1. Legal Ad

    Documents:

        PB LEGAL AD 2-27-18.PDF

2. Agenda

    Documents:

        PB AGENDA 2-27-18.PDF

3. 22 Bramhall Street (MMC)

    3.I. Memo And Attachments For 2-27-18 Workshop

        Documents:

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

    3.II. Memo And Attachments From 1-23-18 Workshop

        Documents:

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

4. R-3 Text Amendment (19 Libby Street)

    Documents:

        LIBBY ST. - 19 MEMO AND ATTACHMENTS.PDF

5. 255 Diamond Avenue

    Documents:

        DIAMOND AVE. - 255 (REPORT).PDF
        DIAMOND AVE. - 255 (PUBLIC COMMENTS).PDF
        DIAMOND AVE. - 255 (PLANS).PDF
        DIAMOND AVE. - 255 (APPLICANTS SUBMITTAL).PDF

    5.I. Additional Public Comment

        Documents:

            PC22 - DOUG SOSNIK 2-23-18.PDF

PC23 - JIM DOYLE 2-25-18.PDF
PC24 - DAVE WITTING 2-25-18.PDF

6. 22 Hope Avenue

Documents:

HOPE AVE. - 22 (REPORT).PDF
HOPE AVE. - 22 (REPORT ATTACHMENTS).PDF
HOPE AVE. - 22 (APPLICANTS SUBMITTAL).PDF
HOPE AVE. - 22 (PUBLIC COMMENTS).PDF
HOPE AVE. - 22 (PLANS).PDF

7. 37 Casco Street

Documents:

CASCO ST. - 37 (REPORT).PDF
CASCO ST. - 37 (APPLICANTS SUBMITTAL).PDF
CASCO ST. - 37 (PLANS).PDF

8. 502 Stevens Avenue

Documents:

STEVENS AVE. - 502 (REPORT AND REPORT ATTACHMENT).PDF
STEVENS AVE. - 502 (PLANS).PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD - MEETING AGENDA

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

Workshop – 4:30 p.m.

i. Level III Site Plan; Maine Medical Center (MMC) East Tower and Visitor Parking Garage Vertical Expansions; 22 Bramhall Street, Maine Medical Center, Applicant. (4:30 – 5:45 p.m. estimated time) The Board will hold a workshop to consider the proposal to add two (2) floors to the East Tower, relocate the heliport to the East Tower, and to expand the visitor garage with three (3) levels of parking for 225 vehicles. The proposal adds 137,961 sq. ft. to the MMC hospital complex. The property is within the Institutional Overlay Zone (IOZ) and MMC has an Institutional Development Plan approved by the Planning Board.

ii. Zoning Text Amendment to the R-3 Zone; 19 Libby Street; Developer's Collaborative, Applicant. (5:45 – 6:30 p.m. estimated time) The Board will hold a workshop to consider a zoning text amendment to enable the adaptive reuse of Reed School (the original 1910 building) for 8 residential units. The text amendment adds, as a conditional use, the alteration of an existing non-residential structure to allow three or more dwelling units with standards that address, but are not limited to, density, unit size, parking, and design.

Public Hearing – 7:00 p.m.

i. Conditional Use; 255 Diamond Avenue – Great Diamond Island; The General Store at Diamond Cove, Applicant. (7:00 – 7:45 p.m. estimated time) The Board will hold a public hearing to consider a change of use from a general store to a 35-seat restaurant on Great Diamond Island. The applicant will also keep a portion of the general store at the rear of the building.

ii. Level III Subdivision and Conditional Use for Inclusionary Zoning Application; Brandy Lane Subdivision; 22 Hope Avenue; LBW, LLC., Applicant. (7:45 – 8:30 p.m. estimated time) The Board will hold a public hearing on a proposal to subdivide a 40 acre parcel into 16 single family lots ranging in size from 6,048 to 18,641 sq. ft. and a 1.9 acre open space parcel. The application is subject to review under conditional rezoning agreement C-40, subdivision standards, and conditional use review of one affordable home to meet inclusionary zoning requirements.

iii. Level III Site Plan and Subdivision; 37 Casco Street; Port Property Management, Applicant. (8:30 – 9:00 p.m. estimated time) The Board will hold a public hearing on a proposal to add 6 residential units to the existing 86 unit building at 37 Casco Street. The site is in the Downtown Business B-3 zone and subject to subdivision/site plan review.

iV. Level III Site Plan and Subdivision Amendment; 502 Stevens Avenue; 502 Deering Center, LLC., Applicant. (9:00 p.m. estimated time) The Board will hold a public hearing to consider a proposed subdivision amendment to add an additional live/work unit for a total of 7 residential units in the mixed use project located at 502 Stevens Avenue in the B-1b Neighborhood Business zone.

SEAN DUNDON, CHAIR – PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE
PLANNING BOARD

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

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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 FEBRUARY 13, 2018:
Workshop: All members were present. Eaton recused from the first item.
Public Hearing: All members were present.

4. REPORT OF DECISIONS AT THE MEETINGS HELD ON FEBRUARY 13, 2018:

i. Proposed Amendments to Division 9, B-1 and B-1b Neighborhood Business Zones, City of Portland, Applicant. Mazer moved and Boepple seconded a motion to find the proposed text amendments consistent with the Comprehensive Plan and recommended adoption of the text amendments to the City Council. Vote: 6-0, Morrissette abstained due to a possible conflict of interest.

5. NEW BUSINESS

i. Conditional Use; 255 Diamond Avenue - Great Diamond Island; The General Store at Diamond Cove, Applicant. (7:00 – 7:45 p.m. estimated time) The Board will hold a public hearing to consider a change of use from a general store to a 35-seat restaurant on Great Diamond Island. The applicant will also keep a portion of the general store at the rear of the building.

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Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: February 23, 2018

Re: MMC East Tower and Visitor Garage Vertical Expansion
22 Bramhall Street
Maine Medical Center (MMC)

Project #: 2017-289 CBL: 053D007/054H001/064C001

Meeting Date: February 27, 2018 (Second Workshop)

I. INTRODUCTION

This is the second Workshop held to consider the preliminary Level III Site Plan application from Maine Medical Center (MMC) which proposes to extend the existing East Tower vertically by two stories (approx. 60,000 sq ft) to accommodate 64 single-occupancy inpatient beds, and to extend the existing Visitor's Garage on Congress Street by 3 stories vertically to provide an additional 225 parking spaces. The applicant has confirmed that the application and review does not include the Central Utility Plant.

It is understood that the 64 single-occupancy bedrooms will not add patient capacity as they would allow existing double-occupancy patient rooms elsewhere to be single-occupancy.

The application is the first of three Site Plan applications associated with the short-term MMC expansion plans. The proposals follow on from the City's recent adoption of an MMC Institutional Overlay Zone and the associated Institutional Development Plan and Regulatory Framework (both attached to this Memo). The review includes aspects of the MMC IOZ Regulatory Framework that required action at the time of the first site plan (TDM and Signage Plans).

This first Workshop was held on 1.23.18 and addressed the following topics:

- Design, including Street Activation
- Helipad
- Construction Management Plan overview, plus East Tower

This second Workshop will focus on the following topics:

- Construction Management Plan and associated Traffic Control (Detour) Plans
- Design Update
- Utilities including stormwater and wastewater capacity
- Other Updates eg helipad

Applicant: Maine Medical Center; Alexander Green, Director of system Planning and Regulatory Compliance
Agent and Engineer: Sebago Technics Inc
Architect: Perkins + Will; Jeffrey Keilman, Senior Project Manager, Senior Associate

Required Reviews:

Applicant's Proposal	*Applicable Standards*
Addition of 60,940 sq ft to the East Tower; addition of 77,021 sq ft to the Visitor Garage	Level III Site Plan Review 14-526
Additions that would increase height; helipad	MMC IOZ Regulatory Framework

Waiver Requests: None identified at this time.

II. PROJECT DATA

SUBJECT	*DATA for EAST TOWER*	*DATA for VISITORS GARAGE*
Existing Zoning	IOZ	
Existing Use	Hospital	Hospital parking garage
Proposed Use	Hospital- adding single rooms for 64 patient beds	Hospital parking garage – 3-story addition for 225 parking spaces
Parcel Size	12.52 acres	
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 415,220 sq ft 0 sq ft 0 sq ft	 415,220 sq ft 0 sq ft 0 sq ft
Total Disturbed Area	0	0
Building Footprint **--Existing** **--Proposed** **--Net Change**	 30,470 sq ft 0 sq ft 0 sq ft	 25,674 sq ft 0 sq ft 0 sq ft
Building Floor Area **--Existing** **--Proposed** **--Net Change**	 152,350 sq ft 213,290 sq ft 60,940 sq ft	 200,000 sq ft 277,021 sq ft 77,021 sq ft
Parking Spaces **--Existing** **--Proposed** **--Net change** **--# of handicapped spaces**	 2,328 (entire campus) 2,553 225 6	
Bicycle parking Spaces **--Existing** **--Proposed** **--Net change**	 193 (entire campus) 0 0	
Estimated Cost of the Project	TBD	

III. First Planning Board workshop 1.23.2018

The following table summarizes the PB comments and the responses to date:

PB comment	Response
Design - comments regarding the East Tower such as: • Looks like new building on top; Looks glaringly institutional; Seeking more cohesive- more integration • Would like more info on how the white wall of the ET expansion will relate to other new buildings • Would like to see renderings with other colors (?silver)/options for Board to consider	Staff met with MMC on 2/8/18 and encouraged them to address comments with additional information. The applicant has submitted a "*Design Review Update*" (WS Q -2 2.23.18 under Second Workshop Applicants Submittal) and Section VII below provides an update. No additional renderings of the proposals or alternatives have been submitted.
How was visitor garage constructed?	See photo of the garage under construction in section VI below.
Would like to see details of visitor garage fencing and other fall protection	Included in "*Design Review Update*" (WS Q -2 2.23.18 under Second Workshop Applicants Submittal)
How is MMC addressing the loss of parking in visitors garage while under construction	Displaces visitors parking spaces will be relocated into employee garage. Access to visitors garage will be via the employee garage during construction.
Does Westcott Street need to be closed for such a long period of time?	
What upgrading is planned for retail units under garage?	Fitting out for Turners but will anticipate future retail uses.

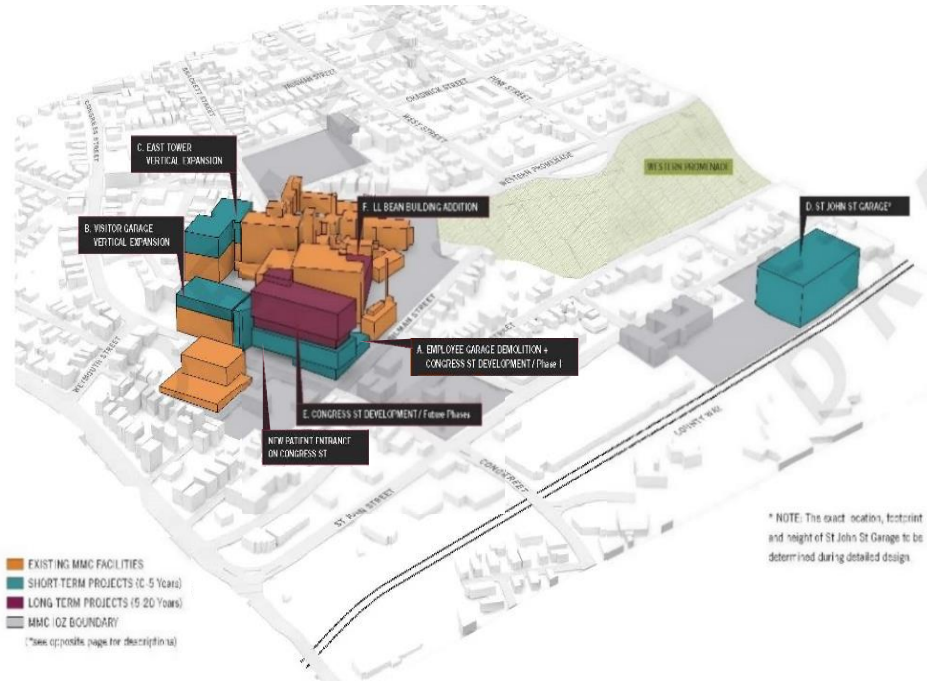
Interested in the 2-way Park Avenue option	Discussed a large "check -in" meeting between staff and MMC and concluded that this was too complicated to do safely and correctly in the time available (would need to be designed and implemented by May 8).
Disappointed not relating the buildings better to local streets to be part of neighborhood	No further information submitted.
Parking garage needs more visual interest – more creative way that doesn't reinforce massing	No revisions or options submitted. No rendering from Congress Street submitted.

IV. SITE AND CONTEXT

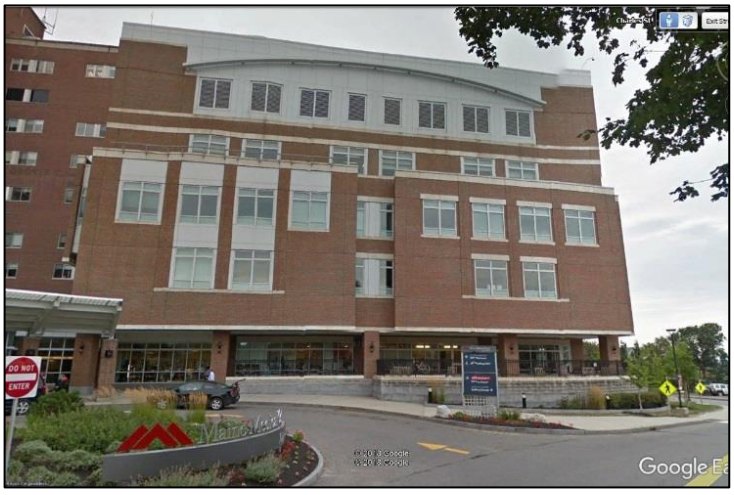
The approved Institutional Development Plan (IDP) (Attachment 4.) provides information regarding the hospital site and its development over the years, along with context information. Photographs of the existing buildings (to be expanded) are included below.

V. PROPOSALS

The submissions include a description of the proposals and plans and graphics of the proposed "overbuild". The graphic to right is extracted from the IDP in Att.4 (pages 44/45)



East Tower: Addition of two floors (64 patient rooms, single-occupancy):



Existing from south

Proposed, comparable rendering (see WSQ – 1)

Visitor Garage: 3 additional floors of parking spaces: (renderings not submitted)

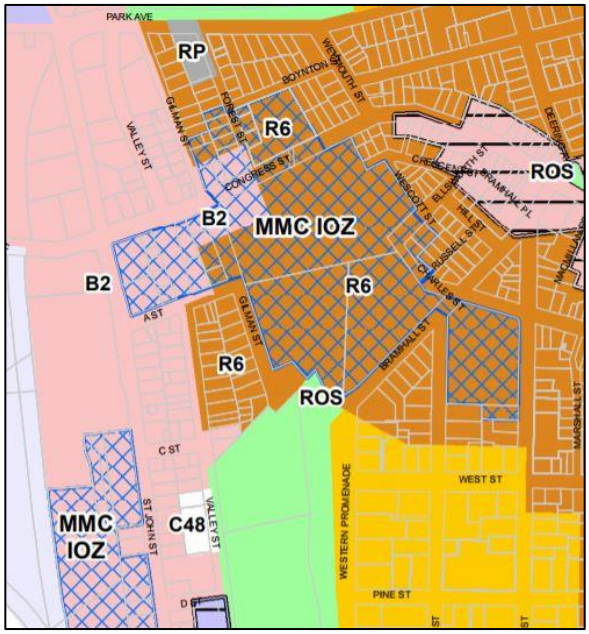
Existing as viewed looking west

Proposed west elevation

VI. ZONING ANALYSIS and REVIEW

Overview

The zoning map at right shows the recently adopted MMC IOZ in blue cross hatch:



The MMC IOZ *Regulatory Framework* (Attachment 5) is the zoning ordinance that applies to the proposed site plan projects; this was reviewed by the Planning Board in early 2017 and adopted by the City Council in December 2017.

The proposed additions to the East Tower and the Visitors Garage were included in the IDP background material for the zoning amendment, and the proposals now under site plan review are consistent with what was discussed during that review.

Table 1 below summarizes the Regulatory Framework provisions that apply to the current review and includes staff comments:

TABLE 1 RELEVANT EXTRACTS FROM MMC IOZ REGULATORY FRAMEWORK (entire document is in Att. 5)

MMC IOZ Regulatory Framework provisions	*MMC Site Plan submissions to address the RF provisions, as updated in CAPITALS*	*Staff Comments for first PB Workshop*	*Staff comments (summary) for second PB Workshop*
(c) Uses: Note under list: 1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the	The current submission does not include proposals for the existing empty retail units along the base of the Visitors Garage.	Staff consider that the entire building is subject to the review and therefore MMC needs to develop strategies to address any "blank walls' along Congress Street in	Use of these units by Turners as construction base is welcomed; confirmation of this and the longer term intention is requested

approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.	IT IS UNDERSTOOD FROM MEETINGS THAT TURNER WILL BE FITTING OUT THESE UNITS SO THAT THE FILM WILL BE REMOVED & NEW INFRA-STRUCTURE (EG BATHROOMS) WILL BE DESIGNED TO ANTICIPATE FUTURE RETAIL USE. NO WRITTEN SUBMISSION RECEIVED.	accordance with the Regulatory Framework and the IDP Design Guidelines/Fig 5.15 re Street Activation (p117 of IDP in Att. 4 to this Memo)	for the final submission.
Maximum Building Height: East Tower: 150 feet (the IDP indicated a future height of 141 ft including helipad)	Submitted proposals indicate a height of just over 146 ft but part of the helipad appears to be higher	Clarification required as to helipad height compared to the average grades identified in the IDP.	Additional information received; it confirms height including the helipad is 142 feet
Maximum Building Height: Visitors Garage: 125 feet (the IDP indicated a future height of 119 ft)	Submitted proposals indicate a height of 119 ft excluding part of the stair tower	Appears to meet dimensional requirements as stair and elevator overruns are considered appurtenances.	Additional information received: it confirms height is 119 feet
Transition Zones – none at these locations	N/A	N/A	N/A
Setbacks: East Tower - 20 ft Visitors Garage - up to 40 ft	N/A	N/A	N/A
Design Guidelines	MMC submitted architectural narrative and graphics for inclusion in PB Memo for first PB workshop and presented it at the workshop.	Urban Design Review comments included in first workshop PB Memo	Staff and PB requested additional information at the first PB workshop, as reiterated to MMC at a 2.8.18 meeting and 2.15.18 e-mail. The submitted "*Design Review Update*" (WS Q -2 2.23.18 under Second Workshop Applicants Submittal) partially addressees comments (see Section VII).
(f) Signs: 1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP. 2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.	The applicant has submitted the Signage Plan (Plan 11) that illustrates how the existing signage fits into the campus. The current proposals for the East Tower and Visitors Garage do not necessitate any additional signage, so this plan comprises the current Signage Plan.	Staff anticipate that this Strategy would be updated to take account of the signage needs of the new St Johns Garage and new hospital building (future site plans).	No further comments.
(g) Transportation: (TDM) 1. Transportation Demand Management (TDM):		This is currently under review and detailed	

a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time. b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors. c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.	The applicant submitted a TDM Plan (Att. WS S-7) on 12.15.17 AN UPDATED TDM (ATTACHMENT X) WAS SUBMITTED ON 2.13.18 IN RESPONSE TO THE STAFF COMMENTS SENT 2.13.18 (ATT. 8)	comments will be forwarded to the applicant this week, and this will be a topic for the second PB workshop. DETAILED COMMENTS SENT 1.24.18.	Discussions are continuing; this does not need to be finalized as part of this site plan review.
(g) Transportation: (Parking) 2. Parking: a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods. b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.	The applicant submitted a Parking Demand Study (Att WS S-8) that identifies shortfalls in both visitor and employee parking supply and elaborates on the background information in the approved IDP. The proposals will temporarily remove 2 levels of parking during construction, but will result in a net increase of 225 visitor parking spaces when complete. STAFF HAVE BEEN ADVISED VERBALLY THAT SPACES IN THE EMPLOYEE GARAGE WILL BE RE-ALLOCATED TO VISITORS; SOME EMPLOYEES THEN REALLOCATED TO OTHER LOTS	Tom Errico, City's consultant traffic engineering reviewer, comments: *During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.* Staff note that 6 handicapped spaces are included in the 225 new spaces, and request confirmation that this meets ADA requirements	Request that the updated information, that responds to the Traffic Engineer comments, be documented as part of the final submissions.
(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.		Staff would like to understand how the Visitor Garage integrates into the surrounding pedestrian network both during construction and after it is completed.	Staff request CPTED review by applicant- see Section X regarding other Site Plan Standards.
(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.		The Construction Management Plan may have impacts on off-premise infrastructure; this is under review.	CMP/Traffic Detours agreed in principle subject to staff review comments and further detailed discussions.
			Stormwater/Sewer capacity & impacts on combined sewer

			infrastructure under discussion
Helipad. MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions: a. Setback requirements of Section 14-327(3); and b. Fencing requirements of Section 14-327(4).	Partial noise info provided in original submissions. ADDITIONAL HELIPAD SOUND INFORMATION SUBMITTED 2.23.18	Request info re sound impacts of former helipad location and proposed and updated FAA application	Staff have not been able to review the additional technical information in time for comments to be included in this Memo; these will be provided at the Workshop.

VI Construction Management Plan and Associated Detours

a. *Review meetings with MMC:*
At the first PB workshop the applicant provided an overview of the Construction Management Plan (CMP) (prepared by Turner, the contractor for this project). Since then there have been three meetings between the MMC team/contractor and City staff/site plan reviewers (including Traffic Engineers, representatives from DPW, Police, Fire Department and the City's Parking Manager) to understand the construction constraints and consider what detour options were available if Congress Street was unavoidably closed. The summary notes of these meetings are included in Attachment 6 but City representatives have also provided comments (see below and Attachments 11, 13, and 14) to help the Board evaluate the CMP and associated traffic implications.

b. *Third Party Review of MMC construction approach:*
In parallel with these discussions the Planning Division commissioned a firm with experience of large-scale construction projects (Kleinfelders) to provide an independent review the "constructability" of the MMC proposals and Turners CMP, with a view to determining if it might be possible to avoid or minimize the closure of Congress Street.

The Kleinfelder Review (see Attachment 16) did not consider major changes to the overall phasing of the MMC expansion project, but did consider options that would necessitate significant reconsideration of phasing and the current access to the hospital. Their review took account not only of construction feasibility, but also questions of alternative types of construction and crane sizes/types, public safety, impacts on the ongoing use of the garage and local utilities, access to the ER, and work scheduling. The Review concluded that:

> *Closing Congress Street for an 8 week duration is the recommendation that Kleinfelder fully supports and would have proposed if developing this type of project independently for a client. It is recommended that the City work with Maine Medical Center to tighten up the schedule, as previously mentioned in this memo, with the use of incentive/disincentives, liquated damages associated with possible street damage, proper detour signing, and proper public outreach campaign.*

c. CMP for East Tower and Visitor Garage (Second Workshop Plan WSI-5 CM Plan)
The CMP for these expansions is particularly challenging because in both cases the hospital seeks to maintain current activity on the lower floors (patients in the East Tower and parking in the garage) plus maintain safe and efficient access for emergency vehicles to the ER.
.

The original garage was constructed largely from inside the site; see photo below from the contractor (then Reed and Reed) as included in their 2018 calendar:

Since the first PB Workshop MMC and Turner has submitted a revised CMP (*Second Workshop Plan WSI-5 CM Plan*) that has been revised as follows:

- Access for ambulances has been revised to remain as existing by relocating the site fencing and modifying the curb to provide ambulance access to the bays under East Tower
- References to converting Ellsworth to two way have been removed
- Precast and steel delivery routes added
- Location of concrete washout areas added per Wright Pierce Peer Engineer comments (Att. 9, 1.25.18)

At the review "check in" meetings (Att. 6) there was general agreement that the 8 week closure of Congress Street presented the safest approach with the fewest "unknowns", but there remain some concerns that require further discussion:

- The feasiblity of the pedestrian route alongside the crane in Congress Street (the crane at right is the type of crane that will be needed)
- The delivery route for the steel for the East Tower is proposed to go via Washington Avenue and Congress Street
- Delivery hours to avoid peak traffic times
- Enforcement of contractor employee parking not to be on local streets
- Introduction of penalties and other measures to ensure the closure is reopened prior the July 4th holiday weekend.

d. Traffic Control/ Detours and associated signage, signals and parking restrictions (See Plan GP Traffic Analysis)

The Turner CMP discussed above has addressed the need for some parking and traffic restrictions plus signage on the local streets near the East Tower construction site, and these are shown in the graphics referenced above.

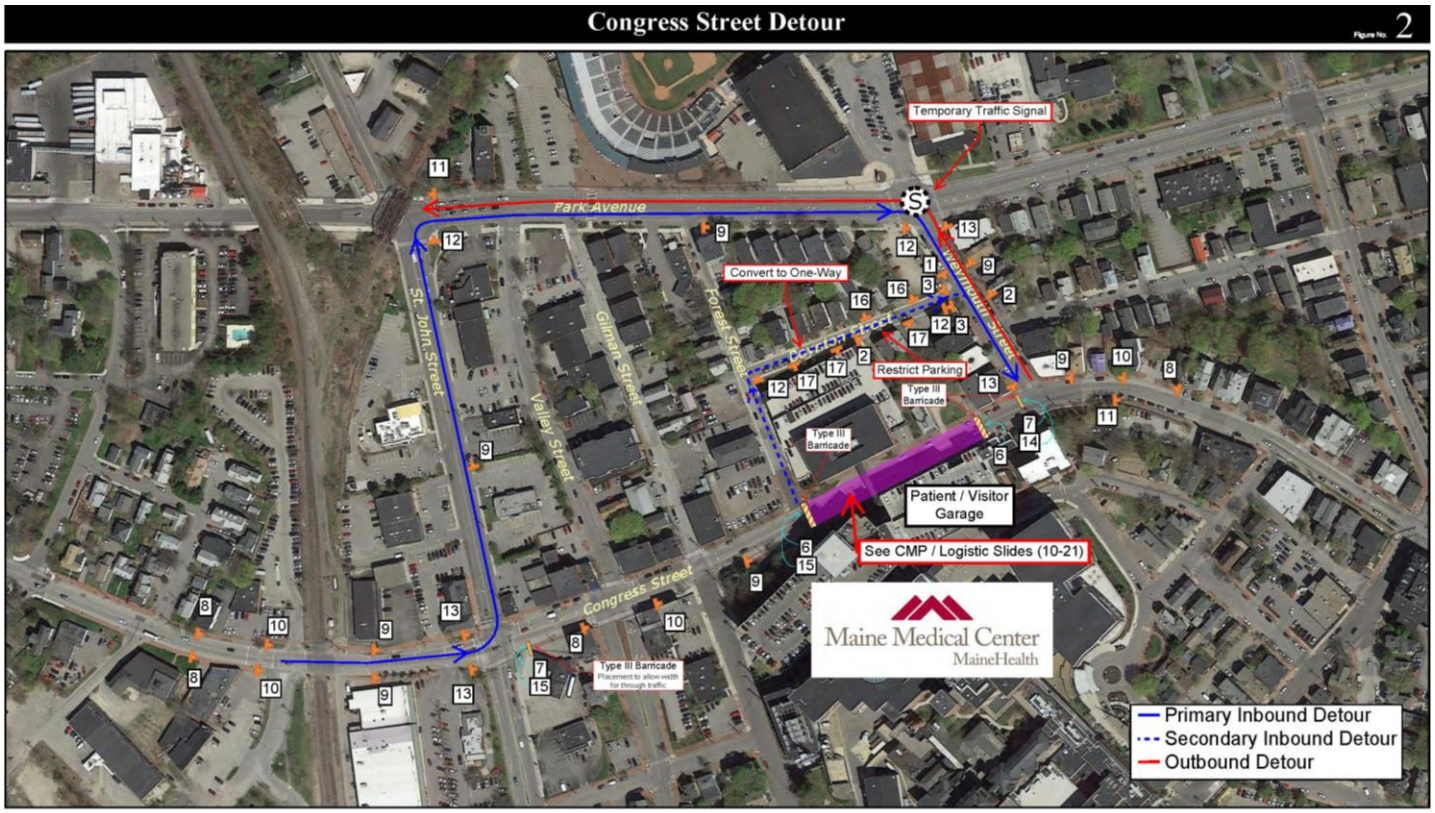
MMC has engaged Gorrill-Palmer to explore traffic management options to facilitate the closure of Congress Street to allow for the overbuild of the visitors garage. The "check-in" meeting notes of 2.1.18 and 2.15.18 document the issues that have been raised by City staff and reviewers which MMC and the consultants were asked to consider as the proposed detours were developed. One of the key concerns was the scope for congestion on the detour routes which would hamper emergency service vehicles being able to get through.

The detour options had included conversion of Park Avenue to two way which would take pressure off of the Congress/St Johns intersection, but the intersection with the Fore River Parkway and the need to install signals facing west at the railway overpass appeared to require more time to resolve than was available.

The proposals and associated details are outlined in *GP Traffic Analysis* (under Second Workshop Plans) and are based on a three -level approach to traffic diversions:

- Signage (eg variable message signs) outside central Portland to encourage different routes
- Barricades at Congress/St Johns and at Weymouth/Congress to re-route the bulk of traffic
- Local traffic to use Forest/Boynton (Boynton one way inbound)

The Police, Fire and DPW Traffic Departments were initially concerned that closure of Congress Street was not workable. As information regarding the constraints of the construction process and the options to facilitate detours was provided and discussed, the proposals were more broadly supported subject to many caveats regarding the need for bringing detour streets up to standard so they can support the additional traffic (Attachment 14), street/lane/signal and pedestrian crossing modifications, communications strategies, and monitoring (Attachment 13) during the closure (see Second memo Attachments 11, 13 and 14).



Maine Medical Center Expansion
PORTLAND, MAINE

VII. Design update

Following the first workshop discussion, Caitlin Cameron, the City's Urban Designer, met with the applicants on Feb 8th to consider the issues raised by the Planning Board and the Preliminary Design Review Memo (Attachment 3) (notes in Attachment 6).

Staff articulated the key issues from that meeting in an e-mail sent 2/15/18 as quoted below:

> ***1) Design submission for Planning Board workshop 2/27*** *- Staff suggest the PB workshop submission include at least a written narrative addressing the design points below which may also include some visual examples of past design iterations. The PB workshop presentation should definitely include visual responses to some of these points as we discussed in the meeting last week.*
>
> *The following comments/questions from the Planning Board should be addressed regarding design:*
>
> - *Mixed feelings about use of white panels - too sterile or stark contrast, not recessive enough?*
>
> 1. *Provide renderings showing options for material choices, grey or silver were specifically mentioned*
> 2. *Respond to question about re-cladding existing white on building*

- *Address request for integration:*

    1. *Integration of existing building elements and new - looks like an addition*
    2. *Clarify integration of East Tower proposal related to future campus design*
    3. *Integration into neighborhood (especially at the edges, entrances, blank walls, retail)*
- *Long-term plan for Congress Street retail facade improvements*
- *How will streetscape at South Entrance change when new entrance is added on Congress Street?*
- *Screening of mechanicals on garage*
- *Concerns with parking garage design - rooftop fence quality, facade improvements*

***2) Design Comments** - Based on the design meeting last week, staff continue to have the following comments/questions on the current proposal:*

- ***East Tower:** Staff, aligned with PB comment, continue to have some concern about the facade integration of the new and existing - especially in overall facade composition, proportion, and articulation. The existing building has a high level of articulation while the proposed new is much more minimal. Please clarify where new metal panel is proposed and where existing to remain and the strategy around getting those to match or blend. Staff suggest you consider articulation strategies in the new section that address these integration concerns whether that is a horizontal band, dimensional elements, color or other strategies.*
- ***Garage:** There are two opportunities to update or improve the design character of the garage - the fall protection fence, especially on the top level, and the metal screens.*

The applicant has submitted an illustrated Design Narrative (Attachment WSQ-2 Design Review Update 2.23.18 under Second Workshop Applicants Submittal) that partially addresses the Planning Board comments; however, revised renderings or other options have not been submitted. The Board is requested to clarify to MMC what, if any, further information it would like to have submitted for the final review.

VIII. Helipad Update

At the first PB Workshop the applicant and a representative from LifeFlight clarified regarding the operation of the proposed helipads and indicated that further sound information would be provided. Three new documents have been submitted:

- Revised FAA application (WS -S-6B Second Workshop Applicants Submittal) which confirms the likely number of flights as up to 63 per month (38 per month at present)
- Memo from MMC (WS-S-6A Second Workshop Applicants Submittal) documenting the information that was presented at the first PB Workshop, including one summary paragraph regarding sound
- Comment Responses (WS S-6C 2.23.18) to the staff e-mail of 2.16.18 (Att.15) (which requested comparative data as between ambient, current flight sounds and future sound levels when helipad is relocated). The Comment Response includes a narrative and associated data; however there has not been time for it to be reviewed prior to the completion of this Memo. Comments will be provided at the PB Workshop.

IX. Stormwater/Sewer issues

The original submission did not address stormwater management on the basis that there is no increase in the impervious surface associated with the proposed overbuilds. The Peer Engineer's first Memo (Attachment 9, January) primarily requested further information and this was provided and discussed at a "check in" meeting on 2.1.18 (notes in Attachment 6).

Following that meeting the Peer Engineer provided a second comment Memo (also Attachment 9, dated 2.7.18) that include a request for MMC to remove some of the stormwater currently discharging into the Congress Street combined sewer and convey it to the separated system in nearby A Street.

Staff understand that MMC are questioning this request and staff have provided a Memo (Attachment 14 from the City Engineer Keith Gray) outlining the City's ordinances and obligations that aim to reduce the stormwater flows into the combined system, with the Congress Street system noted as of particular

importance because it is a tributary to a CSO that overflows at Marginal Way/Preble Street. The DPW city engineer will be at the PB Workshop to answer questions.

The Peer Engineer request is also supported by the Site Plan Standards (extracted in Attachment 7) which include provisions wherein the reviewing authority can require improvements "to connect or continue off-premises public infrastructure" and specify that "The development shall not overburden sanitary sewers and storm drains, water lines or other public infrastructure and utilities".

X. Update on other Site Plan standards

The focus of the review has been on the construction issues and impacts, and design. The review is of site plan applications for vertical expansions of buildings that received site plan approval in 2005, so in addition to the Regulatory Framework reviewers have considered the proposals to ensure that they meet all current site plan standards as noted below. It is anticipated that detailed discussions on some of these issues will take place between staff and the MMC team at "check-in" meetings so that they are addressed in the final submissions.

- *Bicycle parking:* See comments from the Transportation Program Manager Bruce Hyman (Attachment 12) which note that while the number of bicycle parking spaces meets the standards, they do not meet Technical Standards regarding the design and location. Reviewers request an inventory showing that a combination of existing and proposed bike racks will meet the number and design standard for location and design.
- *CPTED (Crime Prevention Through Environmental Design):* The original site plan approval for the Visitors Garage included a public pedestrian access between Crescent Street and Congress Street that partially used the garage stair tower. It is understood that this created security issues. The applicant should assess the access and lighting arrangements for the garage and confirm what improvements for public safety and security will be included in this site plan proposal eg improved or new lighting; signage; relocated pedestrian links etc.
- *Exterior lighting:* The applicant has provided photometric studies of the helipad lighting and the top level lights on the garage (Attachments First Workshop Submission), but these did not include any specifications or information as to whether these would be visible to neighbors. More information was submitted (WS S-12 Site Lighting narrative) which clarifies the proposals in respect of these upper level lights. As part of the CPTED review the exterior ground level and internal garage lighting should be reviewed.
- *ROW: Street Lighting and ADA Sidewalks:* The Transportation Program Manager Bruce Hyman (Attachment 12) has noted that the existing street lights and sidewalk construction does not fully comply with the City's Technical Standards. In view of the increased activity in this area generated by the MMC expansion, he recommends that the lighting be upgraded (to add the street level light), and the ADA deficiencies be addressed, by the applicant. This may also tie in with the CPTED review.
- *Signage and Wayfinding-* In the first PB memo staff requested further consideration be given to the pedestrian access/routes and associated wayfinding along Congress Street in conjunction with addressing the street activation.
- *Land Transfers ref submitted "recording plats":* The original submission included two "recording plats" that identified street transfers and discontinuances that relate to the two buildings under review. After some research, staff agree that a procedural step (post PB approval of the initial site plan) may not have been completed at that time. This is under review and staff will update the Board when further information is available.

XI. NEXT STEPS - The final submissions will need to address the staff and Planning Board comments.

ATTACHMENTS

First Workshop - Memo Attachments

1. Initial Traffic Comments
2. Fire Department Comments on CMP
3. Preliminary Design Review Comments
4. MMC Institutional Development Plan (IDP) as approved by PB
5. MMC IOZ Regulatory Framework (Ordinance 14-282) as adopted by CC

Second Workshop Memo Attachments

6. "Check In" meeting notes
7. Extract from Site Plan Ordinance regarding stormwater and sewer infrastructure
8. City comments on submitted TDM
9. Peer Engineer Review comments Jan 25, 2018 and Feb 7, 2018
10. Design E-mail re further info requested
11. Fire Department comments
12. Transportation Program Manager re bike parking, lighting and ADA access in ROW
13. Police Department re CMP and Detours
14. DPW re CMP/Detours and Drainage Infrastructure
15. Staff clarification re relocated helipad sound analysis
16. Kleinfelder third party review of "constructability" and closure of Congress Street

Public comments (none received to date)

First Workshop Applicants Submittal (numbering as per applicant)

WS - 1 Cover Letter
WS A Application Form
WS A -1 East Tower Data Sheet
WS A -2 Visitor Garage Data Sheet
WS B Right Title Interest
WS C State and Federal Approvals
WS D Zoning Assessment
WS E Easements
WS G Financial and Technical Ability
WS H - Boundary Survey
WS I - 3 CM Plan January 18
WS J Traffic Study
WS M City Master Plans
WS N Utilities
WS O Solid Waste
WS Q - 1 Design Review Update January 18
WS Q Design Review
WS R HVAC
WS S - 2 Bicycle Parking
WS S - 3 East Tower Code Report
WS S - 4 Visitor Garage Code Report
WS S - 5 Heliport FAA Submittal
WS S - 6 Heliport Noise Study
WS S - 7 TDM Plan
WS S - 8 Parking Demand Study
WS S - 9B CM East Tower MOT January 18
WS S-10 Project Description

Second Workshop Applicants Submittal (numbering as per applicant)

WS - 7A TDM Plan Update February 13
WS - S- 6A Heliport Memo January 31
WS A-3 Neighborhood Meeting Info February 21
WS L Stormwater Management Plan
WS L-1 2004 Stormwater Management Plan
WS L-2 2004 Watershed Plans
WS N-1 Wastewater Capacity Request
WS N-2 CMP Ability to Serve
WS Q - 1 Design Review Update January 18
WS Q - 2 Design Review Update February 23
WS S - 12 Site Lighting Narrative
WS S-6B Heliport FAA Application February 8
WS S-6C Heliport Comment Responses 2.23.18
WSL - 3 Stormwater Comment Responses 2.21 (1)

First Workshop Plans (numbering as per applicant)

Plan 1 Boundary Survey (8 sheets)
Plan 2I Recording Plan
Plan 2J Recording Plan
Plan 5 Site Plan
Plan 10A Visitor Garage Lighting Plan
Plan 10B Heliport Lighting Plan
Plan 11 Signage Plan
Plan 13 Shadow Analysis
Plan 14A East Tower Level 6 Floor Plan
Plan 14B East Tower Level 7 Floor Plan
Plan 14C East Tower East Elevation Janua...
Plan 14D East Tower North Elevation Jan...
Plan 14E East Tower West Elevation Janu...
Plan 14F East Tower South Elevation Janu...
Plan 14G Visitor Garage Level P8 Floor Pl...
Plan 14H Visitor Garage Level p8 Floor Pl...
Plan 14I Visitor Garage Level P10 Floor Pl...
Plan 14J Visitor Garage Level P11 Floor Pl...
Plan 14K Vistitor Garage East Elevation Ja...
Plan 14L Visitor Garage North Elevation J...
Plan 14M Visitor Garage West Elevation J...
Plan 14N Visitor Garage South Elevation J...
WS Q - 1 Design Review incl renderings1....

Second Workshop Plans

a. CMP/Detours

GP Traffic Analysis 2.14.18
WS I - 5 CM Plan February 13

b. Other Plans

Plan 2K Boundary Survey February 21
PLAN 14O ET Elevations February 22
Plan 14P VG Elevations February 22

Note: these first 12 pages are informal notes that have been included to provide an indication of the nature of the discussions, but they are not formal nor binding.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of 2/15 MMC Site Plan Review Meeting (CMP/Detours)

1 message

Jean Fraser <jf@portlandmaine.gov> Thu, Feb 22, 2018 at 1:05 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>
Cc: "DiPierro, Philip" <pd@portlandmaine.gov>, "Gautreau, Keith" <kng@portlandmaine.gov>

Hello all

Key points from the 2/15/18 Site Plan Review meeting with MMC:

(Please let me know if I have missed anything important; note that these are intended as an "aid de memoir" and not as formal minutes)

Congress Street Closure and associated detours/emergency access (based on the revised docs and plans attached to this e-mail from Gorrill-Palmer)
Updates from Gorrill-Palmer re traffic detours and associated signage and signals, assuming no alternative to a Congress Street closure (see below- third item):

- RD of GP had developed the option with Boynton one-way inbound, based on feedback from earlier meeting
- Outlined the "three-layer" approach:
  - Signage via variable message signs outside central Portland to encourage different routes into the City
  - Barricades at Congress/St Johns and at Weymouth/Congress to re-route the bulk of traffic
  - Local traffic may use Forest/Boynton inbound
- Outlined the changes needed for each of these (see plans) eg signal at Weymouth/Park (actuated); removal of parking in addition to signage; change ped to concurrent crossing in some places (but RD thought signal timing otherwise OK)
- Key concerns (need more analysis and discussion):
  - Police particularly concerned re the safety of retaining central lane at Congress/St John - rather see it removed even though a number of cars going straight ahead

        - Need for information/maps to MMC patients and visitors and employees - suggest use online data providers to flag closures
        - Need to look closely at impact on peds at signals, especially during ball games and other events
        - Consider impacts on residents and businesses of some routes and semi-closures
        - Introduce Boynton as one-way working a couple of weeks in advance
    - Access to visitors garage during Congress closure (see plan)
        - Via employee garage, channeled and flaggers as needed
        - 200 employees moving out of the employee garage to make up for loss of 2 levels in visitor garage during construcion
    - Emergency Routes (see plan)
        - Clarified that access via Gilman only secondary and only when the "green" route is closed
        - Attendees stressed need for communication and decision-making chart
        - Agreed that from now on there would be smaller follow up meetings a necessary to resolve details
        - Agreed there needed to be monitoring and heavy contractor presence during first few weeks and may need to tweak these plans
    - METRO - MMC to meet with them once plan firmed up
    - DPW noted that the condition of the streets being used for deliveries and detours may require some action in advance eg partial paving - DPW to advise MMC re this after a more detailed site visit - need to avoid delays to the proposed schedule

<u>CMP - East Tower and Visitor Garage</u> (based on revised CMP as attached from Turners)

- Congress St closure anticipated May 7 to June 28 for the installation of precast beams for overbuild of the visitors garage - weather biggest factor
- Turner summarized the revisions to CMP, which included facilitating the ambulance access, adding delivery routes
- Reviewers questioned the proposal to route steel deliveries (from North, June 4 to June 28, starting at 5am) along Washington Ave and Congress
    - City staff advised route should avoid Washington completely due to planned construction work
    - Route must avoid downtown Portland and Congress
    - Keep delivery vehicles on I295 longer - maybe I295 to Forest /Park ? Deering; maybe Fore River Parkway
    - Turners will speak to the trucking company again and get back to us
- Police stressed need for ongoing monitoring and process for making changes to delivery and detour routes after closure starts
- Concern re pedestrian route along Congress by construction area
    - Need ADA ramp
    - Need 9ft for crossing
    - Ensure entire sidewalk available

    - Look at conflicts for peds crossing Weymouth at Congress - need to address
    - Gilman crosswalk needs to be ADA compliant
- Timetable (based on SO (Tuck) discussions with MMC and City Communication Directors)
    - Need for early completion of telephone tree communication structure/contacts to be circulated within about 2 weeks and to be tested ahead by local and regional responders
    - In week after 2/27 PB meeting need schedule that includes lead time and actions
    - Early prep of handouts for employees and visitors plus early website info important

Third Part Review of Constructability

- Kleinfelders consultancy (Jim Wentworth) has been engaged by city to provide independent review of the constructability issues for the East Tower and Visitors Garage, as there was concern regarding the closure of Congress Street (for at least 8 weeks) and whether that closure was essential in view of its impacts
- JW outlined what had gone into the review and amplified on the review Memo (see FINAL REVIEW MEMO attached for details) outlining the pros and cons of a range of construction options
- JW noted that public safety was a key factor as was the need to use this size of crane which requires a long straight area for assembly
- Kleinfelders professional view was that their analysis supported the choice of the proposed option, though they recommended penalties and other disincentives in the contract for going beyond the identified closure time
- Discussion regarding the work schedule for the garage - potentially possible to increase from 5 days/week to 6 or 7- but then the noise etc from construction would also be for more days
- A 6 day working week with a later start on Saturday may be best compromise and potentially could shorten the closure by a few days depending on weather

Next Meeting:

NO MEETING FEBRUARY 22

March 1 Meeting: am holding a meeting slot and room 209 is reserved (and all following thursdays at 9am) but no agenda yet- will in part depend on issues raised at the PB Workshop on Feb 27th

--
Jean Fraser, Planner
City of Portland

874 8728

--
Jean Fraser, Planner
City of Portland
874 8728

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3 attachments

GP Traffic Analasis of detours & traffic managment 2.14.18.pdf
4469K

CM Plan February 13.pdf
10844K

Kleinfelder MMC -Constructability Review Memo 2-21-2018.pdf
144K

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC meeting 2/8/18 Brief notes/action

1 message

Jean Fraser <jf@portlandmaine.gov> Mon, Feb 12, 2018 at 4:22 PM
To: "Alexander M. Green" <AGreen@mmc.org>, Keri Ouellette <kouellette@portlandmaine.gov>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Hello all

Below please find my brief "action" notes of the 2/8 MMC meetings- pl let me know if your "take way" was different:

Permitting and Inspections re building permits (relates to the three most urgent permits eg for retail space (under VG), ET and VG; later ones will be CUP cooling tower on roof & chiller; new St John garage; demo existing garage; new hospital building)

- Retail fit up for Turners - MMC to liaise with KO to resolve re use and move forward on the permit
- ET and VG - urgent re ET roof and Tuck to follow up; otherwise MMC to initiate pre-app discussions with SAFEBUILD and keep KO and JF in the loop
- Submission of permit applications to be direct to Permitting and Inspections Department and pay full fees for now
- ET and VG permits will need State FIre Marshall and City Fire Dept reviews

Design (Purpose of meeting was to consider the staff and PB comments and how to address)

- JK from Perkins & Will showed more detailed rendering of ET and clarified where there was "white" on the existing buildings that relate; consider white best for a number of reasons; not done a rendering with silver nor with white cladding brought down
- Discussion of whether white of the new will match existing- not feasible to reclad existing white; MMC explained had looked at options for tone of upper cladding
- Discussion of how ET overbuild will integrate with new hospital building and agreed rendering of latter to show Board
- Discussion of VG and question of adding visual interest (viewed new renderings of proposal from Congress); MMC had considered options but not revised proposals due to constraints
- VG Retail space being fitted out for Turners with long term use in mind- CC suggested this be clarified to Board

- CC and JF suggested that MMC needs to address Board comments on both buildings in some way and to explain what other options have been considered prior to finalizing current option
- MMC clarified glass specs for both ET new windows and VG tower at E end
- CC asked for info re the following and to be submitted for Board:
    - glass specs
    - all materials
    - shades to be used inside ET rooms

Thank you
Jean

--
Jean Fraser, Planner
City of Portland
874 8728

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC SP Review Mtg Feb 1, 2018 - MEETING NOTES

1 message

Jean Fraser <jf@portlandmaine.gov> Tue, Feb 6, 2018 at 12:10 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>, "Alexander M. Green" <AGreen@mmc.org>, Dominic Gagnon <Dominic.Gagnon@colliers.com>, gscholler@tcco.com
Cc: "DiPierro, Philip" <pd@portlandmaine.gov>, "Ryan T. Wingard" <ryan.wingard@wright-pierce.com>, "Michael A. Guethle" <michael.guethle@wright-pierce.com>, Will Conway <wconway@sebagotechnics.com>, Jim Wentworth <JWentworth@kleinfelder.com>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "driley@sebagotechnics.com" <driley@sebagotechnics.com>, "Gautreau, Keith" <kng@portlandmaine.gov>

Hello all

Key points from the Site Plan Review meeting with MMC held last **Thursday, February 1, 2018** plus (at end) future meeting agendas:

A. CMP with focus on analysis of detour options for any Congress Street closure - meeting was seeking to find consensus as to the best option

Updates re detour options from Gorrill-Palmer *(circulated summary plans and narrative that included analysis of levels of service at intersections which was sent by e-mail the evening before- this is attached):*

- Outlined two "local" (using Forest & Boynton) options: (A) two-way and (B) one-way on Boynton
- Outline option (C) using St John/Park/Weymouth
- Outlined wider add-on option (E) that diverted in bound vehicles further out in the system eg leaving I295 at different exits
- Acknowledged option (D) to make Park two-way but this was not analysed as it entailed alot of changes to be completed in a short time and not recommended
- Subject to some further information and discussion, the Boynton one-way (B) combined with the add-on option (E) to divert inbound vehicles seemed to be worth considering further

METRO

- MMC had met with METRO who would work with them once final plan in place

- METRO had noted that they would probably need additional drivers and buses to maintain headways

Implications of detours - *attendees highlighted concerns and Bruce Hyman offered to provide a coordinated note regarding key areas of additional info requested [**this is below**] and Gorrill-Palmer will provide updated and expanded info on these as "final package" for next discussion (2/15)*

- Need to remove dedicated ped phase at St John/Congress
- Issues re access and parking for residents on Boynton
- Need for signal modifications eg timing, peds
- Note increase in traffic April-June (+20% - from Police)
- Suggestions for signage, including variable messaging VB and moving MMC sign(s) on I295
- Physical condition of Weymouth and need for emergency service access
- City does not recommend adding traffic to Deering
- See Bruce Hyman's note at end of e-mail

Timeframes/contingencies:

- Concern that the June 28th end date is crucial
- What penalties if this is not met?
- Question of whether can be shorter but keep some buffer (which might have impacts on neighbors)
- Timing of deliveries and where staged crucial to minimize impacts
- Turner to prepare communications info between contractor/MMC security/City re decisions needed if issues arise
- Police suggest have flaggers during the first week

B. Stormwater Review of Site Plan (note that W-P had previously provided review comments and Sebago had responded, so discussion focused on outstanding issues and questions)

- Wright-Pierce (W-P) attended on behalf of City; Sebago Technics (ST) attended on behalf of MMC
- ST explained existing situation:
  - ET sewer goes to Congress combined system; ER stormwater goes to A Street separated system
  - VG has treatment of stormwater on roof which then goes to Congress combined
  - Density of utilities prevents connection so ST consider only way to get stormwater to A street from VG and new hospital building is to pump
- New hospital building on Congress will have subsurface system along Congress to detain, and green roof- ultimately discharge to Congress combined system
- Other items raised by W-P and DPW for MMC to address:
  - Increase storage at visitor garage
  - Reduce disturbance & introduce erosion control etc at construction sites
  - Submit capacity letters

C. TDM- MMC had submitted TDM Plan and City had sent comments recently

- Discussion monitoring- methods of monitoring parking demand - questions
- City expects the TDM to include specific strategies and associated details, and then monitor and review in a year
- TDM needs to go one step beyond IDP
- Planning had seen good examples and will forward these (WEX; Thompsons Point)
- Discussion re bicycle by-ways and how these should be integrated with TDM for MMC - question of whether they would facilitate cycling by MMC staff

D. NEXT MEETINGS

THURS FEB 8 (most do not need to attend)

- **9:30am- 10:00 MMC building permits process**
- **10ish TO 11:00: Design with Jeff K of Perkins & Will**

PLANNING CONFERENCE ROOM (this meeting only)

THURS FEB 15 9AM - final discussion CMP and associated traffic/detours/signage/signals etc (based on a final package from MMC to be circ 2/13/18) in Room 209

Coordinated Note from Bruce:

Here are the consolidated comments from last Thursday's preliminary review of the MMC draft Congress Street detour analysis dated 1/31/18.

The following additional information is requested:

- More documentation of the actual morning and afternoon peak hours that are being referenced as part of the detour planning. It is not stated in the document itself and the Synchro printouts have the same START-STOP times for both the AM-PM analysis period. (It looks like 7AM-8AM are the AM peak hour from the printouts but it should be documented in the narrative and in the tables.)
- More documentation of the peak hour(s) for the detour analysis: do one or both of the actual peak traffic hours change to a different time period based on the amount of traffic that is deducted-credited based on the amount of traffic heading to the Gilman lot and MOB parking and the actual amount of traffic that remains?
- The configuration and specific type of temporary traffic signal equipment proposed for the Weymouth Street/Park Avenue intersection and the means of traffic signal coordination/communication with nearby traffic signals
- All traffic volume information that was used in the analysis to better understand the analysis' assumptions for traffic volumes on Congress Street between St. John and Brahmall. A review by the city of the actual Synchro models is also suggested.
- The specific location, placement and wording of detour signage associated with the proposed detour concept
- The specific recommended deployment of personnel (e.g., flaggers, police officers, etc) at the initiation of the proposed Congress Street detour to actively manage traffic associated with the detour and and coordinated with construction activities/the CMP.

--
Jean Fraser, Planner
City of Portland
874 8728

Congress St Detour 1-31-18 - reduced.pdf
3051K

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of todays meeitng

1 message

Jean Fraser <jf@portlandmaine.gov> Thu, Jan 25, 2018 at 6:10 PM
To: "Alexander M. Green" <AGreen@mmc.org>
Cc: Mark Harris <HARRIM6@mainehealth.org>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Al

This (below) is what I have sent around internally, as mentioned in earlier e-mail to help keep reviewers in the loop.

thanks
Jean

Key points from todays Site Plan Review meeting with MMC:

East Tower CMP - meeting was seeking to find consensus

Updates from Turner:

- Ambulances will be allowed to use ambulance portal as existing
- Explained penalties if workers park on nearby streets
- Have checked out feasibility of trucks using Ellsworth
- Truck deliveries of steel with be June, July and most of August
- Probably remove bump out in Crescent

Discussion of Access routes:

- A number of alternatives were discussed, looking at pros and cons (eg access from Gilman) as Turner proposals problematic Ellsworth to Congress and reservations over 2-way in Crescent
- MMC noted secondary access via employee garage for cars going to Visitors Garage
- Concluded:
  - Take out bumpout in Crescent to help larger emergency vehicles
  - Best option for exiting trucks is Bramhall via Charles to 295
  - Keep Crescent 2-way (MMC contacting residents long here re need to remove parking)
  - Gilman could be back up access option and arranged if necessary

Congress Street Closure and associated detours/emergency access (this discussion to continue longer; includes third party review of construction plan)

Updates from Turner:

- Current plan is for 8 week closure based on normal working practices, so May 7 to June 28 envisaged
- Compression of time means more trucks in area per day

Updates from Gorrill-Palmer re options for detours:

- Local - Forest/Boynton/Weymouth (for small cars)
- One way system probaly Boynton inbound and park outbound
- Park between Fore River Pkway and St Johns to be two way
- Comparison/analysis to be completed/circulated early next week and discussed at Feb 1 mtg

Discussion of detour options:

- Need to get people out of system further out - need signage
- Police suggest closures on Congress at St John, and Park
- Many felt should avoid pushing traffic to Weymouth
- Deering another option - G-P to include in analysis
- Park 2-way offers benefits but big questions re intersection modifications and signals

Next Meeting:

THURS FEB 1 9am- 10:30 (reviewers attend for their topics within this time)
ROOM 209

- Focus on Congress Closure & detour option
- Some time on TDM
- Some time on Stormwater/Wastewater

--
Jean Fraser, Planner
City of Portland
874 8728

EXTRACT FROM SITE PLAN ORDINANCE

Water Quality, Stormwater Management and Erosion Control:

a. All development must demonstrate that the proposed siteimprovements are designed to minimize the amount of stormwater leaving the site. This must include consideration of the design and location of improvements to minimize the total area of impervious surface on the site and stormwater management techniques to minimize both the volume and rate of runoff from the lot. The stormwater management plan must demonstrate the following:

(i) Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or re-directed so as to create ponding on, or flooding of, adjacent lots;

(ii) Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot following the improvement can be handled on the adjacent lot without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot;

(iii)Any increase in volume or rate of stormwater draining from the lot onto City property following the improvement can be handled without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the City's property; and

(iv) Any increase in volume or rate of stormwater draining from the lot into the City's separate storm sewer system can be accommodated in the system without creating

downstream problems or exceeding the capacity of the storm sewer system.

b. All development, except Level I minor residential development, shall comply with the standards of Section 5 of the Technical Manual including basic, general and flooding standards, as applicable, to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

c. All development, except Level I minor residential development, that are located within the watershed of an Urban Impaired Stream shall comply with the Urban Impaired Stream standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules, as described in Section 5 of the Technical Manual.

d. Level I: minor residential development shall comply with basic erosion control standards, as described in Section 6 of the City of Portland Technical Manual.

e. Development shall not pose a risk of groundwater contamination either during or post-construction, as described in Sections 5 and 9 of the Technical Manual.

f. Development shall provide for adequate and sanitary disposal of sewage as described in Section 2 of the Technical Manual.

(c) *Public Infrastructure and Community Safety Standards.*

1. *Consistency with City Master Plans*:

a. All developments shall be designed so as to be consistent with City Council approved master plans and facilities plans and with off-premises infrastructure, including but not limited to sewer and stormwater, streets, trails, pedestrian and bicycle network, environmental management or other public facilities (see Section 15 of the Technical Manual).

b. The site plan shall include suitable easements, rights and improvements to connect or continue off-premises public infrastructure as may be required by the reviewing authority.

2. *Public Safety and Fire Prevention*: **[excluded from this extract]**

3. *Availability and Adequate Capacity of Public Utilities*:

a. The development shall not overburden sanitary sewers and storm drains, water lines, or other public infrastructure and utilities. Development shall provide adequate utility capacity and distribution network on-site and in connection to surrounding locations and facilities.

b. Electrical service shall be underground unless otherwise specified for industrial uses, or if it is determined to be unfeasible due to extreme cost, the need to retrofit properties not owned by the applicant or complexity of revising existing overhead facilities.

c. Installation of new or upgrades to existing sanitary sewers, storm drains, water lines or other utilities shall meet the provisions outlined in Section 2 and Section 9 of the Technical Manual.

d. All development within 200 feet of a public sanitary collection and treatment system shall connect sanitary sewer lines into the nearest available public sewer. If a public sanitary collection and treatment system is not available, a private wastewater system may be used according to the requirements of Chapter 24 of the City Code and Section 2 of the Technical Manual.

e. All sanitary sewer and stormwater utilities proposed as part of the development shall be designed to City standards as specified in Section 2 and Section 4, Chapter 500 Stormwater Management Standards, of the Technical Manual.

f. All residential development of 20 units or more, commercial development and industrial development shall provide for the temporary storage and timely removal of all trash and recyclable materials including, at a minimum, paper, corrugated cardboard, plastics and metals. Storage containers for recyclable materials shall be separated from trash containers. All exterior storage of trash and recyclables shall be screened from view from public sidewalks, streets and adjacent properties.

4. Reserved.

MMC TDM PLAN | City Review Comments 1/24/18 (Tom Errico, Bruce Hyman, Nell Donaldson)

General

- Add date to title page.

Context

Transit:

- Provide information on #9/#1/Breez/Zoom. These all run on Congress and will provide service to future front door.

Current Travel Behavior

Existing Mode Share:

- Include absolute numbers on graphs (i.e. ~860 people are taking shuttle, 100 carpooling, 88 walking, etc.)
- Commuting survey should be completed annually.

Geospatial Analysis:

- Include absolute figures (e.g. ~1080 MMC employees live within a 3 mile radius, 320 live within a mile).
- Is there data on usage of UCar Share?

Program Goals

- This section begins with a discussion on peak parking demand, but the goal/metric is framed as a 'trip reduction.' This section should be consistent re goals and metrics.
- Baseline should also be more clearly identified (e.g. if there are ~2700 MMC employees driving alone to work every day (based on the survey), this = X SOV trips. Target (2%) of these trips = X. A table may be helpful to show this information.
- Plan should be clear on how the metric will be monitored. If metric is trips, MMC will need to monitor trips. If parking demand, same. What method is proposed? Counts or surveys? Traffic or parked vehicles.
- The shift of 65 employees over five years seems under-achieving.
- Monitoring should be annual.

Parking & TDM Strategies

Current GOB Strategies:

- Figure 6 should include both the existing and proposed bike network (see attached markup).
- The TDM plan notes that vanpool and carpool vehicles will get preferential parking spaces in the new employee garage. The location of the new garage may actually be a barrier for increased carpooling. We would suggest identifying spaces on-campus.
- The 'pay for parking' section is in the future tense. This should be in the future strategies section.
- The plan should also clarify the cost for parking – is it $3 per week or bi-weekly? Paying for parking (and allowing cash out) is potentially one of the most significant things the hospital could do to shift mode share. Fees could/should be increased significantly.

Enhanced (Future?) Strategies:

- In the bike discussion, note that many of the proposed bike network connections serve MMC.
- Explain how enhanced transit subsidies will work. How will MMC administer the program?
- Also, are there METRO system/operational enhancements that could influence MMC employee use?
- Provide incentives for those who walk or bike.

New Program Elements:

- Narrative states that MMC 'is currently exploring the following options.' MMC needs to commit to strategies in the TDM plan.
- Short-term strategies should be 1-2 years to align with the short-term goals.
- The short-term strategies include improving data collection capabilities with a reference to the long-term strategies. This should be fleshed out in the short-term if it is included as a short-term action.
- The plan should also include mid-term actions (3-5 year). Otherwise there is a gap between short & long-term.

- There are only two long-term strategies identified. Are there other, more targeted strategies that MMC could pursue in the future?

Education and Marketing Strategies

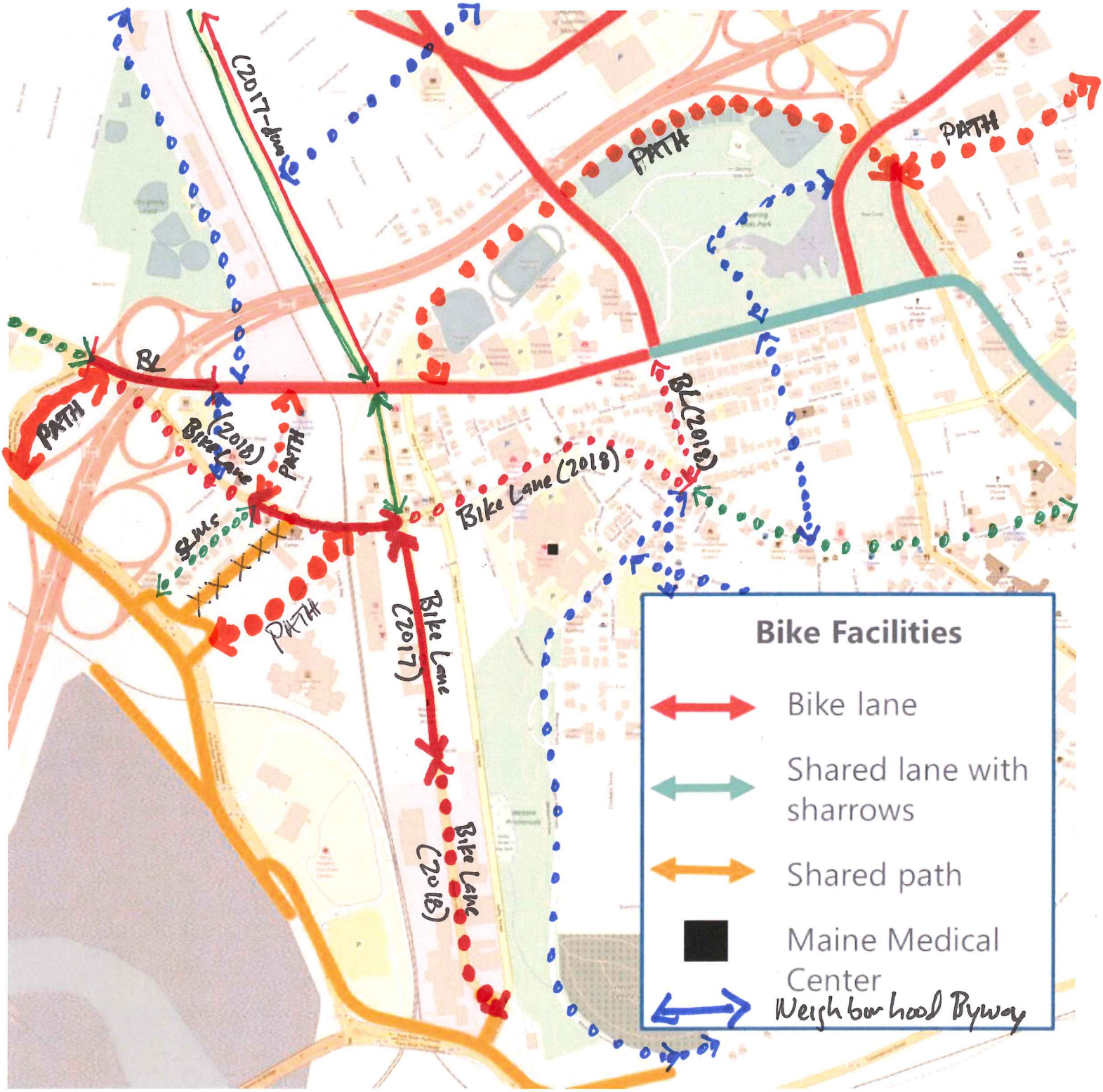
- Include a timeframe for these strategies.
- What about challenges/incentives outside of GoMaine? MMC could provide their own.
- What about connections to HR/employee health programs?

Comprehensive Data and Goal Monitoring

- As above, data collection and monitoring should be annual at the least (as per the IOZ). Monitoring reports should be submitted to the city's Planning Division and include a summary of progress toward plan targets.
- Establishing a strong data collection system is critical. We strongly suggest that MMC incorporate technologies that will provide useful and accurate information for assessing transportation data.

UPDATED EXISTING + FUTURE BIKEWAY NETWORK

FIGURE 6 Bicycle Network Surrounding MMC



1/16/18
BATH/PAUD.

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Jean Fraser, Planner	**DATE:**	1/25/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982A
SUBJECT:	Bramhall St. - 22; MMC East Tower and Visiting Parking (PEZ.2017.289)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the East Tower and Visiting Parking redevelopment proposed at 22 Bramhall Street. The project will include adding three levels of parking to the existing parking garage, relocating the heliport to the East Tower, and adding 2 floors to the East Tower. The work will add 0 square feet of new impervious surfaces, will add 0 square feet of new building surfaces, will add 225 parking spaces, and will add 137,961 square feet of building floor area.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) January 8, 2018.
- Engineering Permitting Plans, dated (most recent) January 8, 2018.

Comments:

1) Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)
    a. Basic Standard: Project Plans and Application should be provided to address erosion and sedimentation requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with MaineDEP Chapter 500, Appendix A, B, and C. The applicant has provided information that the project will have no disturbance. The applicant shall provide information confirming proposed construction practices for concrete installation, including location of concrete washout, and protection for down-gradient storm drain inlets. Construction

Management Plan submitted includes mention of sweeping sidewalks to remove trash and debris; storm drain inlets shall be protected in sidewalk locations adjacent to the project. The applicant shall provide information relative to the control of construction equipment mud tracking.

b. General Standard: no additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the General Standard, or report on how the project meets the terms and conditions of the General Standard.

c. Flooding Standard: No additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the Flooding Standard, or report on how the project meets the terms and conditions of the Flooding Standard.

2) Connection to Existing System:

a. The existing facility currently discharges to a combined sewer system. The applicant shall provide the following:

i. For floor drains not exposed to roof runoff, an oil-water separator connected to the sanitary sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.

ii. For floor drains exposed to roof runoff, a proposed connection to the separated storm sewer system on A Street shall be evaluated.

iii. The applicant shall address the potential to separate existing combined sanitary and stormwater flows in the East Tower to help reduce the impact of storm drainage on the existing combined sewer system.

iv. It is understood that the sewers adjacent to the facility are near capacity to serve new development. Applicant shall demonstrate opportunity to offset proposed new sewer flows.

v. Proposed and existing connections to the sewer and stormwater system shall be indicated on the proposed engineering permitting plans.

vi. Details of connections, pipes, structures shall be provided.

3) Confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain and sewer shall be provided.

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Jean Fraser, Planner	**DATE:**	2/7/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982A
SUBJECT:	Bramhall St. - 22; MMC East Tower and Visiting Parking (PEZ.2017.289)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the East Tower and Visiting Parking redevelopment proposed at 22 Bramhall Street, including the updated plans and response to comments received. The project will include adding three levels of parking to the existing parking garage, relocating the heliport to the East Tower, and adding 2 floors to the East Tower. The work will add 0 square feet of new impervious surfaces, will add 0 square feet of new building surfaces, will add 225 parking spaces, and will add 137,961 square feet of building floor area.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) February 5, 2018.
- Engineering Permitting Plans, dated (most recent) February 5, 2018.
- Construction Management Plan, dated (most recent) February 1, 2018

Comments:

1) Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)
    a. Basic Standard: The applicant has confirmed that no additional impervious surfaces are being added to the facility, the proposed work is not causing a change of use, and no site disturbance is proposed. As such, the project is not subject to the requirements of the Basic Standard. Information provided in the updated

Construction Management Plan indicates that downstream catch basin inlets will be protected.

b. General Standard: The applicant has provided information that no additional impervious surfaces are being added to the facility and that the proposed work is not causing a change of use. As such, the project is not subject to the requirements of the General Standard.

c. Flooding Standard: The applicant has provided information that no additional impervious surfaces or changes of use are occurring as part of the proposed development. As such, the project is not subject to the requirements of the Flooding Standard.

2) East Tower Expansion Connections:

a. The applicant has provided information confirming that the East Tower storm runoff currently discharges to a separated storm sewer system, and that the proposed construction will also discharge to the separated storm sewer system. The roof connections are internal to the facility and no additional information regarding the East Tower Expansion is requested at this time.

b. It is understood that the sewers adjacent to the facility are near capacity to serve new development. The applicant has indicated that increases to dry-weather sanitary flows are minimal, and has submitted a Wastewater Capacity Application for review by the Department of Public Works.

3) Visitor Garage Expansion

a. The existing facility currently discharges to a combined sewer system within Congress Avenue. The applicant has provided a Stormwater Management Report from 2004, indicating stormwater rates to the separate storm sewer in the A-Street corridor.

i. The information provided indicates that the separate storm drain within the A-street corridor is at or near capacity during the modeled 10-year, 24-hour rain event, but that capacity may be available for lower interval rain events.

ii. Plan 2D Boundary Survey indicates a connection or stub connection leading from the catch basin on the south side of the Visitor Garage that may allow for connection from the Visitor Garage roof drain into the separate storm drain system. The applicant shall provide the following:

1. An updated boundary survey in the vicinity of "Plan 2D Boundary Survey" with utility elevations, pipe sizes, and pipe materials in accordance with the City's Chapter 14 and Technical Manual requirements for a Boundary Survey. Anecdotal information regarding the difficulty for construction in this corridor was discussed in the February 1 meeting. However, a sewer pipe crossing currently exists in this corridor, as does a storm drain or storm drain stub. City staff need additional information regarding existing utilities to confirm if a connection to the separate storm drain will be feasible or not.
2. If a connection from the Visitor Garage roof to the separate storm drain that conveys flows to the A Street corridor is feasible, then the applicant shall provide:
    a. A connection that allows for a 1" rain event to be conveyed to the separate storm drain on A Street, consistent with the City's Long-Term CSO Control Plan.
    b. An overflow connection that conveys larger interval storm events towards the combined sewer on Congress Avenue.

iii. For floor drains not exposed to roof runoff, flows shall be conveyed to an oil-water separator connected to the combined sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.

4) If new connections to the municipal system are constructed, then confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain, sewer, and connections to the existing system shall be provided.

5) General Comments:
    a. Ability to Serve letters from affected utilities are required as part of the Level III Application process. Ability to Serve Letter from Central Maine Power has been provided.
    b. The plans should note a location for snow storage or provide a written snow storage plan. The proposed conditions are very similar to the existing conditions. If all snow is removed from the site in the existing conditions, then a statement from the applicant indicating method of removal and that snow removal protocol will not be changed will suffice for this item. If snow is stored on site, snow storage locations shall be indicated.

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

Re: MMC Design review

Caitlin Cameron <ccameron@portlandmaine.gov> Thu, Feb 15, 2018 at 2:27 PM
To: "Fraser, Jean" <jf@portlandmaine.gov>

1) Design submission for Planning Board workshop 2/27 - Staff suggest the PB workshop submission include at least a written narrative addressing the design points below which may also include some visual examples of past design iterations. The PB workshop presentation should definitely includes visual responses to some of these points as we discussed in the meeting last week.

The following comments/questions from the Planning Board should be addressed regarding design:

- Mixed feelings about use of white panels - too sterile or stark contrast, not recessive enough?

1. Provide renderings showing options for material choices, grey or silver were specifically mentioned
2. Respond to question about re-cladding existing white on building

- Address request for integration:

1. Integration of existing building elements and new - looks like an addition
2. Clarify integration of East Tower proposal related to future campus design
3. Integration into neighborhood (especially at the edges, entrances, blank walls, retail)

- Long-term plan for Congress Street retail facade improvements
- How will streetscape at South Entrance change when new entrance is added on Congress Street?
- Screening of mechanicals on garage
- Concerns with parking garage design - rooftop fence quality, facade improvements

2) Design Comments - Based on the design meeting last week, staff continue to have the following comments/questions on the current proposal:

- **East Tower:** Staff, aligned with PB comment, continue to have some concern about the facade integration of the new and existing - especially in overall facade composition, proportion, and articulation. The existing building has a high level of articulation while the proposed new is much more minimal. Please clarify where new metal panel is proposed and where existing to remain and the strategy around getting those to match or blend. Staff suggest you consider articulation strategies in the new section that address these integration concerns whether that is a horizontal band, dimensional elements, color or other strategies.

- **Garage:** There are two opportunities to update or improve the design character of the garage - the fall protection fence, especially on the top level, and the metal screens.

--
Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101
phone: (207) 874-8901
email: ccameron@portlandmaine.gov

MEMORANDUM

To: FILE

From: Jean Fraser

Subject: Application ID: 2017-289

Date: 2/21/2018

1/17/2018

Circulation--The ambulance emergency room entrance should remain open to one way traffic. The area can be difficult to maneuver in its current design. Making the patient delivery area a two way drop off doesn't seem achievable.
2/21/2018 The plan has been changed to accommodate one way traffic through the ambulance bay at MMC. Some additional landscaping will be done to allow the ambulance approach from Crescent Street. An alternative ambulance route for ambulances will be via Gilman Street.

1/17/2018

2/21/2018 Congress Street will be closed for several weeks. Ambulances destined for the hospital will follow the same detour as other traffic. Fire apparatus responding from the peninsula will make route adjustments when responding West of Deering Avenue.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

PEZ 2017-289: MMC East Tower and Visitor Parking Garage - Site Plan Requirements

1 message

Bruce Hyman <bhyman@portlandmaine.gov> Fri, Feb 23, 2018 at 11:42 AM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: Barbara Barhydt <bab@portlandmaine.gov>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>, Tom Errico <thomas.errico@tylin.com>, Caitlin Cameron <ccameron@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Stuart O'Brien <sgo@portlandmaine.gov>

Good morning Jean,

The following are my review comments and recommendations on the Site Plan application for the MMC East Tower and Visitor Parking Garage components, touching upon: Bicycle Parking; ADA-Compliance at both locations; and, Street Lighting on Congress Street.

Bicycle Parking

Based on the information submitted in Submission S-2 Bicycle Parking, the total quantities of parking appear to be sufficient to meet the bicycle parking requirements for the MMC campus.

The type of bicycle parking provided, based upon images supplied in the latest Draft TDM Plan (Feb. 13th, 2018) is in some cases deficient per the Technical Manual to securely park bicycles and encourage bicycle commuting. Some of the bicycle racks secure the front wheel only and do not provide the required two points of contact between the bicycle frame and bicycle rack. This is shown in the photograph in the TDM plan where users are securing their bicycles to the ends of the racks, not in the mid-portion where they are intended by this design. See below.

These bicycle racks do not meet the functional requirements of the Technical Manual, Section 1.15, so-called "wheel-benders". Photo Source: MMC Draft TDM Plan, dated February 13, 2018.

Bicycle parking requirements are outlined in the Technical Manual in Section 1.15. It states, in part:
"Bicycle parking shall:
• Provide secure, durable racks that maintain bicycles in an upright position and to which bicycles can be affixed with customary lock and cable mechanisms. Fence-type ("wheel bender") racks designed to secure the front wheel only are prohibited. (emphasis added, excerpt)"

The other types of bicycle racks illustrated in the Draft TDM Plan (and other types) do meet the functional requirements for bicycle parking. See below.

These bicycle racks do meet the functional requirements of the Technical Manual, Section 1.15. Photo Source: MMC Draft TDM Plan, dated February 13, 2018.

The applicant is to inventory the type and number of bicycle parking spaces within the MMC Campus at each location to ensure that, at a minimum, 1) the total number of racks that meet the parking standards equals the number required and 2) also meets the standard that bicycle racks are adequately distributed within the MMC Campus at main building entrances, also as required by the Technical Manual.

East Tower ADA-Compliance/Accessibility

The sidewalks and curb ramps serving crosswalks along the frontage of the East Tower appear to meet ADA-accessibility requirements. The curb ramps on the opposite side of the street do not appear to meet ADA due to what appear to be worn detectable warning panels (being comprised of concrete pavers). The applicant is to assess the condition of the detectable warning panels at each crosswalk serving the East Tower site and replace those that are not compliant due to their condition with cast iron detectable warning panels.

Source: Google Streetview, Aug. 2017.

Visitor Garage ADA-Accessibility

The applicant is to confirm that the driveway on Congress Street for the Visitor Garage (for both the entrance and exit) is ADA-compliant for a pedestrian access route for a minimum width of 5' where it meets the back of sidewalk. The maximum allowable cross-slope is 2%.

