	3562	73	0	1	2	3552	72	0	1	2	3388	69	0	1	2
		Diffused Flat	Type II	UCM-VSL-[HOOD]-T2-(-CLR)	4223	86	1	1	1	4210	86	1	1	1	4016	82	1	1	1
			Type III	UCM-VSL-[HOOD]-T3-(-CLR)	4114	84	1	1	1	4102	84	1	1	1	3913	80	1	1	1
			Type IV	UCM-VSL-[HOOD]-T4-(-CLR)	3901	80	1	1	1	3890	79	1	1	1	3710	76	1	1	1
			Type V	UCM-VSL-[HOOD]-T5-(-CLR)	4189	85	2	0	1	4177	85	2	0	1	3984	81	2	0	1
	LUM Luminous Rings	(None)	Type II	UCM-VSL-[HOOD]-T2-(-FLD)	3367	69	1	1	1	3358	69	1	1	1	3203	65	1	1	1
			Type III	UCM-VSL-[HOOD]-T3-(-FLD)	3398	69	1	1	1	3388	69	1	1	1	3232	66	1	1	1
			Type IV	UCM-VSL-[HOOD]-T4-(-FLD)	3308	68	1	1	1	3299	67	1	1	1	3147	64	1	1	1
			Type V	UCM-VSL-[HOOD]-T5-(-FLD)	3423	70	1	0	1	3413	70	1	0	1	3256	66	1	0	1
		Clear Flat	Type II	UCM-LUM-[HOOD]-T2	4809	98	2	1	2	4795	98	2	1	2	4574	93	2	1	2
			Type III	UCM-LUM-[HOOD]-T3	4646	95	1	0	2	4633	95	1	0	2	4419	90	1	0	2
			Type IV	UCM-LUM-[HOOD]-T4	4701	96	1	1	2	4687	96	1	1	2	4471	91	1	1	2
			Type V	UCM-LUM-[HOOD]-T5	4733	97	3	1	1	4719	96	3	1	1	4502	92	3	1	1
		Diffused Flat	Type V, HSS	UCM-LUM-[HOOD]-T4-(-HSS)	3564	73	0	1	2	3554	73	0	1	2	3390	69	0	1	2
			Type II	UCM-LUM-[HOOD]-T2-(-CLR)	4207	86	1	1	1	4194	86	1	1	1	4001	82	1	1	1
Type III			UCM-LUM-[HOOD]-T3-(-CLR)	4131	84	1	1	1	4119	84	1	1	1	3929	80	1	1	1	
Type IV			UCM-LUM-[HOOD]-T4-(-CLR)	3911	80	1	1	1	3900	80	1	1	1	3720	76	1	1	1	
Diffused Flat	Type V	UCM-LUM-[HOOD]-T5-(-CLR)	4196	86	2	1	1	4184	85	2	1	1	3991	81	2	1	1		
	Type II	UCM-LUM-[HOOD]-T2-(-FLD)	3434	70	1	1	1	3424	70	1	1	1	3266	67	1	1	1		
	Type III	UCM-LUM-[HOOD]-T3-(-FLD)	3338	68	1	1	1	3328	68	1	1	1	3175	65	1	1	1		
	Type IV	UCM-LUM-[HOOD]-T4-(-FLD)	3166	65	1	1	1	3157	64	1	1	1	3012	61	1	1	1		
Diffused Flat	Type V	UCM-LUM-[HOOD]-T5-(-FLD)	3418	70	1	1	1	3408	70	1	1	1	3251	66	1	1	1		

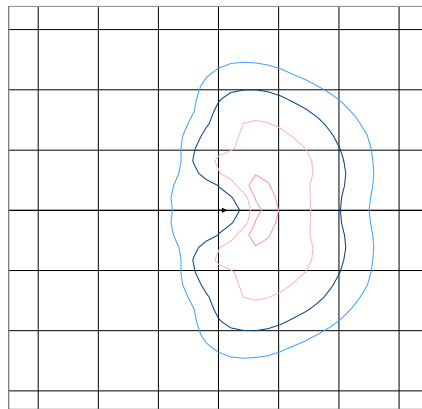
ELECTRICAL CHARACTERISTICS

Ordering Code		Line Input		Amps AC	LED Drive (mA)	System Watts (w)	Min. Power Factor	MAx THD (%)	Driver Operating Temp. Range (°C)	Inrush Current peak		Dimming	
MODEL	LUMEN PACKAGE	VAC	Hz							(A)	T@ 50% (µs)	Dimming Range (V)	Source / Sink Current (mA)
UCM UCM-(...SLC)	700	120-277	50 / 60	0.6 - 0.3	650	71	≥9	20	-30 TO +40	15 - 32	100	0 - 10	1
		347		0.2						32	100		
		480		0.2						32	100		
UCM-WND UCM-SR UCM-VSL UCM-LUM	700	120-277	50 / 60	0.6 - 0.3	450	74	≥9	21	-30 TO +40	15 - 32	100	0 - 10	1
		347		0.2						32	100		
		480		0.2						32	100		
UCM UCM-(...SLC)	450	120-277	50 / 60	0.4	650	47	≥9	22	-30 TO +40	15 - 32	100	0 - 10	1
		347		0.1						32	100		
		480		0.1						32	100		
UCM-WND UCM-SR UCM-VSL UCM-LUM	450	120-277	50 / 60	0.2	450	49	≥9	23	-30 TO +40	15 - 32	100	0 - 10	1
		347		0.1						32	100		
		480		0.1						32	100		

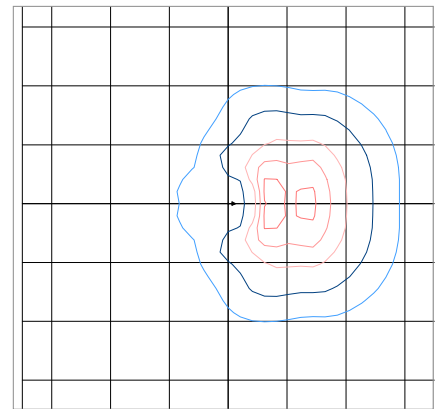
ISOLINE TEMPLATES 16' Mounting Height



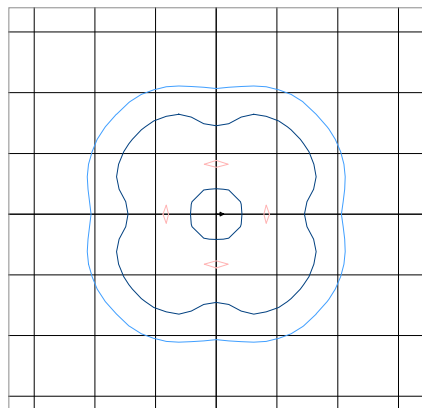
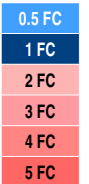
UCM-[HOOD]-T2-32LED-5K-700



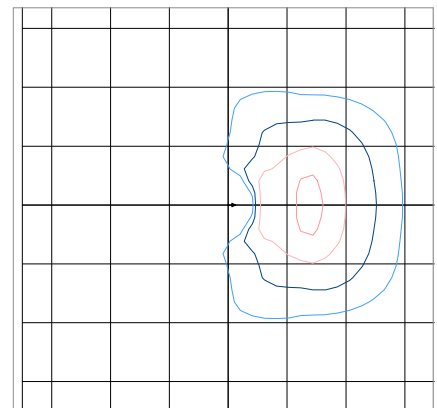
UCM-[HOOD]-T3-32LED-5K-700



UCM-[HOOD]-T4-32LED-5K-700



UCM-[HOOD]-T5-32LED-5K-700

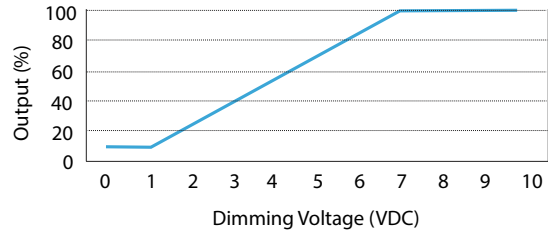


UCM-[HOOD]-T4-32LED-5K-700-HSS

TM-21 LIFETIME CALCULATION

Ambient Environment °C	Projected Lumen Maintenance (Khrs)					Reported L70
	15	25	50	60	100	
25	98%	97%	96%	96%	93%	>96Khrs.
40	96%	95%	93%	92%	89%	

DIMMING CURVE



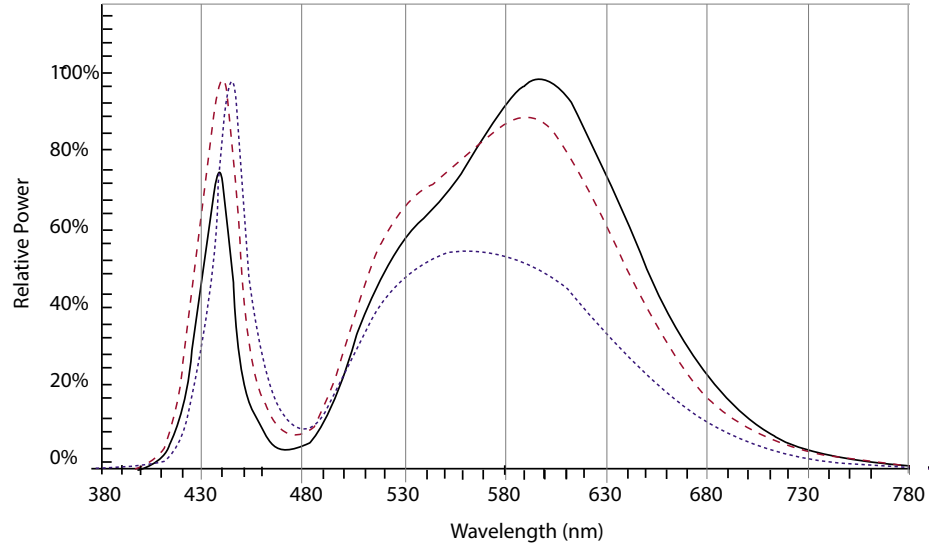
Note: Fixture does not dim to off, fixture dims to 10% minimum output.

COLOR CHARACTERISTICS

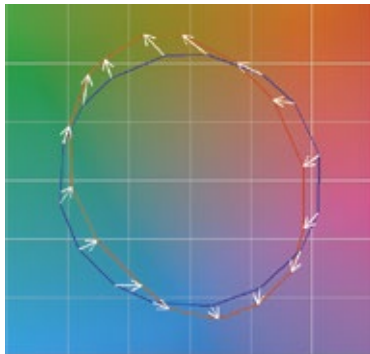
Value	Ordering Code		
	3K	4K	5K
Rf	69	69	71
Rg	99	99	98
CCT(K)	3122	3852	5020
Duv	0.001	0.0004	0.0005
CIE Ra	74	73	74

Note: TM-30 reported at the discrete LED level, not fixture level.

SPECTRAL POWER DISTRIBUTION COMPARISON

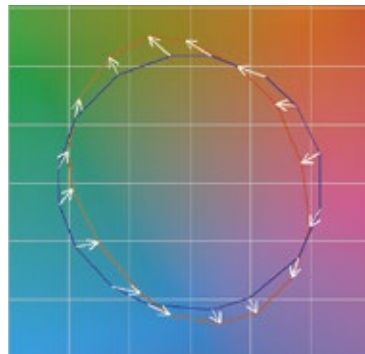


COLOR VECTOR GRAPHIC



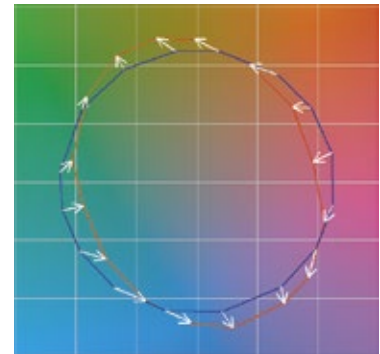
— Reference Illuminant — Test Source — Series1 — Series2
— Series3 — Series4 — Series5 — Series6
— Series7 — Series8 — Series9 — Series10

XX30



— Reference Illuminant — Test Source — Series1 — Series2
— Series3 — Series4 — Series5 — Series6
— Series7 — Series8 — Series9 — Series10

XX40



— Reference Illuminant — Test Source — Series1 — Series2
— Series3 — Series4 — Series5 — Series6
— Series7 — Series8 — Series9 — Series10

XX50

SENSOR DETECTION RANGE

		SENSOR MOUNTING HEIGHT											RATIO
		8'	10'	12'	14'	16'	18'	20'	25'	30'	35'	40'	
COVERAGE DIAMETER	SCP	20'	25'	30'	35'	40'	45'	50'	62.5'	75'	87.5'	100'	1:2.5
	WIRSC	16'	20'	24'	28'	32'	36'	50'	N/A	N/A	N/A	N/A	1:2

SPECIFICATIONS

HOUSING

- All housing components shall be die-cast aluminum 360 alloy, sealed with continuous silicone rubber gaskets.
- Hood and spacers shall be heavy gauge spun aluminum with hemmed edges for added rigidity.
- Luminous rings shall be clear acrylic with an internal lens.
- Standard configurations do not require a flat lens, optional lenses shall be tempered glass
- All internal and external hardware shall be stainless steel.
- Optical bezel finish shall match the luminaire housing.

OPTICAL

- Patent pending MicroCore™ LED modules shall independently aim each light emitting diode (LED) in both horizontal rotation and vertical tilt angle.
- LEDs shall be mounted to a metal printed circuit board assembly (PCBA) with a uniform conformal coating over the panel surface and electrical features.
- LED optics shall be clear injection molded PMMA acrylic.
- MicroCore™ PCBA and optic shall be sealed to a die-cast anodized aluminum heat sink with an injection molded silicone rubber gasket. IP66.
- Type 4 distribution with optional House Side Shield not available with clear or diffused glass lenses. Factory installed House Side Shield is optimized for Type 4 distribution and not recommended for use with Type 2 or 3 distribution and not available with type 5 distribution.

ELECTRICAL

- Luminaires shall have integral surge protection that shall be U.L. recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 372J.
- Drivers shall be U.L. recognized with an inrush current maximum of <20.0 Amps maximum at 230VAC.
- Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems, approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV.

CONTROLS

- Wireless enabled fixtures shall support bi-directional radio frequency (RF) communications utilizing IEEE 802.15.4 operating in the 2.4GHZ ISM band.
- Up to 1000' wireless range may be reduced by physical obstructions between fixtures.
- Motion sensor shall be flame retardant, UV resistant, impact resistant, recyclable polycarbonate.
- Motion Sensor shall use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Careful consideration must be given to obstructions that may block the sensor's line of sight.
- Factory default settings for SCP option shall be:
 - High mode: 10V
 - Low mode: 1V
 - Ramp-up rate: disabled
 - Fade-down rate: disabled
 - Photocell: Off
 - Sensitivity: Full
 - Time Delay: Fade to low: 5 minutes
 - Time Delay: Fade to off: 1 hour

PHOTOCELL / EGRESS ADAPTERS

- Adapter(s) shall slip over a 4"/100mm DIA. pole with the luminaire or arm slipping over the adapter to add a total of 4.5"/114mm to the overall height. Adapter(s) shall be prewired, independently rotatable 359°, and have a cast access cover with an integral lens and lanyard.
- Photocell adapter shall include an internal twist lock receptacle. Photocell by others.
- Egress adapter shall require an auxiliary 120 volt supply for operation of an integral MR16 lamp in the event of emergency. The lamp may be aimed and locked into position with an adjustment range of 15°-45°. Adapter shall have a socket that accepts miniature bi-pin MR16 lamps up to 50 watts, lamp by others.

SERVICING

- Luminaire shall have tool-less service access to the gear compartment. Driver and surge suppressor shall be mounted to a prewired tray with quick disconnects that may be removed from the gear compartment.

ARM MOUNTING

- Luminaire shall be attached to the arm assembly with three stainless steel bolts. The connection shall be sealed with a silicone compression gasket.
- Post top arms and brackets shall slip over a 4"/100mm O.D. or a 5"/127mm as configured and secured with six stainless steel set screws.
- Wall mounted arms and brackets shall require mounting hardware by others.

FINISH

- Luminaire finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- Luminaire finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

- Luminaire shall be listed with ETL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250.

WARRANTY / TERMS AND CONDITIONS OF SALE

Download:
<http://www.hubbellighting.com/resources/warranty/>

DLC QUALIFIED PRODUCTS

Lumen Package	Luminous Element	CCT	ANG – ANGLED HOOD		
			NO LENS Standard	FTG Flat clear glass lens	FLD Flat diffused glass lens
700	(None)	4K 4000K	UCM-ANG-T2-4K-32LED-700-120-277		
			UCM-ANG-T5-4K-32LED-700-120-277		
		5K 5000K	UCM-ANG-T2-5K-32LED-700-120-277		
			UCM-ANG-T3-5K-32LED-700-120-277		
			UCM-ANG-T5-5K-32LED-700-120-277		
450	(None)	3K 3000K	UCM-ANG-T2-3K-32LED-450-120-277		
			UCM-ANG-T3-3K-32LED-450-120-277		
			UCM-ANG-T4-3K-32LED-450-120-277		
			UCM-ANG-T5-3K-32LED-450-120-277		
			UCM-ANG-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-ANG-T3-4K-32LED-450-120-277		
			UCM-ANG-T4-4K-32LED-450-120-277		
			UCM-ANG-T5-4K-32LED-450-120-277		
			UCM-ANG-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-ANG-T3-5K-32LED-450-120-277		
			UCM-ANG-T4-5K-32LED-450-120-277		
			UCM-ANG-T5-5K-32LED-450-120-277		
			UCM-WND-ANG-T2-3K-32LED-450-120-277		
			UCM-WND-ANG-T3-3K-32LED-450-120-277		
			UCM-WND-ANG-T4-3K-32LED-450-120-277		
			UCM-WND-ANG-T5-3K-32LED-450-120-277		
			UCM-WND-ANG-T2-4K-32LED-450-120-277		
	WND 4 Windows	4K 4000K	UCM-WND-ANG-T3-4K-32LED-450-120-277		
			UCM-WND-ANG-T4-4K-32LED-450-120-277		
			UCM-WND-ANG-T5-4K-32LED-450-120-277		
			UCM-WND-ANG-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-WND-ANG-T3-5K-32LED-450-120-277		
			UCM-WND-ANG-T4-5K-32LED-450-120-277		
			UCM-WND-ANG-T5-5K-32LED-450-120-277		
			UCM-SR-ANG-T2-3K-32LED-450-120-277	UCM-SR-ANG-T2-3K-32LED-450-FTG-120-277	
			UCM-SR-ANG-T3-3K-32LED-450-120-277	UCM-SR-ANG-T3-3K-32LED-450-FTG-120-277	
		3K 3000K	UCM-SR-ANG-T4-3K-32LED-450-120-277		
			UCM-SR-ANG-T5-3K-32LED-450-120-277		
			UCM-SR-ANG-T2-4K-32LED-450-120-277	UCM-SR-ANG-T2-4K-32LED-450-FTG-120-277	
		4K 4000K	UCM-SR-ANG-T3-4K-32LED-450-120-277	UCM-SR-ANG-T3-4K-32LED-450-FTG-120-277	
			UCM-SR-ANG-T4-4K-32LED-450-120-277	UCM-SR-ANG-T4-4K-32LED-450-FTG-120-277	
			UCM-SR-ANG-T5-4K-32LED-450-120-277		
			UCM-SR-ANG-T2-5K-32LED-450-120-277	UCM-SR-ANG-T2-5K-32LED-450-FTG-120-277	
		5K 5000K	UCM-SR-ANG-T3-5K-32LED-450-120-277	UCM-SR-ANG-T3-5K-32LED-450-FTG-120-277	
			UCM-SR-ANG-T4-5K-32LED-450-120-277	UCM-SR-ANG-T4-5K-32LED-450-FTG-120-277	
			UCM-SR-ANG-T5-5K-32LED-450-120-277		
	VSL Vertical Slots	3K 3000K	UCM-VSL-ANG-T2-3K-32LED-450-120-277		
			UCM-VSL-ANG-T3-3K-32LED-450-120-277		
			UCM-VSL-ANG-T4-3K-32LED-450-120-277		
			UCM-VSL-ANG-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-VSL-ANG-T2-4K-32LED-450-120-277		
			UCM-VSL-ANG-T3-4K-32LED-450-120-277		
			UCM-VSL-ANG-T4-4K-32LED-450-120-277		
			UCM-VSL-ANG-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-VSL-ANG-T2-5K-32LED-450-120-277		
			UCM-VSL-ANG-T3-5K-32LED-450-120-277		
			UCM-VSL-ANG-T4-5K-32LED-450-120-277		
			UCM-VSL-ANG-T5-5K-32LED-450-120-277		
	LUM Luminous Rings	3K 3000K	UCM-LUM-ANG-T2-3K-32LED-450-120-277		
			UCM-LUM-ANG-T3-3K-32LED-450-120-277		
			UCM-LUM-ANG-T4-3K-32LED-450-120-277		
			UCM-LUM-ANG-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-LUM-ANG-T2-4K-32LED-450-120-277		
			UCM-LUM-ANG-T3-4K-32LED-450-120-277		
			UCM-LUM-ANG-T4-4K-32LED-450-120-277		
			UCM-LUM-ANG-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-LUM-ANG-T2-5K-32LED-450-120-277		
			UCM-LUM-ANG-T3-5K-32LED-450-120-277		
			UCM-LUM-ANG-T4-5K-32LED-450-120-277		
			UCM-LUM-ANG-T5-5K-32LED-450-120-277		

DLC QUALIFIED PRODUCTS (Continued)

Lumen Package	Luminous Element	CCT	SKB – SKIRTED BELL HOOD		
			NO LENS Standard	FTG Flat clear glass lens	FLD Flat diffused glass lens
450	(None)	3K 3000K	UCM-SKB-T2-3K-32LED-450-120-277		
			UCM-SKB-T3-3K-32LED-450-120-277		
			UCM-SKB-T4-3K-32LED-450-120-277		
			UCM-SKB-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-SKB-T2-4K-32LED-450-120-277		
			UCM-SKB-T3-4K-32LED-450-120-277		
			UCM-SKB-T4-4K-32LED-450-120-277		
			UCM-SKB-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-SKB-T2-5K-32LED-450-120-277		
			UCM-SKB-T3-5K-32LED-450-120-277		
			UCM-SKB-T4-5K-32LED-450-120-277		
			UCM-SKB-T5-5K-32LED-450-120-277		
	WND 4 Windows	3K 3000K	UCM-WND-SKB-T2-3K-32LED-450-120-277		
			UCM-WND-SKB-T3-3K-32LED-450-120-277		
			UCM-WND-SKB-T4-3K-32LED-450-120-277		
			UCM-WND-SKB-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-WND-SKB-T2-4K-32LED-450-120-277		
			UCM-WND-SKB-T3-4K-32LED-450-120-277		
			UCM-WND-SKB-T4-4K-32LED-450-120-277		
			UCM-WND-SKB-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-WND-SKB-T2-5K-32LED-450-120-277		
			UCM-WND-SKB-T3-5K-32LED-450-120-277		
			UCM-WND-SKB-T4-5K-32LED-450-120-277		
			UCM-WND-SKB-T5-5K-32LED-450-120-277		
	SR Solid Rings	3K 3000K	UCM-SR-SKB-T3-3K-32LED-450-120-277		
			UCM-SR-SKB-T4-3K-32LED-450-120-277		
			UCM-SR-SKB-T5-3K-32LED-450-120-277		
			UCM-SR-SKB-T3-4K-32LED-450-120-277		
		4K 4000K	UCM-SR-SKB-T4-4K-32LED-450-120-277		
			UCM-SR-SKB-T5-4K-32LED-450-120-277		
			UCM-SR-SKB-T3-5K-32LED-450-120-277		
			UCM-SR-SKB-T4-5K-32LED-450-120-277		
		5K 5000K	UCM-SR-SKB-T5-5K-32LED-450-120-277		
			UCM-VSL-SKB-T3-3K-32LED-450-120-277		
			UCM-VSL-SKB-T4-3K-32LED-450-120-277		
			UCM-VSL-SKB-T5-3K-32LED-450-120-277		
	VSL Vertical Slots	3K 3000K	UCM-VSL-SKB-T2-4K-32LED-450-120-277		
			UCM-VSL-SKB-T3-4K-32LED-450-120-277		
			UCM-VSL-SKB-T4-4K-32LED-450-120-277		
			UCM-VSL-SKB-T5-4K-32LED-450-120-277		
		4K 4000K	UCM-VSL-SKB-T3-5K-32LED-450-120-277		
			UCM-VSL-SKB-T4-5K-32LED-450-120-277		
			UCM-VSL-SKB-T5-5K-32LED-450-120-277		
		5K 5000K	UCM-LUM-SKB-T2-3K-32LED-450-120-277		
			UCM-LUM-SKB-T3-3K-32LED-450-120-277		
			UCM-LUM-SKB-T4-3K-32LED-450-120-277		
			UCM-LUM-SKB-T5-3K-32LED-450-120-277		
	LUM Luminous Rings	3K 3000K	UCM-LUM-SKB-T3-4K-32LED-450-120-277		
			UCM-LUM-SKB-T4-4K-32LED-450-120-277		
			UCM-LUM-SKB-T5-4K-32LED-450-120-277		
			UCM-LUM-SKB-T3-5K-32LED-450-120-277		
		4K 4000K	UCM-LUM-SKB-T4-5K-32LED-450-120-277		
			UCM-LUM-SKB-T5-5K-32LED-450-120-277		
			UCM-LUM-SKB-T3-5K-32LED-450-120-277		
			UCM-LUM-SKB-T4-5K-32LED-450-120-277		
		5K 5000K	UCM-LUM-SKB-T5-5K-32LED-450-120-277		
			UCM-LUM-SKB-T3-5K-32LED-450-120-277		
			UCM-LUM-SKB-T4-5K-32LED-450-120-277		
			UCM-LUM-SKB-T5-5K-32LED-450-120-277		

DLC QUALIFIED PRODUCTS (Continued)

Lumen Package	Luminous Element	CCT	BEL – BELL HOOD		
			NO LENS Standard	FTG Flat clear glass lens	FLD Flat diffused glass lens
700	(None)	4K 4000K	UCM-BEL-T2-4K-32LED-700-120-277		
			UCM-BEL-T3-4K-32LED-700-120-277		
			UCM-BEL-T4-4K-32LED-700-120-277		
			UCM-BEL-T5-4K-32LED-700-120-277		
		5K 5000K	UCM-BEL-T2-5K-32LED-700-120-277		
			UCM-BEL-T3-5K-32LED-700-120-277		
			UCM-BEL-T4-5K-32LED-700-120-277		
			UCM-BEL-T5-5K-32LED-700-120-277		
	WND 4 Windows	4K	UCM-WND-BEL-T5-4K-32LED-700-120-277		
		5K	UCM-WND-BEL-T5-5K-32LED-700-120-277		
450	(None)	3K 3000K	UCM-BEL-T2-3K-32LED-450-120-277		
			UCM-BEL-T3-3K-32LED-450-120-277		
			UCM-BEL-T4-3K-32LED-450-120-277		
			UCM-BEL-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-BEL-T2-4K-32LED-450-120-277		
			UCM-BEL-T3-4K-32LED-450-120-277		
			UCM-BEL-T4-4K-32LED-450-120-277		
			UCM-BEL-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-BEL-T2-5K-32LED-450-120-277		
			UCM-BEL-T3-5K-32LED-450-120-277		
			UCM-BEL-T4-5K-32LED-450-120-277		
			UCM-BEL-T5-5K-32LED-450-120-277		
	WND 4 Windows	3K 3000K	UCM-WND-BEL-T2-3K-32LED-450-120-277		
			UCM-WND-BEL-T3-3K-32LED-450-120-277		
			UCM-WND-BEL-T4-3K-32LED-450-120-277		
			UCM-WND-BEL-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-WND-BEL-T2-4K-32LED-450-120-277		
			UCM-WND-BEL-T3-4K-32LED-450-120-277		
			UCM-WND-BEL-T4-4K-32LED-450-120-277		
			UCM-WND-BEL-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-WND-BEL-T2-5K-32LED-450-120-277		
			UCM-WND-BEL-T3-5K-32LED-450-120-277		
			UCM-WND-BEL-T4-5K-32LED-450-120-277		
			UCM-WND-BEL-T5-5K-32LED-450-120-277		
	SR Solid Rings	3K 3000K	UCM-SR-BEL-T2-3K-32LED-450-120-277		
			UCM-SR-BEL-T3-3K-32LED-450-120-277		
			UCM-SR-BEL-T4-3K-32LED-450-120-277		
			UCM-SR-BEL-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-SR-BEL-T2-4K-32LED-450-120-277		
			UCM-SR-BEL-T3-4K-32LED-450-120-277		
			UCM-SR-BEL-T4-4K-32LED-450-120-277		
			UCM-SR-BEL-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-SR-BEL-T2-5K-32LED-450-120-277		
			UCM-SR-BEL-T3-5K-32LED-450-120-277		
			UCM-SR-BEL-T4-5K-32LED-450-120-277		
			UCM-SR-BEL-T5-5K-32LED-450-120-277		
	VSL Vertical Slots	3K 3000K	UCM-VSL-BEL-T2-3K-32LED-450-120-277		
			UCM-VSL-BEL-T3-3K-32LED-450-120-277		
			UCM-VSL-BEL-T4-3K-32LED-450-120-277		
			UCM-VSL-BEL-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-VSL-BEL-T2-4K-32LED-450-120-277		
			UCM-VSL-BEL-T3-4K-32LED-450-120-277		
			UCM-VSL-BEL-T4-4K-32LED-450-120-277		
			UCM-VSL-BEL-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-VSL-BEL-T2-5K-32LED-450-120-277		
			UCM-VSL-BEL-T3-5K-32LED-450-120-277		
			UCM-VSL-BEL-T4-5K-32LED-450-120-277		
			UCM-VSL-BEL-T5-5K-32LED-450-120-277		
	LUM Luminous Rings	3K 3000K	UCM-LUM-BEL-T2-3K-32LED-450-120-277		
			UCM-LUM-BEL-T3-3K-32LED-450-120-277		
			UCM-LUM-BEL-T4-3K-32LED-450-120-277		
			UCM-LUM-BEL-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-LUM-BEL-T2-4K-32LED-450-120-277		
			UCM-LUM-BEL-T3-4K-32LED-450-120-277		
			UCM-LUM-BEL-T4-4K-32LED-450-120-277		
			UCM-LUM-BEL-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-LUM-BEL-T2-5K-32LED-450-120-277		
			UCM-LUM-BEL-T3-5K-32LED-450-120-277		
			UCM-LUM-BEL-T4-5K-32LED-450-120-277		
			UCM-LUM-BEL-T5-5K-32LED-450-120-277		

DLC QUALIFIED PRODUCTS (Continued)

Lumen Package	Luminous Element	CCT	FLR – FLARED HOOD		
			NO LENS Standard	FTG Flat clear glass lens	FLD Flat diffused glass lens
450	(None)	3K 3000K	UCM-FLR-T2-3K-32LED-450-120-277		
			UCM-FLR-T3-3K-32LED-450-120-277		
			UCM-FLR-T4-3K-32LED-450-120-277		
			UCM-FLR-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-FLR-T2-4K-32LED-450-120-277		
			UCM-FLR-T3-4K-32LED-450-120-277		
			UCM-FLR-T4-4K-32LED-450-120-277		
			UCM-FLR-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-FLR-T2-5K-32LED-450-120-277		
			UCM-FLR-T3-5K-32LED-450-120-277		
			UCM-FLR-T4-5K-32LED-450-120-277		
			UCM-FLR-T5-5K-32LED-450-120-277		
	WND 4 Windows	3K 3000K	UCM-WND-FLR-T2-3K-32LED-450-120-277		
			UCM-WND-FLR-T3-3K-32LED-450-120-277		
			UCM-WND-FLR-T4-3K-32LED-450-120-277		
			UCM-WND-FLR-T5-3K-32LED-450-120-277		
		4K 4000K	UCM-WND-FLR-T2-4K-32LED-450-120-277		
			UCM-WND-FLR-T3-4K-32LED-450-120-277		
			UCM-WND-FLR-T4-4K-32LED-450-120-277		
			UCM-WND-FLR-T5-4K-32LED-450-120-277		
		5K 5000K	UCM-WND-FLR-T2-5K-32LED-450-120-277		
			UCM-WND-FLR-T3-5K-32LED-450-120-277		
			UCM-WND-FLR-T4-5K-32LED-450-120-277		
			UCM-WND-FLR-T5-5K-32LED-450-120-277		
		3K 3000K	UCM-SR-FLR-T3-3K-32LED-450-120-277		
			UCM-SR-FLR-T4-3K-32LED-450-120-277		
			UCM-SR-FLR-T5-3K-32LED-450-120-277		
			UCM-SR-FLR-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-SR-FLR-T3-4K-32LED-450-120-277		
			UCM-SR-FLR-T4-4K-32LED-450-120-277		
			UCM-SR-FLR-T5-4K-32LED-450-120-277		
			UCM-SR-FLR-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-SR-FLR-T3-5K-32LED-450-120-277		
			UCM-SR-FLR-T4-5K-32LED-450-120-277		
			UCM-SR-FLR-T5-5K-32LED-450-120-277		
			UCM-VSL-FLR-T2-3K-32LED-450-120-277		
	VSL Vertical Slots	3K 3000K	UCM-VSL-FLR-T3-3K-32LED-450-120-277		
			UCM-VSL-FLR-T4-3K-32LED-450-120-277		
			UCM-VSL-FLR-T5-3K-32LED-450-120-277		
			UCM-VSL-FLR-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-VSL-FLR-T3-4K-32LED-450-120-277		
			UCM-VSL-FLR-T4-4K-32LED-450-120-277		
			UCM-VSL-FLR-T5-4K-32LED-450-120-277		
			UCM-VSL-FLR-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-VSL-FLR-T3-5K-32LED-450-120-277		
			UCM-VSL-FLR-T4-5K-32LED-450-120-277		
			UCM-VSL-FLR-T5-5K-32LED-450-120-277		
			UCM-LUM-FLR-T2-3K-32LED-450-120-277		
	LUM Luminous Rings	3K 3000K	UCM-LUM-FLR-T4-3K-32LED-450-120-277		
			UCM-LUM-FLR-T5-3K-32LED-450-120-277		
			UCM-LUM-FLR-T2-4K-32LED-450-120-277		
			UCM-LUM-FLR-T4-4K-32LED-450-120-277		
		4K 4000K	UCM-LUM-FLR-T5-4K-32LED-450-120-277		
			UCM-LUM-FLR-T2-5K-32LED-450-120-277		
			UCM-LUM-FLR-T3-5K-32LED-450-120-277		
			UCM-LUM-FLR-T4-5K-32LED-450-120-277		
		5K 5000K	UCM-LUM-FLR-T5-5K-32LED-450-120-277		

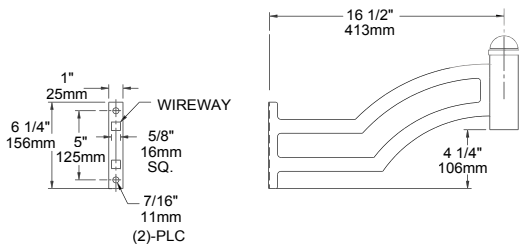
DLC QUALIFIED PRODUCTS (Continued)

Lumen Package	Luminous Element	CCT	STR – STRAIGHT HOOD		
			NO LENS Standard	FTG Flat clear glass lens	FLD Flat diffused glass lens
700	(None)	4K 4000K	UCM-STR-T2-4K-32LED-700-120-277		
			UCM-STR-T3-4K-32LED-700-120-277		
			UCM-STR-T4-4K-32LED-700-120-277		
		5K 5000K	UCM-STR-T5-4K-32LED-700-120-277		
			UCM-STR-T2-5K-32LED-700-120-277		
			UCM-STR-T3-5K-32LED-700-120-277		
	WND 4 Windows	4K 4000K	UCM-STR-T4-5K-32LED-700-120-277		
			UCM-STR-T5-5K-32LED-700-120-277		
			UCM-WND-STR-T2-4K-32LED-700-120-277		
		5K 5000K	UCM-WND-STR-T3-4K-32LED-700-120-277		
			UCM-WND-STR-T5-4K-32LED-700-120-277		
			UCM-WND-STR-T2-5K-32LED-700-120-277		
450	(None)	3K 3000K	UCM-STR-T3-5K-32LED-450-120-277		
			UCM-STR-T4-5K-32LED-450-120-277		
			UCM-STR-T5-5K-32LED-450-120-277		
			UCM-STR-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-STR-T3-4K-32LED-450-120-277		
			UCM-STR-T4-4K-32LED-450-120-277		
			UCM-STR-T5-4K-32LED-450-120-277		
			UCM-STR-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-STR-T3-5K-32LED-450-120-277		
			UCM-STR-T4-5K-32LED-450-120-277		
			UCM-STR-T5-5K-32LED-450-120-277		
			UCM-WND-STR-T2-3K-32LED-450-120-277		
	WND 4 Windows	3K 3000K	UCM-WND-STR-T3-3K-32LED-450-120-277		
			UCM-WND-STR-T4-3K-32LED-450-120-277		
			UCM-WND-STR-T5-3K-32LED-450-120-277		
			UCM-WND-STR-T2-4K-32LED-450-120-277	UCM-WND-STR-T2-4K-32LED-450-FTG-120-277	
		4K 4000K	UCM-WND-STR-T3-4K-32LED-450-120-277		
			UCM-WND-STR-T4-4K-32LED-450-120-277		
			UCM-WND-STR-T5-4K-32LED-450-120-277		
			UCM-WND-STR-T2-5K-32LED-450-120-277	UCM-WND-STR-T2-5K-32LED-450-FTG-120-277	
		5K 5000K	UCM-WND-STR-T3-5K-32LED-450-120-277	UCM-WND-STR-T3-5K-32LED-450-FTG-120-277	
			UCM-WND-STR-T4-5K-32LED-450-120-277		
			UCM-WND-STR-T5-5K-32LED-450-120-277	UCM-WND-STR-T5-5K-32LED-450-FTG-120-277	
			UCM-SR-STR-T2-3K-32LED-450-120-277		
	SR Solid Rings	3K 3000K	UCM-SR-STR-T3-3K-32LED-450-120-277		
			UCM-SR-STR-T4-3K-32LED-450-120-277		
			UCM-SR-STR-T5-3K-32LED-450-120-277		
			UCM-SR-STR-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-SR-STR-T3-4K-32LED-450-120-277		
			UCM-SR-STR-T4-4K-32LED-450-120-277		
			UCM-SR-STR-T5-4K-32LED-450-120-277		
			UCM-SR-STR-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-SR-STR-T3-5K-32LED-450-120-277		
			UCM-SR-STR-T4-5K-32LED-450-120-277		
			UCM-SR-STR-T5-5K-32LED-450-120-277		
			UCM-VSL-STR-T2-3K-32LED-450-120-277		
	VSL Vertical Slots	3K 3000K	UCM-VSL-STR-T3-3K-32LED-450-120-277		
			UCM-VSL-STR-T4-3K-32LED-450-120-277		
			UCM-VSL-STR-T5-3K-32LED-450-120-277		
			UCM-VSL-STR-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-VSL-STR-T3-4K-32LED-450-120-277		
			UCM-VSL-STR-T4-4K-32LED-450-120-277		
			UCM-VSL-STR-T5-4K-32LED-450-120-277		
			UCM-VSL-STR-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-VSL-STR-T3-5K-32LED-450-120-277		
			UCM-VSL-STR-T4-5K-32LED-450-120-277		
			UCM-VSL-STR-T5-5K-32LED-450-120-277		
			UCM-LUM-STR-T2-3K-32LED-450-120-277		
	LUM Luminous Rings	3K 3000K	UCM-LUM-STR-T3-3K-32LED-450-120-277		
			UCM-LUM-STR-T4-3K-32LED-450-120-277		
			UCM-LUM-STR-T5-3K-32LED-450-120-277		
			UCM-LUM-STR-T2-4K-32LED-450-120-277		
		4K 4000K	UCM-LUM-STR-T3-4K-32LED-450-120-277		
			UCM-LUM-STR-T4-4K-32LED-450-120-277		
			UCM-LUM-STR-T5-4K-32LED-450-120-277		
			UCM-LUM-STR-T2-5K-32LED-450-120-277		
		5K 5000K	UCM-LUM-STR-T3-5K-32LED-450-120-277		
			UCM-LUM-STR-T4-5K-32LED-450-120-277		
			UCM-LUM-STR-T5-5K-32LED-450-120-277		
			UCM-LUM-STR-T2-5K-32LED-450-120-277		