The applicant is to also confirm that the sidewalk grades on the approaches to the driveway are ADA-compliant for their cross-slope (also 2% maximum for a minimum of 5' clear width) and running slope (it may not exceed specific slopes for different distances and in some instances may not exceed the running slope of the adjacent street).

The applicant is to correct any noted ADA-accessibility issues along the Visitor Garage frontage on Congress Street.

The current driveway at the Visitor Garage. Source: Google Streetview, Aug. 2017.

Pedestrian/Street Scale Lighting on Congress Street

The current pedestrian scale lighting provided along the frontage of the Visitor Garage (and Employee garage to be demolished in Ph III) is not of the same scale as the remainder of Congress Street (where it has both pedestrian and street scale lighting) where it has been implemented within the Downtown Lighting District within the Municipal Street Lighting Standards.

Along the Visitor Garage frontage, the applicant is to replace the existing pedestrian-scale luminaires and add the street lighting luminaire/lamp (3000K, LED) with top bracket to the existing assembly to create street lighting consistent with this vicinity to be activated as the principal visitor entrance with the completion of Phase III.

The current pedestrian-only scale lighting along the Congress Street frontage. Source: Google Streetview, Aug. 2017.

The current standard for pedestrian and street-scale lighting on Congress Street. Source: Google Streetview, Aug. 2017.

Please do not hesitate to contact me if you or the applicant has any questions on the abov

--

Bruce Hyman
Transportation Program Manager
Transportation Division

Department of Planning & Urban Development
389 Congress Street
Portland, Maine 04101
(207) 874-8717 phone

bhyman@portlandmaine.gov
http://www.portlandmaine.gov/1363/Transportation-Division
Yes! Transportation's Good Here ....

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Fwd: MMC CMP and detours- to PB Workshop on 2/27

1 message

Jean Fraser <jf@portlandmaine.gov> Fri, Feb 23, 2018 at 11:32 AM
To: "Fraser, Jean" <jf@portlandmaine.gov>

From: **James Sweatt** <jjs@portlandmaine.gov>
Date: Fri, Feb 23, 2018 at 9:50 AM
Subject: Re: MMC CMP and detours- to PB Workshop on 2/27
To: Jean Fraser <jf@portlandmaine.gov>
Cc: "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>

Hello Jean,

The Police Department have taken great effort to evaluate the proposed construction at Maine Medical Center to include the closure of Congress St. The material presented by several city departments, and the MMC staff have determined the safest way to build the parking garage further is to close Congress St. We are obviously concerned with the impact to the neighborhood and greater Portland community.

We have read, and was present during Kleinfelder's presentation of the engineering data and crane placement recommendations. It appears it will be necessary to close Congress St for the 8 week period that Turner construction has projected. It will be imperative that Turner keep to this schedule and we would recommend incentives to open Congress St sooner and substantive penalties for delays beyond 8 weeks. It will be crucial that the closure of Congress Street not extend past June 29th to avoid conflict with the highest summer traffic flow.

We have presented recommendations and participated in the construction detour plan. With the available details and traffic projections, the plan presented at the 2/15/18 meeting appears to be the best option during the road closure and construction of the East Tower and garage over-build. Having said that, we believe the detour has to be monitored throughout the closure to insure it meets the needs of the area. Changes may be necessary after traffic patterns develop around the detour.

It is our experience that traffic changes are unpredictable even with thorough planning. We believe Maine Medical Center must educate it's employees and the many visitors on the best ways to access the hospital to reduce confusion with motorists. MMC must stay engaged with the community and be thoughtful to continue to address the community needs as they change through the construction project. MMC must communicate to the community on numerous platforms to keep the community informed. MMC must have

a robust staff dedicated to work with day to day complaints this extensive project will produce. Project staff must maintain direct communication with city departments throughout the project using prearranged communication channels.

Turner construction must also manage the delivery of concrete casts to Congress St and steel to East Tower in a manner to avoid large vehicles with heavy loads moving during morning commuter hours (0700-1000) and afternoon hours (1500-1800). We continue to recommend the delivery and staging of large vehicles before and after normal commuting hours to reduce the impact on traffic and pedestrians.

A parking plan for construction workers has been developed and Turner has expressed a commitment to hold those workers and contractors accountable. We believe this needs to be followed through on to minimize some of the negative impacts on the neighborhood.

There are still many details that have to be resolved. We look forward to further meetings with city staff and MMC partners to formalize the details at we proceed through this process. MMC and their partners seem to be willing to accept suggestions that are being presented. We would suspect a written document would memorialize the traffic expectations for the MMC project.

Overall the Police Department would prefer a construction options that did not involve the closure of Congress Street, however the proposed plan seems to be the best option short of that.

Thank you.

Memorandum

Portland Public Works - Engineering

To: Jean Fraser, Planner
From: Keith Gray, PE – City Engineer, Jeremiah Bartlett, PE - Transportation Systems Engineer and Water Resources
Date: 2-23-19
Subject: 22 Bramhall Street_MMC East Tower & Visiting Parking (2017-289)

The following comments/concerns are in regards to the Level III Site Application prepared by Sebago Technics, on behalf of the applicant, Maine Medical Center, with last plan revision submitted on February 22, 2018. Please feel free to contact me with questions.

Construction Management Plan:

The applicant has proposed to close Congress Street for an eight (8) duration for the vertical expansion construction of the existing visitor parking garage. As presented today, the Department of Public Works, along with Kleinfelder, has reviewed the constructability options and determined that the closure is the best approach to mitigate long term community and safety impacts. It should be noted that we have reflected that this closure may well have been avoided with strategic planning from the applicant prior to Site Plan submission but that time has passed and we are moving forward with the closure.

We have reviewed the draft MMC detour plan associated with the Congress Street closure and offer the following comments:

1.) Weymouth Street is in poor condition, and with the significant increase in traffic, including heavy vehicles, the infrastructure is not capable of accommodating additional traffic. In order to maintain a tight construction schedule, the applicant shall pursue a two-step course of action.
    a. First, a short-term paving/patching project shall be considered to stabilize Weymouth during the course of the detour project.
    b. Second, a more comprehensive outcome shall be constructed post detour, which would ideally address the unusual crown of the road. As with any paving project done in Portland, ADA considerations shall be part of the outcomes.

2.) Paving conditions for Forest and Boynton Streets shall also be investigated and any interventions/mitigation identified for those streets included in outcomes.

3.) More detail needs to be provided on the temporary traffic signal to be located at Weymouth Street and Park Ave. The signal shall meet all state and federal requirements for operation, and accommodation of pedestrians. Details shall be provided on timing and potential time of day or direct coordination with adjacent signals at St. John Street and Deering Ave. The location shall be monitored to determine operation and a count completed after two weeks to determine if the location is

operating as intended. Consideration shall be given to whether this location would likely make a more permanent signal location candidate.

Combined Sewer Overflow Comments:

The City's ordinance does require the Department of Public Works approval prior to stormwater discharge connections into a storm sewer, combined sewer or natural outlet. The Department, through the development review process, has historically requested that new developments and redevelopments make connections to the separated storm drain systems when they are present or at a minimum provide separate service lines to the street when a combined system exists. There is a separated storm drain available in Gilman Street and we would request that the applicant tie into the storm drain due to the City's ongoing requirements and efforts to mitigate CSO activity. The City's Chapter 24 Sewer ordinance states:

"(c) Stormwater shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the Department of Public Works. Industrial cooling water or unpolluted process waters may be discharged, on approval of the Department of Public Works, to a storm sewer, combined sewer or a natural outlet. (Ord. No. 263-96, 5-20-96; Ord. 129-14/15, 1-21-2015, Effective 1-1-2016)"

The applicant's visitor parking garage facility drains into a combined sewer. This combined sewer is tributary to the City's most active CSO, CSO location #17, which overflows at the intersection of Marginal Way and Preble Street. The City is under an EPA mandated Long Term Control Plan to mitigate CSO activity around the City. The City's current CSO permit focuses on reducing CSO activity in the Back Cove South sewer service area. The CSO # 17 is located in this target service area.

It should be noted that the City is currently in the process of conducting a City wide sewer inflow and infiltration study as required by the EPA. One of the outcomes of this study could result in the City to look at changing the City Ordinance to require private property owners to separate stormwater flows out of the combined sewers when a separated storm drain is available in the street, regardless of development.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Helicopter Pad Relocation Noise Studies

1 message

Jean Fraser <jf@portlandmaine.gov> Fri, Feb 16, 2018 at 4:40 PM
To: "Alexander M. Green" <AGreen@mmc.org>, Will Conway <wconway@sebagotechnics.com>
Cc: "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>

Al

I appreciate that the recent Memo (attached 1-2-18) summarizes the outcome of the recent noise studies, but as noted in the PB Memo we would like to document the data comparing helicopter sound levels currently at a given location compared to what they are predicted to be (at the same location) with the relocated helipad, especially given the likely increase in the numbers of flights.

While I appreciate that the Russell Acoustics, LLC May 2017 sound study (attached) used the same locations as the original study, it does not include this data for all of these locations.

Could you please send the recent data that shows the ambient, helicopter sound (based on the current helicopter pad location), and predicted helicopter sound (new location, main pad) for each of the nine CP locations so that we can see the data that underpins the submitted summary. Could you please send that data in a table linked to the plan of the locations.

Also I have a couple questions having looked at the studies conducted in 2004/2005 and the associated reviewer comments:

- The original study conducted by consultants for MMC in 2004(by Resource Systems Engineering) noted that the location of the helipad on the top of the employee garage was beneficial regarding noise as this location would "...enable the existing and proposed buildings to block sound propagation to noise sensitive areas to the west and south." Could you ask your consultants to advise as to whether relocation of the helipad (albeit higher) out from "behind" those buildings will increase sound levels in different community locations than were studied in 2004.

- The City's sound consultant at that time (2004) noted that the direction the helicopter was facing when on the pad could make a significant difference in the sound levels nearby. Could you please confirm that the orientation of the helicopter on the relocated pad will be the same as for the current pad.

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MEMORANDUM

TO: City of Portland – Planning Board

FROM: Jim D. Wentworth, P.E.

DATE : February 21st, 2018

SUBJECT: Maine Medical Center – Constructability Review

Kleinfelder was tasked by the City of Portland's Planning Department to assist in the constructability review for the vertical expansion of Maine Medical Center's existing visitors parking garage.

Maine Medical Center along with Turner Construction have submitted a construction option matrix to the City of Portland with five construction options outlined which have been investigated as part of this project's development.

These options were the starting points for Kleinfelder's review; and ultimately upon review were the *clear choice options* that this type of project and site would warrant. In order to develop a project of this magnitude, it is necessary to vet out construction options from each side of the parking garage (North, South, and East, and West, as well as from within the garage, as is shown in the Cast in Place Option 1. An additional Option 6 was added which investigated the construction from the East end of the visitor garage.

As you will see further in this memo, Option 4 is the recommended option by Kleinfelder and is also the favored option of Maine Medical Center. This memo summarizes the review by Kleinfelder of the five options presented, but also investigates some additional pertinent data Kleinfelder has associated with these options.

This site poses a challenging and congested construction site, and many factors such as overall public safety (*general public, hospital staff, and contractor staff*), traffic movements, construction type (*parking garage*), construction equipment and capacities (*crane*), and duration (*schedule*) all play a role in a successful project.

Documents that have been reviewed as part of this effort include:

- Visitor Garage Construction Option Comparison (Matrix)
- Maine Medical Center Construction Management Plan -Traffic and Road Closure studies: January 2nd, 2018
- Maine Medical Center Construction Management Plan - Logistics Plans and Studies-East Towers and Visitors Garage, Central Utility Plant: Last update February 9th, 2018, pages 1-29

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- Maine Medical Center/Turner – Construction Management Plan-East Tower, Visitor Garage, Central Utility Plant. Last Updated February 13th, 2018 for PB February 27th, 2018
- 440 Ton Leibherr Crane Chart and Boom/Jib Configuration: February 5th, 2018
- Email from Dominic Gagnon with data assumptions for Option 1: CIP, and Option 2: South side retaining walls: February 9th, 2018
- Submitted Congress Street Cross Section with Crane Layout: February 12th, 2018

The following are each option listed with constructability comments and recommendation:

Option 1- Cast in Place (CIP)

- Cast in Place (CIP) concrete is not a preferred nor typical construction technique used in parking garage construction due to concrete quality control, longevity of structure, time/schedule, and overall increased cost. The existing MMC employee garage is a cast in place structure and has these maintenance and longevity issues. (i.e. efflorescence, concrete spalling, resistance to deicing chemicals)
- SGH Engineering has determined that the overall structure was designed to handle an additional 3 stories at approximately 80-85 lbs. per square foot. Kleinfelder was not tasked to perform independent calculations to verify these loading parameters. However, in our engineering judgement, a CIP structure could likely weigh more than a precast structure based on additional reinforcing steel needed for post tensioning along with additional concrete in the post tensioning anchorage zones. This is solely based on engineering judgement and not calculations.
- For a CIP structure, the existing visitor garage interior and exterior support columns and walls would most likely also need to be reinforced in order to handle any additional weight that a CIP structure and the support formwork/falsework would pose to the structure.
- Without performing and bearing capacity calculations, it is likely that the existing foundation and support soil that exists under the building would need reinforcement to hold a CIP type structure.
- Based on overall constructability for these long Double Tee beams the following are factors that would add cost and duration into a CIP type structure:
    - Forming, concrete placement, concrete curing for Double Tee type beams would be labor intensive which would add cost and affect duration of project schedule.
    - ***A crane would still be needed to perform the work for lifting formwork materials, steel tendons, concrete, and other various construction materials, therefore impacts to traffic to Congress Street would still occur frequently. It is our opinion, without fully developing a full construction schedule for a CIP type structure that the duration and temporary impacts to traffic, associated with CIP construction, would cumulatively be more than the 8 weeks of associated shutdown currently proposed with Option 4. Due to CIP concrete curing and forming this type of project could take up to 4-6 months to complete.***
    - Post tensioning the tendons, grouting, and equipment/ jacks to perform this post tensioning in place would be needed. A post tensioning procedure would be very difficult to perform with accuracy in this type of location and environment. (i.e. Staging of post tensioning jacking equipment, worker falsework)

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- There is a high probability that the entire parking garage would need to be empty during this type of construction operations based on temporary falsework and shoring needs to cast the concrete in place would be from a bottom up approach. (All floors to be braced from ground up).

Based on the information provided and reviewed, ***Option 1 is not recommended.***

Option 2- South Side Approach

- Overall Safety of Area: The location of the Emergency room entrance/exit is located on the South side of the visitor parking garage and therefore general *public safety and emergency access* of this public service would be extremely limited if this option was chosen.
- Two retaining walls exists along the South side of the existing parking garage. Kleinfelder did not have access to as built plans of these two retaining walls nor was scoped to perform any structural check calculations on these two walls.
    - Based on the design loadings, per email of Dominic Gagnon February 9th, 2018 per SGH Engineering; the retaining walls as designed assumed a vertical surcharge pressure in the order of 500 pounds per square foot for the wall. It is reasonable to state that the 440 T Liebherr crane as proposed, with a frame weight of approximately 94,800 lbs. and allowable counterweight of 341,800 lbs. distributed over a total track area of 240 square feet (3'11"x30'8" each track), without accounting for the boom and precast units, has the ability to produce in excess of *1800 lbs. per square foot of surcharge*.
    - A slightly smaller crane than the 440T Liebherr could be used from this South side of the garage; however surcharge pressures of 1500-1800 lbs. per square foot would not be unreasonable to experience for the crane size needed to lift the 30 ton precast units.
    - MMC and Turner investigated a 600 Ton hydraulic crane for this option, also this crane was also ruled out due to wall surcharge capacity and overall site logistics.
- Temporary shoring of these two retaining walls is not a feasible option based on their location. Any type of shoring such a sheet pile type wall, soldier pile wall, or pile platform would need crane access to perform the temporary work as well. It is not known, but assumed, that there are buried utilities in this section of roadway which would complicate any pile driving or shoring processes.
- There is limited *safe area* to operate any type of crane swing radius on this South side of the building. This area is terraced with a retaining wall. The total area is approximately 120 ± feet by 100 ± feet. A safe area for a crane to operate would be a minimum 60± feet by 60± feet which is not available.
- Overall staging of materials in the area on the South side would be limited.
- Delivery and access of precast units (85' long truck) to the South side would be limited based on turning movements associated with street configurations, on street parking, and utility pole locations around the area.

Based on the information provided and reviewed, ***Option 2 is not recommended.***

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Option 3- North Side Approach, One lane

- Congress Street is approximately 43’9”± curb to curb based on cross section provided by Turner.
- The sidewalk abutting the visitor garage is approximately 10’6”± in width.
- The sidewalk on the North side of Congress is approximately 11’ ±in width.
- The proposed 440 Ton Liebherr Crane is approximately 45 feet in length from front of track to back of counterweight. This crane configuration takes up the majority of the roadway and overhanging 2-3± feet of the sidewalk.
- The Main boom on the crane cannot operate totally vertical and will use all of the available 10’6”± sidewalk area to face the garage.
- There is no available *safe width* for emergency or passengers vehicles to travel through the area based on the crane operating parameters.
- There is limited available width (7-8 feet ±) for protected pedestrian traffic along the North sidewalk.

Based on the information provided and reviewed, ***Option 3 is not feasible or recommended.***

Option 4- North Side Approach, Two lane (Road Closure)

- Safety-All work is completed in closed section of road, there will be no vehicular traffic present in the area. Overall this option is the safest for general public and contractor based on constructability.
- This option has similar site and crane parameters as Option 3, but calls for a shutdown Congress Street for 8 weeks.
- The 440 T Liebherr crane configuration is needed to reach up and over existing parking garage for lifting and reach capacity reasons to install the 30 Ton precast Double tee beams.
- Two other type of cranes where investigated: Mobile Hydraulic, and Tower Crane.
    - Each crane has limitations:
        - A Tower Crane, which is typically used in building construction, does not have the 30 Ton capacity for the distance needed to lift the precast beams and set them into place.
        - A mobile crane does not have the 30 Ton capacity to reach up and over the building.
- The 440 T Liebherr crane will have two sections of crane boom: Main Boom-161 feet, Jib-161 feet. (320 ± feet).
- A 300 foot length of Congress from pedestrian skybridge to Weymouth is necessary to assemble the crane along with its boom and jib.
- A single phase power utility line exists at corner of Congress and Weymouth which will not affect boom assembly.
- There is no additional street or sidewalk width with this crane configuration to safely use this option with emergency vehicular traffic.
- Delivery of the 85 foot long precast units for this option from Weymouth to Congress is feasible.

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Based on the information provided and reviewed, ***Option 4 is recommended.***

Incentive/disincentives for allowable closure days (User cost/day), liquidated damages for end dates (Cost/day), traffic detours and signage, are all parameters that can be employed by the City to minimize the closure efforts with Option 4.

Option 5- Crane Placed in vacant Employee parking garage area

- This option poses construction scheduling delays and logistics, based on current schedule of additions onto visitor garage complete (2018), and new East Tower heliport complete (2019).
- The new employee parking garage on St. John would need to be constructed (2019) prior to demolition of existing employee garage.
- A crane with 480 ± lineal feet of boom/jib would be needed to reach up and over elevator/stairwell that currently exists between two parking garages.
    - This is an additional ***160 lineal feet*** of boom/jib added to the current 440T crane configuration proposed.
- Safety of general public working over ***LIVE*** stairwell needs to be taken into consideration.
- Crane assembly along Congress has limitations on South side of pedestrian skybridge:
    - Approximate 500 ± feet would be needed from pedestrian skybridge into Valley Street to assemble crane, boom and jib (480 ± feet from bullet above)
    - Closure of Congress to assemble crane.
    - Utility line interferences and needed utility relocations: Three phase power lines at Congress and Forest, Congress and Gilman, Congress and Valley.
    - Hospital main electrical feed from Gilman

Based on the information provided and reviewed, ***Option 5 is not recommended.***

Option 6- Crane Placed on East side of Visitor garage

- The existing medical building that was constructed within the last 10 years and is located on this East side of the visitor parking garage would need to be demolished and rebuilt with this option. This would have substantial costs with no value added.
- This option also would pose construction scheduling delays and logistics, based on current schedule of additions onto visitor garage complete (2018), and new East Tower heliport complete (2019).
- The steep slope in this location would case a need for temporary retaining wall to be built to support Crescent Street.
- A similar size Crane as the Liebherr 440 Ton crane would be needed as in Option 5 to construct the addition.

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- Impacts to traffic on Congress Street would still occur due to building demolition, crane assembly/disassembly, and delivery of precast units, which would in cumulative duration would account for more than the eight weeks for Option 4.

Based on this information, **Option 6 is not recommended.**

Schedule Overview

The overall construction schedule of an 8 week closure of Congress Street was reviewed and is listed below as *Schedule 1*. This schedule allows for 8 precast pieces set per day. It is realistic that 10 precast pieces may be set a day or even 12 pieces. It is also realistic that construction delays such as deliveries and/or adverse weather conditions may cause delays and allow only 6 pieces to be set per day.

Two other schedule scenarios were investigated based on 8 pieces per day.

Schedule 2 assumes a 6 days a week schedule and resulted in a 7 week closure.

Schedule 3 assumes a 7 days a week schedule and resulted in a 6 week closure.

It is recommended that the 8 week schedule be allowed, but set with allowable penalties for not opening on time.

It is not recommended to go to a 7 day work week as shown in Schedule 3. Consideration needs to be given in any schedule that as days get added to the work week there exists safety concerns with rested employees, decreased efficiency, a work area increase for complacency, as well as increase in cost premiums.

- *Schedule 1*
  - 8 week -5 day/week-8 pieces (assumed) per day-proposed
- *Schedule 2*
  - 7 week -6 day/week-8 pieces per day- Open by June 18th-19th
- *Schedule 3*
  - 6 week-7 day plus holiday-Open by June 8th-9th

In conclusion, taking all the project parameters into consideration:

- Safety to the overall general public
- Existing building and wall capacities
- Crane capacities and locations
- Schedule duration
- Impacts to Congress Street

Closing Congress Street for an 8 week duration is the recommendation that Kleinfelder fully supports and would have proposed if developing this type of project independently for a client. It is recommended that the City work with Maine Medical Center to tighten up the schedule, as previously mentioned in this memo, with the use of incentive/disincentives, liquated damages associated with possible street damage, proper detour signing, and proper public outreach campaign.

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Maine Medical Center
MaineHealth
centered around you

Get on Board!

Maine Medical Center

Transportation Demand Management Program
Tuesday, February 13, 2018

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Introduction

Purpose

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees.

Maine Medical Center

Maine Medical Center is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

Incorporated in 1868, Maine Medical Center is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people – with approximately 2,000 of those employees residing in the City of Portland. Maine Medical Center's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

Our care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout greater Portland and the southern Maine region.

Maine Medical Center is the flagship hospital of MaineHealth, a 12-member health system touching central, southern, and western Maine and eastern New Hampshire. The collaboration of MaineHealth's members allows greater availability to community health improvement programs, access to clinical trials and research, and shared electronic medical records.

The strength of the health system, anchored by Maine Medical Center, enables its members to invest in shared programs and services that improve the quality of care while reducing costs whenever possible. As a nonprofit institution, Maine Medical Center has provided more than $200 million annually in community benefits, delivering care to those who need it, regardless of their ability to pay.

MISSION, VISION AND VALUES

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for its community
- Educating tomorrow's caregivers
- Researching new ways to provide care

It proudly carries its unique responsibility as Maine's leader in patient care, education and research. MMC is dedicated to the traditions and ideals of not-for-profit healthcare. It provides care to all who seek it.

MMC's efforts to execute its Mission are aimed at achieving a simple, yet powerful Vision: "Working together our communities are the healthiest in America."

MMC is guided by a set of Values, helping to meet and exceed the expectations of those it is privileged to serve. MMC's Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

MMC Facility Planning

Maine Medical Center recently announced a project that will expand and modernize much of its patient care facilities. Over the next five years Maine Medical Center plans to spend $512 million on the construction, renovation and expansion of inpatient and outpatient facilities and services. The majority of this investment will occur at MMC's main Bramhall campus.

Every aspect of this project is designed around the needs of patients. The project will optimize current bed capacity at the state's largest hospital and calls for increasing the number of single rooms available to patients as well as well replacing surgical and treatment areas with ones that conform to 21st century standards. About $50 million of the total project cost will be invested in other outpatient facilities through the hospital's multi-specialty medical group organization - Maine Medical Partners.

The project also involves the replacement of the largest parking garage on the campus, a 1,200-space structure used by employees that sits along Congress Street. The need to replace that garage creates an opportunity to reorient the hospital's main entrance to Congress Street, one of the city's main thoroughfares. The hospital's current main entrance faces Bramhall Street in the city's largely residential West End.

The project is organized into three separate site plan descriptions:

- Site Plan #1:
    - Two floor addition to the East Tower housing 64 private universal rooms.
    - Relocation of the helipad which is currently on the employee garage to the top of the East Tower. Patients arriving via the helipad will have a direct vertical connection via elevator to MMC's Emergency Department and trauma services on the first floor of the East Tower.
    - Three floor addition to the visitor garage on Congress St.
- Site Plan #2:
    - New employee parking garage on St John St that will include over 2,400 parking spaces. The location of the new garage is roughly a quarter mile from the main campus and MMC will encourage employee to walk during nice weather.
- Site Plan #3:

- Removal of the current employee parking garage on Congress St.
- Construction of a new hospital tower with 64 private universal rooms, 19 procedure rooms, and space for an additional 32 private universal rooms. This building will also include a new hospital entrance and drop-off area with direct connection to the visitor garage.

The project is expected to be completed in the fall of 2022.

Commitment to TDM

MMC has a long-standing history of promoting health outside of and within its organization. The medical center developed a Transportation Demand Management (TDM) program in 2008, becoming one of the first in Maine to publish such a plan.

In 2008, MMC became one of the first in Maine to develop an independent TDM program.

Known as "Get on Board!," the program supports alternative commuting options such as carpool, mass transit, bicycling, and walking. MMC also engages in an extensive campaign to educate employees about the benefits of alternative modes of transportation and the Get on Board! program. Total enrollment in Get on Board continues to increase year after year.

Over the years, MMC has added elements to strengthen the program's offerings. In 2015, for example, MMC installed additional bicycle parking in its South Parking Lot to enhance cycling access to the main areas of the campus.

The following Plan documents MMC's current TDM efforts, planned program enhancements, as well as new TDM programs. The Plan is intended to serve as a living document. Monitoring reports will be submitted annually to the City's Planning Department.

While MMC encourages sustainable commuting practices across its organization, this TDM Plan applies to MMC's main campus in the west end of Portland, ME, where the majority of MMC's staff is located. Presently, the main campus has approximately 4,400 employed individuals on any given week day. Maine Medical Center employs more than 8,000 people throughout Southern Maine, roughly 6,000 of MMC employees work at the Bramhall Campus.

Context

Land Use

CURRENT

MMC's Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress St —Portland's main thoroughfare that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.

FUTURE

The area surrounding MMC is identified in the City's Comprehensive Plan as an area with transformational potential. MMC's TDM plan aligns with this future vision. As part of the project, MMC will add a new entrance to Congress Street and envisions providing active ground floor uses in new buildings. This change will heighten the level of pedestrian activity on Congress Street, and serve to promote the corridor.

Parking

CURRENT SUPPLY

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 850 spaces are available for public use by patients and visitors, and 2,027 parking spaces are subscribed to staff and physicians.

TABLE 1 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS 850 patient / visitor 1,538 employee spaces	Employee Garage	0	1,274	1,274	Owned
	Patient / Visitor Garage	480	0	480	Owned
	South Lot	370	0	370	Owned
	887 Congress (Forest St Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS 489 employee spaces	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The Forest St Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

CURRENT DEMAND

MMC has continued to witness demands on the existing parking supply intensify due to increased patient volumes and higher acuity patients with longer lengths of stay. Under current conditions, MMC's staff parking system typically operates at capacity during the weekday daytime hours. When off-site, remote staff parking facilities reach capacity, staff is directed to park on-campus in the Congress Visitor Garage. Some staff members independently choose to park nearby utilizing neighborhood on-street parking, although this is discouraged by MMC.

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. The counts indicate that the parking system typically operates at or above capacity during weekday daytime.

The observed data reveals that peak parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,122. This number is 4.4% below the expected parking demand (3,264) for a suburban hospital of MMC's size, according to Institute of Transportation Engineers (ITE) parking demand projections. The difference equates to 142 parking spaces.

VHB compared MMC's parking ratio per licensed bed to other hospitals in New England and nationally. MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed is low compared to peers. The midpoint patient and visitor parking space/licensed bed ratio among MMC peers is 1.87. It is also important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 344 spaces, or 40%, to achieve a similar beds-to-spaces ratio as its peers. MMC's 2,027 staff parking spaces equate to 3.18 parking spaces per bed is also low when compared to other peer institutions. The midpoint employee parking space/licensed bed ratio among MMC peers is 4.38.

Based on these comparisons and the onsite usage observations, VHB estimates that the MMC parking demand exceeds patient and visitor supply by roughly 350 and exceeds employee parking supply by roughly 200. Therefore, the average weekday parking demand in 2017 is:

- 1,200 for patient and visitor parking
- 2,250 for employees

The employee parking demand per Bramhall campus employee is roughly 0.375.

FUTURE

Looking towards the future, MMC will undertake a project to modernize its Bramhall campus. The project is detailed above and is anticipated to increase patient/visitor and employee parking demand. This demand will be offset by TDM methods described later in this document, along with expansions in its campus parking capacity.

Data Collection

Currently, MMC has a limited transportation mode data collection system. MMC recognizes the need for an improved system. MMC employs a large number of individuals and tracking their commute behaviors will require a system that relies on automatic data collection wherever possible. MMC is exploring options to improve data collection such as a card reading system similar to EZ-PASS.

Transit

MMC's main campus is located in a section of the City that is served by the Greater Portland Transit system (METRO), which has multiple routes that stop within walking distance of the Medical Center. The campus is also served by the ZOOM turnpike Express route operated by ShuttleBus-ZOOM.

The METRO routes accessible from the Bramhall Campus have varying service spans with buses generally arriving every 30 to 60 minutes. They provide connections to the nearby Portland Transportation Center (PTC) and the Downtown Hub, which are served by additional METRO and regional bus lines. The PTC also serves as the local connection to Amtrak's Downeaster service that runs along the coast between Boston and Brunswick. The closest bus shelter to the hospital is along Bramhall Street, between the Dana Health Education Center and the South Entrance. This stop is served by METRO Route #8, which provides connections to other parts of the peninsula. There are two other nearby bus stops on the corners of Congress St and Gilman St and Congress St and Weymouth St. These bus stops are served by routes #9, #1, METRO's express service BREEZ, and the ZOOM turnpike express. For the most up to date METRO stops and routes, go to www.gpmetrobus.com.

FIGURE 1 Map of Existing Transit Routes and Stops

Bicycle and Pedestrian Infrastructure

MMC understands that all campus users walk at some point to arrive at their MMC destination. To enhance pedestrian accessibility, MMC maintains its network of campus pathways and public sidewalks adjacent to campus. Similar to other medical centers of its size, MMC provides elevated, covered, and temperature-controlled walkways between its parking garages and key campus circulation corridors.

The bike facility network surrounding MMC's campus is fragmented and lacks bicycle infrastructure as illustrated in figure 6 below. In addition, the hilly nature of the Western Promenade impacts bicycling and walking in this area.

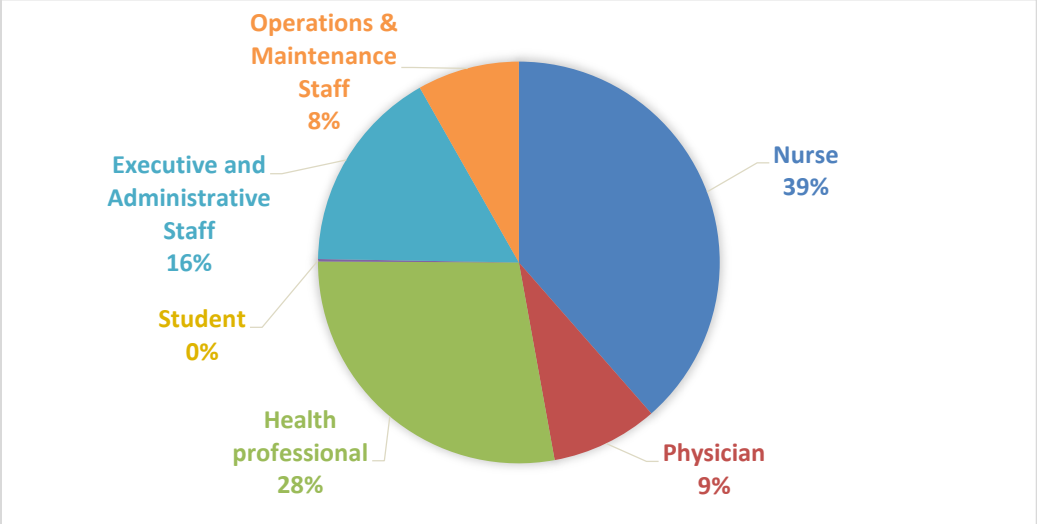
Current Travel Behavior

As part of its efforts to monitor and enhance the Get on Board program, MMC recently conducted a survey of its employees to understand how they commute, any barriers to using alternative transportation, and their interest in other TDM initiatives. The Medical Center also analyzed employee residence data using geospatial analysis tools to better understand employee commuting patterns. The findings from the survey and analysis are summarized below.

Commuting Survey

Approximately 1,600 MMC employees participated in the voluntary survey, administered in February 2017 – nearly a 40% response rate. Approximately 81% of the respondents work at the Bramhall campus. The respondents included a diverse spectrum of employees including operations and maintenance staff, students, executive and administrative staff, health professionals, nurses, and physicians. Figure 2 illustrates the various roles held by the survey participants.

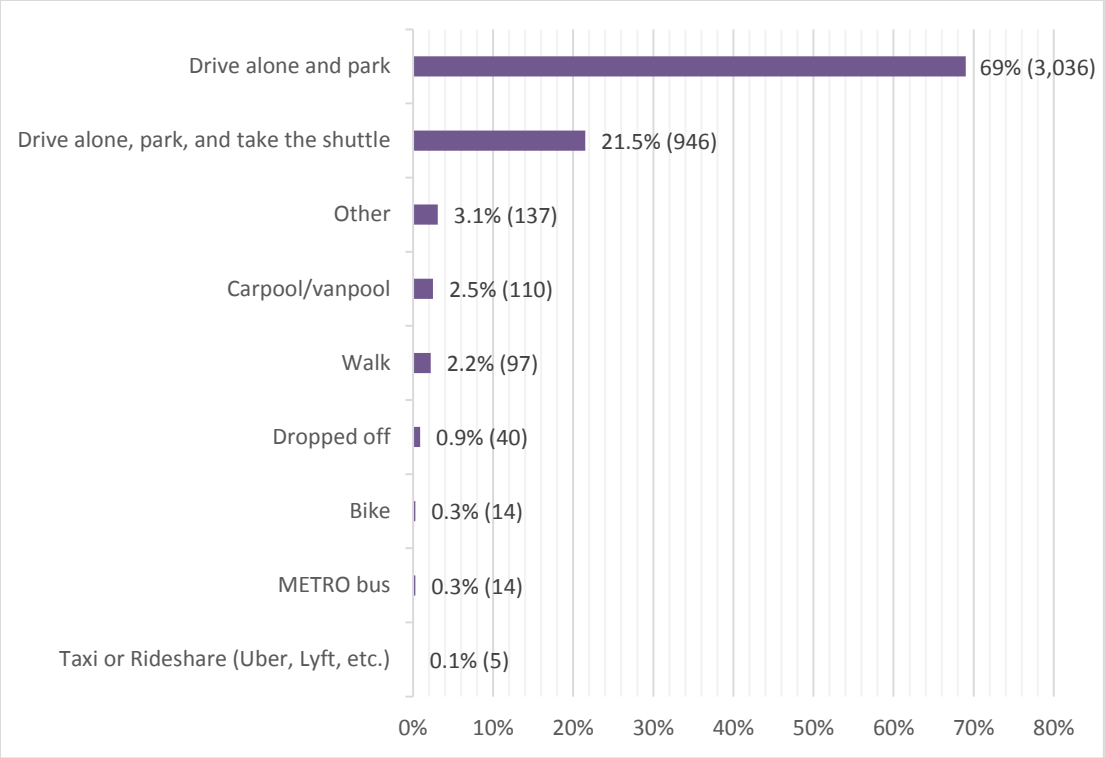
FIGURE 2 Survey Respondents by Hospital Affiliation



The survey found that the majority of employees drive to campus. Among alternative modes, carpooling was the most used mode of travel, followed closely by walking. Figure 3 illustrates the commuting modes of MMC employees.

FIGURE 3 Estimated Employee Travel Mode To and From MMC on an Average Workday

(4,400 estimated employees on campus per average weekday)



The survey also revealed that among Get on Board enrollees who participate in the program, carpooling benefits were the most used benefits, followed by biking benefits and transit benefits.

As the Get on Board program evolves, MMC intends to administer a commuting survey bi-annually to track travel trends and to gauge the effectiveness of specific initiatives. The information collected will enable MMC to develop informed, data-based enhancements to Get on Board, providing a greater prospect for program success.

Geospatial Analysis

MMC analyzed the residence locations of its employees to understand the commuting patterns of its employees. The analysis showed that approximately 27% of employees live within a 3-mile radius and approximately 73% of employees live beyond a three mile radius of MMC (See, Figures 4 and 5). Three miles is generally considered a reasonable biking distance by industry standards.

FIGURE 4 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

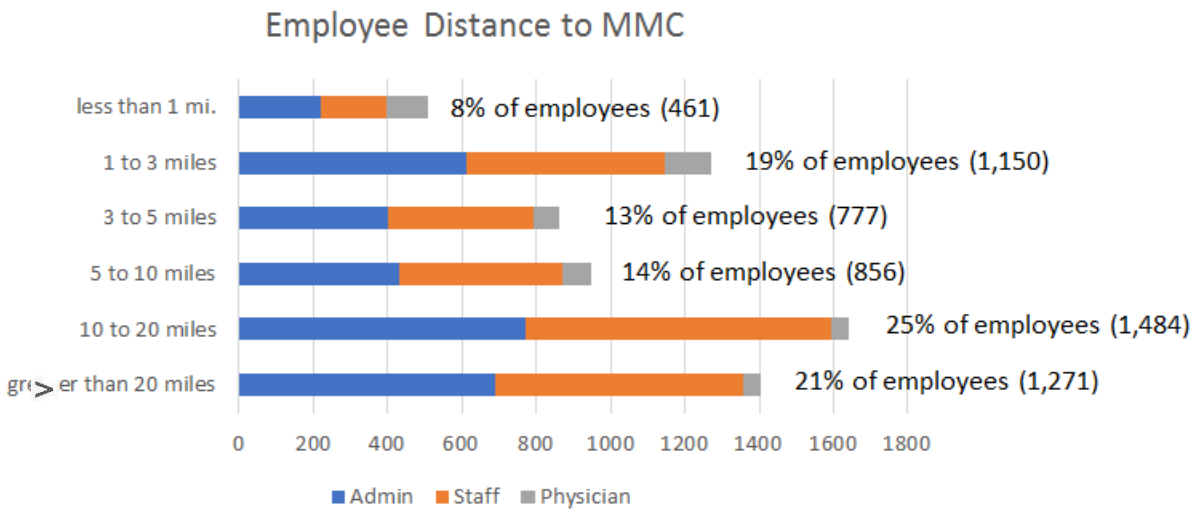
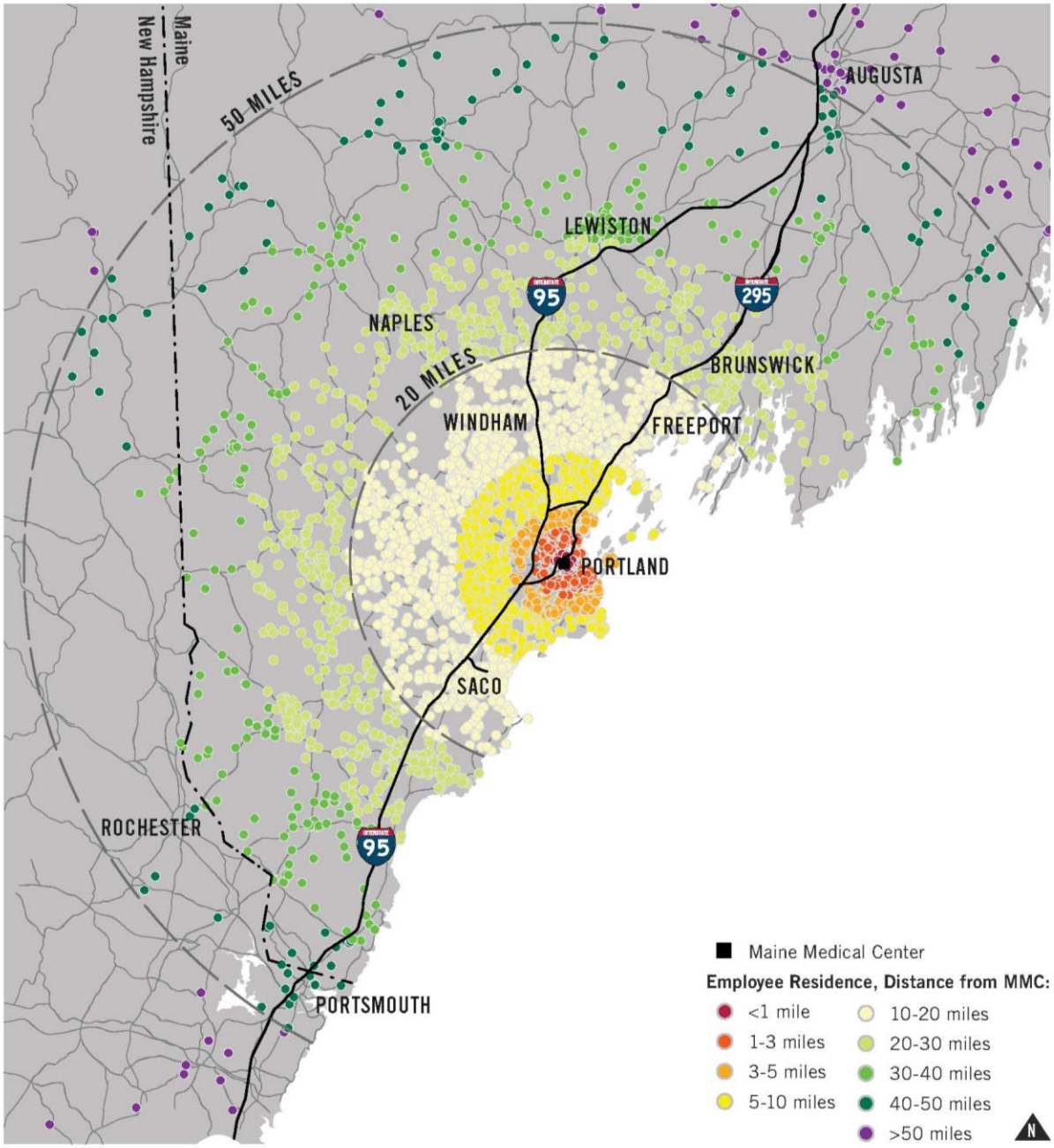


FIGURE 5 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



Program Goals

The goal of the program is to reduce employee use of single-occupancy vehicles as they commute to work at MMC's Bramhall Campus. At this time, MMC has determined the best way to measure a reduction in employee single-occupancy vehicles is to monitor employee parking demand per employee.

$$Employee\ Parking\ Demand\ Per\ Employee\ = \frac{Estimated\ Employee\ Parking\ Demand}{Bramhall\ Campus\ Employees}$$

As the program grows and evolves with time, new goals and metrics may be identified.

VHB conducted a study to determine the existing parking demand for employees (refer to the Context section of this document). This study will serve as the baseline for future reduction targets

Peak parking demand at the Bramhall campus is 4.4% below the expected parking demand for a suburban hospital of MMC's size.

The Get on Board program aims to reduce single-occupancy vehicles on MMC's Bramhall campus through effective TDM measures. These measures include a parking "cash out" program, discounted transit fares, premium parking for carpoolers, and bicycle parking and facilities, among others. Additional details about the program elements are described in the next section. MMC believes the program has had a positive impact on employee travel behavior and has contributed to reduced parking demand over the years.

Based on a review of federal census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 65 individuals who currently drive to MMC could be shifted into alternative modes of accessing the campus over 5 years. This represents an additional 2% reduction from the ITE parking demand projections.

In consultation with the City, MMC has established the following aggressive short-term, mid-term, and long-term trip reduction goals. These targets are applied to the 2017 baseline identified in the Context section of this document.

	2017 Baseline	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Targeted Reduction		2%	4%	5%
Employee Parking Demand Per Employee	0.375	0.368	0.360	0.356

MMC hopes these targets will be achieved through the strategies outlined below. It will endeavor to reduce the number beyond the target identified above through further enhancements or program expansions in the coming years. MMC will continue to monitor parking demand and needs at the Bramhall campus, and re-evaluate its program goals after the initial five year period as needed.

Parking and TDM Strategies

Current Get on Board Program Elements

Get on Board is advanced through a range of incentives and the provision of services to support alternative modes. The individual program elements are described below.

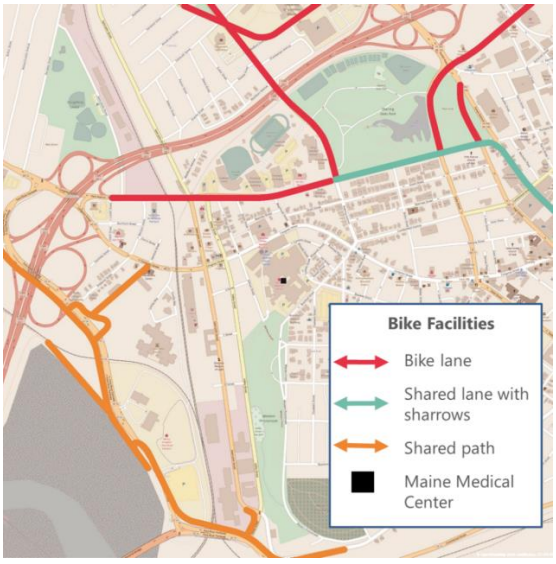
Biking

The MMC campus is located in close proximity to existing and planned routes in the City of Portland's growing bicycle network as shown in Figure 6. MMC offers a variety of bike facilities to make bicycle commuters feel welcome and safe. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on its main campus. Three new bicycle racks were added in the vicinity of the Bramhall entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus. Bicycle commuters also have access to additional on-site facilities such as showers and lockers.

Beyond on-campus facilities, MMC is an advocate of the City of Portland's Bikeway Network Plan, which will provide bicycle infrastructure on streets adjacent to campus to connect bicyclists with existing and shared use paths.

The City of Portland's latest Comprehensive Plan proposes transforming the streets surrounding MMC into "neighborhood byways." This type of improvement would serve to encourage walking and biking for employees who live within a reasonable distance of the hospital. MMC also supports ongoing collaboration with the City of Portland, local and regional transit agencies, and neighborhood and advocacy organizations to explore opportunities to improve pedestrian, bicycle, and transit infrastructure and networks serving the Bramhall Campus. The City of Portland has plans to expand the bike lanes illustrated in Figure 6 and add a Neighborhood byway.

FIGURE 6 Bicycle Network Surrounding MMC as of 2017



Mass Transit

Under Get on Board (GOB), employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently on campus. This is a clear demonstration of MMC's commitment to making the TDM Plan work for its employees and for the City of Portland. Table 2 lists the Greater Portland METRO Bus and Shuttle-Bus Zoom discounts provided through "Get on Board!"

TABLE 2 MMC Transit Discounts

	Regular Price	MMC Sale Price	% Discount
METRO	$13.50	$8.00	60%
S. Portland	$13.50	$8.00	60%
Zoom 10 Ride	$39.00	$29.60	76%
Zoom Monthly	$100.00	$84.50	85%
Zoom Quarterly	$260.00	$197.50	76%

The *Portland Peninsula Transit Study* [1]established several strategies for improving the utilization of transit in Portland. These strategies involved expanding the transit service to development areas, creating more direct connections, and increasing service frequency to compete with drive-alone commute times. The *Portland Transportation Hub Link Feasibility Study*[2] also proposed a route alignment along Congress Street that would increase transit frequency near the hospital. These improvements, if implemented, would highly benefit MMC's campus population in light of the distance that most employees reside from MMC and the fluctuating nature of employees' schedules.

Carpool

Carpooling is the most popular component of the Get on Board program. Over half of program participants at the main campus take advantage of this benefit. Currently, employees participating in a carpool are given access to preferred parking in an area of the Employee Garage that connects directly to the Main Lobby on the ground floor of the hospital. MMC is planning to relocate its employee parking garage to St John St. Appropriate incentives that encourage participation in the carpool program have not been fully identified. However, until other incentives are identified, carpool participants will have preferred parking in the St John St employee garage.

Parking Cash Out

Presently, MMC operates a "parking cash out" program that offers employees monetary payments in lieu of a parking space. Program participants submit a form each week that certifies their use of alternative transportation during the week to commute to work. Upon receipt of a certification, MMC issues the employee a payment equal to the cost of parking at MMC's employee garage.

[1] Portland Transit Committee. *Portland Peninsula Transit Study* (2009), Retrieved from: https://www.portlandmaine.gov/DocumentCenter/Home/View/3383 .
[2] Portland Area Comprehensive Transportation System (PACTS). *Portland "Hub Link" Feasibility Study* (2015), Retrieved from: http://www.portlandmaine.gov/DocumentCenter/View/14793 .

MMC Shuttles

MMC operates employee shuttle services between the Bramhall campus and off-site parking locations Mondays-Fridays, 6:00 am to 11:00 pm. The shuttles include:

- MMC and off-site parking lots at 222 St. John Street and 993 Congress Street (Monday – Friday, 6:00 AM to 11:00 PM)
- MMC Bramhall campus and the 110 Free Street Office Building (Monday-Friday, 6:00 AM to 4:00 PM, every 20 minutes)
- MMC Bramhall and Brighton Medical Center (335 Brighton Avenue) (Monday-Friday, 6:00 AM to 4:00 PM)

MMC also provides shuttle service for contractors from the parking lot at 993 Congress Street to the hospital. The shuttles provide a predictable alternative to employees commuting between the three sites and serves to reduce vehicular traffic in and around MMC.

Scooters and Motorcycles

The campus provides a designated parking space for scooters and motorcycles on the first floor of the employee parking garage.

UCar

MMC currently dedicates a space in its Congress Street parking garage for a carshare vehicle, as part of the city-wide carshare program called U Car Share. The program allows members to borrow a car by the hour, providing employees who bike, walk, or ride transit to work with additional mobility for off-site meetings. Between mid-March and October of 2016, the UCar program had 96 reservations for a total of 4,105 miles.

TDM and GoMAINE website

The current employee GOB portal is linked to the GoMAINE Commuter Connections website, which is an alternative commuting program operated by MaineDOT. GoMAINE provides commuters with additional commuting resources and benefits that supplement those provided by MMC. These benefits include a carpool ride-matching program and a rewards program for participants.

Pay for Parking

MMC charges its employees no less than $3 per paycheck to utilize MMC parking. MMC employees are paid bi-weekly.

$$\$78 = \$3 \times 26\, pay\ periods$$

Skiing

In the winter months, some employees chose to leverage their wintertime hobbies to get to work.

Enhanced Get on Board Program Elements

Program enhancements are anticipated to occur within 1-3 years.

Walking

As part of the modernization of Bramhall, MMC will orient entrances to public streets and provide active ground floor uses where possible to encourage pedestrian activity.

Biking

MMC will continue to offer bike storage, bike repair tools, and on-site shower and locker facilities to commuters who choose to bicycle to work.

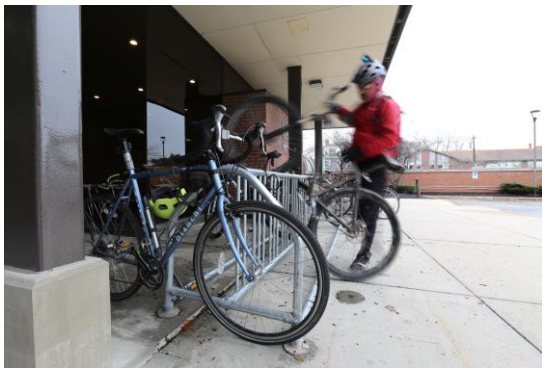
MMC will also continue its parking cash out program to incentivize current bicyclists. To support "interested but cautious" bicyclists, MMC will seek out local bicycling support organizations to host educational safety seminars and/or adult bicycling skills classes at least once per year on the Bramhall Campus. MMC will also promote rewards programs, such as GO MAINE and Bicycle Benefits, to further motivate increased bicycle commuting.

MMC understands that Portland Bikeshare, a non-profit organization with a goal to establish a bikeshare system in the City of Portland, plans to launch a bikeshare pilot in 2018. MMC will support this effort in the future.

MMC also recognizes the importance of safe and accessible infrastructure to active transportation. The presence of infrastructure can provide the sense of security that cautious bicyclists seek to spur a change in travel behavior. Additionally, as active modes become more widespread throughout the City of Portland, the visibility of walkers and bicyclists in the community can encourage greater participation

among MMC employees. MMC supports the City of Portland in its work to improve public rights-of-way and promote active transportation modes.

The City of Portland has proposed a bike lane on Congress St and a proposed Neighborhood Byway on Bramhall St. Both of these proposed improvements are immediately adjacent to MMC's Bramhall campus.



Carpooling/Vanpooling

Given the success of its carpooling program, MMC will continue to provide carpoolers with premium parking in the new employee parking garage. Similar to bicyclists, pedestrians, and transit riders, carpoolers will also continue to be eligible for parking "cash out" benefits. To facilitate the formation of carpools and vanpools, MMC will promote GOMAINE's carpool matching program to facilitate carpool matching.

MMC Shuttle

Once the new employee parking garage is constructed, MMC will redesign its shuttle route system to serve employees parking at the new site. The new parking garage will consolidate previously dispersed parking options for MMC employees. MMC anticipates the new route will reduce traffic congestion into and around the campus area.

UCar

Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar vehicle presently located in its Congress Street parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the additional UCar.

Enhanced Transit Subsidies

To further incentivize transit use, MMC will fully cover the cost of METRO bus tickets for employees who elect to use METRO as their primary mode of transit to the campus. If METRO ticket costs change, MMC will address program participation rates and work with METRO to find the best solution to support employees who wish to ride METRO. The type and amount of subsidy will depend upon ongoing discussions with METRO to enhance partnerships (see below).

Employees who use the METRO can apply for 100% reimbursement of METRO ticket costs. This project is administered on a reimbursement basis in order to minimize abuse of this benefit.

New Program Elements

In addition to enhancements to the initiatives described above, MMC intends to initiate complementary elements to ensure the program's continued success. The strategies are prioritized based on their implementation timeframe.

Short-Term (1-5 years)

The following actions MMC will pursue immediately (some are already underway) with the intention that all programs are fully operational within the 3-year time horizon.

Get on Board! Coordinator

MMC will hire a designated resource who will work to reduce employee single-occupancy vehicles on the Bramhall campus through the implementation, facilitation, and continuing sustainability of Get on Board. The coordinator will track the progress of the TDM program, oversee operations, and identify future opportunities to reduce single-occupancy vehicles on MMC's Bramhall campus by employees. The Coordinator will also be responsible for monitoring the progress of programs, data collection, and TDM program updates as required.

Way 2 GO MAINE

In October 2017, MMC participated in GOMAINE's Way 2 GO MAINE program for the first time. Way 2 GO MAINE is a 3-week business to business commuter challenge where employees log commute trips and earn prizes. In the first year participating, MMC ranked 2nd for large companies participating with 1,094 trips logged.

MMC will participate in the Way 2 GO MAINE B2B challenge in the future.

Improving Data Collection Capabilities

MMC will improve its data collection capabilities as described below.

Guaranteed Ride Home (GRH) Program

MMC will implement a Guaranteed Ride Home program to ensure that employees who regularly commute using alternative modes will have transportation in emergency situations.

Pay for Parking

MMC will evaluate employee parking fees in the mid-term. In evaluating future price, MMC will consider the prevailing market price for parking in the surrounding area at the time of implementation, as well as best practices in setting affordable parking prices in the region.

Long-Term Actions (5+ years)

MMC recognizes that the following program elements require partnerships with outside partners and agencies and, as such, will take longer to achieve. MMC has already laid the groundwork for all of these elements and will continue to pursue them in the coming years.

Regional Connections Partnership

Through its TDM Coordinator, MMC will seek to form partnerships with other major employers in the city, including the City itself, to foster a wholistic approach to travel management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland. Such collaborations would afford the opportunity to think regionally and help guide both employer provided or sponsored benefits as well as critical external resources such as METRO transit, sidewalks, and bicycle infrastructure. Opportunities to improve existing transit infrastructure would be a focus of any regional connections partnership.

Supporting Mass Transit Commutes

MMC intends to explore a partnership with the METRO to identify strategies for increasing MMC ridership, such as service updates and/or pricing agreements. Service updates could include changes in existing routes, new routes, or alternative route schedules. The formation of a partnership could be mutually beneficial, by providing METRO with feedback for increasing ridership while maximizing the usefulness of the transit system for MMC employees. As MMC formalizes its ties to other local institutions through a regional partnership, its collaboration with METRO could also extend to other employers.

Education and Marketing Strategies

MMC has a number of approaches to raise awareness about the benefits of alternative transportation and opportunities for participating in the Get on Board program. These strategies are integrated into various aspects of the organization's engagement with employees to reinforce the importance of TDM.

Sharing TDM Program Information

Information about the Get on Board program is available to all MMC employees via the MMC intranet. MMC's intranet is a place where employees routinely go for information. The Get on Board page provides information about all of MMC's TDM programs as well as links to the GOMAINE.org webpage.

MMC will develop and deliver information about the Get on Board program using communications best practices that are refined throughout the program's lifespan. Communications methods that are effective will be further refined while elements that are less effective will be reevaluated. Some examples of communication methods include:

- Introducing the program to new employees at orientation: MMC has shared information about the Get on Board program with new employees during orientation but will evaluate whether this is an effective way to educate new employees about the program. There are many factors to consider when providing information to new employees. The biggest factor to consider is the large amount of information shared during orientation.
- Social Media: MMC will use social media as an effective tool to communicate with employees about the Get on Board program.
- Get on Board Kiosks: To supplement information available on the Get on Board intranet site, MMC will designate locations to communicate information to employees in real time. One location under consideration is near shuttle stops.

MMC will commit to reorganizing information on its intranet site within the first six months following the hiring of the TDM Coordinator.

Get on Board Fair/Seminars

MMC will explore offering educational sessions about the importance of TDM and specific TDM methods such as walking, biking, or riding the bus. Educational sessions will rely on the expertise of local organizations specializing in alternative modes of transportation.

Get on Board Blitz

October is National Rideshare month and the same month of GOMAINE's Way 2 GOMAINE business to business challenge. In the future, MMC will explore ways to increase marketing of the Get on Board program during the month of October, potentially leveraging social media and internal communications vehicles, such as electronic newsletters.

Comprehensive Data and Goal Monitoring

MMC understands from its prior experience with TDM initiatives that achieving change is an iterative process that involves tracking the effectiveness of its programming and making mid-term adjustments if necessary to improve program effectiveness. MMC will collect and analyze data on a regular basis to monitor progress towards its TDM targets. The data would be collected through a range of instruments and will be used to make annual comparisons and to identify trends, and areas for growth. MMC will submit monitoring reports that include a summary of the data monitoring results, comparisons of the data to trip reduction targets, and adjustments to programs as needed.

Parking Utilization Data

MMC is exploring options to improve data collection in the new employee parking garage. The most likely option utilizes Easy-Pass technology to automatically collect information about the vehicles parking in the garage.

In addition, MMC plans to install a parking guidance system in the new employee garage, as well as a controlled-access parking system in the visitor parking garages. Together, these systems will allow MMC to monitor occupancy in each garage and to collect data regarding who uses the parking facilities and the temporal fluctuations in parking demand across various periods of time.

MMC will utilize this parking usage data to assess its parking arrangement on a semi-annual basis.

MMC has received feedback on numerous occasions about inappropriate use of its parking garages. MMC hopes to reduce the misuse of its garages in the future by implementing these monitoring and controlling systems.

Employee Survey

MMC conducted an employee travel survey in 2017 to understand employee commuter preferences, and it intends to administer the survey bi-annually going forward. The survey is administered electronically using a survey platform and will produce data that MMC (or a third party) can use to identify changes and progress from one period to the next. The survey will seek information about the following topics to gauge the effectiveness of initiatives:

- TDM program participation rates
- Individual program effectiveness
- Barriers to TDM use
- Changes in commuting preferences
- Marketing effectiveness

Reporting Frequency

MMC will submit annual monitoring reports that will include a summary of progress toward targets established in the TDM Plan.

Conclusion

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of employee single-occupancy vehicles at MMC's Bramhall Campus by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees. The program has aggressive short- and long-term goals. Success of this program partially relies on a cultural shift away from personal vehicles. Maine Medical Center is committed to implementing the programs outlined in this report and supporting the transition away from single occupancy vehicles.

Memorandum
Maine Medical Center

To:	Members of the City of Portland Planning Board
From:	Jeff Sanders, Chief Operating Officer, MMC
Date:	January 2, 2018
Re:	MMC Heliport

Thank you for the opportunity to present to you on Tuesday January 23, 2018 about the East Tower and Visitor Garage projects at Maine Medical Center. The projects include space for 64 private universal patient rooms and 225 parking spaces and a relocated helipad. There were several questions during the meeting about the relocated helipad that were answered during the meeting but that I would like to summarize in this memo.

1. Question: Is there an expected increase in helicopter traffic?

   Answer: Maine Medical Center expects an increase in flights over the next five years. The Federal Aviation Administration application that was submitted as part of MMC's site plan application materials included an error. Rather than monthly volume, annual volume was provided. There are 450 flights per year today and MMC expects volume to grow to 750 per year in five years. An updated copy of the FAA application will be submitted to the Planning Authority.

2. Question: Why are there 2 helipads with different sizes?

   Answer: The primary helipad is the larger of the two helipads and is designed to accommodate United States Coast Guard and military aircraft which on rare instances transport patients into MMC. The larger pad is the same size as the existing pad. The second pad will be used only as necessary for a second aircraft in bound if there is already a helicopter on the primary pad. Two-three times per month there are concurrent flights into MMC that require the landed aircraft to depart from MMC and relocate to the airport and then return to pick up the medical crew and equipment with the second aircraft having to do the same relocation to and from the airport. Most noise complaints received by MMC are tied to these multiple repositions to the airport which incurs two additional overflights of the neighborhood for each patient flight.

3. Question: Why is there an additional route shown for use in high winds?

   Answer: The approaches and departures to the helipad are the same as current. The pilot in command always has the final decision on approach and departure paths to maintain safety. The added approach is to maintain safety in certain wind conditions and codifies the planned route for non-normal wind conditions. Based on years of use, we expect that the standard approach and departures will continue to be the normal operation.

4. Question: How different is the sound profile going to be with the new helipad location?

   Answer: MMC and LifeFlight had an aviation sound study conducted in preparation for the submission to the City. The sound study used exactly the same test locations as the previous studies for the initial helipad. The study concluded with the exception of two test sites immediately adjacent to the hospital campus that the new sound profile will essentially be similar to the current helipads. It is also important to note that the new helipads will be almost 100' higher than the current helipad and the structures of the buildings will reflect sound up both of which will also mitigate the sound.

5. Question: Will the helipads continue to be solely used for patients and how is access to the helipads controlled?

Answer: Helipad use is solely for critically ill and injured patients being transferred in and out of MMC. The MMC helipad is in Class B airspace which requires all aircraft to be under positive control from the Approach Control at the Jetport. In addition, all use of the helipad is coordinated through LifeFlight MedComm which along with MMC Regional Emergency Management Information System (REMIS) coordinates landing and departures of the medical helicopters from LifeFlight, DHART (Dartmouth Hitchcock), Boston MedFlight, and the USCG / Military.

Maine Medical Center submits these answers in writing so that they may be easily shared with other interested parties.

Maine Medical Center
MaineHealth

Dear Neighbor:

As 2017 draws to a close, I'd like to thank all the members of our community who engaged with Maine Medical Center as we developed and refined our expansion and renovation plans.

The dialogue with our neighbors and community stakeholders made this important plan better for all of us, and I look forward to continued open dialogue in 2018. The coming years will be busy for us, and it will be important to keep open the lines of communication between MMC and our neighbors to ensure things go as smoothly as possible for everyone.

Toward that end, I'd like to invite you to a neighborhood meeting where we will share our Site Plan #1 for the expansion and renovation project:

Meeting Date: January 10, 2018

Meeting Time: 6:00-7:30 PM

Meeting Location: Dana Center Auditorium (Entrance directly across the street from 7 Bramhall St.)

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

If you have any questions, please contact us at MMCProjectContact@mmc.org.

For more information and regular updates on the project please visit: http://www.mmc.org/modernization. We are offering a new feature on this page: an option to sign up for regular emails regarding upcoming meetings, construction/traffic notices, etc. We look forward to continuing the dialogue with you.

Respectfully,

Jeff Sanders
Executive Vice President and Chief Operating Officer
Maine Medical Center

Note: Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

Maine Medical Center
MaineHealth

centered around you

Please Sign In

Name	Neighborhood Affiliation
Jenny Mackenzie	St. John Valley
Alex NEDELJKOVIC	Gilman St
Elizabeth Baird	256 Vaughan
David Humphrey	" "
Rebecca Hatfield	Avesta Housing
ANNE PRINGLE	WPNA
Zack Barowitz	LNA
TIM WELLS	SJV
LIZ PRICE	~~WE~~ PNA
Channing Capuchino	St. John Valley - President

Maine Medical Center
MaineHealth

MINUTES

Attendees		
Jenny Mackenzie	Tim Wells	Jeff Sanders
Alex Nedelokovic	Liz Rice	Dominic Gagnon (Colliers)
Elizabeth Baird	Channing Capuchino	Randy Dunton (Gorrill Palmer)
David Humphrey	Tuck O'Brien	Dick Parsons (Turner)
Rebecca Hatfield	Walter Pochebit	Richard Martineau (Turner)
Anne Pringle	Dennis Morelli	
Zack Barowitz	Al Green	

I. Welcome & Introduction

Jeff Sanders welcomed the group and briefly covered the following:

- A high-level review of what was included in MMC's Institutional Development Plan (IDP) and Regulatory Framework.
- An overview of the project and project timing. Specifically that the East Tower expansion must be completed first in order to relocate the helipad.
- MMC's continuing efforts to engage the neighborhoods.
- An overview of MMC's site plan applications and timing of submittals and City of Portland Planning Board meetings.

II. City Update

Tuck O'Brien thanked the group for attending and shared the following through presentation and question and answer:

- The City has been working to coordinate the process with MMC and stakeholders for approximately 18 months.
- There are many details of MMC's plan that the City is working with MMC to review.
- Because this is a large project, it has been split into three phases. The 1st application was received in December and the first Planning Board meeting is scheduled for January 23rd. The Public Hearing in March will be the final approval of MMC's first of three site plan applications. We expect two workshops per application and the review of all phases of the project will continue through the Spring and is expected to be complete at the end of the Summer. MMC will then be required to seek the appropriate permits from the City.
- The issue that the City and MMC are working through right now is management of construction impacts related with street closures.

- Tuck and his department are available to answer any questions from the public or review the process at any time.
- MMC has excelled at hosting the neighborhood meetings and more will be scheduled.
- When asked about mitigations to public impact and MMC's contributions to the City, Tuck reiterated the neighborhood engagement programs that are in process like the community grant program in which the hospital contributes $30,000 annually, the healthy communities program which is taking shape, and the services that MMC provides as part of its mission. The City's Comprehensive Plan also focuses on the St John St / Congress St area as an important node within the City. Tuck also addressed questions specifically to the overlay zone and offered his or his staffs' time to review details of the new zoning with anyone interested.
- Members of the St John Valley Neighborhood association shared, via comment, they are not in favor of an Avesta housing project in their neighborhood. They already have the Florence house. Also, they are unanimously opposed to a conversion from one- to two-way traffic on Congress St.
- A member of the audience provided feedback on the meeting format. She would prefer more opportunities for two-way communication with MMC.

III. Construction Management Plan

Dick Parson, Turner Construction, introduced himself and his team and proceeded to share the following:

- Turner construction company is an international construction company and the largest healthcare builder in the United States. The company, and specifically the team working on this project, has extensive experience in garage and clinical building overbuild work and work in congested city environment. This makes Turner construction company best suited for MMC's project.
- Turner's approach to this project is to minimize the impacts to surrounding areas, maintain open and transparent communication for the duration of the project, maintain hospital operations, and provide a safe environment for anyone traveling in or near the construction site.
- The East Tower overbuild will require temporary closure of Wescott St between Ellsworth and Crescent. The majority of construction activity will occur within the construction fence. Materials will be delivered from Congress St, up Ellsworth, and directly into the construction fence.
- Contractor parking for all phases of the project will be located at MMC's Scarborough facility on Route 1.

- The Visitor Garage overbuild is a three level addition that will provide MMC with 225 additional parking spaces for patients and visitors. The project requires a temporary closure of Congress St between Weymouth and Forest Ave. The closure will last up to 8 weeks. Turner explored alternatives to closing Congress St that included a two smaller cranes, different position of the crane, and different construction materials. All alternatives were considered to be unfeasible by Turner Construction.
- MMC and Turner Construction are reaching out to business owners and residents in the immediate area to discuss the closure and expected impacts.
- Turner is addressing several challenges with detailed mitigation strategies.
    - Material staging: Staging will occur at off-site facilities.
    - Material delivery: Material will be delivered to the site by the same truck drivers on a just-in-time basis.
    - Emergency Traffic: Turner, MMC, the City, and other stakeholders are evaluating detour routes that maintain a safe and efficient level of service.
- Turner is selecting contractors based on merit and experience. There will be no allegiance to any trade unions.

IV. Design Review

Jeff Keilman, Perkins + Will Architects, introduced himself and shared the following:

- The approach for this phase of the project and the East Tower and Visitor Garage expansions is to extend existing conditions and continue with the vision for the campus.
- The interior of healthcare buildings are highly specialized and regulated. Interior designs drive the exterior of the building which is often different from buildings designed to meet needs of other programs (i.e. offices or classrooms).

V. Question / Answer

Q: Will the Visitor Garage remain parking?
A: Yes. It is not feasible to convert the building into any other use.

Q: What is the timeline for the Congress building?
A: We anticipate submitting the Site Plan application for the Congress Building later this spring.

January 30, 2018
15466

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

Response to Peer Review Comments dated January 25, 2018
Maine Medical Center, East Tower and Visitor Parking

Dear Jean:

On behalf of Maine Medical Center we have prepared the following responses and materials addressing engineering peer review comments from Wright Pierce Engineers dated January 25, 2018 on the above referenced project. The text of the comments are provided in italics for reference, followed by our response.

1. *Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)*
    a. *Basic Standard: Project Plans and Application should be provided to address erosion and sedimentation requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with MaineDEP Chapter 500, Appendix A, B, and C. The applicant has provided information that the project will have no disturbance. The applicant shall provide information confirming proposed construction practices for concrete installation, including location of concrete washout, and protection for down-gradient storm drain inlets. Construction Management Plan submitted includes mention of sweeping sidewalks to remove trash and debris; storm drain inlets shall be protected in sidewalk locations adjacent to the project. The applicant shall provide information relative to the control of construction equipment mud tracking.*

The project is limited to a vertical expansion of the building. No site work or site disturbance is proposed. As such the Basic Standards of Chapter 500 would not typically apply to the project.

The Construction Management plan has been revised and expanded to identify housekeeping and maintenance plans for the work zone. The revised plan includes the installation of "Silt Sack" inlet projection for catch basins down gradient of the work zone.

b. *General Standard: no additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the General Standard, or report on how the project meets the terms and conditions of the General Standard.*

The proposed project is a vertical expansion of the building. There is no change in impervious area and no disturbed area as defined in the Chapter 500 standards that would trigger the General Standards.

c. *Flooding Standard: No additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the Flooding Standard, or report on how the project meets the terms and conditions of the Flooding Standard.*

The existing building was approved by the Planning Board in 2004. As part of the contract zoning and site plan approvals, a Stormwater Management plan was prepared that included a pre and post development runoff analysis of the entire Bramhall Campus. This analysis addressed the Chapter 500 standards in place at the time including the Flooding Standard. There are no changes in disturbed area, impervious area or drainage patterns on the site proposed as part of the vertical expansion when compared to the 2004 approval.

2. *Connection to Existing System:*
   a. *The existing facility currently discharges to a combined sewer system. The applicant shall provide the following:*
      i. *For floor drains not exposed to roof runoff, an oil-water separator connected to the sanitary sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.*

There are no floor drains proposed as part of the vertical expansion of the building.

ii. *For floor drains exposed to roof runoff, a proposed connection to the separated storm sewer system on A Street shall be evaluated.*

There are no floor drains proposed as part of the vertical expansion of the building. The existing building's roof runoff is currently connected to the separated storm drain in A Street. The new roof will be connected to the same system.

iii. *The applicant shall address the potential to separate existing combined sanitary and stormwater flows in the East Tower to help reduce the impact of storm drainage on the existing combined sewer system.*

The roof runoff from the East Tower building is fully separated and is tributary to the separated storm drain in A Street. Roof runoff from the East Tower is collected in a storm drain

constructed in 2004 that extends below the Emergency Department entry plaza, then west between the employee garage and the LL Bean Wing to Gilman Street where it is treated in an existing hydrodynamic separator unit, installed as part of the 2004 approved plan, and discharged to the separated storm drain in A Street (See attached Annotated As Built Survey).

The sanitary sewer from the East Tower drains in a sewer line constructed in 2004 below the emergency department entry plaza, then through the Visitor Garage to Congress Street uphill of its intersection with Forest Street.

iv. It is understood that the sewers adjacent to the facility are near capacity to serve new development. Applicant shall demonstrate opportunity to offset proposed new sewer flows.

As indicated in the application, the East Tower expansion is a decompression of facilities and will not increase the number of hospital beds. There will be a slight increase in staff and fixtures (approximately 6 additional staff toilets and 2 additional staff sinks) with a calculated increase in water usage of 2,050 gallons per day, or an average of 0.003 cfs. Because the hospital is a 24 hour operation, peaking factors are expected to be small. Conservatively assuming a peaking factor of four, the maximum expected peak increase in sewer flow from the project is 0.01 cfs. It is our opinion that this increase will not have a measurable impact to the offsite sewer system. In addition, we have not received any evidence of capacity issues in the adjacent sewers.

v. Proposed and existing connections to the sewer and stormwater system shall be indicated on the proposed engineering permitting plans.

There are no new connections to the sewer or storm drainage system. The vertical expansion will connect to the existing building plumbing internal to the building.

Enclosed is a copy of the site survey with the existing storm drain and sanitary sewer connections highlighted.

vi. Details of connections, pipes, structures shall be provided.

There are no proposed pipes, connections or structures. All work is internal to the building.

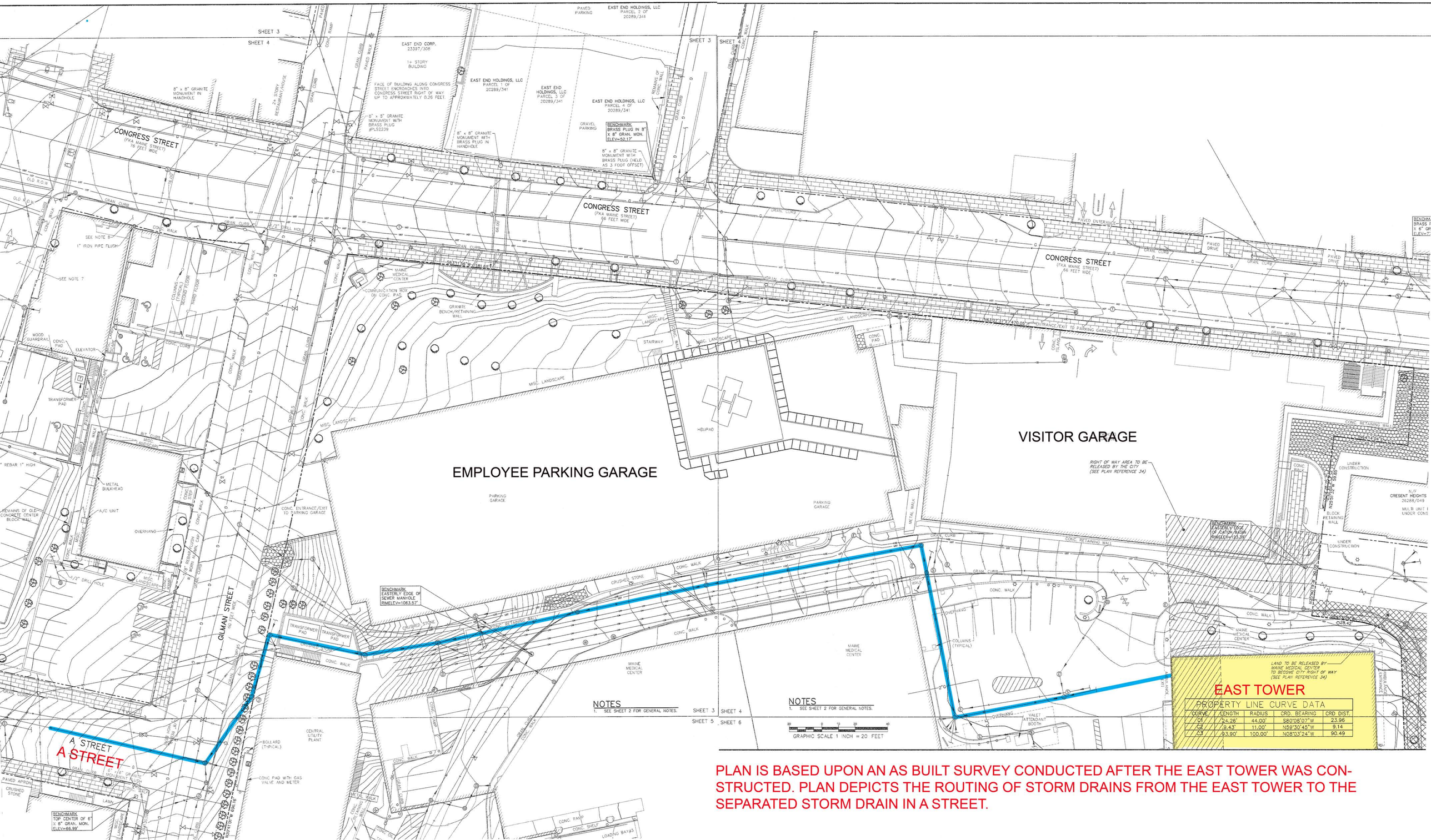
3. *Confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain and sewer shall be provided.*

Sincerely,

SEBAGO TECHNICS, INC.