SLA3

WT: 8 LBS

EPA: .77

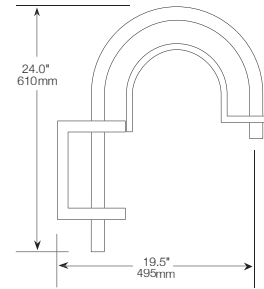


4" POLE

SLA3

WT: 8 LBS

EPA: .77

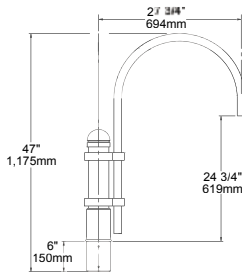


4" POLE

SLA4

WT: 14 LBS

EPA: 1.39

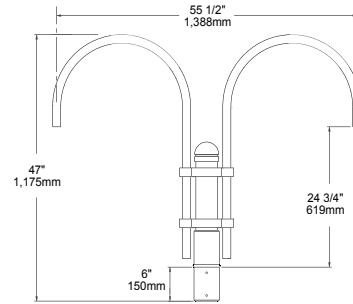


4" POLE

SLA4-2

WT: 26 LBS

EPA: 2.10

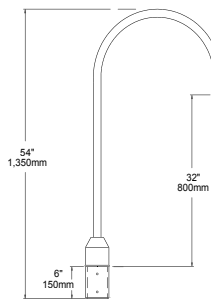


4" POLE

SLA7

WT: 9 LBS

EPA: 1.34

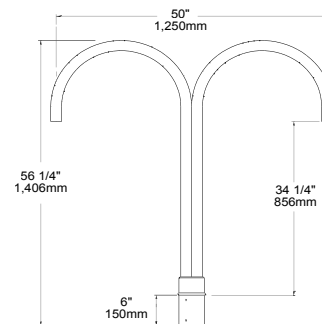


4" POLE

SLA7-2

WT: 16 LBS

EPA: 2.34

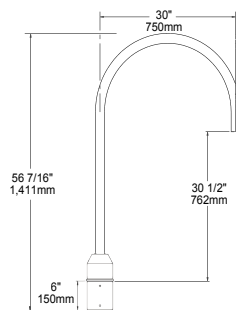


4" POLE

SLA7 (5)

WT: 11 LBS

EPA: 1.73

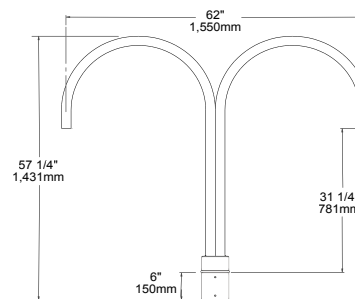


5" POLE

SLA7 (5)-2

WT: 18 LBS

EPA: 2.60

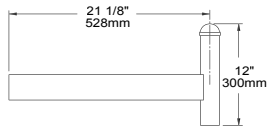


5" POLE

SLA8D

WT: 5 LBS

EPA: .40

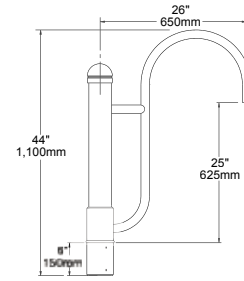


4" OR 5" POLE

SLA9

WT: 18 LBS

EPA: 1.90

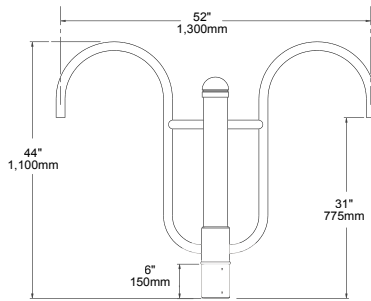


4" POLE

SLA9-2

WT: 24 LBS

EPA: 2.44

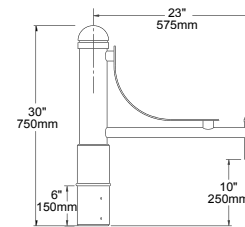


4" POLE

SLA10

WT: 9 LBS

EPA: 1.09

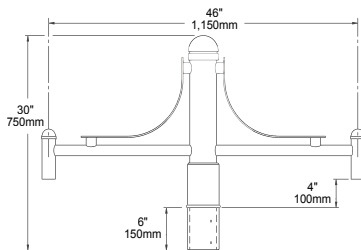


4" POLE

SLA10-2

WT: 16 LBS

EPA: 1.47

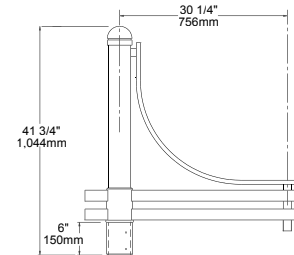


4" POLE

SLA16

WT: 18 LBS

EPA: 2.88

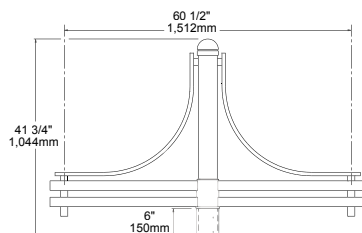


4" POLE

SLA16-2

WT: 28 LBS

EPA: 4.38

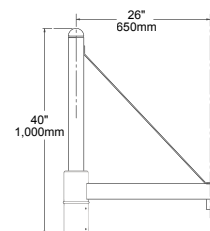


4" POLE

SLA17

WT: 18 LBS

EPA: 1.50

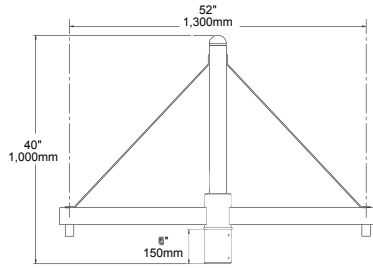


4" POLE

SLA17-2

WT: 24 LBS

EPA: 2.05

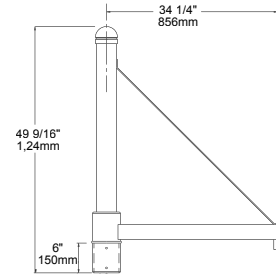


4" POLE

SLA17 (5)

WT: 24 LBS

EPA: 2.20

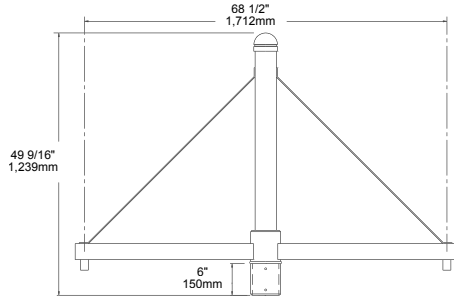


5" POLE

SLA17 (5)-2

WT: 33 LBS

EPA: 2.90

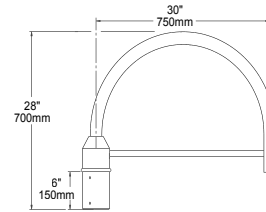


5" POLE

SLA18

WT: 12 LBS

EPA: .85

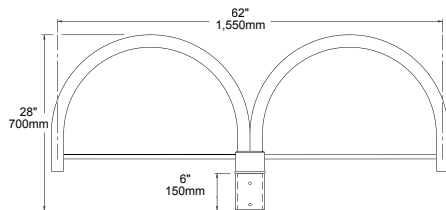


4" POLE

SLA18-2

WT: 22 LBS

EPA: 1.59

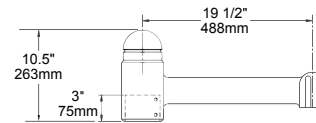


4" POLE

SLA20

WT: 10 LBS

EPA: .70

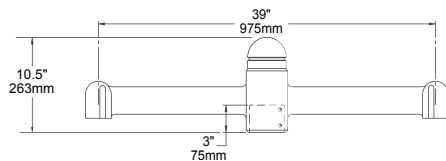


4" POLE

SLA20-2

WT: 18 LBS

EPA: 1.25

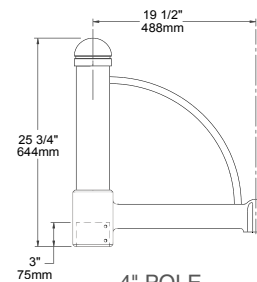


4" POLE

SLA20A

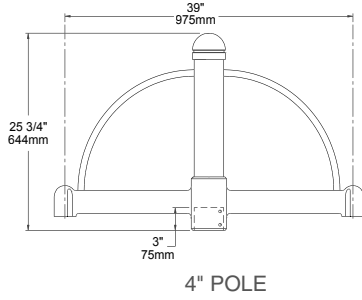
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EPA: 1.30

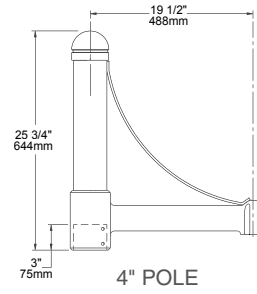


4" POLE

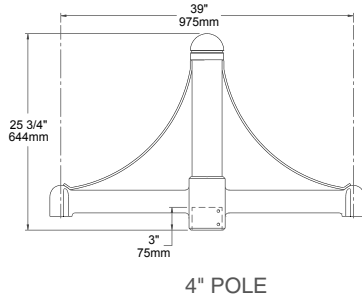
SLA20A-2 WT: 26 LBS EPA: 1.94



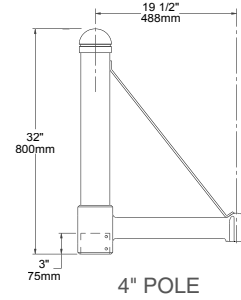
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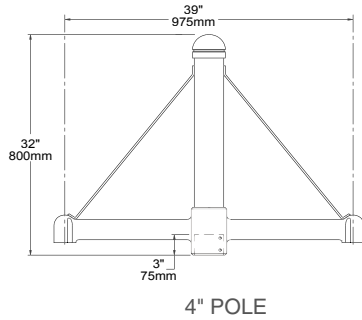
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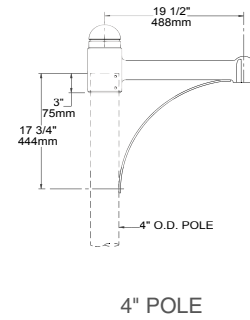
SLA20C WT: 15 LBS EPA: 1.39



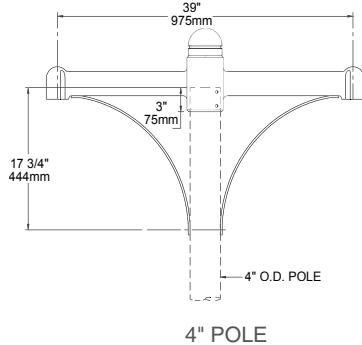
SLA20C-2 WT: 26 LBS EPA: 1.91



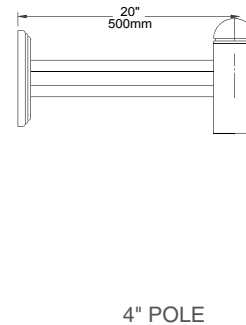
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SLA20D-2 WT: 21 LBS EPA: 1.18



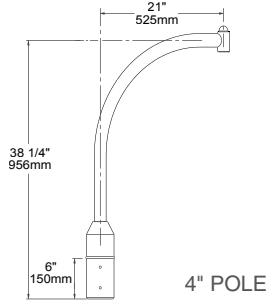
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SLA24

WT: 9 LBS

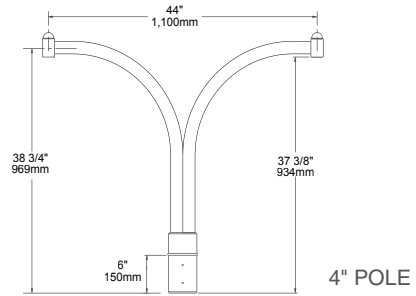
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SLA24-2

WT: 14 LBS

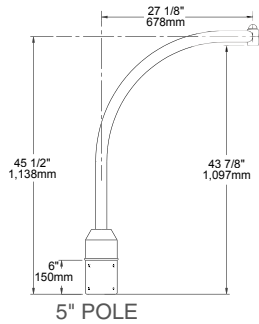
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SLA24(5)

WT: 11 LBS

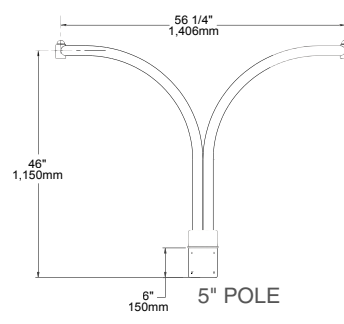
EPA: 1.17



SLA24(5)-2

WT: 16 LBS

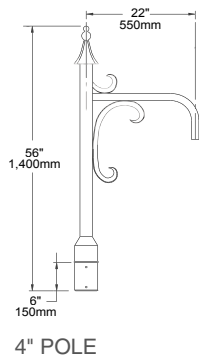
EPA: 1.81



TRA4

WT: 16 LBS

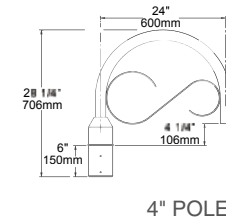
EPA: 1.81



TRA7

WT: 12 LBS

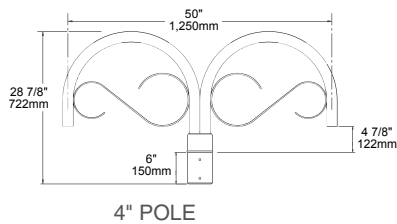
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TRA7-2

WT: 18 LBS

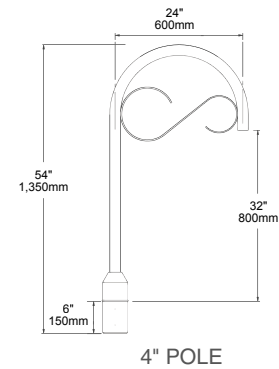
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TRA8

WT: 13 LBS

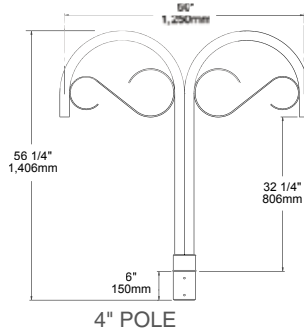
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TRA8-2

WT: 21 LBS

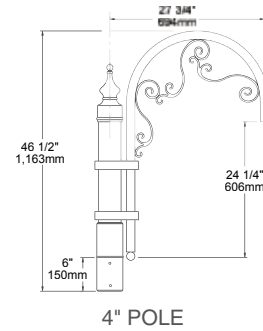
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TRA9

WT: 17 LBS

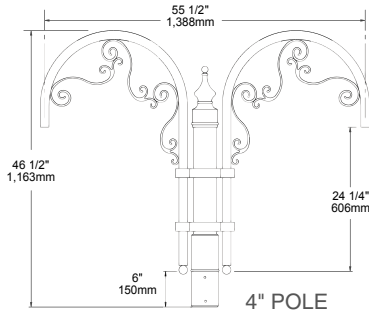
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TRA9-2

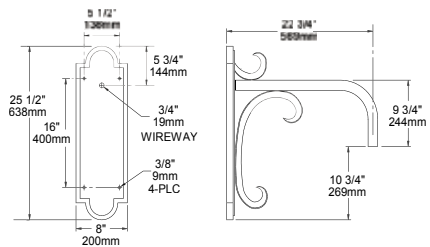
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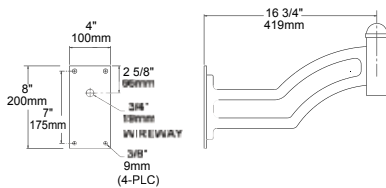
WMA4

WT: 12 LBS



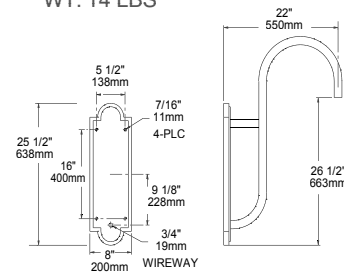
WMA5

WT: 6 LBS



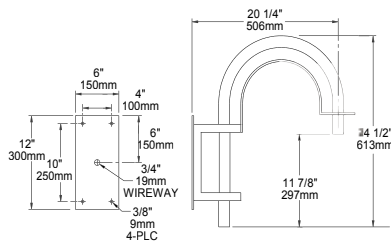
WMA6

WT: 14 LBS



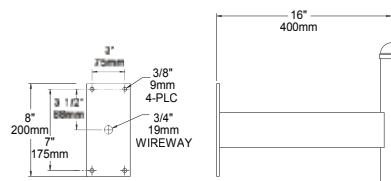
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WT: 10 LBS

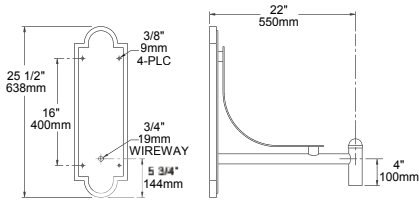


WMA9D

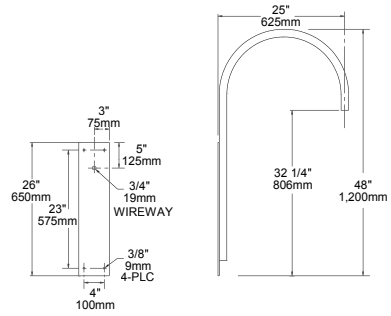
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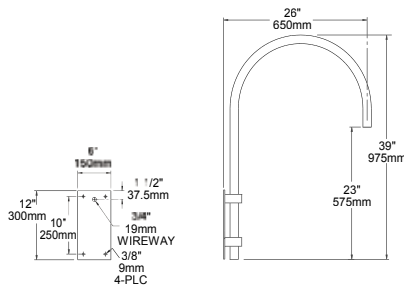
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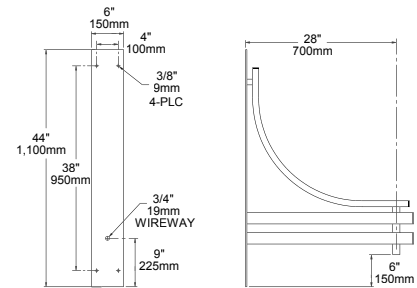
WMA11 WT: 10 LBS



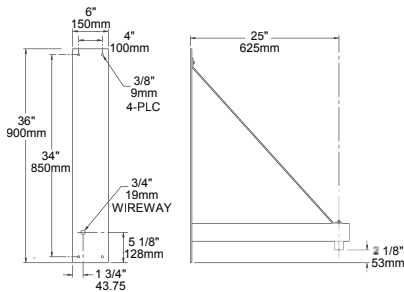
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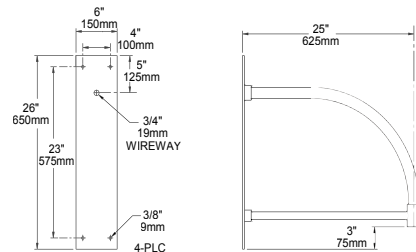
WMA16 WT: 22 LBS



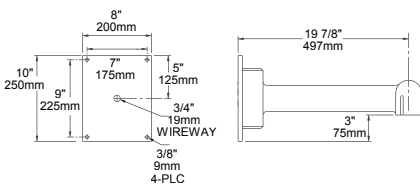
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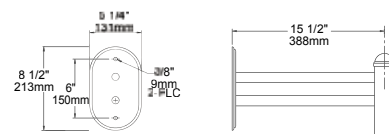
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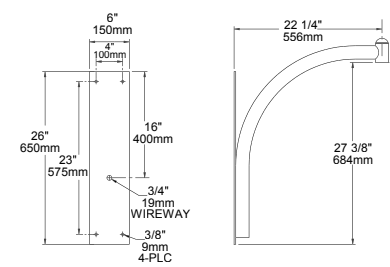
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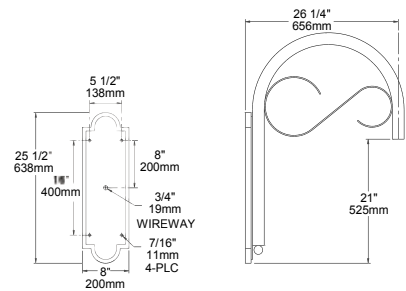
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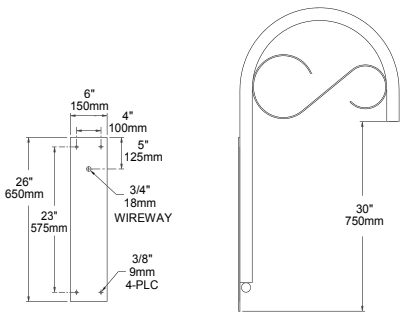
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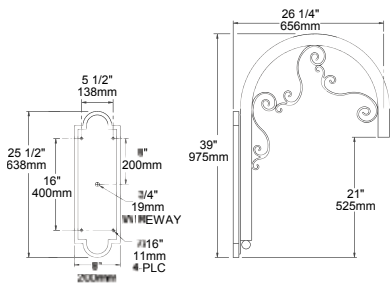
WMA37 WT: 12 LBS



WMA38 WT: 12 LBS



WMA39 WT: 14 LBS



26. Neighborhood Meeting

A neighborhood meeting was held on May 17, 2017. This meeting was required to meet the division 30 affordable housing requirements. The following documentation of that meeting is attached:

A separate neighborhood meeting will be scheduled once the application has been submitted for review, and documentation of that meeting will be uploaded once completed.

1. Neighborhood meeting flyer / invite (it was posted at the subject property and mailed to the abutters list)
2. Neighborhood meeting sign-in sheet
3. Neighborhood meeting notes
4. Photos

Please join the Portland Housing Authority for a

Community Meeting

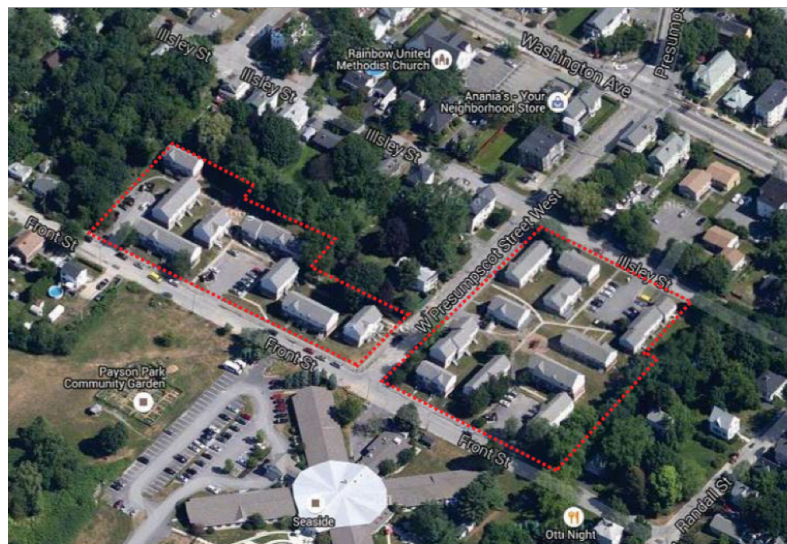
Regarding the Future Re-Development of the
Front Street Public Housing Community

When: Wednesday, May 17, 2017 from 6:30-8:00pm

What: An update on the plan for the Front Street public housing re-development, and comments and questions

Who: Residents of Front Street and area neighbors

Where: Presumpscot Elementary School, 69 Presumpscot St. Portland



Interpreters will be available

Light snacks will be provided

For more information call

Jay Waterman, PHA Director of Development, at 207.221.8009

①

Front Street Neighborhood Meeting Sign-In

May 17, 2017 6:30-8:30pm

	Name	Street Address	email
31	Mike Ham	120 Front St	hammer@time74.com
32	Angela Bashenow	Same	abashenow@msn.com
33	Terri McLowen	73 Front St	
34	Patricia Carroll	217 Commercial	pacarroll@carroll-assoc.com
35	MARYANNE PAPI	581 Washington Ave	
36	Sharon Kiley	35 Presumpscott St	sgkiley@gmail.com
37	Khalil Mohammed	49 Front street	yazankhalilhouse@yahoo.com
38	Jerry Marx	77 Randall St.	Jerry_Marx@unh.edu
39	Susan Oey	77 Randall St	SCOLE001@hotmail.com
40	Susan Lurgue	22 Fernald	friendsofpaysonpark@gmail.com
41	Scott Dobos	33 Randall	sdobos@lesacys.com
42	Mowlid Ahmed	44 Cummings St	mowlid2020@gmail.com
43	Shawn Landry	46 Haven	
44		922 Bailey	SLAMONTAGNE
45		916 918 Bailey	littlesebayolake.net
46		8 Ford St	
46	Lien Hoa T Pham	House of languages	lienhouapham@gmail.com
47	ALAN ELM	— " — " —	alanelm@4-maine.com
48	Habiboo Mohamed		
49	42 CUMMINGS ST		
50	Emily Marantz-Fitch	PHA	efitch@porthouse.org
51	Charles Collins	51 W. Kidder St	charcoll51@gmail.com
52	Justin Costa	11 Sawyer St.	jcosta@portlandmaine.gov
53	Burt + Don Warren	904 Baxter Blvd	dwarren@maine.rr.com
54			
55			
56		Continued	
57			
58			
59			
60			

(2)

Front Street Neighborhood Meeting Sign-In

May 17, 2017 6:30-8:30pm

	Name	Street Address	email
1	Clifford Merrill Jr.	36 Illsley St.	
2	Tallan Merrill	36 Illsley St.	
3	Abdul ISACK	71 Frost St	
4	Shirley Peterson	270 Presumpscot St	
5	Cheryl Heeman	37 Savoy Street	cal4761@yahoo.com
6	Barlene Peterson	45 Pembroke St	cpeterson2@AINE.RP.DON
7	Douglas Down	34 Johnson St	
8	Allan Down	26 Johnson St	
9	Shukri Adan	42 Cummings St	adan shukri 46@gmail.com
10	Martina Augustine	36 Cummings St	Martinaaugustine@gmail.com
11	Luke + Barbara Doyle	64 ILLSLEY ST #3	Doyle 4@yahoo.com
12			
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Front Street Re-Development Meeting Minutes May 17, 2017, Presumpscot Elementary School

Team Members Present:

PHA - Mark Adelson (Executive Director), Jay Waterman (Director of Development), Trevor Nugent (Dir. Of public Housing), Emily Mancini-Fitch (Housing Services Manager), Shirley Peterson (PHA Board President)
Utile Architecture and Design - Jonathan Evans, Katie Wirtz, Evan Parkinson
Government Strategies - Kim Cook
Carroll Associates Landscape Architecture - Pat Carroll

Portland Housing Authority hosted a neighborhood meeting regarding the re-development of the Front Street public housing project in Portland's East Deering neighborhood. The meeting was held at the Presumpscot Elementary School on May 17, 2017 from 6:30-8:00pm.

The meeting was noticed by mail to property owners within 500 feet of the proposed development using the City Planning Department's mailing list. PHA also noticed all Front Street Public Housing residents with flyers

Sign-in sheets and the flyer that was sent are attached.

Mark Adelson, Executive Director, opened the meeting with introductions and gave some background on the Housing Authority and PHA's Strategic Vision Plan for renovation or re-development of its 1,000+ housing units in Portland

Jonathan Evans from Utile Architecture and Design, presented the project, the neighborhood context. Jonathan gave a history of project, noted it is at the end of its useful life. Discussed the needs of the neighborhood. There are currently 182 bedrooms in 18 bldgs plus the community room. He said it is important to look at the community needs, listed from previous meetings. Opportunities:

- meet needs of project but respectful of neighborhood
- scale of housing
- traffic calming measures on Presumpscot St.

Jonathan showed existing and proposed views of project.

Jay Waterman discussed the process at the planning board, the schedule, and next steps. Pat Carroll, Landscape Architect, presented the site plan.

Comments from attendees (responses or discussion in italics):

- It appears that most residents of current development have more than 1 car. Sharon Kiley offered to sell her property to use as parking lots. Traffic speed on Presumpscot is fast and dangerous.

- Area needs more parking, residents have more than 1 car, parking on Front St and neighboring streets.
- Too many Front Street residents park on the street and the streets do not get plowed.
- Concern for location of school bus stop around development as it blocks traffic.
- Area resident wants it to be pedestrian friendly, enhance sidewalks, curb flares, improved pedestrian safety.
 - *Design team explained some of the ideas of pedestrian friendly design and connection to Payson Park; making all sidewalks that are in rough shape new and safe; better crosswalks and potential bump-outs for a shorter distance from curb to curb.*
- Concept design shown, the architecture is not in keeping with neighborhood. Looking for 'Maine' archtype, project is in 1922 neighborhood.
- The design shown with the flat roofs is too modern looking. We want brick exterior and a design that is in keeping with the neighborhood.
- It is a problem that people are cutting through the nursing home to Baxter Blvd.
- Wants to change neighborhood traffic habits, cut thru nursing home driveway to Baxter Blvd, wants some kind of blvd access. Other concern that senior housing would cut off access to the Blvd. if this were used too much.
- Need for a traffic study
 - *This is pending and will be submitted with the Site Plan application to the planning board*
 - *Jay Waterman gave an estimated timeframe for the project of a site plan application submission in Summer 2017 with a construction start in Fall of 2018 and occupancy in Fall of 2019.*
- Traffic Study should be done at different times of day to show the different usage and different cars.
- Changing nature of neighborhood; this is not India St or West End, different than other neighborhoods; there are challenges and opportunities; didn't like flat roofs
- Concern about design as too urban and would change the feel of the neighborhood; concern it is too dense.
- Concern about sewer capacity and school capacity for more children
 - *Jay noted that utilities (sewer/water) are through the City and Portland Water District. Unit mix has not been determined but there will be some 4-5 BR units and many more studios and 1BR units. It will also be mixed income at 80% affordable and 20% market rate.*
- Concern about new height being taller than current building height.
 - *It was noted that the 2-3 story buildings will not be any taller than the pitched roofs and will meet the zoning requirements for R-5 PRUD.*
- Playgrounds too close to windows, move away from buldings.
- Concern that buildings are too close to the road and need larger front yards for playing and neighbor interaction
 - *There will be setbacks and small front yards and stoops*
- Concern that distance from parking to unit entry is too far.
- An area resident asked the timing of project and the need for traffic study.
 - *Team noted that the project is going to planning board Fall 2017. Pat Carrol noted a traffic study is part of that submission to the planning board and that will*

help the planning board impose a number of off-street parking spaces

- Questioned scale of project, doubling number of units on site. Questioned speed table on Presumpscot; described using Cummings as escape to Washington Ave. Need to slow traffic on Randall and Johannsen.
- Too many cars parked on the street and people drive too fast in the neighborhood.
 - *This is something the team would like work with the area residents and the City on to find solutions because PHA does not want too many cars on the street or unsafe streets.*
- Need 2nd exit onto Washington Ave; questioned school population; questioned similarity to Washington Gardens; Issues with sewer system on Washington Avenue
- A Front Street resident asked about basements.
There will be no basements if Front Street is re-developed.
- Concern about sewer capacity and soils on this site.
 - *There is public sewer in the area and the Portland Water District said that it has the capacity to serve the proposed new project size and BR mix.*
- How is trash handled; school buses; questioned who takes care of housing.
 - *Trash service will take trash from rooms in buildings. No dumpsters.*
- Questioned ownership of property; where can she read about project; lack of outdoor space for individual residents
 - *There will be information on PHA's website soon. More information after submission to the planning board.*
- Questioned occupancy rate/ bedroom occupancy of 60% valid?
 - *The 60% only refers to the maximum number of people per bedroom under HUD rules. PHA tracks this and our occupancy is less than the maximum of 2 persons per bedroom by about 55% or about 1 person per bedroom.*
- Residents parking on streets, not in parking lots; main issues traffic, parking ,school impact
 - *There was discussion about existing number of bedrooms increasing only by 21% even though the number of units is going from 50 to 99.*
- Preference for community play areas to be separated from residential areas. Area resident has kids that have broken a window when using the play space close to her residence.
- There are only parking outlets to Front Street planned. There should be parking outlets to other streets.
 - *Design team noted driveways onto Illsley as well as Front Street.*
- Concern about doubling number of units and the amount of traffic.
- Could Cummings Street be built to ease traffic? Speed bumps on Johannsen and Randall a possibility?
 - *These are City issues that we could help the neighbors discuss with the City.*
 - *Discussion about Cummings street and turning it into a real street*
- Area resident asked if the management company will do a better job of keeping the trash picked up. Trash is a problem.
 - *Design Team noted that there will be indoor trash rooms and a trash service that picks up trash. The dumpsters and their enclosures will go away.*
- Concern for who manages the property.
- Would like to see a digital or hard copy of the presentation
 - *It was noted that the presentation and the meeting minutes would be on the PHA website.*

- Does not like the aesthetics of residents storing things outdoors. They should have storage. Prefer fenced back yards. Residents should all have private outdoor space.
- Having individualized outdoor spaces is important to residents. Residents in surrounding neighborhood have access to outdoor spaces.
- What is required for site plan application to the City planning board?
 - *Pat Carroll explained the level of plan details, performance guidelines, utilization rates, construction management plans, etc. that need to be submitted.*
- Traffic is too fast; Would like to feel invited into the new development and have areas for kids to play; wants to strengthen the sense of community.
 - *Team explained they want as much integration with the neighborhood as possible and make the design of the new development “permeable” so that area residents feel welcome walking through.*
- When is the next community meeting?
 - *2-3 months from this meeting after site plan submission. There is also a required public hearing at the planning board for anyone to come and give comments.*

END OF MEETING MINUTES

Note: This memorandum represents our understanding of the events which transpired and the actions which were taken. If they do not conform to a recipient's understanding, prompt written notice must be communicated to the writer. If no corrections or objections are made, this memorandum will be relied upon as a factual interpretation of this meeting.



t Promise

responsibility



Comp

EXIT

T.E.A.M.
Together Everyone Achieves More

Trains

- I will be on time and ready to play (responsibility)
- I will use kind words and comments (respect)
- I will encourage my teammates (teamwork)
- I will be a team player (collaboration)
- I will try my hardest (perseverance)
- I will always be truthful (honesty)
- I will have fun!