Daniel L. Riley , PE
Vice President, Engineering

DLR:jg
Enc.



PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD. DIST.
C1	24.28'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

PLAN IS BASED UPON AN AS BUILT SURVEY CONDUCTED AFTER THE EAST TOWER WAS CONSTRUCTED. PLAN DEPICTS THE ROUTING OF STORM DRAINS FROM THE EAST TOWER TO THE SEPARATED STORM DRAIN IN A STREET.

Section 12

Stormwater Management

Section 12

Stormwater Management

General

This stormwater runoff evaluation report has been prepared for the Maine Medical Center (MMC) to evaluate stormwater runoff associated with the comprehensive facilities construction project at its Bramhall Street campus. The hospital is planning the following improvements:

- A four-story, 192,000 square foot building addition for obstetrics and newborn services, referred to as the Charles Street addition. The Charles Street project also includes improvements to the Richards Wing/admitting lobby. In order to construct this addition, Charles Street will be discontinued and Ellsworth Street will be relocated as shown on the project plans.
- A new parking garage to accommodate 512 additional parking spaces for patients and visitors. The new garage will be located immediately east of and connected to the existing parking garage on Congress Street. A pedestrian bridge will lead from both garages to the main hospital building.
- A new central utility plant, located on Gilman Street, which will provide a central heating/cooling facility for the campus.
- A new helicopter landing pad to be constructed on the top level of the existing parking garage on Congress Street.
- Reconfiguration of the main entrances to the hospital and lobbies.

The proposed development of the site will result in a net increase in impervious area of approximately 0.85 acre. This increase in impervious area is primarily attributed to the footprint of the proposed parking garage (27,300 square feet) and the footprint of the proposed central utility plant (7,000 square feet). The remaining increase in impervious area is attributed to the construction of the Charles Street addition, the relocation of Ellsworth Street, and the reconfiguration of the main entrance to the hospital.

Site Characteristics

The project site occupies an area bounded by Congress Street, Wescott Street, Charles Street, Ellsworth Street, Gilman Street and Crescent Street in Portland. The site is located in a densely developed urban setting consisting of hospital and office buildings with their associated parking and landscaped areas, public roadways and multi family residential housing. The undeveloped areas of the site consist of steeply sloped land abutting Congress Street and Gilman Street. Ground cover in this area consists primarily of grass, brush and evergreen tree growth.

The proposed Parking Garage occupies a steeply sloped undeveloped area adjacent to Congress Street, and the Central Utility plant occupies a steeply sloped undeveloped area abutting Gillman Street at a point opposite A Street. The remaining site improvements occur on previously developed areas of the site.

The subject site is located at a high point in the west end of the Portland Peninsula. Runoff from the project site is collected through a series of roof drains and catch basins and conveyed to combined sanitary/stormwater sewers located within public streets abutting the site. There are currently no facilities installed to provide stormwater quality treatment to runoff from the site.

A 15,000-gallon stormwater detention tank was installed in 1983 on the steeply sloped, wooded area adjacent to Gilman Street at the location of the proposed Central Utility Plant. Based on conversations with City of Portland Public Works staff, it is our understanding that this detention tank does not function as intended to provide attenuation of stormwater runoff. This tank is included in the pre-development runoff analysis attached to this report. The hydraulic characteristics of this facility are based on design plans.

The only existing point of connection to the City's separated storm drain system is located at the intersection of A Street and Gilman Street. This sewer was installed by the City of Portland Public Works Department in 2000-2001 as part of the St. John Street Sewer Separation Project. The City of Portland Public Works Department has indicated that this sewer was designed and constructed for the purpose of separating storm drainage and sanitary sewer flow from the Maine Medical Center Campus.

The enclosed pre-development and post-development watershed maps and USGS topographic map depict the general drainage patterns and infrastructure in the project area.

Soils

Soil classifications within the project area were referenced from the Cumberland County Medium Intensity Soil Survey. The site is primarily comprised of Hinckley gravelly sand loam. The project geotechnical evaluation report indicates significant depths of granular fill overlaying glacial till. For modeling purposes of this report, the soils were considered hydraulic soil groups A consistent with the Cumberland County soil survey.

Stormwater Management

In order to evaluate drainage characteristics in pre and post-development conditions, a quantitative analysis was performed to determine peak rates of runoff for the 2, 10 and 25-year storm events. Runoff calculations were performed following the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds, Technical Release #55" and HydroCAD Stormwater Modeling System software.

The 24-hour rainfall values utilized in the hydrologic model are as follows.

Storm Frequency Precipitation (in./24 hr)	
2-year	3.0
10-year	4.7
25-year	5.5

Nineteen watersheds were analyzed in the pre-development condition, and twenty-one watersheds in the post-developed condition. The watershed delineations are based on the topography of the site, record drawings, and field surveys of the drainage infrastructure. Watershed delineations along the hospital building rooftops are based on visible roof drain locations and record design drawings. Due to the age of a number of buildings, records indicating the locations of roof drain connections to the surrounding sewer system are not available. In these cases, the assumed watershed delineations were made based observations of the rooflines and the surrounding topography and sewer infrastructure.

Seven Study Points, identified on the attached watershed plans and hydrologic model output as points SP-1 through SP-7, were selected for the evaluation pre and post-developed runoff conditions. The Study Points represent locations where stormwater runoff from the project site enters the public drainage infrastructure system. In most cases, the capacity of the existing combined sewers is small relative the area draining to them under existing conditions. In these cases, the study point represents the total stormwater discharge at the study point, including both gutter flow and flow in the sewer.

Study Point SP-1 represents the point where stormwater runoff from the site enters a combined sewer at the intersection of Wescott Street and Crescent Street. The study point represents runoff at a manhole identified as DMH-99 on the project plans. The sewer outlet from this manhole is a 12" cement line that drains in a westerly direction along Crescent Street, eventually draining to Park Avenue via sewers in Ellsworth Street, Congress Street and Weymouth Street.

Study Point SP-2 represents the point where runoff from the existing Maine Medical Center parking garage enters a combined sewer at the intersection of Congress Street and Forest Street. The study point represents runoff at manhole SMH-13 on the project plans. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains in a northerly direction along Forest Street to Park Avenue.

Study Point SP-3 represents the point where runoff from areas of the project site east of the existing emergency room enters the combined sewer system at the intersection of Gilman Street and Congress Street. At this point, runoff within the sewer system discharges in a northerly direction along Gilman Street to Park Avenue. Runoff in the roadway that bypasses the catch basins at the intersection discharges in a westerly direction along Congress Street to St. John Street.

Study Point SP-4 represents runoff at the intersection of Gilman Street and A Street at the upstream end of an existing 15" separate storm drainage system constructed by the City of Portland in 2001 as part of the St. John Street sewer separation project. The storm drain was extended along A Street from its intersection with St. John Street to a drainage manhole in Gilman Street opposite the location of the proposed central utility plant. This manhole is identified as SMH-27 on the project existing conditions plan. It is our understanding that this storm drain was extended to the hospital property specifically for the purpose of providing a point of connection for separated stormwater runoff from the hospital. Under existing conditions, this storm drain only conveys runoff entering two catch basins draining Gilman Street south of its intersection with A Street. Under post-development conditions, runoff from areas of the site, including the existing emergency room parking area, L. L. Bean wing, and service areas abutting the proposed central utility plant are directed to the A Street storm drain.

Study Point SP-5 represents the point where runoff from the site enters the combined sewer system at the intersection of Bramhall Street and Chadwick Street. The proposed development of the site does not affect runoff at this point. The study point represents runoff at a manhole structure identified as SMH-8; the sewer outlet from this manhole is a 15 cement line that drains in an easterly direction along Bramhall Street to Brackett Street.

Study Point SP-6 represents runoff at the intersection of Ellsworth Street and Wescott Street. Runoff currently enters the combined sewer system via manholes in Ellsworth Street and drains in an easterly direction along Ellsworth Street towards its intersection with Congress Street.

Study Point SP-7 represents runoff at the intersection of Russell Street and Brackett Street. Runoff entering the combined sewer system drains in a southeasterly direction along Brackett Street.

The areas and times of concentration of the post-development watersheds vary from the existing conditions based on the proposed site development. Due to the highly developed nature of the site, the time of concentration in some watersheds is less than five minutes. A minimum time of concentration of five minutes was used in these cases.

Table 1 summarizes the results of the hydrologic analysis of the project under pre-development and post-development conditions.

Table 1 - Stormwater Runoff Summary Table: Pre-Development vs. Post-Development

Study Point	Total Watershed Area (Ac)		Avg. Weighted Curve No. (Cn)		Peak Rates of Runoff (cfs)								
					2-Year			10-Year			25-Year		
						Post			Post			Post	
	Pre	Post	Pre	Post	Pre	wo/d	w/d	Pre	wo/d	w/d	Pre	wo/d	w/d
1P	0.54	.77	88	82	1.2	1.3		2.1	2.6		2.6	3.2	
2P	9.70	7.71	88	91	18.7	15.5		33.0	27.2		39.7	32.6	
3P	6.10	1.40	86	70	11.6	1.3		23.6	3.1		27.2	4.0	
4P	2.20	8.60	62	85	<1	16.8		3.0	29.9		4.3	33.6	
5P	2.00	2.00	92	92	5.1	5.1		8.7	8.7		10.3	10.3	
6P	1.18	1.39	90	92	2.7	3.2		4.8	5.6		5.7	6.7	
7P	0.25	0.10	84	98	<1	<1		<1	<1		1.1	<1	

Stormwater modeling results indicate that the peak rates of runoff in the developed condition will be reduced from pre-developed runoff rates in the combined sewers at Study Points SP-2, SP-3, SP-5 and SP-7 during the 2-year, 10-year and 25-year storm events. This reduction is due primarily to the realignment of the public roadways on the site and the separation of stormwater runoff from existing developed areas to the dedicated storm drain line at the intersection of Gilman Street and A Street (Study Point SP-4).

The stormwater modeling results indicate minor increases in the peak rate of runoff at Study Points SP-1 and SP-6 during the 2, 10, and 25-year storm events. This increase in the post-development runoff is due to the proposed vacation of Charles Street and realignment of Ellsworth Street and the resulting alteration to existing drainage patterns.

The stormwater analysis results indicate an increase in runoff at Study Point SP-4 which represents runoff in the A Street storm sewer at the intersection of Gilman Street and A Street. This existing storm sewer was specifically designed and constructed for a future separation of storm drainage from the hospital property. Under proposed condition, this storm drain conveys runoff from the existing emergency room parking area, the L. L. Bean Wing and the service drive providing access from Crescent Street to Gilman Street at the rear of the L. L. Bean Wing. This design is consistent with improvements planned as part of the St. John Street sewer separation project, but not completed as part of the City's sewer construction project. The proposed development also directs rooftop runoff from the proposed Charles Street building to the separate storm drainage system in A Street. This design provides stormwater separation for approximately 6.3 acres of existing development that is currently tributary to combined sewers in Crescent Street and Congress Street.

Stormwater Quality

The project site is not located within a watershed at risk from development as defined by the Maine Department of Environmental Protection. Stormwater quality treatment is, therefore, not required under State stormwater regulations. However, stormwater quality treatment is required by the City of Portland's stormwater design criteria related to proposed parking areas and to replace the existing stormwater quantity detention tank which will be removed as part of the Central Utility Plant construction.

To meet the stormwater quality treatment requirements for the site, two Hydro-International Downstream Defender stormwater treatment units are proposed to treat runoff from both proposed and existing impervious surfaces.

A 6-foot diameter Downstream Defender Unit is proposed to treat runoff generated from the paved surface of the proposed parking garage. Runoff from the parking garage will be collected in the structure's roof drainage system and directed to a treatment unit installed at the Congress Street parking level. The treated stormwater will discharge to an existing 15" combined sewer located on hospital property adjacent to Congress Street and tributary to Study Point SP2.

A 10-foot diameter Downstream Defender Unit is proposed to treat runoff tributary to Study Point SP-4. The unit is proposed at a location adjacent to Gilman Street and discharges to the separated storm sewer manhole at the intersection of Gilman Street and A Street. This unit provides stormwater quality treatment to runoff from approximately 4.93 acres of previously untreated impervious surfaces.

The proposed treatment units have been sized based on the Maine Department of Environmental Protection (MDEP) criteria to provide a 60% total suspended solids (TSS) removal efficiency for runoff generated by a 1-year storm. The units have also been sized such that the 25-year discharge to each unit is less than the manufacturer's published capacity flow rate. Table 2 below summarizes the design flow rates for the stormwater treatment units.

Table 2 Stormwater Treatment Unit Summary

Unit	Downstream Defender Treatment Unit Capacity (cfs)			Post Development Flow rates (cfs)	
	50% TSS Removal ($Q_{1\text{-year}}$)	60% TSS Removal ($Q_{1\text{-year}}$)	Unit Capacity ($Q_{25\text{-year}}$)	1year	25-year
6-ft (SP-2)	3.86	3.58	8.0	1.51	3.38
10-ft (SP-4)	13.84	12.85	25.0	10.66	22.85

Summary

The proposed development of the Maine Medical Center Bramhall Campus will result in significant reductions in the stormwater runoff entering the existing combined sewers within the public right-of-ways surrounding the site. The analysis indicates that the peak rate of runoff in the developed condition will be less than pre-developed runoff rates at four of the seven project study points (Study Points for Study Points SP-2, SP-3, SP-5 and SP-7).

Insignificant increases in stormwater water runoff are anticipated at Study Point SP-1 representing the intersection of Crescent street and Wescott Street and at Study Point SP-6 representing the intersection Ellsworth Street and Wescott Street. The increases are considered insignificant based on the relatively small flow rates involved.

The proposed development will direct runoff from approximately 6.3 acres of existing urban development away from the combined sewers in Crescent Street, Ellsworth Street and Congress Street to a separate storm drainage system in A Street. This storm drain, identified as Study Point SP-4 in the hydrologic model, was designed and constructed as part of the City of Portland's St. John Street sewer separation project for the purpose of providing a fully separated storm sewer to drain the hospital campus site. The drainage infrastructure proposed as part of the Maine Medical Center expansion project is consistent with the design plans for the sewer separation project.

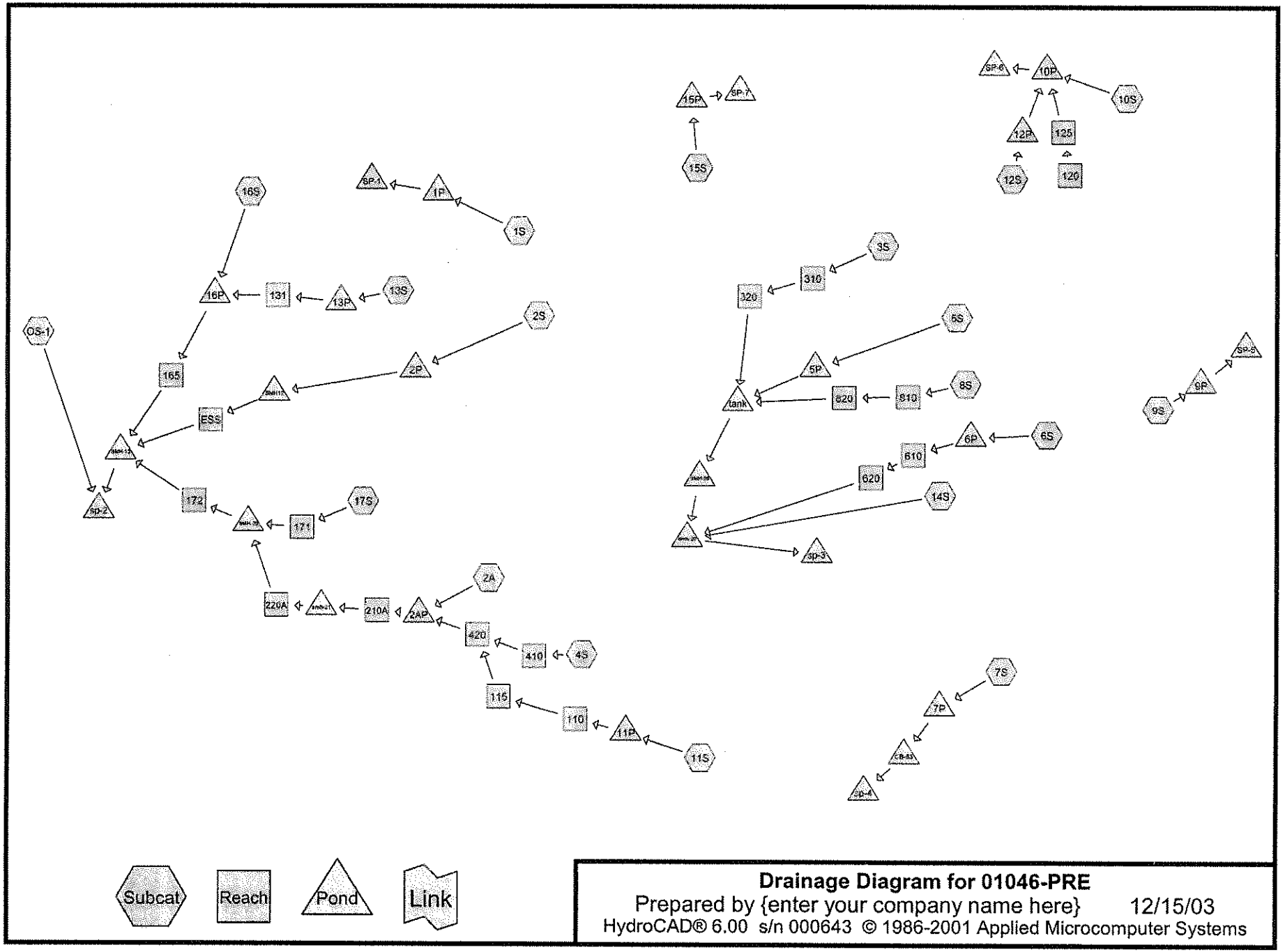
Stormwater quality treatment for the site is provided by two Downstream Defender treatment units. A 6-foot unit is proposed to treat the impervious area associated with the proposed parking garage. A 10-foot diameter unit is proposed to provide stormwater treatment for runoff tributary to the A Street sewer. This unit provides treatment to approximately 4.93 acres of previously untreated impervious surfaces from the northeastern portion of the site, which are currently tributary to the City's combined sewer system.

Prepared by:

SEBAGO TECHNICS, INC.

Daniel L. Riley, P.E.
Senior Project Manager

DLR/APP:app/jc
Enclosure



Drainage Diagram for 01046-PRE

Prepared by {enter your company name here} 12/15/03

HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=88 Area=0.539 ac Runoff= 1.15 cfs 0.076 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.576 ac Runoff= 1.69 cfs 0.124 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=89 Area=0.672 ac Runoff= 1.49 cfs 0.100 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=98 Area=0.401 ac Runoff= 1.17 cfs 0.087 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 1.54 cfs 0.114 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=94 Area=2.860 ac Runoff= 7.63 cfs 0.529 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=43 Area=0.250 ac Runoff= 0.00 cfs 0.000 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 0.64 cfs 0.064 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 2.55 cfs 0.171 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 5.07 cfs 0.345 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=86 Area=0.767 ac Runoff= 1.50 cfs 0.099 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.216 ac Runoff= 0.63 cfs 0.047 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.415 ac Runoff= 1.21 cfs 0.090 af

Subcatchment 13S: (new node)
Tc=5.0 min CN=43 Area=0.210 ac Runoff= 0.00 cfs 0.000 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=71 Area=1.390 ac Runoff= 1.11 cfs 0.079 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=84 Area=0.254 ac Runoff= 0.45 cfs 0.030 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=61 Area=0.506 ac Runoff= 0.12 cfs 0.013 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 2.69 cfs 0.198 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 11.55 cfs 0.894 af

Reach 110: (new node)
Inflow= 0.63 cfs 0.047 af
Length= 60.0' Max Vel= 3.6 fps Capacity= 3.86 cfs Outflow= 0.62 cfs 0.047 af

Reach 115: (new node)
Inflow= 0.62 cfs 0.047 af
Length= 50.0' Max Vel= 3.6 fps Capacity= 3.86 cfs Outflow= 0.62 cfs 0.047 af

Reach 120: (new node)
Length= 55.0' Max Vel= 0.0 fps Capacity= 5.65 cfs Outflow= 0.00 cfs 0.000 af

Reach 125: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 172.0' Max Vel= 0.0 fps Capacity= 0.92 cfs Outflow= 0.00 cfs 0.000 af

Reach 131: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 30.0' Max Vel= 0.4 fps Capacity= 0.21 cfs Outflow= 0.00 cfs 0.000 af

Reach 165: (new node)
Inflow= 0.14 cfs 0.013 af
Length= 215.0' Max Vel= 4.3 fps Capacity= 3.01 cfs Outflow= 0.12 cfs 0.013 af

Reach 171: (new node)
Inflow= 2.69 cfs 0.198 af
Length= 31.0' Max Vel= 14.8 fps Capacity= 29.32 cfs Outflow= 2.68 cfs 0.198 af

Reach 172: (new node)
Inflow= 6.35 cfs 0.483 af
Length= 32.0' Max Vel= 18.8 fps Capacity= 28.85 cfs Outflow= 6.35 cfs 0.483 af

Reach 210A: (new node)
Inflow= 3.78 cfs 0.285 af
Length= 150.0' Max Vel= 20.3 fps Capacity= 39.83 cfs Outflow= 3.77 cfs 0.285 af

Reach 220A: (new node)
Inflow= 3.77 cfs 0.285 af
Length= 168.0' Max Vel= 9.5 fps Capacity= 13.64 cfs Outflow= 3.73 cfs 0.285 af

Reach 310: (new node)
Inflow= 1.17 cfs 0.087 af
Length= 195.0' Max Vel= 5.0 fps Capacity= 4.73 cfs Outflow= 1.14 cfs 0.086 af

Reach 320.: (new node)
Inflow= 1.14 cfs 0.086 af
Length= 56.0' Max Vel= 19.2 fps Capacity= 32.06 cfs Outflow= 1.14 cfs 0.086 af

Reach 410: (new node) Inflow= 1.54 cfs 0.114 af
Length= 110.0' Max Vel= 4.6 fps Capacity= 3.86 cfs Outflow= 1.51 cfs 0.114 af

Reach 420: (new node) Inflow= 2.13 cfs 0.160 af
Length= 14.0' Max Vel= 8.4 fps Capacity= 24.14 cfs Outflow= 2.12 cfs 0.160 af

Reach 610: (new node) Inflow= 0.00 cfs 0.000 af
Length= 28.0' Max Vel= 0.3 fps Capacity= 26.83 cfs Outflow= 0.00 cfs 0.000 af

Reach 620: (new node) Inflow= 0.00 cfs 0.000 af
Length= 265.0' Max Vel= 0.1 fps Capacity= 0.75 cfs Outflow= 0.00 cfs 0.000 af

Reach 810: (new node) Inflow= 2.55 cfs 0.171 af
Length= 169.0' Max Vel= 15.4 fps Capacity= 16.82 cfs Outflow= 2.53 cfs 0.171 af

Reach 820: (new node) Inflow= 2.53 cfs 0.171 af
Length= 141.0' Max Vel= 13.3 fps Capacity= 13.70 cfs Outflow= 2.52 cfs 0.171 af

Reach ESS: (new node) Inflow= 1.34 cfs 0.100 af
Length= 265.0' Max Vel= 8.5 fps Capacity= 3.10 cfs Outflow= 1.33 cfs 0.100 af

Pond 1P: (new node) Inflow= 1.15 cfs 0.076 af
Primary= 1.15 cfs 0.076 af

Pond 2AP: (new node) Inflow= 3.78 cfs 0.285 af
Primary= 3.78 cfs 0.285 af

Pond 2P: (new node) Peak Storage= 131 cf Inflow= 1.49 cfs 0.100 af
Primary= 1.34 cfs 0.100 af Secondary= 0.00 cfs 0.000 af Outflow= 1.34 cfs 0.100 af

Pond 5P: (new node) Inflow= 7.63 cfs 0.529 af
Primary= 7.63 cfs 0.529 af

Pond 6P: (new node) Inflow= 0.00 cfs 0.000 af
Primary= 0.00 cfs 0.000 af

Pond 7P: (new node) Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond 9P: (new node) Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond 10P: (new node) Inflow= 2.72 cfs 0.189 af
Primary= 2.72 cfs 0.189 af

Pond 11P: (new node) Inflow= 0.63 cfs 0.047 af
Primary= 0.63 cfs 0.047 af

Pond 12P: (new node)
Inflow= 1.21 cfs 0.090 af
Primary= 1.21 cfs 0.090 af

Pond 13P: (new node)
Inflow= 0.00 cfs 0.000 af
Primary= 0.00 cfs 0.000 af

Pond 15P: (new node)
Inflow= 0.45 cfs 0.030 af
Primary= 0.45 cfs 0.030 af

Pond 16P: (new node) Peak Storage= 10 cf Inflow= 0.12 cfs 0.013 af
Primary= 0.14 cfs 0.013 af Secondary= 0.00 cfs 0.000 af Outflow= 0.14 cfs 0.013 af

Pond CB-63: (new node)
Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond dmh-20: (new node)
Inflow= 11.64 cfs 0.862 af
Primary= 11.64 cfs 0.862 af

Pond SMH-13: (new node)
Inflow= 7.65 cfs 0.596 af
Primary= 7.65 cfs 0.596 af

Pond SMH-20: (new node)
Inflow= 6.35 cfs 0.483 af
Primary= 6.35 cfs 0.483 af

Pond smh-21: (new node)
Inflow= 3.77 cfs 0.285 af
Primary= 3.77 cfs 0.285 af

Pond SMH-26: (new node) Peak Storage= 102 cf Inflow= 10.73 cfs 0.783 af
Primary= 10.58 cfs 0.783 af Secondary= 0.00 cfs 0.000 af Outflow= 10.58 cfs 0.783 af

Pond SMH12: (new node)
Inflow= 1.34 cfs 0.100 af
Primary= 1.34 cfs 0.100 af

Pond SP-1: (new node)
Inflow= 1.15 cfs 0.076 af
Primary= 1.15 cfs 0.076 af

Pond sp-2: (new node)
Inflow= 18.67 cfs 1.490 af
Primary= 18.67 cfs 1.490 af

Pond sp-3: (new node)
Inflow= 11.64 cfs 0.862 af
Primary= 11.64 cfs 0.862 af

Pond sp-4: (new node)
Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond SP-5: (new node)
Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond SP-6: (new node)
Inflow= 2.72 cfs 0.189 af
Primary= 2.72 cfs 0.189 af

Pond SP-7: (new node)
Inflow= 0.45 cfs 0.030 af
Primary= 0.45 cfs 0.030 af

Pond tank: (new node) Peak Storage= 1,461 cf Inflow= 11.18 cfs 0.787 af
Primary= 10.73 cfs 0.783 af Secondary= 0.00 cfs 0.000 af Outflow= 10.73 cfs 0.783 af

Runoff Area = 21.928 ac Volume = 3.060 af Average Depth = 1.67"

Subcatchment 1S: (new node)

Runoff = 1.15 cfs @ 12.08 hrs, Volume= 0.076 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.036	39	>75% Grass cover, Good, HSG A
0.061	48	Brush, Poor, HSG A
0.442	98	Paved parking & roofs
0.539	88	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	40	0.0250	1.2		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.9	195	0.0300	3.5		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.6					**Direct Entry, DIRECT**
5.0	235	Total			

Subcatchment 2A: (new node)

Runoff = 1.69 cfs @ 12.07 hrs, Volume= 0.124 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.576	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	40	0.0430	1.5		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.6	170	0.0520	4.6		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.6	140	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.0	14	0.0450	13.7	24.14	**Circular Channel (pipe), PIPE D TO E** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
3.4					**Direct Entry, DIRECT**
5.0	364	Total			

Subcatchment 2S: (new node)

Runoff = 1.49 cfs @ 12.08 hrs, Volume= 0.100 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.568	98	Paved parking & roofs
0.104	39	>75% Grass cover, Good, HSG A
0.672	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	40	0.0250	1.2		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.0	283	0.0580	4.9		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	16	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.4					**Direct Entry, DIRECT**
5.0	339	Total			

Subcatchment 3S: (new node)

Runoff = 1.17 cfs @ 12.07 hrs, Volume= 0.087 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.401	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	40	0.0875	2.0		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	218	0.0690	5.3		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	205	0.0370	9.5	7.42	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.6					**Direct Entry, DIRECT**
5.0	463	Total			

Subcatchment 4S: (new node)

Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.528	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	50	0.0050	0.7		**Sheet Flow, SHEET A TO B**
					Smooth surfaces n= 0.011 P2= 3.00"
1.3	110	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C**
					Paved Kv= 20.3 fps
2.4					**Direct Entry, DIRECT**
5.0	160	Total			

Subcatchment 5S: (new node)

Runoff = 7.63 cfs @ 12.07 hrs, Volume= 0.529 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
2.664	98	Paved parking & roofs
0.196	39	>75% Grass cover, Good, HSG A
2.860	94	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	35	0.0050	0.6		**Sheet Flow, SHEET A TO B**
					Smooth surfaces n= 0.011 P2= 3.00"
2.2	355	0.0050	2.7	0.93	**Circular Channel (pipe), PIPE B TO C**
					Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.4	63	0.0050	2.7	0.93	**Circular Channel (pipe), PIPE C TO D**
					Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
1.5					**Direct Entry, DIRECT**
5.0	453	Total			

Subcatchment 6S: (new node)

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.250	43	Woods/grass comb., Fair, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.3500	0.2		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.3	59	0.3720	3.0		**Shallow Concentrated Flow, SHALLOW B OT C** Woodland Kv= 5.0 fps
1.3					**Direct Entry, DIRECT**
5.0	99	Total			

Subcatchment 7S: (new node)

Runoff = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.456	98	Paved roads w/curbs & sewers
1.354	43	Woods/grass comb., Fair, HSG A
0.079	43	Woods/grass comb., Fair, HSG A
0.327	98	Paved roads w/curbs & sewers
2.216	62	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	75	0.0400	1.7		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	78	0.0180	2.7		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7	219	0.0590	4.9		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.7	266	0.0930	6.2		**Shallow Concentrated Flow, SHALLOW D TO E** Paved Kv= 20.3 fps
2.3					**Direct Entry, DIRECT**
5.0	638	Total			

Subcatchment 8S: (new node)

Runoff = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.973	98	Paved parking & roofs
0.152	43	Woods/grass comb., Fair, HSG A
0.025	39	>75% Grass cover, Good, HSG A
1.150	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	93	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.5	135	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	131	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.8					**Direct Entry, DIRECT**
5.0	399	Total			

Subcatchment 9S: (new node)

Runoff = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.191	39	>75% Grass cover, Good, HSG A
1.839	98	Paved parking & roofs
2.030	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	285	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE B TO C** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.3	97	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.4					**Direct Entry, DIRECT**
5.0	422	Total			

Subcatchment 10S: (new node)

Runoff = 1.50 cfs @ 12.08 hrs, Volume= 0.099 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.195	61	1/4 acre lots, 38% imp, HSG A
0.542	98	Paved parking & roofs
0.012	39	>75% Grass cover, Good, HSG A
0.018	39	>75% Grass cover, Good, HSG A
0.767	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0125	0.9		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	235	0.0210	2.9		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.0					**Direct Entry, DIRECT**
5.0	275	Total			

Subcatchment 11S: (new node)

Runoff = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.216	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	60	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.5					**Direct Entry, DIRECT**
5.0	90	Total			

Subcatchment 12S: (new node)

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.090 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.415	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	24	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.9					**Direct Entry, DIRECT**
5.0	54	Total			

Subcatchment 13S: (new node)

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.210	43	Woods/grass comb., Fair, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	40	0.2500	0.2		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.3	50	0.4400	3.3		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.3	43	0.2100	2.3		**Shallow Concentrated Flow, SHALLOW C TO D** Woodland Kv= 5.0 fps
0.5					**Direct Entry, DIRECT**
5.0	133	Total			

Subcatchment 14S: (new node)

Runoff = 1.11 cfs @ 12.09 hrs, Volume= 0.079 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.728	98	Paved parking & roofs
0.429	39	>75% Grass cover, Good, HSG A
0.233	43	Woods/grass comb., Fair, HSG A
1.390	71	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	40	0.1060	0.3		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.6	225	0.1940	6.6		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.6	168	0.0625	5.1		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
1.3					**Direct Entry, DIRECT**
5.0	433	Total			

Subcatchment 15S: (new node)

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.194	98	Paved parking & roofs
0.060	39	>75% Grass cover, Good, HSG A
0.254	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	15	0.0600	0.2		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.2	35	0.0420	3.3		**Shallow Concentrated Flow, SHALLOW B TO C** Unpaved Kv= 16.1 fps
3.4					**Direct Entry, DIRECT**
5.0	50	Total			

Subcatchment 16S: (new node)

Runoff = 0.12 cfs @ 12.12 hrs, Volume= 0.013 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.167	98	Paved parking & roofs
0.339	43	Woods/grass comb., Fair, HSG A
0.506	61	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	40	0.2500	0.2		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.3	71	0.5490	3.7		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.5	117	0.0420	4.2		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.3					**Direct Entry, DIRECT**
5.0	228	Total			

Subcatchment 17S: (new node)

Runoff = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.918	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	14	0.0100	2.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	134	0.1600	15.0	5.24	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
4.0					**Direct Entry, DIRECT**
5.0	188	Total			

Subcatchment OS-1: OS-1

Runoff = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
6.030	89	Urban commercial, 85% imp, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.2		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.2		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.0		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.7		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.5		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Reach 110: (new node)

Inflow = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af
Outflow = 0.62 cfs @ 12.08 hrs, Volume= 0.047 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.27'
Capacity at bank full= 3.86 cfs
12.0" Diameter Pipe n= 0.012 Length= 60.0' Slope= 0.0100 '/'

Reach 115: (new node)

Inflow = 0.62 cfs @ 12.08 hrs, Volume= 0.047 af
Outflow = 0.62 cfs @ 12.09 hrs, Volume= 0.047 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.27'
Capacity at bank full= 3.86 cfs
12.0" Diameter Pipe n= 0.012 Length= 50.0' Slope= 0.0100 '/'

Reach 120: (new node)

Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00'
Capacity at bank full= 5.65 cfs
10.00' x 0.25' deep channel, n= 0.040 Length= 55.0' Slope= 0.0251 '/'

Reach 125: (new node)

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00'
Capacity at bank full= 0.92 cfs
6.0" Diameter Pipe n= 0.012 Length= 172.0' Slope= 0.0230 '/'

Reach 131: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.4 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.4 fps, Avg. Travel Time= 1.4 min

Peak Depth= 0.01'
Capacity at bank full= 0.21 cfs
4.0" Diameter Pipe n= 0.012 Length= 30.0' Slope= 0.0100 '/'

Reach 165: (new node)

Inflow = 0.14 cfs @ 12.11 hrs, Volume= 0.013 af
Outflow = 0.12 cfs @ 12.16 hrs, Volume= 0.013 af, Atten= 15%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.3 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.3 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.09'
Capacity at bank full= 3.01 cfs
8.0" Diameter Pipe n= 0.012 Length= 215.0' Slope= 0.0530 '/'

Reach 171: (new node)

Inflow = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af
Outflow = 2.68 cfs @ 12.07 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.8 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 5.6 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26'
Capacity at bank full= 29.32 cfs
15.0" Diameter Pipe n= 0.012 Length= 31.0' Slope= 0.1755 '/'

Reach 172: (new node)

Inflow = 6.35 cfs @ 12.08 hrs, Volume= 0.483 af
Outflow = 6.35 cfs @ 12.09 hrs, Volume= 0.483 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 18.8 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 7.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.40'
Capacity at bank full= 28.85 cfs
15.0" Diameter Pipe n= 0.012 Length= 32.0' Slope= 0.1700 '/'

Reach 210A: (new node)

Inflow = 3.78 cfs @ 12.08 hrs, Volume= 0.285 af
Outflow = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 20.3 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 7.7 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.26'
Capacity at bank full= 39.83 cfs
15.0" Diameter Pipe n= 0.012 Length= 150.0' Slope= 0.3240 '/'

Reach 220A: (new node)

Inflow = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af
Outflow = 3.73 cfs @ 12.09 hrs, Volume= 0.285 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.5 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.6 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.45'
Capacity at bank full= 13.64 cfs
15.0" Diameter Pipe n= 0.012 Length= 168.0' Slope= 0.0380 '/'

Reach 310: (new node)

Inflow = 1.17 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.086 af, Atten= 3%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.0 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.9 fps, Avg. Travel Time= 1.7 min

Peak Depth= 0.34'
Capacity at bank full= 4.73 cfs
12.0" Diameter Pipe n= 0.012 Length= 195.0' Slope= 0.0150 '/'

Reach 320.: (new node)

Inflow = 1.14 cfs @ 12.09 hrs, Volume= 0.086 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 19.2 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 7.3 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.13'
Capacity at bank full= 32.06 cfs
12.0" Diameter Pipe n= 0.012 Length= 56.0' Slope= 0.6900 '/'

Reach 410: (new node)

Inflow = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af
Outflow = 1.51 cfs @ 12.09 hrs, Volume= 0.114 af, Atten= 2%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.6 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.8 fps, Avg. Travel Time= 1.0 min

Peak Depth= 0.44'
Capacity at bank full= 3.86 cfs
12.0" Diameter Pipe n= 0.012 Length= 110.0' Slope= 0.0100 '/'

Reach 420: (new node)

Inflow = 2.13 cfs @ 12.09 hrs, Volume= 0.160 af
Outflow = 2.12 cfs @ 12.09 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.4 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.30'
Capacity at bank full= 24.14 cfs
18.0" Diameter Pipe n= 0.012 Length= 14.0' Slope= 0.0450 '/'

Reach 610: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.3 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.3 fps, Avg. Travel Time= 1.8 min

Peak Depth= 0.00'
Capacity at bank full= 26.83 cfs
20.00' x 0.25' deep channel, n= 0.050 Length= 28.0' Slope= 0.2139 '/'

Reach 620: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 13%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.1 fps, Min. Travel Time= 33.7 min
Avg. Velocity = 0.1 fps, Avg. Travel Time= 33.7 min

Peak Depth= 0.00'
Capacity at bank full= 0.75 cfs
1.00' x 0.25' deep channel, n= 0.040 Length= 265.0' Slope= 0.0370 '/'
Side Slope Z-value= 3.0 0.0 '/'

Reach 810: (new node)

Inflow = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 15.4 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 5.6 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.26'
Capacity at bank full= 16.82 cfs
12.0" Diameter Pipe n= 0.012 Length= 169.0' Slope= 0.1900 '/'

Reach 820: (new node)

Inflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.52 cfs @ 12.09 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 13.3 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.9 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.29'
Capacity at bank full= 13.70 cfs
12.0" Diameter Pipe n= 0.012 Length= 141.0' Slope= 0.1260 '/'

Reach ESS: (new node)

Inflow = 1.34 cfs @ 12.12 hrs, Volume= 0.100 af
Outflow = 1.33 cfs @ 12.13 hrs, Volume= 0.100 af, Atten= 1%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.5 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.3 fps, Avg. Travel Time= 1.3 min

Peak Depth= 0.31'
Capacity at bank full= 3.10 cfs
8.0" Diameter Pipe n= 0.012 Length= 265.0' Slope= 0.0560 '/'

Pond 1P: (new node)

Inflow = 1.15 cfs @ 12.08 hrs, Volume= 0.076 af
Primary = 1.15 cfs @ 12.08 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 2AP: (new node)

Inflow = 3.78 cfs @ 12.08 hrs, Volume= 0.285 af
Primary = 3.78 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 2P: (new node)

Inflow = 1.49 cfs @ 12.08 hrs, Volume= 0.100 af
Outflow = 1.34 cfs @ 12.12 hrs, Volume= 0.100 af, Atten= 10%, Lag= 2.8 min
Primary = 1.34 cfs @ 12.12 hrs, Volume= 0.100 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 119.92' Storage= 131 cf
Plug-Flow detention time= 0.7 min calculated for 0.100 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
109.00	12	0	0
123.00	12	168	168
124.00	12	12	180

Primary OutFlow (Free Discharge)
└─1=Culvert

Secondary OutFlow (Free Discharge)
└─2=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	109.00'	**4.0" x 113.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 67.75' S= 0.3650 '/' n= 0.012 Cc= 0.900
2	Secondary	123.00'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Pond 5P: (new node)

Inflow = 7.63 cfs @ 12.07 hrs, Volume= 0.529 af
Primary = 7.63 cfs @ 12.07 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 6P: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 7P: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 9P: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 10P: (new node)

Inflow = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af
Primary = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 11P: (new node)

Inflow = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af
Primary = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 12P: (new node)

Inflow = 1.21 cfs @ 12.07 hrs, Volume= 0.090 af
Primary = 1.21 cfs @ 12.07 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 13P: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 15P: (new node)

Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af
Primary = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 16P: (new node)

Inflow = 0.12 cfs @ 12.12 hrs, Volume= 0.013 af
Outflow = 0.14 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.11 hrs, Volume= 0.013 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 62.30' Storage= 10 cf
Plug-Flow detention time= 5.8 min calculated for 0.013 af (99% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.50	12	0	0
62.00	12	6	6
66.00	12	48	54
67.00	12	12	66

Primary OutFlow (Free Discharge)
└─1=Culvert

Secondary OutFlow (Free Discharge)
└─2=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	62.00'	**4.0" x 21.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 61.79' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Secondary	65.50'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Pond CB-63: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond dmh-20: (new node)

Inflow = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af
Primary = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-13: (new node)

Inflow = 7.65 cfs @ 12.09 hrs, Volume= 0.596 af
Primary = 7.65 cfs @ 12.09 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-20: (new node)

Inflow = 6.35 cfs @ 12.08 hrs, Volume= 0.483 af
Primary = 6.35 cfs @ 12.08 hrs, Volume= 0.483 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond smh-21: (new node)

Inflow = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af
Primary = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-26: (new node)

Inflow	=	10.73 cfs @	12.11 hrs,	Volume=	0.783 af
Outflow	=	10.58 cfs @	12.12 hrs,	Volume=	0.783 af, Atten= 1%, Lag= 0.5 min
Primary	=	10.58 cfs @	12.12 hrs,	Volume=	0.783 af
Secondary	=	0.00 cfs @	5.00 hrs,	Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 52.46' Storage= 102 cf
Plug-Flow detention time= 0.2 min calculated for 0.783 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	12	0	0
53.42	12	113	113
55.00	12	19	132

Primary OutFlow (Free Discharge)
↑—1=Culvert

Secondary OutFlow (Free Discharge)
↑—2=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	44.20'	**12.0" x 209.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 31.99' S= 0.0584 '/' n= 0.012 Cc= 0.900
2	Secondary	53.40'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Pond SMH12: (new node)

Inflow	=	1.34 cfs @	12.12 hrs,	Volume=	0.100 af
Primary	=	1.34 cfs @	12.12 hrs,	Volume=	0.100 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-1: (new node)

Inflow	=	1.15 cfs @	12.08 hrs,	Volume=	0.076 af
Primary	=	1.15 cfs @	12.08 hrs,	Volume=	0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-2: (new node)

Inflow = 18.67 cfs @ 12.12 hrs, Volume= 1.490 af
Primary = 18.67 cfs @ 12.12 hrs, Volume= 1.490 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-3: (new node)

Inflow = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af
Primary = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-4: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-5: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-6: (new node)

Inflow = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af
Primary = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-7: (new node)

Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af
Primary = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond tank: (new node)

Inflow = 11.18 cfs @ 12.08 hrs, Volume= 0.787 af
Outflow = 10.73 cfs @ 12.11 hrs, Volume= 0.783 af, Atten= 4%, Lag= 2.1 min
Primary = 10.73 cfs @ 12.11 hrs, Volume= 0.783 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 69.50' Storage= 1,461 cf
Plug-Flow detention time= 5.1 min calculated for 0.783 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.00	225	0	0
72.00	225	2,025	2,025
73.00	225	225	2,250

Primary OutFlow (Free Discharge)
1=Culvert
2=Orifice/Grate

Secondary OutFlow (Free Discharge)
3=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	63.50'	**12.0" x 168.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 44.97' S= 0.1103 '/' n= 0.012 Cc= 0.900
2	Primary	68.00'	**8.0" Vert. Orifice/Grate** C= 0.600
3	Secondary	72.00'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=88 Area=0.539 ac Runoff= 2.11 cfs 0.143 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.576 ac Runoff= 2.66 cfs 0.199 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=89 Area=0.672 ac Runoff= 2.69 cfs 0.184 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=98 Area=0.401 ac Runoff= 1.85 cfs 0.139 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.44 cfs 0.182 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=94 Area=2.860 ac Runoff= 12.64 cfs 0.903 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=43 Area=0.250 ac Runoff= 0.02 cfs 0.005 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 2.98 cfs 0.210 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 4.61 cfs 0.315 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 8.66 cfs 0.607 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=86 Area=0.767 ac Runoff= 2.85 cfs 0.192 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.216 ac Runoff= 1.00 cfs 0.075 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.415 ac Runoff= 1.92 cfs 0.143 af

Subcatchment 13S: (new node)
Tc=5.0 min CN=43 Area=0.210 ac Runoff= 0.02 cfs 0.004 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=71 Area=1.390 ac Runoff= 3.04 cfs 0.202 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=84 Area=0.254 ac Runoff= 0.89 cfs 0.060 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=61 Area=0.506 ac Runoff= 0.64 cfs 0.045 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.25 cfs 0.317 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 20.76 cfs 1.651 af

Reach 110: (new node)
Inflow= 1.00 cfs 0.075 af
Length= 60.0' Max Vel= 4.1 fps Capacity= 3.86 cfs Outflow= 0.98 cfs 0.075 af

Reach 115: (new node)
Inflow= 0.98 cfs 0.075 af
Length= 50.0' Max Vel= 4.1 fps Capacity= 3.86 cfs Outflow= 0.98 cfs 0.075 af

Reach 120: (new node)
Length= 55.0' Max Vel= 0.0 fps Capacity= 5.65 cfs Outflow= 0.00 cfs 0.000 af

Reach 125: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 172.0' Max Vel= 0.0 fps Capacity= 0.92 cfs Outflow= 0.00 cfs 0.000 af

Reach 131: (new node)
Inflow= 0.02 cfs 0.004 af
Length= 30.0' Max Vel= 1.5 fps Capacity= 0.21 cfs Outflow= 0.02 cfs 0.004 af

Reach 165: (new node)
Inflow= 0.60 cfs 0.049 af
Length= 215.0' Max Vel= 6.7 fps Capacity= 3.01 cfs Outflow= 0.59 cfs 0.049 af

Reach 171: (new node)
Inflow= 4.25 cfs 0.317 af
Length= 31.0' Max Vel= 16.9 fps Capacity= 29.32 cfs Outflow= 4.24 cfs 0.317 af

Reach 172: (new node)
Inflow= 10.07 cfs 0.773 af
Length= 32.0' Max Vel= 21.3 fps Capacity= 28.85 cfs Outflow= 10.07 cfs 0.773 af

Reach 210A: (new node)
Inflow= 5.98 cfs 0.456 af
Length= 150.0' Max Vel= 23.2 fps Capacity= 39.83 cfs Outflow= 5.97 cfs 0.456 af

Reach 220A: (new node)
Inflow= 5.97 cfs 0.456 af
Length= 168.0' Max Vel= 10.7 fps Capacity= 13.64 cfs Outflow= 5.92 cfs 0.456 af

Reach 310: (new node)
Inflow= 1.85 cfs 0.139 af
Length= 195.0' Max Vel= 5.6 fps Capacity= 4.73 cfs Outflow= 1.80 cfs 0.138 af

Reach 320.: (new node)
Inflow= 1.80 cfs 0.138 af
Length= 56.0' Max Vel= 22.0 fps Capacity= 32.06 cfs Outflow= 1.80 cfs 0.138 af

Reach 410: (new node) Inflow= 2.44 cfs 0.182 af
Length= 110.0' Max Vel= 5.2 fps Capacity= 3.86 cfs Outflow= 2.39 cfs 0.182 af

Reach 420: (new node) Inflow= 3.37 cfs 0.257 af
Length= 14.0' Max Vel= 9.6 fps Capacity= 24.14 cfs Outflow= 3.36 cfs 0.257 af

Reach 610: (new node) Inflow= 0.02 cfs 0.005 af
Length= 28.0' Max Vel= 0.3 fps Capacity= 26.83 cfs Outflow= 0.02 cfs 0.005 af

Reach 620: (new node) Inflow= 0.02 cfs 0.005 af
Length= 265.0' Max Vel= 0.6 fps Capacity= 0.75 cfs Outflow= 0.02 cfs 0.005 af

Reach 810: (new node) Inflow= 4.61 cfs 0.315 af
Length= 169.0' Max Vel= 18.1 fps Capacity= 16.82 cfs Outflow= 4.55 cfs 0.315 af

Reach 820: (new node) Inflow= 4.55 cfs 0.315 af
Length= 141.0' Max Vel= 15.6 fps Capacity= 13.70 cfs Outflow= 4.53 cfs 0.315 af

Reach ESS: (new node) Inflow= 2.85 cfs 0.184 af
Length= 265.0' Max Vel= 10.0 fps Capacity= 3.10 cfs Outflow= 2.63 cfs 0.184 af

Pond 1P: (new node) Inflow= 2.11 cfs 0.143 af
Primary= 2.11 cfs 0.143 af

Pond 2AP: (new node) Inflow= 5.98 cfs 0.456 af
Primary= 5.98 cfs 0.456 af

Pond 2P: (new node) Peak Storage= 171 cf Inflow= 2.69 cfs 0.184 af
Primary= 1.36 cfs 0.171 af Secondary= 1.49 cfs 0.013 af Outflow= 2.85 cfs 0.184 af

Pond 5P: (new node) Inflow= 12.64 cfs 0.903 af
Primary= 12.64 cfs 0.903 af

Pond 6P: (new node) Inflow= 0.02 cfs 0.005 af
Primary= 0.02 cfs 0.005 af

Pond 7P: (new node) Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond 9P: (new node) Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond 10P: (new node) Inflow= 4.77 cfs 0.335 af
Primary= 4.77 cfs 0.335 af

Pond 11P: (new node) Inflow= 1.00 cfs 0.075 af
Primary= 1.00 cfs 0.075 af

Pond 12P: (new node) Inflow= 1.92 cfs 0.143 af
Primary= 1.92 cfs 0.143 af

Pond 13P: (new node) Inflow= 0.02 cfs 0.004 af
Primary= 0.02 cfs 0.004 af

Pond 15P: (new node) Inflow= 0.89 cfs 0.060 af
Primary= 0.89 cfs 0.060 af

Pond 16P: (new node) Peak Storage= 42 cf Inflow= 0.64 cfs 0.049 af
Primary= 0.60 cfs 0.049 af Secondary= 0.00 cfs 0.000 af Outflow= 0.60 cfs 0.049 af

Pond CB-63: (new node) Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond dmh-20: (new node) Inflow= 23.60 cfs 1.559 af
Primary= 23.60 cfs 1.559 af

Pond SMH-13: (new node) Inflow= 13.22 cfs 1.006 af
Primary= 13.22 cfs 1.006 af

Pond SMH-20: (new node) Inflow= 10.07 cfs 0.773 af
Primary= 10.07 cfs 0.773 af

Pond smh-21: (new node) Inflow= 5.97 cfs 0.456 af
Primary= 5.97 cfs 0.456 af

Pond SMH-26: (new node) Peak Storage= 124 cf Inflow= 20.78 cfs 1.352 af
Primary= 10.93 cfs 1.280 af Secondary= 9.67 cfs 0.072 af Outflow= 20.60 cfs 1.352 af

Pond SMH12: (new node) Inflow= 2.85 cfs 0.184 af
Primary= 2.85 cfs 0.184 af

Pond SP-1: (new node) Inflow= 2.11 cfs 0.143 af
Primary= 2.11 cfs 0.143 af

Pond sp-2: (new node) Inflow= 32.95 cfs 2.657 af
Primary= 32.95 cfs 2.657 af

Pond sp-3: (new node) Inflow= 23.60 cfs 1.559 af
Primary= 23.60 cfs 1.559 af

Pond sp-4: (new node) Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond SP-5: (new node) Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond SP-6: (new node) Inflow= 4.77 cfs 0.335 af
Primary= 4.77 cfs 0.335 af

Pond SP-7: (new node) Inflow= 0.89 cfs 0.060 af
Primary= 0.89 cfs 0.060 af

Pond tank: (new node) Peak Storage= 2,181 cf Inflow= 18.80 cfs 1.356 af
Primary= 14.66 cfs 1.327 af Secondary= 6.13 cfs 0.025 af Outflow= 20.78 cfs 1.352 af

Runoff Area = 21.928 ac Volume = 5.576 af Average Depth = 3.05"

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=88 Area=0.539 ac Runoff= 2.56 cfs 0.176 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.576 ac Runoff= 3.12 cfs 0.234 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=89 Area=0.672 ac Runoff= 3.25 cfs 0.225 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=98 Area=0.401 ac Runoff= 2.17 cfs 0.163 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.86 cfs 0.214 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=94 Area=2.860 ac Runoff= 14.97 cfs 1.079 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=43 Area=0.250 ac Runoff= 0.06 cfs 0.009 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 4.34 cfs 0.296 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 5.57 cfs 0.385 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 10.34 cfs 0.732 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=86 Area=0.767 ac Runoff= 3.49 cfs 0.237 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.216 ac Runoff= 1.17 cfs 0.088 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.415 ac Runoff= 2.25 cfs 0.169 af

Subcatchment 13S: (new node)
Tc=5.0 min CN=43 Area=0.210 ac Runoff= 0.05 cfs 0.008 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=71 Area=1.390 ac Runoff= 4.06 cfs 0.268 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=84 Area=0.254 ac Runoff= 1.10 cfs 0.074 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=61 Area=0.506 ac Runoff= 0.94 cfs 0.064 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.98 cfs 0.373 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 25.09 cfs 2.017 af

Reach 110: (new node)
Inflow= 1.17 cfs 0.088 af
Length= 60.0' Max Vel= 4.3 fps Capacity= 3.86 cfs Outflow= 1.15 cfs 0.088 af

Reach 115: (new node)
Inflow= 1.15 cfs 0.088 af
Length= 50.0' Max Vel= 4.3 fps Capacity= 3.86 cfs Outflow= 1.14 cfs 0.088 af

Reach 120: (new node)
Length= 55.0' Max Vel= 0.0 fps Capacity= 5.65 cfs Outflow= 0.00 cfs 0.000 af

Reach 125: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 172.0' Max Vel= 0.0 fps Capacity= 0.92 cfs Outflow= 0.00 cfs 0.000 af

Reach 131: (new node)
Inflow= 0.05 cfs 0.008 af
Length= 30.0' Max Vel= 1.9 fps Capacity= 0.21 cfs Outflow= 0.05 cfs 0.008 af

Reach 165: (new node)
Inflow= 1.10 cfs 0.072 af
Length= 215.0' Max Vel= 7.9 fps Capacity= 3.01 cfs Outflow= 1.00 cfs 0.072 af

Reach 171: (new node)
Inflow= 4.98 cfs 0.373 af
Length= 31.0' Max Vel= 17.7 fps Capacity= 29.32 cfs Outflow= 4.97 cfs 0.373 af

Reach 172: (new node)
Inflow= 11.82 cfs 0.908 af
Length= 32.0' Max Vel= 22.3 fps Capacity= 28.85 cfs Outflow= 11.81 cfs 0.908 af

Reach 210A: (new node)
Inflow= 7.02 cfs 0.536 af
Length= 150.0' Max Vel= 24.3 fps Capacity= 39.83 cfs Outflow= 7.00 cfs 0.536 af

Reach 220A: (new node)
Inflow= 7.00 cfs 0.536 af
Length= 168.0' Max Vel= 11.2 fps Capacity= 13.64 cfs Outflow= 6.95 cfs 0.536 af

Reach 310: (new node)
Inflow= 2.17 cfs 0.163 af
Length= 195.0' Max Vel= 5.9 fps Capacity= 4.73 cfs Outflow= 2.11 cfs 0.163 af

Reach 320.: (new node)
Inflow= 2.11 cfs 0.163 af
Length= 56.0' Max Vel= 23.1 fps Capacity= 32.06 cfs Outflow= 2.11 cfs 0.163 af

Reach 410: (new node) Inflow= 2.86 cfs 0.214 af
Length= 110.0' Max Vel= 5.3 fps Capacity= 3.86 cfs Outflow= 2.80 cfs 0.214 af

Reach 420: (new node) Inflow= 3.95 cfs 0.302 af
Length= 14.0' Max Vel= 10.0 fps Capacity= 24.14 cfs Outflow= 3.95 cfs 0.302 af

Reach 610: (new node) Inflow= 0.06 cfs 0.009 af
Length= 28.0' Max Vel= 0.5 fps Capacity= 26.83 cfs Outflow= 0.06 cfs 0.009 af

Reach 620: (new node) Inflow= 0.06 cfs 0.009 af
Length= 265.0' Max Vel= 0.9 fps Capacity= 0.75 cfs Outflow= 0.06 cfs 0.009 af

Reach 810: (new node) Inflow= 5.57 cfs 0.385 af
Length= 169.0' Max Vel= 19.0 fps Capacity= 16.82 cfs Outflow= 5.50 cfs 0.385 af

Reach 820: (new node) Inflow= 5.50 cfs 0.385 af
Length= 141.0' Max Vel= 16.4 fps Capacity= 13.70 cfs Outflow= 5.47 cfs 0.385 af

Reach ESS: (new node) Inflow= 3.53 cfs 0.225 af
Length= 265.0' Max Vel= 10.1 fps Capacity= 3.10 cfs Outflow= 3.15 cfs 0.225 af

Pond 1P: (new node) Inflow= 2.56 cfs 0.176 af
Primary= 2.56 cfs 0.176 af

Pond 2AP: (new node) Inflow= 7.02 cfs 0.536 af
Primary= 7.02 cfs 0.536 af

Pond 2P: (new node) Peak Storage= 172 cf Inflow= 3.25 cfs 0.225 af
Primary= 1.36 cfs 0.202 af Secondary= 2.17 cfs 0.023 af Outflow= 3.53 cfs 0.225 af

Pond 5P: (new node) Inflow= 14.97 cfs 1.079 af
Primary= 14.97 cfs 1.079 af

Pond 6P: (new node) Inflow= 0.06 cfs 0.009 af
Primary= 0.06 cfs 0.009 af

Pond 7P: (new node) Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

Pond 9P: (new node) Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond 10P: (new node) Inflow= 5.74 cfs 0.406 af
Primary= 5.74 cfs 0.406 af

Pond 11P: (new node) Inflow= 1.17 cfs 0.088 af
Primary= 1.17 cfs 0.088 af

Pond 12P: (new node) Inflow= 2.25 cfs 0.169 af
Primary= 2.25 cfs 0.169 af

Pond 13P: (new node) Inflow= 0.05 cfs 0.008 af
Primary= 0.05 cfs 0.008 af

Pond 15P: (new node) Inflow= 1.10 cfs 0.074 af
Primary= 1.10 cfs 0.074 af

Pond 16P: (new node) Peak Storage= 50 cf Inflow= 0.97 cfs 0.072 af
Primary= 0.66 cfs 0.069 af Secondary= 0.44 cfs 0.002 af Outflow= 1.10 cfs 0.072 af

Pond CB-63: (new node) Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

Pond dmh-20: (new node) Inflow= 27.22 cfs 1.899 af
Primary= 27.22 cfs 1.899 af

Pond SMH-13: (new node) Inflow= 15.90 cfs 1.205 af
Primary= 15.90 cfs 1.205 af

Pond SMH-20: (new node) Inflow= 11.82 cfs 0.908 af
Primary= 11.82 cfs 0.908 af

Pond smh-21: (new node) Inflow= 7.00 cfs 0.536 af
Primary= 7.00 cfs 0.536 af

Pond SMH-26: (new node) Peak Storage= 126 cf Inflow= 23.27 cfs 1.622 af
Primary= 10.98 cfs 1.493 af Secondary= 12.21 cfs 0.129 af Outflow= 23.19 cfs 1.622 af

Pond SMH12: (new node) Inflow= 3.53 cfs 0.225 af
Primary= 3.53 cfs 0.225 af

Pond SP-1: (new node) Inflow= 2.56 cfs 0.176 af
Primary= 2.56 cfs 0.176 af

Pond sp-2: (new node) Inflow= 39.74 cfs 3.222 af
Primary= 39.74 cfs 3.222 af

Pond sp-3: (new node) Inflow= 27.22 cfs 1.899 af
Primary= 27.22 cfs 1.899 af

Pond sp-4: (new node) Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

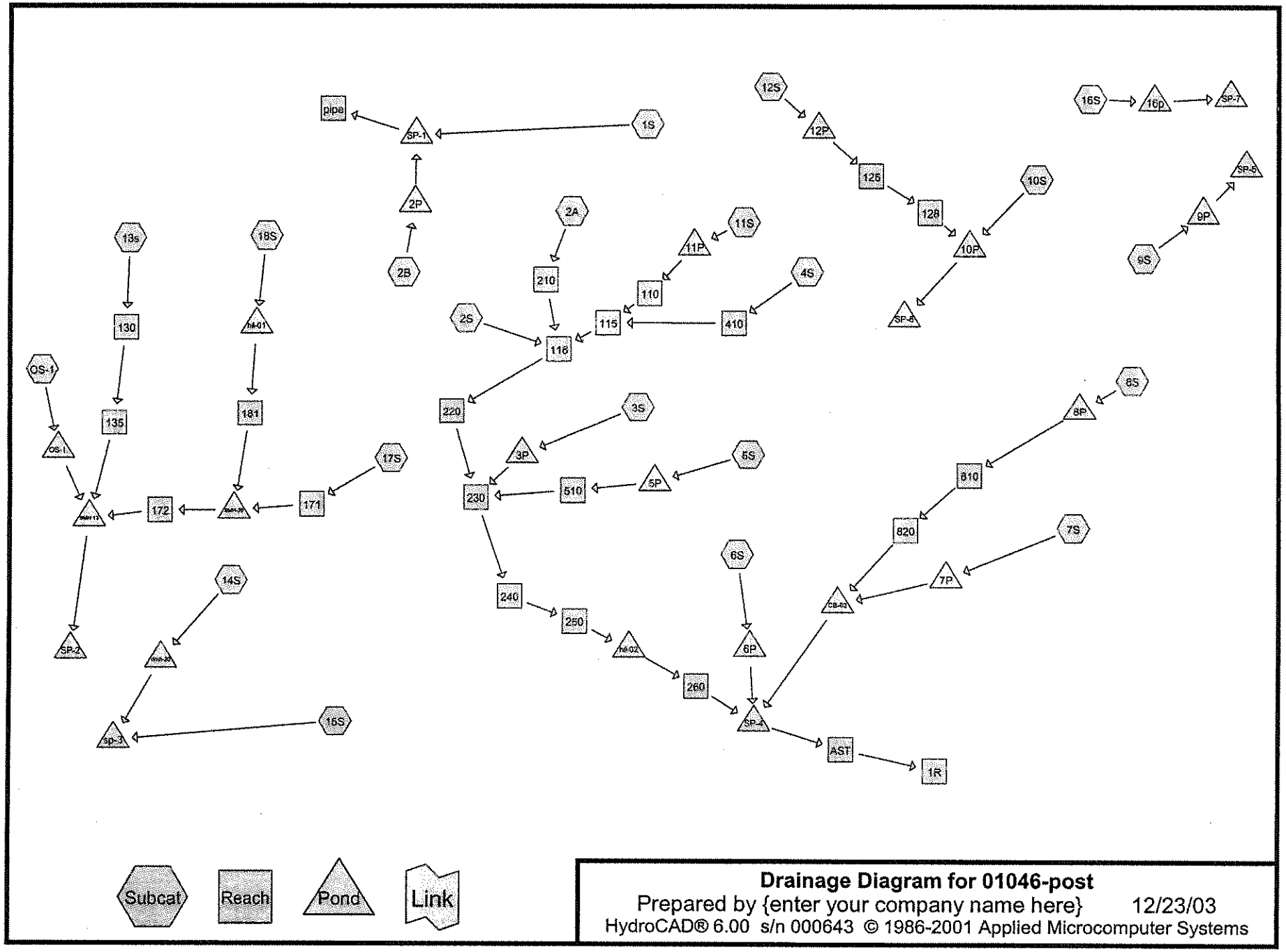
Pond SP-5: (new node) Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond SP-6: (new node) Inflow= 5.74 cfs 0.406 af
Primary= 5.74 cfs 0.406 af

Pond SP-7: (new node) Inflow= 1.10 cfs 0.074 af
Primary= 1.10 cfs 0.074 af

Pond tank: (new node) Peak Storage= 2,218 cf Inflow= 22.36 cfs 1.626 af
Primary= 14.83 cfs 1.560 af Secondary= 8.44 cfs 0.063 af Outflow= 23.27 cfs 1.622 af

Runoff Area = 21.928 ac Volume = 6.810 af Average Depth = 3.73"


pipe
SP-1
1S
2P
2B
2A
210
2S
116
11S
11P
110
115
4S
410
12S
12P
125
128
10S
10P
SP-5
16S
16p
SP-7
9S
9P
SP-6
13S
130
18S
hl-01
OS-1
135
181
OS-1
17S
171
172
3S
3P
220
230
510
5P
6S
8S
8P
810
820
7S
7P
6S
240
250
hl-02
260
6P
SP-4
AST
1R
14S
SP-2
SP-3
16S
Subcat
Reach
Pond
Link
Drainage Diagram for 01046-post
Prepared by {enter your company name here} 12/23/03
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=84 Area=0.448 ac Runoff= 0.80 cfs 0.053 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.568 ac Runoff= 1.66 cfs 0.123 af

Subcatchment 2B: (new node)
Tc=5.0 min CN=80 Area=0.320 ac Runoff= 0.46 cfs 0.031 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=98 Area=0.384 ac Runoff= 1.12 cfs 0.083 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=89 Area=0.347 ac Runoff= 0.77 cfs 0.052 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 1.54 cfs 0.114 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=91 Area=2.860 ac Runoff= 6.89 cfs 0.465 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=91 Area=0.251 ac Runoff= 0.60 cfs 0.041 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 0.64 cfs 0.064 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 2.55 cfs 0.171 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 5.07 cfs 0.345 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=87 Area=0.853 ac Runoff= 1.74 cfs 0.116 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.249 ac Runoff= 0.73 cfs 0.054 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.533 ac Runoff= 1.56 cfs 0.115 af

Subcatchment 13s: (new node)
Tc=6.2 min CN=78 Area=0.146 ac Runoff= 0.18 cfs 0.013 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=76 Area=1.140 ac Runoff= 1.30 cfs 0.088 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=43 Area=0.241 ac Runoff= 0.00 cfs 0.000 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=98 Area=0.093 ac Runoff= 0.27 cfs 0.020 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 2.69 cfs 0.198 af

Subcatchment 18S: (new node)
Tc=5.0 min CN=98 Area=0.623 ac Runoff= 1.82 cfs 0.134 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 11.55 cfs 0.894 af

Reach 1R: (new node)
Inflow= 15.90 cfs 1.164 af
Length= 10.0' Max Vel= 7.7 fps Capacity= 22.37 cfs Outflow= 15.88 cfs 1.164 af

Reach 110: (new node)
Inflow= 0.73 cfs 0.054 af
Length= 51.0' Max Vel= 3.8 fps Capacity= 1.31 cfs Outflow= 0.72 cfs 0.054 af

Reach 115: (new node)
Inflow= 2.24 cfs 0.168 af
Length= 83.0' Max Vel= 5.1 fps Capacity= 7.00 cfs Outflow= 2.22 cfs 0.168 af

Reach 118: (new node)
Inflow= 4.93 cfs 0.373 af
Length= 66.0' Max Vel= 5.9 fps Capacity= 10.76 cfs Outflow= 4.90 cfs 0.373 af

Reach 125: (new node)
Inflow= 1.56 cfs 0.115 af
Length= 113.0' Max Vel= 6.0 fps Capacity= 5.59 cfs Outflow= 1.53 cfs 0.115 af

Reach 128: (new node)
Inflow= 1.53 cfs 0.115 af
Length= 71.0' Max Vel= 3.5 fps Capacity= 2.71 cfs Outflow= 1.51 cfs 0.115 af

Reach 130: (new node)
Inflow= 0.18 cfs 0.013 af
Length= 74.0' Max Vel= 4.2 fps Capacity= 7.91 cfs Outflow= 0.18 cfs 0.013 af

Reach 135: (new node)
Inflow= 0.18 cfs 0.013 af
Length= 225.0' Max Vel= 4.8 fps Capacity= 3.10 cfs Outflow= 0.17 cfs 0.013 af

Reach 171: (new node)
Inflow= 2.69 cfs 0.198 af
Length= 31.0' Max Vel= 14.8 fps Capacity= 29.32 cfs Outflow= 2.68 cfs 0.198 af

Reach 172: (new node)
Inflow= 4.46 cfs 0.333 af
Length= 32.0' Max Vel= 16.9 fps Capacity= 28.85 cfs Outflow= 4.44 cfs 0.332 af

Reach 181: (new node) Inflow= 1.82 cfs 0.134 af
Length= 125.0' Max Vel= 7.7 fps Capacity= 13.83 cfs Outflow= 1.79 cfs 0.134 af

Reach 210: (new node) Inflow= 1.66 cfs 0.123 af
Length= 147.0' Max Vel= 4.1 fps Capacity= 3.23 cfs Outflow= 1.61 cfs 0.122 af

Reach 220: (new node) Inflow= 4.90 cfs 0.373 af
Length= 218.0' Max Vel= 11.4 fps Capacity= 26.19 cfs Outflow= 4.85 cfs 0.373 af

Reach 230: (new node) Inflow= 12.36 cfs 0.889 af
Length= 71.0' Max Vel= 25.9 fps Capacity= 57.69 cfs Outflow= 12.35 cfs 0.889 af

Reach 240: (new node) Inflow= 12.35 cfs 0.889 af
Length= 69.0' Max Vel= 22.9 fps Capacity= 48.44 cfs Outflow= 12.33 cfs 0.889 af

Reach 250: (new node) Inflow= 12.33 cfs 0.889 af
Length= 36.0' Max Vel= 11.9 fps Capacity= 43.43 cfs Outflow= 12.32 cfs 0.889 af

Reach 260: (new node) Inflow= 12.32 cfs 0.889 af
Length= 39.0' Max Vel= 7.5 fps Capacity= 23.22 cfs Outflow= 12.29 cfs 0.889 af

Reach 410: (new node) Inflow= 1.54 cfs 0.114 af
Length= 35.0' Max Vel= 3.6 fps Capacity= 2.77 cfs Outflow= 1.52 cfs 0.114 af

Reach 510: (new node) Inflow= 6.89 cfs 0.465 af
Length= 23.0' Max Vel= 26.2 fps Capacity= 74.96 cfs Outflow= 6.88 cfs 0.465 af

Reach 810: (new node) Inflow= 2.55 cfs 0.171 af
Length= 200.0' Max Vel= 14.5 fps Capacity= 15.48 cfs Outflow= 2.53 cfs 0.171 af

Reach 820: (new node) Inflow= 2.53 cfs 0.171 af
Length= 192.0' Max Vel= 12.2 fps Capacity= 12.21 cfs Outflow= 2.51 cfs 0.171 af

Reach AST: (new node) Inflow= 15.99 cfs 1.164 af
Length= 214.0' Max Vel= 19.8 fps Capacity= 22.39 cfs Outflow= 15.90 cfs 1.164 af

Reach pipe: (new node) Inflow= 1.26 cfs 0.083 af
Length= 10.0' Max Vel= 5.6 fps Capacity= 5.46 cfs Outflow= 1.26 cfs 0.083 af

Pond 2P: (new node) Peak Storage= 4 cf Inflow= 0.46 cfs 0.031 af
Primary= 0.46 cfs 0.031 af Outflow= 0.46 cfs 0.031 af

Pond 3P: (new node) Inflow= 0.77 cfs 0.052 af
Primary= 0.77 cfs 0.052 af

Pond 5P: (new node) Inflow= 6.89 cfs 0.465 af
Primary= 6.89 cfs 0.465 af

Pond 6P: (new node) Inflow= 0.60 cfs 0.041 af
Primary= 0.60 cfs 0.041 af

Pond 7P: (new node) Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond 8P: (new node) Inflow= 2.55 cfs 0.171 af
Primary= 2.55 cfs 0.171 af

Pond 9P: (new node) Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond 10P: (new node) Inflow= 3.24 cfs 0.230 af
Primary= 3.24 cfs 0.230 af

Pond 11P: (new node) Inflow= 0.73 cfs 0.054 af
Primary= 0.73 cfs 0.054 af

Pond 12P: (new node) Inflow= 1.56 cfs 0.115 af
Primary= 1.56 cfs 0.115 af

Pond 16p: (new node) Inflow= 0.27 cfs 0.020 af
Primary= 0.27 cfs 0.020 af

Pond CB-63: (new node) Peak Storage= 15 cf Inflow= 3.13 cfs 0.235 af
Primary= 3.13 cfs 0.235 af Outflow= 3.13 cfs 0.235 af

Pond dmh-20: (new node) Inflow= 1.30 cfs 0.088 af
Primary= 1.30 cfs 0.088 af

Pond hil-01: (new node) Inflow= 1.82 cfs 0.134 af
Primary= 1.82 cfs 0.134 af

Pond hil-02: (new node) Inflow= 12.32 cfs 0.889 af
Primary= 12.32 cfs 0.889 af

Pond OS-1.: (new node) Inflow= 11.55 cfs 0.894 af
Primary= 11.55 cfs 0.894 af

Pond SMH-13: (new node) Inflow= 15.49 cfs 1.239 af
Primary= 15.49 cfs 1.239 af

Pond SMH-20: (new node) Inflow= 4.46 cfs 0.333 af
Primary= 4.46 cfs 0.333 af

Pond SP-1: (new node) Inflow= 1.26 cfs 0.083 af
Primary= 1.26 cfs 0.083 af

Pond SP-2: (new node)
Inflow= 15.49 cfs 1.239 af
Primary= 15.49 cfs 1.239 af

Pond sp-3: (new node)
Inflow= 1.30 cfs 0.088 af
Primary= 1.30 cfs 0.088 af

Pond SP-4: (new node)
Inflow= 15.99 cfs 1.164 af
Primary= 15.99 cfs 1.164 af

Pond SP-5: (new node)
Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond SP-6: (new node)
Inflow= 3.24 cfs 0.230 af
Primary= 3.24 cfs 0.230 af

Pond SP-7: (new node)
Inflow= 0.27 cfs 0.020 af
Primary= 0.27 cfs 0.020 af

Runoff Area = 21.928 ac Volume = 3.171 af Average Depth = 1.74"

Subcatchment 1S: (new node)

Runoff = 0.80 cfs @ 12.08 hrs, Volume= 0.053 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.344	98	Paved parking & roofs
0.104	39	>75% Grass cover, Good, HSG A
0.448	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.0500	0.2		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.2	33	0.0500	3.4		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.3	82	0.0420	4.2		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.1	74	0.0500	11.0	8.63	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.0					**Direct Entry, DIRECT**
5.0	229	Total			

Subcatchment 2A: (new node)

Runoff = 1.66 cfs @ 12.07 hrs, Volume= 0.123 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.568	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	112	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.9					**Direct Entry, DIRECT**
5.0	142	Total			

Subcatchment 2B: (new node)

Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.220	98	Paved parking & roofs
0.100	39	>75% Grass cover, Good, HSG A
0.320	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	123	0.0380	4.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.0	131	0.0005	1.1	0.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.9					**Direct Entry, DIRECT**
5.0	284	Total			

Subcatchment 2S: (new node)

Runoff = 1.12 cfs @ 12.07 hrs, Volume= 0.083 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.384	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	30	0.0180	1.0		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	78	0.0370	3.9		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	136	0.0107	5.1	3.99	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.8					**Direct Entry, DIRECT**
5.0	244	Total			

Subcatchment 3S: (new node)

Runoff = 0.77 cfs @ 12.08 hrs, Volume= 0.052 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.054	39	>75% Grass cover, Good, HSG A
0.293	98	Paved parking & roofs
0.347	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0250	1.1		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	106	0.0810	5.8		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.2	222	0.0530	14.8	26.20	**Circular Channel (pipe), PIPE C TO D** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.1					**Direct Entry, DIRECT**
5.0	358	Total			

Subcatchment 4S: (new node)

Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.528	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	50	0.0050	0.7		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	110	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.4					**Direct Entry, DIRECT**
5.0	160	Total			

Subcatchment 5S: (new node)

Runoff = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
2.506	98	Paved parking & roofs
0.354	39	>75% Grass cover, Good, HSG A
2.860	91	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	35	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
2.2	355	0.0050	2.7	0.93	**Circular Channel (pipe), PIPE B TO C** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.1	35	0.0300	8.5	6.69	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	85	0.0160	6.2	4.88	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.6					**Direct Entry, DIRECT**
5.0	510	Total			

Subcatchment 6S: (new node)

Runoff = 0.60 cfs @ 12.07 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.049	61	>75% Grass cover, Good, HSG B
0.202	98	Paved parking & roofs
0.251	91	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	64	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE B TO C (ROOF DRAIN)** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.0	27	0.0740	10.2	3.56	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
4.1					**Direct Entry, DIRECT**
5.0	121	Total			

Subcatchment 7S: (new node)

Runoff = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.456	98	Paved roads w/curbs & sewers
1.354	43	Woods/grass comb., Fair, HSG A
0.079	43	Woods/grass comb., Fair, HSG A
0.327	98	Paved roads w/curbs & sewers
2.216	62	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	75	0.0400	1.7		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	78	0.0180	2.7		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7	219	0.0590	4.9		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.2	72	0.0970	6.3		**Shallow Concentrated Flow, SHALLOW D TO E** Paved Kv= 20.3 fps
0.2	190	0.1020	15.7	12.33	**Circular Channel (pipe), PIPE E TO F** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.6					**Direct Entry, DIRECT**
5.0	634	Total			

Subcatchment 8S: (new node)

Runoff = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.973	98	Paved parking & roofs
0.152	43	Woods/grass comb., Fair, HSG A
0.025	39	>75% Grass cover, Good, HSG A
1.150	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	93	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.5	135	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	131	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.8					**Direct Entry, DIRECT**
5.0	399	Total			

Subcatchment 9S: (new node)

Runoff = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.191	39	>75% Grass cover, Good, HSG A
1.839	98	Paved parking & roofs
2.030	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	285	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE B TO C** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.3	97	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.4					**Direct Entry, DIRECT**
5.0	422	Total			

Subcatchment 10S: (new node)

Runoff = 1.74 cfs @ 12.08 hrs, Volume= 0.116 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.157	39	>75% Grass cover, Good, HSG A
0.696	98	Paved parking & roofs
0.853	87	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.4		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	37	0.0540	4.7		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	75	0.0200	2.9		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.3	113	0.0210	7.1	5.59	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.3	71	0.0050	3.5	2.73	**Circular Channel (pipe), PIPE E TO F** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.5					**Direct Entry, DIRECT**
5.0	326	Total			

Subcatchment 11S: (new node)

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.249	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	60	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.5					**Direct Entry, DIRECT**
5.0	90	Total			

Subcatchment 12S: (new node)

Runoff = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.533	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.9	80	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	90	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
2.9					**Direct Entry, DIRECT**
5.0	200	Total			

Subcatchment 13s: (new node)

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.013 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.093	98	Paved parking & roofs
0.053	43	Woods/grass comb., Fair, HSG A
0.146	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	40	0.1000	0.1		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.2	51	0.6400	4.0		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.4	105	0.0420	4.2		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
6.2	196	Total			

Subcatchment 14S: (new node)

Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.711	98	Paved parking & roofs
0.429	39	>75% Grass cover, Good, HSG A
1.140	76	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	45	0.0680	0.2		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.0	217	0.0320	3.6		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7					**Direct Entry, DIRECT**
5.0	262	Total			

Subcatchment 15S: (new node)

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.225	39	>75% Grass cover, Good, HSG A
0.016	98	Paved parking & roofs
0.241	43	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	18	0.2770	0.3		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.5	190	0.1920	6.6		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.5	176	0.0760	5.6		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
3.1					**Direct Entry, DIRECT**
5.0	384	Total			

Subcatchment 16S: (new node)

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.093	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.2	28	0.0100	2.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.0	11	0.0125	5.5	4.32	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.2					**Direct Entry, DIRECT**
5.0	69	Total			

Subcatchment 17S: (new node)

Runoff = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.918	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	14	0.0100	2.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	134	0.1600	15.0	5.24	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
4.0					**Direct Entry, DIRECT**
5.0	188	Total			

Subcatchment 18S: (new node)

Runoff = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.623	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	141	0.2000	9.1		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	135	0.0110	5.2	4.05	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.5					**Direct Entry, DIRECT**
5.0	316	Total			

Subcatchment OS-1: OS-1

Runoff = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
6.030	89	Urban commercial, 85% imp, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.2		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.2		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.0		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.7		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.5		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Reach 1R: (new node)

Inflow = 15.90 cfs @ 12.10 hrs, Volume= 1.164 af
Outflow = 15.88 cfs @ 12.10 hrs, Volume= 1.164 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.7 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 1.25'
Capacity at bank full= 22.37 cfs
24.0" Diameter Pipe n= 0.011 Length= 10.0' Slope= 0.0070 '/'

Reach 110: (new node)

Inflow = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af
Outflow = 0.72 cfs @ 12.08 hrs, Volume= 0.054 af, Atten= 2%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.8 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.5 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.35'
Capacity at bank full= 1.31 cfs
8.0" Diameter Pipe n= 0.012 Length= 51.0' Slope= 0.0100 '/'

Reach 115: (new node)

Inflow = 2.24 cfs @ 12.08 hrs, Volume= 0.168 af
Outflow = 2.22 cfs @ 12.09 hrs, Volume= 0.168 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.1 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.9 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.49'
Capacity at bank full= 7.00 cfs
15.0" Diameter Pipe n= 0.012 Length= 83.0' Slope= 0.0100 '/'

Reach 118: (new node)

Inflow = 4.93 cfs @ 12.08 hrs, Volume= 0.373 af
Outflow = 4.90 cfs @ 12.09 hrs, Volume= 0.373 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.9 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.71'
Capacity at bank full= 10.76 cfs
18.0" Diameter Pipe n= 0.012 Length= 66.0' Slope= 0.0089 '/'

Reach 125: (new node)

Inflow = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af
Outflow = 1.53 cfs @ 12.08 hrs, Volume= 0.115 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.0 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.36'
Capacity at bank full= 5.59 cfs
12.0" Diameter Pipe n= 0.012 Length= 113.0' Slope= 0.0210 '/'

Reach 128: (new node)

Inflow = 1.53 cfs @ 12.08 hrs, Volume= 0.115 af
Outflow = 1.51 cfs @ 12.09 hrs, Volume= 0.115 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.5 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.54'
Capacity at bank full= 2.71 cfs
12.0" Diameter Pipe n= 0.012 Length= 71.0' Slope= 0.0049 '/'

Reach 130: (new node)

Inflow = 0.18 cfs @ 12.10 hrs, Volume= 0.013 af
Outflow = 0.18 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.2 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.11'
Capacity at bank full= 7.91 cfs
12.0" Diameter Pipe n= 0.012 Length= 74.0' Slope= 0.0420 '/'

Reach 135: (new node)

Inflow = 0.18 cfs @ 12.11 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.13 hrs, Volume= 0.013 af, Atten= 5%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.8 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.0 fps, Avg. Travel Time= 1.9 min

Peak Depth= 0.11'
Capacity at bank full= 3.10 cfs
8.0" Diameter Pipe n= 0.012 Length= 225.0' Slope= 0.0560 '/'

Reach 171: (new node)

Inflow = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af
Outflow = 2.68 cfs @ 12.07 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.8 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 5.6 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26'
Capacity at bank full= 29.32 cfs
15.0" Diameter Pipe n= 0.012 Length= 31.0' Slope= 0.1755 '/'

Reach 172: (new node)

Inflow = 4.46 cfs @ 12.07 hrs, Volume= 0.333 af
Outflow = 4.44 cfs @ 12.08 hrs, Volume= 0.332 af, Atten= 1%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 16.9 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 6.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.33'
Capacity at bank full= 28.85 cfs
15.0" Diameter Pipe n= 0.012 Length= 32.0' Slope= 0.1700 '/'

Reach 181: (new node)

Inflow = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af
Outflow = 1.79 cfs @ 12.08 hrs, Volume= 0.134 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.7 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.31'
Capacity at bank full= 13.83 cfs
15.0" Diameter Pipe n= 0.012 Length= 125.0' Slope= 0.0390 '/'

Reach 210: (new node)

Inflow = 1.66 cfs @ 12.07 hrs, Volume= 0.123 af
Outflow = 1.61 cfs @ 12.09 hrs, Volume= 0.122 af, Atten= 3%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.1 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.6 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.51'
Capacity at bank full= 3.23 cfs
12.0" Diameter Pipe n= 0.012 Length= 147.0' Slope= 0.0070 '/'

Reach 220: (new node)

Inflow = 4.90 cfs @ 12.09 hrs, Volume= 0.373 af
Outflow = 4.85 cfs @ 12.10 hrs, Volume= 0.373 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.4 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 4.3 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.44'
Capacity at bank full= 26.19 cfs
18.0" Diameter Pipe n= 0.012 Length= 218.0' Slope= 0.0530 '/'

Reach 230: (new node)

Inflow = 12.36 cfs @ 12.08 hrs, Volume= 0.889 af
Outflow = 12.35 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 25.9 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 9.5 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.47'
Capacity at bank full= 57.69 cfs
18.0" Diameter Pipe n= 0.012 Length= 71.0' Slope= 0.2570 '/'

Reach 240: (new node)

Inflow = 12.35 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 12.33 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 22.9 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 8.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.52'
Capacity at bank full= 48.44 cfs
18.0" Diameter Pipe n= 0.012 Length= 69.0' Slope= 0.1812 '/'

Reach 250: (new node)

Inflow = 12.33 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.9 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.73'
Capacity at bank full= 43.43 cfs
24.0" Diameter Pipe n= 0.011 Length= 36.0' Slope= 0.0264 '/'

Reach 260: (new node)

Inflow = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 12.29 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.5 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.8 fps, Avg. Travel Time= 0.2 min

Peak Depth= 1.04'
Capacity at bank full= 23.22 cfs
24.0" Diameter Pipe n= 0.012 Length= 39.0' Slope= 0.0090 '/'

Reach 410: (new node)

Inflow = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af
Outflow = 1.52 cfs @ 12.08 hrs, Volume= 0.114 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.53'
Capacity at bank full= 2.77 cfs
12.0" Diameter Pipe n= 0.012 Length= 35.0' Slope= 0.0051 '/'

Reach 510: (new node)

Inflow = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af
Outflow = 6.88 cfs @ 12.07 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 26.2 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 9.4 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.31'
Capacity at bank full= 74.96 cfs
18.0" Diameter Pipe n= 0.012 Length= 23.0' Slope= 0.4339 '/'

Reach 810: (new node)

Inflow = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.5 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 5.3 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.28'
Capacity at bank full= 15.48 cfs
12.0" Diameter Pipe n= 0.012 Length= 200.0' Slope= 0.1608 '/'

Reach 820: (new node)

Inflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.51 cfs @ 12.09 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 12.2 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 4.5 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.31'
Capacity at bank full= 12.21 cfs
12.0" Diameter Pipe n= 0.012 Length= 192.0' Slope= 0.1000 '/'

Reach AST: (new node)

Inflow = 15.99 cfs @ 12.09 hrs, Volume= 1.164 af
Outflow = 15.90 cfs @ 12.10 hrs, Volume= 1.164 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 19.8 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 7.6 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.78'
Capacity at bank full= 22.39 cfs
15.0" Diameter Pipe n= 0.011 Length= 214.0' Slope= 0.0860 '/'

Reach pipe: (new node)

Inflow = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af
Outflow = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.6 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.33'
Capacity at bank full= 5.46 cfs
12.0" Diameter Pipe n= 0.012 Length= 10.0' Slope= 0.0200 '/'

Pond 2P: (new node)

Inflow = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af
Outflow = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.1 min
Primary = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 107.29' Storage= 4 cf
Plug-Flow detention time= 0.3 min calculated for 0.031 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
107.00	13	0	0
120.00	13	169	169

Primary OutFlow (Free Discharge)
└1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	107.00'	**18.0" x 50.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 106.50' S= 0.0100 '/' n= 0.011 Cc= 0.900

Pond 3P: (new node)

Inflow = 0.77 cfs @ 12.08 hrs, Volume= 0.052 af
Primary = 0.77 cfs @ 12.08 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 5P: (new node)

Inflow = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af
Primary = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 6P: (new node)

Inflow = 0.60 cfs @ 12.07 hrs, Volume= 0.041 af
Primary = 0.60 cfs @ 12.07 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 7P: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 8P: (new node)

Inflow = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af
Primary = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 9P: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 10P: (new node)

Inflow = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af
Primary = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 11P: (new node)

Inflow = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af
Primary = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 12P: (new node)

Inflow = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af
Primary = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 16p: (new node)

Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond CB-63: (new node)

Inflow = 3.13 cfs @ 12.10 hrs, Volume= 0.235 af
Outflow = 3.13 cfs @ 12.10 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.1 min
Primary = 3.13 cfs @ 12.10 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 60.98' Storage= 15 cf
Plug-Flow detention time= 0.2 min calculated for 0.235 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.80	13	0	0
66.00	13	81	81

Primary OutFlow (Free Discharge)
└1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	59.80'	**12.0" x 10.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 58.46' S= 0.1340 '/' n= 0.012 Cc= 0.900

Pond dmh-20: (new node)

Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af
Primary = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond hil-01: (new node)

Inflow = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af
Primary = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond hil-02: (new node)

Inflow = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af
Primary = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond OS-1.: (new node)

Inflow = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af
Primary = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-13: (new node)

Inflow = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af
Primary = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-20: (new node)

Inflow = 4.46 cfs @ 12.07 hrs, Volume= 0.333 af
Primary = 4.46 cfs @ 12.07 hrs, Volume= 0.333 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-1: (new node)

Inflow = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af
Primary = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-2: (new node)

Inflow = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af
Primary = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-3: (new node)

Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af
Primary = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-4: (new node)

Inflow = 15.99 cfs @ 12.09 hrs, Volume= 1.164 af
Primary = 15.99 cfs @ 12.09 hrs, Volume= 1.164 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-5: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-6: (new node)

Inflow = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af
Primary = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-7: (new node)

Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=84 Area=0.448 ac Runoff= 1.57 cfs 0.105 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.568 ac Runoff= 2.63 cfs 0.196 af

Subcatchment 2B: (new node)
Tc=5.0 min CN=80 Area=0.320 ac Runoff= 0.99 cfs 0.066 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=98 Area=0.384 ac Runoff= 1.78 cfs 0.133 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=89 Area=0.347 ac Runoff= 1.39 cfs 0.095 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.44 cfs 0.182 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=91 Area=2.860 ac Runoff= 11.97 cfs 0.832 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=91 Area=0.251 ac Runoff= 1.05 cfs 0.073 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 2.98 cfs 0.210 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 4.61 cfs 0.315 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 8.66 cfs 0.607 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=87 Area=0.853 ac Runoff= 3.25 cfs 0.220 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.249 ac Runoff= 1.15 cfs 0.086 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.533 ac Runoff= 2.46 cfs 0.184 af

Subcatchment 13s: (new node)
Tc=6.2 min CN=78 Area=0.146 ac Runoff= 0.41 cfs 0.028 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=76 Area=1.140 ac Runoff= 3.06 cfs 0.202 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=43 Area=0.241 ac Runoff= 0.02 cfs 0.005 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=98 Area=0.093 ac Runoff= 0.43 cfs 0.032 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.25 cfs 0.317 af

Subcatchment 18S: (new node)
Tc=5.0 min CN=98 Area=0.623 ac Runoff= 2.88 cfs 0.215 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 20.76 cfs 1.651 af

Reach 1R: (new node)
Inflow= 22.39 cfs 2.120 af
Length= 10.0' Max Vel= 8.1 fps Capacity= 22.37 cfs Outflow= 22.39 cfs 2.120 af

Reach 110: (new node)
Inflow= 1.15 cfs 0.086 af
Length= 51.0' Max Vel= 4.2 fps Capacity= 1.31 cfs Outflow= 1.13 cfs 0.086 af

Reach 115: (new node)
Inflow= 3.54 cfs 0.268 af
Length= 83.0' Max Vel= 5.7 fps Capacity= 7.00 cfs Outflow= 3.51 cfs 0.268 af

Reach 118: (new node)
Inflow= 7.81 cfs 0.597 af
Length= 66.0' Max Vel= 6.6 fps Capacity= 10.76 cfs Outflow= 7.77 cfs 0.597 af

Reach 125: (new node)
Inflow= 2.46 cfs 0.184 af
Length= 113.0' Max Vel= 6.8 fps Capacity= 5.59 cfs Outflow= 2.42 cfs 0.184 af

Reach 128: (new node)
Inflow= 2.42 cfs 0.184 af
Length= 71.0' Max Vel= 3.9 fps Capacity= 2.71 cfs Outflow= 2.40 cfs 0.184 af

Reach 130: (new node)
Inflow= 0.41 cfs 0.028 af
Length= 74.0' Max Vel= 5.3 fps Capacity= 7.91 cfs Outflow= 0.41 cfs 0.028 af

Reach 135: (new node)
Inflow= 0.41 cfs 0.028 af
Length= 225.0' Max Vel= 6.1 fps Capacity= 3.10 cfs Outflow= 0.39 cfs 0.028 af

Reach 171: (new node)
Inflow= 4.25 cfs 0.317 af
Length= 31.0' Max Vel= 16.9 fps Capacity= 29.32 cfs Outflow= 4.24 cfs 0.317 af

Reach 172: (new node)
Inflow= 7.06 cfs 0.532 af
Length= 32.0' Max Vel= 19.2 fps Capacity= 28.85 cfs Outflow= 7.02 cfs 0.532 af

Reach 181: (new node) Inflow= 2.88 cfs 0.215 af
Length= 125.0' Max Vel= 8.8 fps Capacity= 13.83 cfs Outflow= 2.83 cfs 0.215 af

Reach 210: (new node) Inflow= 2.63 cfs 0.196 af
Length= 147.0' Max Vel= 4.6 fps Capacity= 3.23 cfs Outflow= 2.56 cfs 0.196 af

Reach 220: (new node) Inflow= 7.77 cfs 0.597 af
Length= 218.0' Max Vel= 12.9 fps Capacity= 26.19 cfs Outflow= 7.69 cfs 0.597 af

Reach 230: (new node) Inflow= 20.79 cfs 1.523 af
Length= 71.0' Max Vel= 29.9 fps Capacity= 57.69 cfs Outflow= 20.77 cfs 1.523 af

Reach 240: (new node) Inflow= 20.77 cfs 1.523 af
Length= 69.0' Max Vel= 26.3 fps Capacity= 48.44 cfs Outflow= 20.74 cfs 1.523 af

Reach 250: (new node) Inflow= 20.74 cfs 1.523 af
Length= 36.0' Max Vel= 13.6 fps Capacity= 43.43 cfs Outflow= 20.72 cfs 1.523 af

Reach 260: (new node) Inflow= 20.72 cfs 1.523 af
Length= 39.0' Max Vel= 8.3 fps Capacity= 23.22 cfs Outflow= 20.68 cfs 1.523 af

Reach 410: (new node) Inflow= 2.44 cfs 0.182 af
Length= 35.0' Max Vel= 4.0 fps Capacity= 2.77 cfs Outflow= 2.41 cfs 0.182 af

Reach 510: (new node) Inflow= 11.97 cfs 0.832 af
Length= 23.0' Max Vel= 30.8 fps Capacity= 74.96 cfs Outflow= 11.96 cfs 0.832 af

Reach 810: (new node) Inflow= 4.61 cfs 0.315 af
Length= 200.0' Max Vel= 17.0 fps Capacity= 15.48 cfs Outflow= 4.54 cfs 0.315 af

Reach 820: (new node) Inflow= 4.54 cfs 0.315 af
Length= 192.0' Max Vel= 14.4 fps Capacity= 12.21 cfs Outflow= 4.51 cfs 0.315 af

Reach AST: (new node) Inflow= 29.21 cfs 2.121 af
Length= 214.0' Max Vel= 20.7 fps Capacity= 22.39 cfs Outflow= 22.39 cfs 2.120 af

Reach pipe: (new node) Inflow= 2.55 cfs 0.170 af
Length= 10.0' Max Vel= 6.8 fps Capacity= 5.46 cfs Outflow= 2.55 cfs 0.170 af

Pond 2P: (new node) Peak Storage= 6 cf Inflow= 0.99 cfs 0.066 af
Primary= 0.99 cfs 0.066 af Outflow= 0.99 cfs 0.066 af

Pond 3P: (new node) Inflow= 1.39 cfs 0.095 af
Primary= 1.39 cfs 0.095 af

Pond 5P: (new node) Inflow= 11.97 cfs 0.832 af
Primary= 11.97 cfs 0.832 af

Pond 6P: (new node)
Inflow= 1.05 cfs 0.073 af
Primary= 1.05 cfs 0.073 af

Pond 7P: (new node)
Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond 8P: (new node)
Inflow= 4.61 cfs 0.315 af
Primary= 4.61 cfs 0.315 af

Pond 9P: (new node)
Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond 10P: (new node)
Inflow= 5.61 cfs 0.404 af
Primary= 5.61 cfs 0.404 af

Pond 11P: (new node)
Inflow= 1.15 cfs 0.086 af
Primary= 1.15 cfs 0.086 af

Pond 12P: (new node)
Inflow= 2.46 cfs 0.184 af
Primary= 2.46 cfs 0.184 af

Pond 16p: (new node)
Inflow= 0.43 cfs 0.032 af
Primary= 0.43 cfs 0.032 af

Pond CB-63: (new node)
Peak Storage= 58 cf Inflow= 7.50 cfs 0.525 af
Primary= 7.51 cfs 0.525 af Outflow= 7.51 cfs 0.525 af

Pond dmh-20: (new node)
Inflow= 3.06 cfs 0.202 af
Primary= 3.06 cfs 0.202 af

Pond hil-01: (new node)
Inflow= 2.88 cfs 0.215 af
Primary= 2.88 cfs 0.215 af

Pond hil-02: (new node)
Inflow= 20.72 cfs 1.523 af
Primary= 20.72 cfs 1.523 af

Pond OS-1.: (new node)
Inflow= 20.76 cfs 1.651 af
Primary= 20.76 cfs 1.651 af

Pond SMH-13: (new node)
Inflow= 27.15 cfs 2.211 af
Primary= 27.15 cfs 2.211 af

Pond SMH-20: (new node)
Inflow= 7.06 cfs 0.532 af
Primary= 7.06 cfs 0.532 af

Pond SP-1: (new node)
Inflow= 2.55 cfs 0.170 af
Primary= 2.55 cfs 0.170 af

Pond SP-2: (new node)
Inflow= 27.15 cfs 2.211 af
Primary= 27.15 cfs 2.211 af

Pond sp-3: (new node)
Inflow= 3.06 cfs 0.206 af
Primary= 3.06 cfs 0.206 af

Pond SP-4: (new node)
Inflow= 29.21 cfs 2.121 af
Primary= 29.21 cfs 2.121 af

Pond SP-5: (new node)
Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond SP-6: (new node)
Inflow= 5.61 cfs 0.404 af
Primary= 5.61 cfs 0.404 af

Pond SP-7: (new node)
Inflow= 0.43 cfs 0.032 af
Primary= 0.43 cfs 0.032 af

Runoff Area = 21.928 ac Volume = 5.754 af Average Depth = 3.15"

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=84 Area=0.448 ac Runoff= 1.95 cfs 0.131 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.568 ac Runoff= 3.08 cfs 0.231 af

Subcatchment 2B: (new node)
Tc=5.0 min CN=80 Area=0.320 ac Runoff= 1.25 cfs 0.083 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=98 Area=0.384 ac Runoff= 2.08 cfs 0.156 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=89 Area=0.347 ac Runoff= 1.68 cfs 0.116 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.86 cfs 0.214 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=91 Area=2.860 ac Runoff= 14.34 cfs 1.007 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=91 Area=0.251 ac Runoff= 1.26 cfs 0.088 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 4.34 cfs 0.296 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 5.57 cfs 0.385 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 10.34 cfs 0.732 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=87 Area=0.853 ac Runoff= 3.97 cfs 0.271 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.249 ac Runoff= 1.35 cfs 0.101 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.533 ac Runoff= 2.89 cfs 0.216 af

Subcatchment 13s: (new node)
Tc=6.2 min CN=78 Area=0.146 ac Runoff= 0.52 cfs 0.036 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=76 Area=1.140 ac Runoff= 3.95 cfs 0.261 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=43 Area=0.241 ac Runoff= 0.06 cfs 0.009 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=98 Area=0.093 ac Runoff= 0.50 cfs 0.038 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.98 cfs 0.373 af

Subcatchment 18S: (new node)
Tc=5.0 min CN=98 Area=0.623 ac Runoff= 3.38 cfs 0.253 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 25.09 cfs 2.017 af

Reach 1R: (new node)
Inflow= 22.39 cfs 2.592 af
Length= 10.0' Max Vel= 8.1 fps Capacity= 22.37 cfs Outflow= 22.43 cfs 2.592 af

Reach 110: (new node)
Inflow= 1.35 cfs 0.101 af
Length= 51.0' Max Vel= 4.3 fps Capacity= 1.31 cfs Outflow= 1.33 cfs 0.101 af

Reach 115: (new node)
Inflow= 4.15 cfs 0.315 af
Length= 83.0' Max Vel= 5.9 fps Capacity= 7.00 cfs Outflow= 4.12 cfs 0.315 af

Reach 118: (new node)
Inflow= 9.15 cfs 0.702 af
Length= 66.0' Max Vel= 6.8 fps Capacity= 10.76 cfs Outflow= 9.11 cfs 0.702 af

Reach 125: (new node)
Inflow= 2.89 cfs 0.216 af
Length= 113.0' Max Vel= 7.1 fps Capacity= 5.59 cfs Outflow= 2.84 cfs 0.216 af

Reach 128: (new node)
Inflow= 2.84 cfs 0.216 af
Length= 71.0' Max Vel= 3.9 fps Capacity= 2.71 cfs Outflow= 2.81 cfs 0.216 af

Reach 130: (new node)
Inflow= 0.52 cfs 0.036 af
Length= 74.0' Max Vel= 5.7 fps Capacity= 7.91 cfs Outflow= 0.52 cfs 0.036 af

Reach 135: (new node)
Inflow= 0.52 cfs 0.036 af
Length= 225.0' Max Vel= 6.6 fps Capacity= 3.10 cfs Outflow= 0.51 cfs 0.036 af

Reach 171: (new node)
Inflow= 4.98 cfs 0.373 af
Length= 31.0' Max Vel= 17.7 fps Capacity= 29.32 cfs Outflow= 4.97 cfs 0.373 af

Reach 172: (new node)
Inflow= 8.28 cfs 0.626 af
Length= 32.0' Max Vel= 20.1 fps Capacity= 28.85 cfs Outflow= 8.26 cfs 0.626 af

Reach 181: (new node) Inflow= 3.38 cfs 0.253 af
Length= 125.0' Max Vel= 9.2 fps Capacity= 13.83 cfs Outflow= 3.32 cfs 0.253 af

Reach 210: (new node) Inflow= 3.08 cfs 0.231 af
Length= 147.0' Max Vel= 4.7 fps Capacity= 3.23 cfs Outflow= 3.00 cfs 0.231 af

Reach 220: (new node) Inflow= 9.11 cfs 0.702 af
Length= 218.0' Max Vel= 13.5 fps Capacity= 26.19 cfs Outflow= 9.03 cfs 0.701 af

Reach 230: (new node) Inflow= 24.73 cfs 1.824 af
Length= 71.0' Max Vel= 31.3 fps Capacity= 57.69 cfs Outflow= 24.70 cfs 1.824 af

Reach 240: (new node) Inflow= 24.70 cfs 1.824 af
Length= 69.0' Max Vel= 27.4 fps Capacity= 48.44 cfs Outflow= 24.68 cfs 1.824 af

Reach 250: (new node) Inflow= 24.68 cfs 1.824 af
Length= 36.0' Max Vel= 14.2 fps Capacity= 43.43 cfs Outflow= 24.65 cfs 1.824 af

Reach 260: (new node) Inflow= 24.65 cfs 1.824 af
Length= 39.0' Max Vel= 8.4 fps Capacity= 23.22 cfs Outflow= 24.59 cfs 1.824 af

Reach 410: (new node) Inflow= 2.86 cfs 0.214 af
Length= 35.0' Max Vel= 4.0 fps Capacity= 2.77 cfs Outflow= 2.82 cfs 0.214 af

Reach 510: (new node) Inflow= 14.34 cfs 1.007 af
Length= 23.0' Max Vel= 32.4 fps Capacity= 74.96 cfs Outflow= 14.33 cfs 1.007 af

Reach 810: (new node) Inflow= 5.57 cfs 0.385 af
Length= 200.0' Max Vel= 17.9 fps Capacity= 15.48 cfs Outflow= 5.49 cfs 0.385 af

Reach 820: (new node) Inflow= 5.49 cfs 0.385 af
Length= 192.0' Max Vel= 15.1 fps Capacity= 12.21 cfs Outflow= 5.46 cfs 0.385 af

Reach AST: (new node) Inflow= 35.64 cfs 2.593 af
Length= 214.0' Max Vel= 20.8 fps Capacity= 22.39 cfs Outflow= 22.39 cfs 2.592 af

Reach pipe: (new node) Inflow= 3.18 cfs 0.214 af
Length= 10.0' Max Vel= 7.2 fps Capacity= 5.46 cfs Outflow= 3.18 cfs 0.214 af

Pond 2P: (new node) Peak Storage= 6 cf Inflow= 1.25 cfs 0.083 af
Primary= 1.25 cfs 0.083 af Outflow= 1.25 cfs 0.083 af

Pond 3P: (new node) Inflow= 1.68 cfs 0.116 af
Primary= 1.68 cfs 0.116 af

Pond 5P: (new node) Inflow= 14.34 cfs 1.007 af
Primary= 14.34 cfs 1.007 af

Pond 6P: (new node)
Inflow= 1.26 cfs 0.088 af
Primary= 1.26 cfs 0.088 af

Pond 7P: (new node)
Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

Pond 8P: (new node)
Inflow= 5.57 cfs 0.385 af
Primary= 5.57 cfs 0.385 af

Pond 9P: (new node)
Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond 10P: (new node)
Inflow= 6.72 cfs 0.487 af
Primary= 6.72 cfs 0.487 af

Pond 11P: (new node)
Inflow= 1.35 cfs 0.101 af
Primary= 1.35 cfs 0.101 af

Pond 12P: (new node)
Inflow= 2.89 cfs 0.216 af
Primary= 2.89 cfs 0.216 af

Pond 16p: (new node)
Inflow= 0.50 cfs 0.038 af
Primary= 0.50 cfs 0.038 af

Pond CB-63: (new node)
Peak Storage= 94 cf Inflow= 9.80 cfs 0.681 af
Primary= 9.83 cfs 0.681 af Outflow= 9.83 cfs 0.681 af

Pond dmh-20: (new node)
Inflow= 3.95 cfs 0.261 af
Primary= 3.95 cfs 0.261 af

Pond hil-01: (new node)
Inflow= 3.38 cfs 0.253 af
Primary= 3.38 cfs 0.253 af

Pond hil-02: (new node)
Inflow= 24.65 cfs 1.824 af
Primary= 24.65 cfs 1.824 af

Pond OS-1.: (new node)
Inflow= 25.09 cfs 2.017 af
Primary= 25.09 cfs 2.017 af

Pond SMH-13: (new node)
Inflow= 32.63 cfs 2.678 af
Primary= 32.63 cfs 2.678 af

Pond SMH-20: (new node)
Inflow= 8.28 cfs 0.626 af
Primary= 8.28 cfs 0.626 af

Pond SP-1: (new node)
Inflow= 3.18 cfs 0.214 af
Primary= 3.18 cfs 0.214 af

Pond SP-2: (new node)
Inflow= 32.63 cfs 2.678 af
Primary= 32.63 cfs 2.678 af

Pond sp-3: (new node)
Inflow= 3.98 cfs 0.270 af
Primary= 3.98 cfs 0.270 af

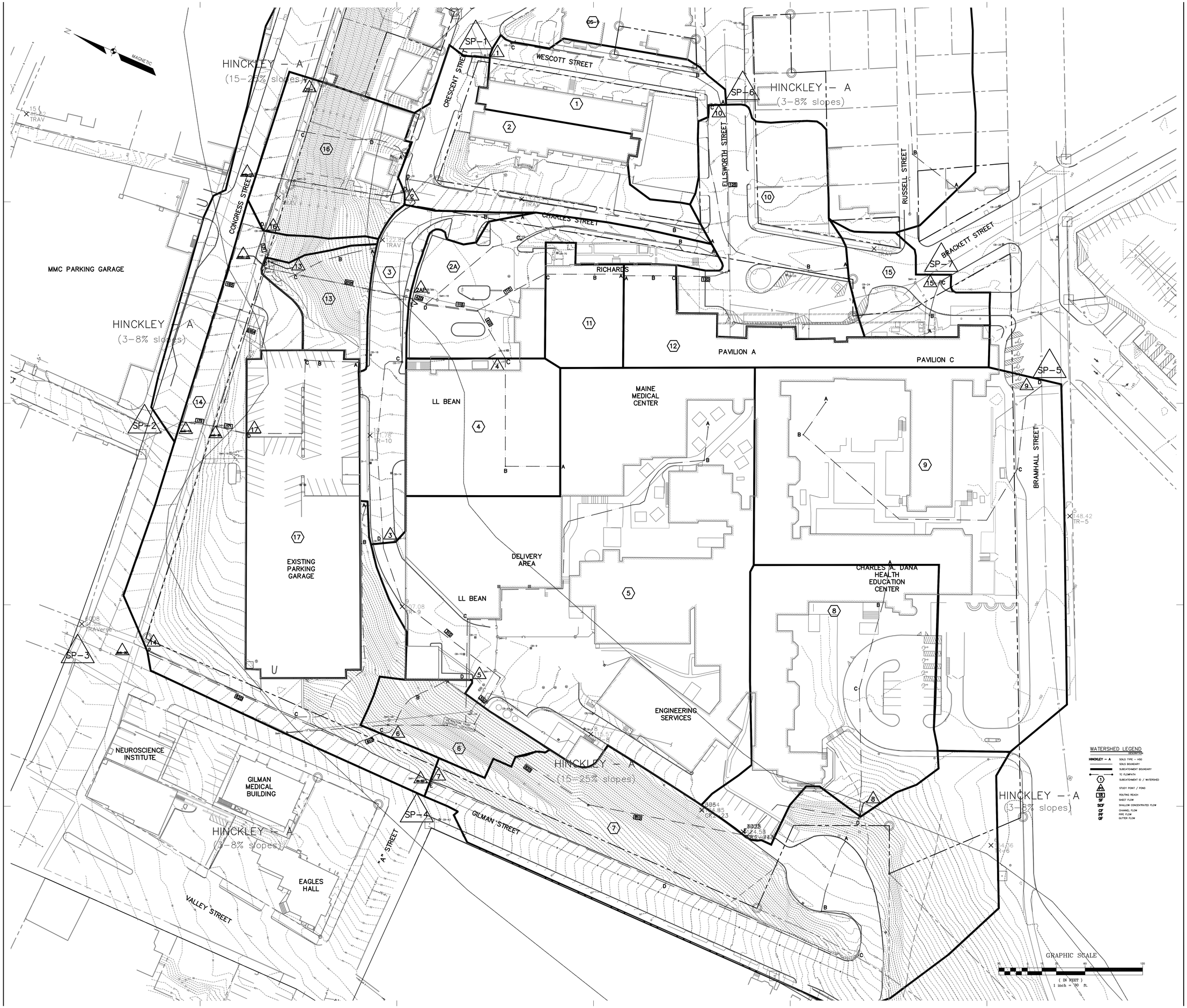
Pond SP-4: (new node)
Inflow= 35.64 cfs 2.593 af
Primary= 35.64 cfs 2.593 af

Pond SP-5: (new node)
Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond SP-6: (new node)
Inflow= 6.72 cfs 0.487 af
Primary= 6.72 cfs 0.487 af

Pond SP-7: (new node)
Inflow= 0.50 cfs 0.038 af
Primary= 0.50 cfs 0.038 af

Runoff Area = 21.928 ac Volume = 7.014 af Average Depth = 3.84"



General Notes:

CITY REVIEW

MARK	ISSUE DATE	DESCRIPTION
	1–6–04	CITY REVIEW

Issue Log

Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center

Bramhall Street Campus
Portland, Maine

Drawing Title

PRE DEVELOPMENT WATERSHED PLAN

0 15 30 60 120

Commission No.	–	Date Issued	1–6–04
Scale	1"=30'	Sheet Number	C700
Drawn By	APP		
Approved By	WTC		
Filename	01046PRE.DWG		

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HINCKLEY – A
(15–25% slopes)

HINCKLEY – A
(3–8% slopes)

HINCKLEY – A
(3–8% slopes)

HINCKLEY – A
(3–8% slopes)

HINCKLEY – A
(15–25% slopes)

MAGNETIC

WESCOTT STREET

ELLSWORTH

CONGRESS STREET

RUSSELL STREET

BRACKETT STREET

BRAMHALL STREET

CHADWICK

GILMAN STREET

"A" STREET

VALLEY STREET

PROPOSED CHARLES STREET BUILDING

PROPOSED PARKING GARAGE

MMC PARKING GARAGE

PROPOSED SERVICE TUNNEL

RICHARDS

PAVILION A

PAVILION C

LL BEAN

MAINE MEDICAL CENTER

DELIVERY AREA

CHARLES A. DANA HEALTH EDUCATION CENTER

EXISTING PARKING GARAGE

LL BEAN

PROPOSED CENTRAL UTILITY PLANT

ENGINEERING SERVICES

NEUROSCIENCE INSTITUTE

GILMAN MEDICAL BUILDING

EAGLES HALL

6" DIAMETER DOWN STREAM DEFENDER TREATMENT UNIT

10" DIAMETER DOWN STREAM DEFENDER TREATMENT UNIT

SP–1 SP–2 SP–3 SP–4 SP–5 SP–6 SP–7

WATERSHED LEGEND

HINCKLEY – A — SOILS TYPE – HSG
SOILS BOUNDARY
SUBCATCHMENT BOUNDARY
TC FLOWPATH
SUBCATCHMENT ID / WATERSHED
STUDY POINT / POND
ROUTING REACH
SHEET FLOW
SCF — SHALLOW CONCENTRATED FLOW
CF — CHANNEL FLOW
PF — PIPE FLOW
GF — GUTTER FLOW

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

General Notes:

CITY REVIEW

MARK	ISSUE DATE	DESCRIPTION
	1–6–04	CITY REVIEW

Issue Log

Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center
Bramhall Street Campus
Portland, Maine

Drawing Title
POST DEVELOPMENT WATERSHED PLAN

0 15 30 60 120

Commission No.	–	Date Issued	1–6–04
Scale	1"=30'	Sheet Number	C701
Drawn By	APP		
Approved By	WTC		
Filename	01046POST.DWG		

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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: February 2 2018

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

Site Address: Maine Medical Center 22 Bramhall St

Chart Block Lot Number: 053D007 / 054H001 / 064C001

Proposed Use: HOSPITAL
Previous Use: HOSPITAL
Existing Sanitary Flows: TBD GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Congress Street

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

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

2. Please, Submit Contact Information.

City Planner's Name: Jean Fraser Phone: _____
Owner/Developer Name: _____
Owner/Developer Address: _____
Phone: _____ Fax: _____ E-mail: _____
Engineering Consultant Name: Will Conway, Sebago Technics
Engineering Consultant Address: _____
Phone: 200 2055 Fax: _____ E-mail: wconway@sebagotechnics.com

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 2050 GPD
Peaking Factor/ Peak Times: _____
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __"Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

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

(6) STAFF TOILETS @ 325 GPD = 1950 GPD
(2) STAFF SINKS @ 50 GPD = 100 GPD

2050 TOTAL GPD

4. Please, Submit External Grease Interceptor Calculations.

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

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations N/A

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

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

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

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

Peaking Factor/Peak Process Times: _____

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

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

From:	Cough, Jamie
To:	Troidl, Adam
Subject:	CMP Ability to Provide Service-MMC Upgrades
Date:	Monday, February 5, 2018 9:32:59 AM
Attachments:	Easement_Information_Worksheet.doc Standard Easement Sample.pdf

2/02/18

Adam Troidl
Colliers International
*Sent via email to:*adam.troidl@colliers.com

RE: CMP Ability to Serve Letter for upgrades at MMC

Project Description:

Maine Medical Center is planning for a Vertical Expansion of the East Tower (60,000 sf), Heliport, and Visitor Garage Expansion (80,000 sf) on the existing primary metered campus on Congress Street. In preparation for this phase and additional projected work, CMP has completed design work in coordination with your team.

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact CMP. For reference, here are the CMP New Service Milestones. We have completed through Step 7 in our process.

New Service Milestones

1. Call 1-800-565-3181 to establish a new account and an SAP work order.
2. Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
3. Submit Load information. Please complete this CMP spreadsheet using load information
4. Submit the easement information worksheet. Please complete this CMP form and either email or fax back to us.
5. Preliminary meetings with CMP to determine the details of job
6. Field planner design appointment to cost out job and develop CMP Invoice.
7. Submit invoice for payment.
8. Easements signed and payment received.
9. Job scheduled for completion after the electrical inspection has been received.

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

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

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

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

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

If you have any questions, please contact us.

Attachments:
Easement Worksheet and Sample Standard Easement

Regards,

Jamie

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

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Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	City of Portland Planning Department
From:	Jeffrey Keilman, Perkins+Will; Al Green, MMC
Date:	January 19, 2018
Subject:	**MMC East Tower Expansion – Phase 1 Design Narrative**
Attachments	
	Slides shared with City Staff on January 16, 2018

Campus Vision

The campus transformation of Maine Medical Center draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the hospital will reflect its location within Portland and the state of Maine. The goal is to preserve the historic character of the existing campus yet provide the opportunity for new design identities to develop that represent the modern delivery of healthcare and the future of Maine Medical Center.

Many key design drivers and interventions envisioned for Maine Medical Center's campus transformation balance the clinical needs of the hospital with the campus' place within the city of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with the city. This goal is balanced with the clinical needs of the patients served by MMC. Healthcare design has to start with the internal program and layout to ensure a successful and functional design. From there, the exterior design can begin to take shape and be informed by the internal concepts.

The ultimate success of the project will be to provide a positive patient and visitor experience. The creation of healing environments is an essential element to the design of the submitted projects. This is through the incorporation of nature, natural light, and the blending of interior and exterior. Access to views and light are proven to improve positive patient outcomes. Proper location and use of glass and transparency provides connections to the exterior to improve patient experience but also to further reinforce wayfinding.

The current projects submitted within this Site Plan application were developed as a continuation of existing conditions. The façade of the East Tower expansion will relate to the existing conditions and massing of the East Tower by utilizing metal panel and glass.

The internal planning strategies, critical for a clinically driven building, aimed to blend the exterior with the interior through strategic planning that enabled the interiors to be opened up to and expressed on the exterior through the large corner windows.

The East Tower Expansion is conceived as the next phase in the campus replacement and modernization that will continue to blend and blur the new and existing campus architecture. The

addition will continue to link the vision started with the Bean 2 surgical expansion and will culminate with the Congress St. addition.

Context

The East Tower and Visitor Garage expansions are extensions of existing conditions, and as such derive many of the material choices from the existing adjacent construction.

Through the design process, the team explored the impact of the structures from various viewpoints understanding the additions scale within the urban context. Multiple angles and views were analyzed by the design team in conjunction with Maine Medical Center, including long-views, which influenced the decisions of various fenestration patterns and scale. This is particularly important for the East Tower addition which is visible from many points in the city. The design responds to both the long views with the use of scale of fenestration, but also manages to respond to local context through the attention to details, and sensitivity to materials and palate from the campus and neighborhood.

Building Design

The current Site Plan submission outlines (2) projects that are expansions and extensions of existing conditions. Within this context the design process still aimed to express the internal program constraints and create a dialogue between the interior and exterior.

Design is always subjective but the process to reach the current solution was reviewed and vetted by many parties, including critical voices form Maine Medical Center but also internally to Perkins+Will with multiple peer design reviews. The Perkins+Will internal review includes international designers as well as those from across the United States. The proposed design was universally selected as the best option to meet with the campus vision and existing context.

The design team believes the response for the East Tower expansion is in line with the key elements of design outlined through the design guidelines established in MMC's Institutional Development Plan, including the attention to proportion, rhythm, and use of materials. Design iterations were studied and reviewed by multiple stakeholders, including Maine Medical Center. The proposed design was the first solution where all parties agreed that the strategy successfully unifies the existing structure with the new addition while meeting the stringent interior requirements for advanced patient care in a healthcare setting.

By maximizing and utilizing the opportunities provided by the massing and proportions, the design is unified with the existing structure, but also creates urban scale gestures recognizing the prominence within the city. In particular, the scale of multistory fenestration and use of rhythm provided by the interior program.

One key design approach was to limit the current idiosyncrasies that are on the existing East Tower building that are not represented by any of the adjacent structures on the Maine Medical campus. In particular, the pavilions, Richards, and Bean are buildings that have a minimalist approach to massing and detailing on their exterior facades. In essence, the proposed design is more compatible with the existing campus and future goals outlined within the previously approved IDP. This was achieved by

simplifying the palate of materials and utilizing the existing materials on the structure. Introduction of new materials or further reinforcing the banding would have the opposite effect of creating a larger impact of the massing within the city and the campus.

The Visitor Garage expansion will match the current rhythm and proportions of the existing garage. The street façade of the Visitor Garage is an existing condition however opportunities for activation are being considered currently.

Building Materials

The selected materials for each addition are derived from the existing materials on the building and are as follows:

- East Tower – White Aluminum Composite Panels and Glass Curtain Wall
- Visitor Garage – Precast Concrete Panels with imbedded brick

Design Constraints

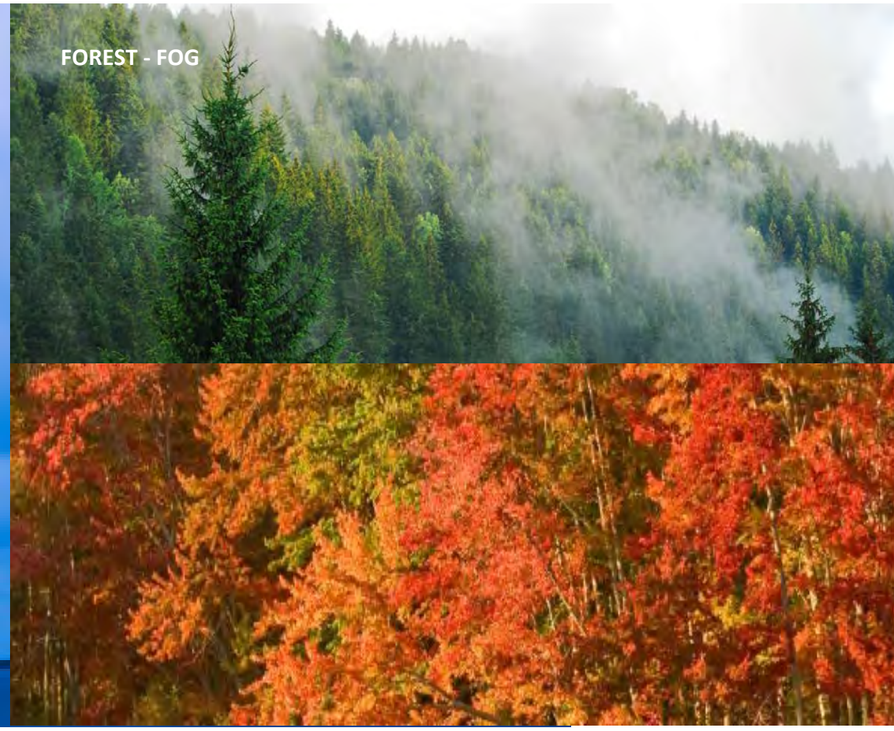
As with any building addition or expansion, existing conditions and real world constraints are critical in determining the final design solution. In particular, constructability for both the East Tower and Visitor Garage were important design drivers. Capacity within the existing structure, feasibility of installation of façade systems, and schedule were considered in selecting the final design solution.

hcc: Project File
Chuck Siconolfi – P+W
Romeo Moreira – P+W
Rashid Ashraf – P+W
Adam Troidl - Colliers
Mark Harris - MMC
Walter Pochebit – MMC
Al Green – MMC
Dennis Morelli - MMC

MMC SITE PLAN SUBMISSION

EAST TOWER & VISITOR GARAGE

CONCEPT DIAGRAMS



SOLID HEAVY

SOLID / LIGHT

ETHEREAL

INTEGRATION OF INSIDE AND OUTSIDE

Blurring the lines between the inside and the outside to bring the garden into the hospital.

CIRCULATION

MATERIALS INSPIRED BY MAINE

50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.

50 PALETTE

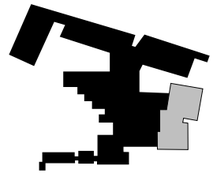
Sky

Sea

Land

COLOR OPTIONS

FLOOR PLAN



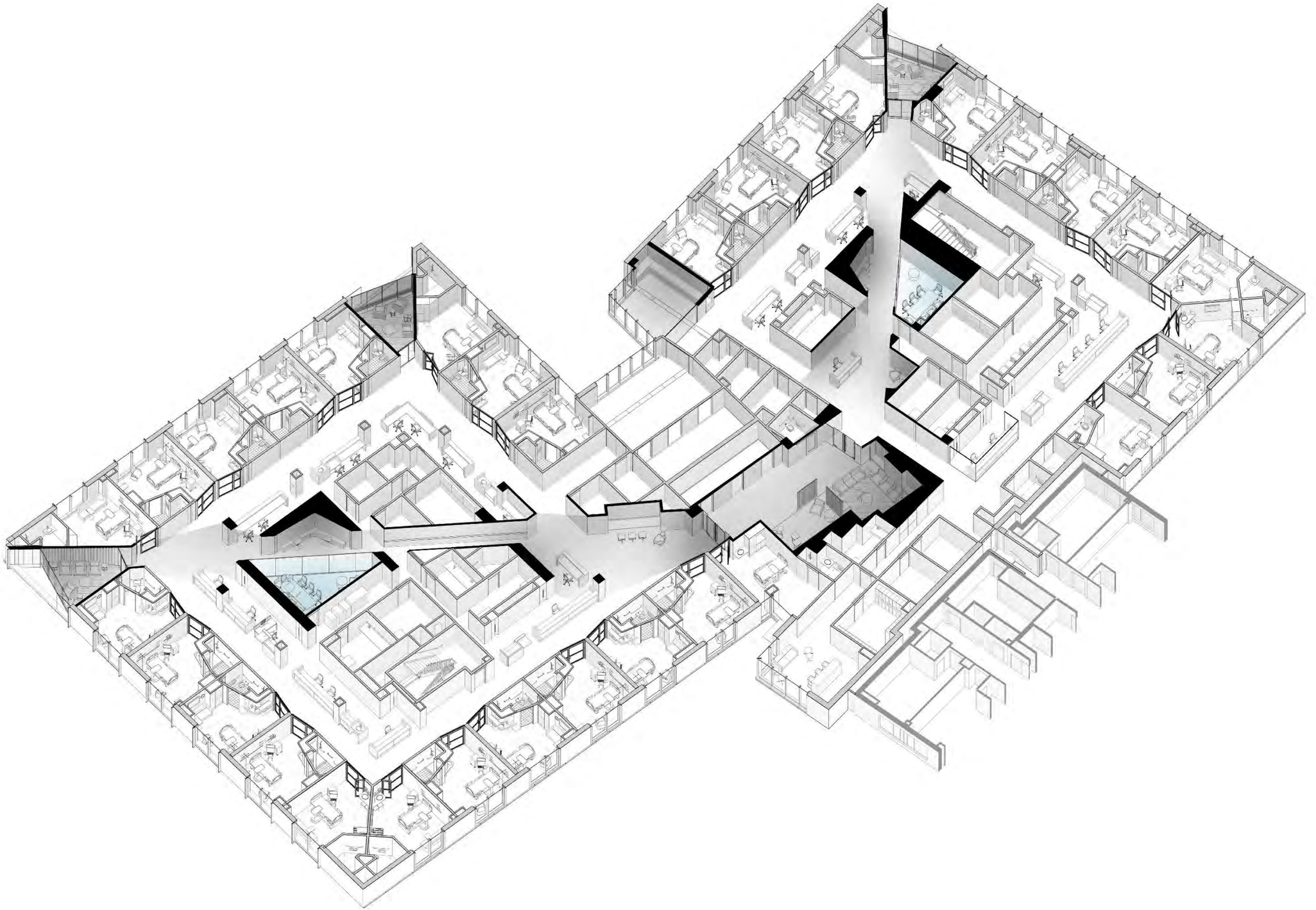
Views to White Mountains

Views to Casco Bay

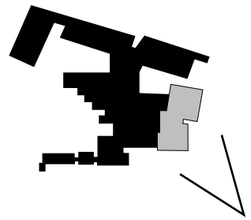
Views to Portland Water Front

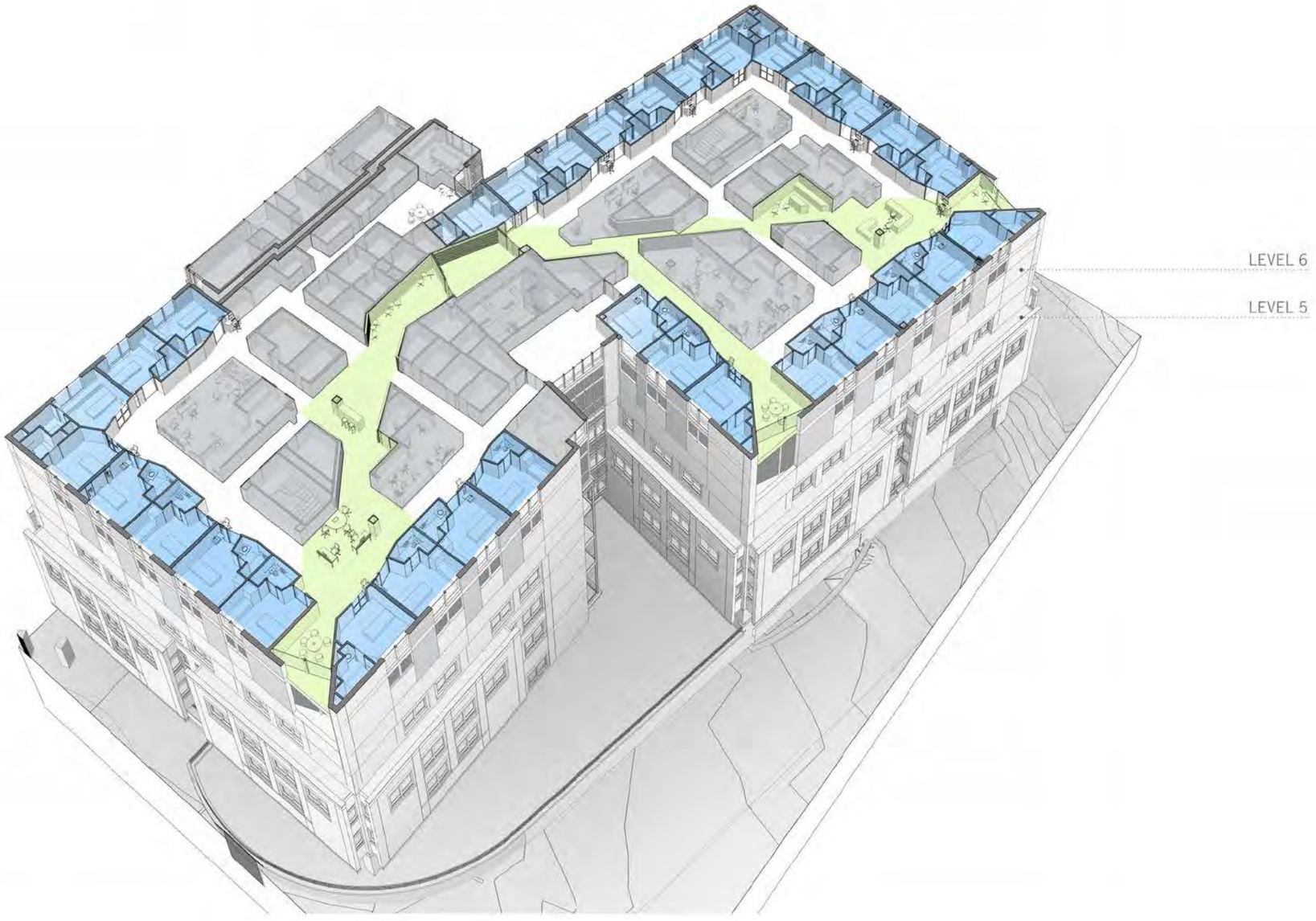
0 10 20 50

AXONOMETRIC

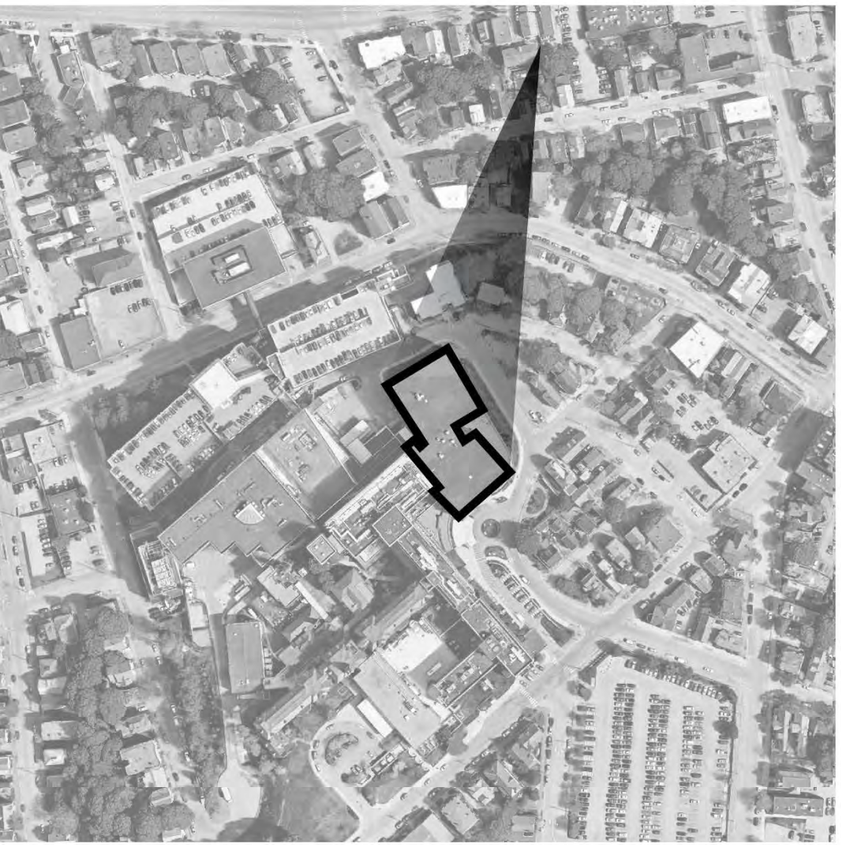


AXONOMETRIC



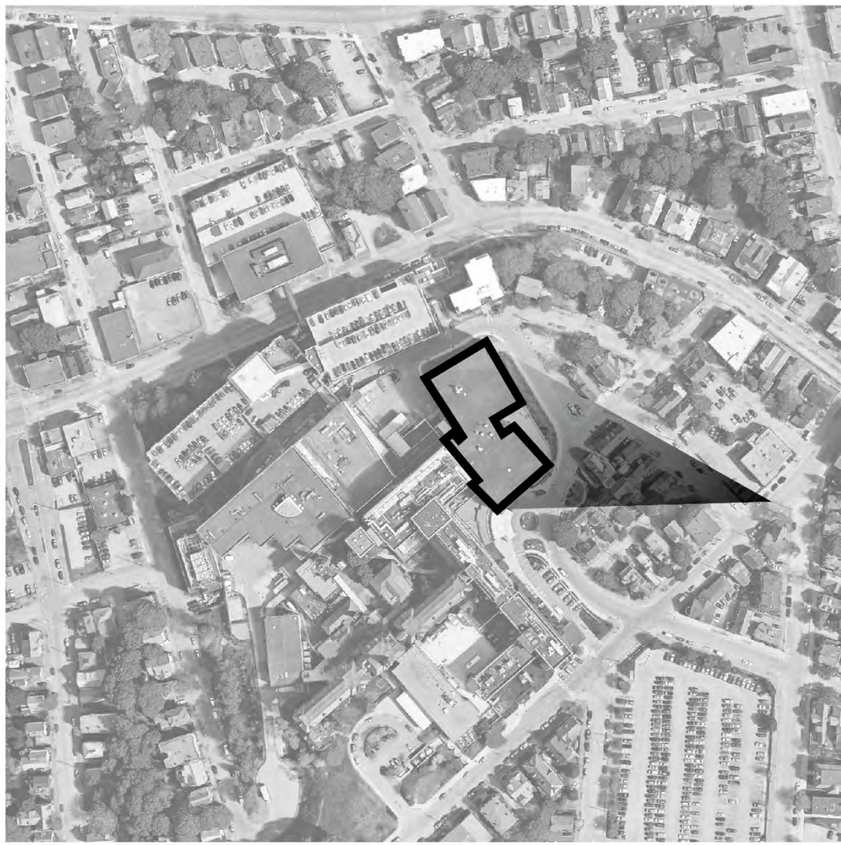


CAMPUS AERIAL



AERIAL VIEW

VIEW FROM BRAMHALL ST



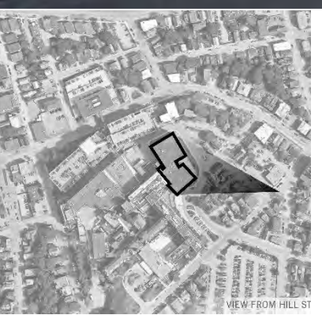
VIEW FROM HILL ST

AERIAL VIEW
South West

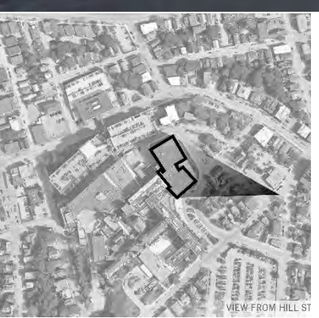
South West

Bramhall and Chadwick Street

Bramhall and Chadwick Street

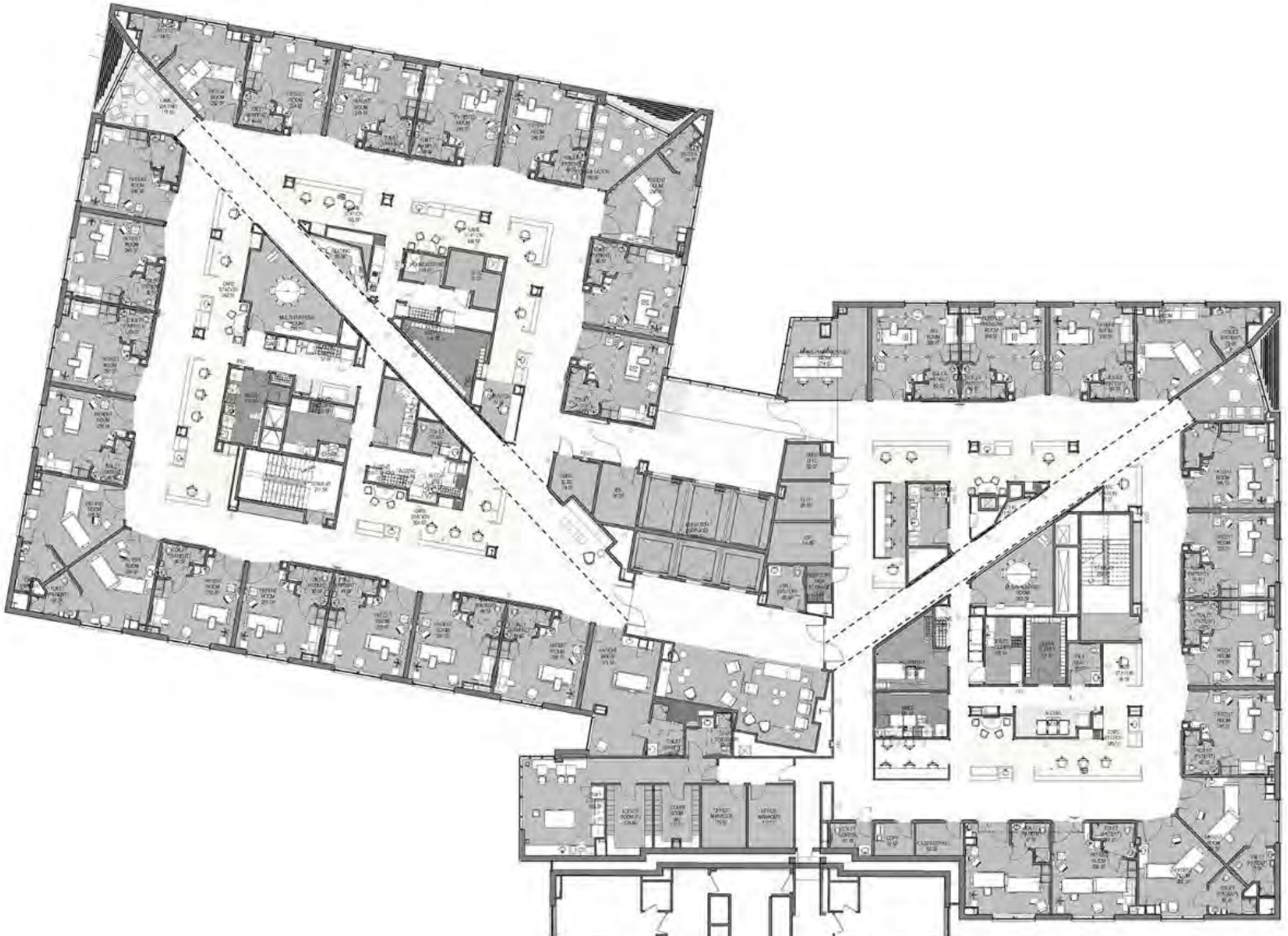


Bramhall and Hill Street



Bramhall and Hill Street

TYPICAL FLOOR PLAN



EAST ELEVATION

NORTH ELEVATION

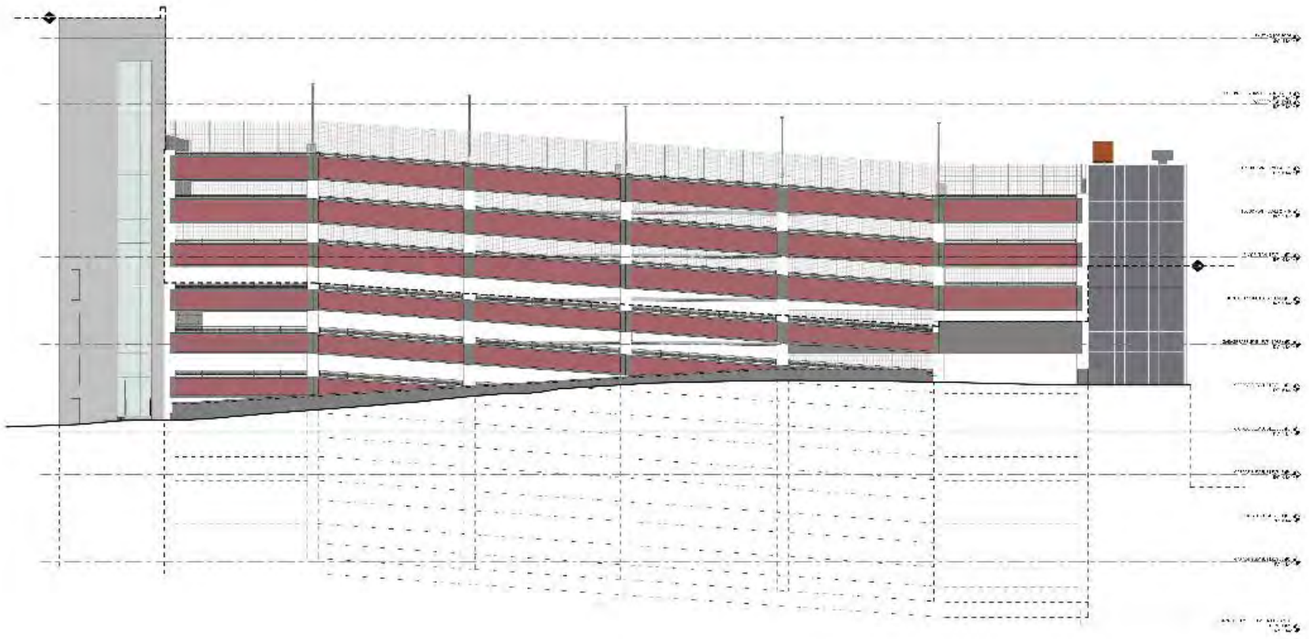
SOUTH ELEVATION

WEST ELEVATION

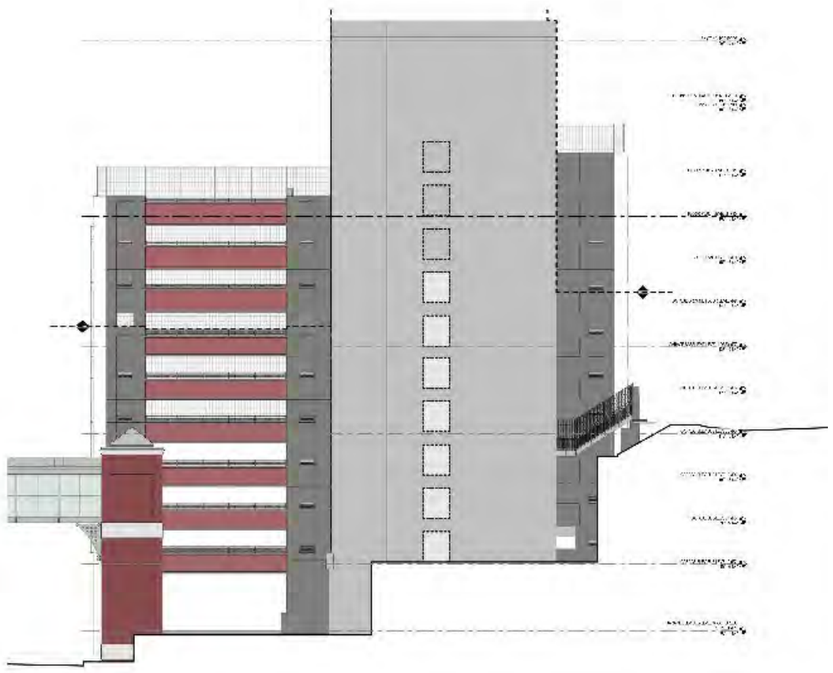
Visitor Garage Expansion

EXISTING

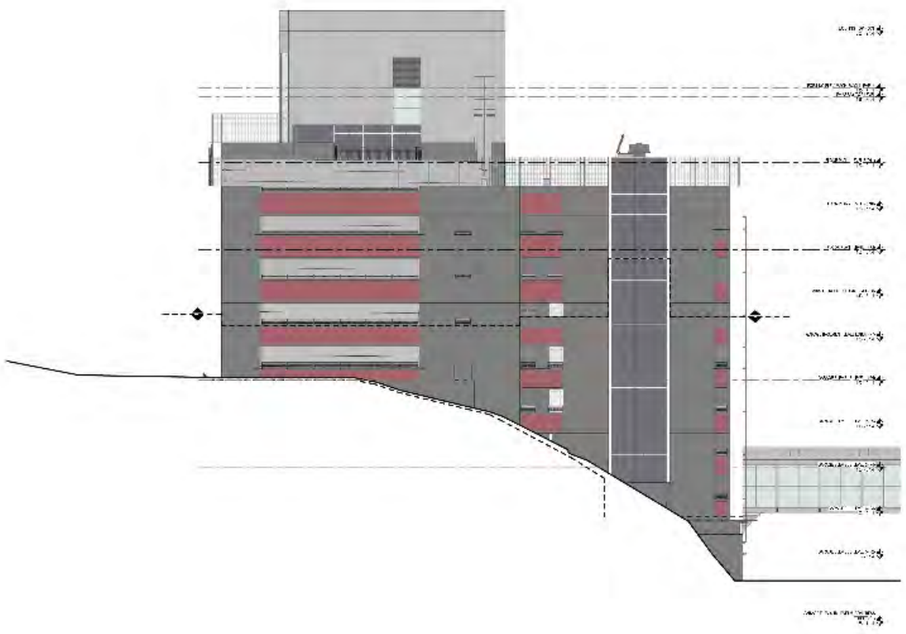
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION

APPENDIX

US-1
Hide imagery

GROVER C
EDITH C. RICHARDS
MEMORIAL
MAIN

WESCOTT ST
ELLSWORTH ST
STOP
NO PARKING ANY TIME
Maine Medical Center
EMERGENCY
Trauma Center
Parking Garage
Main Entrance
South Entrance
South Lot

Medical Center
Maine

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	Al Green
From:	Jeffrey Keilman
Date:	February 20, 2018
Subject:	**MMC East Tower Expansion – City Design Comments**
Attachments	N/A

The purpose of this memorandum is to document and provide design team responses to the Design Comments provided by City of Portland Staff and comments made by the Planning Board on 01.23.2018.

#1 Comment

Mixed feelings about use of white panels - too sterile or stark contrast, not recessive enough? Provide renderings showing options for material choices, grey or silver were specifically mentioned

Respond to question about re-cladding existing white on building

Address request for integration: Integration of existing building elements and new - looks like an addition

Additional Staff Comments: aligned with PB comment, continue to have some concern about the facade integration of the new and existing - especially in overall facade composition, proportion, and articulation. The existing building has a high level of articulation while the proposed new is much more minimal. Please clarify where new metal panel is proposed and where existing to remain and the strategy around getting those to match or blend. Staff suggest you consider articulation strategies in the new section that address these integration concerns whether that is a horizontal band, dimensional elements, color or other strategies.

Response

The design team appreciates the comments and understands the concerns. After careful consideration and reviewing past designs and studies, MMC and the Design Team feels strongly that the decision to continue the existing white metal panel on the East Tower expansion is still the correct design decision. This decision is based first on the fact that all the existing conditions on, surrounding, and below the East Tower utilize white metal panels. This is highlighted in the context photos of campus indicating areas of white panels existing including the bays and cap of East Tower,

the ED Entrance, and the Bean connectors and addition (see Figure 1). Along with the use of metal panel, the continuation of curtain wall from the existing reveals in the mass are continued up into the new addition, effectively helping to stitch the buildings together. Deviations in materials from the existing campus palate will create more discrepancy of new versus old.

FIGURE 1 – East Tower Context photos

Along with the referencing the existing context of the MMC Campus, the East Tower addition's use of white panel is also due to the fact that this will have the most atmospheric transitions in conjunction with the ever changing environment of Maine. White panels will shift in tone and color depending upon bright sunlight, overcast skies, or even fog, not unlike the white light house illustrated as a precedent example (see Figure 2). Other colors and materials will not have this same effect and will in essence create a more dominant massing.

February 20, 2018

Re: **MMC East Tower Expansion – City Design Comments**

FIGURE 2 – Light House Precedent Example

In healthcare design, the interior program drives the exterior of the building which is different than in residential or office construction. All aspects of the building are designed around meeting patient needs. At a detail level, articulation strategies to blend the design have been incorporated into the design including recessed bands/reveals to alleviate concerns as the building transitions from new to old. The detailing of key fenestration (spacing of windows) and other areas are also sensitive to the existing building's detail without being too wrought to allow for the addition to work at both a localized scale and at the urban scale. In particular, the scale of the windows relates specifically to the interior program of private patient rooms with a focus on connection to views and nature for patients and families. Strategies to intervene onto the existing building with specific material changes are not recommended because of a significant impact to patient care and compromises to the integrity of the building envelope. The new East Tower Addition will function mechanically as an independent building and the building envelope is designed to perform in conjunction with this. Modifications to lower levels of the existing building would require significant reengineering of the building science to ensure that the integrity of the envelope is not comprised, and in turn the patient care experience is not compromised.

February 20, 2018
Re: **MMC East Tower Expansion – City Design Comments**

#2 Comment

Clarify integration of East Tower and Visitor Garage proposal related to future campus design
Integration into neighborhood (especially at the edges, entrances, blank walls, retail)
Long-term plan for Congress Street retail facade improvements
How will streetscape at South Entrance change when new entrance is added on Congress Street?

Response

Aerial images (Figure 3) highlight how the East Tower design is an extension of the existing East Tower and is an element that links with recent additions such as Bean 2 addition and future phases including the Congress St. patient care tower. Key in this approach is how the architecture reflects to the MMC mission and represents the delivery of modern healthcare.

This phase of the project specifically with the overbuild of East Tower does not envision any changes to the campus edges of streetscape for the South or Bramhall entrances. Clinical services will still exist at these locations and MMC, being an urban campus, will still require entrances to serve those patient populations.

FIGURE 3 – Ariel Image of Proposed and Future Developments

February 20, 2018

Re: **MMC East Tower Expansion – City Design Comments**

#3 Comment

Screening of mechanicals on garage

Response

The existing garage only has a small rooftop fan unit that serves the eastern glass egress stair. Based on size and location, this unit is not visible. The Visitor Garage expansion is relocating this unit on top of the expand stair tower raising its height and further limiting any site lines to the unit.

February 20, 2018
Re: **MMC East Tower Expansion – City Design Comments**

#4 Comment

Concerns with parking garage design - rooftop fence quality, facade improvements

City Staff: There are two opportunities to update or improve the design character of the garage - the fall protection fence, especially on the top level, and the metal screens.

Response

The existing fall protection fencing on the Visitor Garage is planned to be relocated to the upper level of the addition. Photos have been provided that indicate the details of the system (Figure 4). The current system is a tight mesh that is painted white with limited vertical supports as required to meet the programmatic requirements of a fall protection system. Fall protection requires that the element be a tight mesh to limit abilities for individuals to easily climb the system, providing greater security. The system as currently installed has a minimal visual impact.

FIGURE 4 – Visitor Garage Fencing System

The current screens on the garage are a white grid that aims to add articulation and reduce the scale of some of the larger proportional elements of the garage. The addition replicates this design element to further refine and connect the new with the old so as to eliminate any discrepancies between the phases.

The garage is an open, naturally ventilated garage and the percentage of open air needs to be maintained or else the garage will not meet code.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION S – 12 SITE LIGHTING NARRATIVE

A LIGHTING PLAN FOR THE VISITOR GARAGE IS FILED IN EPLAN AS PLAN 10A.
THE APPLICANT PROPOSES TO SIMPLY RELOCATE THE EXISTING LIGHT FIXTURES CURRENTLY AT THE TOP LEVEL TO THE NEW TOP LEVEL. THESE FIXTURES ARE LED FULL CUTOFF FIXTURES – CUT SHEET FROM THE 2005 CONSTRUCTION FILES IS ATTACHED , AND IS DIFFICULT TO READ – ALSO SEE ATTACHED PHOTOGRAPH. BECAUSE THESE FIXTURES ARE LOCATED IN THE CENTER OF THE STRUCTURE, THEY WILL NOT BE VISIBLE FROM ADJACENT GROUND LEVEL VIEW AREAS.

A LIGHTING PLAN FOR THE HELIPORT IS FILED IN EPLAN AS PLAN 10B. THE FIXTURES ON THE HELIPORT ARE NAVIGATIONAL FIXTURES AS REQUIRED AND REGULATED BY THE FAA. THESE FIXTURES WILL ONLY BE ILLUMINTAED DURING ARRIVAL AND DEPARTURE TIMES FOR AIRCRAFT.

Crossover SOLID-STATE LIGHTING

LED AREA LIGHT - MEDIUM (XAM)

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XAM 2 LED 119 CW UE WHT PCI120**

Prefix	Distribution	Light Source	# of LEDs	LED Color Temperature	Line Voltage	Luminaire Finish	Options
XAM - LED Area Medium	2 - Type 2 3 - Type 3 FT - Forward Throw 5 - Type 5	LED	119	CW - Cool White (5700K nom.)	UE - Universal Voltage (120-277) 347 480	BLK - Black BRZ - Bronze BUF - Buff GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	Button Type Photocells PCI120 - 120v PCI208 - 208v PCI240 - 240v PCI277 - 277v PCI347 - 347v PCR - Twistlock Photoelectric Control Receptacle TB - Terminal Block

LUMINAIRE EPA CHART* - XAM

Single	1.2
D180°	2.4
D90°	2.0
TN°	3.4
TN120°	3.4
Q90°	4.0

ACCESSORY ORDERING INFORMATION

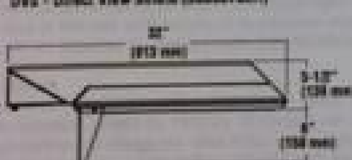
(Accessories are field installed)

Description	Order Number
XAA-XBD-EC-6-CLR - 6" Extension Arm	[illegible]
BKS-XBO-WM-*-CLR - Wall Mounting Bracket	[illegible]
DVS - Direct View Shield (rear mount only)²	380867CLR
4RBPP Round Pole Plate for 4" Pole	[illegible]
3RBPP Round Pole Plate for 3" Pole	[illegible]
PC 120 - Photocell for use w/ PCR option (120V)	[illegible]
PC 208-277 - Photocell for use w/ PCR option (208V, 240V or 277V)	[illegible]
PC 347 - Photocell for use w/ PCR option (347V)	[illegible]
PC 480 - Photocell for use w/ PCR option (480V)	[illegible]

NOTES:
1 - Replace "CLR" with desired color (ex. [illegible])
2 - Direct View Shield adds to fixture EPA. Consult factory.