McLane

FRONT STREET HOUSING REDEVELOPMENT

FRONT STREET,
ILLSELY STREET, &
PRESUMPSCOT
STREET
PORTLAND, ME

TAX MAP 1667
BLOCK B, LOT 1

TAX MAP 167
BLOCK E, LOT 1

Consultants:

OWNER:

PORTLAND HOUSING AUTHORITY
14 Baxter Blvd.
Portland, ME 04101
(207) 773.4753

APPLICANT:

FRONT STREET REDEVELOPMENT, LP
14 Baxter Blvd.
Portland, ME 04101
(207) 773.4753

ARCHITECT:

UTILE INC.
115 Kingston St
Boston, MA 02111
(617) 423-7200

LANDSCAPE ARCHITECT:

CARROLL ASSOCIATES
217 Commercial Street, Suite 200
Portland, ME 04101
(207) 772-1552

ENGINEER:

RANSOM ENGINEERS, INC.
400 Commercial Street, Suite 404
Portland, ME 04101
(207) 772.2891

SURVEYOR:

OWEN HASKELL, INC.
390 US Route One, Unit 10
Falmouth, ME 04105
(207) 774.0424

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C-2.0 SITE PLAN

C-3.0 SUBDIVISION PLAN

C-3.1 GRADING & DRAINAGE WEST PARCEL

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A-2.0 BUILDING VIEWS

A-2.1 BUILDING 1 ELEVATIONS

A-2.2 BUILDING 2 ELEVATIONS

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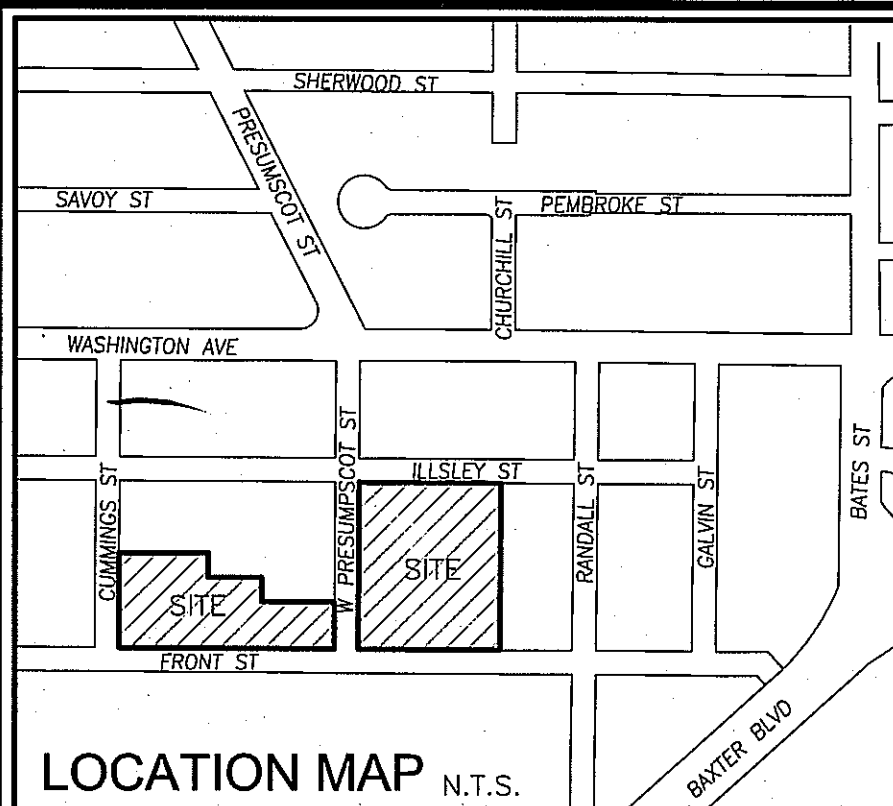
A-2.4 BUILDING 4 ELEVATIONS

A-2.5 BUILDING 5 ELEVATIONS

A-2.6 BUILDING 1 ELEVATIONS

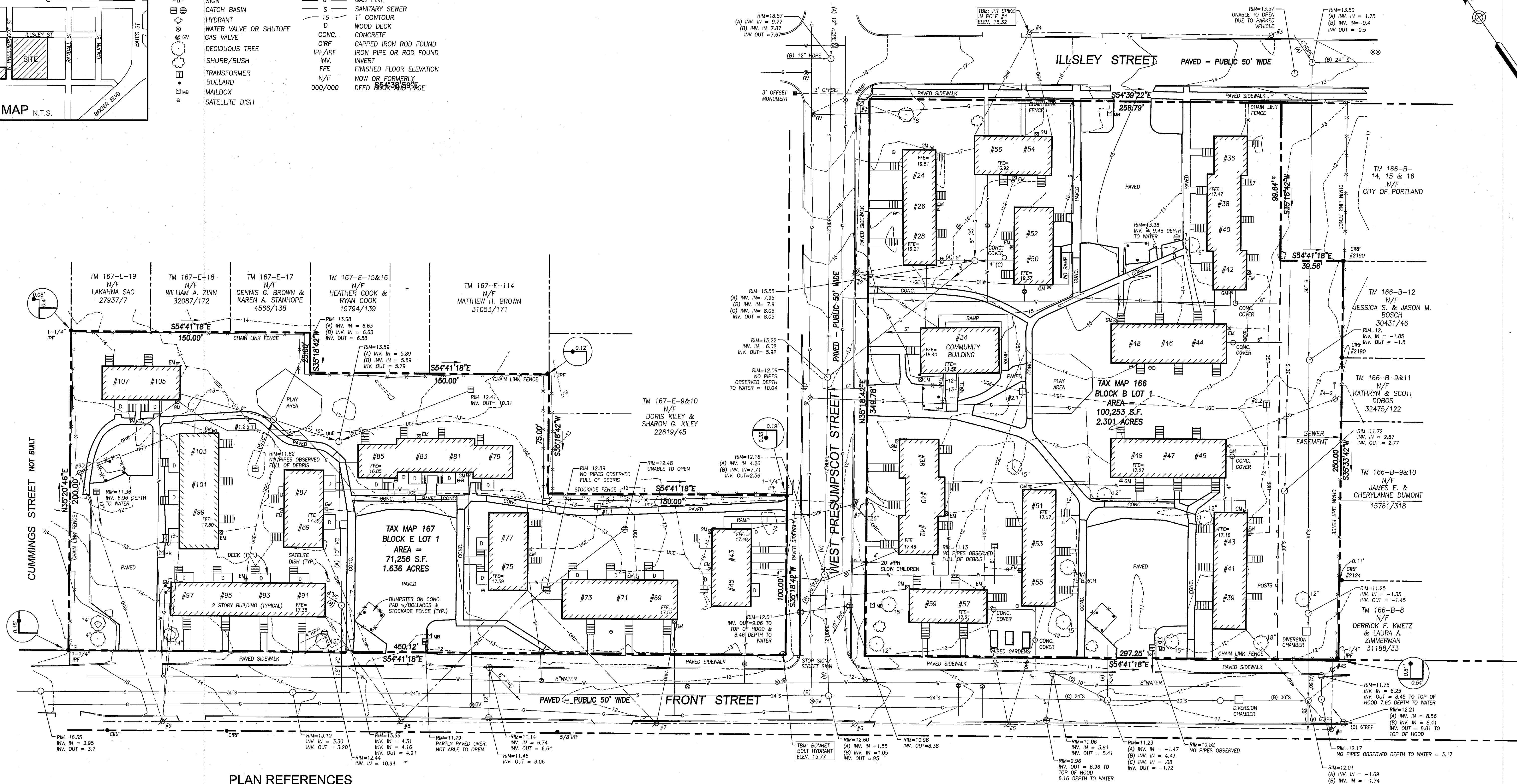
ISSUED FOR: LEVEL III FINAL SITE PLAN APPLICATION

ISSUE DATE: SEPTEMBER 28, 2017



LEGEND	
●	IRON PIPE OR ROD FOUND
■	MONUMENT FOUND
○	UTILITY POLE
⊗	MANHOLE
⊕	ELECTRIC/GAS METER
⊙	SIGN
⊖	CATCH BASIN
⊗	HYDRANT
⊕	WATER VALVE OR SHUTOFF
⊖	GAS VALVE
⊙	DECIDUOUS TREE
⊗	SHURB/BUSH
⊕	TRANSFORMER
⊖	BOLLARD
⊙	MAILBOX
⊗	SATELLITE DISH
---	FENCE
---	CURB
---	OVERHEAD WIRES
---	UNDERGROUND ELECTRIC
---	WATER LINE
---	GAS LINE
---	SANITARY SEWER
---	1" CONTOUR
---	WOOD DECK
---	CONCRETE
---	CAPPED IRON ROD FOUND
---	IRON PIPE OR ROD FOUND
---	INVERT
---	FINISHED FLOOR ELEVATION
---	NOW OR FORMERLY
---	DEED BOOK AND PAGE

LOCATION MAP N.T.S.

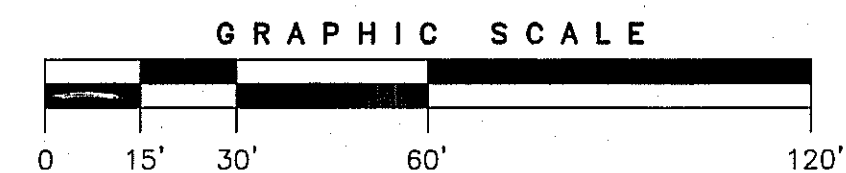


PLAN REFERENCES

- "PLAN SHOWING PROPOSED SCHEME OF STREETS AND LOTS OF LAND OF LW DYER, EAST DEERING MAINE" BY E.C. JORDAN RECORDED IN PLAN BOOK 7, PAGE 2.
- "FRONT STREET TOWNHOUSES, PORTLAND, MAINE UTILITY PLAN, SANITARY SEWERS & STORMS DRAINS" DEC. 22, 1970 BY WRIGHT, PIERCE, BARNES & WYMAN, ENGINEERS.
- "BOUNDARY SURVEY ON 904 BAXTER BOULEVARD, PORTLAND, MADE FOR OWNER OF RECORD BURTT AND DONNA WARREN" JUNE 02, 2004, REV. 1 7-2-04 BY OWEN HASKELL, INC.
- "STANDARD BOUNDARY SURVEY OF PAYSON PARK, PORTLAND, MAINE MADE FOR CITY OF PORTLAND" FEB. 26, 2001, REV. 3 11-27-01 BY OWEN HASKELL, INC.
- "AS-BUILT SURVEY AT 850 BAXTER BOULEVARD, PORTLAND, MAINE MADE FOR SEASIDE REHABILITATION & HEALTHCARE CENTER" MAY 15, 2012, REV. 1 06-19-12 BY OWEN HASKELL, INC.
- "ILLESLEY STREET RECONSTRUCTION, STA. 4+50 TO STA. 9+00, PLAN AND PROFILE" JUNE 1995 CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING SECTION.
- "PORTLAND WATER DISTRICT, PORTLAND, MAINE POLLUTION ABATEMENT FACILITIES, CONTRACT NO. 2, PRESUMPCOT ESTUARY INTERCEPTOR CROSS COUNTRY STA. 1+4-7 TO STA. 7+20"

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.



GENERAL NOTES

- OWNER OF RECORD: PORTLAND HOUSING AUTHORITY, 14 BAXTER BOULEVARD, PORTLAND, MAINE
CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 3196 PAGE 834
- BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM MAINE WEST NAD83, CITY POINT MDTOT-PO-295-29 N:308183.18 E:2927410.833 AND T103-30-8 N:309584.611 E:2927311.4960 HELD.
- ELEVATIONS ARE BASED ON NGVD 1929. BENCHMARK: CITY POINT MDTOT-PO-295 ELEVATION 12.00'.
- ON-SITE GAS COULD NOT BE LOCATED BY UNDERGROUND UTILITY MARKING COMPANY, GAS LINES SHOWN ARE APPROXIMATE CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION.
- ON-SITE WATER LINES TAKEN FROM PORTLAND WATER DISTRICT DRAWING NO. 67.

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, WITH THE EXCEPTION OF MARKERS NOT SET AT ALL CORNERS.

12-30-2015
DATE
JOHN C. SCHWANDA, PLS NO. 1252

BOUNDARY AND TOPOGRAPHIC SURVEY
ON
FRONT STREET, ILLESLEY STREET &
WEST PRESUMPCOT STREET, PORTLAND, MAINE
MADE FOR
PORTLAND HOUSING DEVELOPMENT CORP.
14 BAXTER BOULEVARD, PORTLAND, MAINE

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE 1, UNIT 10, FALMOUTH, ME 04105 207-774-0424
Drawn By RS Date DEC. 30, 2015 Job No. 2015-314P
Trace By JLW Scale 1" = 30' Drwg. No. 1
Check By JWS
Book No. FILE



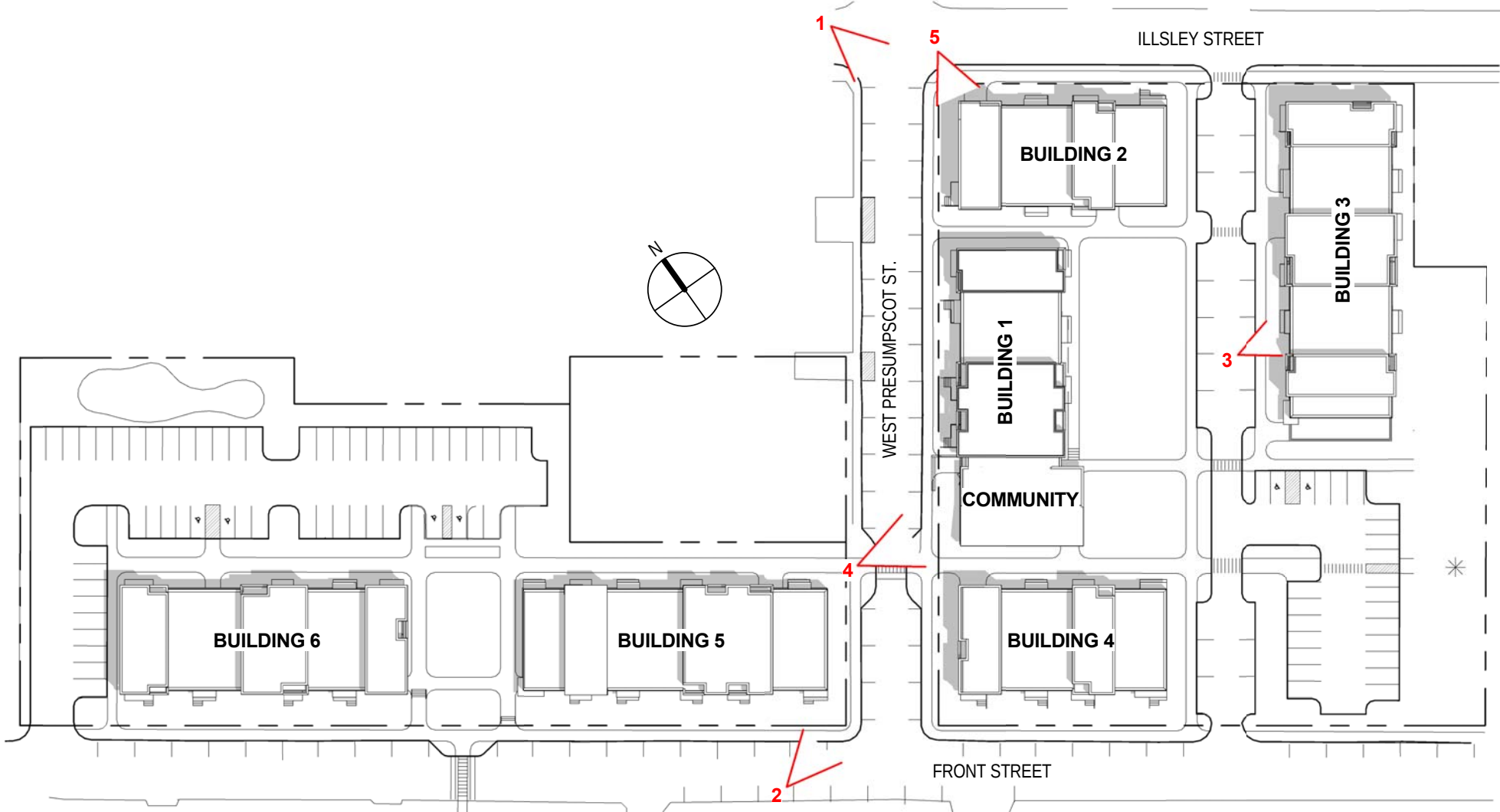
5 PERSPECTIVE VIEW - BUILDING 2 ENTRY



4 PERSPECTIVE VIEW - COMMUNITY BUILDING AT FRONT STREET



3 PERSPECTIVE VIEW - UNIT PATIO



SITE PLAN - VIEW LEGEND
1" = 80'-0"



2 PERSPECTIVE VIEW - W. PRESUMPCOTT AT FRONT STREET
1/2" = 1'-0"



1 PERSPECTIVE VIEW - W. PRESUMPCOT AT ILLSLEY STREET

PHA FRONT STREET DEVELOPMENT

37 & 63 Front Street
Portland, Maine 04103
PROJECT

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Thornton Tomasetti

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P 207 245.6360
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As indicated

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15145

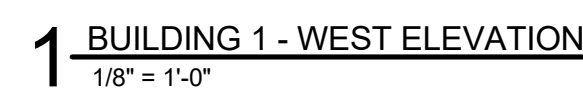
BUILDING VIEWS

A-2.0

OWNER

WINABILITY

10/10/2017 3:20:01 PM





4 BUILDING 2 - EAST ELEVATION
1/8" = 1'-0"



3 BUILDING 2 - NORTH ELEVATION
1/8" = 1'-0"



2 BUILDING 2 - SOUTH ELEVATION
1/8" = 1'-0"



1 BUILDING 2 - WEST ELEVATION
1/8" = 1'-0"

BUILDING 2 - SUMMARY

UNIT MIX	
1-BED:	05
2-BED:	03
3-BED:	03
4-BED:	01
5-BED:	01
TOTAL:	13

GROSS AREA	
GROUND FLOOR:	6,140 SF
LEVEL 2:	6,351 SF
LEVEL 3:	2,361 SF
TOTAL:	14,852 SF

ELEVATION KEY NOTES

- 3A) CAST-IN-PLACE CONCRETE STEM WALL W/ STUCCO FINISH, COLOR TBD.
- 3B) CAST-IN-PLACE CONCRETE LANDING
- 3C) CAST-IN-PLACE CONCRETE STEPS, AS REQ'D
- 3D) PRECAST CONCRETE COLUMNS
- 5A) PTD GALV. STEEL METAL GUARDS & HAND RAILS, COLOR TBD
- 7A) 4" PTD. CEMENTITIOUS CLAPBOARD, CUSTOM COLOR "A"
- 7B) 4" PTD. CEMENTITIOUS CLAPBOARD, CUSTOM COLOR "B"
- 7C) PTD CEMENTITIOUS PANELS W/ PAINTED PVC OR POLY-ASH BATTENS, SPACING TBD, CUSTOM COLOR "C"
- 7D) 4" PTD. CEMENTITIOUS CLAPBOARD, CUSTOM COLOR "D"
- 7E) 1X4 T&G V-JOINT EVLS A CLEAR GRADE, W/ 2-COAT TRANSPARENT ALKYD-OIL FINISH
- 7F) PTD PVC OR POLY-ASH TRIM, (4) COLOR OPTIONS TO MATCH SIDING
- 7G) FLAT LOCK ZINC-COATED-COPPER PANEL SIDING
- 7H) FACTORY FINISHED ALUMINUM FLASHING, TYP. AT RESIDENTIAL BUILDINGS
- 7J) ZCC FLASHING, TYP. AT COMMUNITY BUILDING
- 7K) STANDING SEAM METAL ROOF, SEAM SPACING TBD.
- 7L) STANDING SEAM ALUM. ROOFING
- 7M) PVC ROOFING, TYP. AT RESIDENTIAL BUILDINGS
- 8A) VINYL HIGH PERFORMANCE WINDOWS, CASEMENT & FIXED, TBD.
- 8B) PTD FIBERGLASS DOOR W/ TRANSOM & SIDELITE
- 8C) THERMALLY BROKEN ALUM. STOREFRONT SYSTEM W/ 1" LOW-E IGUS
- 10) PVDF COATED ALUM. SIGNAGE
- 23) ROOF MOUNTED CONDENSERS BEYOND

NOTE: SEE 3/A2.2 FOR TYPICAL BUILDING MATERIAL NOTES

PHA FRONT STREET DEVELOPMENT

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Portland, Maine 04103

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STRUCTURAL

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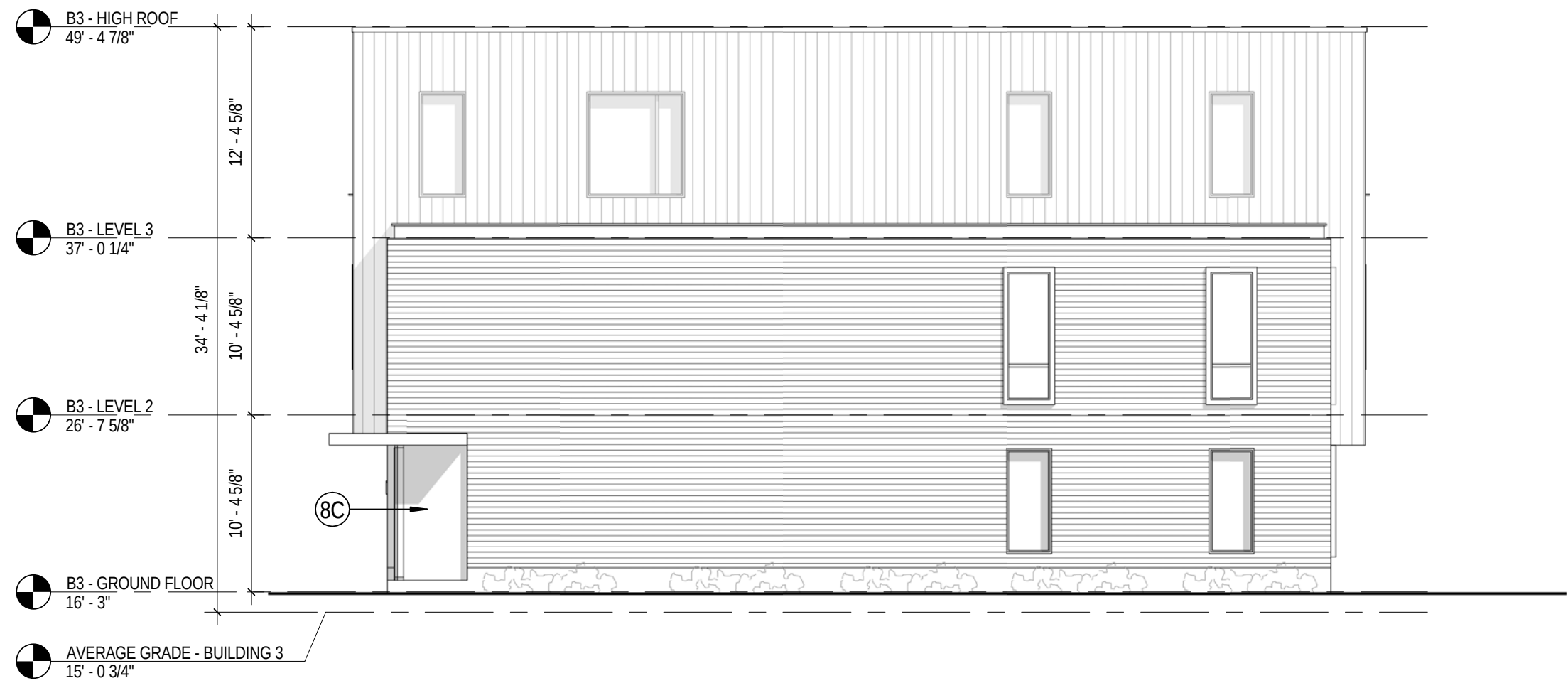
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BUILDING ELEVATIONS

A-2.2



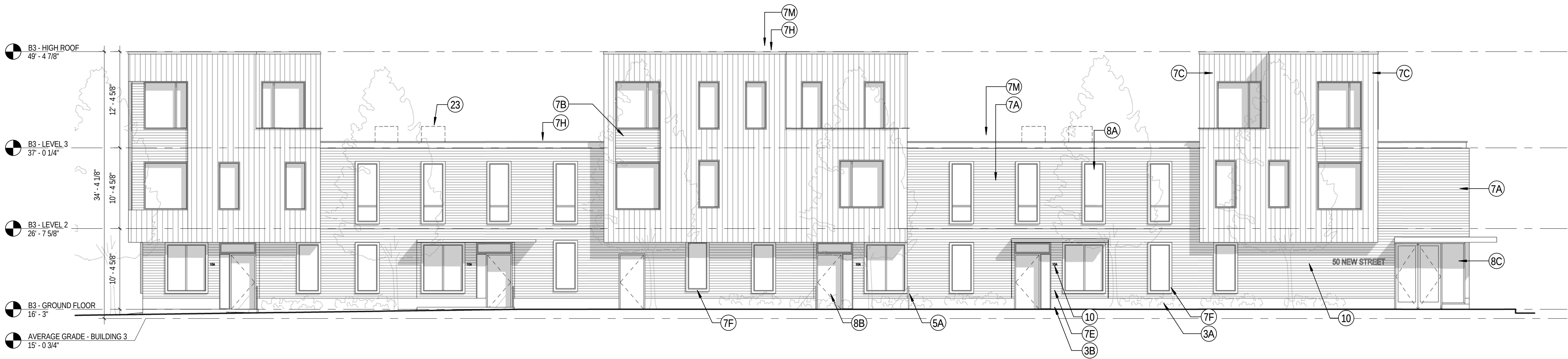
4-BUILDING 3 - EAST ELEVATION
1/8" = 1'-0"



3-BUILDING 3 - SOUTH ELEVATION
1/8" = 1'-0"



2-BUILDING 3 - NORTH ELEVATION
1/8" = 1'-0"



1-BUILDING 3 - WEST ELEVATION
1/8" = 1'-0"

BUILDING 3 - SUMMARY

UNIT MIX	
1-BED:	08
2-BED:	02
3-BED:	03
4-BED:	04
5-BED:	02
TOTAL:	19

GROSS AREA	
GROUND FLOOR:	9,371 SF
LEVEL 2:	9,737 SF
LEVEL 3:	4,638 SF
TOTAL:	23,746 SF

ELEVATION KEY NOTES

- 3A CAST-IN-PLACE CONCRETE STEM WALL W/ STUCCO FINISH, COLOR TBD.
- 3B CAST-IN-PLACE CONCRETE LANDING
- 3C CAST-IN-PLACE CONCRETE STEPS, AS REQ'D
- 3D PRECAST CONCRETE COLUMNS
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- 8A VINYL HIGH PERFORMANCE WINDOWS, CASEMENT & FIXED, TBD.
- 8B PTD FIBERGLASS DOOR W/ TRANSOM & SIDELITE
- 8C THERMALLY BROKEN ALUM. STOREFRONT SYSTEM W/ 1" LOW-E IGUS
- 10 PVDF COATED ALUM. SIGNAGE
- 23 ROOF MOUNTED CONDENSERS BEYOND

NOTE: SEE 1/A2.3 FOR TYPICAL BUILDING MATERIAL NOTES

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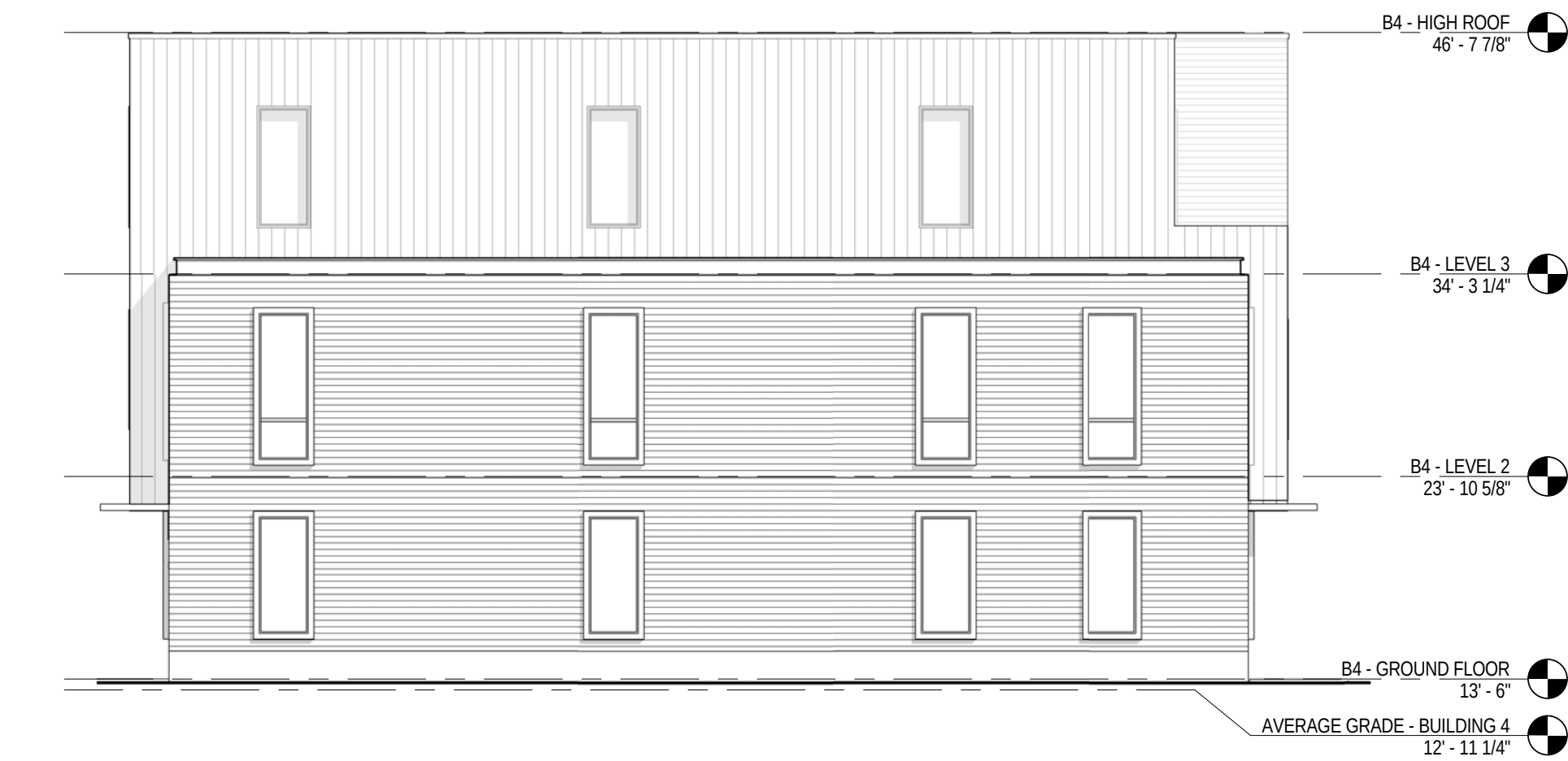
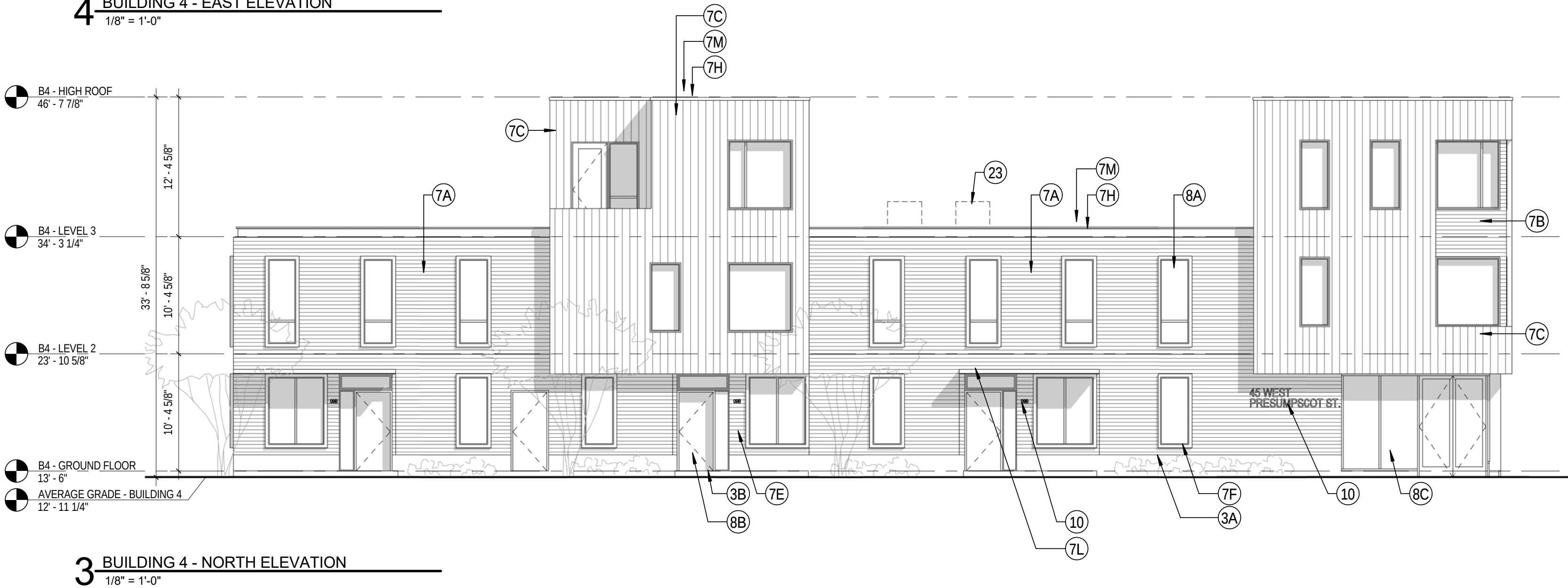
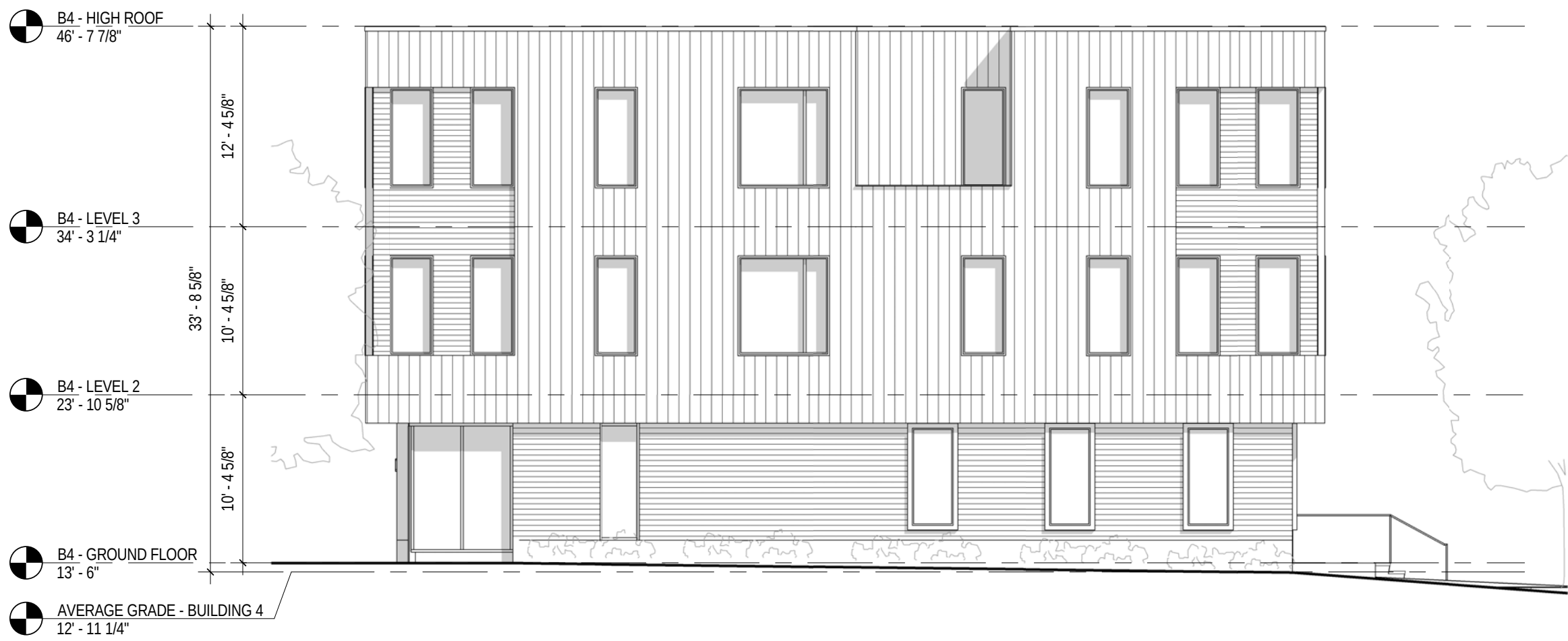
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UTILITE PROJECT NUMBER

15145

BUILDING ELEVATIONS

A-2.3



BUILDING 4 - SUMMARY

UNIT MIX	
1-BED:	05
2-BED:	03
3-BED:	03
4-BED:	01
5-BED:	01
TOTAL:	13

GROSS AREA	
GROUND FLOOR:	6,140 SF
LEVEL 2:	6,351 SF
LEVEL 3:	2,361 SF
TOTAL:	14,852 SF

ELEVATION KEY NOTES

- 3A CAST-IN-PLACE CONCRETE STEM WALL W/ STUCCO FINISH, COLOR TBD.
- 3B CAST-IN-PLACE CONCRETE LANDING
- 3C CAST-IN-PLACE CONCRETE STEPS, AS REQ'D
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- 5A PTD GALV. STEEL METAL GUARDS & HAND RAILS; COLOR TBD
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- 10 PVDF COATED ALUM. SIGNAGE
- 23 ROOF MOUNTED CONDENSERS BEYOND

NOTE: SEE 3/A2.4 FOR TYPICAL BUILDING MATERIAL NOTES

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BUILDING ELEVATIONS

A-2.4



4 BUILDING 5 - NORTH ELEVATION
1/8" = 1'-0"



3 BUILDING 5 - SOUTH ELEVATION
1/8" = 1'-0"



2 BUILDING 5 - WEST ELEVATION
1/8" = 1'-0"



1 BUILDING 5 - EAST ELEVATION
1/8" = 1'-0"

BUILDING 5 - SUMMARY

UNIT MIX	
1-BED:	08
2-BED:	04
3-BED:	02
4-BED:	02
5-BED:	03
TOTAL:	19

GROSS AREA	
GROUND FLOOR:	9,147 SF
LEVEL 2:	9,447 SF
LEVEL 3:	4,020 SF
TOTAL:	22,614 SF

ELEVATION KEY NOTES

- 3A CAST-IN-PLACE CONCRETE STEM WALL W/ STUCCO FINISH, COLOR TBD.
- 3B CAST-IN-PLACE CONCRETE LANDING
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NOTE: SEE 3/A2.5 FOR TYPICAL BUILDING MATERIAL NOTES