DIMENSIONS

DVS - Direct View Shield (380867CLR)



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LED AREA LIGHT - MEDIUM (XAM)

Crossover SOLID STATE LIGHTING

U.S. and international patents pending

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Select high-brightness LEDs. 5750°K color temperature (nominal).

DISTRIBUTION/PERFORMANCE - Types 2, 3, FT*, and 5. Exceptional uniformity with full cutoff creates bright environment at lower light levels. Improved backlight cutoff minimizes light trespass.

HOUSING - Housing is die-formed aluminum. Weather-tight housing contains factory prewired driver and field connections. Wiring access door is located underneath and utilizes tool-less thumbscrew fastener.

OPTICAL UNIT - Lens is clear, flat tempered glass, sealed to aluminum optics housing to create an IP67 rated, sealed optical unit.

MOUNTING - Tapered rear design allows fixtures to be mounted in a quad pattern without the need for extension arms. Use with Crossover steel round and steel square poles. See separate data sheets.

ELECTRICAL - Universal voltage power supply 120-277 VAC. (50/60 Hz) input. Also available in 347 volt and 480 volt. Supply voltage must be specified for use with optional button-type photocells. PCI is available in 120, 208, 240, 277 or 347 volt. Optional twistlock photocell receptacle is also available. Photocell must be ordered separately. See accessories.

DRIVER - State-of-the-art driver technology designed specifically for LSI LED light sources provides unsurpassed system efficiency. Components are fully encased in potting material for moisture resistance. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard colors include bronze, black, platinum plus, buff, graphite, satin verde green, metallic silver and white.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com

SHIPPING WEIGHT - 27.0 lbs (12.7 kg)

LISTING - ETL listed to U.S. and International safety standards. Suitable for wet locations.

* FT distribution is classified as semi-cutoff.

lighting facts™

Light Output (Lumens)	9896
Watts	139.5
Lumens per Watt (Efficacy)	71
Color Accuracy	70
Light Color	5750 (Daylight)

Visit www.lightingfacts.com for the Label Reference Guide.

This "Lighting Facts Label" represents LSI's commitment, through participation in the Department of Energy's SSL Quality Advocates program, to accurately report performance criteria of our LED fixtures. **This label represents a single test of a single fixture. Input power below represents rated values for the family.** Color temperature and lumen output for each variation of this Crossover® fixture can be found in the ordering information below as well as at www.lightingfacts.com.

IP67 CE ETL Intertek Suitable for wet locations RoHS COMPLIANT FC

American Innovation American Made

IDA

LIGHT OUTPUT		
Fixture	Distribution	Lumens (Nominal)
XAM	Type 2	9900
	Type 3	9400
	Type FT	10,200
	Type 5	9000
	Input Power of 137 watts	

06/07/10

© 2010 LSI INDUSTRIES INC.

Project Name _____ Fixture Type F2

Catalog # _____

LSI Industries

RKING
NO PARKING

U.S. Department of Transportation
Federal Aviation Administration

OMB CONTROL NUMBER: 2120-0036
EXPIRATION DATE: 4/30/2017

NOTICE FOR CONSTRUCTION, ALTERATION AND DEACTIVATION OF AIRPORTS

A. Airport Owner ☑ Check if this is also the Property Owner

1. Name and Address ☑ Check if this is the Airport's Physical Address

Maine Medical Center
22 Bramhall Street
Portland, ME 04102

2. Phone: (732) 870-8883
3. Email: ray@heliexp.com

B. Airport Manager (Complete if different than the Airport Owner)

1. Name and Address ☐ Check if this is the Airport's Physical Address

HeliExperts
489 Broadway
Long Branch, NJ 07740

2. Phone: (732) 870-8883
3. Email: ray@heliexp.com

C. Purpose of Notification (Answer all questions that apply)

1. Construct or Establish an: ☐ Airport ☐ Ultralight Flightpark ☐ Balloonport ☒ Heliport ☐ Seaplane Base ☐ Other
2. Construct, Alter or Realign a: ☐ Runway ☒ Helipad(s) ☐ Other ☐ Taxiway (Public Use Airports only)
3. Change Status From/To: ☐ VFR to IFR ☐ IFR to VFR ☐ Private Use to Public Use ☐ Public Use to Other
4. Change Traffic Pattern: ☐ Direction _____ ☐ Altitude _____ ☐ Other (Describe Below)
5. Deactivate: ☐ Airport ☐ RWY _____ ☐ TWY _____
6. Description:
Establishment of a new Hospital, Private, PPR rooftop heliport at the Maine Medical Center in Portland, Maine

D. Name, Location, Use and Type of Landing Area

1. Name of Landing Area: Maine Medical Center
2. Loc ID (for existing):
3. Associated City and State: Portland, ME
4. Distance from City: 0 (nm)
5. County (Physical Location): Cumberland
6. Direction from City: W
7. Latitude: 43° 39' 14.3800"
8. Longitude: 70° 16' 32.6300"
9. Elevation: 240
10. Current Use: ☒ Private ☐ Public ☐ Private Use of Public Lands
11. Ownership: ☒ Private ☐ Public ☐ Military (Branch) _____
12. Airport Type: ☐ Airport ☐ Ultralight Flightpark ☐ Balloonport ☑ Heliport ☐ Seaplane Base ☐ Other

E. Landing Area Data (List any Proposed, New or Unregistered Runways, Helipads etc.)

1. Airport, Seaplane Base or Ultralight Flightpark (use second page if needed)			2. Heliport, Balloonport or other Landing Area (use second page if needed)		
RWY ID	/	/	Helipad ID	H1	H2
Lat. & Long.	Show on attachment(s)	Show on attachment(s)	Lat. & Long.	Show on attachment(s)	Show on attachment(s)
Surface Type			Surface Type	Concrete	Concrete
Length (feet)			TLOF Dimensions	54' Diameter	40' Diameter
Width (feet)			FATO Dimensions	97.2' Diameter	68.1' Diameter
Lighting (if any)			Lighting (if any)	Perimeter	Perimeter
Right Traffic (Y/N)	/	/	Ingress/Egress (Degrees)	085/265, 253/073, 251/071	085/265, 253/073, 251/071
Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)	Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)
VFR or IFR	/	/	Elevated Height (AGL)	120	120

F. Operational Data (Indicate if the number provided is Actual or Estimated)

	1. Number of Based Aircraft		2. Average Number of Monthly Landings	
	Present or Estimated	Estimated in 5 Years	Present or Estimated	Estimated in 5 Years
Single Engine	0	0	0	0
Multi Engine	0	0	0	0
Jet	0	0	0	0
Helicopter	0	0	38	63
Glider	0	0	0	0
Military	0	0	0	0
Ultralight	0	0	0	0

3. What is the Most Demanding Aircraft that operates or will operate at the Airport? (Provide approach speed, rotor diameter, etc. if known)
Design Helicopter: Coast Guard MH-60 J-Hawk // Rotor Diameter = 53.8' // Overall Length = 64.8' // Max Gross Weight = 22,000 lbs.

4. Are IFR Procedures for the Airport Anticipated? ☒ **Yes** ☐ **No** **if Yes, Within** 2 **Years**

G. CERTIFICATION: I hereby certify that all of the above statements made by me are true and complete to the best of my knowledge.

1. Name, title of person filing this notice (type or print)
Raymond A. Syms
Authorized Agent

2. Signature (in ink):

3. Date: 02/08/2018
4. Phone: (732) 870-8883
5. Email: ray@heliexp.com

MMC Responses to City's Helipad Questions
02/22/2018

QUESTION: The original study conducted by consultants for MMC in 2004(by Resource Systems Engineering) noted that the location of the helipad on the top of the employee garage was beneficial regarding noise as this location would "...enable the existing and proposed buildings to block sound propagation to noise sensitive areas to the west and south." Could you ask your consultants to advise as to whether relocation of the helipad (albeit higher) out from "behind" those buildings will increase sound levels in different community locations than were studied in 2004. *(FROM EMAIL DATED 2/16/2018)*

ANSWER: Refer to MMC submission to the City on 1/31/2018 titled WS – S – 6A Heliport Memo

The attached memo dated February 2, 2018 from Russell Acoustics seeks to recreate two tables from the 2004 noise study that summarizes the sound study by comparing average ambient noise with average flight test noise – tables 2 and 3. It is impossible to recreate the 2004 study because the environment has changed significantly. In addition to the developments that have occurred since 2004, the City has seen an increase in population which results in more traffic and more ambient noise.

1. Construction of Crescent Heights apartment building;
2. Construction of the East Tower; and,
3. Construction of the Visitor Garage.

Therefore, rather than comparing the 2017 study to the 2004 study, the attached memo from Russell Acoustics compares average ambient to average flight test.

As stated in the memo, the proposed change has a varying affect to the 9 monitoring positions.

In order to simplify the City's review, MMC has directly compared the 2004 study with the 2017 study.

	Ambient Average		Flight Test Average		Change in Sound Level (2003 to 2017)	
	2003	2017	2003	2017	Ambient	Flight Test
CP1	79	84	82	77	5	-5
CP2	79	93	88	88	14	0
CP3	71	92	80	96	21	16
CP4	69	89	79	89	20	10
CP5	83	88	66	66	5	0
CP6	75	79	71	72	4	1
CP7	68	81	71	86	13	15
CP8	78	89	63	63	11	0
CP9	74	92	65	70	18	5

Direct comparison between studies is inappropriate due to changes in the environment between 2003 and 2017.
This is provided solely for the benefit of City Staff.

QUESTION: The City's sound consultant at that time (2004) noted that the direction the helicopter was facing when on the pad could make a significant difference in the sound levels nearby. Could you please confirm that the orientation of the helicopter on the relocated pad will be the same as for the current pad. *(FROM EMAIL DATED 2/16/2018)*

ANSWER: The direction of the helicopter will be the same.

RUSSELL ACOUSTICS, LLC
Consulting Engineers in Sound and Vibration

1525-A BEAVER DAM ROAD
POINT PLEASANT, NJ 08742
973.283.0001
973.464.9724 (CELL)

2 February 2018

Mr. Dennis Morelli, AIA
Manager of Facilities Development
Maine Medical Center
22 Bramhall Street
Portland, ME 04102

Re: Heliport Relocation Project
Sound Exposure Comparison

Dear Mr. Morelli:

Regarding the various sound tests of ambient and helicopter flights we did last year, you asked that we put the results in a format like that used in the previous report, specifically Tables 2 and 3 of the 30 October 2003 report you provided us. This report describes the process we followed to do this and the results.

The sound measurements we conducted were made over three calendar days at nine test locations (CP1 to CP9); from 12:00 to 12:00 (noon to noon) on 1 to 2 May 2017, and 14:00 to 15:00 on 2 and 3 May. The locations were chosen to reproduce the locations used in the 2003 report. The first set of measurements included ambient sounds only; there were no helicopter operations of any type. Test flights were flown on the afternoon of 2 May, between 17:00 and 18:00, but the rest of the time there were no helicopter flights of any type. The flight tests were done within the one hour (i.e., not split across the on-the-hour times) to make working with the data easier. By removing all the sounds during the hour of flight testing we were more easily able to analyze the other 48 hours of ambient measurements. All of our measurements are A-weighted decibels, or "dBA."

Recall that in the 30 October 2003 sound study report by Resource Systems Engineering (RSE) comparisons were made between the ambient community sound levels and the levels during the flight tests. Page 6 of the report stated:

> *Summary tables of results were prepared based on review of sound level readings from the Figure Sets. There are many comparisons that could be made to quantify the differences between ambient (non-helicopter) sound levels and sound levels measured during the flight testing. Considering that each of the four flight tests was a distinct and relatively short-term event, we chose to compare the four flight test events with the four loudest non-helicopter community events based on a 5-second basis first and then one a one-minute basis.*

The report then presented two tables (Tables 2 and 3) for the loudest 5-second and 1-minute Leq sound measurements for the ambient sounds and the helicopter tests. We are doing the same for the 1-3 May 2017 measurements to enable a direct comparison.

The following process was used:

- From the original instrument data files from our measurements, spreadsheets with 5-second and 1-minute duration Leqs were generated for the two different sets of measurements. (Recall Leqs of these durations were used in the first sound study; we wanted to compare "apples to apples".)
- For the second set of spreadsheets the data for the flight test time from 17:00 to 18:00 were moved to another location so the ambient-only measurements were together.
- The time history of the 5-second and 1-minute Leqs in the 18 different files (nine locations for two days) were individually sorted by their Leq values, highest to lowest.
- Where the instrument indicated an "overload" condition or at the beginning of some of the measurements made on the first day when we were setting up a few of the instruments and interfered with the measurements, we excluded the unnaturally high ambient levels.
- For each of the nine locations we took the four highest of the 5-second and 1-minute ambient Leqs (ignoring any of the discarded high levels). When levels in the highest four were close together in time (implying they were part of the same sound event) we skipped the lesser levels in the set and continued down the list to include other events in the top four. (This has the more conservative effect of lowering the bottom range of the ambient sounds.)
- For the flight tests we took the four highest maximum levels for the different passes. While some of the events were clearly defined when one looks at a graph of sound level over time for the test hour, others were difficult to pick out because the other sounds in the area during this time were significant. We made our best estimate of the different events and used timing information to try to identify the helicopter events from other fluctuating sounds.
- Both the "Ambient Range" and "Flight Test Range" values show the lowest to highest levels from the four highest levels for the data. The "Average" values are the arithmetic average of the two numbers for the corresponding "Range" values. (The RSE report used arithmetic average.)

Table 2 Replicate

Position	Ambient Range	Ambient Average	5-Second Leq Flight Test Range	Flight Test Average	Sound Level Change of Averages
CP1	83-84.1	83.5	76.1-77.3	76.7	-6.8
CP2	92-94.1	93	85.8-89.2	87.5	-5.5
CP3	84.1-99	91.5	95.1-97.2	96.2	4.7
CP4	78.1-81.5	79.8	88.3-89.6	89	9.2
CP5	84.6-92	88.3	65.8-66.8	66.2	-22.1
CP6	76.3-82.3	79.3	71.1-73	72.4	-6.9
CP7	77.8-83.4	80.6	84.7-87.7	86.2	5.6
CP8	85.2-91.9	88.5	58.7-68.1	63.4	-25.1
CP9	89.9-94.8	92.4	68.8-71.1	70	-22.4

Table 3 Replicate

Position	Ambient Range	Ambient Average	1-Minute Leq Flight Test Range	Flight Test Average	Sound Level Change of Averages
CP1	75.3-76.1	75.7	69.4-71.2	70.3	-5.4
CP2	82.2-84.4	83.3	82.8-86.4	84.6	1.3
CP3	73.7-78.3	76	88-90.1	89	13
CP4	71-74.1	72.6	79.5-82.7	81.1	8.5
CP5	75.6-83.3	79.4	56.8-58.8	57.8	-21.6
CP6	70.4-75.2	72.8	64.5-67.3	65.9	-6.9
CP7	70.5-75.6	73	79.8-82.7	81.2	8.2
CP8	78-83.3	80.6	55.4-62	58.7	-21.9
CP9	81.5-88	84.8	62.6-64.6	63.6	-21.2

An obvious question is "How do these changes compare to the changes in sound levels in the 2003 study?" The tables below compares the changes:

5-Second Sound Level Comparisons

Position	Sound Level Change of Averages	Sound Level Change of Averages (2003)
CP1	-6.8	3
CP2	-5.5	8
CP3	4.7	9
CP4	9.2	10
CP5	-22.1	-17
CP6	-6.9	-4
CP7	5.6	3
CP8	-25.1	-15
CP9	-22.4	-11

1-Minute Sound Level Comparisons

Position	Sound Level Change of Averages	Sound Level Change of Averages (2003)
CP1	-5.4	5
CP2	1.3	12
CP3	13	11
CP4	8.5	10
CP5	-21.6	-14
CP6	-6.9	-2
CP7	8.2	6
CP8	-21.9	-13
CP9	-21.2	-6

The green highlights show where the change in sound level vs. ambient was less of an increase or more of a decrease compared to the 2003 study. This was the case for 15 of the 18 comparisons. The red highlight shows where the changes were less favorable than in 2003. There were three of the 18 comparisons where this was the case, with the maximum difference being 2.6 dBA.

We realize there are differences in structures around the hospital than might affect past and present sound level comparisons. All we can do is look at the past and present sounds and present them, as we have done above.

From our several decades of experience with aircraft sounds in general and helicopters in particular, we would not expect substantial changes in sound levels due to moving the pad from one rooftop to that of another nearby building, and I believe the two comparison tables above show this to be the case. In a built-up area in and around an urban area it is not at all unusual to find ambient sound levels for the many other sounds sources in the area to be comparable to or even higher than the sound from the helicopter, and, as the measurements show, that is the case here.

When assessing community sounds the U.S. Department of Housing and Urban Development (HUD) in fact uses the annual average day-night sound level, abbreviated Ldn or DNL. With an average of about one flight in and out of the hospital per day, with the "duration" of the approach or departure event lasting about 30 seconds (there are 86,400 seconds in one day), the effect on the annual DNL is insignificant.

Yours truly,

Norman R. Dotti, PE, PP, INCE
Principal

NRD/me

SOUTH REDDING 6-LANE PROJECT

LOUDNESS COMPARISON CHART (dBA)

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 1000 ft	110	Rock Band
	100	
Gas Lawn Mower at 3 ft	90	Food Blender at 3 ft
		Garbage Disposal at 3 ft
Diesel Truck at 50 ft at 50 mph	80	
Noisy Urban Area, Daytime		Vacuum Cleaner at 10 ft
Gas Lawn Mower at 100 ft	70	
Commercial Area		Normal Speech at 3 ft
Heavy Traffic at 300 ft	60	
		Large Business Office
Quiet Urban, Daytime	50	Dishwasher Next Room
Quiet Urban, Nighttime		
Quiet Suburban, Nighttime	40	Theater, Large Conference Room (Background)
	30	Library
Quiet Rural, Nighttime		Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

An increase of 3 dBA is barely perceptible to the human ear.

City of Redding, California · Shasta County Regional Transportation Planning Agency · Caltrans

Will Conway

From: Will Conway
Sent: Wednesday, February 21, 2018 3:56 PM
To: 'Jean Fraser'
Cc: 'Alexander M. Green'
Subject: Stormwater Comment Responses

Hello Jean, we have the following responses to the Wright Pierce Review Memo dated 2/7/18 :

- Comment 1a – 1 c correctly state that Stormwater Basic, General and Flooding Standards do not apply to this project.
- Comment 3 (a) ii (1) requests that we submit an updated boundary survey with utility elevations, pipe sizes, and pipe materials added – that information is attached.
- Comment 3 (a) ii (2) Al will discuss this with Tuck.
- Comment 5(b) Regarding snow storage, MMC currently removes all snow from the site, and this will be the case in the future.

A copy of this email is saved in EPlan under documents / WSL- 3 Stormwater Comment Responses February 21, 2018

The updated boundary survey is saved in EPlan under plans / Plan2K Boundary Survey February 21

Regards,

Will

William T. Conway, RLA, LEED-AP
Vice President, Landscape Architecture

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Office: 207.200.2100
Fax: 207.856.2206

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GORRILL PALMER

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

DRAFT

Evaluation of Congress Street Detour
Maine Medical Center (MMC) – Bramhall Campus
Portland, Maine

February 14, 2018

Proposed Detour:

The MMC Team met with City staff (including Fire and Police representatives) on January 25th, 2018 to discuss various detour options for the closure of Congress Street between Forest Street and Weymouth Street. Based on those discussions, there was general consensus that the best approach was to combine different aspects of the alternatives into one alternative to create a multi-layered approach.

The currently proposed traffic control plan (TCP) is intended to operate as a three layered approach. The purpose of the multi-layer approach is to gradually decrease the volume of traffic that approaches the closure location, such that traffic is less concentrated at one specific location. A more detailed description of the three layers is as follows, with plans of the TCP attached:

Layer 1 (Figure 1 of attached plans)

The first, or outer most, layer involves the use of four Variable Message Boards (VMB). The current detour plan identifies the use of three mobile units and the use of one of MaineDOTs permanent VMB. The locations are as follows:

- St. John Street southbound prior to the intersection with Park Avenue (mobile unit)
- Outer Congress Street inbound prior to Fore River Parkway (mobile unit)
- Upper Congress Street outbound prior to Mellen Street (mobile unit)
- I-295 northbound prior to the Exit 4 ramp toward the waterfront (permanent VMB) – MaineDOT permission will be required for this use

The VMBs will flash "Lower Congress Closed" "Seek Alt Route". The VMBs are specifically located such that it provides notice to drivers as they enter the downtown such that they have alternate routes to take to avoid the Lower Congress Street closure.

Prior to closure – We recommend that the VMBs be placed and utilized a week in advance of the actual closure to inform drivers of the upcoming closure.

Additional Mitigation beyond that shown on the plans: None anticipated

Layer 2 (Figure 2 of attached plans)

For drivers on Congress Street that are approaching the general area, a primary detour will be established. Inbound traffic on Congress Street will be directed to use St. John Street to Park Avenue to Weymouth Street and back up to Congress Street. A Type III barricade will be placed on Congress Street to discourage through traffic, but will provide enough roadway width such that through traffic will still be allowed to reach local destinations such as the Gilman garage, MOB garage, and local businesses.

For outbound Congress Street traffic, the primary detour will direct traffic onto Weymouth Street to Park Avenue to the intersection with St. John Street. The end detour will be at the intersection with St. John Street because based on our evaluation of the roadway network and traffic patterns, it does not appear to make sense to detour all the traffic back to the Congress Street / St. John Street intersection.

Additional Mitigation beyond that shown on the plans:

- Potential retiming of the traffic signals. We recommend that any exclusive pedestrian timing of the signals involved be changed to concurrent pedestrian timing to maximize capacity while still providing accommodations for pedestrians.

Layer 3 (Figure 2 of attached plans)

For what is expected to be minimal inbound traffic that manages to reach the actual Congress Street closure, rather than try to turn them around, the third secondary layer provides a route. This route would direct traffic onto Forest Street to Boynton Street to Weymouth Street. The current plan is to convert Boynton to one-way inbound which will minimize the potential of outbound traffic trying to use this route. Instead, all outbound traffic will be required to use the primary route described in Layer 2.

To allow emergency vehicles adequate width to maneuver, we recommend that some on-street parking be eliminated while the Congress Street closure is in effect (approximately 8 weeks). This would eliminate approximately four on-street parking spaces on Forest Street and 14 on-street parking spaces on Boynton Street. MMC is working with the residents along Boynton Street to provide alternative parking arrangements such as within the MOB parking garage.

Additional Mitigation beyond that shown on the plans: None anticipated

Capacity Analysis:

To further evaluate the options, key intersections were evaluated using Synchro/SimTraffic computer analysis software. Level of service rankings are similar to the academic ranking system, where an 'A' is good with little control delay and an 'F' represents poor traffic conditions. If levels of service fall below a 'D', an evaluation should be made to determine if mitigation should be implemented. The following tables summarize the relationship between level of service and control delay per vehicle for unsignalized and signalized intersections:

DRAFT

Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The results are based on the average of five SimTraffic runs. The following summarizes the capacity analysis results.

The key intersections for this detour option have been identified as the following:

- Park Avenue / Weymouth Street
- St. John Street / Park Avenue
- Congress Street / St. John Street

The following table summarizes the forecast operation of the key intersections for existing conditions and with the detour in place. Detailed results are attached.

Level of Service Summary

Approach*	Existing Conditions		With Detour	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Park / Weymouth (Existing = U, Detour = S)				
Park EB	A	A	B	D
Park WB	A	A	B	B
Weymouth NB	C	E	C	D
Parking Lot SB	B	B	A	B
Overall	**N/A**	**N/A**	**B**	**C**
St. John / Park (S)				
Park WB	C	B	C	C
St. John NB	B	D	B	C
St. John SB	B	C	C	C
Overall	**B**	**C**	**C**	**C**

DRAFT

Congress / St. John (S)				
Congress EB	C	C	B	C
Congress WB	B	B	B	B
St. John NB	C	C	C	C
St. John SB	C	C	C	C
Overall	**C**	**C**	**C**	**C**

*(U) = Unsignalized, (S) = Signalized

As shown in the table, the intersections of St. John Street with Park Avenue and Congress Street with St. John Street are forecast to operate at similar levels of service to the existing conditions if the detour is implemented. Additionally, the three key intersections are forecast to operate at acceptable levels of service if the detour is implemented. It should be noted that at the intersection of Park Avenue with Weymouth Street, the eastbound and westbound approaches are forecast to operate at lower levels of service with the detour in place than with the existing conditions. This is due to the temporary signalization of the intersection while the detour is operational, which increases the delay of the traffic that is free-flowing in the existing condition. Although the levels of service on Park Avenue are forecast to be lower than the existing conditions, the levels of service on the Weymouth Street approach and the Parking Lot approach are forecast to be maintained or improve from the existing conditions.

Visitor / Patient Garage

Since the Congress Street access to the Visitor / Patient garage will be unavailable during the Congress Street closure, MMC is proposing a plan (attached) to provide access to the Visitor / Patient garage through the Gilman Street access to the employee garage. The two garages are already connected on the base level. The attached plans show the layout that includes an entrance lane for employees and a separate entrance for visitors / patients. Both entrances will be well signed as to who uses which lane. To avoid any crossing of entrance traffic, employees would be required to access the garage from the direction of A Street, while visitors / patients would be expected to use the entrance via Congress Street direction. To get employees in the habit of entering from the A Street direction, the new set up would be implemented a minimum of one week prior to the actual closure of the Congress Street access.

Once in the garage, employees would continue into the employee section of the garage and visitors / patients would continue to the other garage. Exiting traffic from both garages would merge into one exit lane. A flagger(s) would be stationed within the merge area during busy times to ensure proper guidance. MMC is committed to safety so if additional flaggers or additional time periods are required they will be supplied as needed.

METRO Impacts:

The MMC Team has met with METRO to provide advance notice of the closure of a short section of Congress Street. Based on discussions with them, their preference in dealing with road closures is to stay outside of the detours and to change their routes accordingly. They expect that regardless of the specific closure chosen, travel times will be increased and additional buses / drivers will be required to ensure headways and schedules are maintained.

If the City would like to move forward with this detour as proposed, we would have a follow up meeting with METRO to go over the detour with them and receive their feedback.

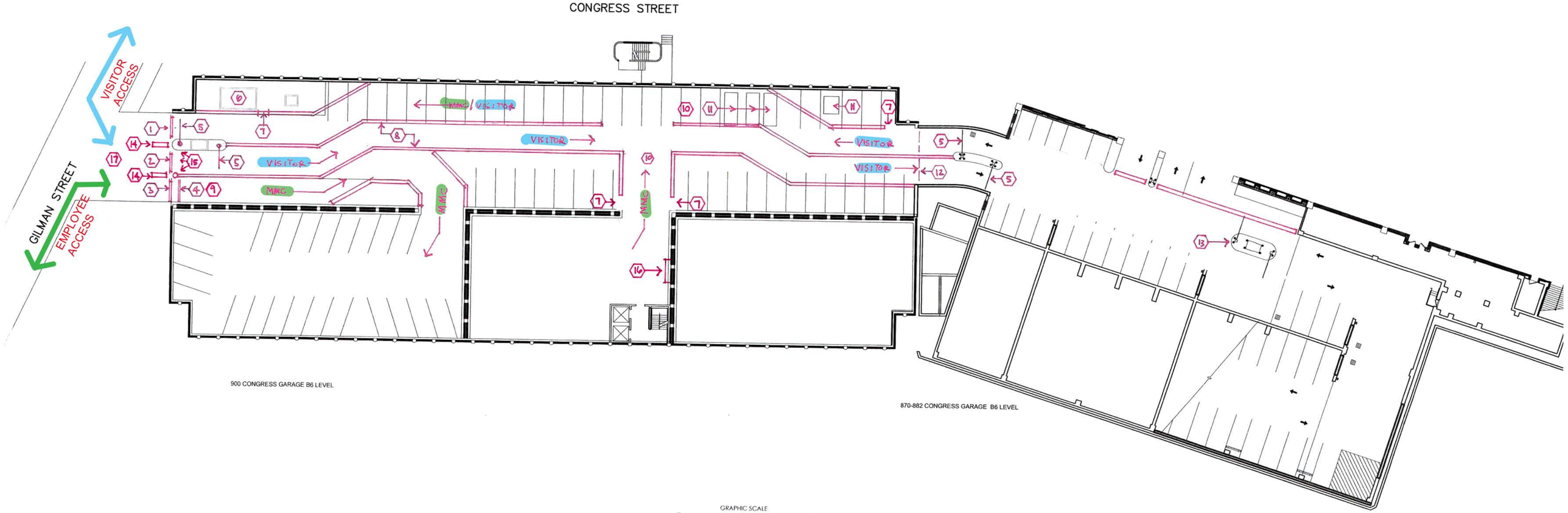
DRAFT

Construction related Deliveries, Delivery Routes, and Parking Restrictions:

Turner Construction will be the responsible party for the actual construction and will be providing number, type (size), and routes for deliveries under separate cover. It should be noted, that additional on-street parking restrictions may be identified when delivery routes are reviewed in the field to ensure proper turning of larger delivery vehicles can be accommodated.

Parking for construction workers will be provided off-site at satellite parking areas, such as the MMC Scarborough Campus, and workers will be shuttled to the work site. Any non-essential vehicles not critical to the work site will be restricted from the site. Any parking by workers in the immediate area reported to MMC or Turner Construction will be taken seriously and addressed by Turner Construction.

DRAFT



Maine Medical Center - Garage Access During Congress Street Closure

LEGEND :

1 - “Exit Only” Sign Facing Gilman Street
2 - “ Visitor Entry Only ” Sign Facing Gilman Street
3 - “Employee Entry Only ” Sign Facing Gilman Street
4 - Add horizontal pvc pipe over employee entry lane
5 - Gate arms to remain in upright position
6 - Temporary office to remain
7- 5 Foot opening in barrier for pedestrian access
8 - Jersey Barriers, typical
9 - Temporary gate arm to conttrol employee access lane
10- Stop sign and staff person at this location during peak times
11 - Remove storage containers
12- Remove chain link fence gates
13 - Visitor access booth to remain as currently functioning
14 - One jersey barrier section on driveway apron
15 - Activate traffic signal lights
16 - Stop Ahead sign
17 - Staff person at Gilman Street Entrance at peak times

Patient / Visitor Garage Traffic Control Plan

Figure No. 1

Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: JAN 2018
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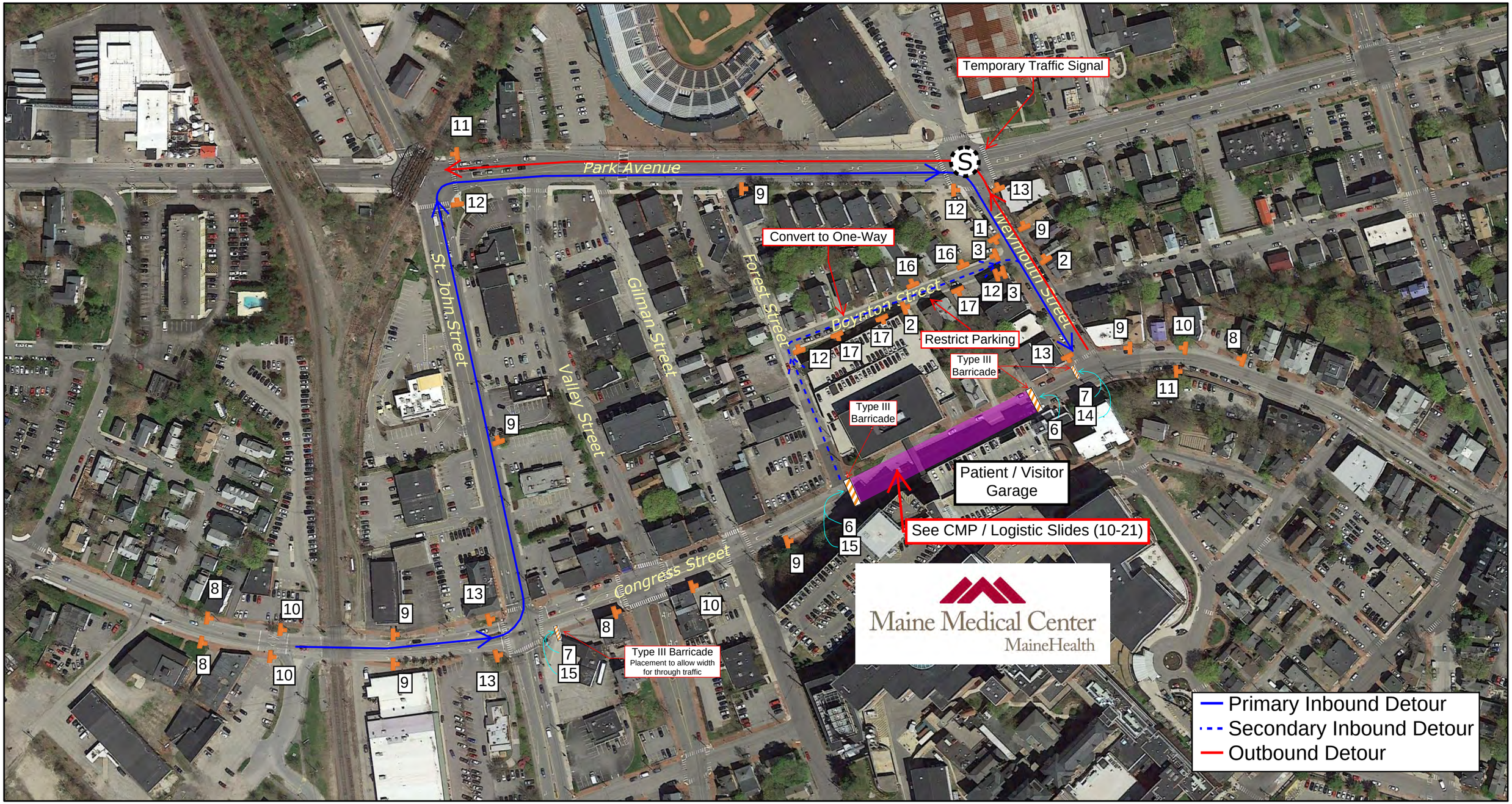
Congress Street Detour

Figure No. 2



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General Notes and Sign Specifications

Figure No. 3

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD), USDOT, FHWA, LATEST EDITION, AND CITY STANDARDS.
2. SIGN LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE CITY.
3. OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE CITY.
4. ALL CONTROL DEVICES SHALL BE PLACED IN HIGHLY VISIBLE LOCATIONS.
5. ALL CONSTRUCTION RELATED TRAFFIC CONTROL SIGNS NOT IN EFFECT SHALL BE COVERED OR TURNED FROM TRAFFIC VIEW UNTIL THEY ARE MADE ACTIVE. SIGNS SHALL BE COVERED OR REMOVED WHEN THE WORK IS NOT ACTIVE.
6. ANY EXISTING SIGNS OR PAVEMENT MARKINGS DAMAGED DURING CONTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS OR REPLACED AS NEEDED.
7. ANY CONFLICTING SIGNS OR PAVEMENT MARKINGS SHALL BE COVERED OR REMOVED AS NEEDED.
8. CHANNELIZING DEVICES SHALL BE PLACED PER MUTCD.
9. POST-MOUNTED SIGNS SHALL BE A MINIMUM HEIGHT OF 7 FEET (TO THE BOTTOM OF THE SIGN) AND MUST BE CRASHWORTHY.

SIGN SPECIFICATIONS:

R3-1
24" x 24"
1

R3-2
24" x 24"
2

R5-1
30" x 30"
3

R8-3
24" x 24"
4

R9-9 Modified
24" x 12"
5

R11-2
48" x 30"
6

R11-3a
60" x 30"
7

W20-1
36" x 36"
8

W20-2
36" x 36"
9

W20-3
36" x 36"
10

M4-8a
24" x 18"
11

M4-9R
30" x 24"
12

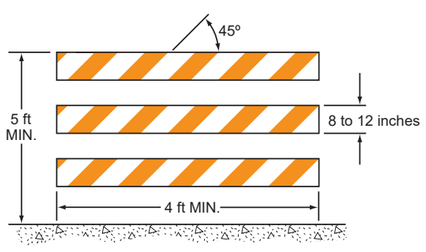
M4-9L
30" x 24"
13

M4-10R
48" x 18"
14

M4-10L
48" x 18"
15

R6-1R
36" x 12"
16

R6-1L
36" x 12"
17



TYPE 3 BARRICADE

TEMPORARY SIGNALIZATION: SIGNAL SHALL BE ON FLASH FOR A MINIMUM OF ONE WEEK PRIOR TO BEING PUT INTO RED-YELLOW-GREEN OPERATION. THE SIGNAL SHALL BE PUT INTO RED-YELLOW-GREEN OPERATION PRIOR TO 6 AM ON A MONDAY MORNING AND SIGNAL CONTRACTOR SHALL REMAIN ON-SITE UNTIL A MINIMUM OF 9 AM TO MAKE ADJUSTMENTS TO SIGNALS / TIMING PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CONTRACTOR SHALL ALSO BE AVAILABLE FROM 11 AM TO 1 PM AND AGAIN FROM 3 PM TO 6 PM ON THE SAME DAY TO MAKE ADJUSTMENTS AS DIRECTED BY THE CITY ENGINEER OR THEIR REPRESENTATIVE. TWO WEEKS AFTER INITIAL RED-YELLOW-GREEN INITIALIZATION, THE CONTRACTOR SHALL BE AVAILABLE AT THOSE SAME TIMES FOR FURTHER ADJUSTMENTS AS DIRECTED BY THE CITY TRAFFIC ENGINEER OR THEIR REPRESENTATIVE.

NOTE: SIZES OF SIGNS AND LETTERING ON ALL SIGNS SHALL BE VERIFIED THAT THEY MEET MUTCD REQUIREMENTS PRIOR TO ORDERING AND INSTALLATION.

Maine Medical Center Expansion
PORTLAND, MAINE

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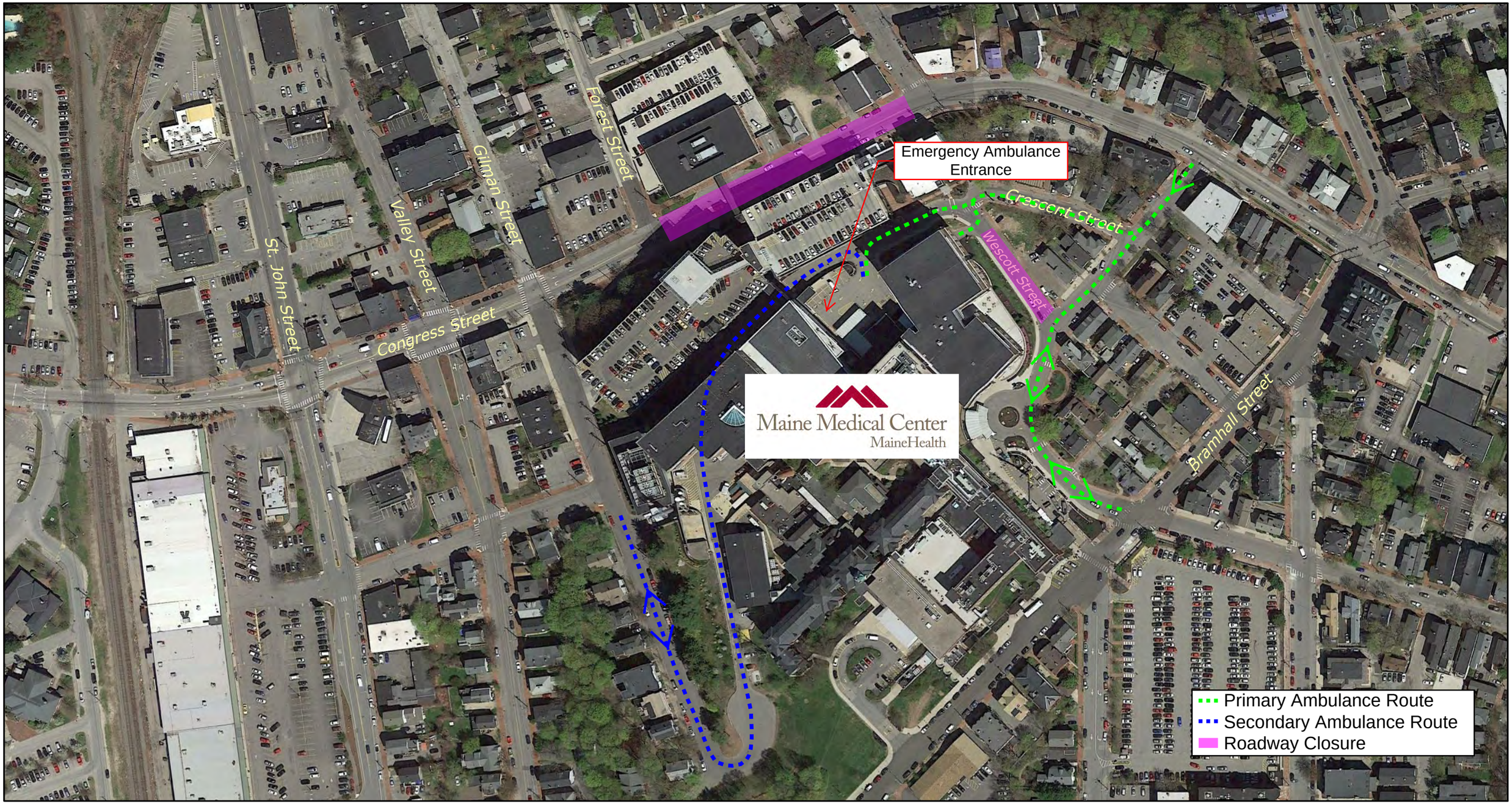
Ambulance Routes

Figure No. 1



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PORTLAND, MAINE

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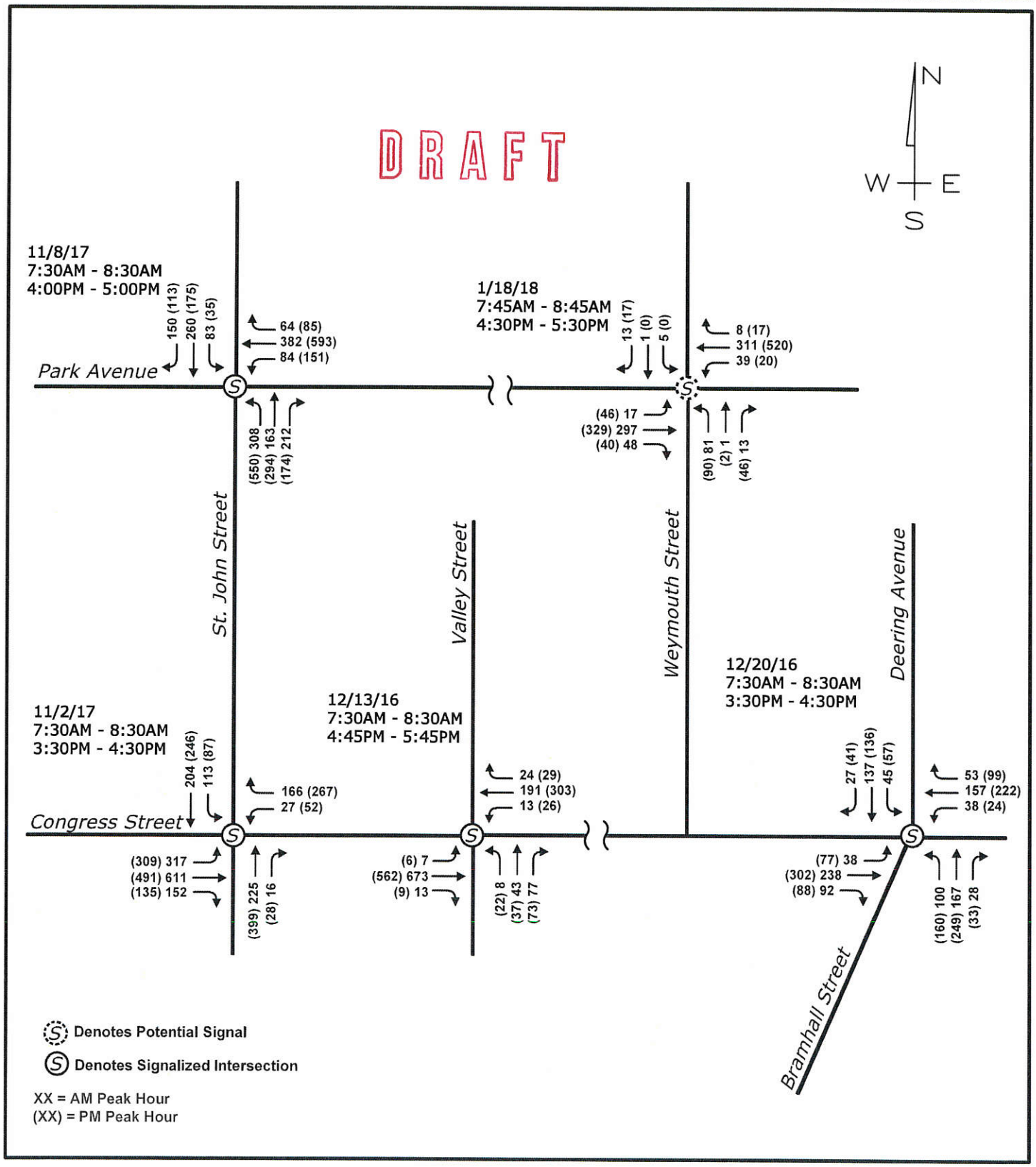
RAW VOLUMES

Figure No. 1



MAINE MEDICAL CENTER EXPANSION
PORTLAND, MAINE

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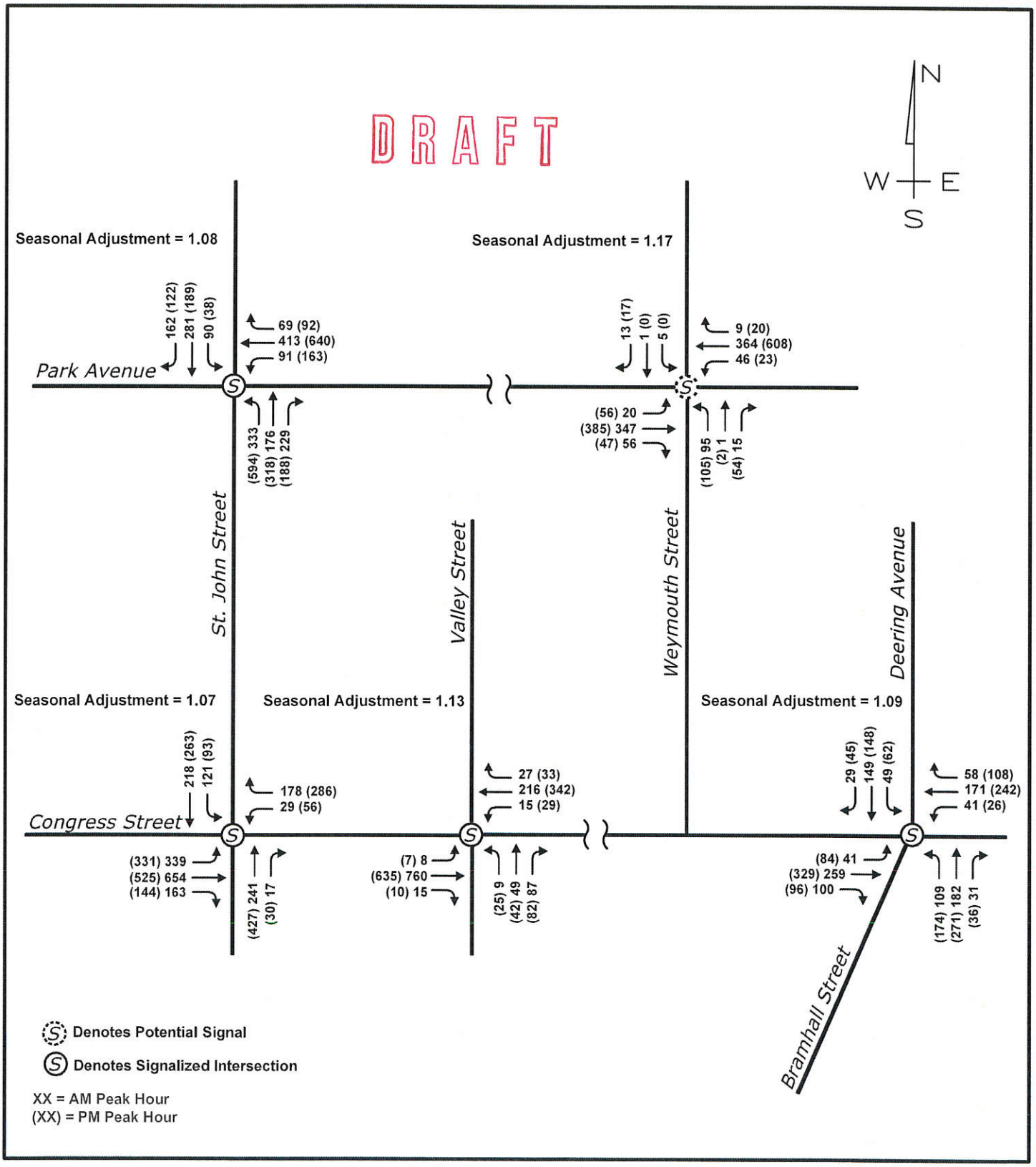
ADJUSTED VOLUMES

Figure No. 2



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PORTLAND, MAINE

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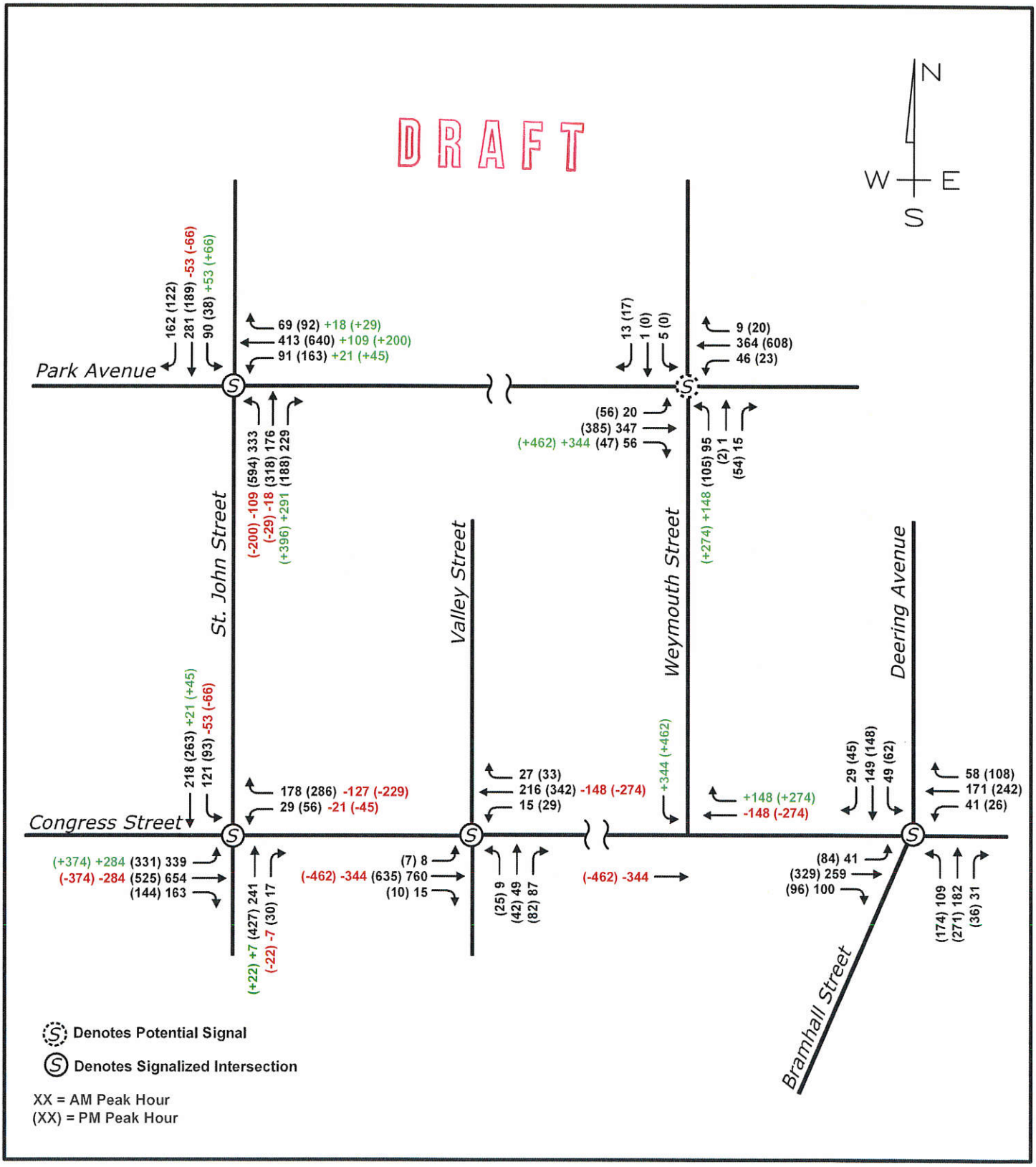
DETOUR VOLUMES

Figure No. 3



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MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management Plan

December 15, 2017

[Updated for 1/23/18 Planning Board Meeting]
(Updated for 2/27/18 Planning Board Meeting)

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

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MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management

Plan 12.15.17 (Updated 02.10.18)

Purpose Statement

The purpose of this document is to provide the details of the first phase of construction for MMC's Master Facility phase IIB. This document outlines Turner Construction's plan for controlling impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding neighborhoods and buildings.

Maintaining normal campus operations and Public Safety are high priorities during the construction phase. This plan will be presented to the appropriate City and Neighborhood representatives. The City of Portland Planning Board will approve the final plan. It has been the goal of these programs to define the construction plan before construction begins. Turner's experience on projects with similar logistic constraints has proven that pre-planning and constant communication are necessary for a smooth efficiently run, incident free project.

It is Turner Construction's full intent to follow the guidelines set by the contract documents.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will control the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

1.0 CONSTRUCTION MANAGEMENT PLAN

This Construction Management Plan (CMP), submitted to the Portland Department of Planning & Urban Development for approval by the City of Portland Planning Board prior to the start of construction, includes specific mitigation measures and staging plans to minimize impacts to surrounding residences and businesses. The Construction Manager and its trade contractors will be bound by the CMP.

Turner Construction Contacts:

Project Superintendent: Scott Griffin
Email: SGriffin@tcco.com / Cell - 203-943-0950

Project Manager: Adam Parys
Email: AParys@tcco.com / Cell – 617-201-0710

Project Engineer : Rick Martineau
Email: RMartineau@tcco.com / Cell – 617-438-1263

Project Superintendent: Chris Rodenhizer
Email: CRodenhizer@tcco.com / Cell – 617-312-9039

Project Director: Gregg Scholler
Email: GScholler@tcco.com / Cell – 203-219-4022

2.0 CONSTRUCTION SCHEDULE & WORK HOURS

Construction work hours will be in accordance with Section 17-18 and Section 25-129.

2.1 Work Hours

- The construction period for the project is expected to be approximately 19 months in duration.
- It is anticipated that the project is estimated to start on or about Spring 2018 and last through Fall 2019.
- Work hours will be 7AM to 7 PM Monday thru Friday.
- Workers will gather at their workplace from 6 AM to 7AM.
- Saturday work will be required on a periodic basis with hours from 7 AM to 6 PM.

2.2 Construction Timeline

2.2.1 Spring 2018 to Fall 2019

East Tower – Wescott Street

A new 60,000 SF addition is being added to the top of the East Tower. The addition consists of two new floors, level 6 and 7. On the roof is a helipad system capable of landing two helicopters. The exterior wall at Level 5 is being replaced in conjunction with a new exterior wall for Level 6 and 7. This project is expected to start in April 2018 and complete by October 2019. (19 Months)

Visitor Garage- Congress Street

Three new floors of parking are being added to the Visitor Garage. These floors will be Level 8, 9 and 10. The added floors are precast and are being added to a garage which has been designed for this expansion. The added parking capacity is 220 cars. This project is expected to start in May 2018 and complete in November 2018. (6 Months)

Central Utility Plant – Gilman Street

The Central Utility Plant is increasing cooling capacity by adding one 2,400 ton chiller and two cooling towers. This project is expected to start in November 2018 and complete in March 2019. (5 months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical as a part of the CMP.

- Monthly "look ahead" schedules and narrative for upcoming construction activities.
- Schedule of over-size deliveries to the site that will impact roadways
- Schedule of deliveries that will be outside the City of Portland's allowable work hours.
- Proposed schedule for utility connection or work in public roadways or sidewalks as a part of Turner work.
- Proposed off-hours or Saturday work.
- Construction activities that may impact the neighborhood in an adverse way, including noise, vibration, dust, on-street parking or work outside construction limits or times. Also, proposed options to mitigate these impacts.
- An estimate of the number of vehicles that will require off-site parking.

2.4 Construction Logistics

The proposed Logistics Plans included in the CMP are designed to isolate the construction while providing safe access for pedestrians, hospital operations, and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Congress Street and Gilman Street. The logistics plan define the timeline of construction activities and the location of cranes, gates, access for each Phase.
Each site will be secured by an 8-foot high fence with privacy screening in accordance with the Logistics Plan.

Logistics plans on the construction sequencing for East Tower Overbuild are Slides 2 to 12.

Logistics plans on the construction sequencing for Visitor Garage Overbuild are Slides 13 to 26.

Logistics plans on the construction sequencing for Central Utility Plant cooling upgrade Slides 27 to 29.

2.5 Perimeter Protection / Public Safety

- Turner Construction will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow.
- The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed.
- In general, secured fencing will be used to isolate construction areas from pedestrian traffic.
- Flagmen or Police Details will be provided at all active gates when there are deliveries.
- Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.
- Subcontractors will implement and manage their own Health and Safety Program for the project.
- All Subcontractors are required to wear appropriate personal protective equipment.
- Snow removal and ice treatment will be provided on the surrounding area within the construction fence.
- Sidewalks will be cleaned of trash and debris as needed.
- If existing street lights need to be removed for the duration of the project,
- Concrete washout will be in concrete washout bags, collected and placed in a dumpster. Concrete washout area to be located within the site fence. **(Refer to logistics slide 9)**
- Turner Construction will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed Light levels will be tested prior to temporary removal of site lighting.

2.6 Worker Parking & Traffic Impacts

- Turner Construction and its subcontractors shall encourage the use of public transportation by their workers.
- Jobsite personnel will be required to park at an offsite parking area to be determined and will be shuttled to the construction site.
    - Jobsite personnel will be required to park at MMC's Scarborough Campus
    - Jobsite personnel will be shuttled to the construction site
    - Subcontractors who violate this requirement will be fined $500 per offense
- Worker parking shall not be allowed on site except for company vehicles required to perform the work.

- Turner will qualify subcontractors' with a legitimate reason to park onsite and manage that parking within the construction fence and not impact parking in the surrounding area.
- No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets.
- The following language will be included in the contracts with all subcontractors
    - *"Parking: There shall be absolutely no parking on the project site, in the Hospital Parking Garages and / or Hospital Surface Parking lots, and on street parking adjacent to the Hospital. This is including but not limited to employee vehicles, company vehicles, delivery trucks, trucks containing equipment such as welders, etc. Turner to provide remote parking location, and transportation to and from the jobsite. Any workers found in violation of this policy will be subject to permanent removal from the project and the subcontractor shall be assessed a $500 fine per incident."*

The number of workers required during the construction will vary by Construction Phase.

Construction Phase - April 2018 to September 2019

- Spring 2018- Fall 2018 – average workers – 40 to 50
- Fall 2018 – Spring 2019 – average workers – 70 - 90
- Spring 2019- Fall 2019 - average workers – 100

2.7 Truck Routes and Volumes – Refer to Site Logistics Plans

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- Truck traffic will vary throughout the construction period, depending on the activity.
- An offsite marshalling area will be utilized for large deliveries such as precast and structural steel.
- All trucks will be brought to the construction areas at MMC by experienced dedicated drivers from the marshalling lot.
- Radio and cell phones will be utilized to coordinate all trucking.
- Trucks routes must be submitted and approved by the City of Portland and the Owner before the start of construction.
- Truck idling will be held to a minimum on-site, to minimize the impact to adjacent properties..
- Turner Construction and its subcontractors shall ensure that haul routes, debris and soil removal, and staging areas are conducted in a manner that minimizes the impacts to the abutting communities,
- Wheel wash stations will be installed and maintained by Turner and its subcontractors as needed and maintained at construction site exit areas.
- Street sweeping / vacuuming of all impacted City streets and sidewalks shall be performed by Turner Construction and its subcontractors on an as-needed basis.

- Streets, sidewalks, bicycle ways or other means of travel may not be obstructed or closed without permission from the Owner and other authorities having jurisdiction. The Owner shall be notified one week in advance of any such obstructions or closures.

Construction - East Tower Overbuild – (Refer to Logistics Slides 2 thru 12)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Ellsworth Street to Wescott Street. **(Refer to Logistics slides 8-12)**
- Turner will install way finding signage at strategic locations identifying no travel zones for construction vehicles
- All subcontractors and vendors will be provided with pamphlets indicating the appropriate truck routes to access the site.
- Trucks will be brought within the fence line.
- **Ambulance right of way thru East Tower tunnel is identified on logistics slide 9.**
- During crane erection a portion of Ellsworth Street and Wescott will be closed. **(Refer to logistics slide 8)**

Construction Visitor Garage Overbuild – (Refer to Logistics Slides 13-26)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Congress Street
- All detours and paths of travel shown on the Traffic Management Plans will be followed..
- During an eight week period when precast erection is occuring, Congress Street will need to be closed at the location of the Visitor Garage. Detailed logistics plans are included to identify the street closure requirements**.(refer to logistics slides 18-26)**
- This street closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.
    - Precast truck routes have been identified. The path is from a marshalling yard on Commercial Street to Valley Street to Park Street to Weymouth Street and backing in the site. **(Refer to slides 25-26)**

Construction - Central Utility Plant – (Refer to Logistics Slides 27-29)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to the Central Utility Plant utilizing a truck path from Congress Street to Gilman Street, and a departing path from A Street. **(refer to logistics slides 27-29)**
- During a two week period when the chillers and cooling towers are installed, trucks and a crane will be set up on Gilman Street. This is expected to occur in Fall/Winter 2018.Police detail will be fulltime during this period. Gilman Street will remain open.
- Lane closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

3.0 Air Quality & Noise

3.1 Dust Control

To reduce emission of dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks used for transportation of construction debris will be fully covered with tarps intended to keep material in the truck.
- Construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.
- Stock piles of soils will be covered with tarps and/or poly when they are not being utilized for current site activities.

3.2 Noise

- The project will require the use of equipment that can be heard from off-site locations. This project will strive to mitigate construction noise impacts, to the extent possible.
- Increased community sound levels are an unavoidable consequence of construction activities.
- Construction will occur during the daytime hours as defined by the City of Portland Code of Ordinances (7:00 a.m. to 6:00 p.m. Monday through Friday).
- In some instances, a second shift, off hour, holiday and weekends may be required.
- When these events arise, all required permits will be obtained and notification will be posted in accordance with section 2.3
- Work shall be performed so as to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).

- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels. Noise reduction methods shall include, but not be limited to:

  Use of:
  - Tie to local power grid to reduce the use of on-site generators.
  - Noise-deadening / isolating surrounds around exceptionally noisy work equipment or operations
  - The maintenance of the access roadways to minimize the "bouncing" of construction vehicles within the construction site.
  - Enforcing the site logistics plan, so as to maximize to every extent possible the forward movement of construction vehicles. This will, in turn, minimize the sound of back-up alarms.

  Attaching:
  - Intake / exhaust mufflers, shields or shrouds
  - Noise-deadening material to equipment and fencing

  Maintaining:
  - Equipment mufflers and lubrication
  - Pre-cast decking and plates to avoid rattling
  - Smooth surfaces on construction sites and public ways to prevent unnecessary noise from surface irregularities.

  Minimizing
  - Noise from the use of backup alarms, using measures that meet OSHA regulations. The construction logistics has been designed such that the backing-up of equipment and trucks is limited.
  - Use of self-adjusting ambient-sensitive backup alarms.
  - Manually adjustable alarms on low setting
  - Scheduling of activities so that alarm noise is minimized

3.3 Air Monitoring

- Turner Construction and its subcontractor's shall employ dust, odor, and gas control measures to minimize the creation of airborne dusts, odors, and gases during the entire construction process. At a minimum, standard dust control techniques shall be employed where heavy equipment will be traveling, standing, or loading, such as watering down the site or utilizing dust control measures. All measures shall be taken in accordance with Turner's approved Health & Safety plan.
- Turner Construction and its subcontractors shall perform dustless street sweeping / vacuuming for all construction activities including demolition, excavation, slurry / soil mixing operations on an as needed basis.
- An air monitoring plan shall be developed by the Owner based on site contaminants of concern, particulate quantities / densities, and risk-based evaluations. The plan will be

developed for off-site impacts. Turner Construction and its subcontractors will be responsible for on-site health and safety issues.

- The Owner will engage a qualified consultant to monitor for dust along the perimeter of the construction site. Results of this monitoring that indicate exceedances of air quality criteria will be immediately brought to the attention of Turner Construction. Turner and its subcontractors shall immediately address the site condition, including terminating construction activities to remedy the site conditions to the satisfaction of the Owner.
- Ductwork snorkels will be installed as required on building air intakes surrounding the job-site to minimize the amount of dust and construction vehicle gases being taken in through the air handling systems. The maintenance of the filters is by the individual building managers.

4.0 Communication Strategies

4.1 Contacts, Distribution Lists

- Turner Construction shall develop a project contact list (e-mail addresses, office and cell phone numbers), to be posted by MMC on the project web site and supplied to Maine Medical Center (MMC) for 24/7 contacts.
- Turner Construction will request similar contact lists from the neighborhood associations. (e-mail addresses, and phone numbers) of key contacts for the specific project.
- Turner Construction will set-up a project bulletin board for each Phase. These boards will be used as communication tools to the surrounding community. There will be a project website thru MMC, developed that also will communicate construction related activities to the community.
- Any last minute changes to the project schedule that may impact the neighborhood or Maine Medical Center (MMC) community will be communicated per section 2.3.
- Turner Construction will participate in the neighborhood council meetings as needed to discuss progress and issues.
- Turner shall maintain a log of all construction-related concerns, via the MMC website.
- MMC shall communicate final resolution of all complaints and concerns to the neighborhood, Maine Medical Center (MMC) community, and when appropriate, to the City of Portland.

5.0 Vibration Monitoring – Not Applicable

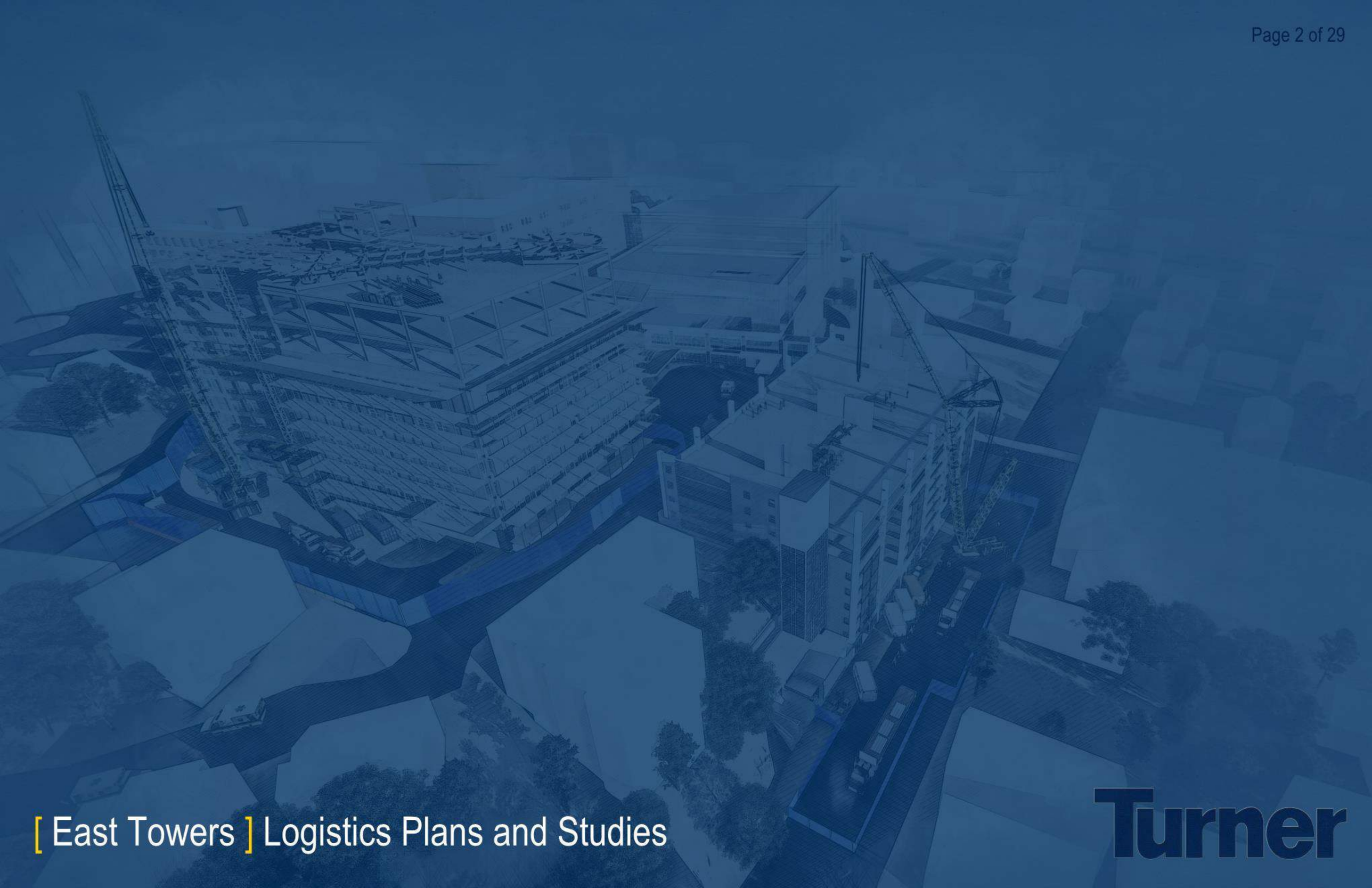
Maine Medical Center
MaineHealth

Construction Management Plan

UPDATED: 02-09-18

[Logistics Plans and Studies]
East Towers and Visitors Garage

Turner



[East Towers] Logistics Plans and Studies

Turner

Maine Medical Center
Additions and Renovations [Logistics Plans] EAST TOWERS - EXISTING

Turner

General Notes:
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2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
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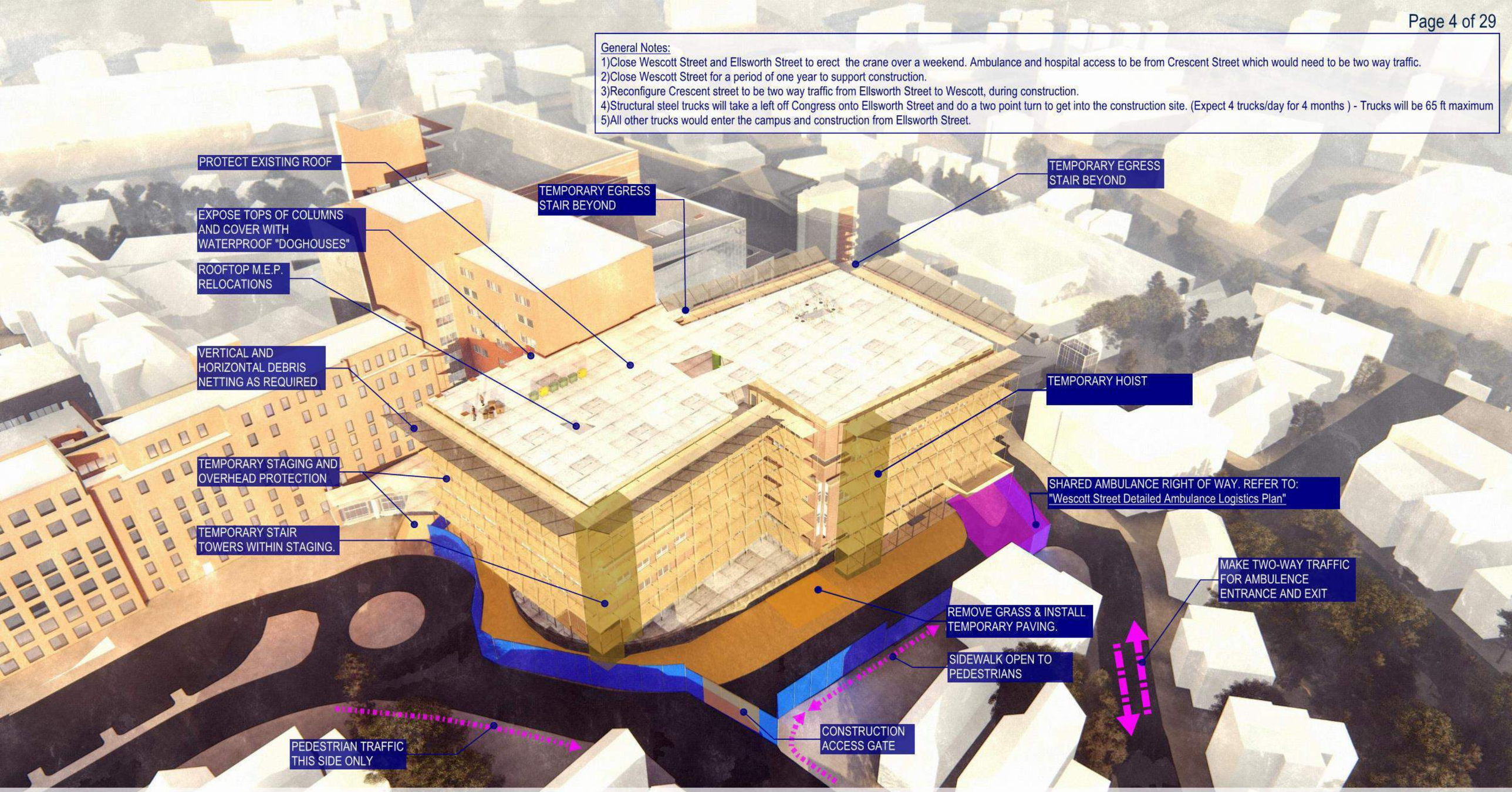

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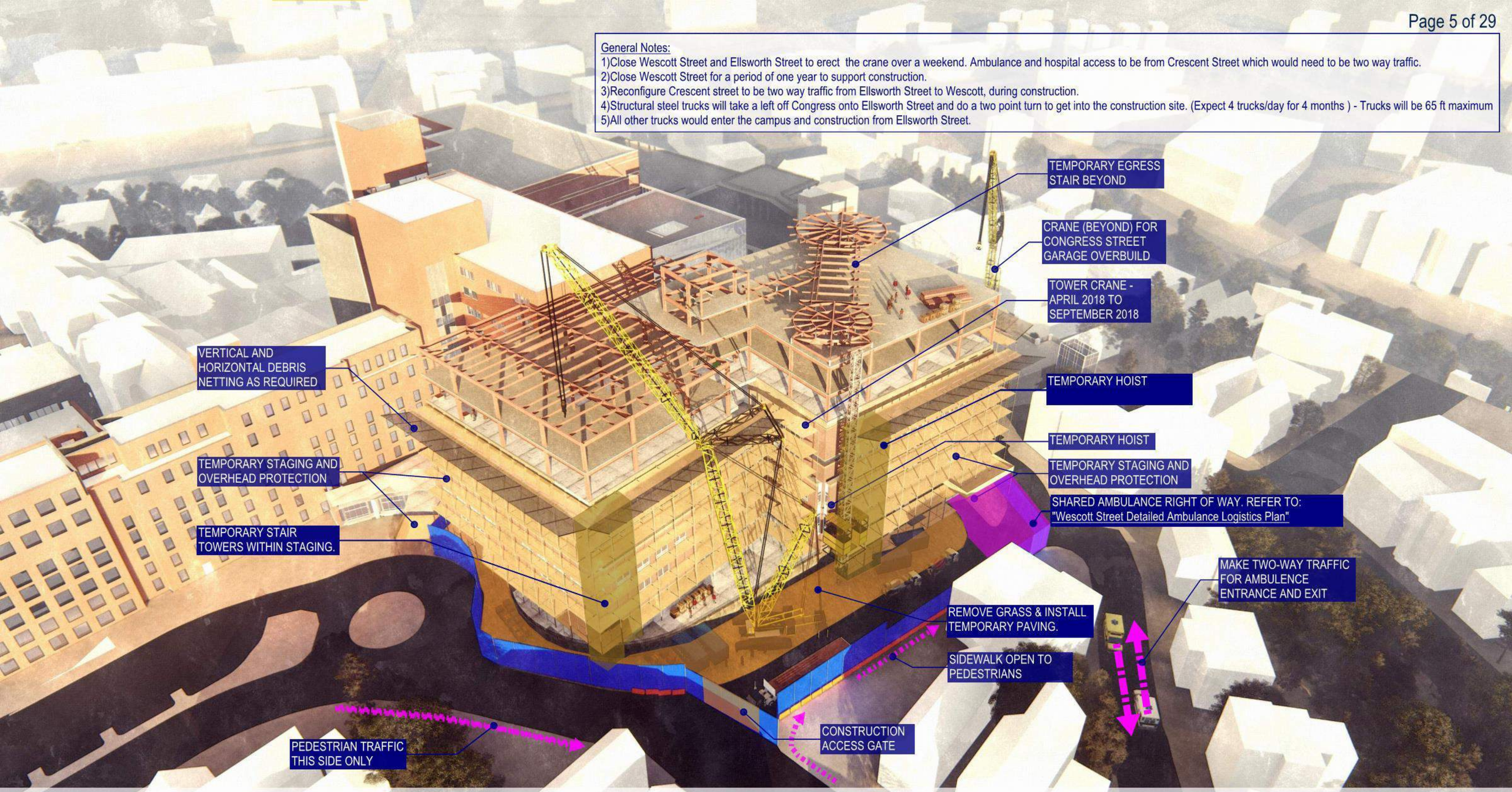

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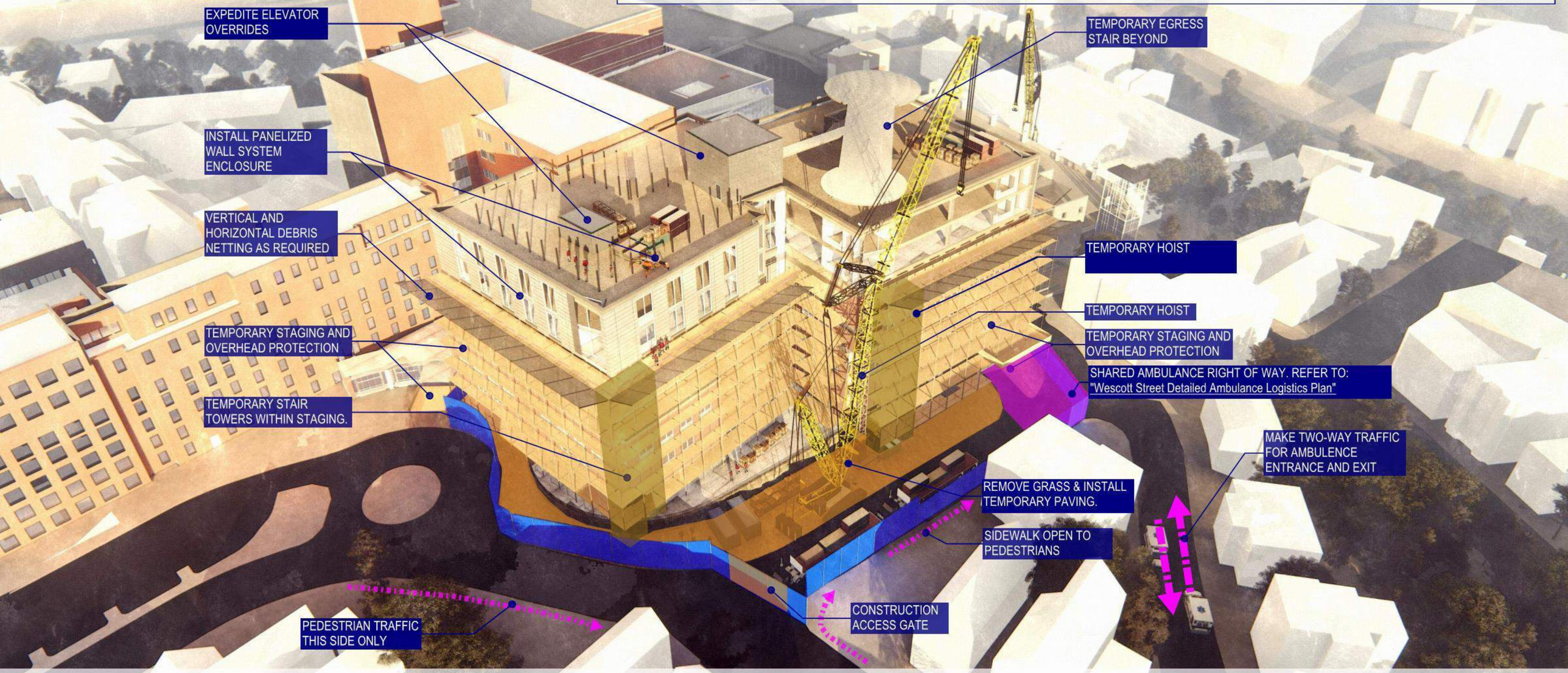

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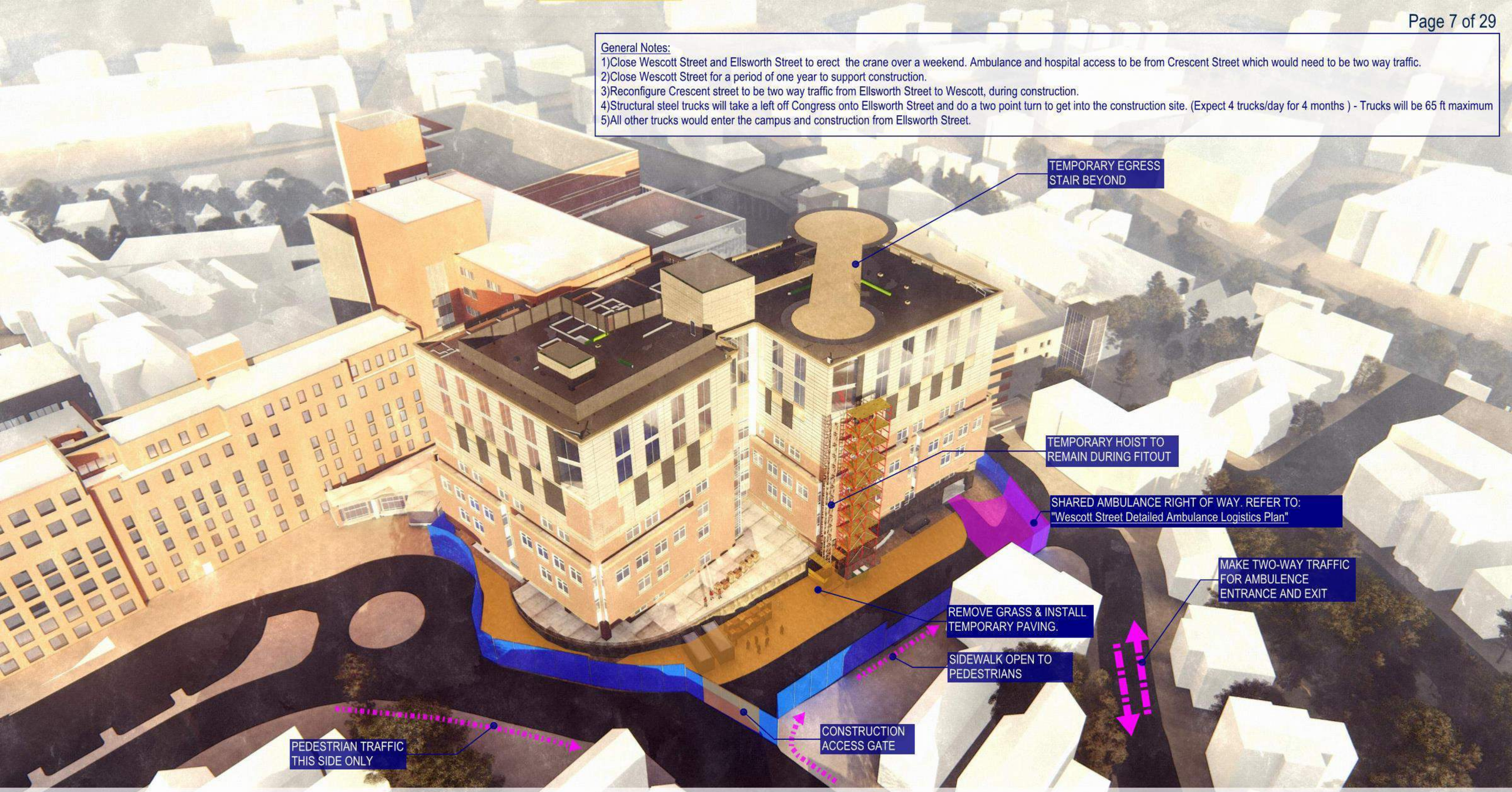
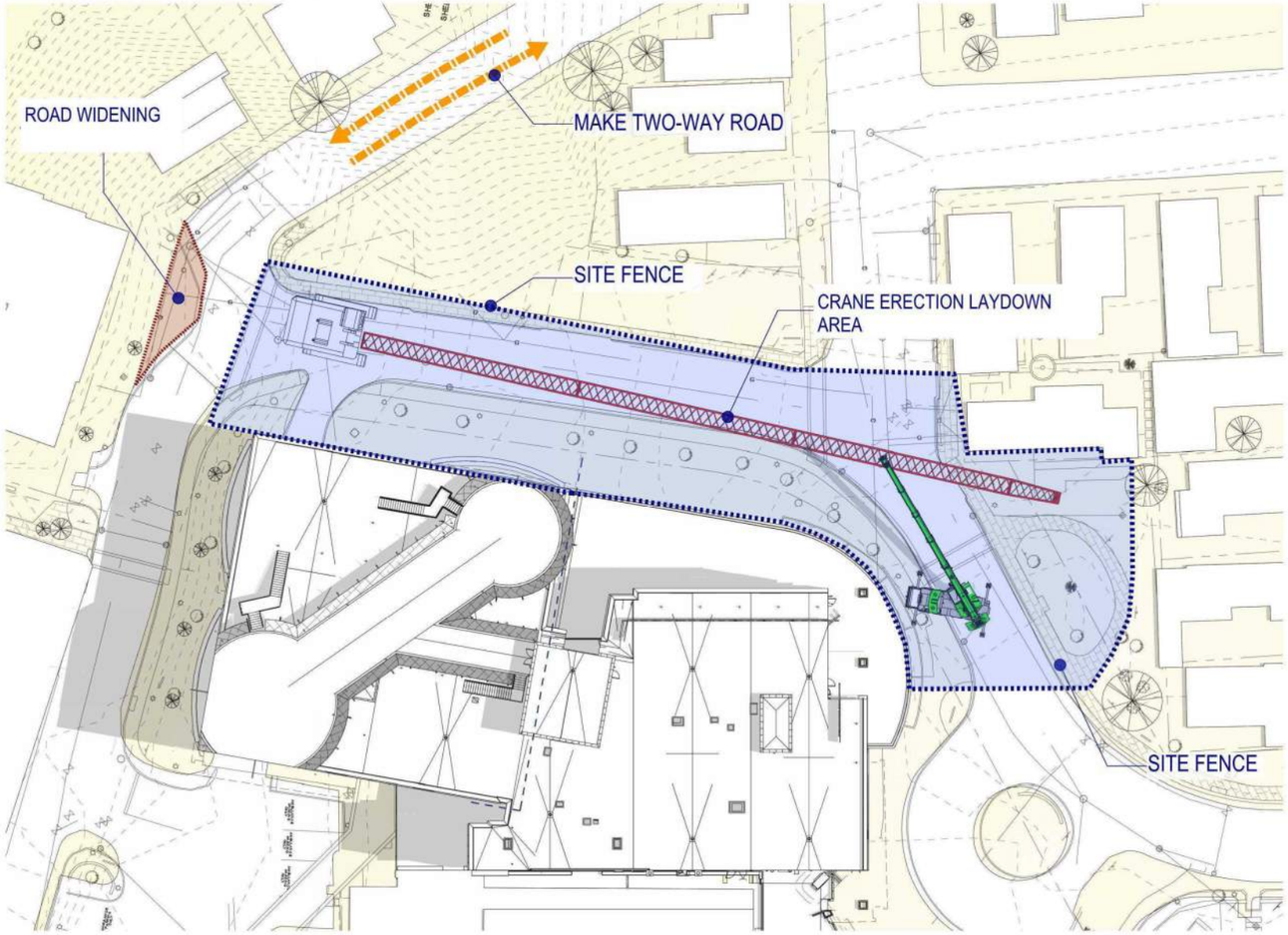
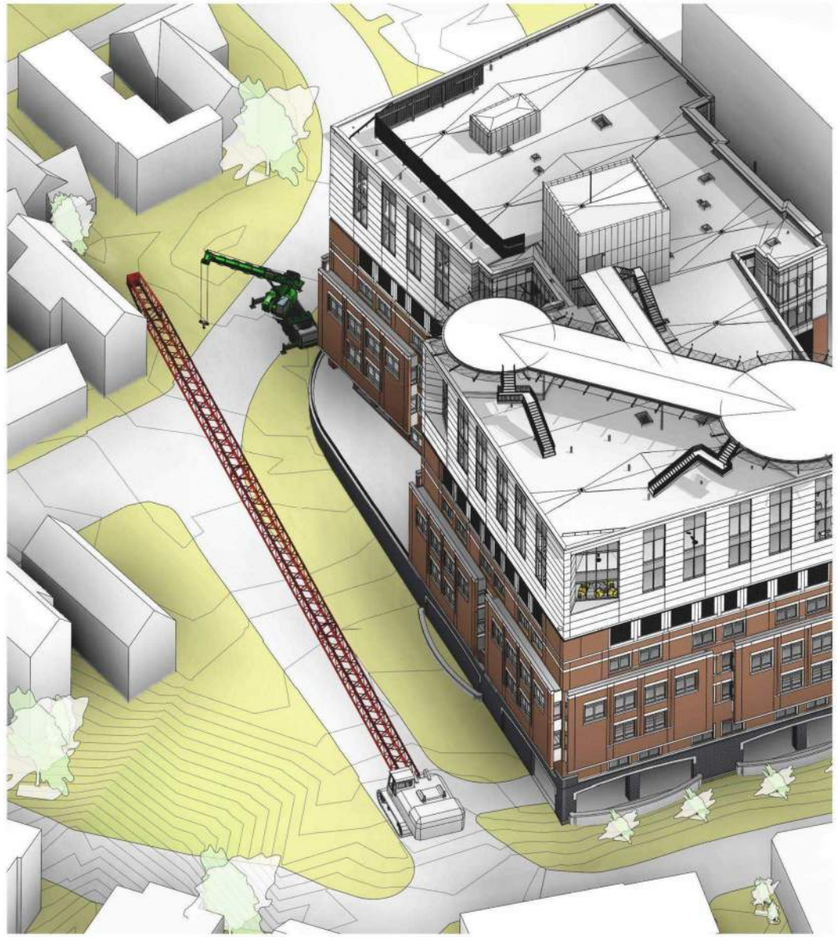




1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"



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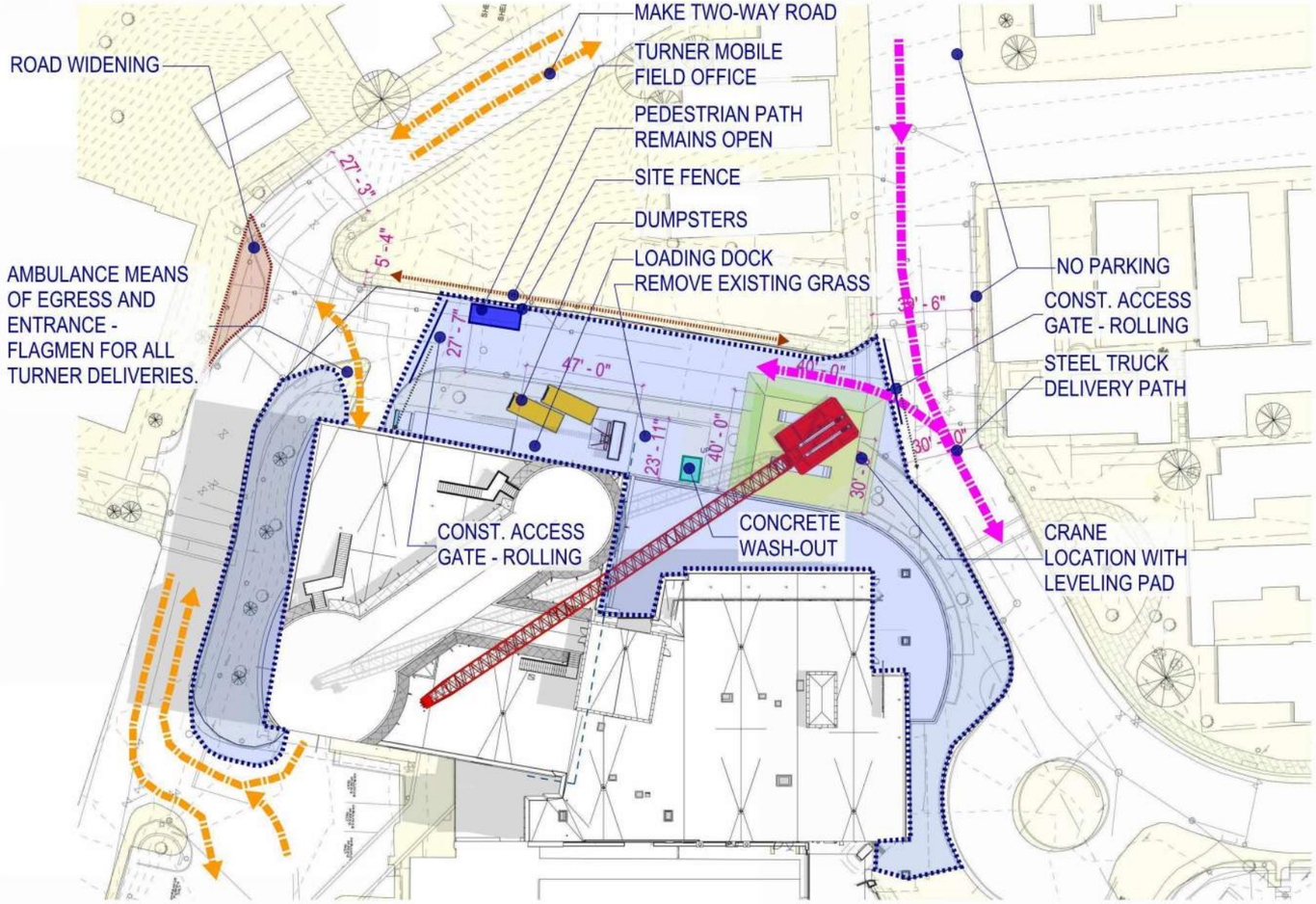

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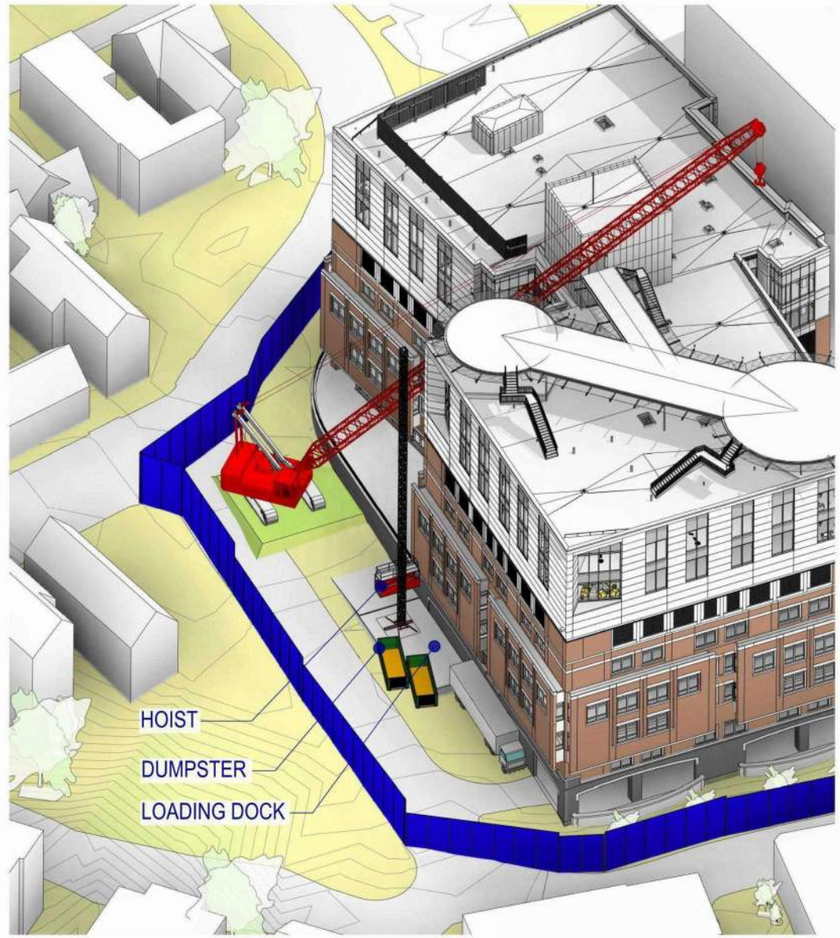

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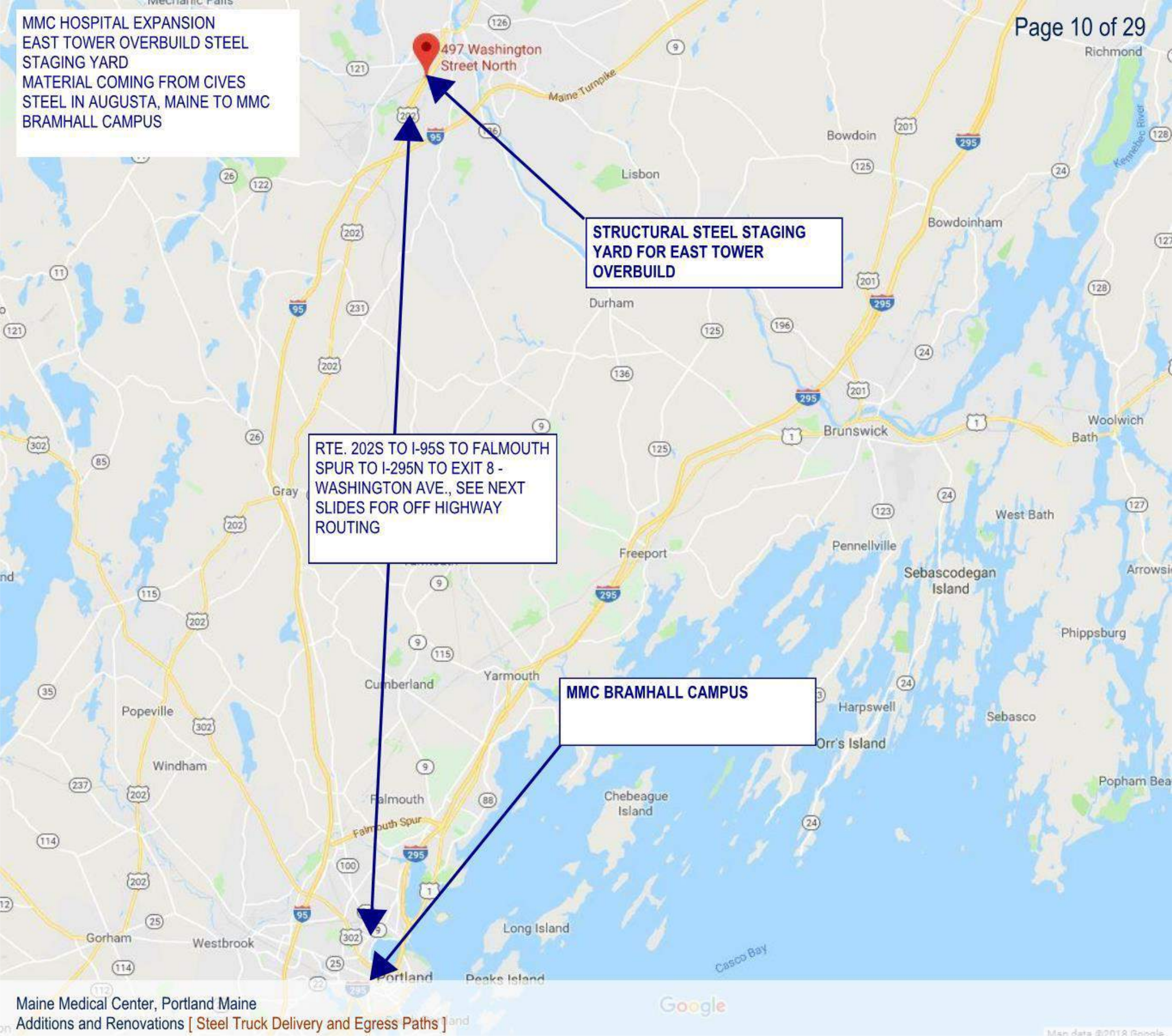
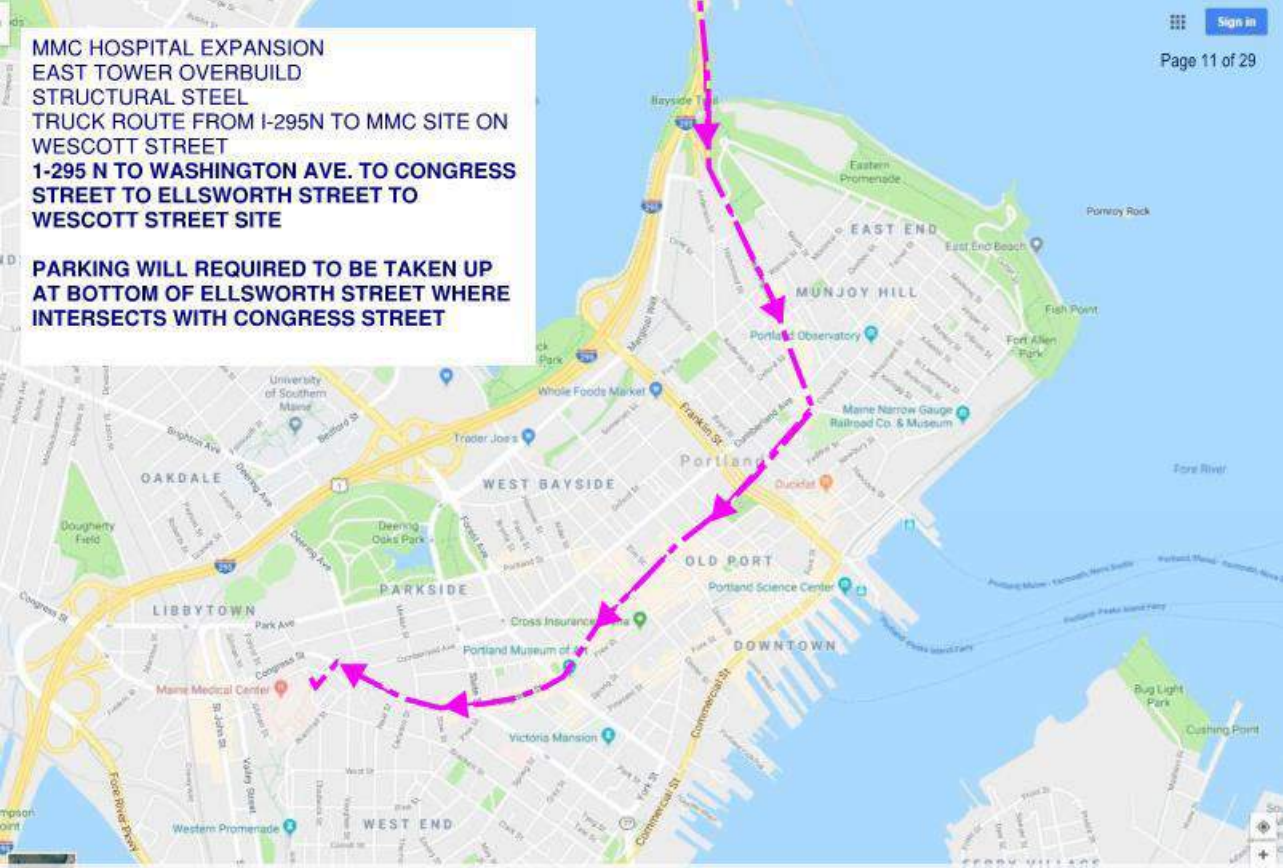
MMC HOSPITAL EXPANSION
EAST TOWER OVERBUILD STEEL
STAGING YARD
MATERIAL COMING FROM CIVES
STEEL IN AUGUSTA, MAINE TO MMC
BRAMHALL CAMPUS



MMC HOSPITAL EXPANSION
EAST TOWER OVERBUILD
STRUCTURAL STEEL
TRUCK ROUTE FROM I-295N TO MMC SITE ON WESCOTT STREET

1-295 N TO WASHINGTON AVE. TO CONGRESS STREET TO ELLSWORTH STREET TO WESCOTT STREET SITE

PARKING WILL REQUIRED TO BE TAKEN UP AT BOTTOM OF ELLSWORTH STREET WHERE INTERSECTS WITH CONGRESS STREET



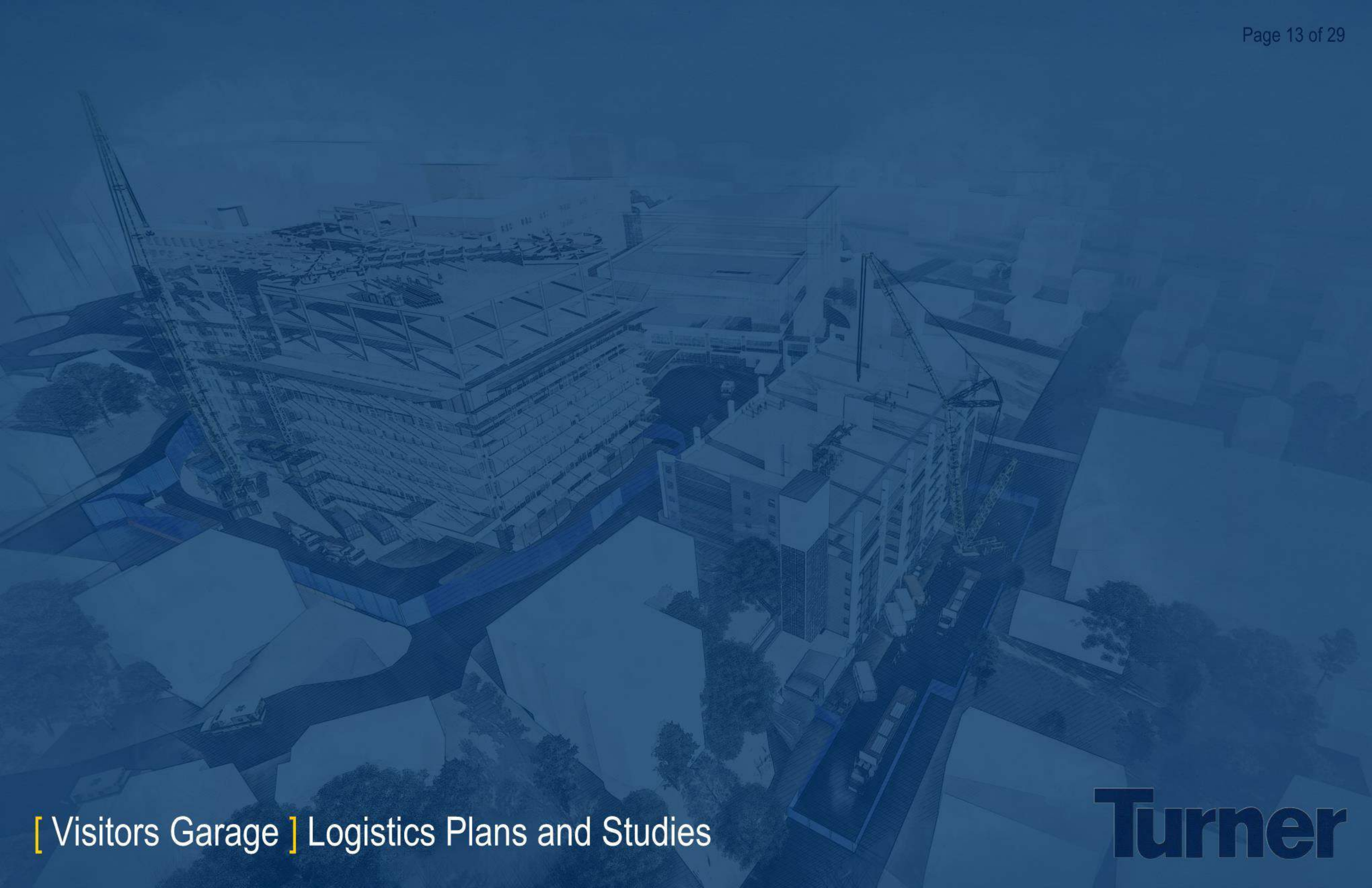
Maine Medical Center, Portland Maine
Additions and Renovations [Steel Truck Delivery and Egress Paths]

EAST TOWER STRUCTURAL STEEL
TRUCK DEPARTURE ROUTE FROM WESCOTT SITE
WESCOTT ST TO CHARLES ST TO BRAMHALL ST TO DEERING AVE TO PARK ST TO I295

PARKING WILL REQUIRED TO BE TAKEN UP AT TOP OF DEERIKNG AVE. WHERE INTERSECTS WITH CUMBERLAND AVE.

SEE TURNER LOGISTICS PLAN FOR BLOW UP OF STEEL DELIVERIES AT SITE

Maine Medical Center, Portland Maine
Additions and Renovations [Steel Truck Delivery and Egress Paths]



[Visitors Garage] Logistics Plans and Studies

Turner

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
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b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
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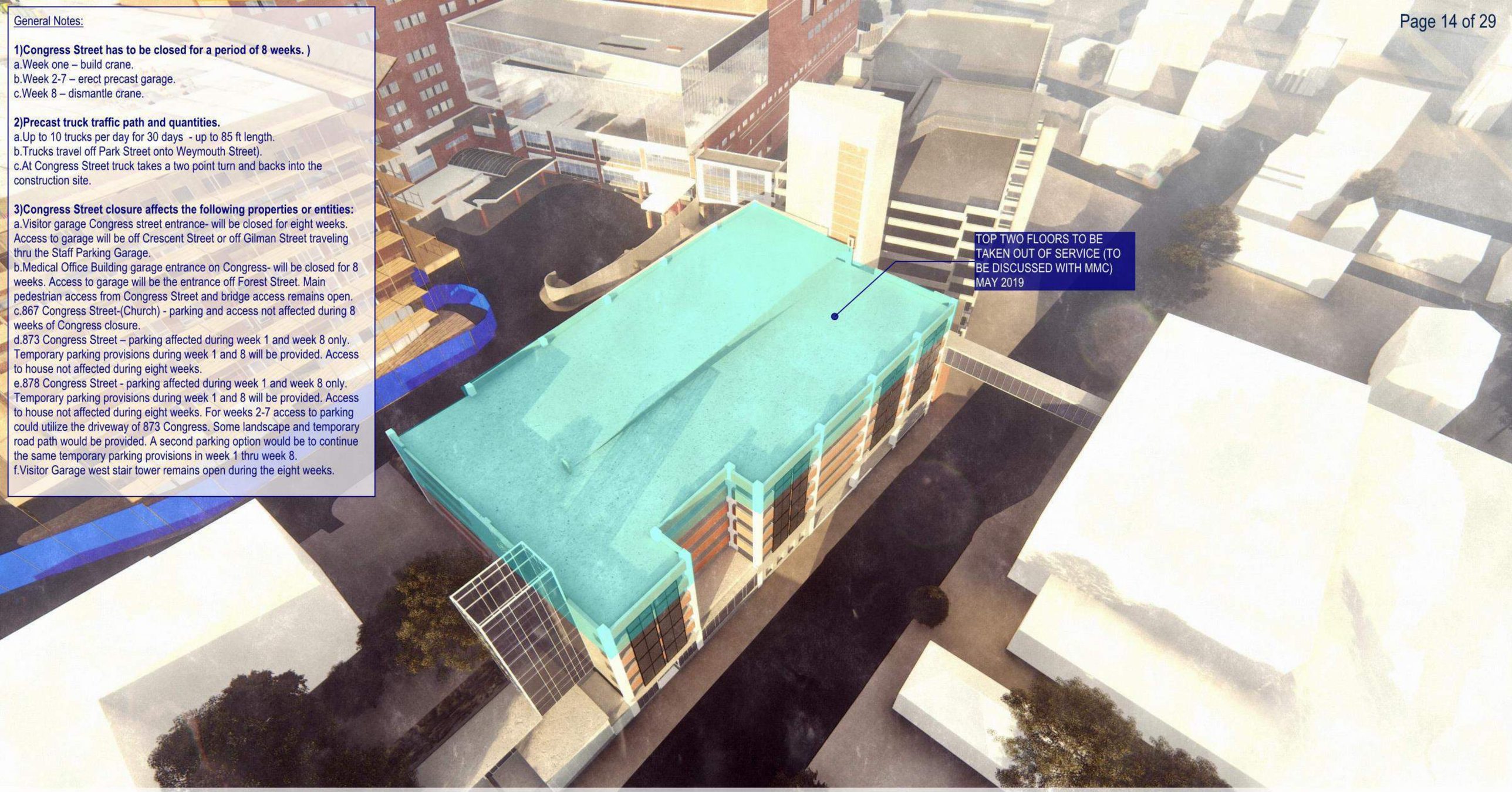
f.Visitor Garage west stair tower remains open during the eight weeks.



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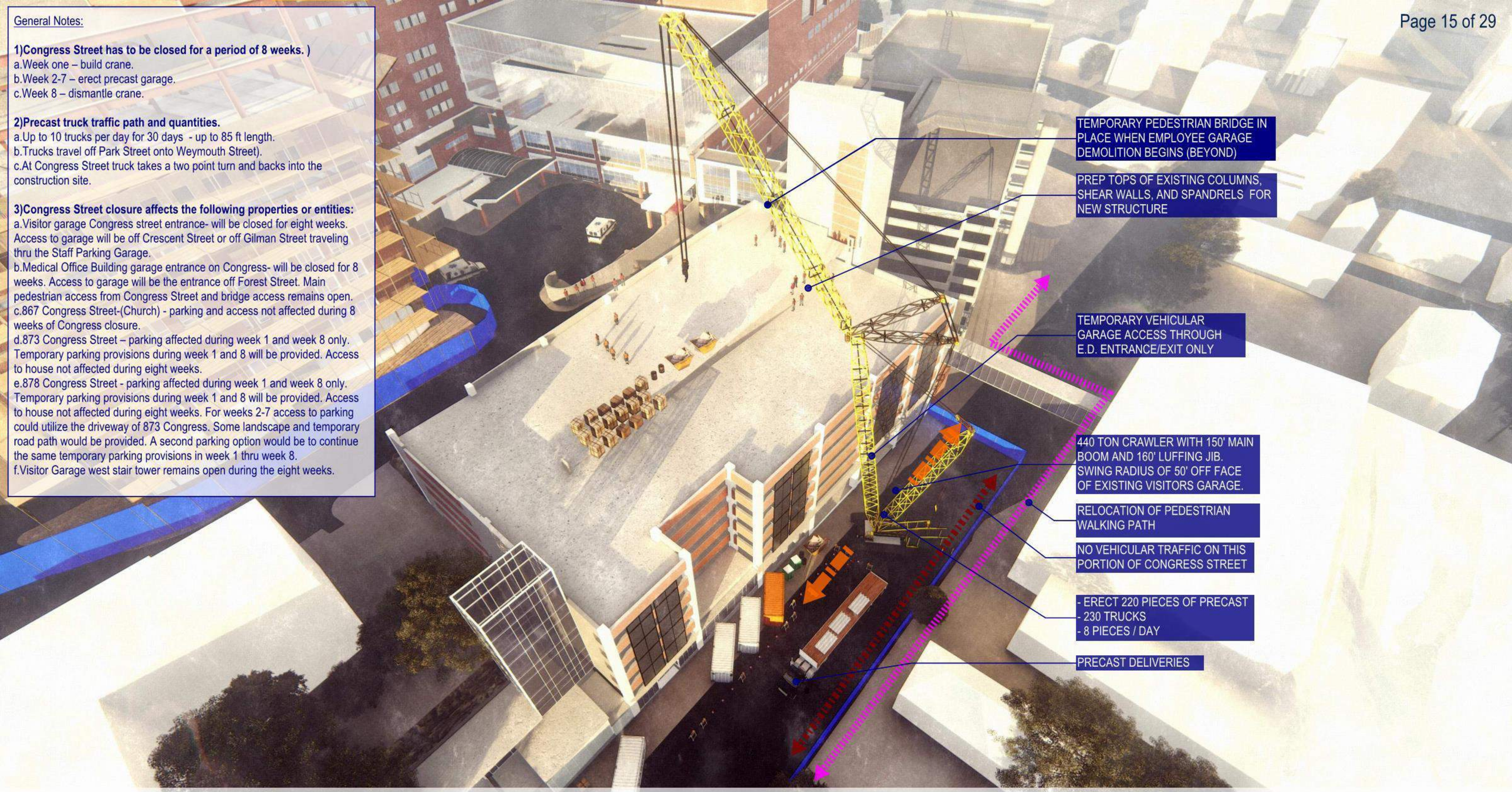

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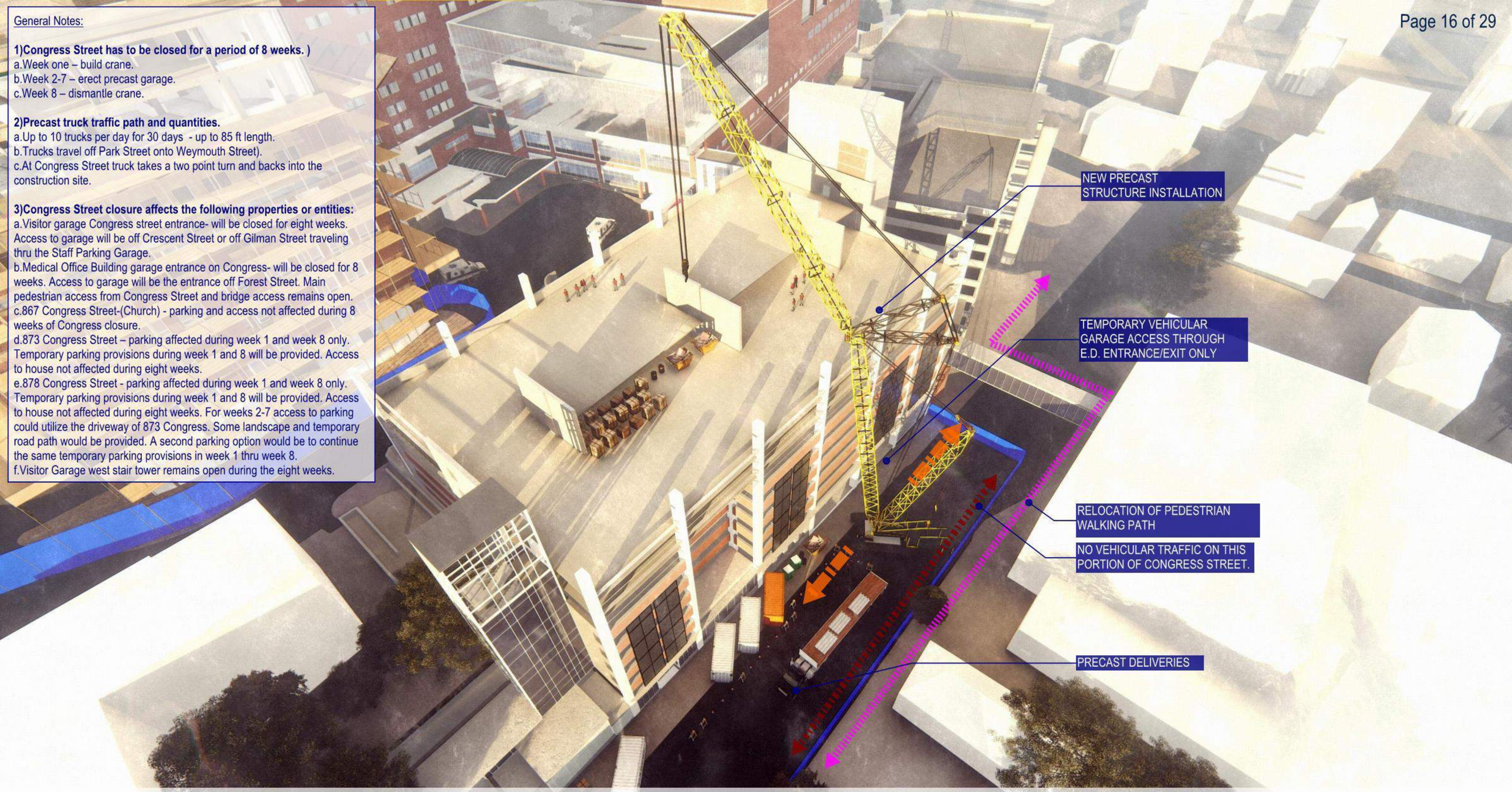

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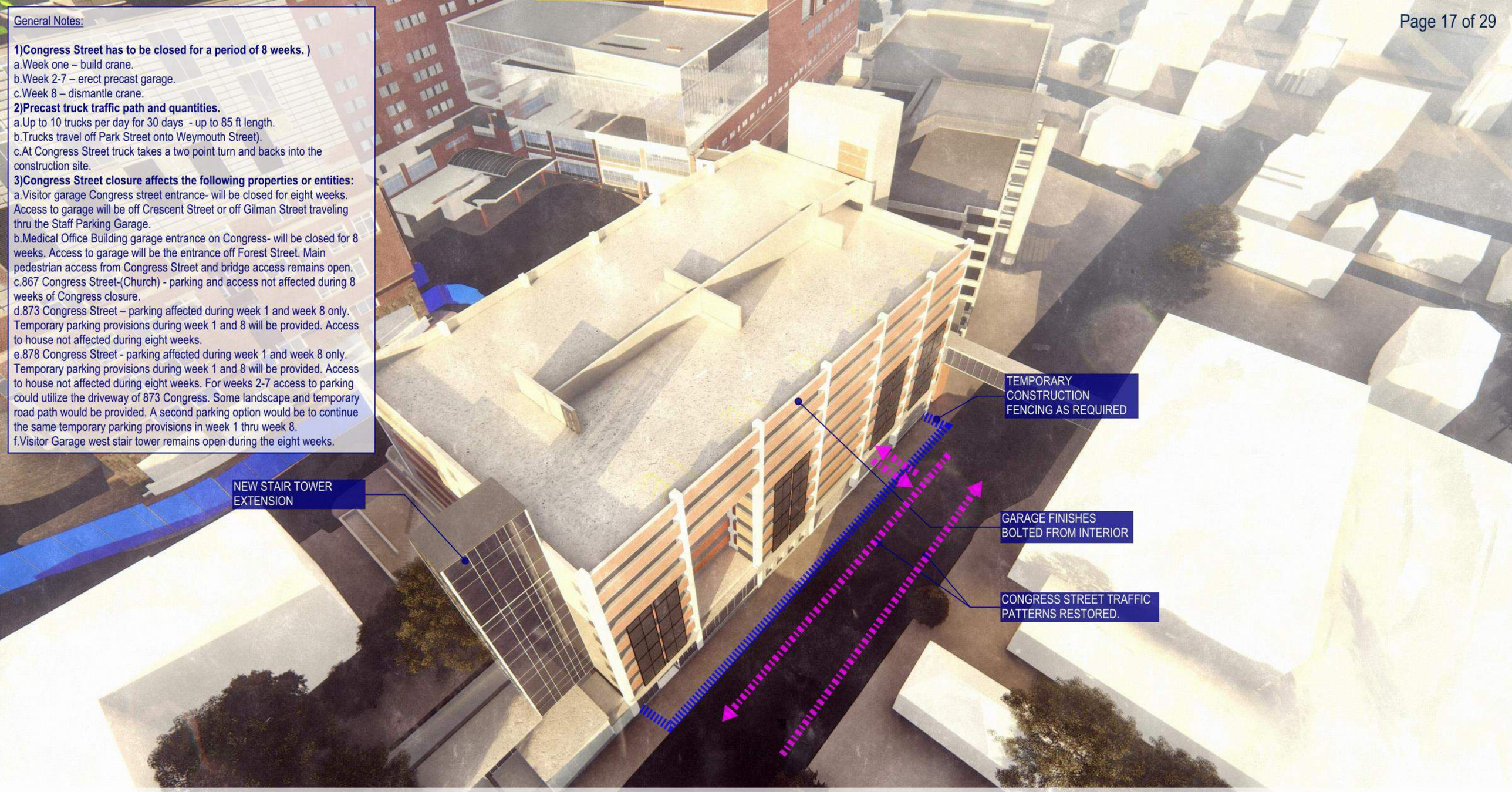


NO VEHICULAR TRAFFIC ON THIS PORTION OF CONGRESS STREET FOR 8 WEEKS.

RELOCATION OF PEDESTRIAN WALKING PATH

440 TON CRAWLER WITH 150' MAIN BOOM AND 160' LUFFING JIB. SWING RADIUS OF 50' OFF FACE OF EXISTING VISITORS GARAGE.

EXISTING OVERHEAD POWER LOCATION

CRAWLER CRANE LOCATION 1

CRAWLER CRANE LOCATION 2

30'-0"

30'-0"

TEMPORARY VEHICULAR GARAGE ACCESS THROUGH E.D. ENTRANCE/EXIT ONLY

160'-0"

160'-1"

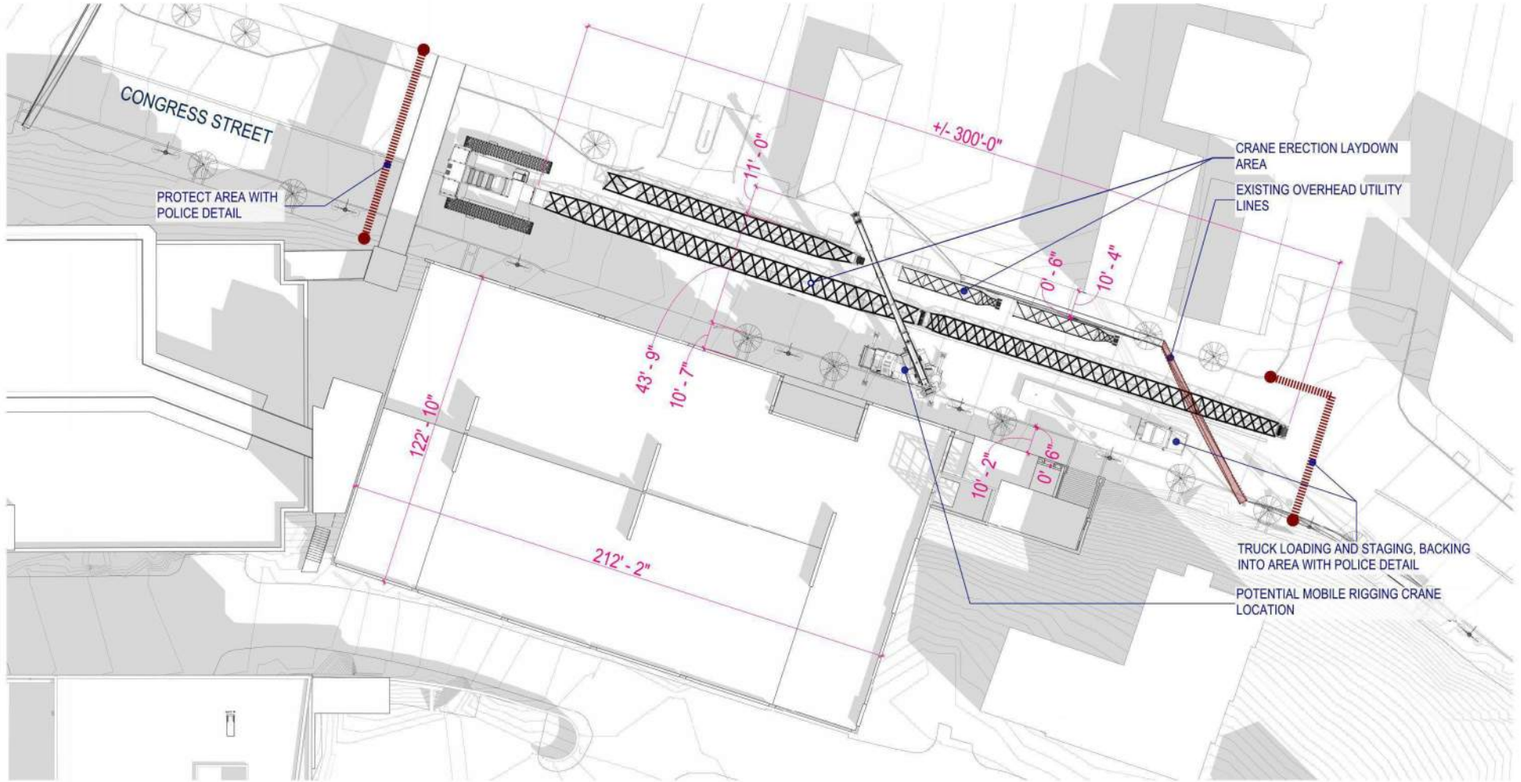
159'-10"

160'-0"

121'-0"

210'-2"

REFER TO "CONGRESS STREET CRANE LOCATION" DRAWINGS FOR MORE INFORMATION AND DETAILS.



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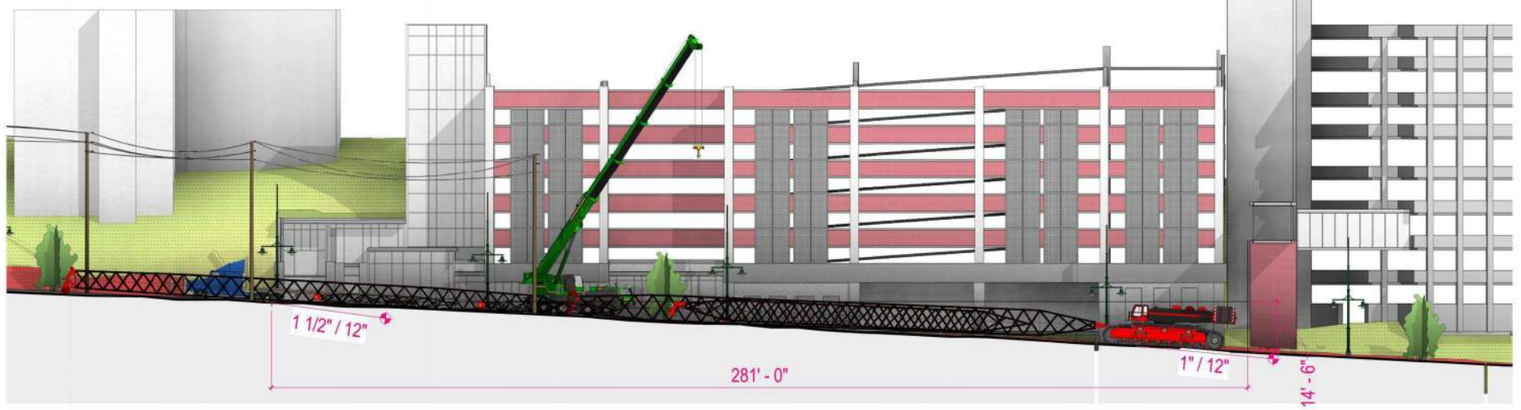
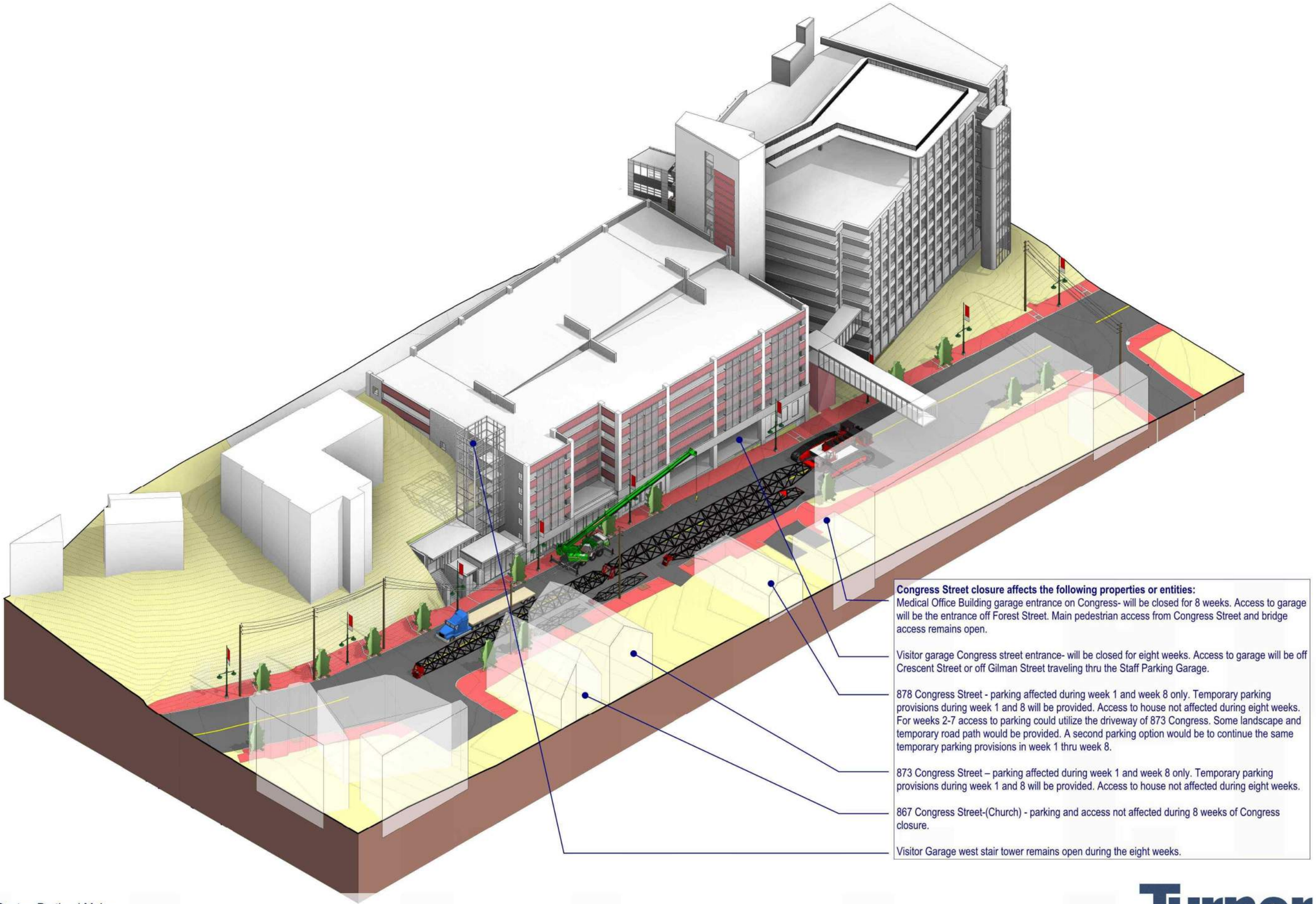


2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"

3 CONGRESS STREET - AXON VIEW



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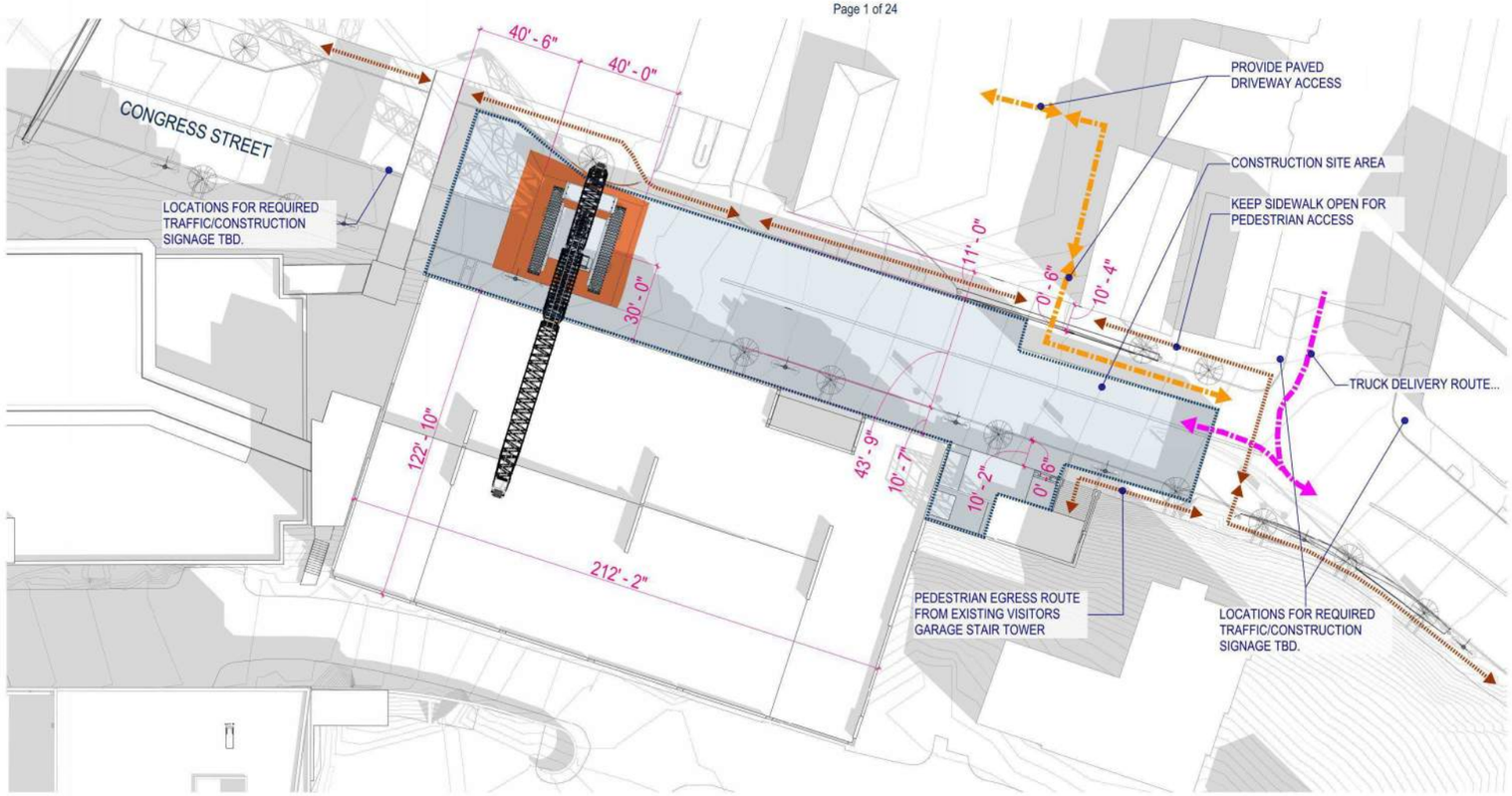

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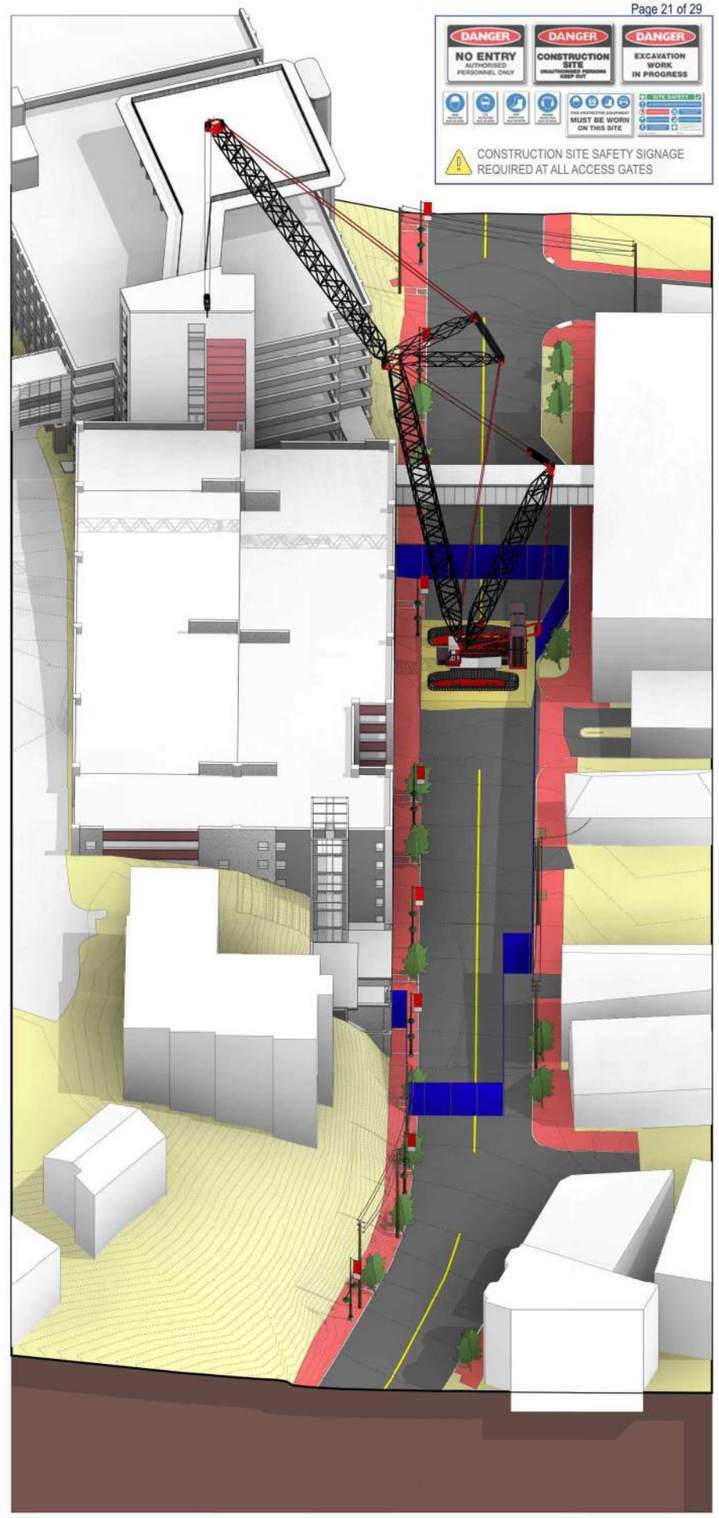

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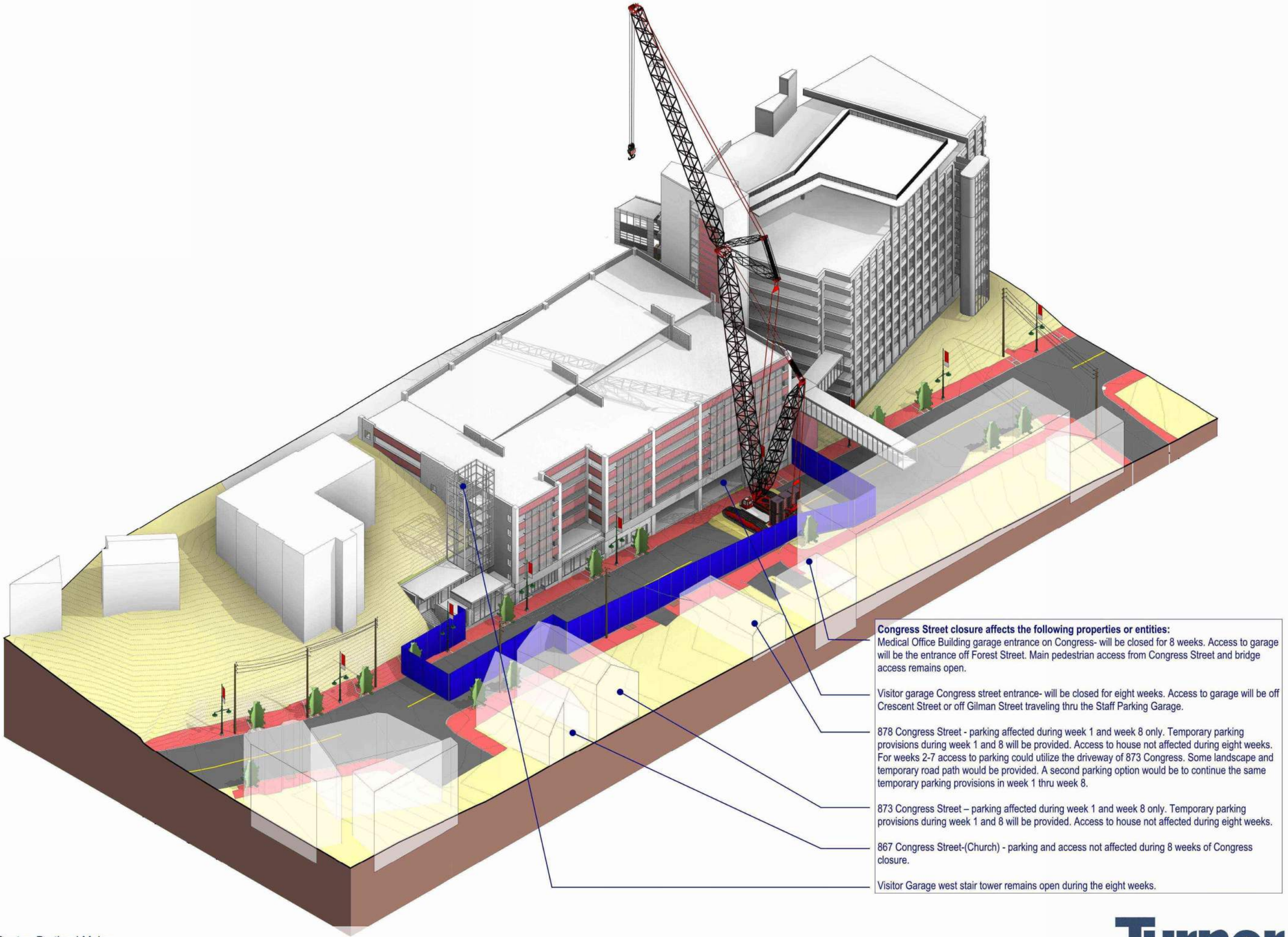
Turner



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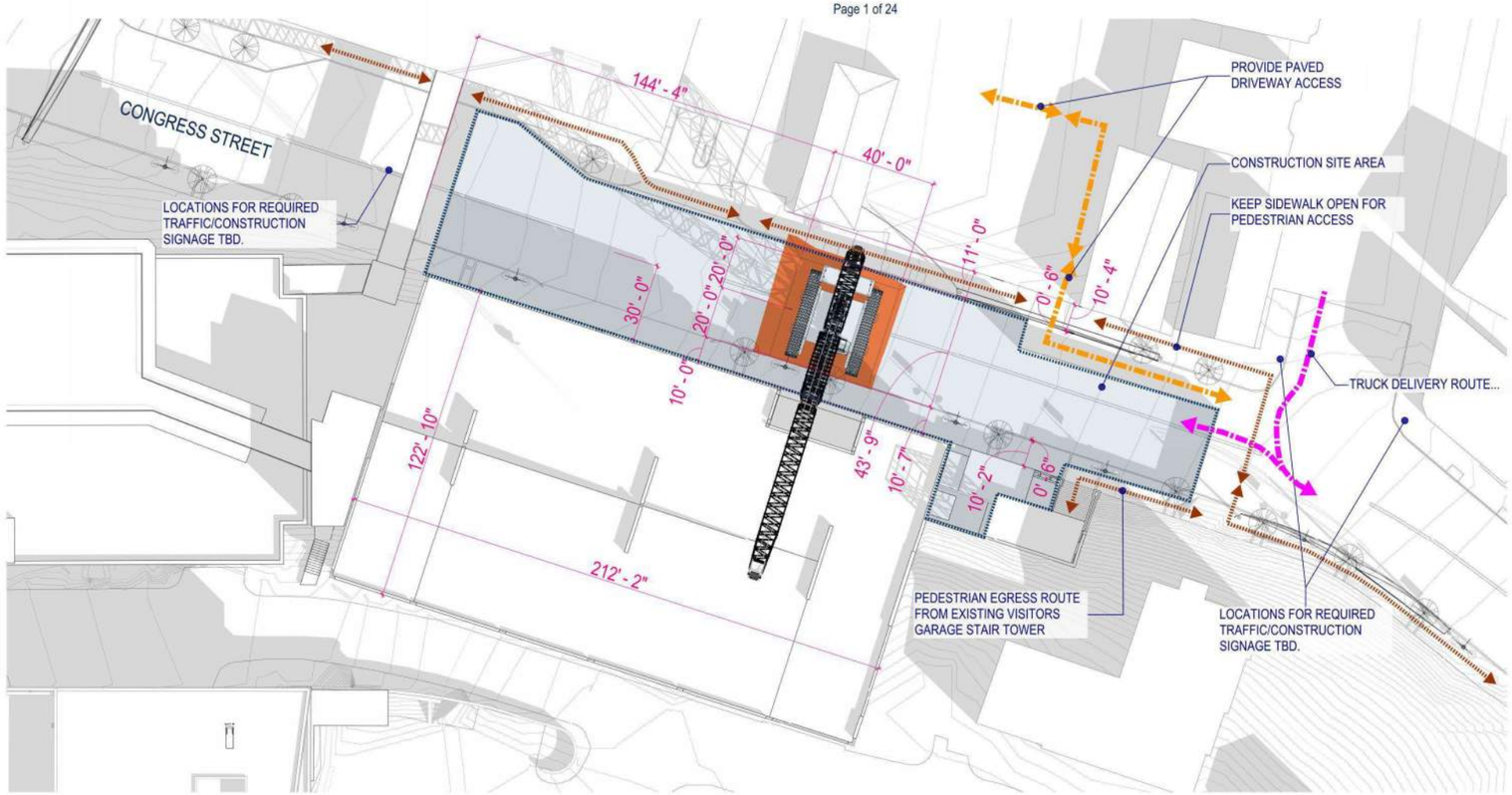

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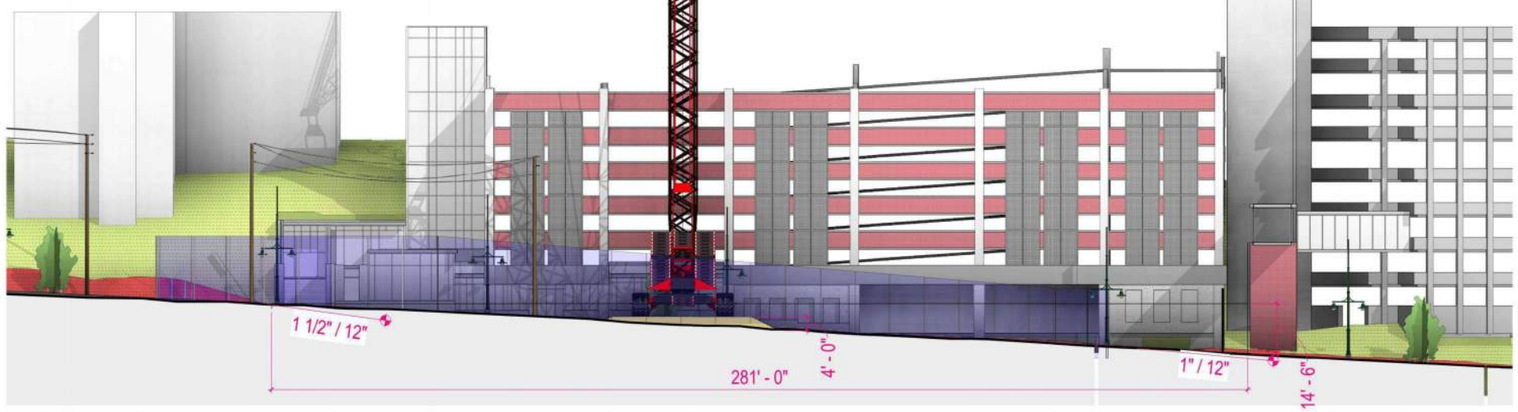

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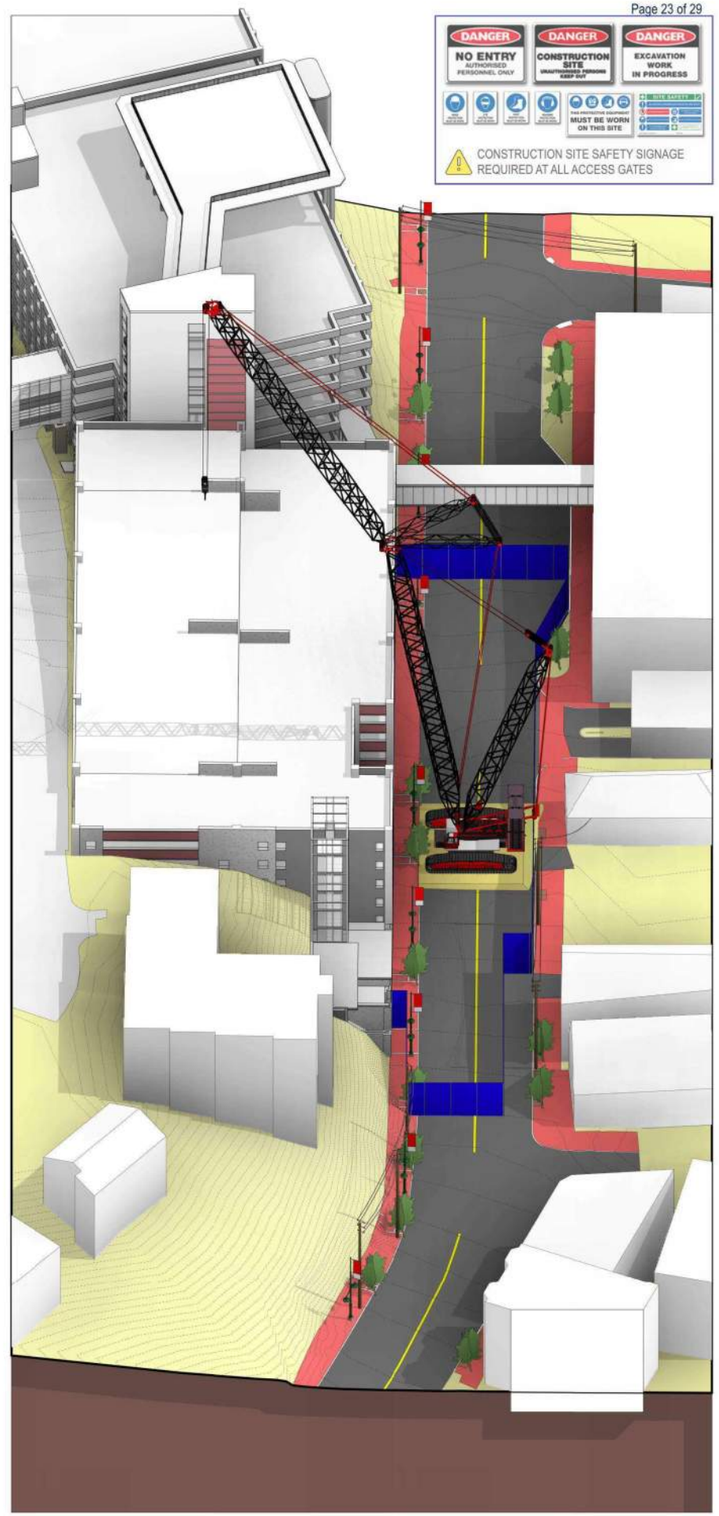
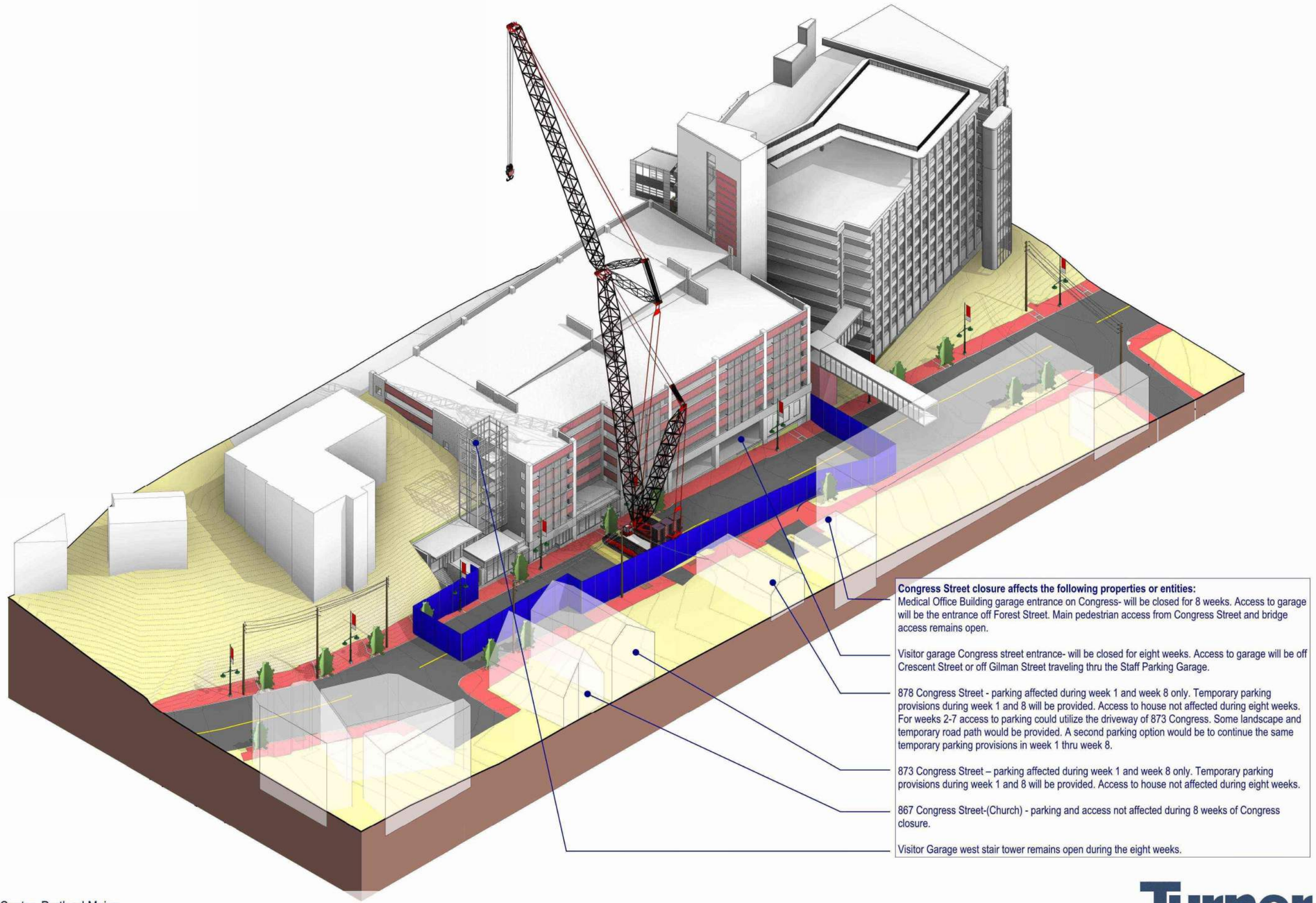


3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 2]

Turner



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Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

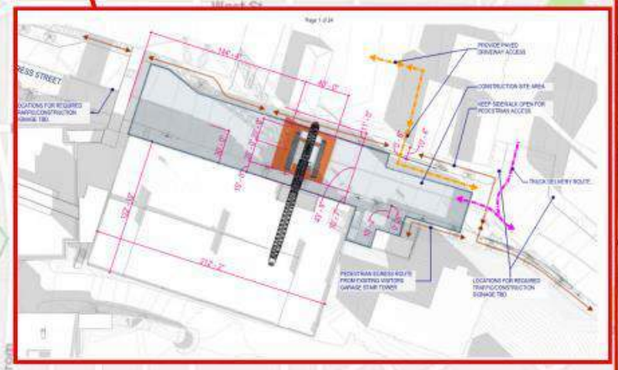
878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

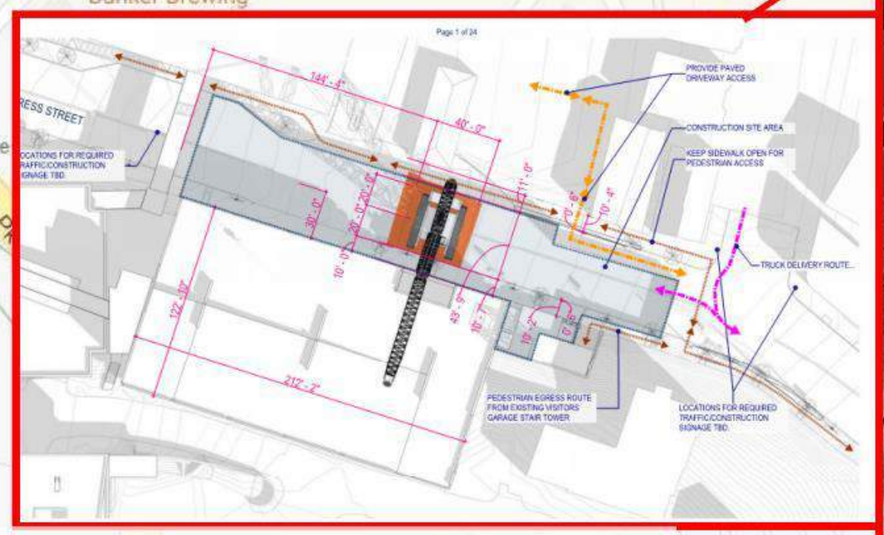
Visitor Garage west stair tower remains open during the eight weeks.