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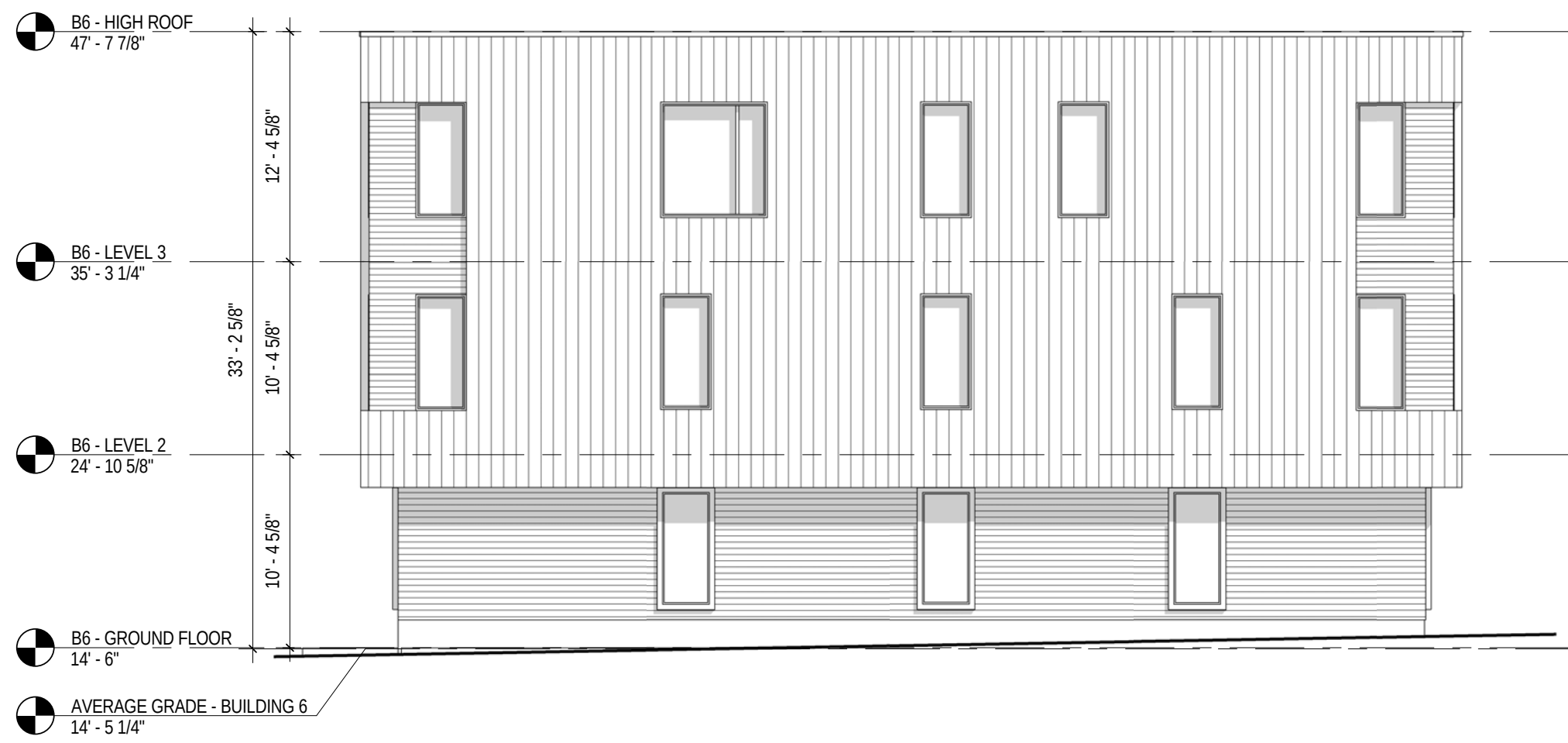
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BUILDING ELEVATIONS

A-2.5



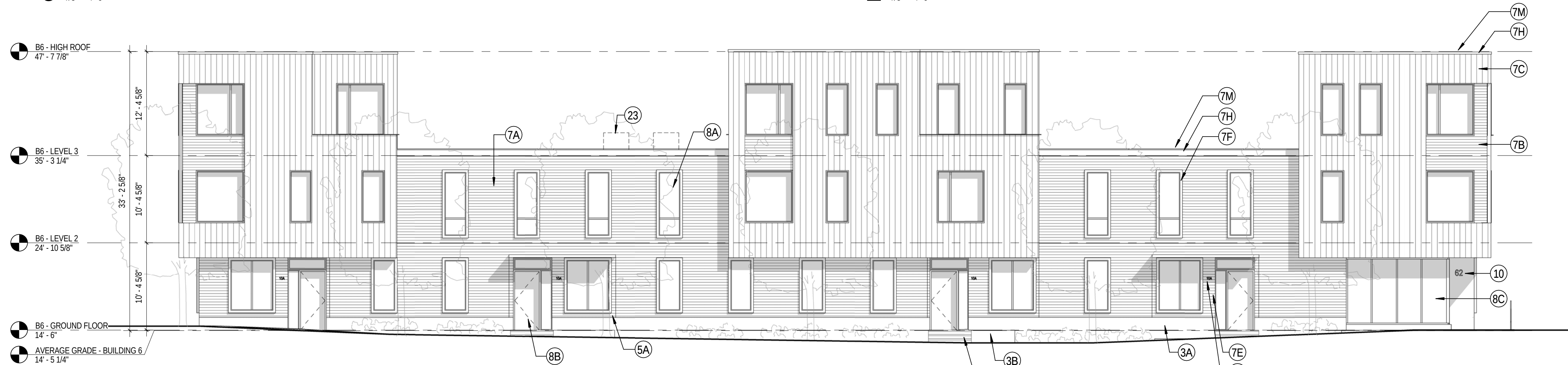
4 BUILDING 6 - NORTH ELEVATION
1/8" = 1'-0"



3 BUILDING 6 - WEST ELEVATION
1/8" = 1'-0"



2 BUILDING 6 - EAST ELEVATION
1/8" = 1'-0"



1 BUILDING 6 - SOUTH ELEVATION
1/8" = 1'-0"

BUILDING 6 - SUMMARY

UNIT MIX	
1-BED:	12
2-BED:	00
3-BED:	05
4-BED:	03
5-BED:	00
TOTAL:	20

GROSS AREA	
GROUND FLOOR:	8,374 SF
LEVEL 2:	8,727 SF
LEVEL 3:	4,285 SF
TOTAL:	21,386 SF

ELEVATION KEY NOTES

- (3A) CAST-IN-PLACE CONCRETE STEM WALL W/ STUCCO FINISH, COLOR TBD.
- (3B) CAST-IN-PLACE CONCRETE LANDING
- (3C) CAST-IN-PLACE CONCRETE STEPS, AS REQ'D
- (3D) PRECAST CONCRETE COLUMNS
- (5A) PTD GALV. STEEL METAL GUARDS & HAND RAILS, COLOR TBD
- (7A) 4" PTD. CEMENTITIOUS CLAPBOARD, CUSTOM COLOR "A"
- (7B) 4" PTD. CEMENTITIOUS CLAPBOARD, CUSTOM COLOR "B"
- (7C) PTD CEMENTITIOUS PANELS W/ PAINTED PVC OR POLY-ASH BATTENS, SPACING TBD, CUSTOM COLOR "C"
- (7D) 4" PTD. CEMENTITIOUS CLAPBOARD, CUSTOM COLOR "D"
- (7E) 1X4 T&G V-JOINT EVIS A CLEAR GRADE, W/ 2-COAT TRANSPARENT ALKYD-OIL FINISH
- (7F) PTD PVC OR POLY-ASH TRIM, (4) COLOR OPTIONS TO MATCH SIDING
- (7G) FLAT LOCK ZINC-COATED-COPPER PANEL SIDING
- (7H) FACTORY FINISHED ALUMINUM FLASHING, TYP. AT RESIDENTIAL BUILDINGS
- (7I) ZCC FLASHING, TYP. AT COMMUNITY BUILDING
- (7K) STANDING SEAM METAL ROOF, SEAM SPACING TBD.
- (7L) STANDING SEAM ALUM. ROOFING
- (7M) PVC ROOFING, TYP. AT RESIDENTIAL BUILDINGS
- (8A) VINYL HIGH PERFORMANCE WINDOWS, CASEMENT & FIXED, TBD.
- (8B) PTD FIBERGLASS DOOR W/ TRANSOM & SIDELITE
- (8C) THERMALLY BROKEN ALUM. STOREFRONT SYSTEM W/ 1" LOW-E IGUS
- (10) PVDF COATED ALUM. SIGNAGE
- (23) ROOF MOUNTED CONDENSERS BEYOND

NOTE: SEE 1/A2.6 FOR TYPICAL BUILDING MATERIAL NOTES

PHA FRONT STREET DEVELOPMENT

37 & 63 Front Street
Portland, Maine 04103

PROJECT

FRONT STREET REDEVELOPMENT, LP

14 Baxter Boulevard
Portland, Maine 04101
P 207 773.4753

OWNER

utile

ARCHITECTURE + URBAN DESIGN

115 KINGSTON ST
BOSTON, MA 02111
P 617 423.7200 F 617 423.1414
utiledesign.com

ARCHITECT

Ransom Consulting, Inc.

400 Commercial Street, Suite 404
Portland, Maine 04101
P 207 772.2891 F 207 772.3284

CIVIL & GEOTECHNICAL

Carol Associates

217 Commercial Street, Suite 200
Portland, Maine 04101
P 207 772.1552 F 207 772.0712

LANDSCAPE

Allied Engineering

160 Veranda Street
Portland, Maine 04103
P 207 221.2260 F 207 221.2266

ME/PF/P & STRUCTURAL

Thornton Tomasetti

386 Fore Street, Suite 401
Portland, Maine 04101
P 207 245.6360

SUSTAINABILITY

STAMP

DATE	REVISION
09/28/2017	PERMITTING

REVISIONS ON SHEET

SCALE As Indicated	UTILE PROJECT NUMBER 15145
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BUILDING ELEVATIONS

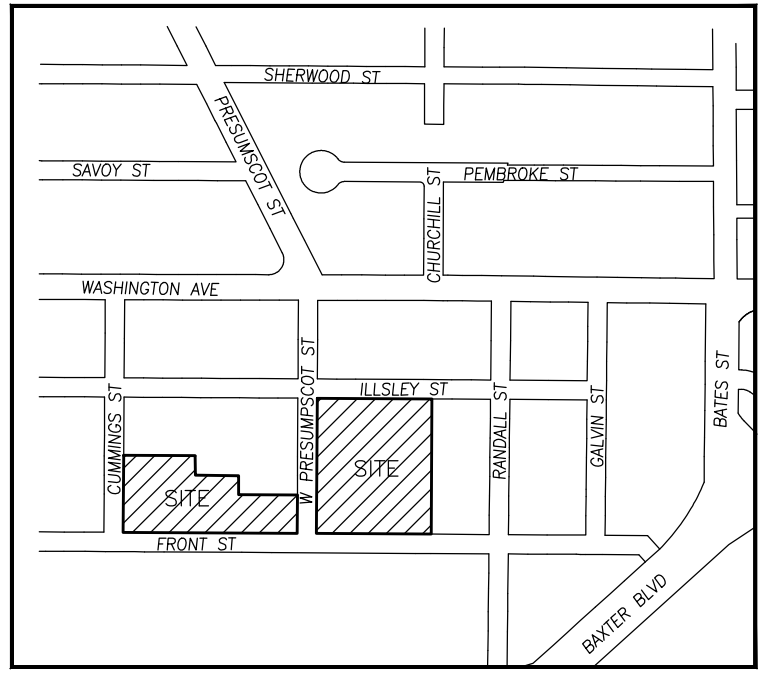
A-2.6

EXISTING

- PROPERTY LINE
- DECIDUOUS TREE (preserved)
- DECIDUOUS TREE (to be removed)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- POLE LIGHT
- FIRE HYDRANT
- MANHOLE
- ELEC / GAS METER
- UTILITY POLE
- STREET LIGHT
- SIGN
- CATCH BASIN
- WATER VALVE / SHUTOFF
- CHAIN LINK FENCE
- OVERHEAD WIRES
- UNDERGROUND POWER
- WATER LINE
- GAS LINE
- TELEPHONE
- STORM DRAIN
- SANITARY SEWER
- CONTOUR LINE

DEMO + SITE PREP NOTES:

- ALL TREES TO BE PRESERVED SHALL BE PROTECTED WITHIN APPROVED FENCING OR BARRIERS AT THE EXISTING DRIPLINE. SEE DETAIL 5, SHEET L2.1
- NO EQUIPMENT OR MATERIALS SHALL BE PLACED OR STORED WITHIN THE PROTECTED DRIPLINE AREA OF PRESERVED TREES
- ALL TREES TO BE PRESERVED SHALL BE MONITORED ON A REGULAR BASIS FOR SIGNS OF STRESS OR OTHER IMPACT DUE TO CONSTRUCTION AND APPROPRIATE TREE CARE SHALL BE INITIATED IMMEDIATELY.
- OWNER SHALL RETAIN A LICENSED ARBORIST TO PREPARE A TREE CARE PROGRAM FOR ALL PRESERVED TREES TO INCLUDE PRE, DURING AND POST CONSTRUCTION MANAGEMENT.
- TREE MANAGEMENT SHALL CONSIST OF SELECT PRUNING, WATERING, FERTILIZATION, AND AERATION AS REQUIRED AND SPECIFIED TO EACH TREE SPECIES.
- THE CONTRACTOR IS ADVISED THAT ANY UNFORESEEN SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COURSE OF WORK SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY AND ANY UNAUTHORIZED REMOVALS SHALL BE DONE SO AT NO EXTRA EXPENSE TO THE OWNER.
- REFER TO THE CIVIL PLANS FOR ADDITIONAL SPECIFICS AND DETAILS.



LOCATION MAP
SCALE: NTS

APPLICANT:

FRONT STREET
REDEVELOPMENT, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

OWNER:

PORTLAND HOUSING
AUTHORITY
14 BAXTER BLVD
PORTLAND, MAINE 04101

FRONT STREET
DEVELOPMENT

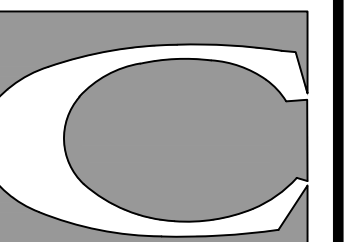
Project:

Revisions	Date	Description
1	9/15/2017	CITY OF PORTLAND LEVEL II SITE PLAN SUBM.

Drawn By: MP Approved By: PC Scale: AS SHOWN

SITE DEMOLITION
& SITE PREP PLAN

Phase:
PERMITTING

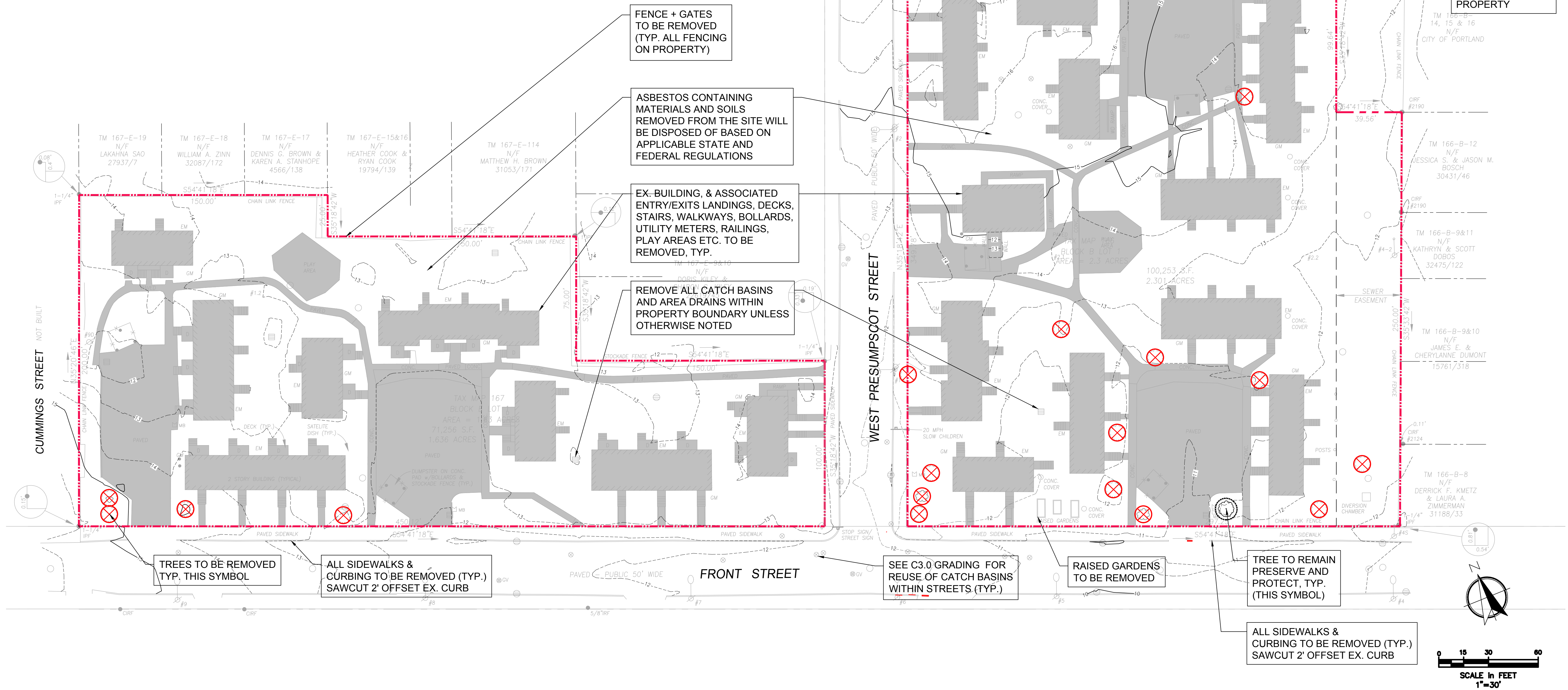


CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS
217 COMMERCIAL STREET, STE 200
PORTLAND, MAINE 04101
207.772.1652 V. F. 207.772.2012

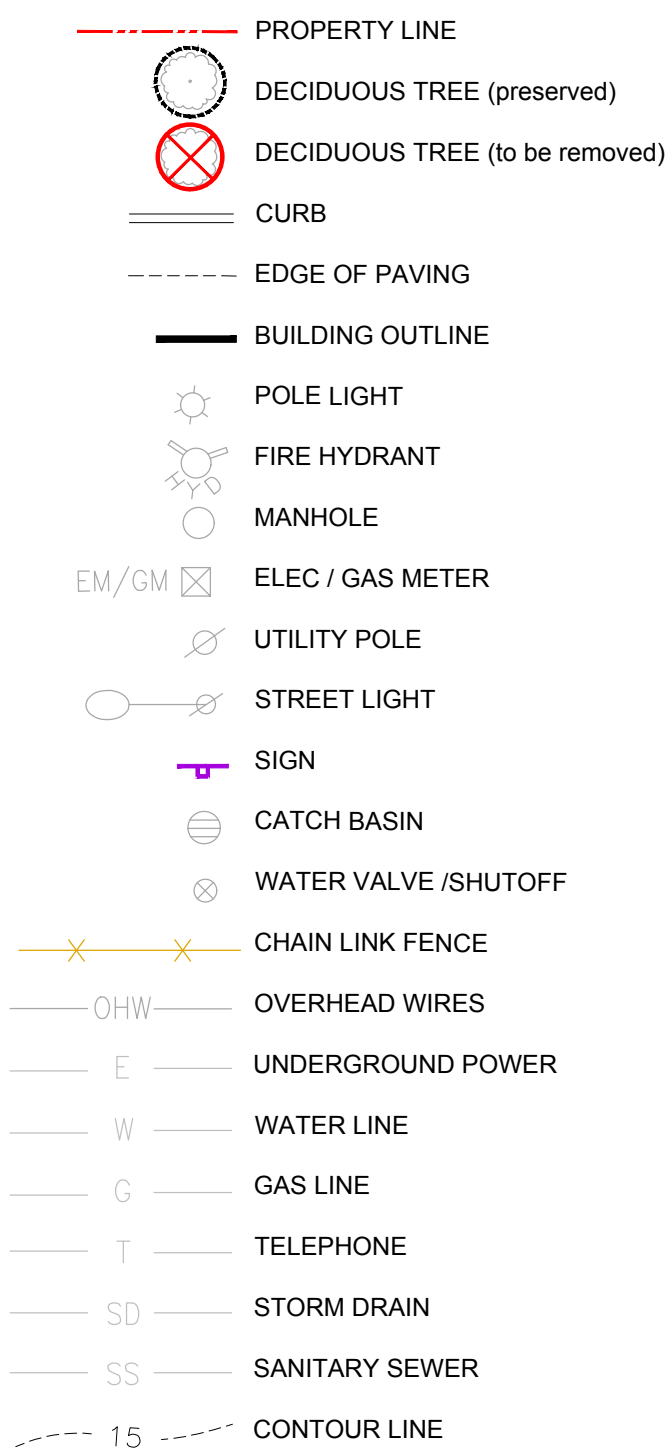
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SEPT 28, 2017

Sheet No:

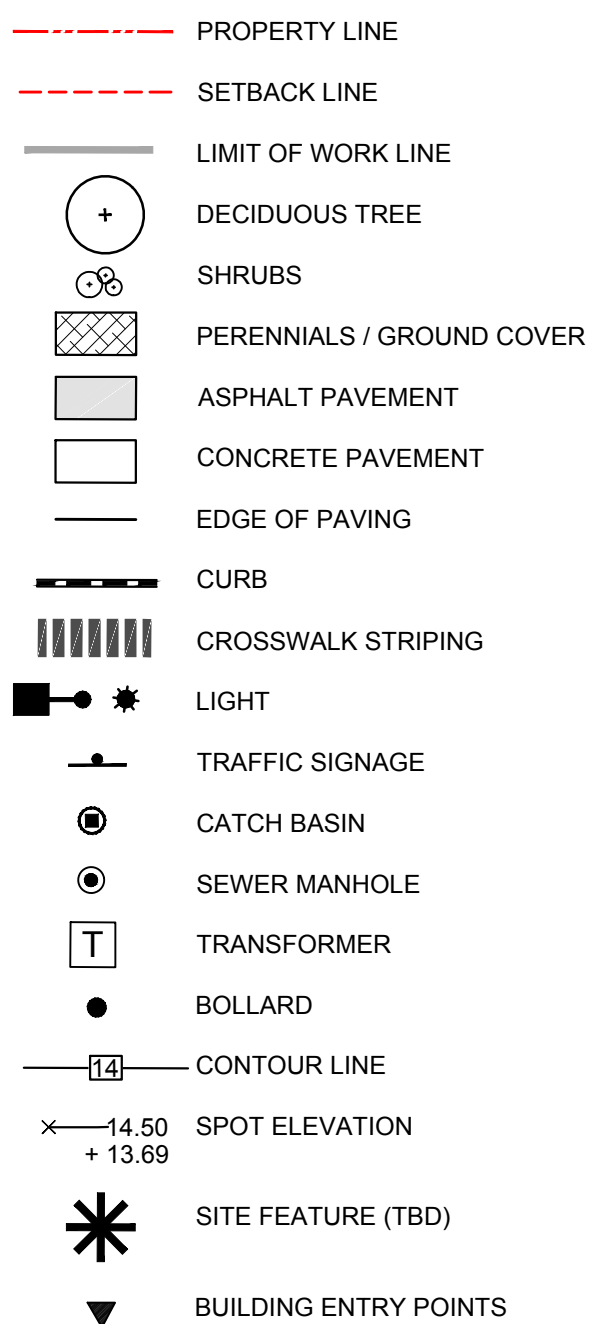
C-1.0



EXISTING



PROPOSED



GENERAL NOTES:

- TOTAL SITE AREA: ±3.93 ACRES (±171,509 SF)
- ZONING DISTRICT: RESIDENTIAL ZONE (R-5)
- OWNER: PORTLAND HOUSING AUTHORITY
14 BAXTER BLVD.
PORTLAND, ME 04101
(207) 773-4753
- TAX MAP: 166, BLOCK B LOT 1
167, BLOCK E LOT 1
- BOOK AND PAGE: CCRD BOOK 3196, PAGE 834
- PROJECT ADDRESS: FRONT STREET & WEST PRESUMPCOT STREET
- BOUNDARY, TOPOGRAPHY, AND EXISTING CONDITIONS INFORMATION TAKEN FROM A PLAN TITLED: "BOUNDARY & TOPOGRAPHIC SURVEY" ON FRONT STREET, ILLSELY STREET & WEST PRESUMPCOT STREET, PORTLAND, MAINE. MADE FOR PORTLAND HOUSING AUTHORITY, 14 BAXTER BLVD., PORTLAND, MAINE 04101. DATED DECEMBER 15, 2015. PREPARED BY OWEN HASKELL, INC. 390 US ROUTE ONE, FALMOUTH, ME 04105, TELEPHONE 207.774.0424
- BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM, MAINE WEST NAD 83.
- BENCHMARK: CITY POINT MDLOT-PO-295 ELEVATION 12.00'
- SPACE AND BULK (W/ DIVISION 30 AFFORDABLE HOUSING BONUSES APPLIED)

	R-5 (PRUD)	PROPOSED
TOTAL DWELLING UNITS	99 DU	99 DU
% AFFORDABLE	80% (79 DU)	3.93 AC
MIN. LOT SIZE	2 AC.	100'
MIN. STREET FRONTAGE	10 FT.	10'
MIN. FRONT YARD	10 FT.	12'
MIN. REAR / SIDE YARD	10 FT.	<100%
MAX. LOT COVERAGE	40%	35 FT.
MAX. BLDG HT.	35 FT.	102 PS
OFF-STREET PARKING	1 PS / D.U. (99 REQ'D)	19,800 SF
RECREATION OPEN SPACE	19,800 SF	21,115 SF

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES IN THE FIELD AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES.
- ALL DIMENSIONS SHOWN ARE TO FACE OF ALL WALLS, BUILDINGS, CURBS, AND OTHER SITE ELEMENTS UNLESS OTHERWISE NOTED.
- EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. CALL DIG-SAFE PRIOR TO BEGINNING WORK (1-800-225-4977).
- ALL EXISTING VEGETATION TO BE PRESERVED AS SHOWN ON PLANS. PROVIDE A SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING. AREAS NOT REQUIRING GRADING SHALL BE LEFT UNDISTURBED.

- STORAGE OR PARKING WILL NOT BE ALLOWED OVER THE ROOTS OF VEGETATION WHICH ARE TO BE PRESERVED. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS REQUIRED FOR THE WORK ON THESE PLANS.
- ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
- ALL AREAS DISTURBED OR WORK REQUIRED WITHIN TEMPORARY CONSTRUCTION AREAS ON PROPERTY SHALL BE REPAIRED BY RE-PAVING OR LOAM/SEEDING AS REQUIRED TO RETURN THE SITE TO PRE-CONSTRUCTION CONDITIONS.
- ALL WORK WITHIN THE RIGHT-OF-WAY MUST BE COORDINATED WITH THE DEPARTMENT OF PUBLIC SERVICES.
- ALL EXTERIOR MECHANICAL EQUIPMENT WILL BE SCREENED FROM PUBLIC STREETS AND ADJACENT SITES BY STRUCTURE WALLS, EVERGREEN LANDSCAPING, FENCING, MASONRY WALLS OR A COMBINATION THEREOF.
- SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY. ANY SNOW THAT CANNOT BE STORED ON-SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFF-SITE WITHIN 24-48 HOURS FOLLOWING A STORM. SNOW TRANSPORTED OFF-SITE SHALL BE BROUGHT TO A MAINE DEP APPROVED 'SNOW DUMP' OR MEET THE EXEMPTION REQUIREMENT SPECIFIED WITHIN CHAPTER 573 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABUNDANCE OF SNOW. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING, ETC. RESULTING FROM THEIR ACTIVITIES. THE SNOW CONTRACTOR SHALL USE SALT OR CHLORIDE SUBSTITUTE TO DEICE THE PARKING LOT. THE BUILDING OWNER / ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

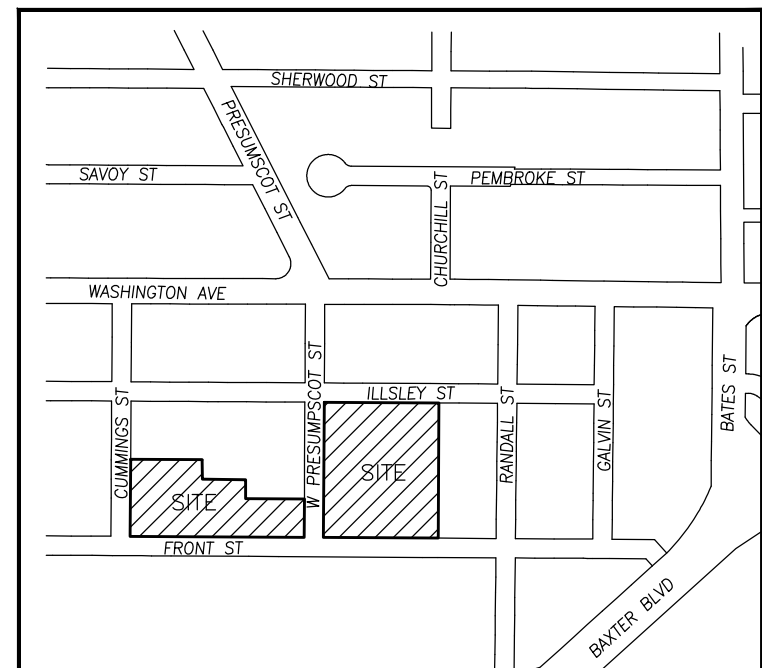
City of Portland Planning Board

Chairman

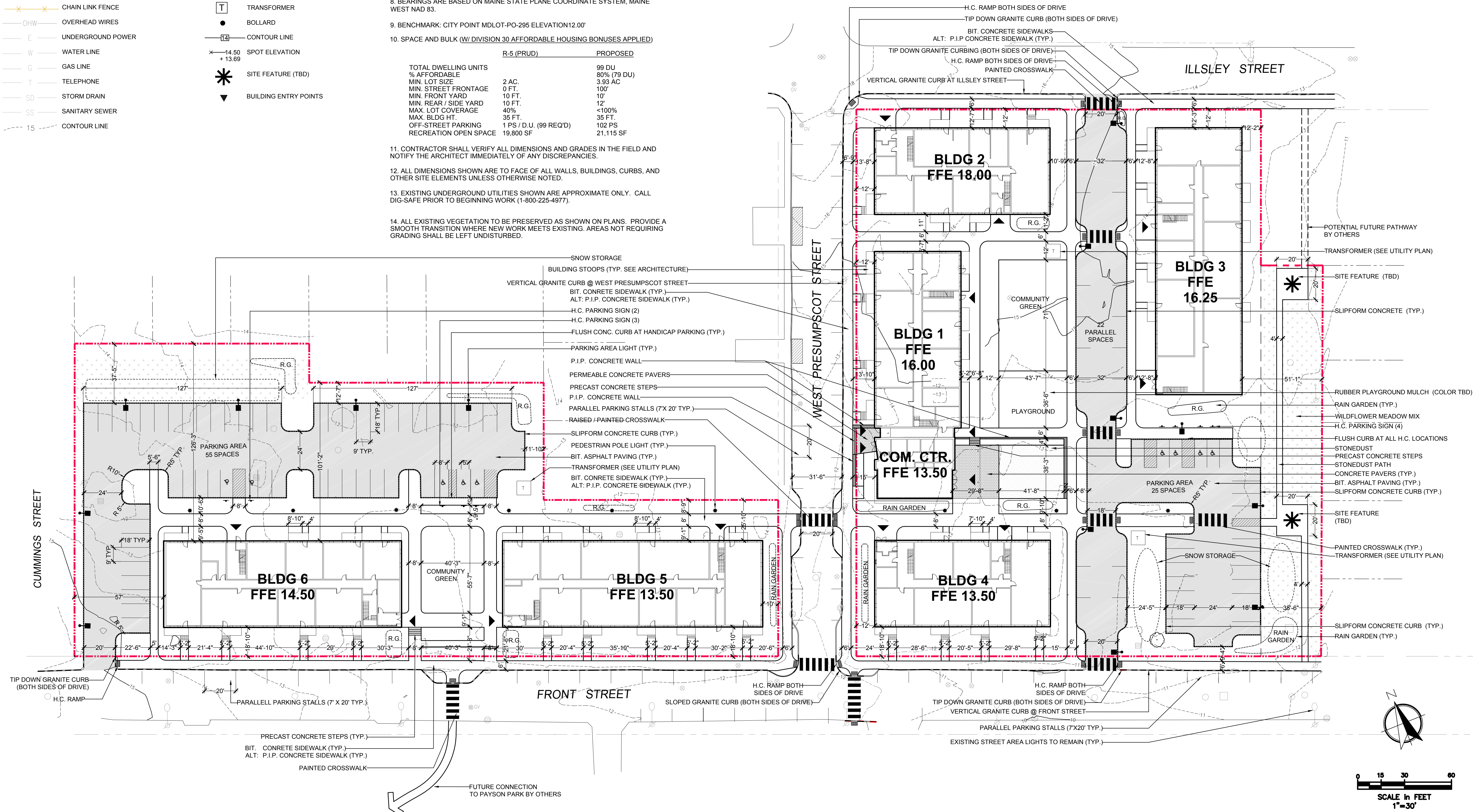
Board Members

Date

"Approved: City of Portland Planning Board"



LOCATION MAP
SCALE: NTS



APPLICANT:

FRONT STREET
REDEVELOPMENT, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

OWNER:

PORTLAND HOUSING
AUTHORITY
14 BAXTER BLVD
PORTLAND, MAINE 04101

FRONT STREET
DEVELOPMENT

Project:

Description	Date	Revisions
CITY OF PORTLAND LEVEL ILLSITE PLAN SUBM.	9/15/2017	1

Scale: AS SHOWN

Approved By: PC

Drawn By: MP

Phase:

PERMITTING

DATE:

SEPT 28, 2017

Sheet No:

C-2.0

Carroll Associates
LANDSCAPE ARCHITECTS

217 COMMERCIAL STREET, STE 200
PORTLAND, MAINE 04101
207.772.1552 V. F. 207.772.6112

DATE:

SEPT 28, 2017

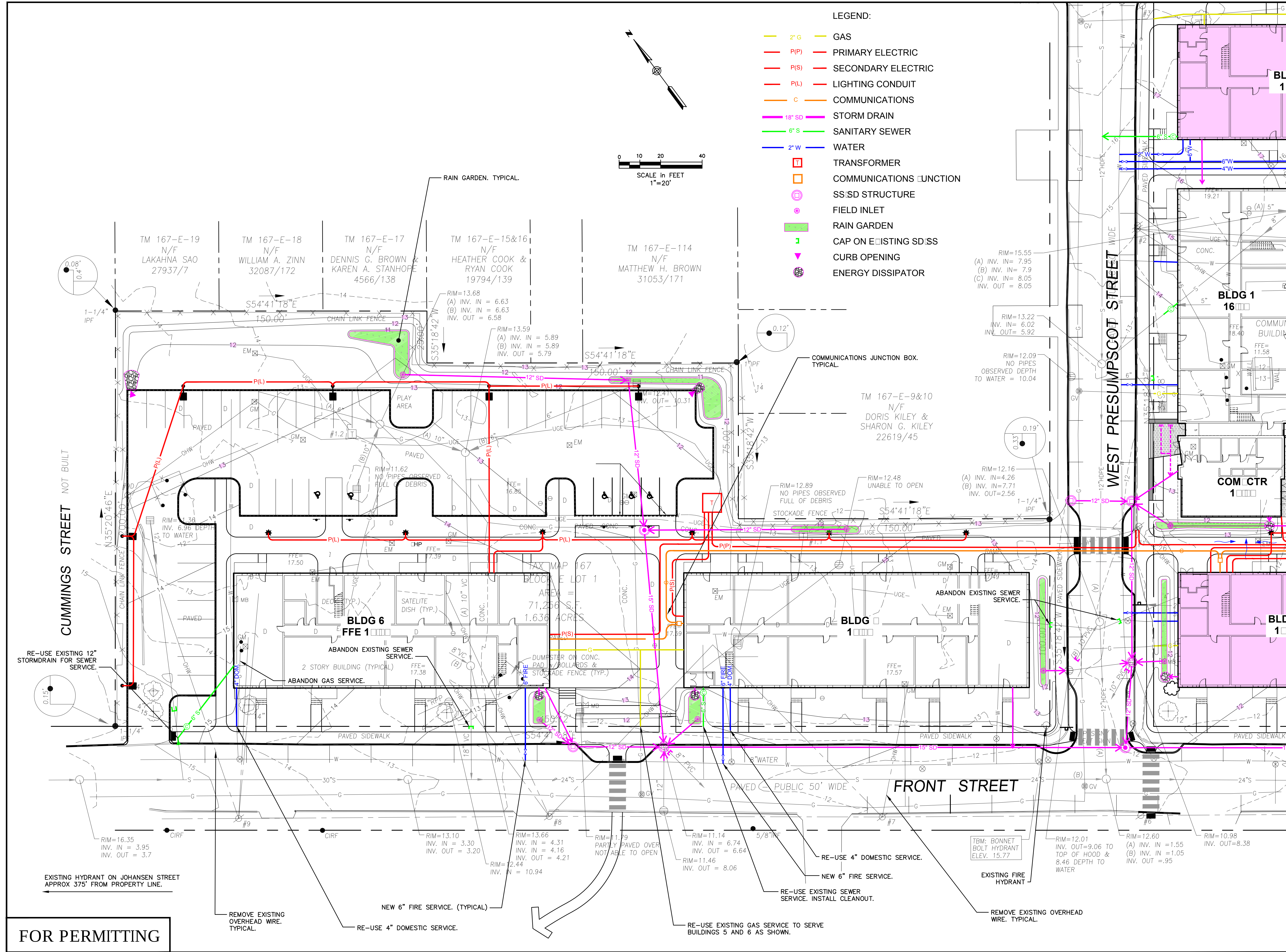
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C-2.0

C-3.0



C-3.1



- LEGEND:
- 2" G GAS
 - P(P) PRIMARY ELECTRIC
 - P(S) SECONDARY ELECTRIC
 - P(L) LIGHTING CONDUIT
 - C COMMUNICATIONS
 - 18" SD STORM DRAIN
 - 6" S SANITARY SEWER
 - 2" W WATER
 - T TRANSFORMER
 - COMMUNICATIONS JUNCTION
 - SS:SD STRUCTURE
 - FIELD INLET
 - RAIN GARDEN
 - CAP ON EXISTING SD:SS
 - CURB OPENING
 - ENERGY DISSIPATOR

Front Street
Development
Front Street
Portland, ME

Applicant:

PORTLAND HOUSING

Consultants:

utile

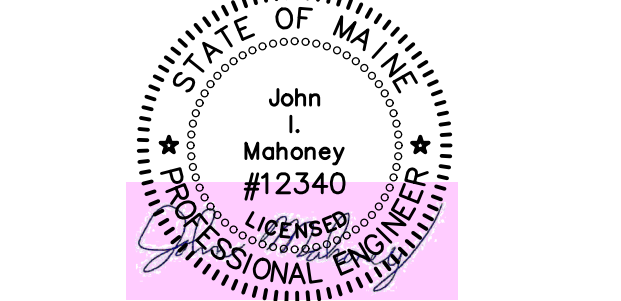
Utile, Inc. | Architecture + Planning
50 Summer Street | Boston, MA 02110

Architect:

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

Engineer:

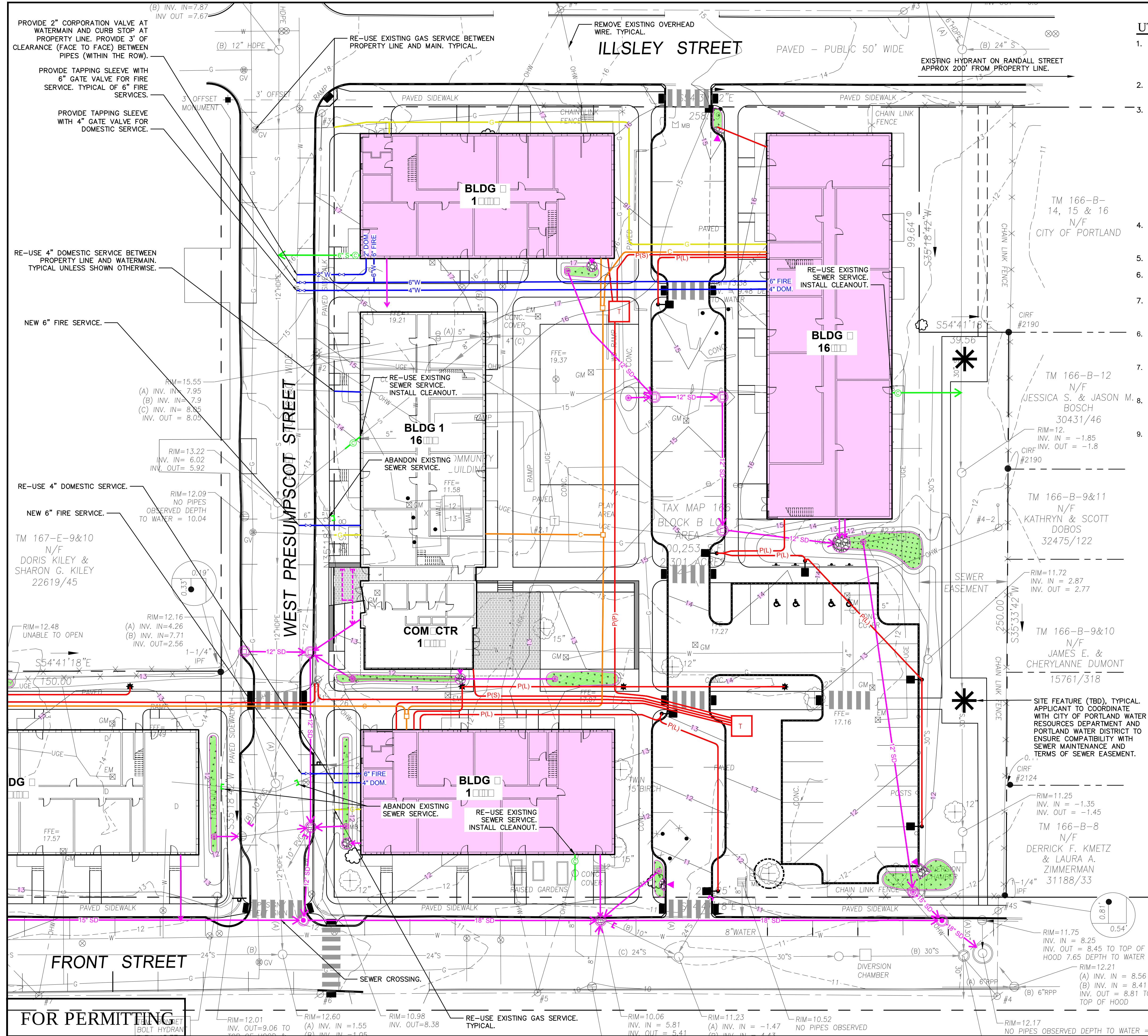
RANSOM
Consulting, Inc.



UTILITY PLAN
WEST PARCEL

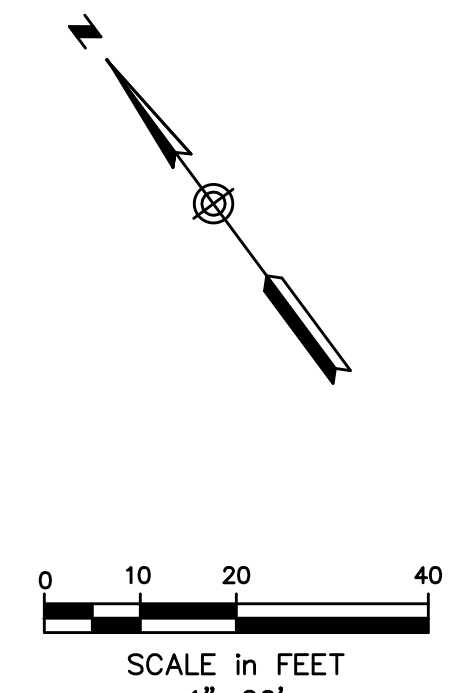
A		PERMITTING	10-10-17
Design by:	JIM	Checked by:	SJB
Drawn by:	KJT	Approved by:	SJB
Project:	151.06170		
Sheet No:	C-4.1		

FOR PERMITTING



UTILITY NOTES

1. CONTRACTOR IS ADVISED THAT CERTAIN BUILDING MATERIALS TESTED POSITIVE FOR ASBESTOS AND SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS.
2. ALL EXISTING PAVEMENT AND BUILDING FOUNDATIONS TO BE REMOVED
3. ALL UTILITIES WITHIN PROPERTY BOUNDARIES ARE TO BE REMOVED WITH THE FOLLOWING EXCEPTIONS:
 - 3.1. WATER UTILITIES (WITH 5' OF COVER OR MORE LOCATED OUTSIDE OF THE ROW) MAY BE ABANDONED IN PLACE IF NOT BENEATH A BUILDING. CAP WHERE ENCOUNTERED.
 - 3.2. SEWER AND STORMDRAIN UTILITIES (WITH 4' OF COVER OF MORE) MAY BE ABANDONED IN PLACE IF NOT BENEATH A BUILDING. PIPES LESS THAN 12" IN DIAMETER MAY BE CAPPED/PLUGGED WHERE ENCOUNTERED. PIPES 12" OR GREATER IN DIAMETER SHALL BE REMOVED OR FILLED WITH FLOWABLE FILL.
4. EXISTING SEWER/STORMDRAIN SERVICES SHALL BE ABANDONED IN ACCORDANCE WITH CITY OF PORTLAND STANDARDS OR RE-USED AS INDICATED ON PLANS.
5. ALL NEW UTILITIES SHALL BE UNDERGROUND.
6. ALL WORK IN THE RIGHT OF WAY SHALL BE IN COMPLIANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS.
7. ALL BUILDINGS WILL HAVE 6" FOUNDATION DRAINS AT BOTTOM OF FOUNDATION ELEVATION, BEDDED IN CRUSHED STONE AND WRAPPED IN GEOTEXTILE
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES IN THE FIELD AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
7. UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES OR CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER.
8. ALL UTILITY INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTLAND, AS WELL AS ANY OTHER LOCAL, STATE, FEDERAL AND UTILITY OWNER REQUIREMENTS.
9. SIZING OF DOMESTIC AND FIRE WATER SERVICES IS SHALL BE CONFIRMED BY MECHANICAL DESIGNER DURING FINAL DESIGN.

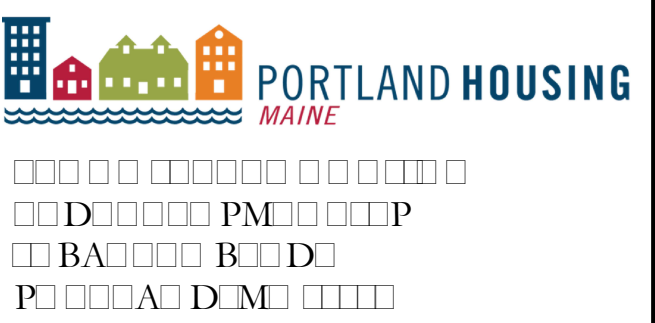


LEGEND:

- 2" G GAS
- P(P) PRIMARY ELECTRIC
- P(S) SECONDARY ELECTRIC
- P(L) LIGHTING CONDUIT
- C COMMUNICATIONS
- 18" SD STORM DRAIN
- 6" S SANITARY SEWER
- 2" W WATER
- TRANSFORMER
- COMMUNICATIONS JUNCTION
- SS/SD STRUCTURE
- FIELD INLET
- RAIN GARDEN
- CAP ON EXISTING SD/SS
- CURB OPENING
- ENERGY DISSIPATOR

Front Street
Development
Front Street
Portland, ME

Applicant:



Consultants:



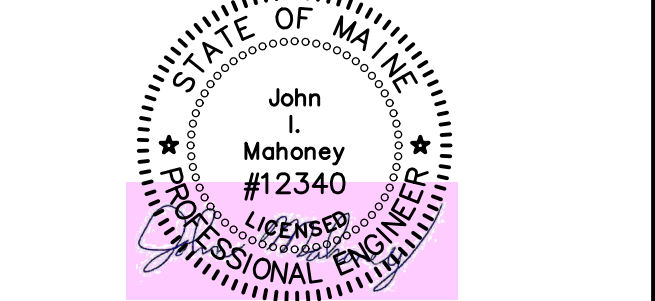
Architect:
Title
Summer Street
Boston, MA 02110



Landscape Architect:
Carroll Associates
Commercial Street
Portland, Maine 04101



Civil Engineer
Ransom Consulting, Inc.
Commercial Street
Portland, Maine 04101



UTILITY PLAN
EAST PARCEL

A	PERMITTING	10-10-17

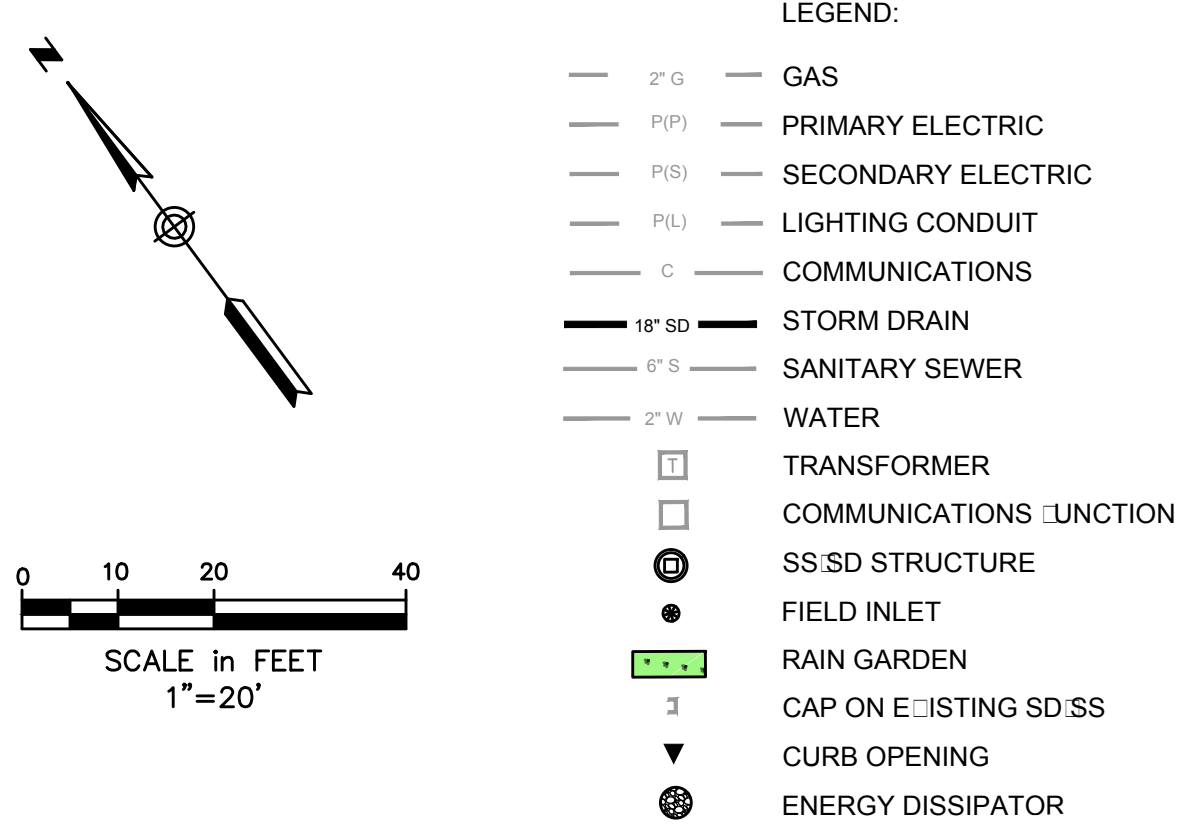
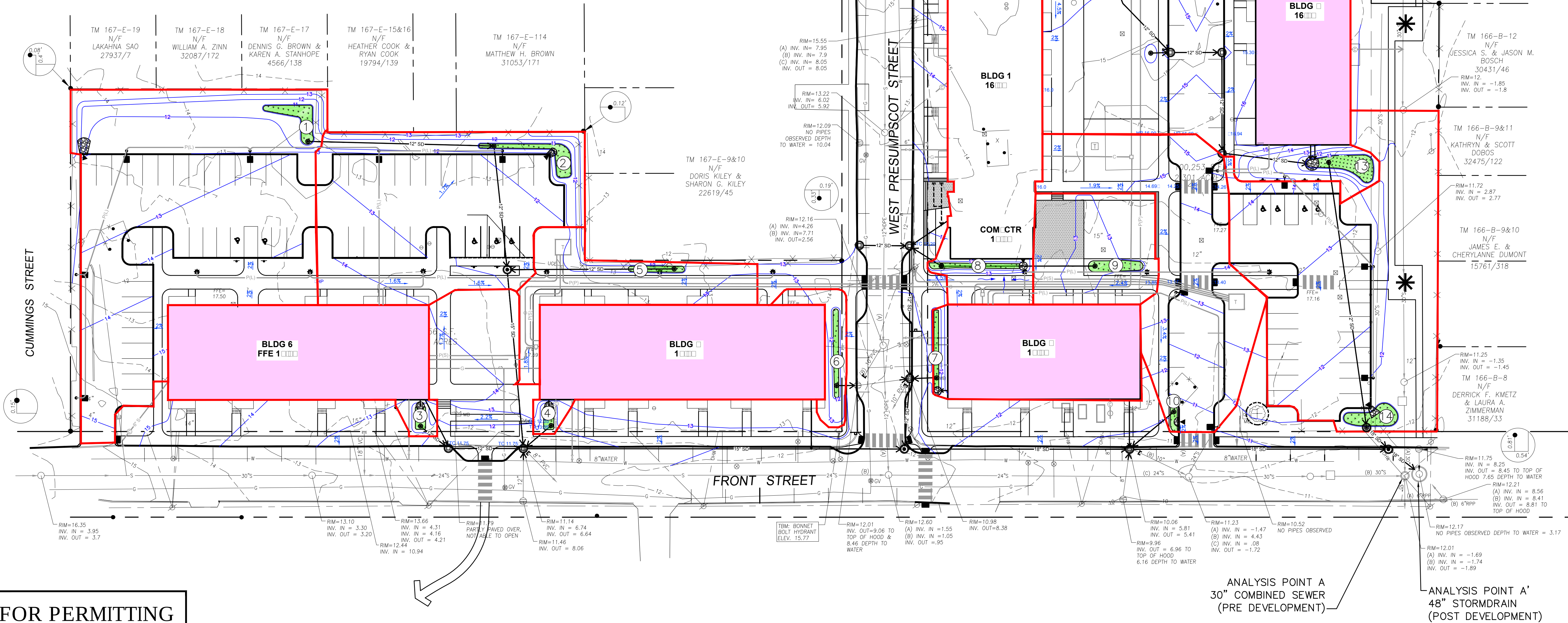
Design by:	Checked by:
JIM	SJB
Drawn by:	Approved by:
KJT	SJB
Project:	
151.06170	

Sheet No:
C-4.2

RAIN GARDEN SUMMARY INFORMATION									
RAIN GARDEN ID	DRAINAGE AREA (SF)	IMPERVIOUS AREA (SF)	% IMPERVIOUS	RAIN GARDEN BOTTOM ELEVATION	RIM ELEVATION	OVERFLOW/SPILL WAY ELEVATION	PONDING VOLUME (CF)	FOCAL POINT AREA (SF)*	QUANTITY OF R-TANK MODULES****
1	21,200	13,066	62	10.75	11.25	11.75	152	110	37
2	13,907	9,575	69	10.75	11.25	11.75	170	60	20
3	8,863	8,420	95	11.00	11.50	11.90	47	80	27
4	9,563	9,180	96	11.00	11.50	11.90	47	80	27
5	4,518	1,849	41	11.50	12.00	12.50	86	10	4
6	1287	103	8	11.50	12.00	12.50	100	NA**	NA**
7	6,725	6,322	94	11.00	11.50	11.90	84	40	14
8	9,989	9,066	91	11.50	12.00	12.30	109	70	24
9	4,597	4,426	96	12.00	12.50	13.18	75	30	10
10	10,862	6,300	58	9.87	10.20	10.50	20	50***	17
11	6,416	6,224	97	16.10	16.60	16.90	44	60	20
12	5,334	3,674	69	14.40	NA*****	14.90	19	40	14
13	23,729	15,640	66	10.90	11.40	11.90	198	120	40
14	17,175	9,855	57	10.50	11.00	11.90	136	80	27

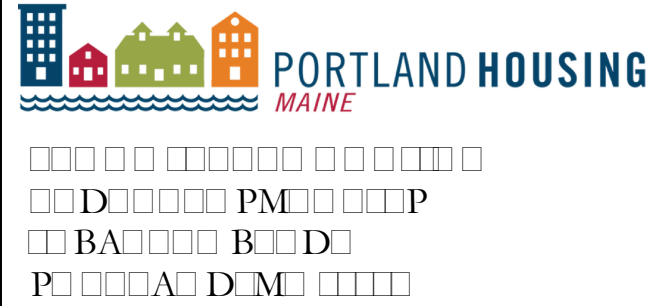
* MIN. REQUIRED TO TREAT RUNOFF GENERATED BY 1.6 INCHES OF RAIN, UNLESS OTHERWISE INDICATED.
** STANDARD RAIN GARDEN - NO FOCAL POINT SYSTEM.
*** MIN. REQUIRED TO TREAT RUNOFF GENERATED BY 1.0 INCHES OF RAIN.
**** MODULES ARE 15.75"x28.15"x17.32"(TALL) WITH A 95% VOID RATIO FOR A STORAGE VOLUME OF 4.22 CF EACH.
*****OVERFLOWS TO ILLSLEY STREET GUTTER AND THEN TO SEPARATED STORMDRAIN.

SUMMARY INFORMATION	
TOTAL AREA (SF)	171,509
TOTAL IMPERVIOUS AREA (SF)	109,012
% IMPERVIOUS AREA TREATED	95
% TOTAL AREA TREATED	87

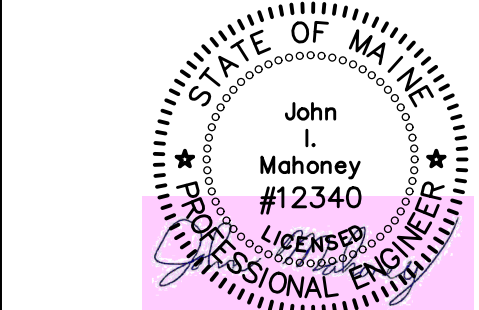
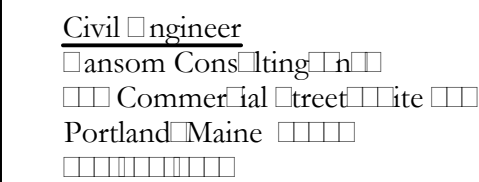
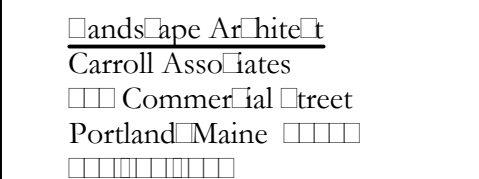
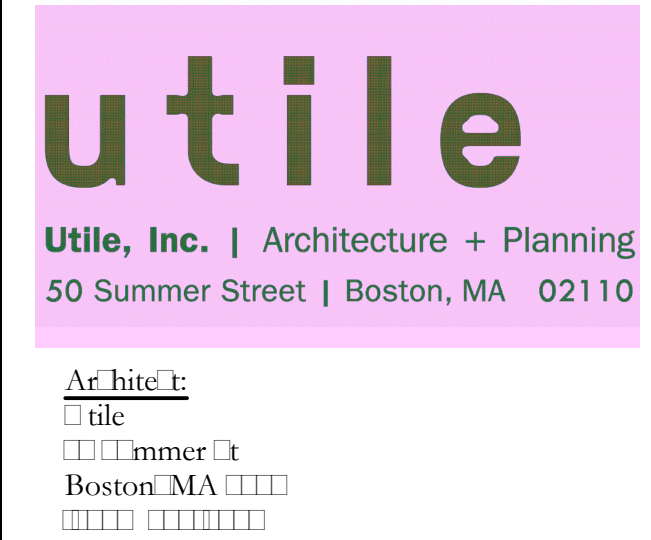


Front Street
 redevelopment
Front Street
 Portland, ME

Applicant:



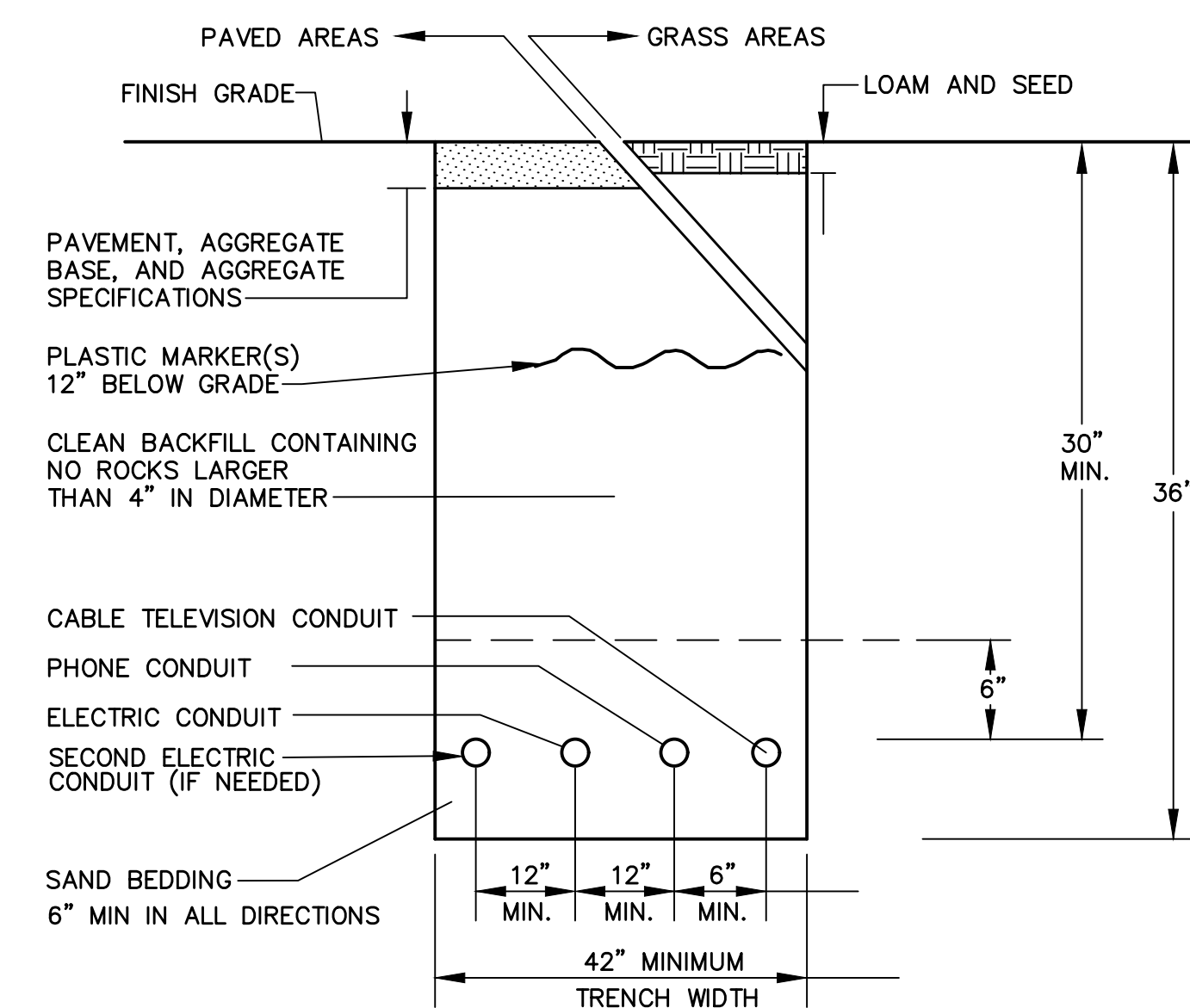
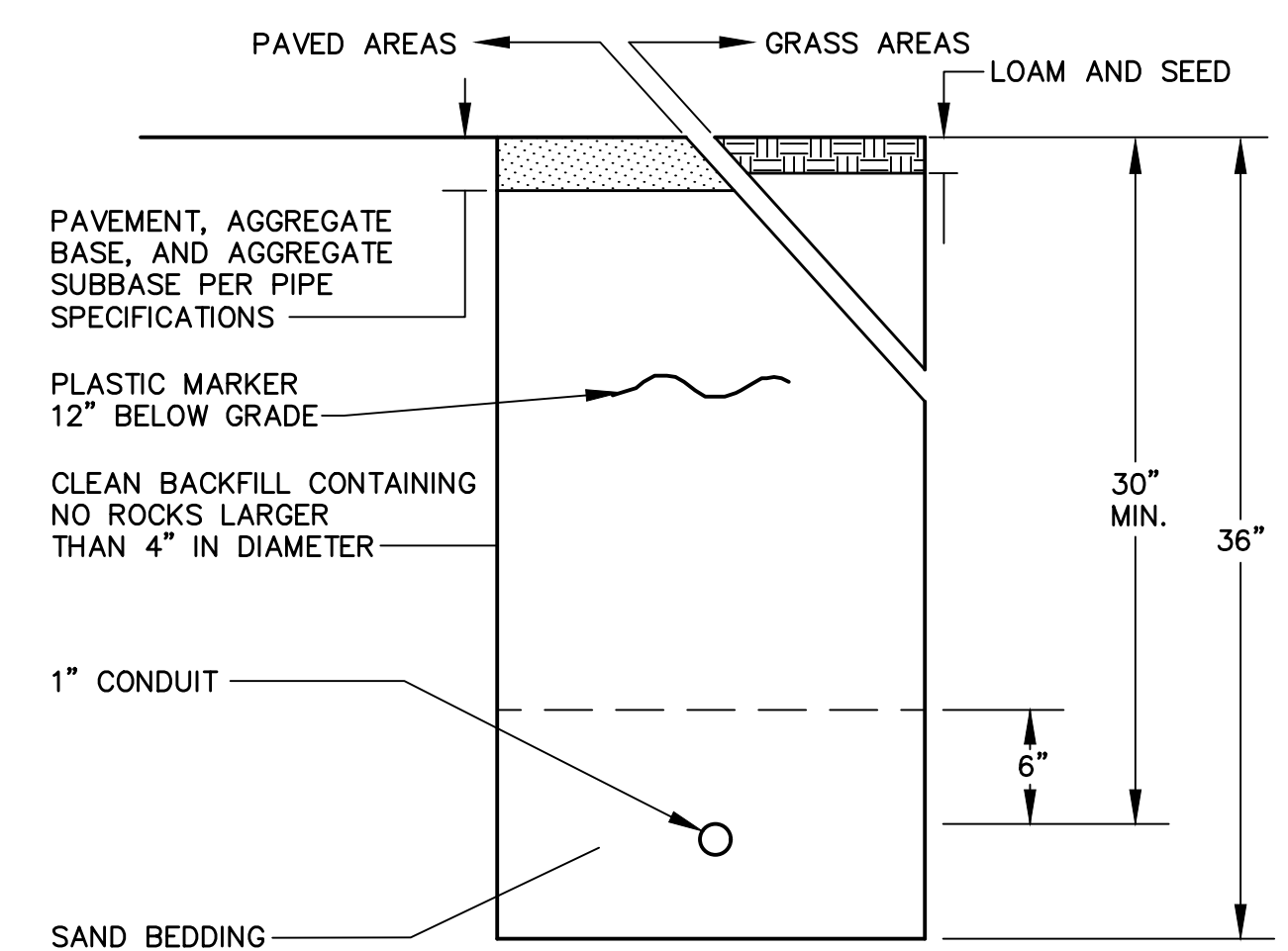
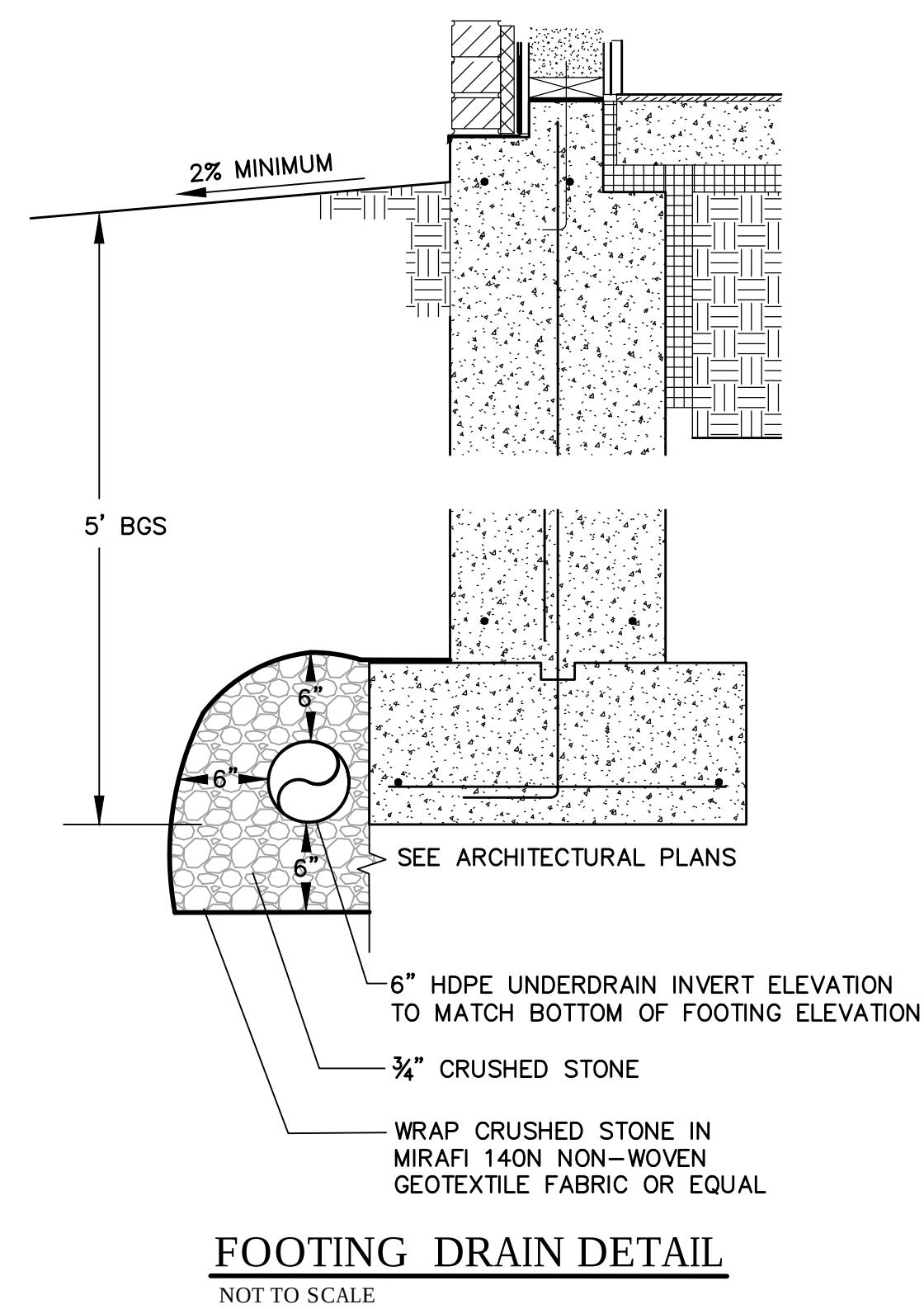
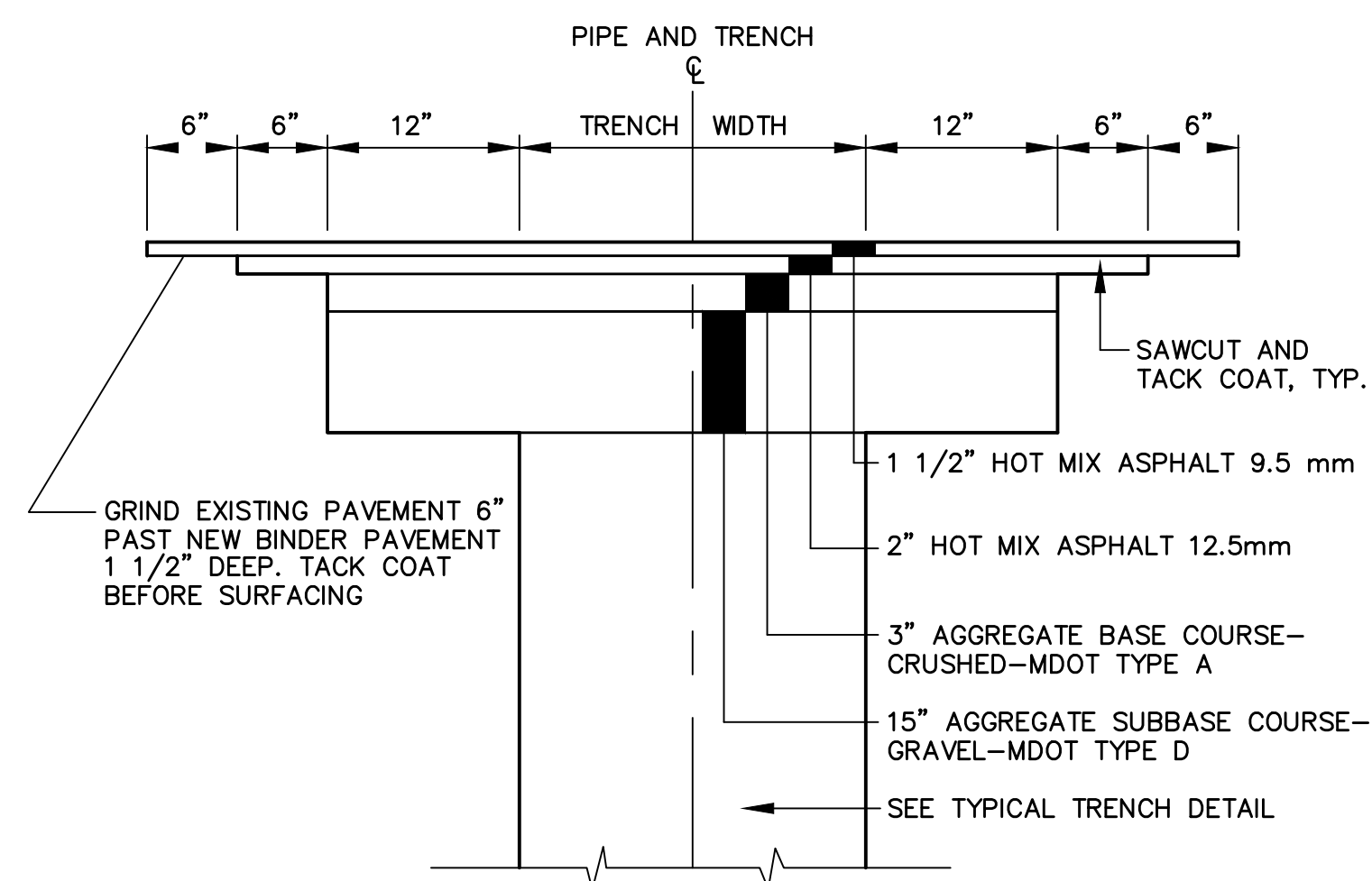
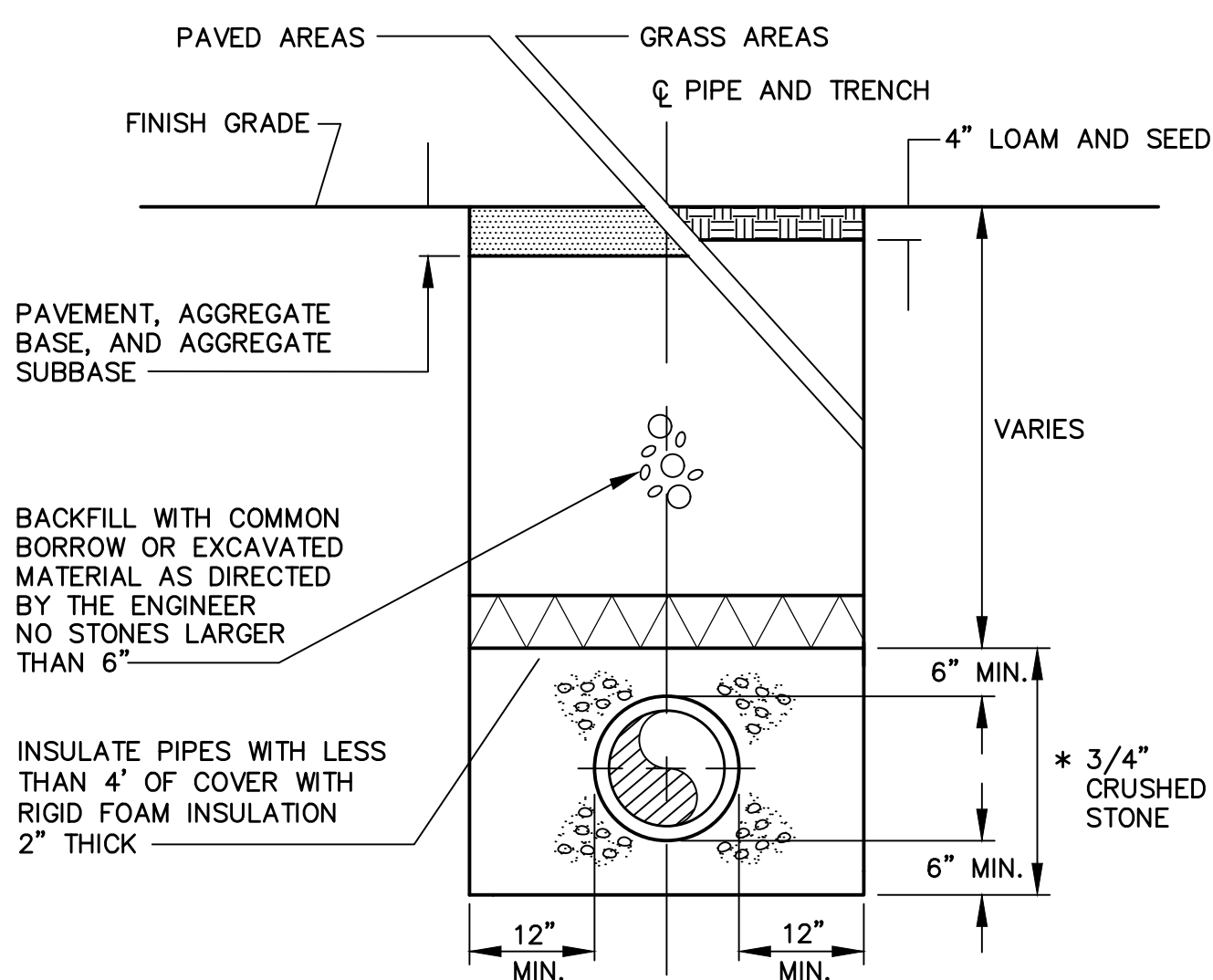
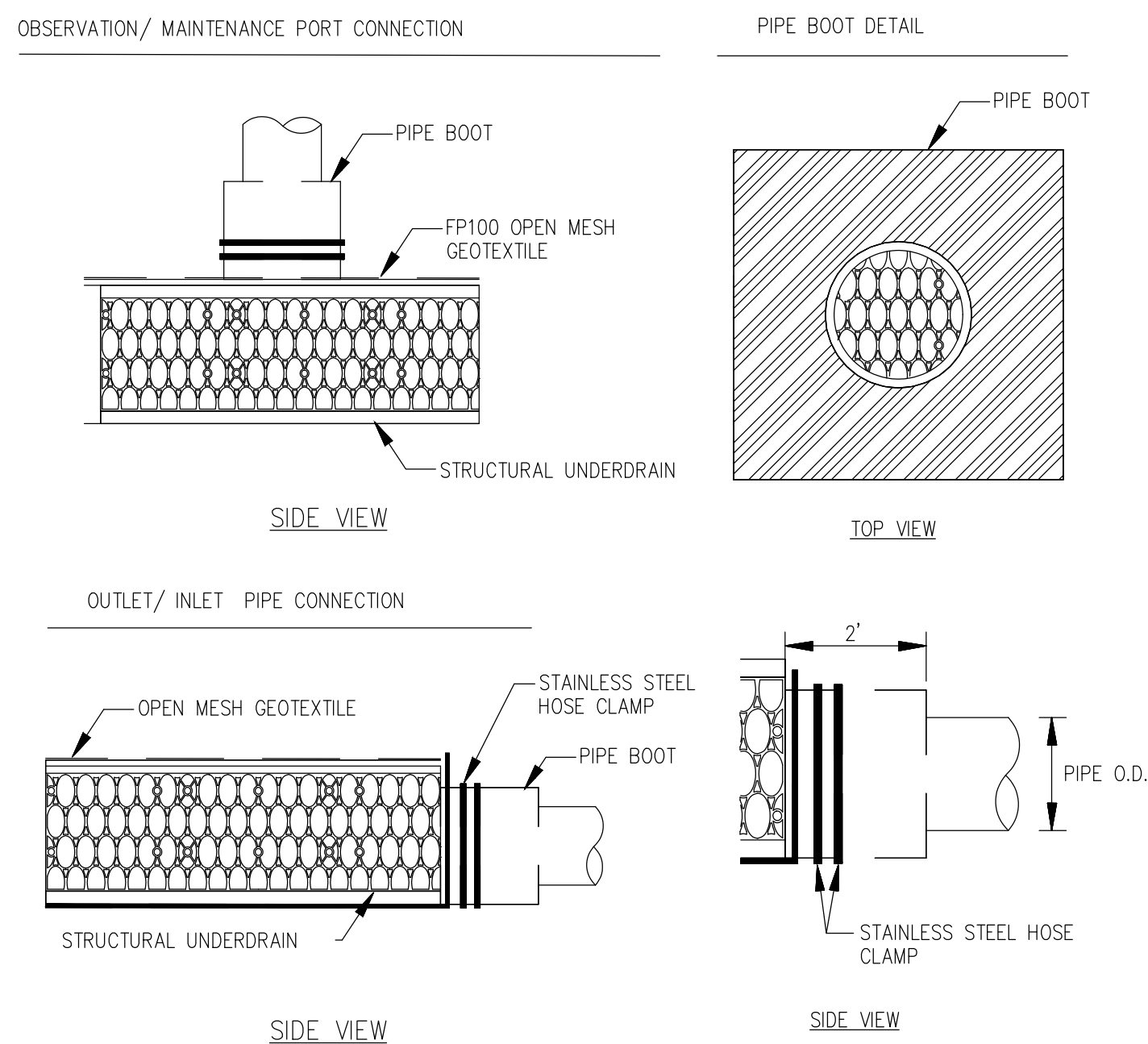
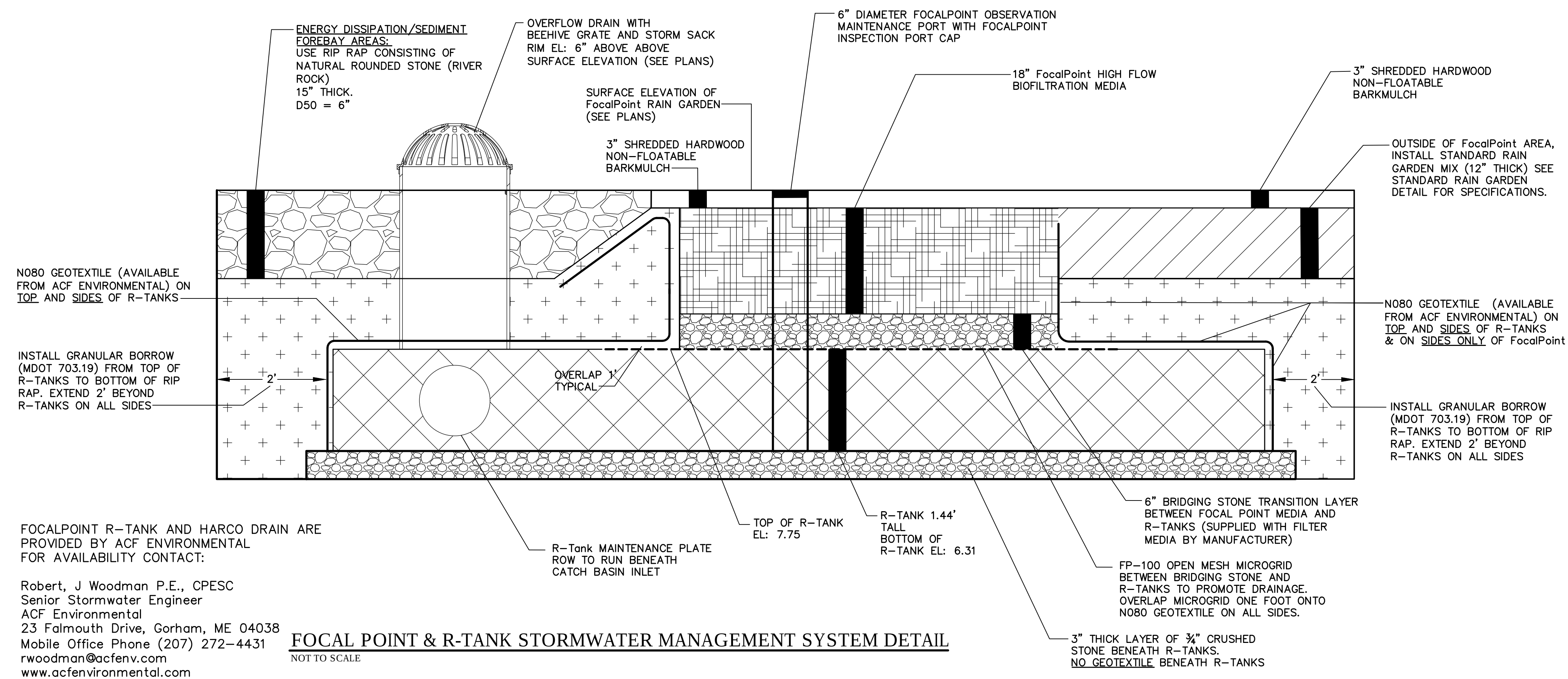
Consultants:



STORMWATER
PLAN

A	PERMITTING	10-10-17
No.	Revision/Issue	Date
Design by:	JIM	Checked by: SJB
Drawn by:	TGN	Approved by: SJB
Project:	151.06170	
Sheet No:		

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FOR PERMITTING

front street
development
front street
Portland, ME

Applicant:



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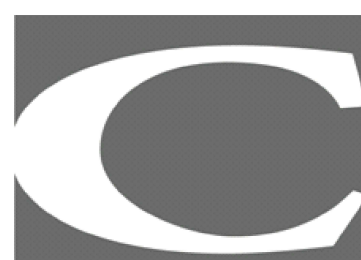
Consultants:

utile

Utile, Inc. | Architecture + Planning
50 Summer Street | Boston, MA 02110

Architecture

☐ tile
☐☐☐mmer☐t
 Boston☐MA ☐☐☐☐
☐☐☐☐ ☐☐☐☐☐



Landscape Architecture

Carroll Associates
Commercial Street
Portland Maine
Maine 04101



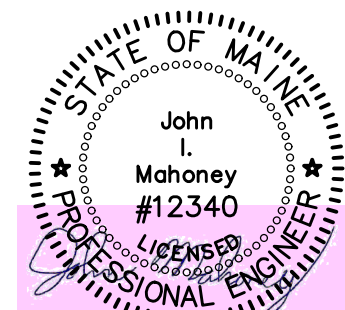
Civil Engineer

☐ ansom Cons₁ting₁n₁

☐ Commercial ☐treet₁ite₁ ☐

Portland₁Maine₁ ☐

☐



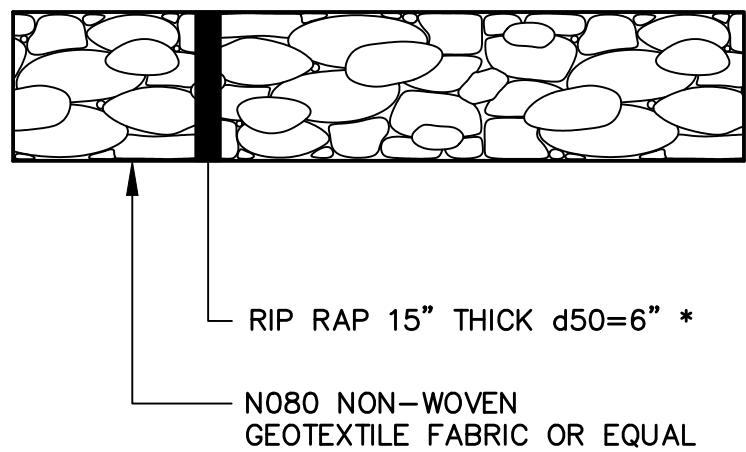
CIVIL DETAILS

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No.	Revision/Issue	Date

Design by:	Checked by:
JIM	SJB
Drawn by:	Approved by:
TGN	SJB

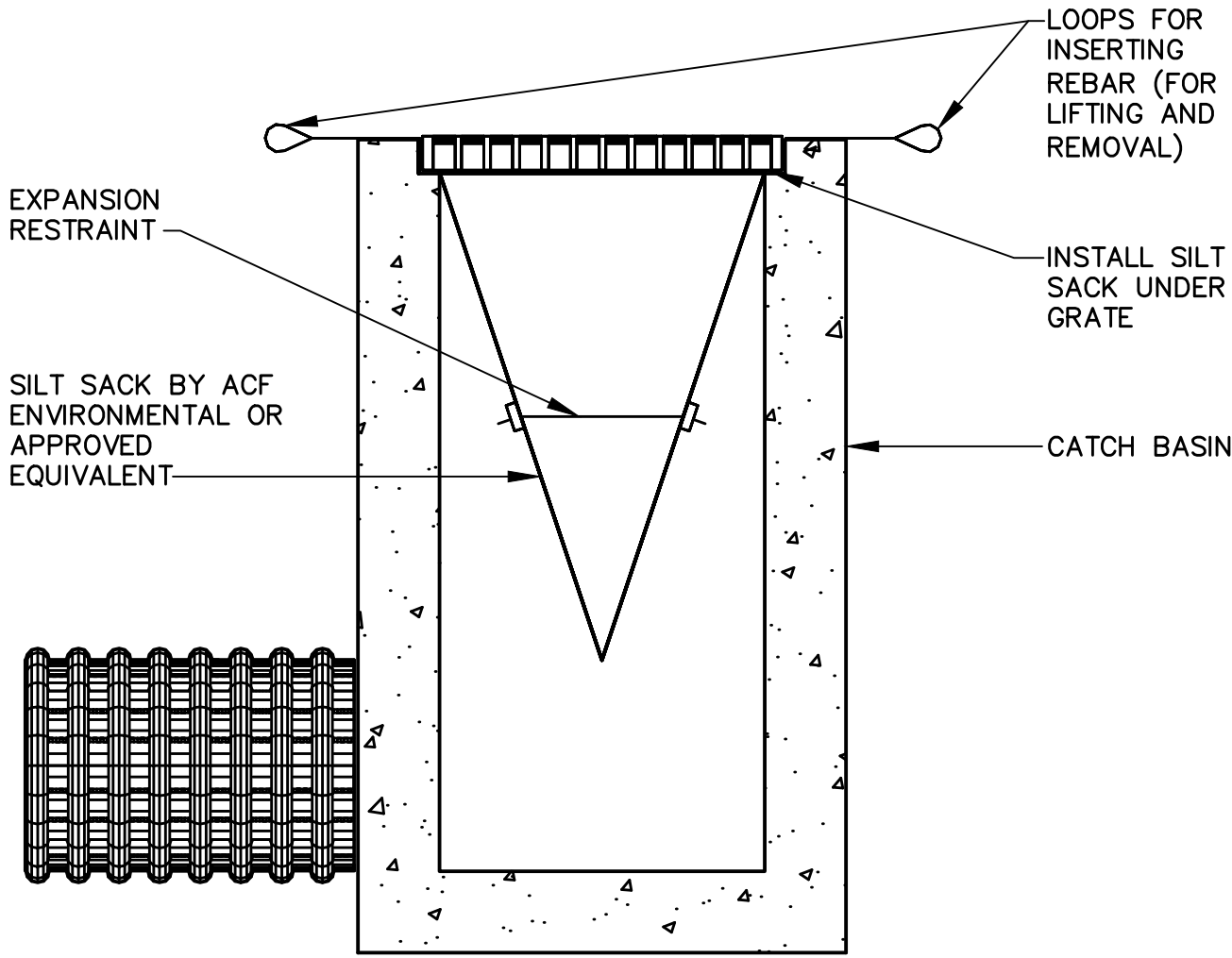
Project:	
151.06170	

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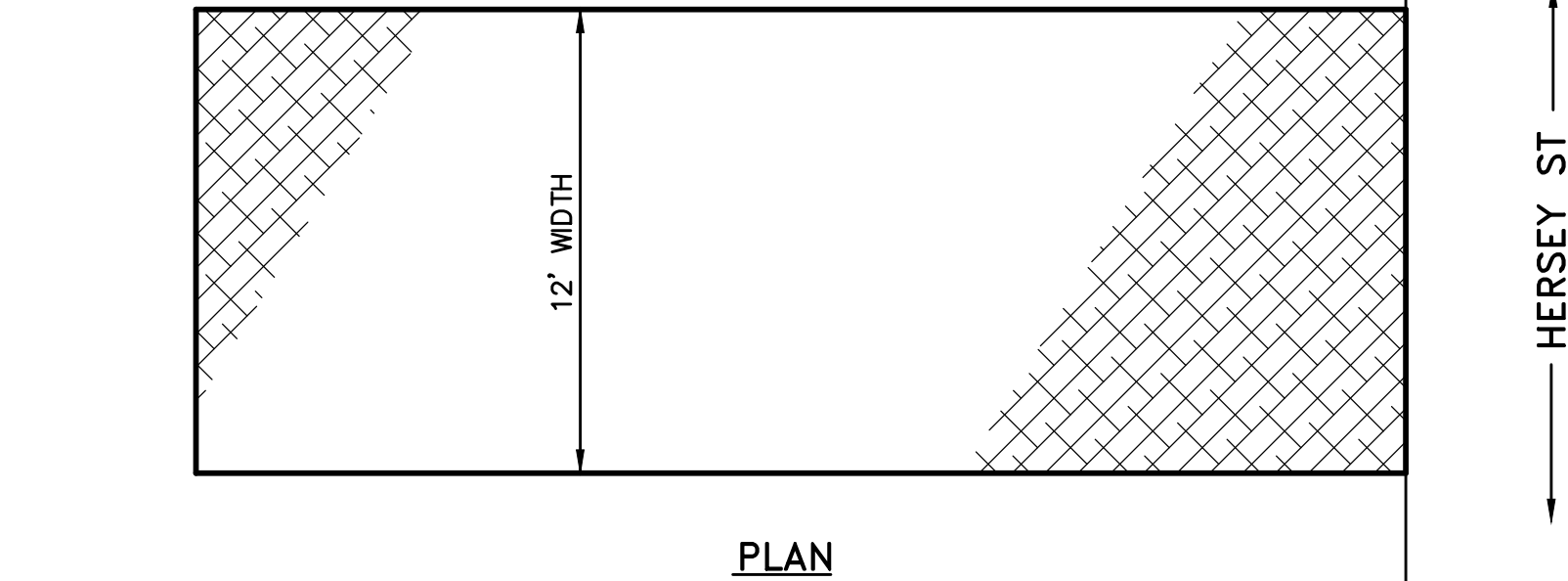
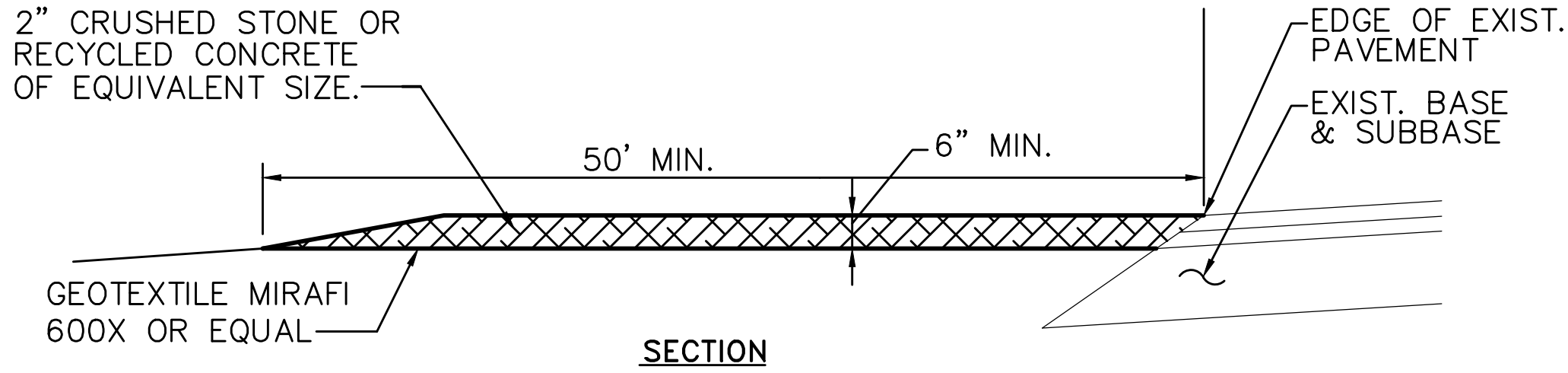
* RIP RAP TO CONSIST OF ROUNDED NATURAL STONE (SCREENINGS)
** SEE PLANS FOR SHAPE, SIZE & GRADING OF ENERGY DISSIPATERS/PLUNGE POOLS

ENERGY DISSIPATER/PLUNGE POOL DETAIL
NOT TO SCALE



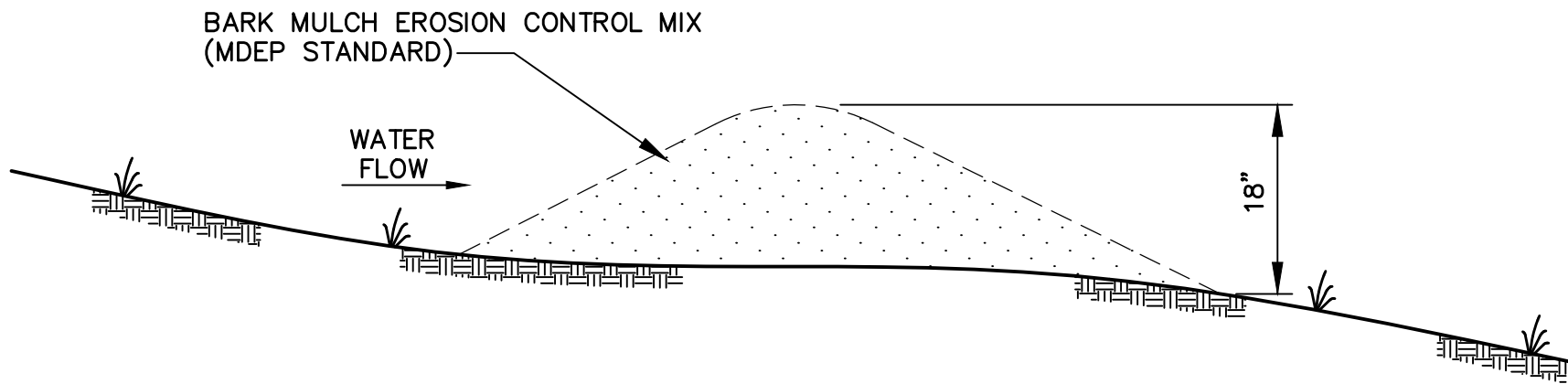
- NOTES:
1. INSTALL SILTSACK PER MANUFACTURER'S RECOMMENDATIONS.
 2. SILTSACKS SHALL BE CHECKED FOR SEDIMENT LEVEL AND OVERALL CONDITION IMMEDIATELY AFTER EVERY RAIN EVENT AND AT LEAST EVERY DAY DURING PROLONGED RAINFALL.
 3. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE SILTSACK. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT WILL NOT ERODE.
 4. SEDIMENT SHALL ONLY BE REMOVED BY REMOVING THE SILTSACKS FROM THE CATCH BASINS ACCORDING TO MANUFACTURER RECOMMENDATIONS.
 5. CARE SHALL BE TAKEN TO AVOID SPILLING SEDIMENT WHILE REMOVING THE SILTSACK.
 6. ANY DAMAGED SILTSACK SHALL BE REPLACED WITH A NEW SILTSACK.

INLET PROTECTION - SILT SACK
NOT TO SCALE

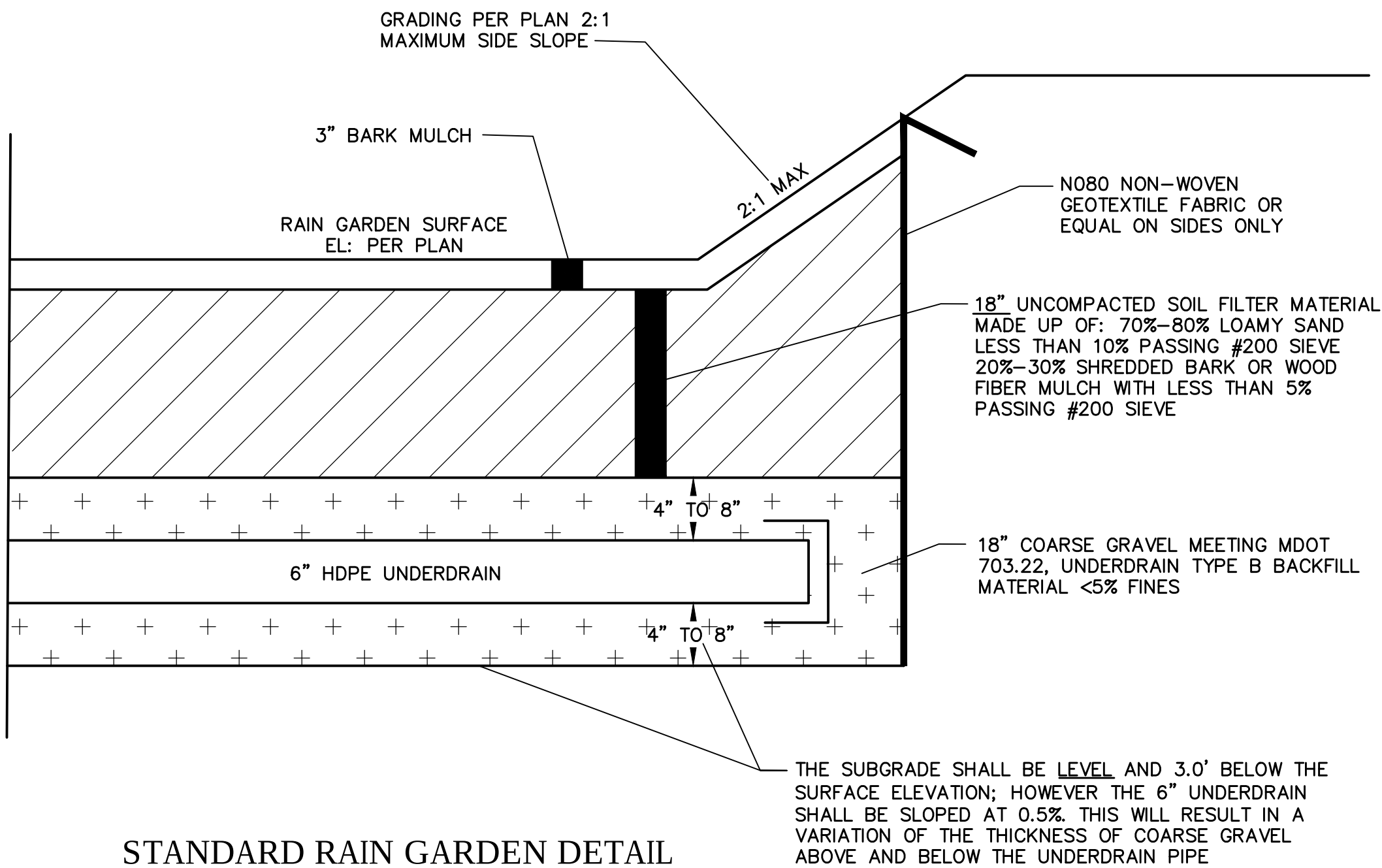


- NOTES:
1. MAINTAIN ENTRANCE IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. IF WASHING IS REQUIRED PREVENT SEDIMENT FROM ENTERING WATERWAYS, DITCHES OR STORM DRAINS.
 2. REMOVE STABILIZED CONSTRUCTION ENTRANCE TO FINISH ROAD CONSTRUCTION & PAVEMENT.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



MULCH BERM DETAIL
NOT TO SCALE

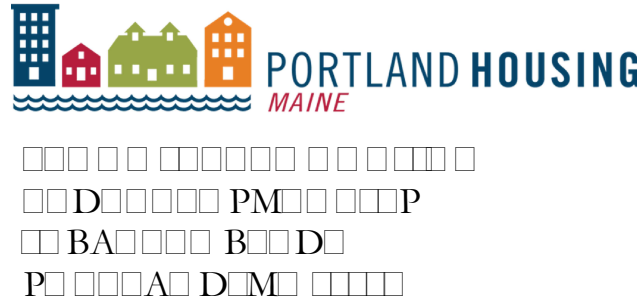


STANDARD RAIN GARDEN DETAIL
NOT TO SCALE

FOR PERMITTING

Front Street
Redevelopment
Front Street
Portland, ME

Applicant:



Consultants:



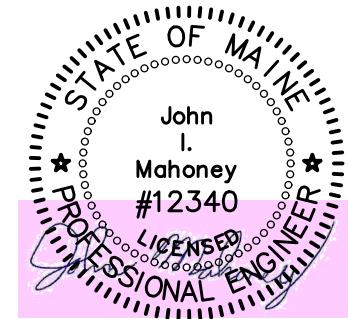
Architect:
Title
Commercial Architect
Boston, MA
Phone Number



Landscape Architect:
Carroll Associates
Commercial Architect
Portland, Maine
Phone Number



Civil Engineer
Ransom Consulting, Inc.
Commercial Architect
Portland, Maine
Phone Number



CIVIL DETAILS

A	PERMITTING	10-10-17
No.	Revision/Issue	Date
Design by:	Checked by:	
JIM	SJB	
Drawn by:	Approved by:	
TGN	SJB	
Project:		
151.06170		
Sheet No:		

C-7.0

EROSION AND SEDIMENTATION CONTROL NOTES

Inspection Requirements

Contractor shall inspect all erosion and sedimentation control measures on a weekly basis and after rain/storm events and shall keep a log of these inspections. See project specifications (Section 311010 - Erosion and Sedimentation Control) for log from. Any issues identified shall be addressed as soon as possible and before additional precipitation.

Erosion Control Measures and Site Stabilization

The primary emphasis of the erosion & sediment control plan is as follows:

- Rapid vegetation of exposed areas to minimize the period of soil exposure.
- Rapid stabilization of drainage paths to avoid channel erosion.
- The use of on-site measures to capture sediment (erosion control berm, staked hay bales etc.)

The following temporary and permanent erosion and sediment control devices will be implemented as part of the site development. These devices shall be installed as indicated on the plans or as described within this report. For further reference, see the Maine Erosion and Sediment Control BMPs, (most recent revision).

Temporary Erosion Control Measures

The following measures are planned as temporary erosion & sedimentation control measures during construction. These temporary erosion control measures should be removed within 30 days after permanent stabilization has been established.

- Crushed stone-stabilized construction entrances shall be placed at site entrances.
- Wood waste compost berms (erosion control berm) shall be installed downstream of any disturbed areas to trap runoff borne sediments until the tributary areas are vegetated. The erosion control berms shall be installed per the details provided and inspected regularly, including before and after a storm event of 0.5 inches or greater. Repairs shall be made if there are any signs of erosion or sedimentation below the fence or berm line. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind fence or berm, the barrier shall be replaced with a stone check dam.
- Straw, hay mulch and hydroseeding is intended to provide cover for bare or seeded areas until vegetation is established and should be applied within 7 days at a rate a 115 pounds per 1000 square feet. Mulch placed between April 15th and October 15th (on slopes of less then 15 percent) shall be anchored by applying water. Mulch placed on slopes of equal to or steeper than 15 percent shall be covered by fabric netting and anchored with staples in accordance with manufacturer's recommendation. Slopes steeper than 3:1 shall receive erosion control blankets or rip rap.
- Use standard conservation seed mix of 100% annual rye grass or field bromegrass. Seed application rate shall be 40 lb/acre.
- Temporary stockpiles of stumps, grubblings, or common excavation will be protected as follows:

Stockpiles shall be stabilized within seven days by either temporarily seeding the stockpile by a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch, such as shredded hay, straw, or erosion control mix.

Stockpiles shall be surrounded by sedimentation barrier at the time of formation.
- All disturbed areas that are within 75 Feet of an undisturbed wetland shall receive mulch or erosion control mesh fabric within 48 hours of initial disturbance of soil. All areas within 75 Feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window. In other areas, the time period may be extended to 7 days.
- State and local roads shall be swept to control mud and dust as necessary. Additional stone shall be added to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
- Stormdrain catch basin inlet protection shall be provided through the use of stone sediment barriers or approved sediment bags (such as Silt Sack). Installation details are provided in the plan set. The barriers shall be inspected after each rainfall and repairs made as necessary. Sediment shall be removed and the barrier restored to its original dimensions when the sediment has accumulated to half the design depth of the barrier. The barrier shall be removed when the tributary drainage area has been stabilized.
- Water and/or calcium chloride shall be furnished and applied in accordance with MDOT specifications--Section 637-Dust Control.
- Loam and seed is intended to serve as the primary permanent vegetative measure for all bare areas not provided with other erosion control measures, such as riprap.
- Water from construction trench dewatering or temporary stream diversion shall pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing, and sediment discharges to a protected resource. In no case shall the filter bag or containment structure be located within 75 feet of a protected natural resource.

Permanent Erosion Control Measures

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

- All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, mulched, and seeded.
- Please refer to the Turf and Grasses specification (Section 329200) for seed mix and application rate

Implementation Schedule

The following construction sequence shall be required to insure the effectiveness of the erosion and sedimentation control measures are optimized:

Note: For all grading activities, the contractor shall exercise extreme caution not to overexpose the site by limiting the disturbed area. The construction of BMPs should either be performed after the tributary area is stabilized or temporary erosion control measures need to be implemented to protect the BMPs from being clogged with construction sediment.

- Install crushed stone to stabilized construction entrances.
- Install perimeter erosion control berm.
- Clear and grub site within the specified clearing limits.
- Commence earthwork and grading to subgrade.
- Commence construction of building foundation.
- Continue earthwork and grading to subgrade as necessary for construction.
- Complete remaining earthwork operations.
- Complete installation of drainage infrastructure.
- Install subbase and base gravel within proposed parking expansion.
- Loam, lime, fertilize, seed and mulch disturbed areas.
- Once the site is stabilized and a 90% catch of vegetation has been obtained, remove all temporary erosion control measures.
- Touch up loam and seed.

Note: All bare areas not subject to final paving, riprap, or gravel; shall be vegetated.

Prior to construction of the project, the contractor shall submit to the owner a schedule for the completion of the work, which will satisfy the above construction sequence in the specified order, however, several separate items may be constructed simultaneously. Work must also be scheduled or phased to reduce the extent of the exposed areas as specified below. The intent of this sequence is to provide for erosion control and to have structural measures such as erosion control berm and construction entrances in place before large areas of land are stripped.

The work shall be conducted in sections which shall:

- Limit the amount of exposed area to those areas in which work is expected to be undertaken during the preceding 30 days.
- Vegetate the disturbed areas as rapidly as possible. All areas shall be permanently stabilized within seven days of final grading or before a storm event; or temporarily stabilized within 48 hours of initial disturbance of soil for areas within 75 feet of an undisturbed wetland and 7 days for all other areas.
- Incorporate planned inlets and drainage system as early as possible into the construction phase.

Winter Stabilization Plan

The winter construction period is from November 1 through April 15. If the construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15th, then the site shall be protected with over-winter stabilization.

Winter excavation and earthwork shall be completed such that any area left exposed can be controlled by the contractor. Exposed areas shall be limited to those areas in which work is expected to commence and complete in the next fifteen (15) days and that can be mulched within one day prior to any snow event.

All areas shall be considered to be bare until the subbase gravel is installed within pavement/building areas or the areas have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150 pounds per 1,000 square feet (3 tons/acre) and shall be properly anchored.

The contractor shall install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions. Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized, in order to minimize areas without erosion control protection.

1. Soil Stockpiles

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or at 150 lbs/1,000 SF. (3 tons per acre) or with a four-inch layer of woodwaste erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpile shall not be placed (even covered with hay or straw) within 100 feet from any natural resources.

1. Sediment Barriers

During frozen conditions, sediment barriers shall consist of woodwaste filter berms as frozen soil prevents the proper installation of hay bales and sediment silt fences.

2. Mulching

An area shall be considered bare until areas of future loam and seed have been loamed, 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 SF. or 1.5 tons/acre) and shall be properly anchored. 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 with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored that ground surface is not visible though the mulch.

Between the dates of November 1st and April 15th all mulch shall be anchored by peg line, mulch netting, tracking, or wood cellulose fiber. When ground surface is not visible through the mulch then cover is sufficient. After November 1st, mulch and anchoring of all bare soil shall occur at the end of each final grading workday.

3. Mulching on Slopes and Ditches

Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with peg and netting or with erosion control blankets. Mulching shall be applied at a rate of 230 lbs/1,000 s.f. on all slopes greater than 8%.

Mulch netting shall be used to anchor mulch in all drainage ways with a slope greater than 3% for slopes exposed to direct winds and for all other slopes greater than 8%. Erosion control blankets shall be used in lieu of mulch in all drainage ways with slopes greater than 8%. Erosion control mix can be used to substitute erosion control blankets on all slopes except ditches.

4. Seeding

Between the dates of October 15th and April 1st, loam or seed will not be required. During periods of above freezing temperatures, finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until such time as the final treatment can be applied. If the date is after November 1st and if the exposed area has been loamed, final graded with a uniform surface, then the area may be dormant seeded at a rate of three times higher than specified for permanent seed and then mulched. Dormant seeding may be selected to be placed prior to the placement of mulch and fabric netting anchored with staples. 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/1000 SF. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 90% 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.

aljdf

5. Dewatering

Water from construction trench dewatering shall pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing, and sediment discharges to a protected resource.

6. Inspection and Monitoring

Maintenance measures shall be applied as needed during the entire construction season. After each rainfall, snow storm or period of thawing and runoff, the site contractor shall perform a visual inspection of all installed erosion control measures and perform repairs as needed to insure their continuous function. Following the temporary and/or final seeding and mulching, the contractor shall in the spring inspect and repair any damages and/or unestablished spots. Established vegetative cover means a minimum of 85% to 90% of areas vegetated with vigorous growth.

Standards for Timely Stabilization of Construction Sites During Winter

1. Standard for the timely stabilization of disturbed soils

By September 15th the applicant shall seed and mulch all disturbed soils on areas having a slope less than 15%. If the applicant fails to stabilize these soils by this date, then the applicant shall take one of the following actions to stabilize the soil for late fall and winter.