MMC VISITOR GARAGE EXPANSION
PRECAST CONCRETE TRUCKS
INBOUND ROUTE TO CONGRESS STREET SITE
PORTLAND YACHT STAGING YARD TO W. COMMERCIAL STREET TO VALLEY STREET TO PARK ST TO WEYMOUTH ST TO CONGRESS ST SITE



Maine Medical Center, Portland Maine
Additions and Renovations [Precast Delivery and Egress Paths] - Option 1

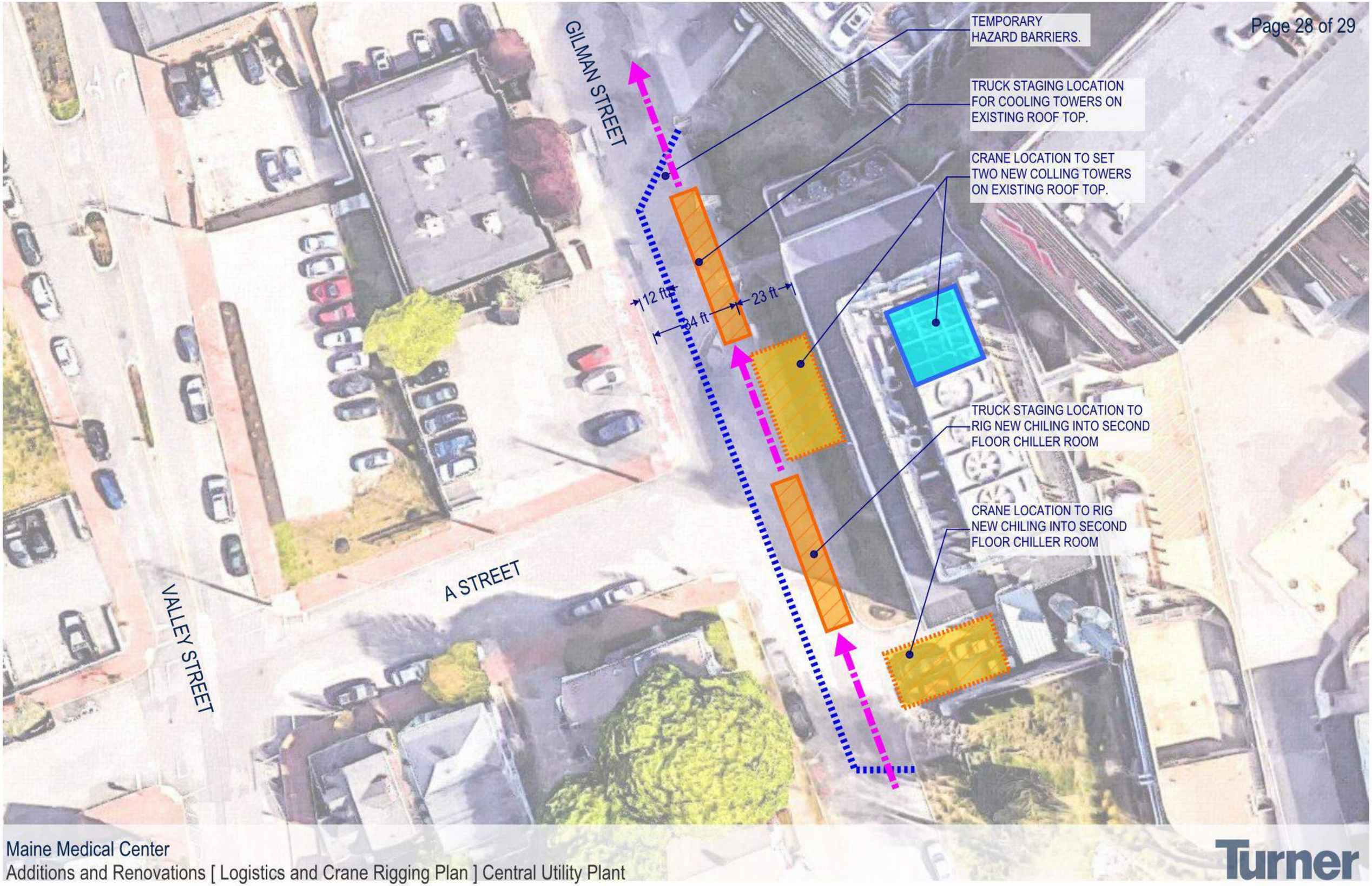
MMC VISITOR GARAGE EXPANSION
PRECAST CONCRETE TRUCK DEPARTURE ROUTE FROM CONGRESS STREET SITE
CONGRESS ST TO WEYMOUTH ST TO PARK ST TO I295

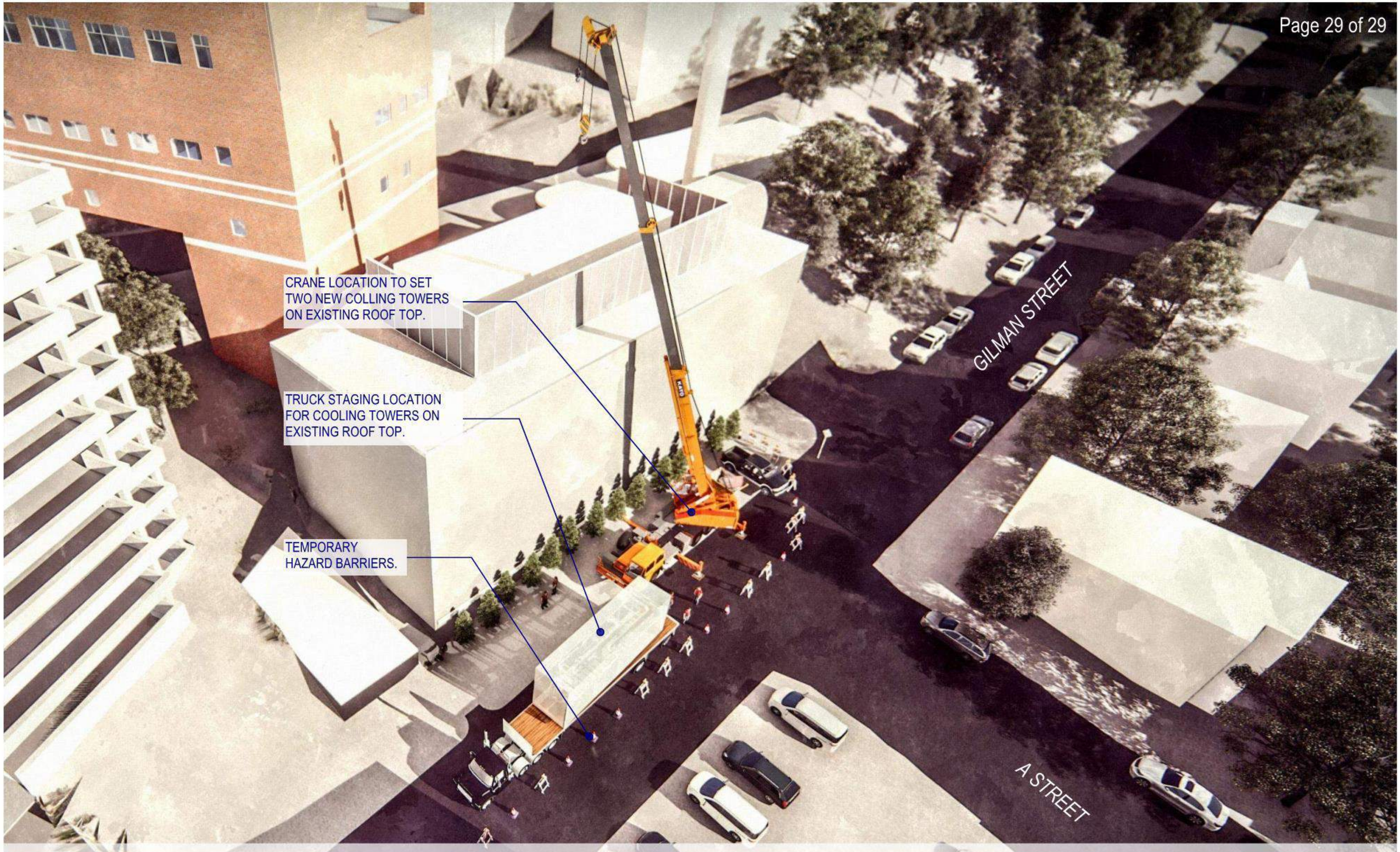


Maine Medical Center, Portland Maine
Additions and Renovations [Precast Delivery and Egress Paths] - Option 1

[Central Utility Plant] Logistics Plans and Studies

Turner

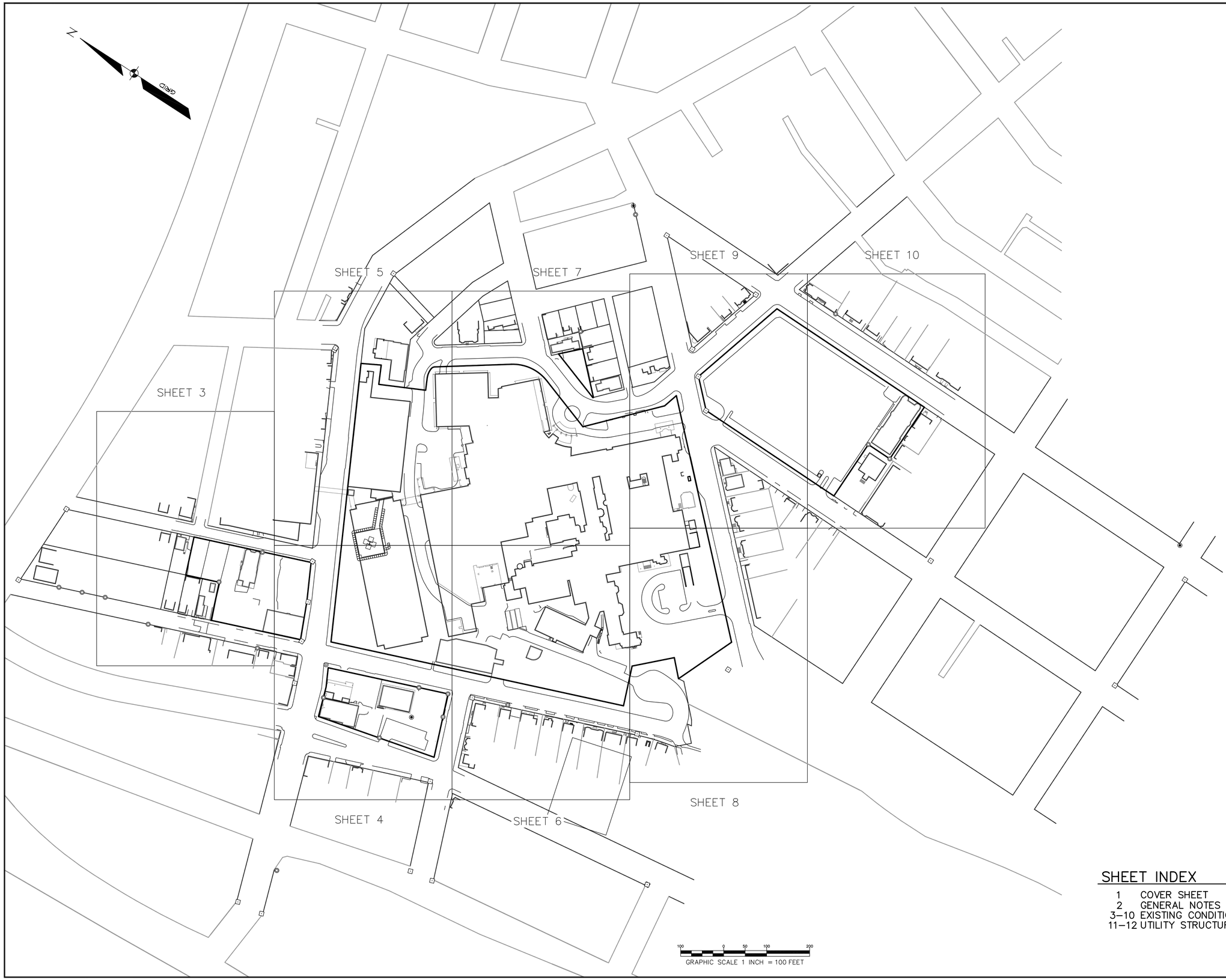

GILMAN STREET
A STREET
VALLEY STREET
TEMPORARY HAZARD BARRIERS.
TRUCK STAGING LOCATION FOR COOLING TOWERS ON EXISTING ROOF TOP.
CRANE LOCATION TO SET TWO NEW COLLING TOWERS ON EXISTING ROOF TOP.
12 ft
34 ft
23 ft
TRUCK STAGING LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM
CRANE LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM



Maine Medical Center

Additions and Renovations [Logistics and Crane Rigging Plan - Typical Both Locations] Central Utility Plant

Turner



LEGEND

EXISTING	DESCRIPTION
	BOUNDARY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	SETBACK
	EASEMENT
	CENTERLINE
	MONUMENT
	IRON PIPE/ROD
	DRILLHOLE
C1/L1	CURVE/LINE NO.
	BENCHMARK
(M) MW-2	MONITORING WELL
	BUILDING
	SIGN
	EDGE PAVEMENT
	PAVEMENT PAINT
	GRAVEL ROAD
	CURBLINE
	TREELINE
122 120	CONTOURS
30.20	SPOT GRADE
	CHAIN LINK FENCE
	WIRE FENCE
	STOCKADE FENCE
	STONE WALL
	RETAINING WALL
	DECIDUOUS TREE
	CONIFEROUS TREE
	GUARDRAIL
	BOLLARD
G	GAS
W	WATER
	GATE VALVE
	HYDRANT
(W)	POTABLE WELL
S	SEWER
FM	FORCE MAIN
(S)	SEWER MH
SD	STORM DRAIN
UD	UNDERDRAIN
	CATCH BASIN
(D)	DRAINAGE MH
	CULVERT
OHE	OVERHEAD ELEC. & TEL.
UGE	UNDERGROUND ELEC. & TEL.
T	TRANSFORMER PAD
	ELECTRICAL MANHOLE
(T)	TELEPHONE MANHOLE
	LIGHT POLE/WALL
	UTILITY POLE
	GUY
	RIPRAP

SHEET INDEX

1 COVER SHEET
2 GENERAL NOTES
3–10 EXISTING CONDITIONS SURVEY
11–12 UTILITY STRUCTURE DATA CHARTS

STATE OF MAINE
MATTHEW W. EK
2117
REGISTERED PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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250 Goddard Rd., Suite B
Lewiston, ME 04240
Tel: 207-783-9958

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=100'

SHEET 1 OF12

01046-EC-2009.dwg, TAB:EC01

GENERAL NOTES

1. THE RECORD OWNERS OF THE SURVEYED PROPERTIES ARE AS FOLLOWS:
   MAINE MEDICAL CENTER AND MMC REALTY CORPORATION AS DESCRIBED IN DEED BOOK/PAGES:

18032/68	13504/86	16145/275	9722/45	3097/244	3187/234	2951/927
3183/576	8309/5	6177/319	3108/396	3095/34	1290/192	2901/326
2349/229	1296/351	1296/352	2308/161	1285/450	1282/323	1250/470
2149/190	3995/53	2127/443	2127/320	2127/269	2147/110	2133/317
2133/311	2133/324	2133/310	2143/330	3075/669	2619/499	2685/369
3278/209	377/296	377/297	388/92	382/450	408/457	384/37
381/260	3095/34	3108/396	6177/319	3278/209	3075/669	2685/369
2619/499	2301/21	2951/927	3310/115	3310/116	2149/190	1282/323
1250/470	408/457	1296/352	1290/177	1250/470	3995/53	378/6
2901/326	1282/323	1289/192	3187/234	18032/68	19986/204	22762/45
2951/927	3097/244	2955/722	2308/161	2988/139	3188/710	384/37
1575/227	9722/45	2133/324	381/260	16145/275	8855/81	14026/287
11613/153	9392/344					

   * ALL RECORDED INFORMATION LISTED HEREON IS WITHIN THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD).

2. THE PROPERTIES ARE SHOWN ON THE CITY OF PORTLAND TAX MAPS AS FOLLOWS:
   MAP 53 BLOCK D, LOT 7,
   MAP 53 BLOCK X, LOT 1,
   MAP 54 BLOCK C, LOTS 5, 6, 10,
   MAP 54 BLOCK H, LOT 1,
   MAP 54 BLOCK I, LOT 1,
   MAP 63 BLOCK B, LOT 8,
   MAP 64 BLOCK B, LOTS 1–9,
   MAP 64 BLOCK C, LOT 1,
   MAP 65 BLOCK E, LOTS 19, 21, 22, 23, 24, 25, 28, 29, 30, & 32,
   MAP 65 BLOCK H, LOTS 1, 2, 5, 8, & 9..

3. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON ON GROUND SURVEY PERFORMED BY SEBAGO TECHNICS IN SUMMER AND FALL OF 2009.

4. THE BEARINGS, AND ELEVATIONS SHOWN HEREON ARE BASED UPON THE MAINE STATE PLANE COORDINATE GRID, WEST ZONE 1802 ON NAD83 AND NAVD88 IN US FEET.

5. THE PROPERTY NORTHWESTERLY OF CONGRESS STREET, BETWEEN FOREST STREET AND GILMAN STREET SHOWN ON THE CITY OF PORTLAND TAX MAP 65 BLOCK E, AS LOTS 19, 21, 22, 23, 24, 25, 28, 29, 30, AND 32 WAS SURVEYED FOR MAINE MEDICAL CENTER (MMC). THE RECORD OWNERS OF THIS AREA ARE AS FOLLOWS:
   EAST END CORP. ONE CANAL PLAZA, PORTLAND, MAINE 04112
   BOOK 19832 PAGE 97 BOOK 23397 PAGE 308
   EAST END DEVELOPMENT, LLC PO BOX 10291 PORTLAND, MAINE 04104
   BOOK 23579 PAGE 288 BOOK 23901 PAGE 188
   EAST END HOLDINGS, LLC PO BOX 10291 PORTLAND, MAINE 04104
   BOOK 20239 PAGE 341
   CONTOURS AND UTILITIES SURVEYS WERE NOT INCLUDED WITHIN THIS AREA. THIS AREA WILL BE REFERENCED HEREON AS THE SPORTSMANS LOT. TOTAL AREA OF THE SPORTSMANS LOT IS APPROXIMATELY 44, 704 SQUARE FEET OR 1.03 ACRES.

6. UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON FIELD LOCATION OF VISIBLE SURFACE FEATURES, INVERT INSPECTIONS, UTILITY MARKINGS BY DIGSMART OF MAINE, AND PLANS REFERENCED HEREON. THE INFORMATION SHOWN HEREON MAY NOT INCLUDE ALL UTILITIES. PRIOR TO ANY CONTRUCTION DIGSAFE AND APPROPRIATE UTILITY PROVIDERS MUST BE CONTACTED.

7. THE RIGHT OF WAY LINES ON THE STREETS ABUTTING THE LOCUS PROPERTIES SHOWN HEREON WERE ESTABLISHED UTILIZING CITY PUBLIC WORKS RECORDS AND FOUND MONUMENTATION AT THE CORNERS AND ANGLE POINTS OF THE STREETS.

EASEMENT, ENCUMBRANCE, AND AGREEMENT REFERENCES:

A. UTILITY EASEMENT: MAINE MEDICAL CENTER (MMC) TO CENTRAL MAINE POWER (CMP) AND NEW ENGLAND TELEPHONE AND TELEGRAPH (NET&T) POLE 29 ON VAUGHAN STREET TO PAD 29.1 PER DEED BOOK 4843 PAGE 39.
B. UTILITY EASEMENT: MMC TO PORTLAND WATER DISTRICT AT 218 VAUGHAN ST. PER DEED BOOK 4792 PAGE 125.
C. UTILITY EASEMENT: MMC TO CMP ON CHADWICK ST., POLE 13 TO POLE 13.1 PER DEED BOOK 6373 PAGE 219.
D. UNDERGROUND ANCHOR SYSTEM EASEMENT RESERVED BY MMC IN CONVEYANCE TO CRESCENT HEIGHTS LLC IN DEED BOOK 26288 PAGE 49.
E. UTILITY/DRAINAGE EASEMENT FOR A DRAIN/SEWER PIPE FROM THE PROPERTY NOW OF CRESCENT HEIGHTS, LLC. FORMERLY AS DESCRIBED IN DEED BOOK 1938 PAGE 248 AND 1946 PAGE 370.
F. UTILITY EASEMENT: TO NET&T NEAR THE NORTHERLY CORNER OF THE PARKING GARAGE ON CONGRESS ST. PER DEED BOOK 8573 PAGE 121.
G. CERTIFICATE OF VARIANCE APPROVAL GRANTING RELIEF FROM SECTION 14–137(7) MAXIMUM STRUCTURE HEIGHT OF 45 FEET, DATED JUNE 25, 1996, AND RECORDED IN DEED BOOK 12629 PAGE 295.
H. SITE LOCATION OF DEVELOPMENT DEPARTMENT ORDER BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR MAINE MEDICAL CENTER, PER DEED BOOK 13919 PAGE 114.
I. UTILITY EASEMENT: MMC TO NET&T 6' X 8' NEAR GILMAN AND CONGRESS PER DEED BOOK 13027 PAGE 207.

PLAN REFERENCES

1. STATE OF MAINE DEPARTMENT OF TRANSPORTATION PLAN SHOWING VALLEY, CONGRESS, AND ST. JOHN STREETS, CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS FILE NO. 726 / 16.
2. STANDARD BOUNDARY SURVEY FOR MAINE MEDICAL CENTER BY STEVENS, MORTON, ROSE, & THOMPSON, INC. DATED OCTOBER 06, 1990 RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 188, PAGE16.
3. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS LAND SWAP WITH MAINE MEDICAL CENTER (GILMAN ST. & ARSENAL ST.) DATED JANUARY 23, 1974. DPW FILE NO. 547 / 20.
4. PLAN OF LAND OF J.M. WOOD ESQ. ELLSWORTH AND O STREETS DPW FILE NO. 361 / 3.
5. PLAN OF LAND SURVEYED FOR MOODY F. WALKER SEPTEMBER 23RD 1863 BY HOWE & OSGOOD C.E. CCRD PLAN BOOK 21, PAGE 36.
6. SITE PLAN OF NEUROSCIENCE INSTITUTE CONGRESS AND GILMAN ST. PORTLAND MAINE BY GREGORY K. JOHNSON AIA DATED JULY 31, 1987 ON FILE WITH THE DPW.
7. PLAN OF PROPOSED WIDENING CONGRESS STREET AUGUST 1885, DPW FILE NO. 360 / 2.
8. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS, B ST. WIDENING DATED NOV.4, 1937 DPW FILE NO. 569 / 9.
9. PLAN OF CITY LANDS BETWEEN GILMAN STREET AND MAINE CENTRAL RAILROAD SOUTH OF CONGRESS STREET, DPW FILE NO. 18 / 4.
10. PLAN OF CITY LAND BETWEEN CONGRESS AND "A" STS DATED 1883 DPW FILE NO. 379 / 10.
11. CITY OF PORTLAND PLAN OF "B" VALLEY ST DATED FEB. 1926 DPW FILE. NO.179.
12. CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS ARSENAL STREET DISCONTINUANCE DATED APRIL 15, 1953 DPW FILE NO. 410 / 96.
13. MMC PARKING FACILITY PROPOSED GRADING PLAN DATED 29 MAY 1971 BY TAC, DPW FILE NO. 680 / 4.
14. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS WESTERN PROMENADE SLOPE, CITY BOUNDARY BETWEEN GILMAN AND "B" ST. DATED JAN. 4,1933 DPW FILE NO. 462 / 32 AND 462 / 32–A.
15. PLAN OF LAND WEST OF THE BRACKETT LINE CHADWICK AND VAUGHN STREETS, DATED 12 JUNE 1833 RECORDED IN CCRD PLAN BOOK 1, PAGE 1, DPW FILE NO. 462 / 4.
16. PLAN OF CITY LANDS BETWEEN GILMAN AND "B" STREETS DATED MAY 1883, DPW FILE NO. 69 / 4R, CCRD PLAN BOOK 4, PAGE 43.
17. WESTERN PROMENADE DATED JAN. 1926 CITY OF PORTLAND DPW SHEET NO. 7 FILE NO. 142.
18. CITY OF PORTLAND WORK SHEET CONGRESS, ARSENAL, AND BRACKETT STREETS DPW FILE NO. 363 / 11.
19. CITY OF PORTLAND, PLAN SHOWING PROPOSED GILMAN STREET, CONGRESS AND ASH STREETS, DPW FILE NO. 365 / 6.
20. CITY OF PORTLAND PLAN SHOWING GILMAN STREET, CONGRESS ST. AND WESTERN PROMENADE, DPW FILE NO. 365 / 7.
21. PLAN OF CITY LAND BETWEEN GILMAN & "B" STREETS DATED MAY 1883, CCRD PLAN BOOK 4, PAGE 43, DPW FILE NO. 379 / 25.
22. PORTLAND WATER DISTRICT, MAP NO. 7 SHOWING MAINE MEDICAL CENTER AREA.
23. CITY OF P D PLAN SHOWING CONGRESS STREET SHEET NO. 3 DPW FILE NO. 150.ORTLAN
24. CITY OF PORTLAND PLAN SHOWING GILMAN STREET DATED FEB 1926 DPW FILE NO. 178.
25. CITY OF PORTLAND PROPERTY PLAN BOOK NO. 274 SHOWING PROPOSED TAKING FROM MAINE MEDICAL CENTER ON CHARLES STREET DATED 11–29–1973.
26. CITY OF PORTLAND PLAN OF BRAMHALL ST., VAUGHAN ST., AND BRACKETT ST. DATED OCT. 1925 DPW FILE NO. 90.
27. STANDARD BOUNDARY SURVEY AT 25–27 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS,INC.
28. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CHARLES ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 7.
29. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, WESCOTT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 6.
30. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
31. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
32. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ELLSWORTH ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 2.
33. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CRESCENT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 3.
34. STREET VACATION / ACCEPTANCE AND LAND TRANSFER PLAN OF MAINE MEDICAL CENTER BY SEBAGO TECHNICS, INC AS REVISED THROUGHT12–10–04 DPW FILE NO. 992 / 3.
35. STANDARD BOUNDARY SURVEY ON CONGRESS AND ELLSWORTH STREETS, PORTLAND MAINE BY DESLAURIERS & ASSOCIATES DATED 8/30/99.
36. STANDARD BOUNDARY SURVEY AT 26–28 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS, INC.
37. EXISTING CONDITIONS & STANDARD BOUNDARY SURVEY MAINE MEDICAL CENTER DATED 05/01/96 BY TITCOMB ASSOCIATES.
38. PLAN OF CRESCENT STREET DATED OCT.1886 BY PORTLAND CITY ENGINEER DPW FILE NO.10 / 02.
39. CITY OF PORTLAND PLAN OF BRAMHALL ST., ELLSWORTH ST., AND CHARLES ST. DATED OCT. 1926 DPW FILE NO. 158..
40. PLAN OF STREETS ON BRAMHALL'S HILL SEPTEMBER 1858 BY A.P. MARSHALL CITY ENGINEER DPW FILE NO. 359 / 22.
41. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.134 / 2.
42. PLAN NO. 5 SHOWING STREETS ON BRAMHALL'S HILL SURVEYED MAY 1862BY C.R. GOODELL C.E. DPW FILE NO. / 15.
43. CITY OF PORTLAND PLAN SHOWING ARSENAL STREET DATED OCT 1925, DPW FILE NO. 95.
44. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.396 / 17..
45. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DPW FILE NO. 360 / 25.
46. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DATED OCTOBER 1854, DPW FILE NO. 360 / 27.
47. PLAN OF J.B. BROWN'S LAND WEST OF BRAMHALL'S HILL MADE BY WM. S. EDWARDS C.E. DATED 1871ON FILE IN THE DPW OFFICE.
48. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ARSENAL ST. DISCONTINUANCE PLAN DATED 12/2/41 ON FILE IN DPW OFFICE.
49. THIS PLAN OF A TOWN ON BRAMHALL'S HILL PORTLAND MAINE AT THE REQUEST OF WILLIAL VAUGHAN, THE PROPRIETOR COMPLETED IN 1813 BY PELEG WADSWORTH, SURVEYOR, DPW FILE NO. 404 / 130, CCRD PLAN BOOK 37, PAGE 12.
50. T.F. CHAPPELL C.E. PLAN OF ASH STREET, ARSENAL ST., CONGRESS ST.
51. PARKING AREA ON BRAMHALL RESERVOIR SITE CHADWICK, BRAMHALL AND VAUGHAN STS. DATED 1964 DPW FILE NO. 698 / 14.
52. MAINE MEDICAL CENTER PKG C– SITE UTILITIES EXISTING CONDITIONS PLAN DATED THROUGH 05/25/05 BY THE RICHIE ORGANIZATION.
53. MAINE MEDICAL CENTER, PORTLAND MAINE BEAN BUILDING SITE UTILITIES AT ER. BY SHEPLEY, BULFINCH, RICHARDSON, & ABBOTT, DATED THROUGH 3/28/97.
54. BOUNDARY SURVEY OF SPORTSMANS LOT FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 10/23/09.
55. EXISTING CONDITIONS PLAN OF EAGLES CLUB BLOCK FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 11/3/09.

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 2 OF12

01046–EC–2009.dwg, TAB:EC02

SHEET 3

SHEET 3

N

GRID

2+ STORY APARTMENT BUILDING

5/8" REBAR 1" HIGH

2 STORY HOUSE

N/F
ALEKSDANDER & BILJANA
NEDELJKOVIC
19230/65

N/F
MEGHAN CAREY
25692/257

2+ STORY HOUSE

PORCH

2+ STORY HOUSE

2 STORY HOUSE

GRAN. CURB

CONC. WALK

N/F
ANN K & PAUL J.
CLOUTIER
4579/261

N69°16'17"E 90.52'

PAINT STRIPE

SUPPORT CABLE

3+ STORY APARTMENT BUILDING

GARAGE

EAST END DEVELOPMENT, LLC
23579/288

PAVED PARKING

2+ STORY HOUSE

PORCH

79.76'

N20°44'46"W

N/F
DINA CHEM
15231/74

SHED

1.5" IRON PIPE 1.2' HIGH

REMAINS OF CONC. WALL

EAST END DEVELOPMENT, LLC
23901/188

GRAVEL PARKING

S69°14'19"W 90.50'

PAVED WALK

BOYNTON STREET

EAST END CORP.
PARCEL 5 OF
19832/97

EAST END CORP.
PARCEL 2 OF
19832/97

CONC.

EAST END CORP.
PARCEL 6 OF
19832/97

PAVED PARKING

EAST END CORP.
PARCEL 1 OF
19832/97

GILMAN STREET

(FKA CARTER STREET)

2 STORY BUILDING

PAVED WALK

PAVED PARKING

EAST END HOLDINGS, LLC
20239/343

MULTI LEVEL DECKS

CONC. WALL WITH CHAIN LINK FENCE

N20°45'41"W
213.00'

3+ STORY APARTMENT BUILDING

EAST END CORP.
PARCEL 3 OF
19832/97

FOREST STREET

EAST END CORP.
PARCEL 4 OF
19832/97

CONC.

ROOF OVERHANG

CONC. WALL

PAVED WALK

N20°43'43"W 276.58'

3/4" IRON BAR
2" HIGH BENT

2+ STORY HOUSE

PAVED WALK

CONC. RAMP

1" IRON PIPE
1" HIGH

PAVED PARKING

EAST END HOLDINGS, LLC
PARCEL 2 OF
20289/341

PAVED EXIT

PAVED ENTER

3+ LEVEL PARKING GARAGE

SHEET 3

SHEET 4

SHEET 3

SHEET 4

SHEET 5

EAST END CORP.
23397/308

1+ STORY BUILDING

SHEET 3

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

20 0 10 20 40
GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW W. KING
2117
REGISTERED
LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-784-9656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE

FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 3 OF 12

01046-EC-2009.dwg, TAB:EC03

CONGRESS STREET
(FKA MAINE STREET)
76 FEET WIDE

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

VALLEY STREET
(FORMERLY B STREET)

GILMAN STREET
60 FEET WIDE

A STREET

N71°32'36"E 70.95'
S63°11'56"W 44.95'
N66°22'23"E 89.56'
N63°11'56"E 91.95'
S63°11'56"W 181.65'
S73°34'47"E 285.11'
N20°41'01"W 285.10'
S69°22'22"W 150.85'

BENCHMARK
BRASS PLUG IN 8" X 8" GRAN. MON.
ELEV=52.17'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=41.78'

BENCHMARK
EASTERLY EDGE OF SEWER MANHOLE
RIMELEV=1063.57'

RECORD OWNER:
SEE NOTE 1, SHEET 2

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 3 | SHEET 4 | SHEET 5 | SHEET 6 | SHEET 7

REV:	BY:	DATE:	
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

DATE	SCALE
10/23/09	1"=20'

SHEET 4 OF12

01046-EC-2009.dwg, TAB:EC04

SHEET 3

SHEET 4 | SHEET 5 | SHEET 3 | SHEET 5 | SHEET 5

BENCHMARK
BRASS PLUG IN 6" X 6" GRAN. MON.
ELEV=77.91'

BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=123.39'

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

WEYMOUTH STREET

CRESENT STREET
40 FEET WIDE

GRID N

GRAN. CURB | CONC. WALK | PAVED ENTERANCE | PAVED DRIVE | CONC. RETAINING WALL | BLOCK RETAINING WALL | METAL WALK | MISC. LANDSCAPE | CONC. PAD | CONC. ISLAND | CRUSHED STONE | OVERHANG | COLUMNS (TYPICAL) | AMBULANCE EXIT | AMBULANCE ENTRANCE | GRAVEL DRIVE | VALET ATTENDANT BOOTH | PAVED APRON | UNDER CONSTRUCTION

SMH#13952 | SMH#14843 | SMH#14847 | SMH#26558 | DMH#15901 | CBR#15960 | SMH#16008 | SMH#16047 | CMP#121.11 | SMH#16094 PAVED OVER | SMH#16091 | SMH#16224 | SMH#16227 | CBR#16258

N63°07'37"E 470.05'

ENTRANCE/EXIT TO PARKING GARAGE

DMH#15953 D.S.D. | DMH#15952 D.S.D.

N64°14'04"E 45.22'

N25°51'02"W 59.85'

N25°50'19"W 50.00'

S64°12'29"W 28.42'

CBR#21803 | DMH#21913 | DMH#21903 | DMH#22098 | CBR#22087 | SMH#22095 | CBR#25688 | CBR#25816 | CBR#23377 | CBR#26038 | CBR#25858 | DMH#25868 | DMH#25575 | SMH#25558 | DMH#25556 | SMH#26367 | DMH#25531 | SMH#25522 | SMH#25491 | DMH#25901 | CBR#25904 | CMP#2 | DMH#24696

HELIPAD | PARKING GARAGE | MAINE MEDICAL CENTER | N/F CRESENT HEIGHTS LLC 26288/049 MULTI UNIT BLUILDING UNDER CONSTRUCTION | N/F MH REALTY LLC 21636/084 | N/F J FREMAN PORTER 9730/198

NOTES:

1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

SHEET 4 | SHEET 5 | SHEET 6 | SHEET 7 | SHEET 5 | SHEET 7

STATE OF MAINE
MATTHEW W. CLOUTIER
PLS
2117
SURVEYOR
LAND SURVEYING

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 5 OF12

01046-EC-2009.dwg, TAB:EC05

SHEET 4 | SHEET 5
SHEET 6 | SHEET 7

A STREET
GILMAN STREET
60 FEET WIDE
CENTRAL UTILITY PLANT
MAINE MEDICAL CENTER

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=66.99'

BENCHMARK
SOUTHERLY EDGE OF CATCH BASIN.
RIM ELEV=108.15'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=105.02'

N20°41'01"W 986.18'
S69°14'08"W 94.58'

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

20 0 10 20 40
GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 6 | SHEET 8 | SHEET 6 | SHEET 7 | SHEET 8

STATE OF MAINE
MATTHEW T. CLOUTIER
PLS
2117
LICENSED PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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Tel. 207-783-9566

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 6 OF12

01046-EC-20091.dwg, TAB: EC06

SHEET 4 | SHEET 5
SHEET 6 | SHEET 7

PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

SMH#25558
DMH#25556
SMH#26367
DMH#25531
OVERHANG
VALET ATTENDANT BOOTH
SMH#25522
SMH#25491
COLUMN (TYPICAL)
EMERGENCY ENTRANCE
CONC. WALK
A/C
MAIN ENTRANCE
MAINE MEDICAL CENTER
GRAVEL DRIVE
CRESENT STREET
40 FEET WIDE
DMH#24696
CBR#24658
S34°57'31"E 178.42'
GRAN. CURB
CONC. WALK
MESCOTT STREET
50 FEET WIDE
GRAVEL PARKING LOT
BLOCK RETAINING WALL
PATIO AREA
MISC. LANDSCAPE
BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=136.98'
CBR#24866
DMH#24878
ELLSWORTH STREET
60 FEET WIDE
SMH#25006
SMH#24874
DMH#24868
CBR#25011
CMP#3
CMP#4
GRAN. CURB
CONC. WALK
PATIO AREA
BLOCK RETAINING WALL
MISC. LANDSCAPE
CONC. WALK
CBR#24399
CBR#24872
DMH#24533
MAINE MEDICAL CENTER
S18°50'42"W 136.31'
GRAN. CURB
MISC. LANDSCAPE
OVERHANG
S18°50'42"W 129.25'
N43°32'45"W 51.27'
CB#25122
DMH#24543
S44°25'34"W 116.01'
1.45'
N47°21'29"W
CBR#24186
CONC. WALK
CB#23946
S47°27'29"E 196.10'
MISC. LANDSCAPE
METAL GRATE
CONC. WALK
SMH#23980
GRAN. CURB
HILL STREET
60 FEET WIDE
N/F
JEFFERY L. FREILAND
14253/320
N/F
PAULA WILHOITE
18004/025
N/F
MICHAEL J. FREILAND
14591/320
N/F
JUNE C. SOULE
3988/248
RUSSELL STREET
20 FEET WIDE
SMH#23479
N/F
BEH REDEVELOPMENT LLC
N
GRID

MISC. LANDSCAPE
BENCHMARK
NORTHERLY EDGE OF CATCH BASIN
RIMELEV=142.70'
TIMBER BORDER
MISC. LANDSCAPE
CONC. WALK
PICNIC TABLE ON CONC. PAD WITH PATIO BLOCK BORDER (TYPICAL)
CBR#22782
AREA
FIRE ESCAPE
A/C
3223
BROKEN PAVEMENT
SMH#23122
CONC. PAD
A/C UNITS
AIR DUCT
GENERATOR UNDER WOODEN TRELLIS
BLOCK PATIO WITH ROCK
STAIRWAY
CONC. FOUNDATION WALL AND FOOTING
BRICK DRAINAGE CHANNEL
CBR#25395
A/C UNITS
AIR DUCTS
BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=145.89'

SHEET 6 | SHEET 7 | SHEET 7
SHEET 8 | SHEET 8 | SHEET 9
SHEET 5
SHEET 7
SHEET 7
SHEET 9

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW E. WOOD
PLS 2117
PROFESSIONAL LAND SURVEYOR

REV.:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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Tel. 207-200-2100
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Lewiston, ME 04240
Tel. 207-783-3566

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 7 OF12

01046-EC-2009.dwg, TAB:EC07

SHEET 6 | SHEET 6 | SHEET 7 | SHEET 7

SHEET 8 | SHEET 8 | SHEET 8 | SHEET 9

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=105.02'

BENCHMARK
SOUTHERLY EDGE OF DRAIN MANHOLE
RIM ELEV=151.07'

S69°14'08"W 94.58'
N44°17'52"W 100.00'
N45°42'08"E 50.00'
N69°14'08"E 149.75'

CMP#1
CMP#1.1
CMP#J1
CMP#J2
DMH#15520
DMH#15602
DMH#19439
DMH#19377
DMH#19236
CBR#15720
CBR#15749
CBR#19454
CBR#26363
CBR#19375
CBR#19317
CB#19649
SMH#18841
SMH#18533

PAVED WALK
6" x 6" GRANITE MONUMENT FLUSH
GRAN. CURB
CONC. WALK
PAVED DRIVE
FOOT PATH
PATIO
PICNIC TABLES
FREE ESPEE
PORCH
C.S.
L.S.
FFE=154.14'
MASONRY WALL
MISC. LANDSCAPE
BENCH
MAINE MEDICAL CENTER
BIKE RACK
STEEL STAIRS
FFE=158.5'
FFE=154.18'
STEEL COLUMNS (TYPICAL)
CONCRETE
BRICK WALL WITH METAL BENCH
ARTISTIC COLUMNS WITH GROUND LIGHTS
AUTOMATED GATE ARM
PAVED PARKING
SLOPED GRAN. CURB
WESTERN PROMENADE
VARYING WIDTH
GRID

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 8 | SHEET 8 | SHEET 9 | SHEET 10

STATE OF MAINE — MATTHEW W. CROCKETT — 2117 — LICENSED PROFESSIONAL LAND SURVEYOR

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 8 OF12

01046-EC-2009.dwg, TAB:EC08

SHEET 7

SHEET 8 | SHEET 9

SHEET 7

SHEET 9

RUSSELL STREET
20 FEET WIDE

SMH#23479

SMH#23980

CBR#17954

N/F
BEH REDEVELOPMENT LLC
26288/055

N/F
BEH REDEVELOPMENT LLC
26288/052

MAINE
MEDICAL
CENTER

CONDITIONING UNITS

A/C

APPROXIMATE LOCATION OF UNDERGROUND LINEAR ACCELERATOR ROOM

PATIO AREA

SHUTTLE STOP

BROKEN PAVEMENT/ TRENCH DRAIN

ENTRANCE

OVERHANG

MISC. LANDSCAPE

CONC. WALK

BRICK WALL

CONC. WALL

GRAN. CURB

BIT. CURB

CRUSHED STONE

BIKE RACK

SMOKING AREA

CONC. ISLAND

LAUTOMATED GATE ARM

BOLLARDS TYPICAL

PAVED DRIVE

PAVED WALK

CONC. DRIVE

BRAMHALL STREET
60 FEET WIDE

CHADWICK STREET
(FKA 1 STREET)
60 FEET WIDE

BRACKETT STREET
(FKA JEFFERSON STREET)
57/75 FEET WIDE

VAUGHAN STREET
66 FEET WIDE

GRID

CBR#18426

DMH#18214

SMH#18219

CBR#18139

CBR#18124

CBR#18172

CBR#18171

CMP#3

CMP#4

CMP#14

SMH#16888

CBR#17646

CBR#17604

STA 0+00
N44°23'02"E
36.15

CMP#5S

SMH#17570

8" x 8" GRANITE MONUMENT WITH DRILL HOLE

8" x 8" GRANITE MONUMENT

SMH#17836

8" x 8" GRANITE MONUMENT 6" HIGH WITH DRILL HOLE

CBR#17684

CMP#6

CMP#5

N44°23'02"E
81.05

BENCHMARK
TOP CENTER OF "M" MON.
ELEV=140.52'

N44°23'02"E 587.81'

S60°47'58"W
357.58'

N47°36'02"W
21.03'

CBR#12313

CBR#12319

CBR#12336

CBR#16634

CBR#16685

SMH#17446

CBR#17378

CMP#34

CBR#17181

SMH#17274

CBR#17159

CMP#33

CBR#17197

CBR#17224

BENCHMARK
NORTHERLY EDGE OF SEWER MANHOLE
RIM ELEV=148.29'

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

20 0 10 20 40
GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 8 | SHEET 9

SHEET 10

SHEET 9

REV:	BY:	DATE:	STATUS:
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STATE OF MAINE
MATTHEW W. WILSON
PLS
2117
PROFESSIONAL LAND SURVEYOR

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST. CONGRESS ST. BRAMHALL ST. ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 9 OF12

01046-EC-2009.dwg, TAB:EC09

SHEET 8 | SHEET 9 | SHEET 10

CHADWICK STREET (FKA T STREET) 60 FEET WIDE

VAUGHAN STREET 66 FEET WIDE

WEST STREET (FKA V STREET) 60 FEET WIDE

BENCHMARK
NORTHERLY EDGE OF SEWER MANHOLE
RIM ELEV=148.29'

CMP#14.1
SMH#16888
CMP#13
CBR#16819
CBR#12257
CMP#32
CMP#31
CMP#30
CMP#28.1
SMH#12485
CMP#28

N69°13'22"W 143.97'
S20°44'43"W 80.00'
N69°13'22"W 144.30'
S20°44'43"W 41.00'

5/8" REBAR 6' HIGH PLS#1273
5/8" REBAR 8' HIGH PLS#1273

N/F
BOWDOIN DEVELOPMENT LLC
19012/321
16023/225

N/F
BOWDOIN DEVELOPMENT LLC
19012/321

N/F
CHERYL BLANK
26061/339

McGEACHY HALL
5+ STORY
BRICK BUILDING
(HEIGHT=208'±)

FFE=149.5'
FFE=145.0'

2" IRON PIPE
1" HIGH

DUMPSTER
BIKE RACK
AUTOMATED GATE ARM
PARKING ATTENDANT BOOTH
CRUSHED STONE
MISC. LANDSCAPE
MISC. LANDSCAPING
PAVED PARKING
PAVED WALK
PAVED DRIVE
CONC. WALK
CONC. RAMP
GRAN. CURB
BIT. CURB
STONE WALL
GRID

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

MATTHEW W. CLOUTIER
No. 2117
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF MAINE

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
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GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 10 OF 12

01046-EC-2009.dwg, TAB: EC10

UTILITY STRUCTURE CHART – SEWER

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN–OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
SMH	12485	145.43						
			IN	137.08	12	RCP	6	
			IN	137.23	6	PVC	6	
			IN	137.73	12	?	8	
			OUT	137.63	12	?	2	
			SHELF	138.13				
SMH	12949	61.78						
			IN	53.38	12	PVC	6	HEAVY FLOW
			IN	51.9	6	PVC	4	HEAVY FLOW
			OUT	52.38	12	PVC	11	
			SHELF	53.78				UPPER SHELF
			SHELF	52.58				LOWER SHELF
SMH	13080	54.2						
			IN	45.5	12	VIT CLAY	6	SOLIDS BUILT UP
			IN	46	12	VIT CLAY	5	
			OUT	45.3	12	VIT CLAY	3	
			SHELF	46				
SMH	13187	35.27						
			IN	24.19	12	VIT CLAY	5	
			IN	24.64	8	PVC	3	
			IN	24.87	4	PVC	3	
			OUT	24.17	12	VIT CLAY	11	
			SHELF	25.27				
SMH	13278	32.93						
			IN	21.93	12	VIT CLAY	2	
			IN	22.33	12	VIT CLAY	11	
			IN	22.13	12	VIT CLAY	5	
			OUT	21.83	12	VIT CLAY	8	
			SHELF	22.63				
SMH	13348	37.94						
			IN	27.99	12	VIT CLAY	5	
			IN	27.99	12	VIT CLAY	2	
			OUT	27.34	12	VIT CLAY	8	
			SHELF	28.19				
SMH	13457	79.42						
			IN	64.6	12	PVC	3	
			IN	72.43	12	PVC	3	
			OUT	64.73	12	PVC	10	
			SHELF	65.47				
SMH	13475	62.91						
			IN	52.35	12	PVC	6	
			IN	56.91	12	PVC	6	
			OUT	52.34	12	PVC	10	
			SHELF	53.27				
SMH	13482	55.71						
			IN	46.1	12	PVC	4	
			IN	50.14	12	PVC	4	
			OUT	46.09	12	PVC	10	
			SHELF	47.22				
SMH	13533	53.55						
			IN	44.77	12	VIT CLAY	5	
			IN	46.82	12	PVC	5	HEAVY FLOW
			IN	45.65	12	PVC	3	HEAVY FLOW
			OUT	44.38	12	VIT CLAY	11	
			SHELF	44.81				
SMH	13820	41.72						
			IN	32.44	12	VIT CLAY	5	
			IN	32.77	12	VIT CLAY	2	
			OUT	32.42	12	VIT CLAY	11	
			SHELF	33.47				
SMH	13875	47.49						
			IN	37.51	10	?	2	
			OUT	37.49	10	?	7	
SMH	13932	52.64						
			IN	43.42	15	RCP	2	
			IN	44.44	12	PVC	4	
			IN	41.64	18	RCP	5	
			IN	44.64	8	VIT CLAY	6	
			OUT	40.64	18	RCP	12	
			SHELF	41.06				
SMH	13952	52.64						
			IN	45.89	12	PVC	2	
			IN	45.98	18	RCP	4	
			OUT	44.61	18	RCP	8	
			SHELF	46.66				
SMH	14040	44.97						
			IN	39.47	18	PVC	11	HEAVY FLOW
			IN	39.42	12	PVC	12	
			IN	39.77	6	PVC	6	
			OUT	38.85	24	RCP	5	
			SHELF	40.34				
SMH	14076	44.57						
			IN	39.89	12	PVC	3	HEAVY FLOW
			OUT	39.69	12	PVC	8	
			SHELF	40.52				
SMH	14081	42.46						
			IN	31.88	12	VIT CLAY	2	
			IN	32.26	12	?	5	CAN NOT SEE MATERIAL
			OUT	31.68	12	VIT CLAY	8	
			SHELF	32.46				
SMH	14170	41.55						
			IN	30.15	12	?	5	SIZE±
			OUT	30.1	12	?	11	SOLIDS BUILD UP
			SUMP	30.4				NO DEFINED TRENCH
SMH	14843	56.66						
			IN	53.17	6	PVC	10	
			IN	52.06	12	VIT CLAY	1	
			IN	51.86	18	RCP	4	
			OUT	51.66	18	RCP	8	
			SHELF	53.27				
SMH	14847	61.65						
			IN	57.85	8	STEEL	6	
			IN	58.45	4	STEEL	6	
			OUT	52.7	8	VIT CLAY	7	
			SUMP	48.35				HEAVILY SILTED
SMH	15063	87.37						
			IN	82.52	12	PVC	2	
			IN	73.12	12	PVC	2	
			OUT	73.02	12	PVC	7	
			SHELF	73.77				
SMH	15163	81.98						
			IN	72.98	12	PVC	3	
			OUT	72.88	12	PVC	11	
			SHELF	73.68				
SMH	16008	69.24						
			IN	61.07	10	ACP	3	
			IN	61.17	10	?	4	
			IN	62.19	12	VIT CLAY	6	
			OUT	60.86	10	ACP	9	
			SHELF	62.06				
SMH	16047	72.79						
			IN	64.59	8	PVC	3	
			IN	64.57	8	PVC	4	
			IN	69.76	4	PVC	6	
			OUT	64.19	10	PVC	9.	
			IN	64.29	8	VIT CLAY	10	
			SHELF	65.13				
SMH	16091	77.67						
			IN	69.37	8	PVC	4	
			OUT	69.34	8	PVC	7	
			SHELF	70.21				
SMH	16224	79.08						
			IN	68.62	18	VIT CLAY	4	
			OUT	67.69	18	PVC	10	
			SHELF	69.13				
SMH	16227	80.05						
			IN	70.89	18	VIT CLAY	5	
			OUT	70.85	18	VIT CLAY	11	
			SHELF	71.9				
SMH	16386	88.39						
			IN	78.29	18	VIT CLAY	4	
			OUT	78.19	18	VIT CLAY	10	
			SHELF	79.39				
SMH	16888	148.29						
			IN	139.89	12	VIT CLAY	8	
			OUT	139.79	12	VIT CLAY	2	
			SHELF	140.49				

UTILITY STRUCTURE CHART – SEWER

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN–OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
SMH	17274	139.65						
			IN	131.15	15	RCP	5	
			IN	129.85	18	?	8	
			IN	132.85	12	STEEL	10	
			IN	131.4	12	?	11	
			OUT	129.75	18	?	2	
SMH	17277	140.22						
			IN	133.27	6	VIT CLAY	3	
			IN	132.27	12	?	5	
			OUT	132.17	12	?	11	
			SHELF	133.42				
SMH	17446	140.46						
			OUT	132.86	8	VIT CLAY	5	
			SHELF	133.36				SILT BUILD UP
SMH	17570	141.18						
			IN	132.73	18	?	9	
			IN	132.13	18	?	11	
			OUT	132.03	18	?	5	
			SHELF	133.28				
SMH	17836	143.54						
			IN	135.89	12	?	7	
			IN	135.44	12	?	8	
			IN	136.49	12	RCP	11	
			IN	139.11	4	STEEL	11	
			OUT	135.34	12	?	2	
			SHELF	136.39				
SMH	18219	145.32						
			IN	136.87	12	VIT CLAY	8	
			IN	137.37	12	?	10	
			OUT	136.77	12	VIT CLAY	2	
			SHELF	138.32				
SMH	18533	150.42						
			IN	141.92	12	VIT CLAY	8	
			IN	143.22	8	STEEL	11	
			OUT	141.82	12	VIT CLAY	2	
			SHELF	143.12				
SMH	18841	154.13						
			IN	146.58	12	VIT CLAY	7	
			OUT	146.48	12	VIT CLAY	2	
			SHELF	146.98				
SMH	21114	107.75						
			IN	99.86	8	PVC	2	
			IN	99.95	8	PVC	5	
			OUT	99.6	8	PVC	8	
			SHELF	100.68				
SMH	21423	106.57						
			IN	97.17	12	PVC	5	HAS DROP
			IN	86.91	12	PVC	5	AT DROP
			OUT	86.91	12	?	11	SIZE±
			SHELF	87.35				
SMH	21735	112.01						
			IN	100.12	10	PVC	1	
			OUT	99.89	12	PVC	8	
			SHELF	100.79				
SMH	22095	115.44						
			IN	108.75	18	STEEL	5	
			OUT	108.49	15	VIT CLAY	11	
			SHELF	109.52				
SMH	23122	145.59						
			IN	141.06	4	STEEL	1	ENCLOSED WITH DROP
			OUT	140.19	4	PVC	7	FRM DROP
			SUMP	140.19				
SMH	23479	140.55						
			OUT	132.88	8	?	2	BEGINING OF RUN
			SHELF	133.56				
SMH	23980	142.54						
			IN	136.54	12	?	5	
			IN	135.54	12	?	10	
			OUT	135.18	12	?	2	
			SHELF	136.25				
SMH	24874	135.9						
			IN	127.38	12	PVC	8	
			IN	127.18	12	PVC	11	
			OUT	127.17	12	PVC	2	
			SHELF	128.08				
SMH	25006	132.26						
			IN	125.55	12	VIT CLAY	5	
			IN	125.17	10	PVC	6	
			IN	125.26	12	VIT CLAY	7	
			IN	124.54	12	VIT CLAY	8	
			OUT	124.46	12	VIT CLAY	2	
			SHELF	125.61				
SMH	25491	129.94						
			IN	118.64	15	PVC	5	
			OUT	118.31	15	?	8	
			SHELF	119.65				
SMH	25522	130.11						
			IN	117.21	15	PVC	3	
			OUT	117.16	15	PVC	10	
			SHELF	118.21				
SMH	25558	128.59						
			IN	110.01	12	?	3	
			OUT	110.00	12	?	9	
			SHELF	110.60				
SMH	26197	88.26						
			IN	80.53	12	PVC	2	
			IN	80.74	15	PVC	4	
			IN	82.56	15	CPP	6	
			IN	83.62	12	PVC	6	
			OUT	80.51	12	PVC	8	
			SHELF	81.44				
SMH	26365	107.74						
			IN	97.99	12	PVC	2	
			IN	98.01	12	PVC	5	
			OUT	97.74	12	PVC	11	
			SHELF	98.44				
SMH	26367	130.04						
			IN	109.83	12	PVC	2	
			IN	109.87	15	PVC	5	
			IN	116.09	15	PVC	5	
			OUT	109.76	15	PVC	11	
			SHELF	110.77				
SMH	26558	61.63	IN	56.28	12	CPP	2	
			IN	56.23	15	PVC	5	
			OUT	56.13	15	PVC	8	

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 11 OF 12

01046–EC–2009.dwg, TAB: STR–11

UTILITY STRUCTURE CHART – DRAIN MANHOLE

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
DMH	12906	72.45						
			IN	62.96	12	PVC	1	
			IN	67.07	12	RCP	5	
			OUT	63.08	12	RCP	12	
			SHELF	63.5				
DMH	12909	66.75						
			IN	60.15	12	RCP	5	
			IN	59.95	12	PVC	7	
			OUT	59.9	12	PVC	11	
			SHELF	60.45				
DMH	12914	65.09						
			IN	49.37	24	CPP	11	
			IN	59.74	10	CPP	2	
			IN	57.39	12	PVC	5	
			OUT	49.31	24	RCP	8	
			SUMP	48.94				
DMH	12964	65.52						DOWN STREAM DEFENDER
			SUMP	41.52				
DMH	12965	64.52						DOWN STREAM DEFENDER
			TOP TANK	51.84	0	?	?	
			SUMP	42.95				
DMH	12966	130.04						
			IN	121.27	4	PVC	11	
			IN	124.21	18	STEEL	3	
			IN	124.61	6	PVC	5	
			OUT	119.82	18	CPP	6	
			SUMP	119.55				
DMH	13079	53.18						
			IN	45.98	24	RCP	3	LARGER IN THAN OUT
			OUT	45.93	18	PVC	9	SMALLER OUT THAN IN
			SUMP	45.76				
DMH	13456	80.75						
			IN	72.15	18	CPP	4	
			OUT	67.96	18	?	10	
			SHELF	69.13				
DMH	13592	42.89						
			IN	37.64	10	?	2	SILTED
			IN	37.79	12	?	5	
			OUT	37.59	12	?	10	SILTED
			SUMP	37.94				SILTED
DMH	14542	37.45						
			IN	32.1	8	PVC	5	
			IN	32.25	6	PVC	2	
			OUT	31.95	8	PVC	9	
			SUMP	31.62				
DMH	15162	81.13						
			IN	75.53	12	PVC	2	APPARENT PONDING
			IN	75.48	12	RCP	5	APPARENT PONDING
			OUT	75.58	12	RCP	11	APPARENT PONDING
			SHELF	76.03				
DMH	15520	114.29						
			IN	109.54	12	PVC	3	
			OUT	109.39	12	RCP	11	
			SUMP	109.14				
DMH	15602	138.17						
			IN	134.47	10	VIT CLAY	3	
			OUT	134.47	10	VIT CLAY	11	
			SUMP	133.17				
DMH	15901	61.7						
			IN	57.4	4	PVC	2	
			IN	55.9	12	CPP	3	
			OUT	55.9	12	CPP	7	
			SHELF	56.58				
DMH	15952	67.02						DOWN STREAM DEFENDER
			IN	64.98	4	STEEL	5	
			SUMP	59.82				
DMH	15953	67						DOWN STREAM DEFENDER
			TOP TANK	64.83	0	?	?	
			SUMP	57.6				
DMH	18214	145.1						
			IN	142.35	10	STEEL	9	
			OUT	142.15	10	TRAP	2	
			SUMP	139.35				SILTED
DMH	19236	152.2						
			IN	140.22	6	PVC	1	PONDING
			IN	140.34	4	PVC	4	PONDING
			OUT	140.22	12	PVC	9	
			SHELF	140.84				
DMH	19377	151.07						
			IN	138.97	8	PVC	2	
			IN	145.93	8	PVC	2	
			IN	145.64	8	PVC	4	
			IN	138.91	12	PVC	4	
			IN	138.81	8	PVC	5	
			IN	145.67	8	PVC	7	
			IN	138.85	8	PVC	8	
			OUT	138.75	12	PVC	10	SHELF –11.55
DMH	19439	144.58						
			IN	137.38	12	PVC	2	
			IN	137.33	12	PVC	4	
			OUT	137.31	12	PVC	9	
			SHELF	138.03				
DMH	20880	121.93						
			IN	119.03	8	PVC	5	
			OUT	115.53	8	PVC	11	
			SHELF	116.63				
DMH	21220	108.04						
			IN	87.36	12	?	2	
			IN	94.86	12	RCP	2	
			IN	104.44	6	PVC	4	
			OUT	86.99	12	?	8	
			SHELF	88.29				
DMH	21240	107.93						
			IN	101.68	12	RCP	5	
			IN	101.68	10	PVC	8	POSSIBLE 12INCH
			OUT	101.58	12	CPP	11	
			SHELF	102.23				
DMH	21425	106.58						
			IN	101.88	12	CPP	2	
			IN	95.92	15	CPP	5	
			OUT	95.9	15	CPP	7	
			SHELF	96.76				
DMH	21468	106.93						
			IN	103.99	6	PVC	12	
			OUT	103.94	6	PVC	5	
			SUMP	101.77				

UTILITY STRUCTURE CHART – DRAIN MANHOLE

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
DMH	21903	110.18						
			OUT	107.30	8	PVC	10	
			SUMP	105.11				
DMH	21913	110.34						
			IN	102.76	18	PVC	12	
			IN	107.25	18	PVC	12	
			IN	101.85	18	PVC	2	
			IN	107.3	8	PVC	5	
			OUT	101.84	18	PVC	9	
			SUMP	100.18				
DMH	22098	115.18						
			IN	106.03	18	CPP	5	
			OUT	105.99	18	CPP	8	
			SHELF	107.08				
DMH	24533	139.38						
			IN	130.43	12	RCP	8	
			IN	132.88	12	PVC	10	
			OUT	130.4	12	RCP	2	
			SHELF	130.98				
DMH	24543	140.61						
			IN	135.38	12	RCP	7	
			IN	132.09	6	PVC	11	
			OUT	131.87	12	RCP	2	
			SHELF	132.55				
DMH	24696	130.95						
			IN	125.3	12	PVC	7	
			OUT	124.75	12	RCP	12	
			SHELF	125.73				
DMH	24868	137.55						
			IN	127.93	12	PVC	6	
			IN	130.06	12	RCP	7	
			IN	130.08	12	PVC	11	
			OUT	127.79	12	RCP	2	
			SHELF	128.43				
DMH	24878	135.6						
			IN	127.3	12	RCP	8	
			OUT	127.25	12	PVC	5	
			SHELF	127.98				
DMH	25531	130.05						
			IN	110.05	12	?	2	
			IN	109.59	12	?	5	
			IN	118.15	12	PVC	5	
			IN	124.95	4	STEEL	6	
			IN	125.85	3	STEEL	7	
			IN	121.2	4	PVC	8	
			OUT	109.44	18	?	10	
			SHELF	110.28				
DMH	25556	128.73						
			IN	121.03	12	CPP	11	
			IN	110.87	12	?	2	
			OUT	110.11	12	?	8	
			SHELF	110.4				
DMH	25575	128.66						
			IN	121.31	12	CPP	5	
			OUT	121.21	12	CPP	12	
			SHELF	122.11				
DMH	25868	125.02						
			IN	116.57	12	RCP	7	
			IN	116.37	12	RCP	9	
			OUT	116.43	12	PVC	4	
			SHELF	116.97				
DMH	25901	127.32						
			IN	117.94	12	PVC	2	
			IN	122.22	12	RCP	5	
			OUT	117.92	12	RCP	1	
			SHELF	118.62				
DMH	26205	89.94						
			IN	83.77	18	CPP	2	
			IN	84.24	6	CPP	4	
			IN	84.94	18	CPP	6	
			OUT	83.76	18	CPP	8	
			SHELF	84.77				
DMH	26212	97.74						
			IN	87.14	18	CPP	2	
			OUT	87.09	18	CPP	11	
			SUMP	86.9				

UTILITY STRUCTURE CHART – CATCH BASIN

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
CB	12257	143.24						
			OUT	137.89	12	PIPE W–HYDROBRAKE	2	
			SUMP	135.64				
CB	12313	141.64						
			OUT	136.69	12	PIPE W–HYDROBRAKE	8	LID–COVER ON 12 INSIDE 18 RCP
			SUMP	134.59				
CB	12319	141.67						
			IN	135.87	12	STEEL	2	
			IN	136.37	12	STEEL	8	
			OUT	135.72	12	STEEL	5	
			SUMP	133.57				
CB	12336	143.18						
			OUT	137.72	12	PIPE W–HYDROBRAKE	2	
			SUMP	135.98				
CB W–INLET	12640	40.47						
			OUT	38.52	0	PIPE W–CASCO TRAP	10	MEASURED TO THE TOP OF TRAP
			SUMP	34.17				SILTED TRASH DEBRIS
CB	12800	53.76						
			OUT	46.5	8	?	11	
			SUMP	46.11				SILTED
CB W–INLET	12913	66.01						
			IN	58.86	12	PVC	5	
			OUT	60.11	12	PIPE W–CASCO TRAP	10	MEASURED TO TOP OF TRAP
			SUMP	56.16				
CB W–INLET	13034	66.99						
			OUT	63.39	12	PVC	12	NO LONGER HAS TRAP
			SUMP	62.49				HEAVILY SILTED
CB	13167	33.74						
			OUT	29.54	12	RCP	8	
			SUMP	26.24				SILTED
CB W–INLET	13215	31.9						
			IN	26.8	12	RCP	2	
			OUT	26.2	12	CPP	10	
			SUMP	24.15				SILTED
CB W–INLET	13218	31.47						
			IN	25.17	12	CPP	4	
			OUT	25.12	12	CPP	8	
			SUMP	22.87				
CB W–INLET	13395	35.15						
			OUT	32.15	12	PIPE W–CASCO TRAP	7	MEASURED TO TOP OF TRAP
			SUMP	28.35				SILTED DEBRIS
CB W–INLET	13581	42.72						
			OUT	40.62	8	PVC	11	
			SUMP	40.62				
CB W–INLET	13770	42.18						
			IN	38.63	6	PVC	2	
			OUT	38.63	8	PIPE W–CASCO TRAP	5	MEASURED TO TOP OF TRAP
			SUMP	34.83				SILTED TRASH DEBRIS
CB W–INLET	13796	42.56						
			IN	38.86	8	BRICK	2	
			OUT	38.66	10	BRICK	8	
			SUMP	39.41				POOR CONDITION. SEE PHOTO
CB W–INLET	13819	34.86						
			OUT	31.21	12	PIPE W–CASCO TRAP	5	MEASURED TO TOP OF TRAP
			SUMP	27.11				SILTED TRASH DEBRIS
CB W–INLET	13999	44.76						
			OUT	41.66	12	PVC	6	
			SUMP	41.86				SILTED FULL OF DEBRIS
CB W–INLET	14031	46.2						
			OUT	43.25	12	PIPE W–CASCO TRAP	9	MEASURED TO TOP OF TRAP
			SUMP	39				SILTED TRASH DEBRIS
CB	14319	39.42						
			OUT	35.42	8	PVC	11	
			SUMP	34.52				SILTED
CB	14588	43.65						
			OUT	40.3	12	PIPE W–CASCO TRAP	10	MEASURED TO THE TOP OF TRAP
			SUMP	38.95				SILTED
CB	14635	42.48						
			OUT	34.53	12	PVC	10	
			SUMP	33.08				SILTED
CB	15076	91.16						
			IN	88.16	12	STEEL	5	
			IN	88.16	12	VIT CLAY	11	
			OUT	87.76	15	CPP	7	
			SUMP	86.61				
CB W–INLET	15161	81.02						
			IN	75.82	12	CPP	2	
			OUT	75.38	12	PIPE W–CASCO TRAP	8	
			SUMP	72.37				SILTED
CB W–INLET	15720	115.3						
			IN	110.25	12	PVC	5	
			OUT	110.25	12	PVC	9	
			SUMP	107.1				SILTED
CB W–INLET	15749	114.96						
			OUT	110.66	12	PVC	11	
			SUMP	114.96				5
CB	15960	65.99						
			OUT	62.69	8	PVC	9	
			SUMP	59.64				
CB W–INLET	16258	82.85						
			IN	79.25	10	STEEL	5	
			OUT	79.02	8	STEEL	2	
			SUMP	75.52				
CB	16634	141.94						
			OUT	136.74	12	PIPE W–HYDROBRAKE	8	
			SUMP	134.59				
CB	16685	141.93						
			IN	136.13	12	STEEL	2	
			IN	136.43	12	STEEL	8	
			IN	134.03	12	STEEL	11	
			OUT	130.13	18	?	2	POSSIBLE HYDRO BRAKE
			SUMP	129.13				2' X 3' 1.2' TALL OBJECT
CB W–INLET	16819	148.29						
			OUT	145.09	8	STEEL	11	
			SUMP	141.39				HEAVILY SILTED
CB W–INLET	17159	139.51						
			OUT	134.51	6	PVC	5	
			SUMP	131.96				
CB W–INLET	17181	138.97						
			OUT	135.9	8	OTHER–COMMENTS	2	8 PVC ELBOW INSERTED IN 10 STL
			SUMP	131.97				
CB W–INLET	17197	139.26						
			IN	135.96	10	VIT CLAY	5	
			OUT	135.81	10	VIT CLAY	11	
			SUMP	132.76				
CB W–INLET	17224	139.24						
			OUT	136.64	10	VIT CLAY	10	
			SUMP	136.74				LIGHTLY SITED
CB W–INLET	17378	138.3						
			OUT	134	12	PIPE W–HYDROBRAKE	8	
			SUMP	130.5				SILTED
CB W–INLET	17604	140.35						
			OUT	136.3	8	PVC	8	
			SUMP	134.35				
CB W–INLET	17646	140.94						
			IN	136.19	12	PVC	12	
			IN	137.24	6	PVC	12	
			OUT	136.14	8	PVC	4	
			SUMP	133.14				
CB W–INLET	17684	140.95						
			OUT	136.15	12	PIPE W–HYDROBRAKE	1	
			SUMP	135.15				HEAVILY SILTED
CB	17954	142.1						
			OUT	137.35	12	PIPE W–CASCO TRAP	4	
			SUMP	137.1				
CB W–INLET	18124	144.56						
			OUT	140.41	10	PIPE W–HYDROBRAKE	3	
			SUMP	137.76				HEAVILY SILTED
CB W–INLET	18139	144.76						
			OUT	140.71	10	STEEL	11	
			SUMP	138.21				HEAVILY SILTED
CB	18171	143.94						
			IN	142.09	8	VIT CLAY	8	
			OUT	140.24	10	PIPE W–HYDROBRAKE	11	
			SUMP	136.49				HEAVILY SILTED

UTILITY STRUCTURE CHART – CATCH BASIN

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
CB	18172	144.03						
			OUT	142.08	10	VIT CLAY	2	
			SUMP	141.53				HEAVILY SILTED
CB W–INLET	18426	146.61						
			OUT	144.31	10	STEEL	3	
			SUMP	139.31				HEAVILY SILTED
CB	19317	151.23						
			OUT	146.43	8	PVC	10	
			SUMP	144.33				
CB	19375	150.77						
			OUT	146.52	8	PVC	1	
			SUMP	144.22				
CB	19454	140.29						
			OUT	139.29	12	PVC	10	FIELD INLET BREACHES
CB	19649	152.39						
			OUT	147.34	12	VIT CLAY	8	
			SUMP	147.19				SILTED
CB W–INLET	19833	124.43						
			OUT	120.21	12	CMP	11	
			SUMP	118.58				
CB	20098	125						
			OUT	122.6	8	PVC	7	
			SUMP	120.9				
CB	20117	125.46						
			IN	122.06	8	PVC	1	
			OUT	122.04	8	PVC	11	
			SUMP	120.26				
CB	20962	114.48						
			IN	109.88	8	PVC	2	
			OUT	108.38	12	PVC	11	
			SUMP	106.18				
CB	20970	114.32						
			IN	111.42	8	PVC	5	
			OUT	111.22	8	PVC	8	
			SUMP	109.62				
CB	21100	108.15						
			SUMP	103.1				SILTED FULL OF WATER NO INV
CB	21201	108.29	IN	102.69	12	PVC	6	
			OUT	102.64	12	PVC	2	
CB	21349	106.08						
			IN	97.88	12	PVC	2	
			IN	98.41	12	CPP	5	
			OUT	97.08	15	CPP	11	
			SUMP	94.68				
CB W–INLET	21385	106.32						
			OUT	102.63	12	CPP	8	
			SUMP	99.68				
CB	21466	106.75						
			IN	102.75	6	PVC	12	
			OUT	99.4	8	PVC	8	
			SUMP	99.36				
CB	21623	123.66						
			IN	120.41	4	?	4	
			IN	119.56	4	?	6	
			OUT	119.26	12	PVC	10	
			SUMP	119.21				SILTED DEBRIS
CB	21802	107.94						
			OUT	105.05	8	CPP	2	
			SUMP	104.35				
CB W–INLET	21848	106.49						
			IN	100.35	15	CPP	2	
			OUT	100.16	18	CPP	8	
			SHELF	100.44				
CB W–INLET	22087	115.13						
			IN	108.88	15	CPP	1	
			IN	106.38	18	RCP	5	
			IN	106.53	6	PVC	7	
			OUT	106.37	18	CPP	10	
			SHELF	106.71				
CB	22782	142.7						
			OUT	139.3	8	PVC	2	
			SUMP	138.3				SILTED
CB	23223	144.37						
			IN	141.77	8	?	5	SIZE ±
			OUT	141.67	0	OTHER–COMMENTS	11	TOP OF PIPE WITH ELBOW
			SUMP	141.37				SILTED
CB W–INLET	23377	123.43						
			OUT	118.33	12	PIPE W–CASCO TRAP	11	
			SUMP	114.53				
CB	23946	141.8						
			OUT	137.67	0	PIPE W–CASCO TRAP	12	TOP OF TRAP
			SUMP	136.29				
CB W–INLET	24186	140.93						
			IN	136.11	6	PVC	6	
			IN	136.21	12	RCP	7	
			OUT	137.18	0	PIPE W–CASCO TRAP	1	TOP OF TRAP
			SUMP	133.24				
CB W–INLET	24399	139.27						
			IN	135.09	6	PVC	3	
			OUT	135.66	0	PIPE W–CASCO TRAP	5	TOP OF TRAP
			SUMP	131.47				
CB W–INLET	24658	131.2						
			IN	125.42	6	PVC	6	
			IN	127.77	6	PVC	5	
			OUT	126.88	8	PIPE W–CASCO TRAP	12	TOP OF TRAP SIZE±
			SUMP	122.72				
CB W–INLET	24866	136.98						
			IN	132.63	6	?	6	
			IN	129.98	0	PVC	10	CAPPED
			OUT	131.58	0	PIPE W–CASCO TRAP	5	TOP OF TRAP
			SUMP	127.33				
CB W–INLET	24872	138						
			IN	128.43	12	PVC	5	
			IN	132.76	6	PVC	8	
			OUT	129.43	0	PIPE W–CASCO TRAP	1	TOP OF TRAP
			SUMP	125.47				
CB W–INLET	25011	134.05						
			OUT	130.55	0	PIPE W–CASCO TRAP	11	TOP OF TRAP
			SUMP	126.25				
CB	25122	137.89						
			OUT	129.92	8	PIPE W–CASCO TRAP	1	TOP OF TRAP SIZE±
			SUMP	127.12				
CB	25688	125.2						
			OUT	121.67	12	PVC	7	
			SUMP	119.8				
CB W–INLET	25816	123.39						
			IN	117.78	12	PVC	5	
			OUT	117.67	12	PIPE W–CASCO TRAP	2	
			SUMP	113.79				
CB W–INLET	25858	124.04						
			IN	116.81	12	RCP	8	
			IN	116.73	12	PVC	11	
			OUT	117.88	12	RCP	2	
			SUMP	113.84				
CB W–INLET	25904	127.38						
			IN	123.98	6	PVC	5	
			OUT	119.49	8	PIPE W–CASCO TRAP	9	TOP OF TRAP SIZE±
			SUMP	115.63				
CB	26038	124.94						
			IN	120.94	6	PVC	10	
			IN	121.39	12	PVC	2	
			OUT	117.49	12	PIPE W–CASCO TRAP	6	
			SUMP	115.34				
CB	26363	150.95						
			OUT	146.16	8	PVC	7	
			SUMP	146.16				
CB	26395	145.89						
			IN	139.04	12	STEEL	5	ENCLOSED PIPE
			IN	141.09	6	STEEL	2	
			IN	143.29	4	?	2	NO MATERIAL
			IN	141.19	6	?	3	NO MATERIAL
			IN	141.14	4	?	8	NO MATERIAL
			OUT	139.64	12	STEEL	2	ENCLOSED
			SUMP	136.89				SILTED
CB	26561	108.54	OUT	105.09	12	PVC	12	