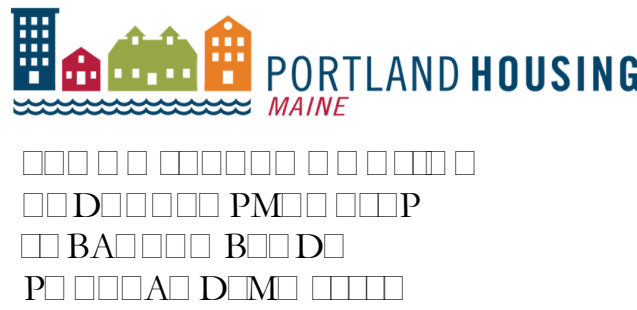
Stabilize the soil with temporary vegetation--By October 1st the applicant shall seed the disturbed soil with winter rye at a seeding rate of three pounds per 1000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per 1000 square feet, and anchor the mulch with plastic netting. The applicant shall monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or cover at least 75% of the disturbed soil before November 15th, then the applicant shall mulch the area for over-winter protection as described above.

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

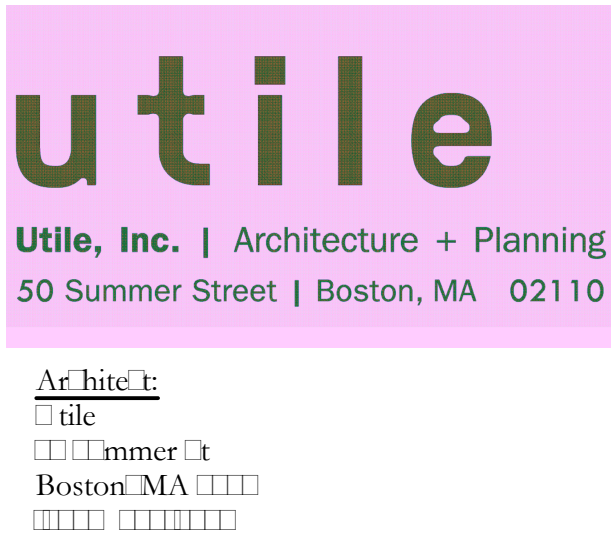
Stabilize the soil with mulch--By November 15th the applicant shall mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Prior to applying the mulch, the applicant shall remove any snow accumulation on the disturbed area. Immediately after applying the mulch, the applicant will anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

Front Street
Redevelopment
Front Street
Portland ME

Applicant:



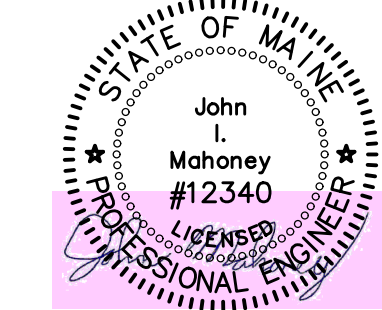
Consultants:



andscape Architecture
Carroll Associates
Commercial Street
Portland, Maine 04101
617.555.1234



Civil Engineer
Ransom Consulting, Inc.
Commercial Street Site
Portland, Maine 04101
617.555.1234



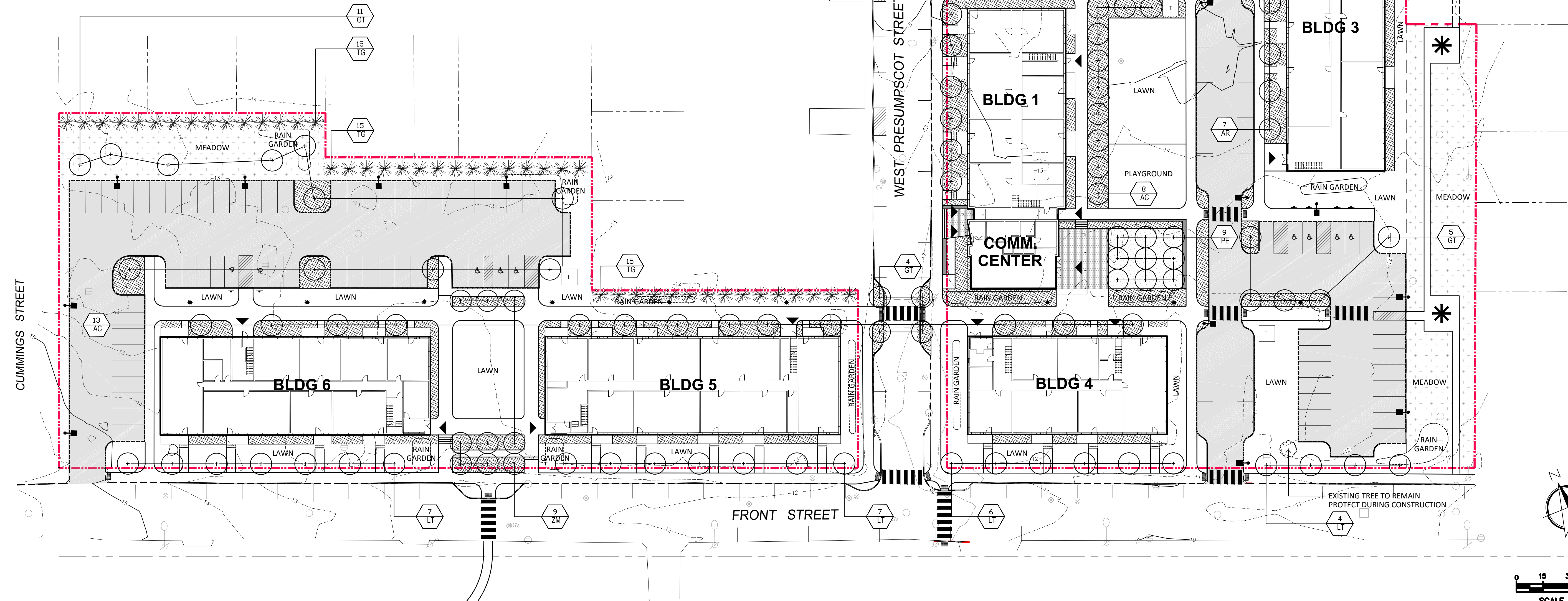
EROSION AND SEDIMENTATION CONTROL NOTES

A	PERMITTING	10-10-17
No.	Revision/Issue	Date
Design by:	Checked by:	
JIM	SJB	
Drawn by:	Approved by:	
TGN	SJB	
Project:		
151.06170		

Sheet No:

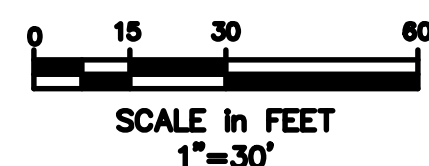
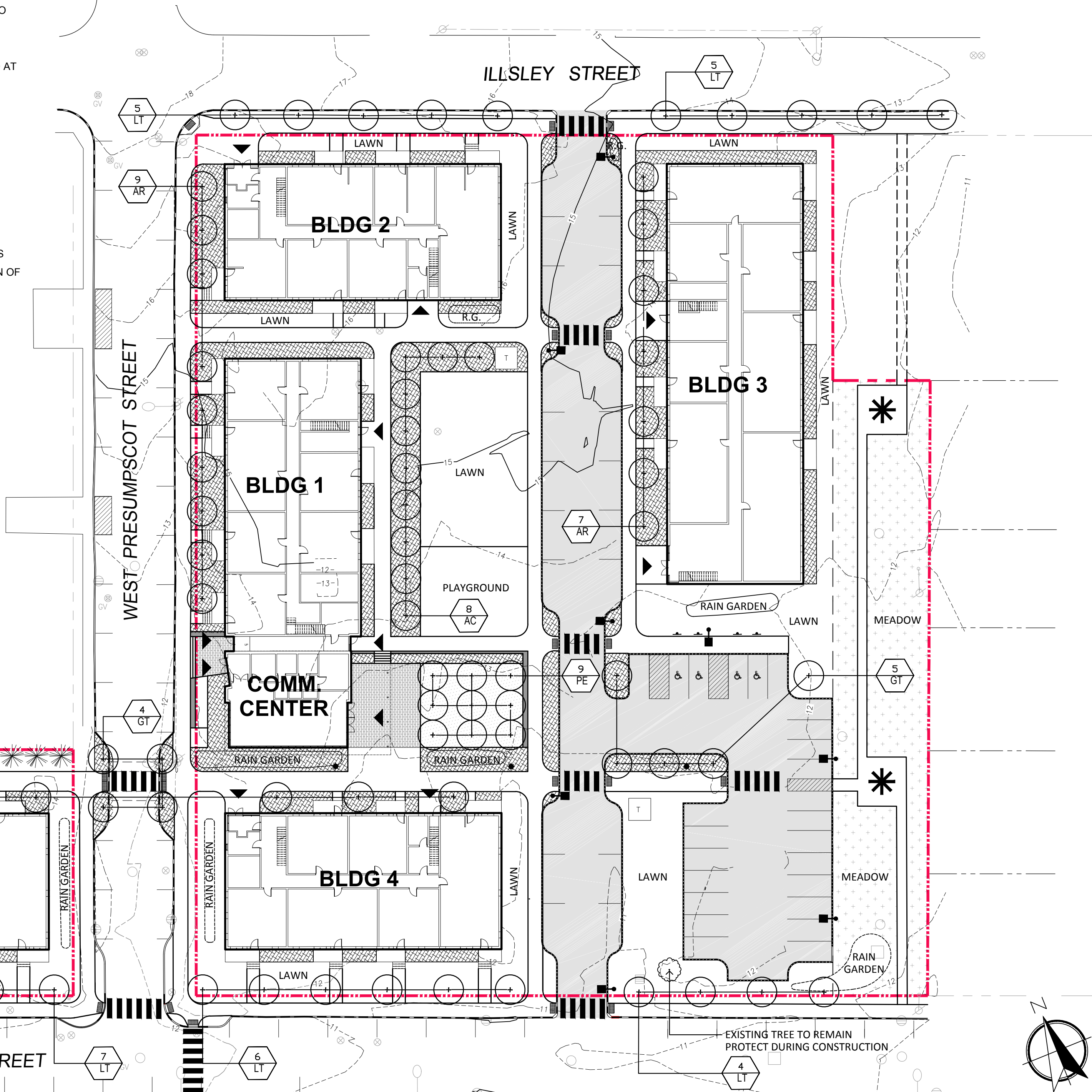
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FOR PERMITTING



1. CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF WATERING AND MAINTENANCE.
2. CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE WORK SHOWN ON THE PLAN. ANY DISCREPANCY BETWEEN THE QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED ON THE PLAN SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL REMUNERATION. ANY DISCREPANCIES SHALL BE CLARIFIED WITH THE LANDSCAPE ARCHITECT PRIOR TO ORDERING PLANT MATERIAL.
3. ALL MATERIALS SHALL CONFORM TO SPECIFICATIONS OF THE AMERICAN STANDARDS FOR NURSERY STOCK (LATEST EDITION) AS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS THE ORIGINAL GRADES BEFORE DIGGING.
5. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
6. ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AT THE NURSERY AND AT THE SITE.
7. ALL PLANT BEDS SHALL MEET MINIMUM TOPSOIL REQUIREMENTS (SEE SPECIFICATIONS).
8. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRUBBING, BED PREPARATION, AND FINISH GRADING HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
9. ALL PLANTS BEDS AND TREE WELLS SHALL HAVE A MINIMUM OF 3" OF UNIFORMLY DISTRIBUTED, DARK, SHREDDED BARK MULCH.
10. CONTRACTOR SHALL SUBMIT SOIL SAMPLE AND TEST OF TOPSOIL TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. SOIL ADMIXTURE SHALL BE ADDED TO EXISTING SOIL (BY CONTRACTOR) IF DEEMED NECESSARY BY SOIL TEST RESULTS.
11. ROUGH GRADING AND BED PREPARATION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANT INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT 48 HOURS PRIOR TO REQUIRED SITE VISIT.
12. ALL PLANTS SHALL BE BALLED AND WRAPPED OR CONTAINER GROWN AS SPECIFIED. ALL ROOT WRAPPING AND CONTAINER MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED AT THE TIME OF PLANTING.
13. ALL BROAD LEAF EVERGREEN PLANTS SHALL BE SPRAYED WITH AN ANTI-DESSICANT AT THE BEGINNING OF THEIR FIRST WINTER.
14. ALL PLANTS SHALL BE INSTALLED AS PER DETAILS AND THE CONTRACT SPECIFICATIONS. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. CONTRACTOR SHALL STAKE TREES IF DEEMED NECESSARY BY THE LANDSCAPE ARCHITECT.
16. THE LANDSCAPE CONTRACTOR SHALL PROVIDE PREPARED SOIL PLANTING MIX AS PER THE CONTRACT SPECIFICATIONS.
17. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE PLANT LIST AND PLANTING SPECIFICATIONS FOR SEASONAL REQUIREMENTS AND OTHER RESTRICTIONS RELATED TO THE TIME AND SEASON OF PLANTING.

RAIN GARDEN PLANT LIST						
QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	NATIVE
2,755 SF		<i>Ilex verticillata</i>	Winterberry	#5	CONT.	y
		<i>Festuca spp.</i>	Blue Fescue Grass	#2	CONT.	y
		<i>Calamagrostis acutiflora</i>	Reed Grass 'Karl Foerster'	#2	CONT.	y
		<i>Limonium latifolium</i>	Sea Lavender	#2	CONT.	y
		<i>Panicum virgatum</i>	Switchgrass	#2	CONT.	y
		<i>Andropogon gerardii</i>	Big Bluestem	#2	CONT.	y

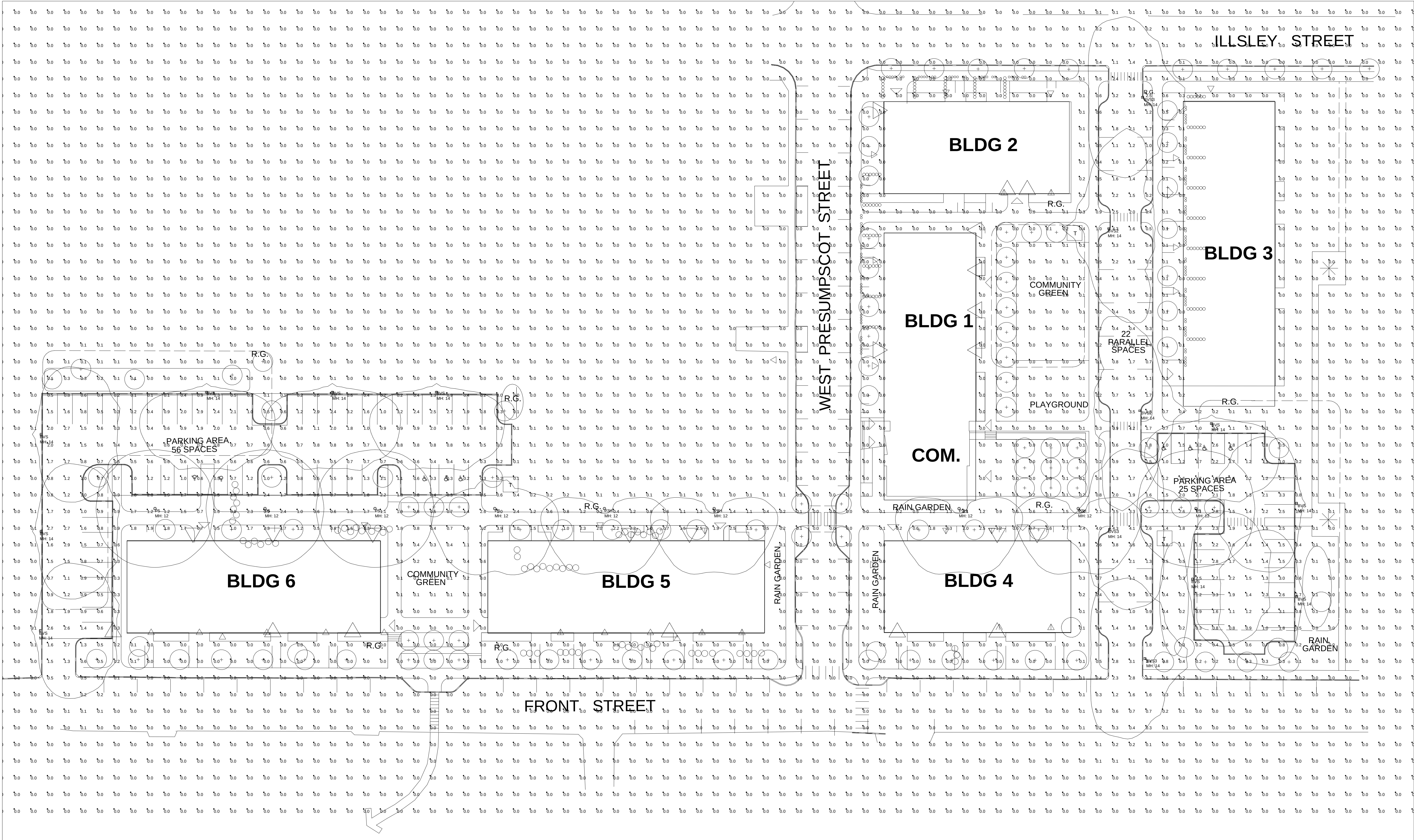


L-1.0

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
site	0.18	4.5	0.0	N.A.	N.A.
bldg 6 parking	1.09	3.2	0.2	5.45	16.00
parking 25	1.75	3.3	0.3	5.83	11.00

Luminaire Schedule (note fixture cataloge numbers are not complete)						
Type	Symbol	Qty	Lum. Lumens	LLF	Lum. Watts	Description
BVS	⬢	10	3709	0.900	55.8	VP-S-24NB-55-4K-T4-BLC
BVS3	⬢	3	5554	0.900	55	VP-S-24NB-55-4K-T3
P3H	⊙	4	3367	0.900	48	UCM-ANG-T3-32LED-3K-450-HSS
P5	⊙	4	4603	0.900	48	UCM-ANG-T5-32LED-5K-450
P3	⊙	1	4570	0.900	47.9	UCM-ANG-T3-32LED-3K-450
BVS2	⬢	2	5610	0.900	55.8	VP-S-24NB-55-4K-T2

- NOTES:
- 1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
 - 2) CALCULATIONS MAY 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 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) CHECK GRAPHIC SCALE. DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY OCCUR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.



PLAN VIEW

GENERATED FOR:
CARROLL ASSOCIATES

SCALE: NOT TO SCALE

DATE: 10/10/2017

Page 1 of 1

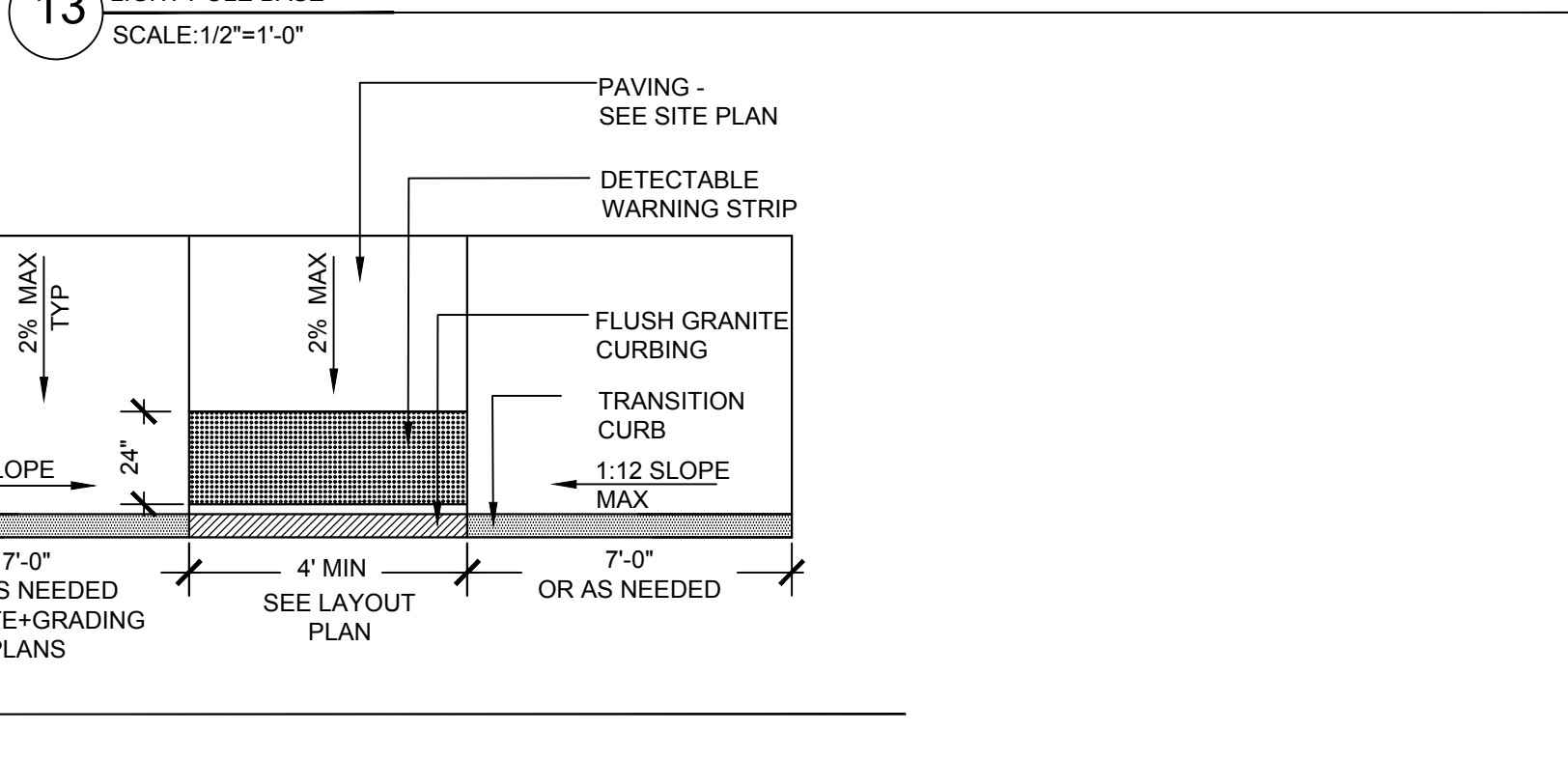
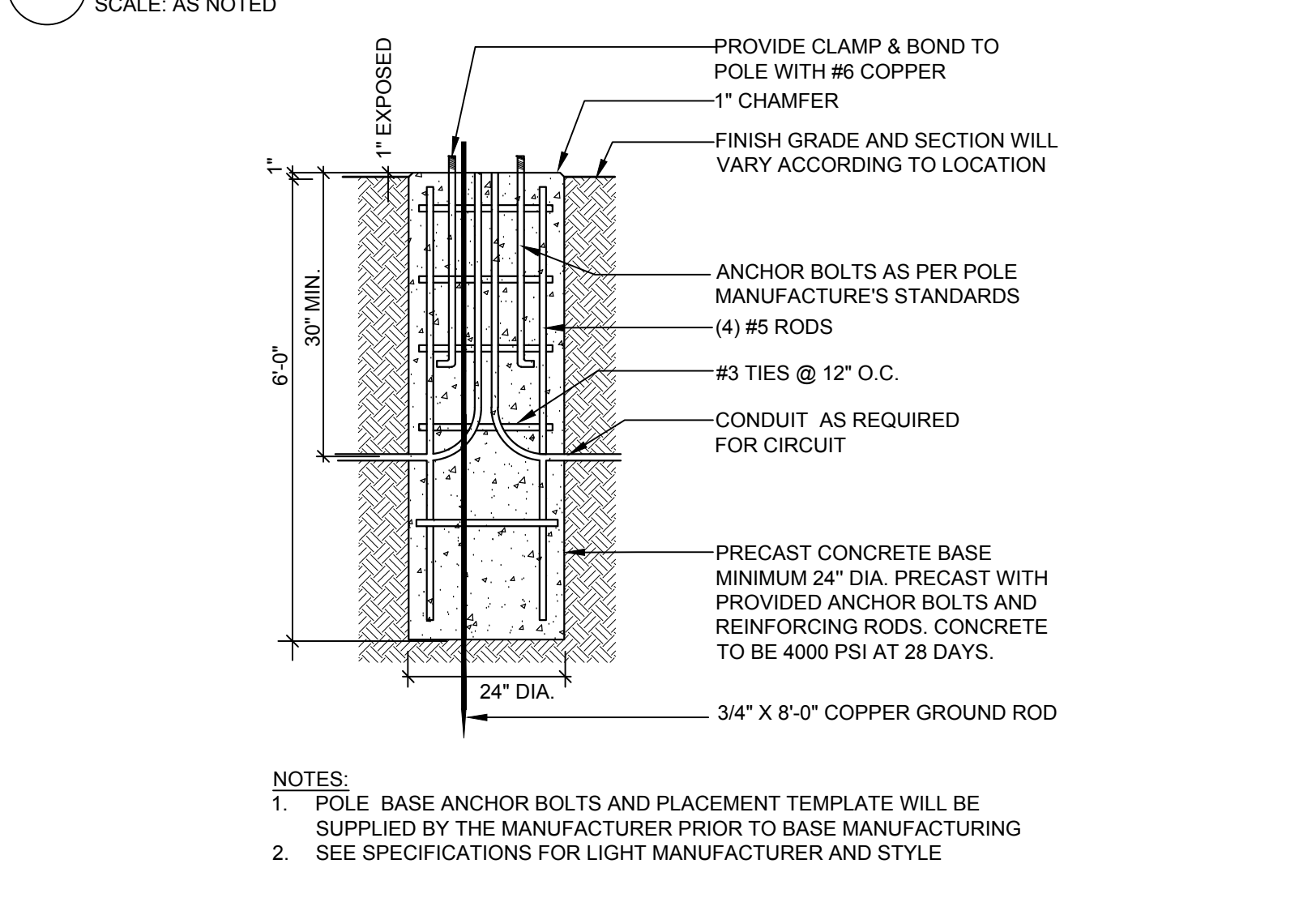
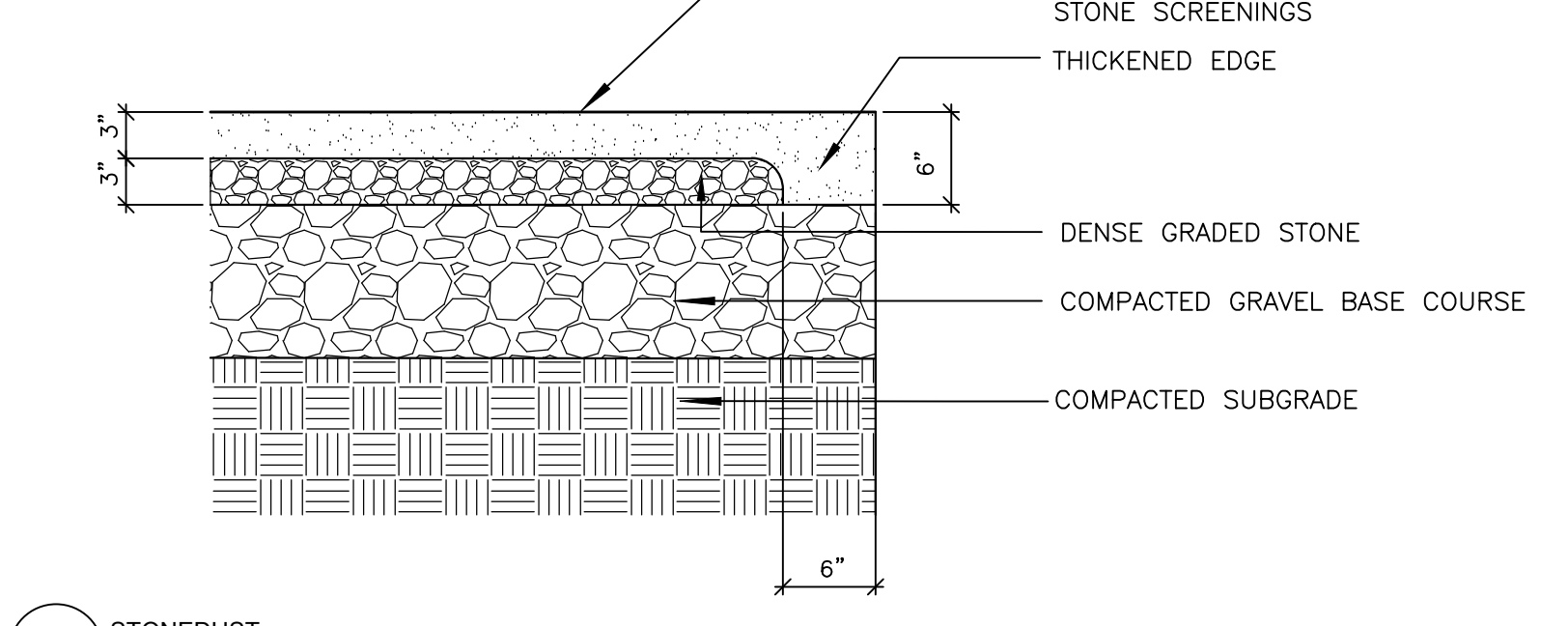
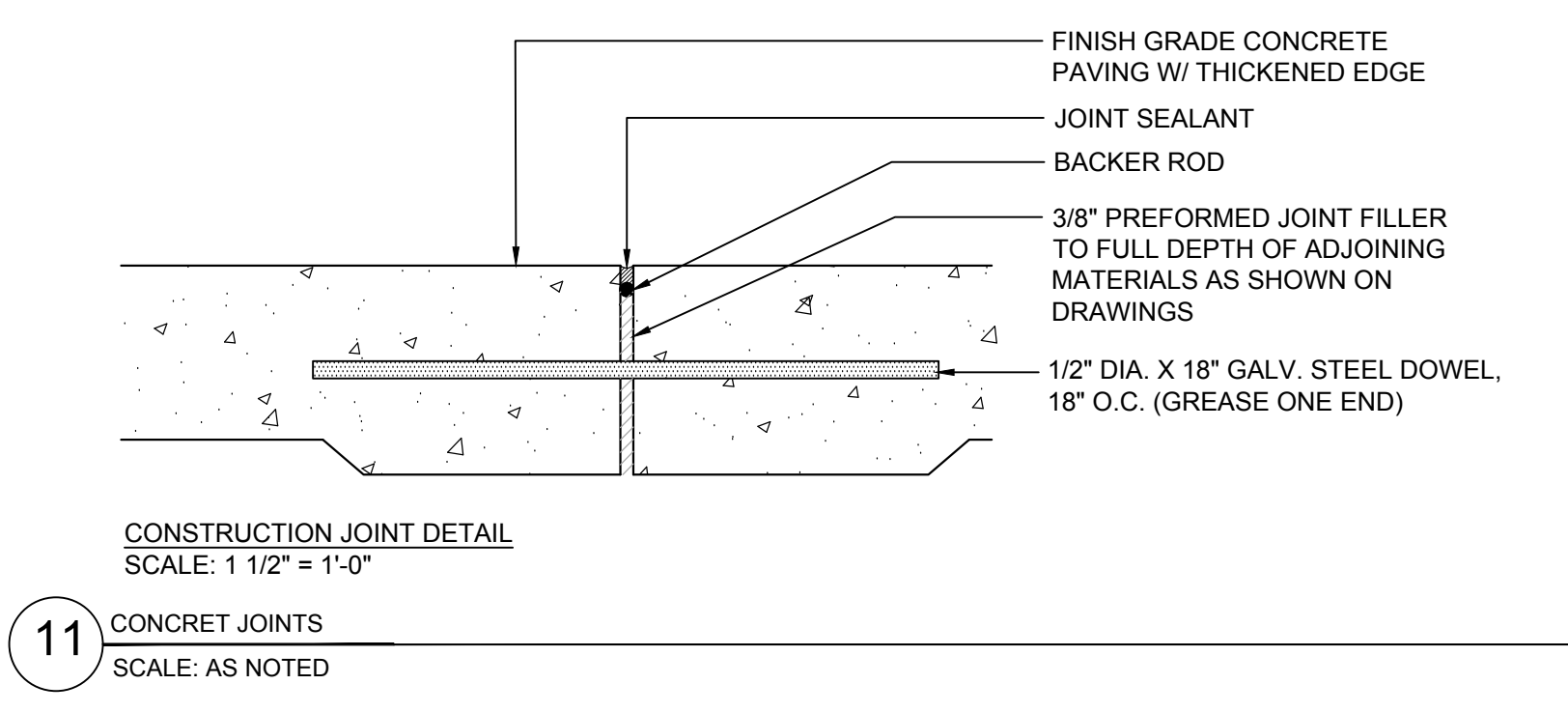
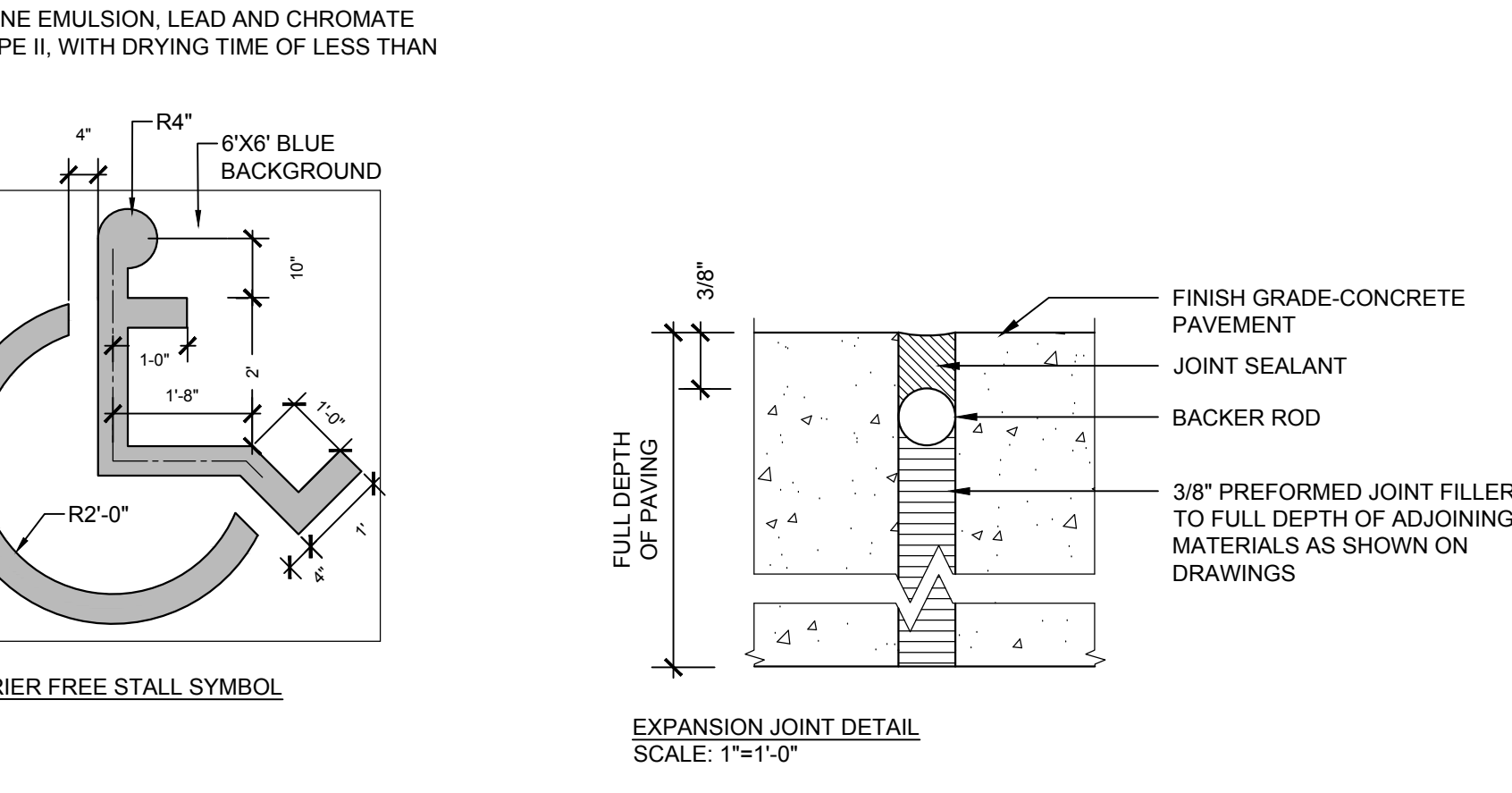
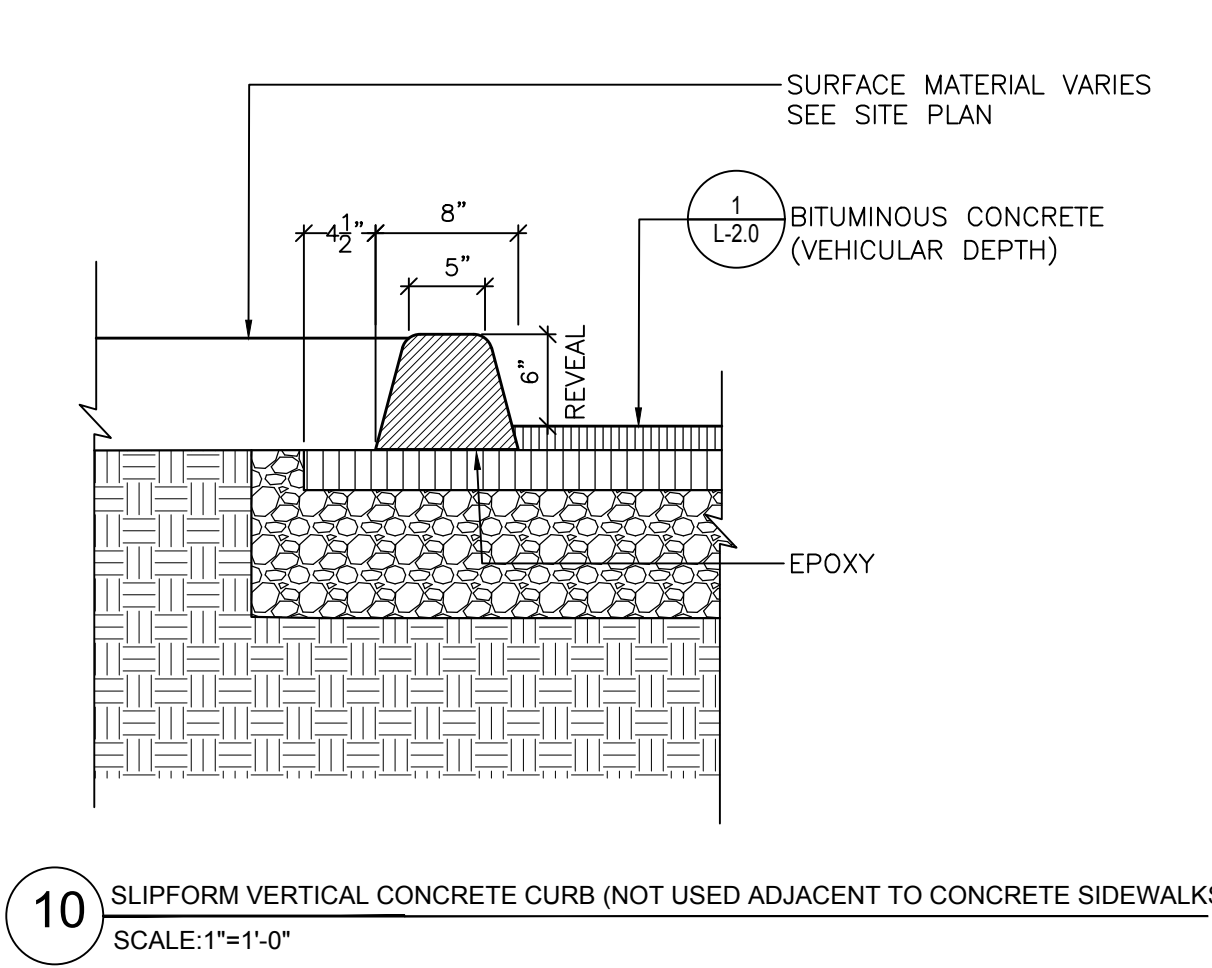
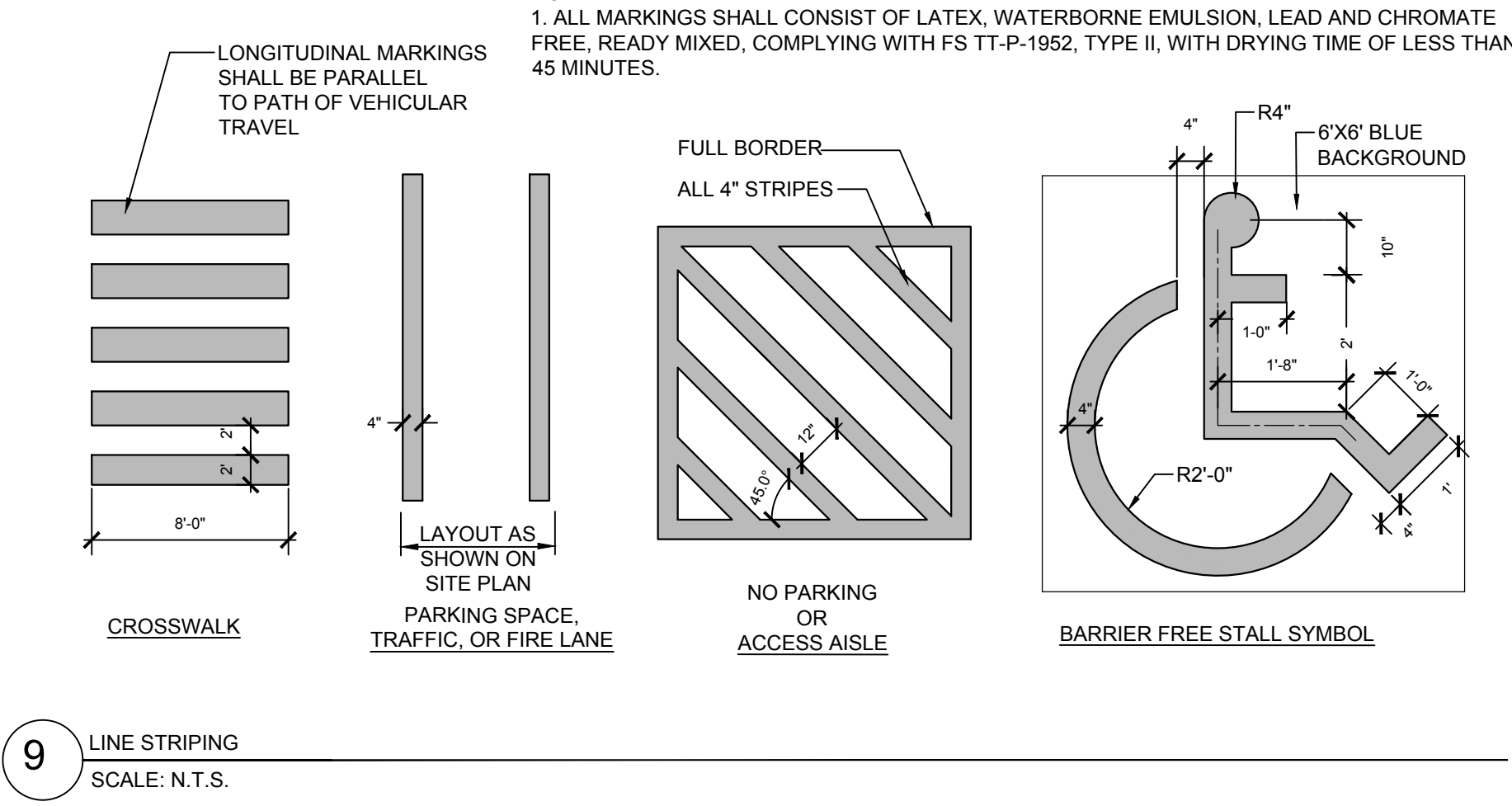
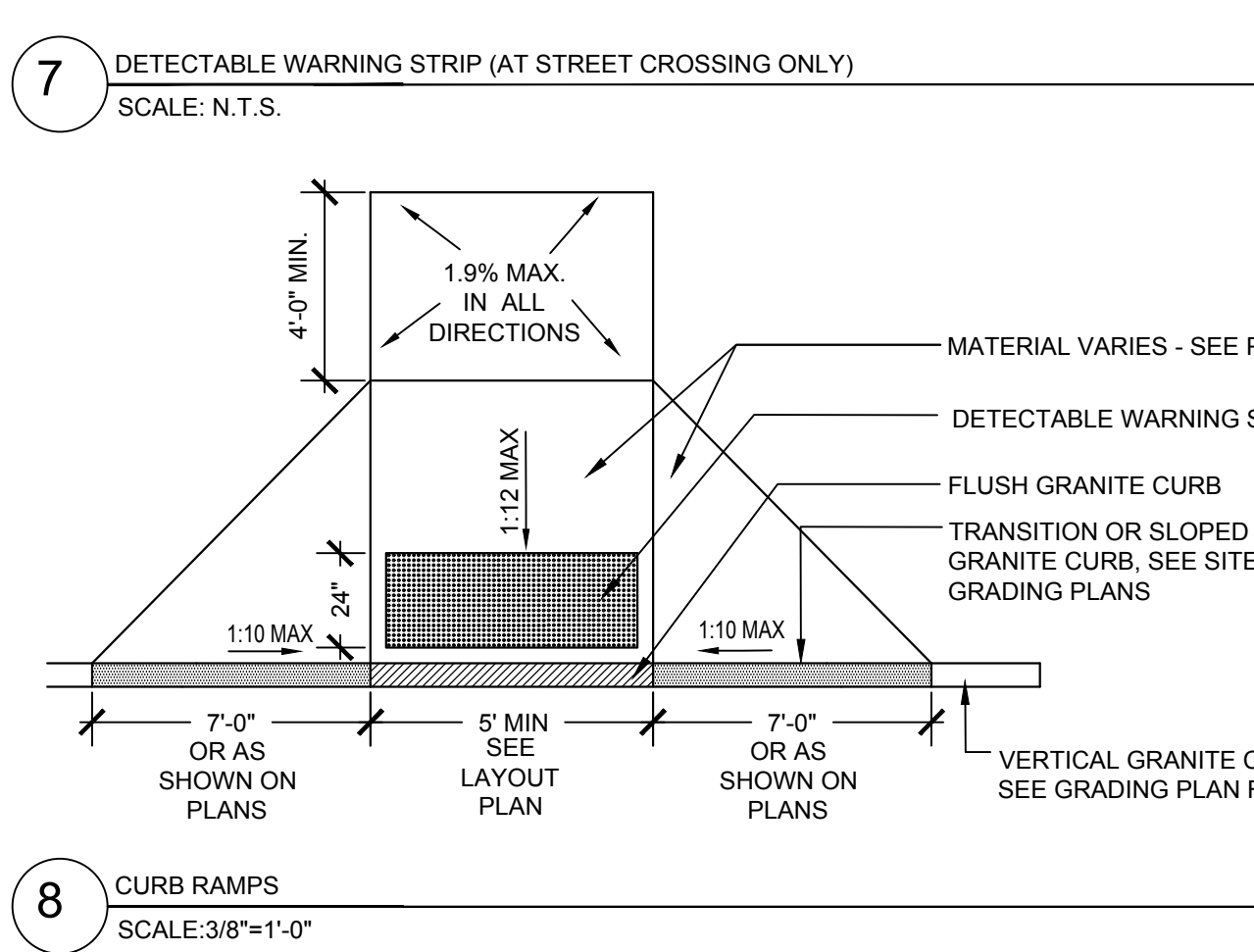
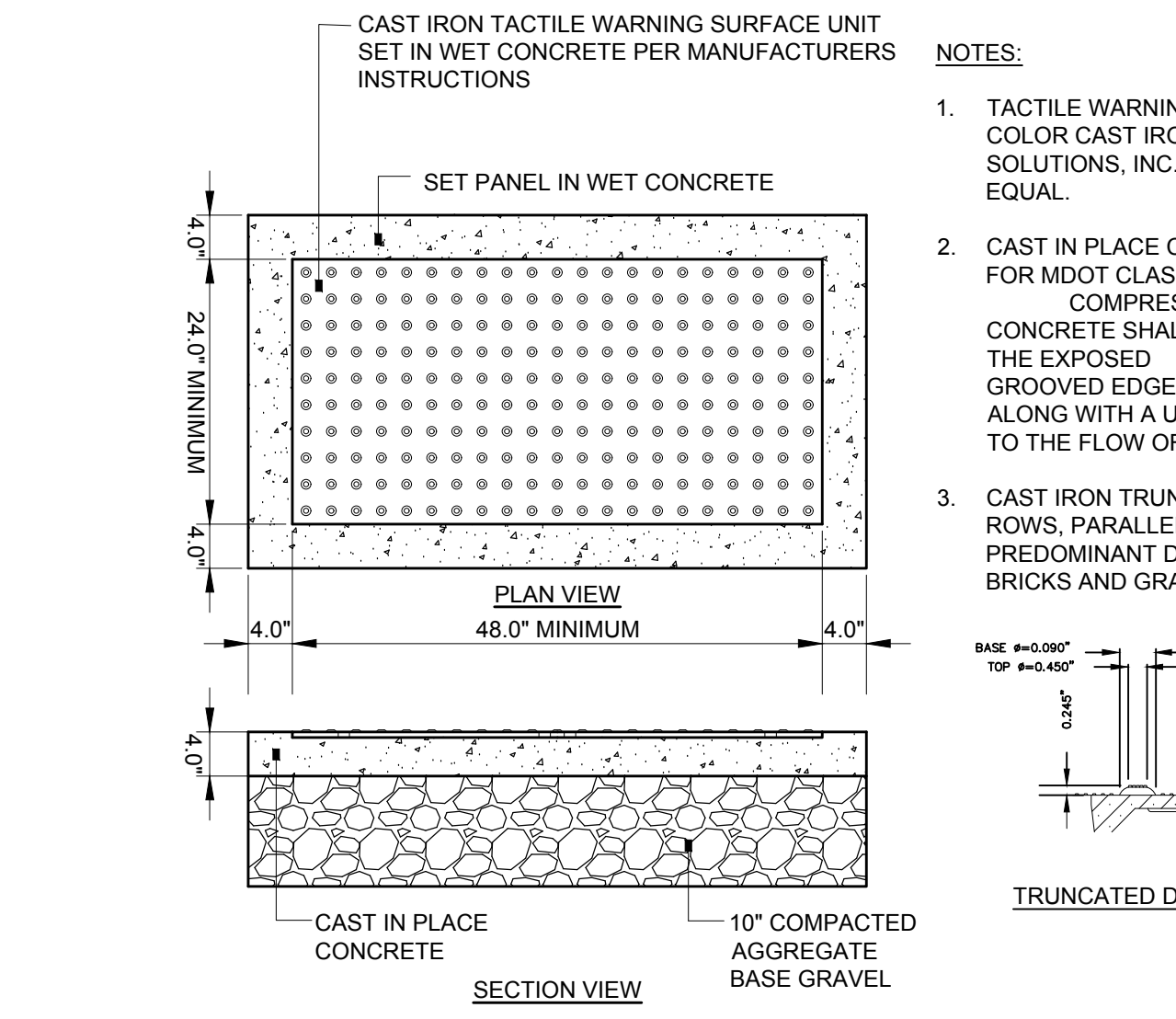
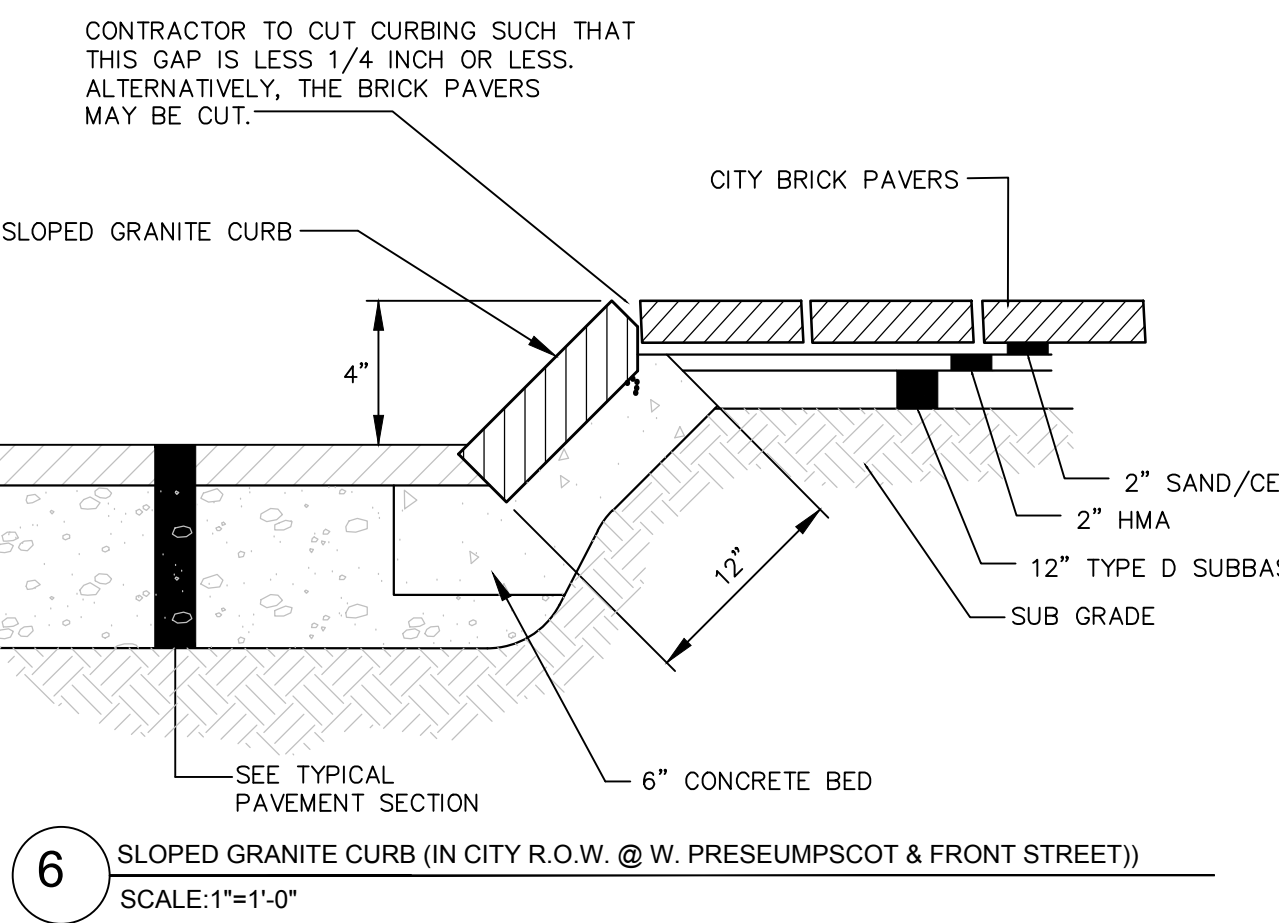
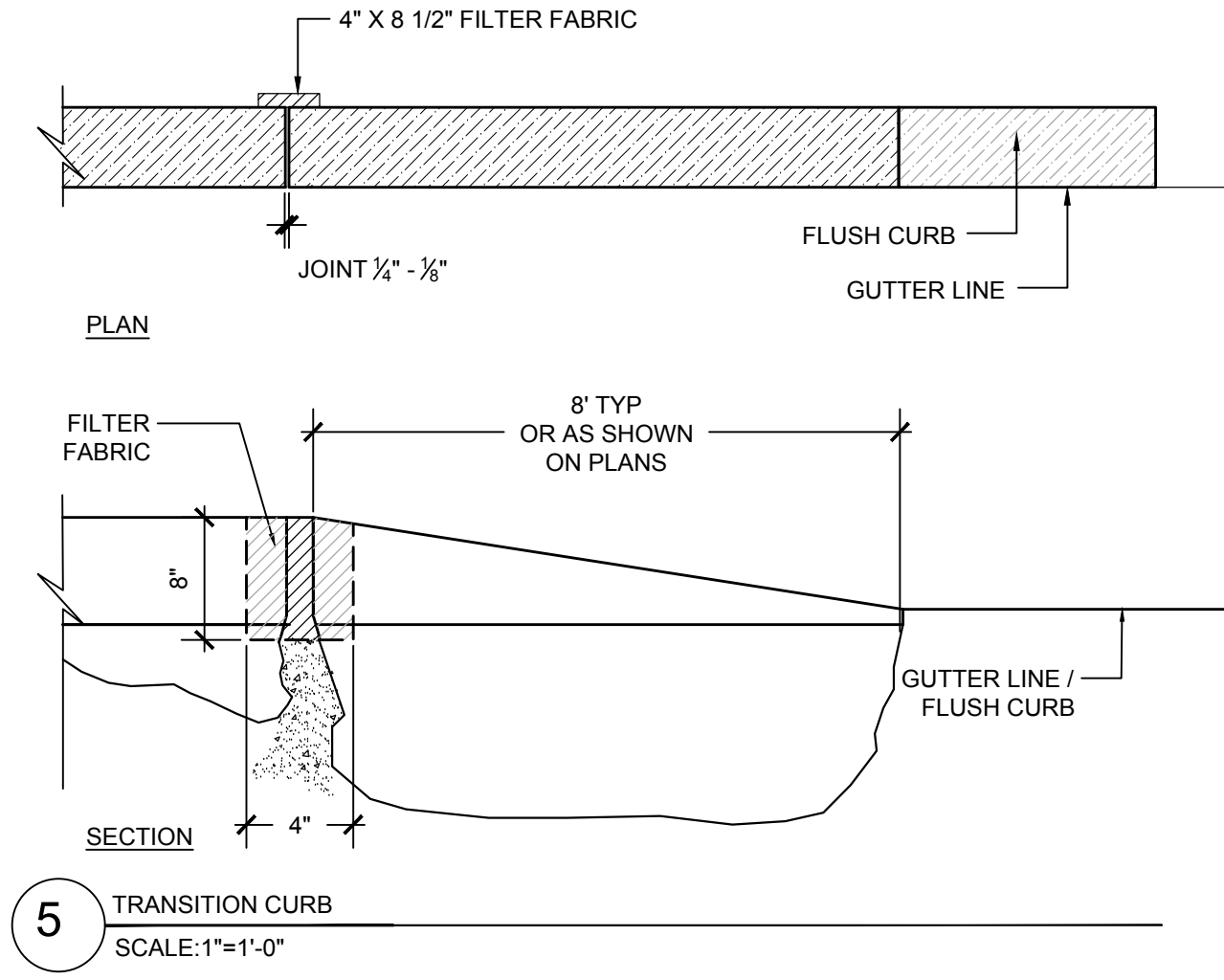
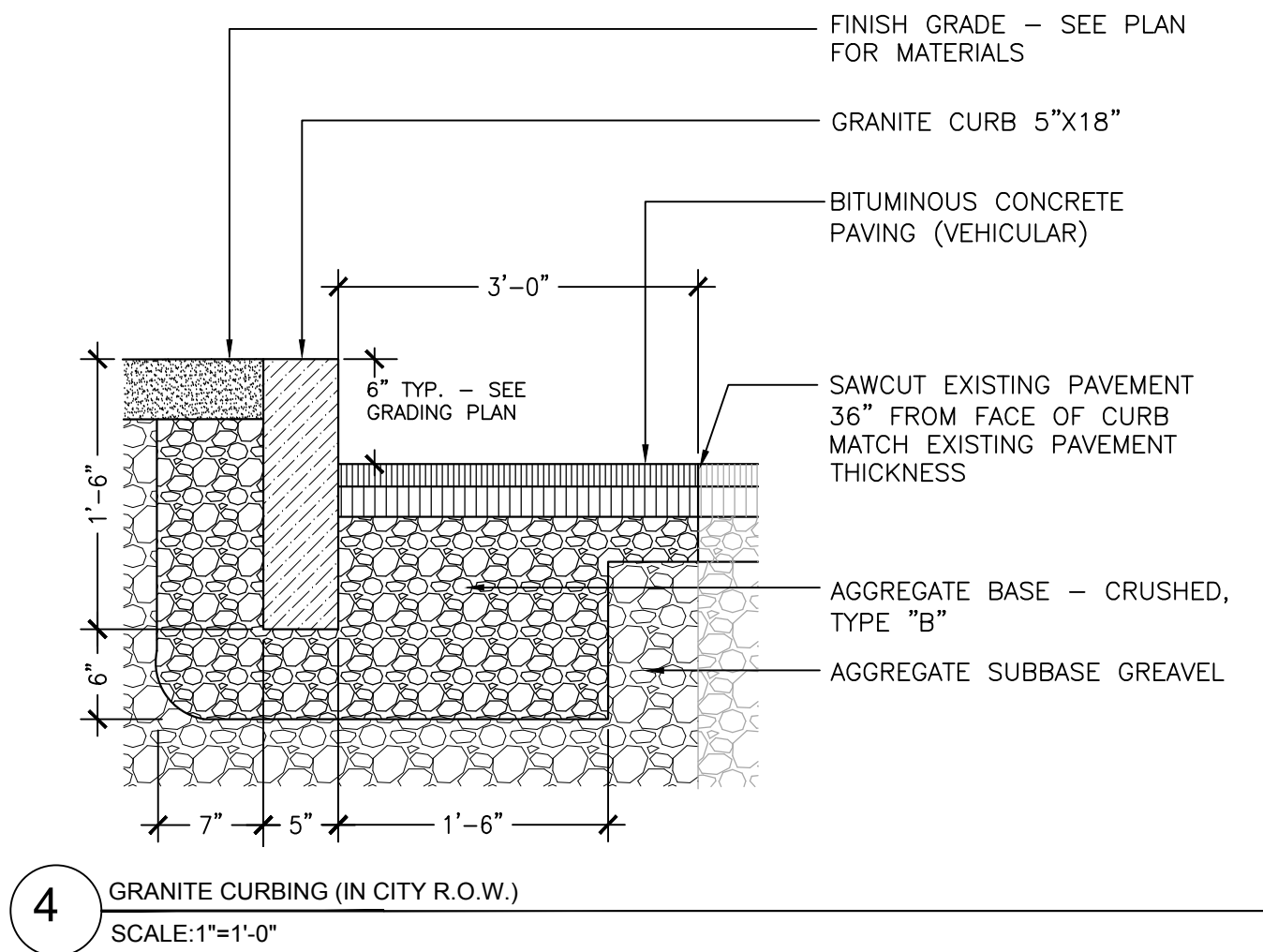
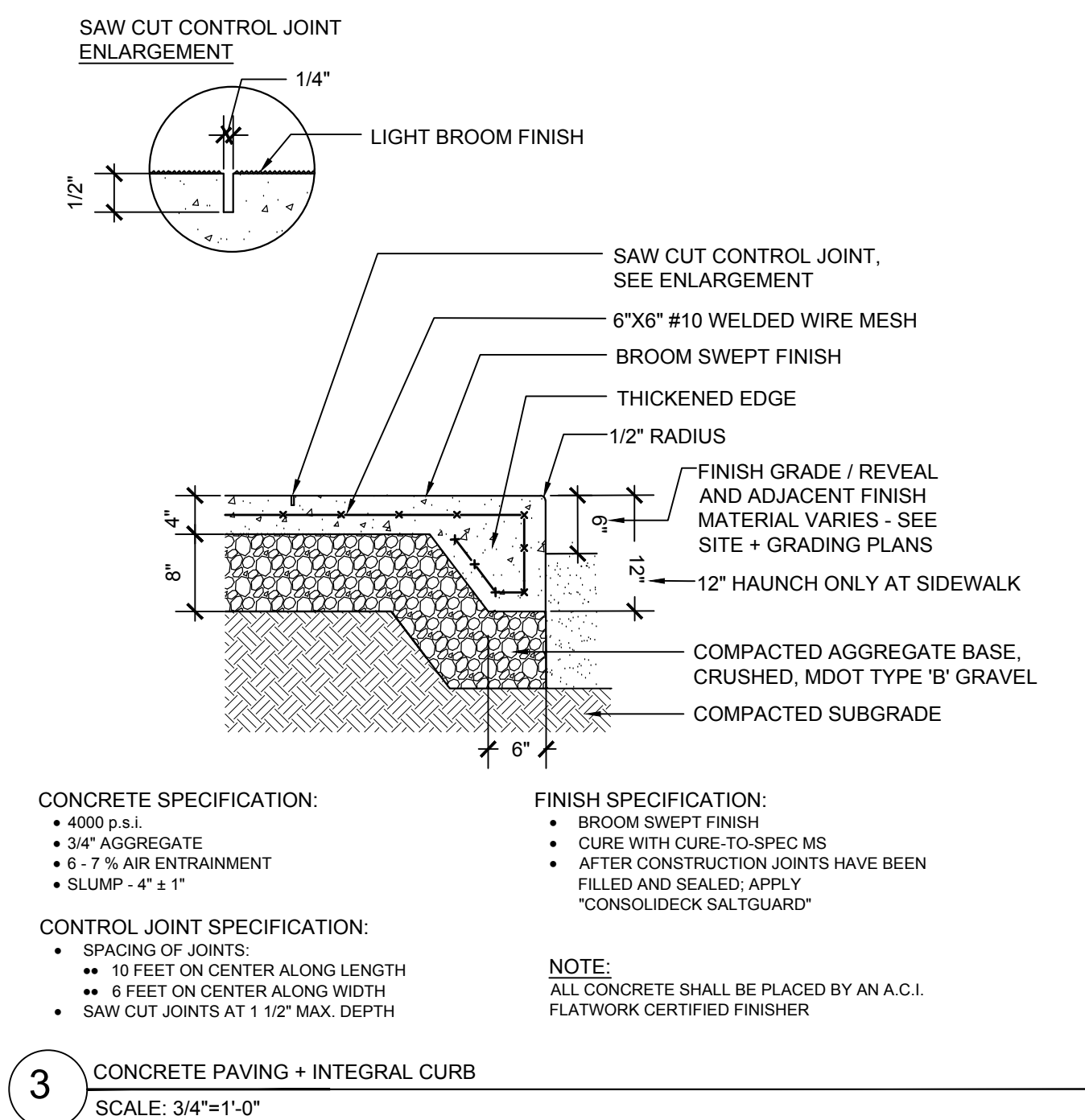
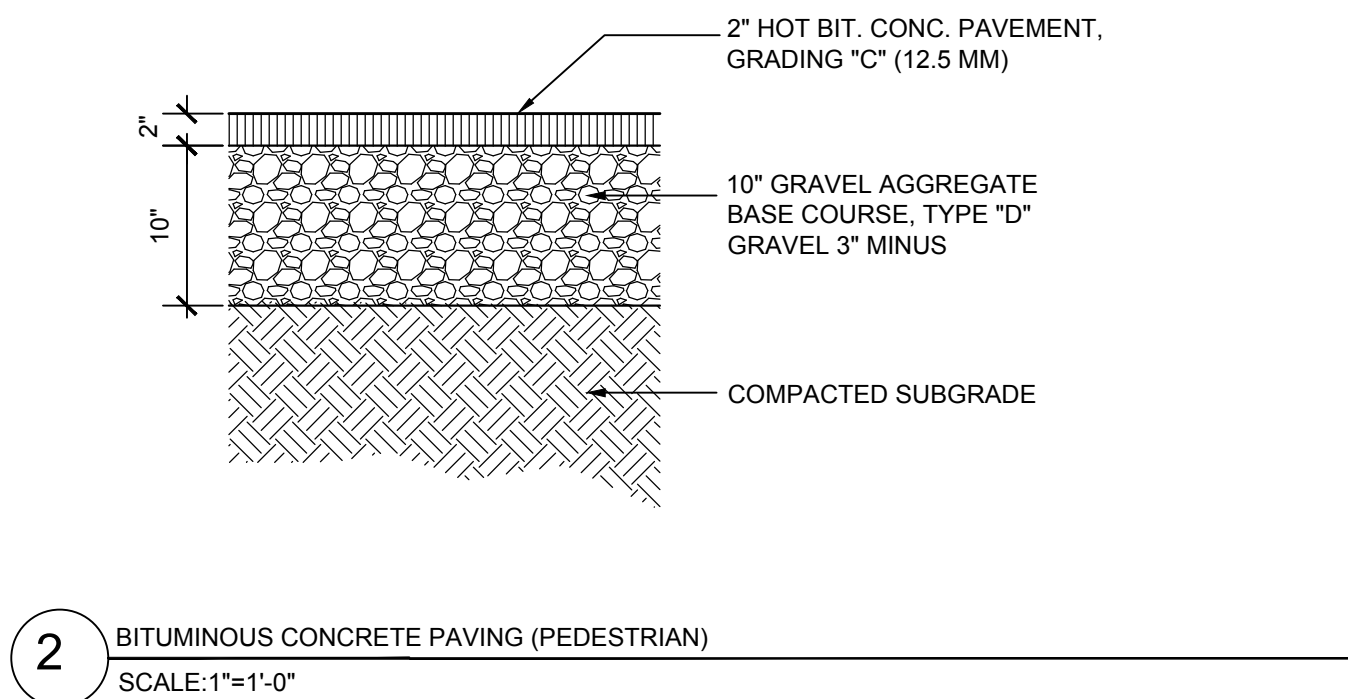
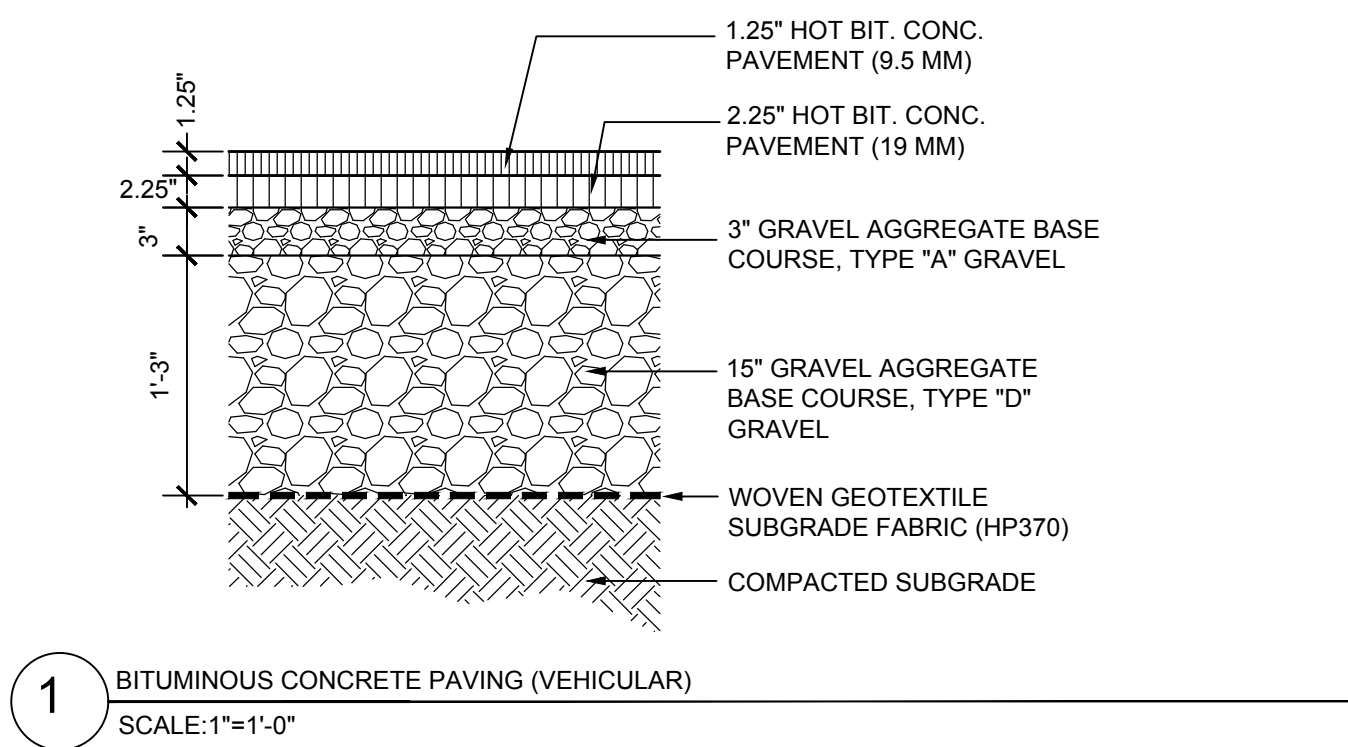
TITLE
**FRONT STREET DEVELOPMENT
PORTLAND, ME
SITE LIGHTING LAYOUT**

SWANEY LIGHTING ASSOCIATES, INC.

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site 10-4-17 - 35902-AG1

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APPLICANT:
FRONT STREET REDEVELOPMENT, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

OWNER:
PORTLAND HOUSING AUTHORITY
14 BAXTER BLVD
PORTLAND, MAINE 04101

Project:			
Description:			
Date:			
Revisions:			
CITY OF PORTLAND LEVEL III SITE PLAN SUBM.			
9.15.2017			
1			

Scale: AS SHOWN
Approved By: PC
Drawn By: MP
Phase: PERMITTING

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS
217 COMMERCIAL STREET, STE 200
PORTLAND, MAINE 04101
207.772.1552 V. F. 207.772.0712
Date: SEPT 28, 2017
Sheet No: L-3.0

**Matthew Grooms** <mgrooms@portlandmaine.gov>

37 Front Street

susan abt <susansabt@gmail.com>

Fri, Oct 20, 2017 at 10:50 PM

To: mgrooms@portlandmaine.gov

Cc: Rick Kmetz <rickkmetzrick@gmail.com>, Dale Belanger <belanger.dale@gmail.com>, donna warren <dwarren@maine.rr.com>, Kirk Duffy <kirk@kirkduffy.net>, Jerry Marx <Jerry.Marx@unh.edu>, Vicki Dillingham <vldill@yahoo.com>, Joyce Peterson <flygirl3154@gmail.com>, Cheryl Leeman <cal4161@yahoo.com>

Dear Mr. Grooms:

Our neighborhood, Randall St., Illsley St., Front St., is opposed to this development which is too massive physically, would house too large a population, and would generate too many vehicles.

We would like to be advised of the proposed Planning Board meetings well in advance, at least two weeks, so neighbors can make arrangements for sitters, etc.

Thank you in advance for sending us this information.

Sincerely,

Susan Abt
65A Randall Street

Google Groups

Support for 37 Front Street redevelopment

Travis Heynen <theynen@gmail.com>

Oct 19, 2017 3:54 PM

Posted in group: **Planning Board**

Dear Planning Board,

I am a resident and homeowner in the East Deering neighborhood, and I am writing in support of the proposal for the redevelopment of 37 Front Street. Affordable housing is important to our community, and incorporating and developing more market rate apartments is critical to the overall success of Portland, especially the creation of more market rate apartments off of the peninsula.

thank you,

Travis Heynen
9 Sylvia Rd, Portland

Google Groups

Front Street Housing Redevelopment

dewdev@aol.com <dewdev@aol.com>

Nov 11, 2017 10:54 AM

Posted in group: **Planning Board**

Planning Board:

In regards to subject project, the on-site parking does not have sufficient parking for the 100 unit development. 102 parking spaces is not sufficient when you consider that some units will have residences with 2 cars and there should also be parking spaces dedicated for visitors. Insufficient parking with the development will mean that there will be a number of cars parking in the street. Neither West Presumpscot, Irlsley or Front Streets are capable of handling more on-street parking.

Thanks for your consideration

Richard Weare
646 Washington Avenue



Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Support for Front St housing redevelopment

Matthew Grooms <mgrooms@portlandmaine.gov>

Tue, Nov 14, 2017 at 1:52 PM

To: Jennifer Munson <jmy@portlandmaine.gov>

Hi Jen,

Here is a public comment for the Front Street Redevelopment project.

Thanks,

Matt

----- Forwarded message -----

From: **Cristos Lianides-Chin** <crastos@crastoslc.com>

Date: Tue, Nov 14, 2017 at 1:43 PM

Subject: Support for Front St housing redevelopment

To: mgrooms@portlandmaine.gov

I am a resident of Portland (04103) writing to support the redevelopment and expansion of the housing on Front Street. While I have yet to familiarize myself with all the specific details for this project, I strongly support efforts to improve affordable, accessible housing in Portland. Thank you for your work towards those goals.

--

Matthew Grooms

Planner

Planning Division

City Hall, [389 Congress Street, 4th Floor](#)[Portland, Maine 04101](#)[\(207\) 874-8725](#) (T)[\(207\) 756-8258](#) (F)mgrooms@portlandmaine.gov