STATE OF MAINE – MATTHEW W. EK – 2117 – PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 12 OF 12

01046–EC–2009.dwg, TAB: STR–12

1/8" = 1'-0"

Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

EAST ELEVATION

PERKINS+WILL

CONSTRUCTION DOCUMENTS 2/12/2018 5:45:56 PM

MAXIMUM BUILDING HEIGHT
PER IOZ REGULATORY FRAMEWORK

150'-0"

CORRUGATED METAL PANEL

PAINTED STEEL

TOP OF HELIPAD
271' - 10"

TOP OF HELIPAD
271' - 10"

EXISTING RICHARD'S BUILDING

254' - 6"
EAST TOWER
ROOF
ELEVATION

254' - 6"
EAST TOWER
ROOF
ELEVATION

CURTAIN WALL
GLAZING

METAL PANEL TO
MATCH EXISTING

NEW CONSTRUCTION

EXISTING

EXISTING
BRICK

129' - 0"
AVERAGE GRADE ELEVATION

124' - 0"
GRADE AT CORNER

126' - 0"
GRADE AT CORNER

1/8" = 1'-0"

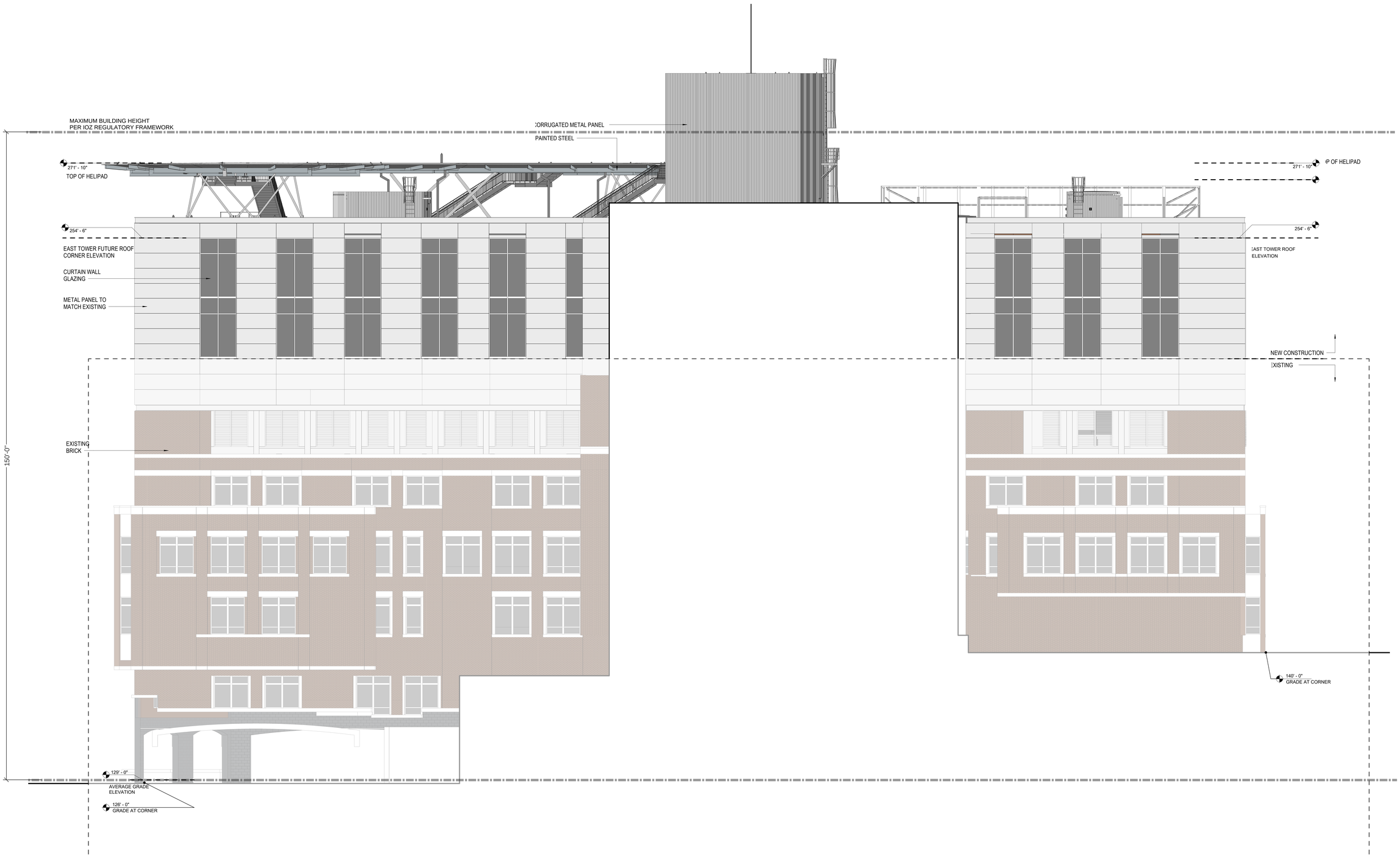
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

NORTH ELEVATION

PERKINS+WILL

CONSTRUCTION DOCUMENTS 2/12/2018 6:13:41 PM



1/8" = 1'-0"

Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

WEST ELEVATION

PERKINS+WILL

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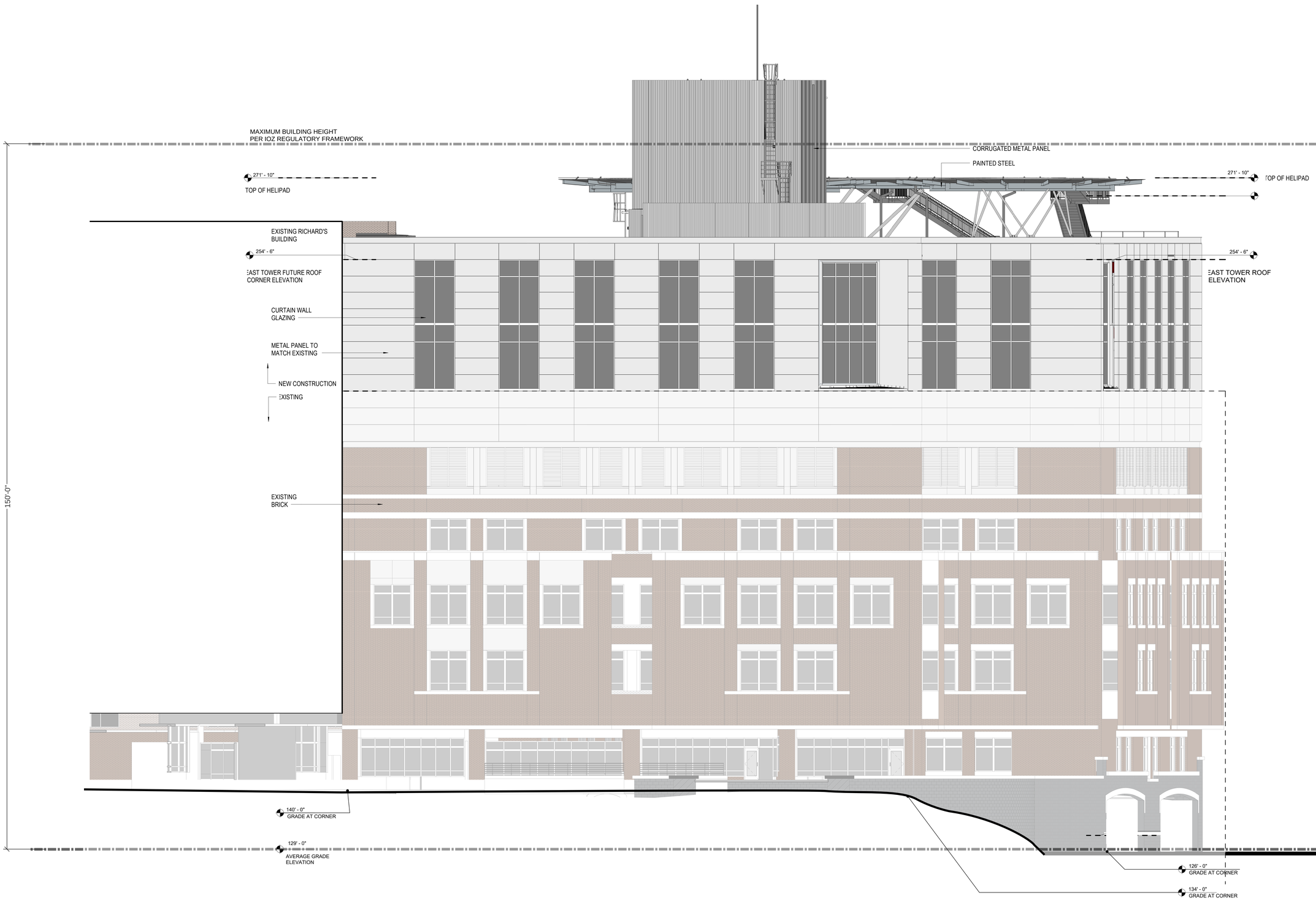

1/8" = 1'-0"

Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

SOUTH ELEVATION

PERKINS+WILL

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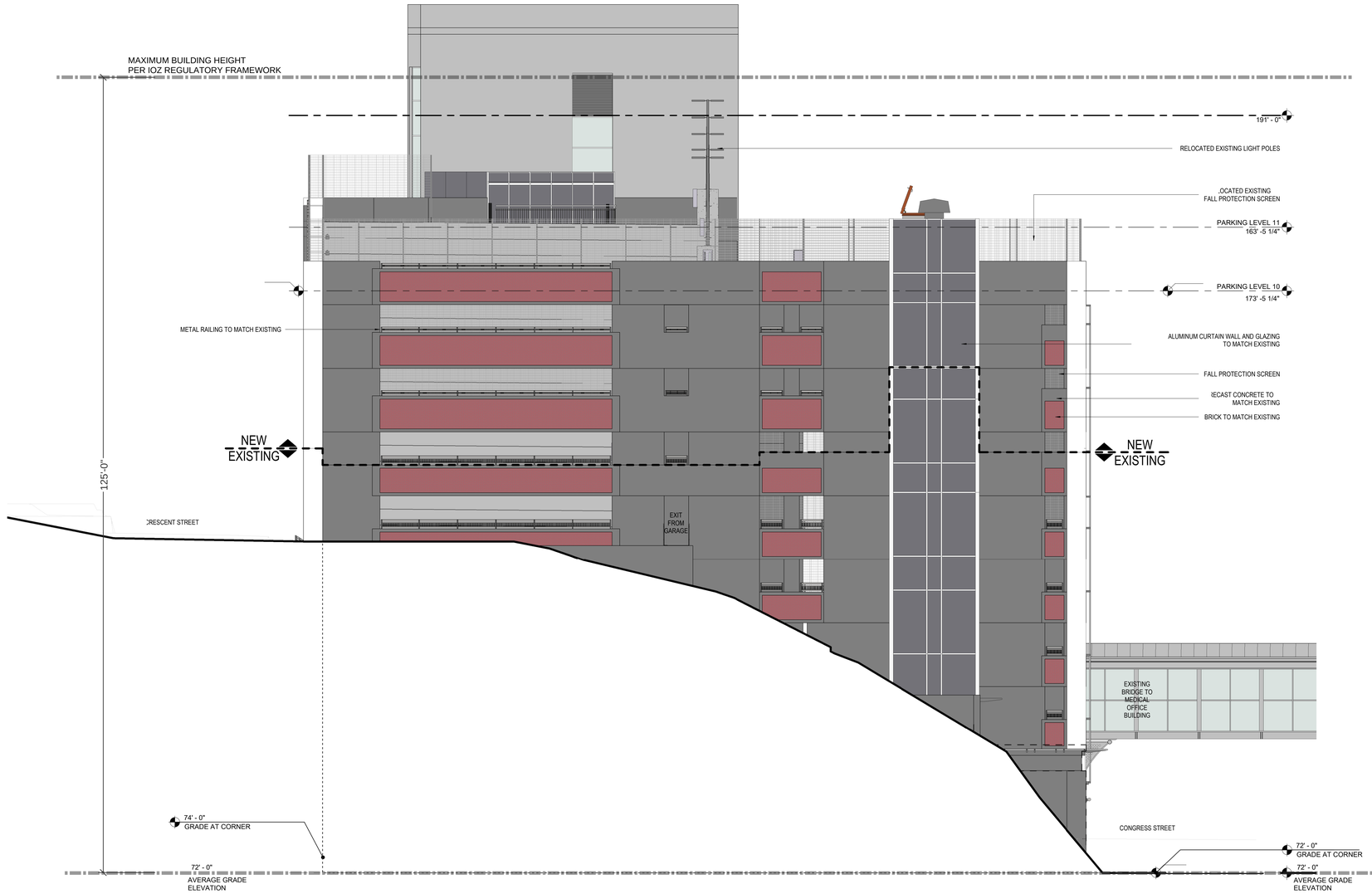


Visitor Garage Expansion

EAST ELEVATION

PERKINS+WILL

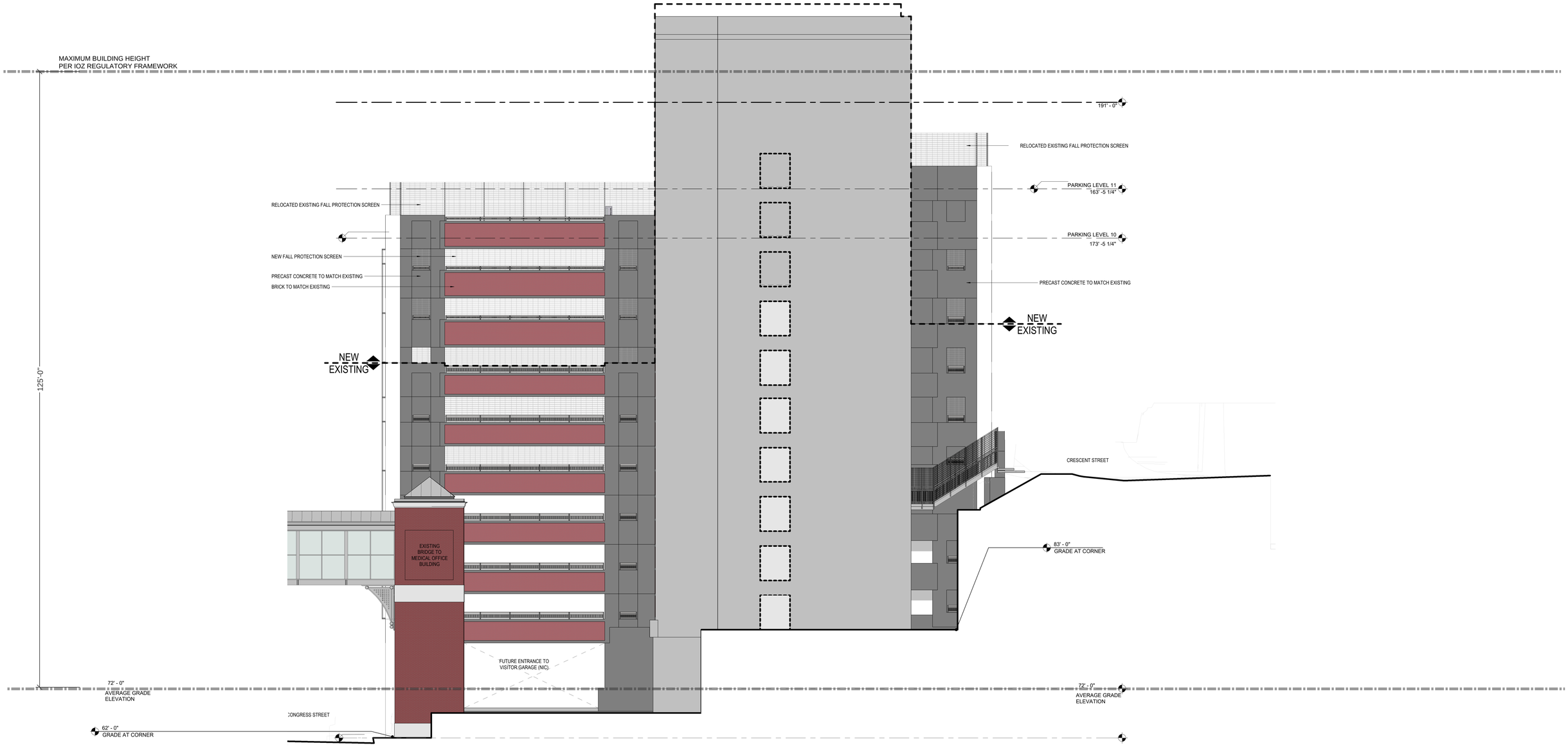
2018.02.12 DOCUMENT SET

Visitor Garage Expansion

NORTH ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET

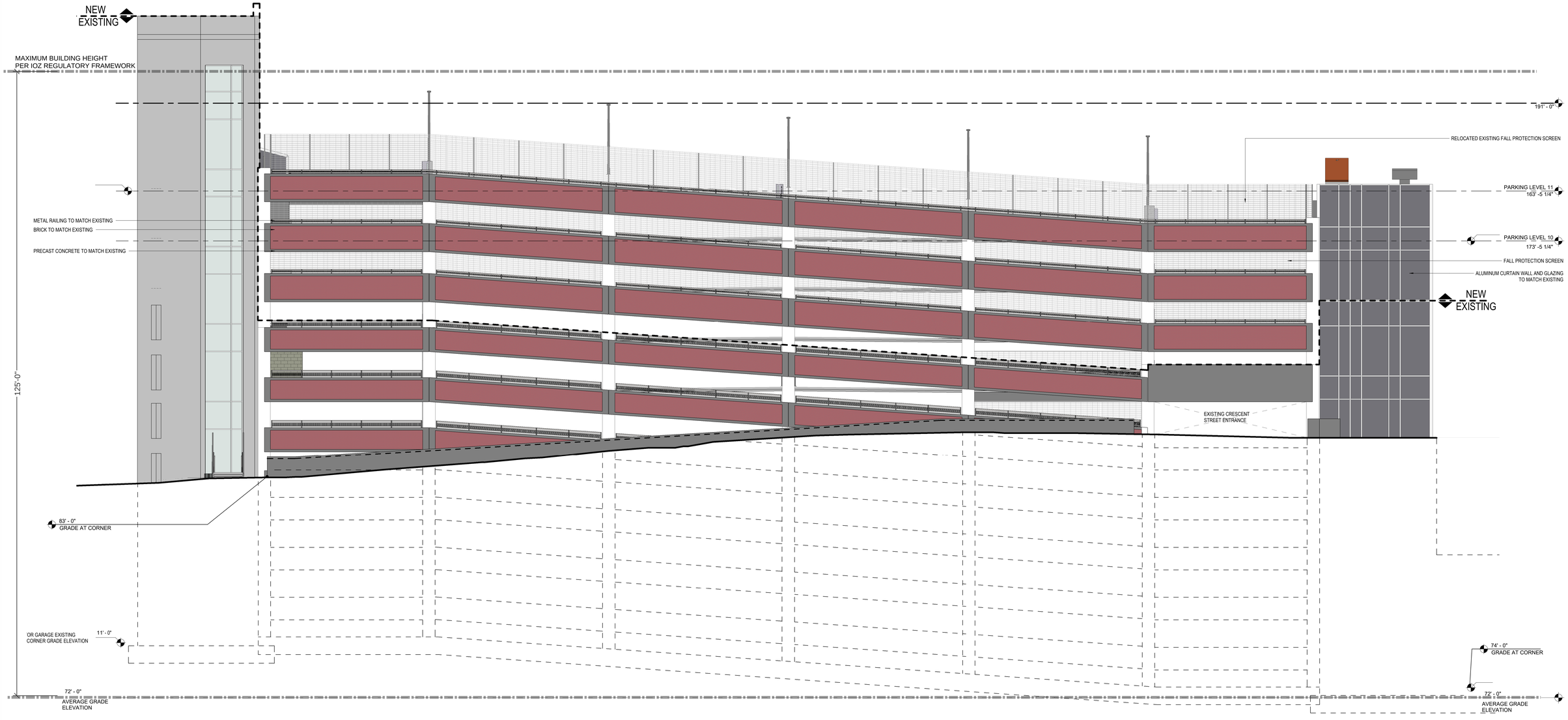


Visitor Garage Expansion

WEST ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET



Visitor Garage Expansion

SOUTH ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET

Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: January 19, 2018

Re: MMC East tower and Visitor Garage Vertical Expansion
22 Bramhall Street
Maine Medical Center (MMC)

Project #: 2017-289 CBL: 053D007/054H001/064C001

Meeting Date: January 23, 2018

I. INTRODUCTION

Maine Medical Center (MMC) has requested a preliminary review of the Level III Site Plan Application to extend the existing East Tower vertically by two stories (approx. 60,000 sq ft) to accommodate 64 single-occupancy inpatient beds, and to extend the existing Visitor's Garage on Congress Street by 3 stories vertically to provide an additional 225 parking spaces. The application also refers to work at the Central Utility Plant and includes the relocation the Helipad to the top of the East Tower.

It is understood that the 64 single-occupancy bedrooms will not add patient capacity as they would allow existing double-occupancy patient rooms elsewhere to be single-occupancy.

The application is the first of three Site Plan applications associated with the short-term MMC expansion plans. The proposals follow on from the City's recent adoption of an MMC Institutional Overlay Zone and the associated Institutional Development Plan and Regulatory Framework (both attached to this Memo). The review includes aspects of the MMC IOZ Regulatory Framework that required action at the time of the first site plan (TDM and Signage Plans).

It is anticipated that there will be two PB Workshops on the East Tower/Visitors Garage proposals. This first Workshop is expected to focus on the following topics:

- Design, including Street Activation
- Helipad
- Construction Management Plan overview, plus East Tower

Future topics would include:

- Construction Management Plan in more detail
- Transportation Demand Management (TDM) Plan
- Site Plan Details

Applicant: Maine Medical Center; Alexander Green, Director of system Planning and Regulatory Compliance
Agent and Engineer: Sebago Technics Inc
Architect: Perkins + Will; Jeffrey Keilman, Senior Project Manager, Senior Associate

Required Reviews:

Applicant's Proposal	*Applicable Standards*
Addition of 60,940 sq ft to the East Tower; addition of 77,021 sq ft to the Visitor Garage	Level III Site Plan Review 14-526
Additions that would increase height; helipad	MMC IOZ Regulatory Framework

Waiver Requests: None identified at this time.

II. PROJECT DATA

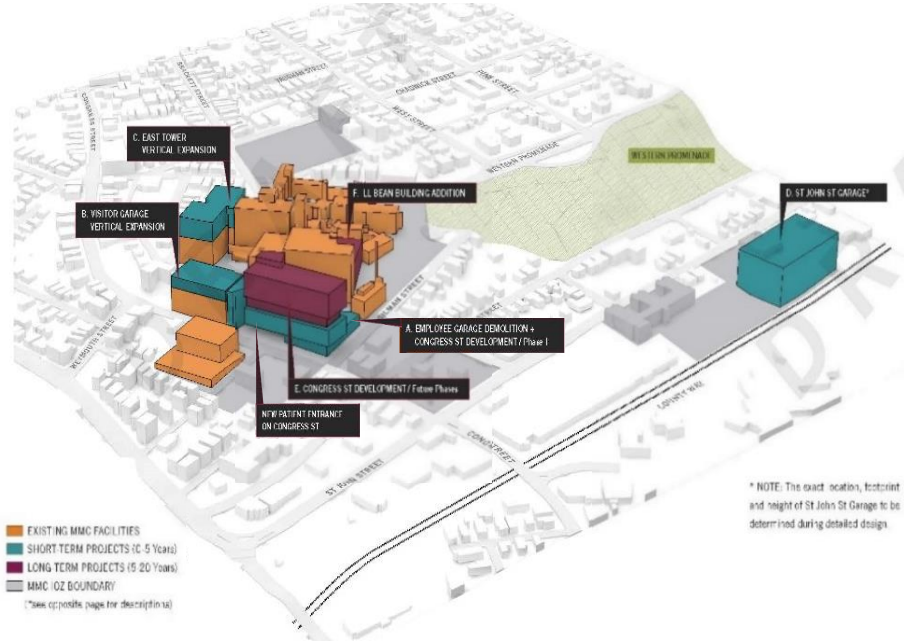
SUBJECT	*DATA for EAST TOWER*	*DATA for VISITORS GARAGE*
Existing Zoning	IOZ	
Existing Use	Hospital	Hospital parking garage
Proposed Use	Hospital- adding single rooms for 64 patient beds	Hospital parking garage – 3-story addition for 225 parking spaces
Parcel Size	12.52 acres	
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 415,220 sq ft 0sq ft 0sq ft	 415,220 sq ft 0 sq ft 0 sq ft
Total Disturbed Area	0	0
Building Footprint **--Existing** **--Proposed** **--Net Change**	 30,470 sq ft 0 sq ft 0 sq ft	 25,674 sq ft 0 sq ft 0 sq ft
Building Floor Area **--Existing** **--Proposed** **--Net Change**	 152,350 sq ft 213,290 sq ft 60,940 sq ft	 200,000 sq ft 277,021 sq ft 77,021 sq ft
Parking Spaces **--Existing** **--Proposed** **--Net change** **--# of handicapped spaces**	 2,328 (entire campus) 2,553 225 6	
Bicycle parking Spaces **--Existing** **--Proposed** **--Net change**	 193 (entire campus) 0 0	
Estimated Cost of the Project	TBD	

III. SITE AND CONTEXT

The approved Institutional Development Plan (IDP) (Attachment 4.) provides information regarding the hospital site and its development over the years, along with context information. Photographs of the existing buildings (to be expanded) are included below.

IV. PROPOSALS

The submissions include a description of the proposals and plans and graphics of the proposed "overbuild". The graphic to right is extracted from the IDP in Att.4 (pages 44/45)

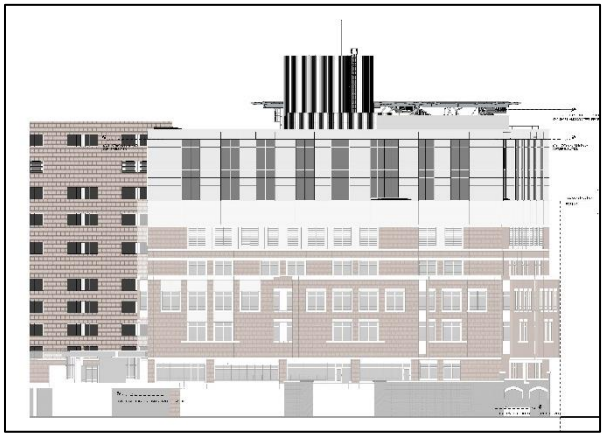


East Tower: Addition of two floors (64 patient rooms, single-occupancy):

Existing from south

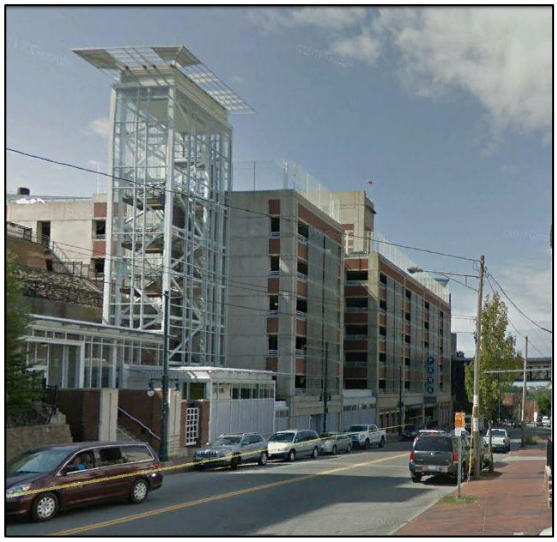
Proposed, comparable rendering (see WSQ – 1)

Rendering as viewed from east (Ellsworth Street) showing secondary helipad (see WS Q – 1 which includes additional renderings & before/after comparisons)



South elevation, showing part of east elevation (Plan 14F)

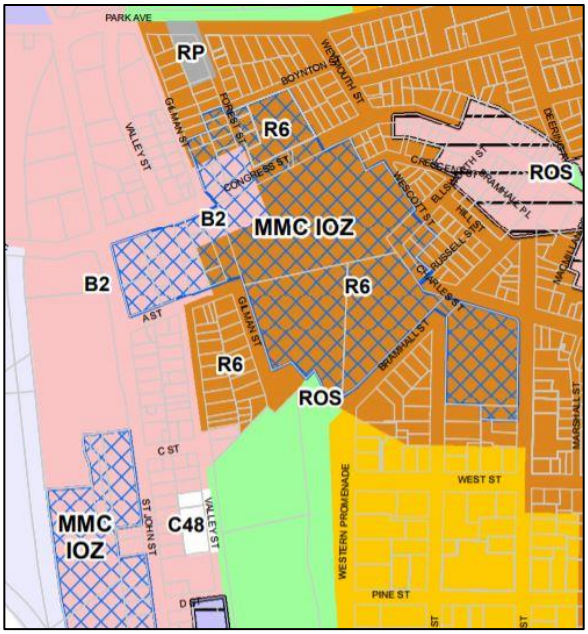
Visitor Garage: 3 additional floors of parking spaces: (renderings not submitted)



Existing as viewed looking west

Proposed west elevation

V. ZONING ANALYSIS and REVIEW



Overview

The zoning map at right shows the recently adopted MMC IOZ in blue cross hatch:

The MMC IOZ *Regulatory Framework* (Attachment 5) is the zoning ordinance that applies to the proposed site plan projects; this was reviewed by the Planning Board in early 2017 and adopted by the City Council in December 2017.

The proposed additions to the East Tower and the Visitors Garage were included in the IDP background material for the zoning amendment, and the proposals now under site plan review are consistent with what was discussed during that review.

Table 1 below summarizes the Regulatory Framework provisions that apply to the current review and includes staff comments:

TABLE 1 RELEVANT EXTRACTS FROM MMC IOZ REGULATORY FRAMEWORK (entire document is in Att. 5)

MMC IOZ Regulatory Framework provisions	***MMC Site Plan submissions to address the RF provisions***	***Staff Comments***
(c) Uses: Note under list: 1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.	The current submission does not include proposals for the existing empty retail units along the base of the Visitors Garage.	Staff consider that the entire building is subject to the review and therefore MMC needs to develop strategies to address any "blank walls' along Congress Street in accordance with the Regulatory Framework and the IDP Design Guidelines/Fig 5.15 re Street Activation (p117 of IDP in Att. 4 to this Memo)
Maximum Building Height: East Tower: 150 feet (the IDP indicated a future height of 141 ft including helipad)	Submitted proposals indicate a height of just over 146 ft but part of the helipad appears to be higher	Clarification required as to helipad height compared to the average grades identified in the IDP.
Maximum Building Height: Visitors Garage: 125 feet (the IDP indicated a future height of 119 ft)	Submitted proposals indicate a height of 119 ft excluding part of the stair tower	Appears to meet dimensional requirements as stair and elevator overruns are considered appurtenances.
Transition Zones – none at these locations	N/A	N/A
Setbacks: East Tower - 20 ft Visitors Garage - up to 40 ft	N/A	N/A

Design Guidelines	See Design Review below	
(f) Signs: 1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP. 2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.	The applicant has submitted the Signage Plan (Plan 11) that illustrates how the existing signage fits into the campus. The current proposals for the East Tower and Visitors Garage do not necessitate any additional signage, so this plan comprises the current Signage Plan.	Staff anticipate that this Strategy would be updated to take account of the signage needs of the new St Johns Garage and new hospital building (future site plans).
(g) Transportation: (TDM) 1. Transportation Demand Management (TDM): a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time. b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors. c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.	The applicant has submitted a TDM Plan (Att. WS S-7).	This is currently under review and detailed comments will be forwarded to the applicant this week, and this will be a topic for the second PB workshop.
(g) Transportation: (Parking) 2. Parking: a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods. b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.	The applicant submitted a Parking Demand Study (Att WS S-8) that identifies shortfalls in both visitor and employee parking supply and elaborates on the background information in the approved IDP. The proposals will temporarily remove 2 levels of parking during construction, but will result in a net increase of 225 visitor parking spaces when complete.	Tom Errico, City's consultant traffic engineering reviewer, comments: *During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.* Staff note that 6 handicapped spaces are included in the 225 new spaces, and request confirmation that this meets ADA requirements
(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.		Staff would like to understand how the Visitor Garage integrates into the surrounding pedestrian network both during construction and after it is completed.
(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.		The Construction Management Plan may have impacts on off-premise infrastructure; this is under review.

1. Helipad. MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions: a. Setback requirements of Section 14-327(3); and b. Fencing requirements of Section 14-327(4).	See review comments below.

Design Review in context of MMC IOZ Regulatory Framework

The City's Urban Designer, Caitlin Cameron, has provided a preliminary design review in the context of the Regulatory Framework (Attachment 3); it is quoted below:

The projects at 22 Bramhall Street – East Tower and Visitor Garage expansion - were reviewed according to the adopted IOZ IDP and Regulatory Framework standards by Caitlin Cameron, Urban Designer, Jean Fraser, Planner, and Nell Donaldson, Senior Planner.

In the case of both proposals, the new construction is limited to vertical expansion of existing buildings. The proposals do not alter the footprints, plans, existing materials, or access points to each building. Therefore, the design evaluation is generally limited to the impact on the overall campus design, long views to the campus, and Congress Streetscape.

Design Review Comments*: (questions and unmet standards in red)*

- Please provide a rendering showing the visitor garage project in context on Congress Street.
- More information is requested regarding materials – label materials on elevations.
- More information is requested regarding site lighting.

IDP Design Guidelines

1. New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan, and best practice design standards for healthcare.

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East Tower: The addition introduces a new design aesthetic to the MMC campus. The applicant proposes this as the first of several phases that incorporate the vision for the campus as described above and in the applicant's submittal. Staff think this design creates a more visible and contemporary identity to the campus – if approved, future designs should be evaluated for cohesiveness with this new direction.

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3. Building entrances will be oriented toward, located adjacent to, accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

East Tower: Not applicable – entrances remain the same with existing ground floor.

Visitor Garage: The existing building has two retail entrances facing Congress Street and steps with a door to access the circulation tower for the garage. The garage currently only has vehicle entrances facing Congress Street which pedestrians can use but there is not a designated pedestrian path/door. From Crescent Street, there is a pedestrian path and doorway.

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Visitor Garage: The proposal maintains the existing material palette of brick, concrete, and metal screen. Staff agree this is a logical selection to provide consistency to the building. However, staff are concerned about the loss of the canopy on the stair tower as an architectural feature.

6. The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach (helipad excluded).

East Tower: The rooftop mechanicals are screened in a way that minimizes their impact and appearance and are visible only from a few directions.

Visitor Garage: Rooftop appurtenances have not been adequately screened or integrated into the building design - this is especially of concern for the long views.

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node identified in the City's Comprehensive Plan.

East Tower: Not applicable

Visitor Garage: Staff request the applicant provide more information regarding the ground floor activation facing Congress Street. The building includes storefront, doors oriented to Congress Street, canopies, and adequate site lighting, however, the space is currently vacant and has a translucent film covering the windows and impeding the visual connection and activity from the sidewalk.

8. In areas where the occurrence of limited blank facades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:
- providing elements of visual interest along any black walls facing public streets, and,
- working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

East Tower: Not applicable
Visitor Garage: See comment 7. above.

9. Any parking structure within the IOZ will:
- screen views of cars from the public rights-of-way
- provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches
- for garage structures within 20' of the public right-of-way, meet street activation intent according to street type

East Tower: Not applicable
Visitor Garage: Screening methods will follow the established existing design – solid wall with metal mesh railing with a trellis accent – this current condition successfully screens cars/headlights from Congress and Crescent streets. The current design includes a curtain wall stair tower with an accentuated canopy feature – this roof element appears to be removed from the new addition and rooftop mechanicals are shown without screening or design integration. Staff suggest keeping an element like the canopy will help screen the rooftop mechanicals and meet the guideline of providing architectural interest on upper floors – especially considering with the increased height, these elements will become even more visible from long views. For street activation, see comments 7. above.

Building Relationship to Public Street

1. Urban Main Street (Congress Street)

MMC buildings abutting Congress St will be designed to:
- *Provide urban-levels of density*
- *Create an urban street wall that provides a sense of enclosure to the public realm*
- *Have their primary orientation towards Congress Street*
- *Activate the public sidewalk with building entrances, lobbies, etc.*
- *To the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk*
- *To the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors, and the broader Portland community*
- *Support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.*

In addition to the guidelines listed above, buildings that have frontage on Congress Street and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress Street.

East Tower: Not applicable
Visitor Garage: The building addition maintains the urban street wall already established. The existing building's primary orientation is towards Congress Street. Entrances are not proposed to be changed – there are several existing entrances oriented to Congress Street. For activation, see comment 7. above.

Crime Prevention Through Environmental Design (CPTED)

MMC will incorporate the following design strategies that have been demonstrated to deter crime:
- *Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials*
- *Providing clear and properly-sized signs in safe locations to ensure safe wayfinding*
- *Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines*
- *Designing street-level elevations to minimize potential hideouts*

- *To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"*
- *Generating foot traffic on public sidewalks with pedestrian entrances*

  East Tower: Please indicate any changes to the site lighting or ground level building interface.

  Visitor Garage: Please indicate any changes to the site lighting or ground level building interface.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Both projects increase building height and will inevitably have some shadow impact – the garage height will increase the shadow cast across Congress Street but, as the applicant has argued, shadows on Congress Street are unavoidable due to the terrain, orientation, and street position. Refer to Plan 13 for shadow analysis of the approved IDP building heights – a couple of residential buildings are impacted in the winter by the increased height.

Context-Sensitive Lighting Design – More information is requested regarding site lighting for both projects.

Mitigating Wind Impact – No information was provided to evaluate this item.

Preserving and Enhancing Viewsheds – The building expansions do not impact Western Promenade viewsheds. Each of these expansions will increase the visibility of the campus from multiple long views.

Regulatory Framework

1. Mixed Uses: . . . *healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP. . . .*

East Tower: Not applicable

Visitor Garage: See comment 7. above.

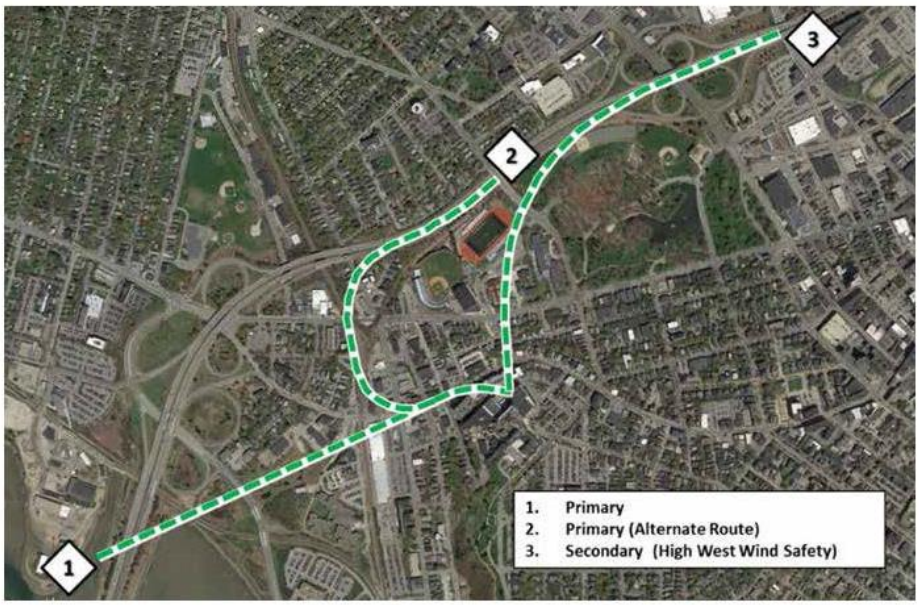
Review of helipad in context of Regulatory Framework, IDP & Zoning (Helistop Overlay Zone)

There is an existing "Single Configuration" helipad (heliport) on the top of the existing employee garage; the helipad needs to be relocated as the garage is proposed to be demolished in the near future. MMC's IDP (Att. 4, page 94) includes background information regarding the proposed relocation of the helipad to the top of the East Tower, and the objective to retain flight routes as existing. It includes the following graphic which indicates that a third route would be added for high wind situations:

The Submission includes the FAA application and supporting information (Att. WS S-5) that:

- Shows the same flight routes but does not qualify the use of the new (third) route as being secondary;
- Clarifies that the proposal is for a "Double heliport configuration" with a connecting taxiway. The primary landing area would be at the northeast corner of the East Tower which is the furthest (approximately 240 feet) from residential properties;
- Indicates that the number of landings per month could rise over the next 5 years from 250 per month to 750 per month.

Fig.4.5 Proposed Flight Routes for the new MMC Helipad



NOTE: Path #3 is new and will only be used under high wind conditions if required by the Federal Aviation Administration.

The Helistop Ordinance requires:

(a) Helistops which have more than five landings per month:
(1) All such helistops must comply with all applicable Federal Aviation Association regulations, including those for marking of landing areas.
(2) All take-off, landing and parking areas at such a helistop site shall be surfaced with grass or with a dust-proof material.
(3) Each landing pad shall be set back at least two hundred (200) feet from any residence, school or church. Each landing pad shall be set back at least fifty (50) feet from any commercial or industrial structure. All setbacks shall be measured from the edge of the landing pad.
(4) The area in which a landing pad is located shall be enclosed by a fence or other barrier of not less than three (3) feet in height or shall be secured by a locked gate, as approved by the fire department.
(5) All such helistops shall be subject to review under article V of this chapter.

The Regulatory Framework does not require MMC to meet provisions (3) and (4) - it is understood that they relate to the fact that the secondary landing area is less than 200 feet from a few residential properties (appears to be about 80 feet) and that fencing is not practicable, although this is not discussed in the IDP.

Staff request further information should be submitted regarding the sound impacts of the proposed helipad. Although the applicant has submitted a *Heliport Noise Study* (Att WS S-6), further clarity is requested as to the scale and nature of the sound impacts compared to the existing situation.

VI. STAFF REVIEW – SITE PLAN

The following comments cover relevant items that are not already addressed above. Comments relate to the East Tower and Visitor Garage proposals as the proposals for the Central Utility Plant have not been outlined in detail except in the CMP.

Transportation Standards:

- *Impact on Surrounding Street Systems*
  The vertical expansion of the East Tower is to allow for the conversion of double-occupancy rooms elsewhere into single rooms and replacing the patient beds in the 64 single bed rooms being added. Thus the number of hospital beds remains unchanged.

  The vertical expansion proposals have been reviewed by the City's consultant Traffic Engineer Tom Errico and he comments:
  This proposed project is not expected to increase traffic volumes and thus at completion will not have a significant impact on traffic conditions. I would note that a Traffic Movement Permit will be required in conjunction with the Congress Street Medical Office Building where additional employees are programmed. The TMP will require a comprehensive Traffic Impact Study. (Att 1)

***Environmental Quality*:**

- *Water Quality/ Stormwater Management/Erosion Control* - this is still under review

Public Infrastructure and Community Safety

- *Public Safety & Fire Prevention* - this is still under review

- *Availability and Adequate Capacity of Public Utilities* - Letters from the utilities confirming capacity should be submitted as part of the final submission.

Site Design

- *Exterior Lighting* - Further information is required regarding any exterior building mounted lighting or revised exterior lighting
- *HVAC and Mechanical Equipment* - the applicant has indicated this information is not yet available and a condition of approval may be appropriate

- *Signage and Wayfinding*- Staff are concerned about the pedestrian access/routes and associated wayfinding along Congress Street and would request further consideration be given to that issue in conjunction with addressing the street activation.

Construction Management Plan

The applicant has submitted Construction Management Plan (prepared by Turner, the contractor for this project) and an associated Traffic Evaluation of traffic and parking impacts related to the CMP for the East Tower (Atts WS I – 3 and WS S – 9B respectively).

The applicant will provide an overview at the PB Workshop. Staff requested further information and review for the proposed closure of Congress Street (weeks), particularly regarding the impacts on emergency services and on traffic flows and detour routes. The staff review of the CMP includes representatives from the Police, Fire, Parking, DPW, Traffic and Planning. The staff suggest that the CMP be a key topic for the second PB workshop.

The staff review has therefore focused on the East Tower CMP proposals that include the closure of Wescott Street and conversion of Crescent and Ellsworth to two-way operation. The City's Consultant Traffic Engineering reviewer Tom Errico has commented (Att 1.):

The following are initial East Tower Traffic Control Plan comments:

- *The City does not support the conversion of Ellsworth Street to two-way flow between Congress Street and Crescent Street. The applicant has noted this to be acceptable. The plans should be revised to reflect this change.*
- *It is unclear if the bump out at the Crescent Street/Wescott Street intersection is to be removed. If it is to remain, vehicle turning templates should be provided for review and approval.*
- *Detailed routing and vehicle turning information for truck deliveries shall be provided for review and approval.*
- *It is my understanding that the Fire Department will be providing comments regarding concerns for Emergency Department vehicle access. (see Att 2)*
- *Specific parking information shall be provided as it relates to fully understanding current on-street parking usage, location of on-street parking prohibitions, and how existing properties parking needs will be addressed given loss of on-street spaces.*

VII. NEXT STEPS

- Provide further details regarding the Central Utility Plant proposals
- Respond to design comments and related requests for info (eg re height, street activation, site design details; integration with pedestrian network)
- Address concern about interim loss of parking and associated management
- Clarify sound impacts of the relocated helipad
- Address comments on East Tower CMP
- Submit utility letters for final submissions
- Address Planning Board comments

ATTACHMENTS

Memo Attachments

1. Initial Traffic Comments
2. Fire Department Comments on CMP
3. Preliminary Design Review Comments
4. MMC Institutional Development Plan (IDP) as approved by PB
5. MMC IOZ Regulatory Framework (Ordinance 14-282) as adopted by CC

Public comments (none received to date)

Applicants Submittal (numbering as per applicant)

WS - 1 Cover Letter
WS A Application Form
WS A -1 East Tower Data Sheet
WS A -2 Visitor Garage Data Sheet
WS B Right Title Interest
WS C State and Federal Approvals
WS D Zoning Assessment
WS E Easements
WS G Financial and Technical Ability
WS H - Boundary Survey
WS I - 3 CM Plan January 18
WS J Traffic Study
WS M City Master Plans
WS N Utilities
WS O Solid Waste
WS Q - 1 Design Review Update January 18
WS Q Design Review
WS R HVAC
WS S - 2 Bicycle Parking
WS S - 3 East Tower Code Report
WS S - 4 Visitor Garage Code Report
WS S - 5 Heliport FAA Submittal
WS S - 6 Heliport Noise Study
WS S - 7 TDM Plan
WS S - 8 Parking Demand Study
WS S - 9B CM East Tower MOT January 18
WS S-10 Project Description

Plans (numbering as per applicant)

Plan 1 Boundary Survey (8 sheets)
Plan 2I Recording Plan
Plan 2J Recording Plan
Plan 5 Site Plan
Plan 10A Visitor Garage Lighting Plan
Plan 10B Heliport Lighting Plan
Plan 11 Signage Plan
Plan 13 Shadow Analysis
Plan 14A East Tower Level 6 Floor Plan
Plan 14B East Tower Level 7 Floor Plan
Plan 14C East Tower East Elevation Janua...
Plan 14D East Tower North Elevation Jan...
Plan 14E East Tower West Elevation Janu...
Plan 14F East Tower South Elevation Janu...
Plan 14G Visitor Garage Level P8 Floor Pl...
Plan 14H Visitor Garage Level p8 Floor Pl...
Plan 14I Visitor Garage Level P10 Floor Pl...
Plan 14J Visitor Garage Level P11 Floor Pl...
Plan 14K Vistitor Garage East Elevation Ja...
Plan 14L Visitor Garage North Elevation J...
Plan 14M Visitor Garage West Elevation J...
Plan 14N Visitor Garage South Elevation J...
WS Q - 1 Design Review incl renderings1....

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC Visitor Garage and East Tower Project - Initial Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com> Thu, Jan 18, 2018 at 11:33 AM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Jean – the following outlines my initial comments as it relates to the above noted project. Please note that the comments do not include a review of the Congress Street Traffic Control Plan.

- This proposed project is not expected to increase traffic volumes and thus at completion will not have a significant impact on traffic conditions. I would note that a Traffic Movement Permit will be required in conjunction with the Congress Street Medical Office Building where additional employees are programmed. The TMP will require a comprehensive Traffic Impact Study.

- During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.

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- Specific parking information shall be provided as it relates to fully understanding current on-street parking usage, location of on-street parking prohibitions, and how existing properties parking needs will be addressed given loss of on-street spaces.

If you have any questions, please contact me.

Best regards,

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

MEMORANDUM

To: FILE

From: Jean Fraser

Subject: Application ID: 2017-289

Date: 1/18/2018

1/17/2018

Circulation--The ambulance emergency room entrance should remain open to one way traffic. The area can be difficult to maneuver in its current design. Making the patient delivery area a two way drop off doesn't seem achievable.

1/17/2018

The Fire Dept is opposed to the closing of Congress Street, doing so will create difficulty for all ambulances in getting their patients to the hospital emergency room. The proposed detours will create high congestion on all streets leading to the hospital emergency department.

Planning and Urban Development Department
Planning Division

Subject: IOZ Design Review – 22 Bramhall (Maine Medical)

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, January 17 2018

The projects at 22 Bramhall Street – East Tower and Visitor Garage expansion - were reviewed according to the adopted IOZ IDP and Regulatory Framework standards by Caitlin Cameron, Urban Designer, Jean Fraser, Planner, and Nell Donaldson, Senior Planner.

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East Tower: The applicant indicated the material choices are limited by construction constraints as well as the existing material palette. The proposal is simple white metal panel intended to visually blend with the existing white materials as well as provide a light, recessive quality to the increase in mass and height. Vi sual interest will be provided by material pattern, fenestration, and shadow lines created by angled windows on each façade.

Visitor Garage: The proposal maintains the existing material palette of brick, concrete, and metal screen. Staff agree this is a logical selection to provide consistency to the building. However, staff are concerned about the loss of the canopy on the stair tower as an architectural feature.

6. The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach (helipad excluded).

East Tower: The rooftop mechanicals are screened in a way that minimizes their impact and appearance and are visible only from a few directions.

Visitor Garage: Rooftop appurtenances have not been adequately screened or integrated into the building design - this is especially of concern for the long views.

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node identified in the City's Comprehensive Plan.

East Tower: Not applicable

Visitor Garage: Staff request the applicant provide more information regarding the ground floor activation facing Congress Street. The building includes storefront, doors oriented to Congress Street, canopies, and adequate site lighting, however, the space is currently vacant and has a translucent film covering the windows and impeding the visual connection and activity from the sidewalk.

8. In areas where the occurrence of limited blank facades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:

- providing elements of visual interest along any black walls facing public streets, and,

- working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

East Tower: Not applicable

Visitor Garage: See comment 7. above.

9. Any parking structure within the IOZ will:

- screen views of cars from the public rights-of-way

- provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches

- for garage structures within 20' of the public right-of-way, meet street activation intent according to street type

East Tower: Not applicable

Visitor Garage: Screening methods will follow the established existing design – solid wall with metal mesh railing with a trellis accent – this current condition successfully screens cars/headlights from Congress and Crescent streets. The current design includes a curtain wall stair tower with an accentuated canopy feature – this roof element appears to be removed from the new addition and rooftop mechanicals are shown without screening or design integration. Staff suggest keeping an element like the canopy will help screen the rooftop mechanicals and meet the guideline of providing architectural interest on upper floors – especially considering with the increased height, these elements will become even more visible from long views. For street activation, see comments 7. above.

Building Relationship to Public Street

1. ***Urban Main Street (Congress Street)***

   MMC buildings abutting Congress St will be designed to:

   - *Provide urban-levels of density*
   - *Create an urban street wall that provides a sense of enclosure to the public realm*
   - *Have their primary orientation towards Congress Street*
   - *Activate the public sidewalk with building entrances, lobbies, etc.*
   - *To the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk*
   - *To the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors, and the broader Portland community*
   - *Support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.*

   In addition to the guidelines listed above, buildings that have frontage on Congress Street and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress Street.

East Tower: Not applicable

Visitor Garage: The building addition maintains the urban street wall already established. The existing building's primary orientation is towards Congress Street. Entrances are not proposed to be changed – there are several existing entrances oriented to Congress Street. For activation, see comment 7. above.

Crime Prevention Through Environmental Design (CPTED)

MMC will incorporate the following design strategies that have been demonstrated to deter crime:

- *Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials*
- *Providing clear and properly-sized signs in safe locations to ensure safe wayfinding*
- *Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines*
- *Designing street-level elevations to minimize potential hideouts*
- *To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"*
- *Generating foot traffic on public sidewalks with pedestrian entrances*

East Tower: Please indicate any changes to the site lighting or ground level building interface.

Visitor Garage: Please indicate any changes to the site lighting or ground level building interface.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Both projects increase building height and will inevitably have some shadow impact – the garage height will increase the shadow cast across Congress Street but, as the applicant has argued, shadows on Congress Street are unavoidable due to the terrain, orientation, and street position. Refer to Plan 13 for shadow analysis of the approved IDP building heights – a couple of residential buildings are impacted in the winter by the increased height.

Context-Sensitive Lighting Design – More information is requested regarding site lighting for both projects.

Mitigating Wind Impact – No information was provided to evaluate this item.

Preserving and Enhancing Viewsheds – The building expansions do not impact Western Promenade viewsheds. Each of these expansions will increase the visibility of the campus from multiple long views.

Regulatory Framework

1. ***Mixed Uses: . . .*** *healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP. . . .*

   East Tower: Not applicable

   Visitor Garage: See comment 7. above.

Att. 4

Maine Medical Center
MaineHealth

Institutional Development Plan

Maine Medical Center
MaineHealth

Institutional Development Plan

FINAL / October 9, 2017
Submitted to Portland City Council for Review

This document is valid until superseded by an approved update.

About This Plan

DATE: October 9, 2017
STATUS: Final / Submitted to Portland City Council for Review

Maine Medical Center (MMC) applied in January, 2017 for a zoning amendment to create an **MMC Institutional Overlay Zone (IOZ)** to allow MMC to modernize and expand their Bramhall St campus. The IOZ ordinance that provides the framework for this zoning was enacted by the City of Portland Code of Ordinances effective May 31, 2017.

The IOZ requires eligible institutions to submit an **Institutional Development Plan (IDP)**, a stand-alone document that describes the institution's tentative plans for the future, in addition to a **Regulatory Framework**, a land use code component that establishes the parameters to allow each institution to grow as envisioned in the IDP. The IDP and Regulatory Framework are institution-specific supplements to the more general provisions provided in the IOZ ordinance, and designed to provide a full list of variances from underlying zoning that are adopted by the Portland City Council.

Since January, MMC has met weekly with members of the neighborhood associations and City staff from Planning and other departments, to develop its IDP. This IDP was approved and the accompanying Regulatory Framework was recommended for approval to the City Council by the City of Portland Planning Board on September 26, 2017.

Once approved by the City Council, the MMC Regulatory Framework will establish the boundary for the MMC IOZ and provide zoning requirements that govern MMC's long-term development within the IOZ. Individual projects proposed by MMC in the IOZ in the future for such properties will be reviewed for zoning compliance with the MMC Regulatory Framework and any underlying zoning requirements that are not superseded by the IOZ.

This document was prepared for MMC by Perkins+Will with input from MMC, VHB, Gorrill Palmer, Sebago Technics, Colliers, Turner, and HeliExperts International. MMC would like to thank its neighbors in the Western Promenade, St John Valley, Parkside, West End, and Libbytown and the City of Portland for their contributions to the IDP process.

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CHAPTER ONE

INTRODUCTION

Maine Medical Center has been a member of the Portland community, a Portland landmark and a destination for excellent health care since it was built as Maine General Hospital in 1874. The campus has grown in size and complexity within its footprint to meet growing demand and changes in healthcare technology and care delivery.

ABOUT MAINE MEDICAL CENTER

Maine Medical Center (MMC) is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

MMC is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people. MMC's unique role as both a community hospital and a tertiary referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

The MMC care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout Maine.

Maine Medical Center is named one of "America's Best Hospitals" by US News & World Report. MMC's Trauma Center is the busiest in Maine, providing the most advanced tertiary care in the state.

MISSION, VISION AND VALUES

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for its community
- Educating tomorrow's caregivers
- Researching new ways to provide care

It proudly carries its unique responsibility as Maine's leader in patient care, education and research. MMC is dedicated to the traditions and ideals of not-for-profit healthcare. It provides care to all who seek it.

MMC's efforts to execute its Mission are aimed at achieving a simple, yet powerful Vision: "Working together so (Maine's) communities are the healthiest in America."

MMC is guided by a set of Values, helping to meet and exceed the expectations of those it is privileged to serve. MMC's Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

PROGRAMS AND SERVICES

MMC provides a scope and depth of specialty and subspecialty inpatient and surgical care that is unparalleled in Maine.

MMC is the only Level I American College of Surgeons (ACS) trauma center in Maine and has the only Level III Neonatal Intensive Care Unit (NICU) and the only kidney transplant program in the state. MMC is an American Nurses Credentialing Center (ANCC) Magnet Hospital and has received numerous awards including: Best Regional Hospitals (2016-2017) from US News and World Report, Gold Seal of Approval and Top Performer in Key Quality Measures from the Joint Commission.

MMC is also the leading provider of tertiary services in the State of Maine. Tertiary services are defined as a set of Medicare severity diagnosis-related groups (MS-DRGs) that are rare and complex, require collaboration across treatment modalities, complex treatment decisions dependent upon unique diagnostic tests, regionalized care, and associated with complex co-morbidities and complications.

MMC's clinical services are organized into six service lines listed in **Table 1.1** at right. More information is available on the MMC website at http://www.mmc.org/care-and-services

Table 1.1 List of MMC Service Lines

ADULT MEDICINE	**MMC's Adult Medicine Service Line extends across the continuum of care, spanning from primary care, to emergency and critical care, medical services for hospitalized adults, subacute rehabilitation and long-term care. It includes a wide array of specialty programs and services including Digestive Health, Endocrinology, Geriatrics, Infectious Disease, Nephrology, and Palliative Care. This service line also includes the procedural areas of Endoscopy and Transplantation.**
CARDIOVASCULAR	**MMC's Cardiovascular Service Line addresses the treatment needs of patients with cardiovascular diseases such as coronary artery disease, valvular heart disease, congestive heart failure, arrhythmias, congenital heart disease, and peripheral vascular disease.**
ONCOLOGY	**MMC's Oncology Service Line provides health services to patients diagnosed with cancer such as medical oncology, radiation oncology, gynecological oncology, and surgical oncology.**
SURGICAL	**MMC's Surgical Service Line addresses specific health problems requiring surgical intervention including cancer, cardiovascular disease, eye diseases and injuries, gastric and intestinal diseases and injury, gynecological diseases and injury, joint and bone diseases and injury, neurological and spinal diseases and injury, bariatric, trauma, and genito-urologic diseases and injury.**
NEUROSCIENCES	**MMC's Neurosciences Service Line addresses the treatment needs of patients with neurological diseases such as stroke, epilepsy, neuro-oncology, multiple sclerosis, neuroendovascular diseases, Parkinson's disease, Alzheimer's disease and dementia, neuromuscular diseases, peripheral nerve and muscle conditions, and spine disorders as well as an array of neurodiagnostic services including electroencephalography (EEG) and sleep lab.**
WOMEN'S AND CHILDREN'S	**MMC's Women's and Children's Service Line addresses the health problems and needs of women and of children under 18 years of age with such clinical services as child birth and pediatric subspecialties including, neonatology, pediatric medicine, oncology, cystic fibrosis, gastroenterology and nutrition, cardiology and cardiac surgery, nephrology, neurology, pulmonology, ophthalmology, orthopedics, and urology.**

HISTORY

MMC opened its doors in 1874 as Maine General Hospital on Bramhall Hill, at the northern end of the tree-lined Western Promenade and adjacent to the Bramhall Reservoir.

The campus, designed by architect Francis Fassett, included four pavilions around a central administration building. The east pavilion and two outbuildings were erected first, providing patients with sweeping views of Casco Bay and the Fore River. The hospital was designated as the training facility for the Portland School for Medical Instruction and the Medical School of Maine at Bowdoin College, and had its own School of Nursing. Built of red-brick in Italian Gothic style, Maine General soon became a local landmark and a destination for the most up-to-date medical care in the state.

The opening of Union Station (1888) down the hill at Congress and St John Sts brought commercial uses to the area and improved access to the hospital. The hospital also catalyzed development of the area with medical uses such as the 1891 Maine Eye and Ear Infirmary as well as residential uses. The Western Promenade neighborhood gained prominence at the turn of the century as high-end homes and apartment buildings were built near the hospital and improvements were made to the

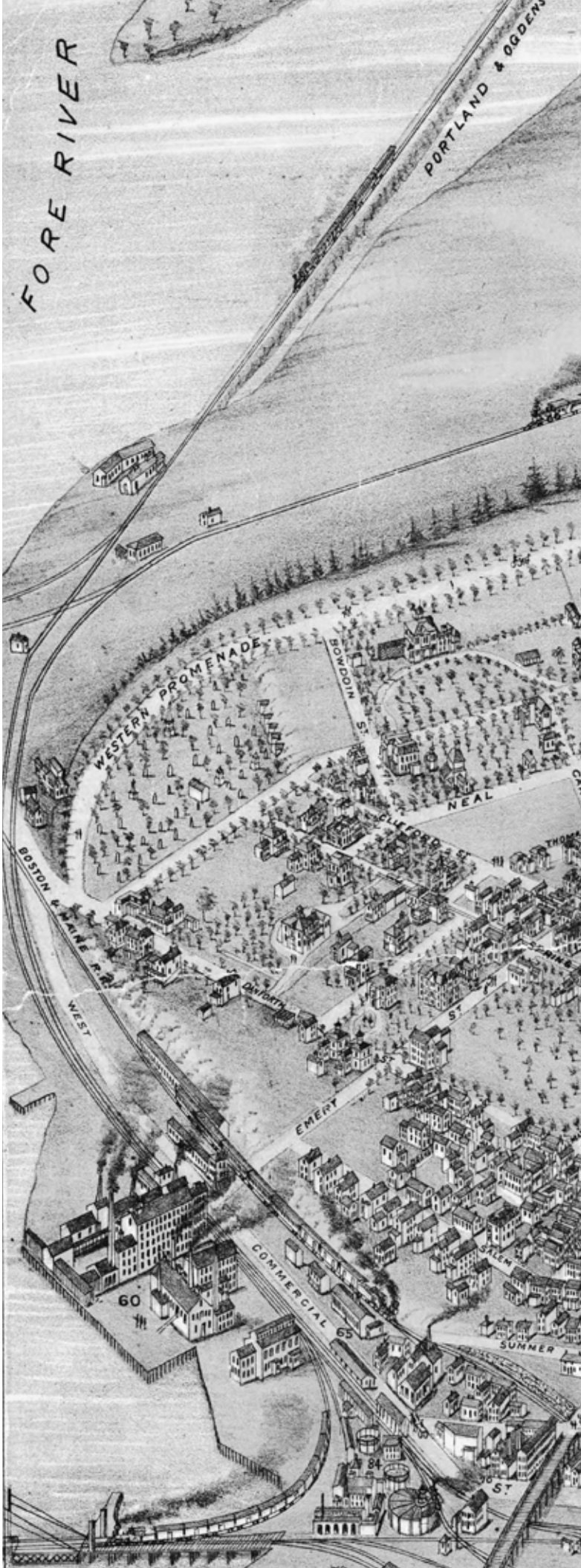


Fig.1.1 1876 Bird's eye view of Portland.

MAINE CENTRAL R.R.
ST. JOHN ST.
CARTER
FOREST
WEYMOUTH
ELLSWORTH
WESTERN PROMENADE
BRAMHALL ST.
CHADWICK ST.
WEST ST.
PINE ST.
VAUGHAN ST.
CARLETON ST.
BRACKETT ST.
CONGRESS ST.
GROVE ST.
PORTLAND ST.
GRANT ST.
SHERMAN ST.
CUMBERLAND AVE.
MELLEN ST.
AVE.
STATE ST.
DEERING
SPRING
CLARK
DANFORTH
PARK
HIGH
YORK ST.
CENTER
10
11
25
26
59

Western Promenade parklands. Maine General Hospital modernized its facilities through the 1920s and added a third pavilion in 1929.

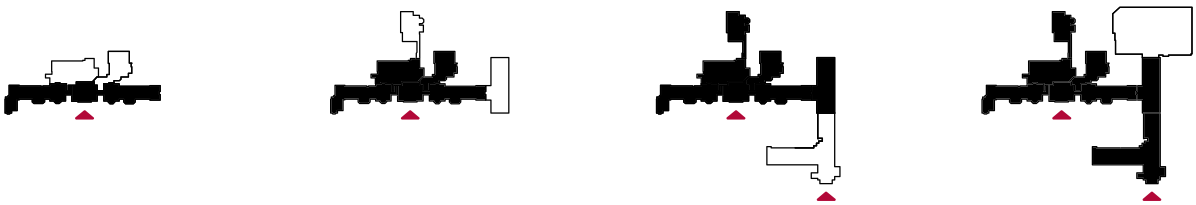
In 1951, Maine General Hospital, the Maine Eye and Ear Infirmary, and Children's Hospital merged to become MMC. Two new pavilions were added in 1956 to provide modern patient rooms. Suburban growth and the construction of interstate highways in the 1960s increased demand for parking at the Medical Center, which was met by converting the Bramhall Reservoir into a surface parking lot (current South Lot).

In 1968, MMC doubled the size of its facilities with the addition of the eleven-story Richards Wing. The campus expanded its footprint down towards Congress St with the addition of its first parking garage (now known as Employee Garage) in the 1970s. In the late 1970s, MMC became a teaching hospital for the University of Vermont College of Medicine.

In 1985, MMC opened the six-story LL Bean Building, another major addition to the campus. The Bean Building housed the new Neonatal Intensive Care Unit (NICU), operating suites, and specialty departments; it also now houses the Barbara Bush Children's Hospital (BBCH). The Dana Building was built in 1987, adding much-needed classroom and conference space to the campus.

Through the 2000s, MMC has renovated and expanded its facilities to meet its role requirements as the highest acuity provider of healthcare in the state. In 2008, MMC opened the 190,000 SF East Tower including new units for prenatal care, labor, delivery and recovery, neonatal intensive care, and mother-baby units. The Emergency Department expanded into the basement of the East Tower the

Fig.1.2 Historical evolution of MMC



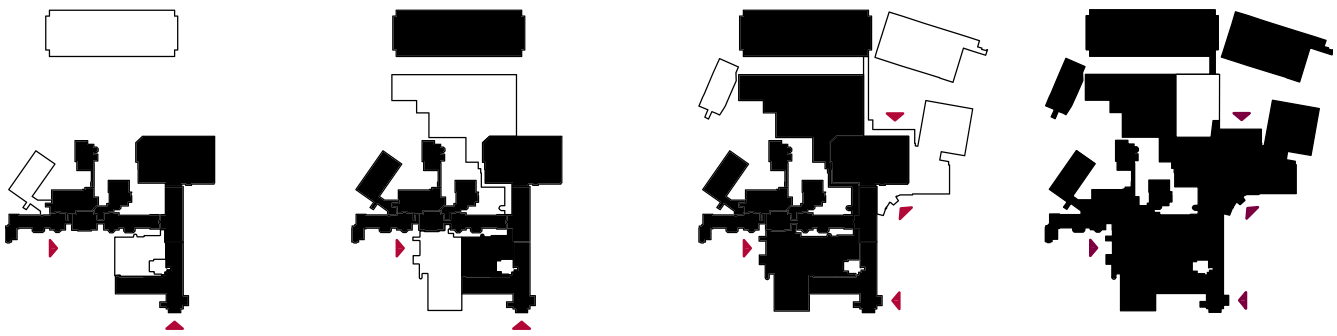
1890s 1920s 1950s 1960s

following year. The campus transformation project also included a new central utility plant and the 512-car Patient and Visitor Garage.

As its partnership with the University of Vermont came to a close, MMC initiated a new training program for medical students at the Tufts University School of Medicine in 2011. Today, MMC also hosts students from the Geisel School of Medicine at Dartmouth and University of New England College of Osteopathic Medicine.

In 2015, MMC completed construction on a portion of the LL Bean building roof to add new operating rooms and perioperative care beds.

Today, MMC is undertaking a new planning effort driven by the need to replace semi-private patient rooms with private rooms and to provide additional surgical capacity. The plan also provides an opportunity to address infrastructure needs, parking, wayfinding, and overall building organization to improve the delivery of care (see **Chapter 2** for details).



1970s **1980s** **2000s** **PRESENT DAY**

CAMPUS CONTEXT

MMC Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress St —Portland's main street that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.

Fig.1.3 Bird's eye view of the campus in its urban context

Fig.1.4 Bird's Eye View of the Campus in Context, Looking North

ADJOINING NEIGHBORHOODS

The 21.8-acre MMC Bramhall campus abuts four distinct neighborhoods. To the west and north is the St John Valley Neighborhood, a diverse area featuring a wide mix of uses including industrial warehouses, a large food processing plant, bus garages and facilities, single-family residential, local and chain restaurants, multi-family rentals, and alternative grocery stores. St John Valley, and the largely residential Parkside neighborhood to its east, are among the most ethnically and racially diverse in Portland. (City of Portland GIS Maps, 2010 Diversity Index). The two neighborhoods share easy access to Hadlock Field, Fitzpatrick Stadium, and Deering Oaks Park north of Park Avenue.

The Western Promenade neighborhood is located to the south of the medical campus. The focal point and namesake of the neighborhood is the 18-acre linear park that wraps the 120-feet tall escarpment, providing sweeping views of the Fore River. Designated as a park as early as 1836, and designed in 1905 by the Olmsted Brothers. The Western Promenade neighborhood and large sections of the adjoining West End neighborhood are included in the West End local historic district in recognition of their cohesive residential character featuring major architectural styles from 1850 to the 1920's (see Historic Resources at right).

ZONING CONTEXT

Development on the MMC campus has been historically governed by Contract Zone agreements C41 (main campus) and C18 (Congress St Medical Building).

At the request of the City, and with input from its neighbors, MMC has developed an Institutional Development Plan (IDP) in the new Institutional Overlay Zone (IOZ). See **Fig.1.5 on page 19** for a map of MMC's IOZ in its zoning context.

HISTORIC RESOURCES

The MMC Bramhall campus abuts the West End Historic District, one of the eleven locally-designated historic districts in the City of Portland (see **Fig.1.5 on page 19** for district boundary). The locally-designed West End Historic District includes the Western Promenade, an 18-acre public park that dates back to the 1830s.

The West End Historic District was added to the National Registry of Historic Places (NRHP) under the name "Western Promenade Historic District" in 1984. The Western Promenade was also added to the NRHP database as a Historic Landscape in 1989.

MMC's IOZ boundary includes the Maine Central Railroad General Office Building located at 222 St John St, which was added to the NRHP in 1988. The IOZ boundary also includes McGeachey Hall at 216 Vaughan St, which is listed as a contributing structure to the Western Promenade Historic District (see **Fig.1.5 on page 19** for locations).

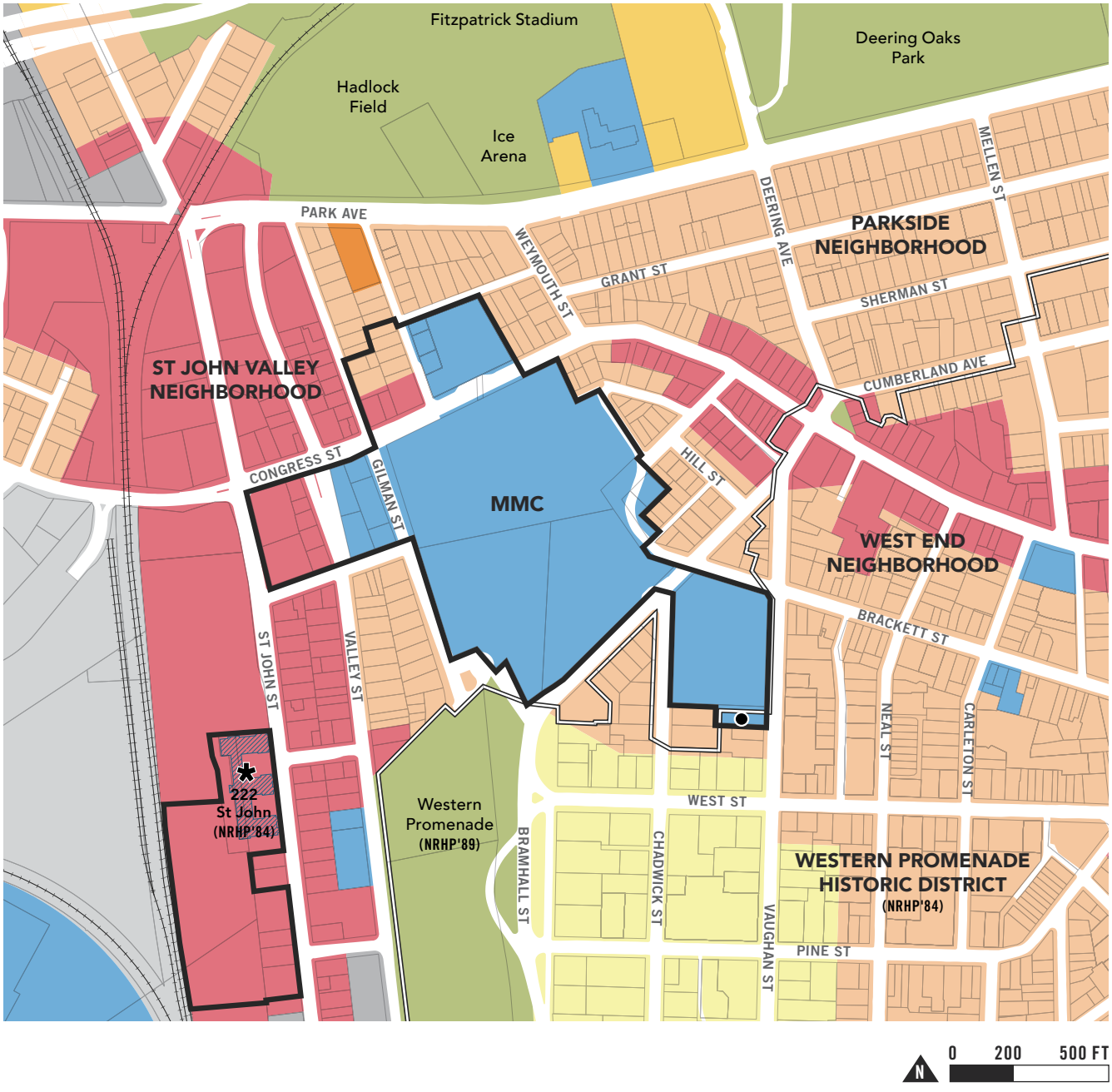
Any development within the IOZ boundary that is adjacent to or within 100 feet of any designated landmark, historic district, or historic landscape district will be subject to applicable requirements listed in Article 5 (Site Plan) of the City of Portland Land Use Ordinance.

Fig.1.5 MMC Campus: Neighborhood and Zoning Context (Data Source: City of Portland GIS)

MMC Institutional Overlay Zoning (IOZ) District Boundary
West End Local Historic District Boundary
NRHP-Listed Structure within IOZ Boundary
Contributing Structure to National Historic District within IOZ Boundary
Parcel Boundaries

CITY OF PORTLAND EXISTING ZONING DISTRICTS

R4 Residential
R5 Residential
R6 Residential
RP Residential Professional
B2 or B2b Business Community
IL Industrial - Low Impact
IM or IMb Industrial - Moderate Impact
ROS Recreation Open Space
Contract Zones (including existing MMC Contract Zones 18 and 41)



PROPERTY OWNERSHIP

MMC owns and leases a number of properties across the City of Portland. These properties are listed and identified on a map on the following pages (see **Fig.1.7** and **Tables 1.2 and 1.3** on the following pages).

Properties that have a functional relationship to the MMC Bramhall campus, which is the subject of this IDP are highlighted with an * on **Tables 1.2 and 1.3**. Per the requirements of the IOZ, a functional relationship is defined as uses or activities that are integrally linked to the day-to-day operations of the MMC Bramhall Campus, without which activity at MMC would be severely limited in one or more services.

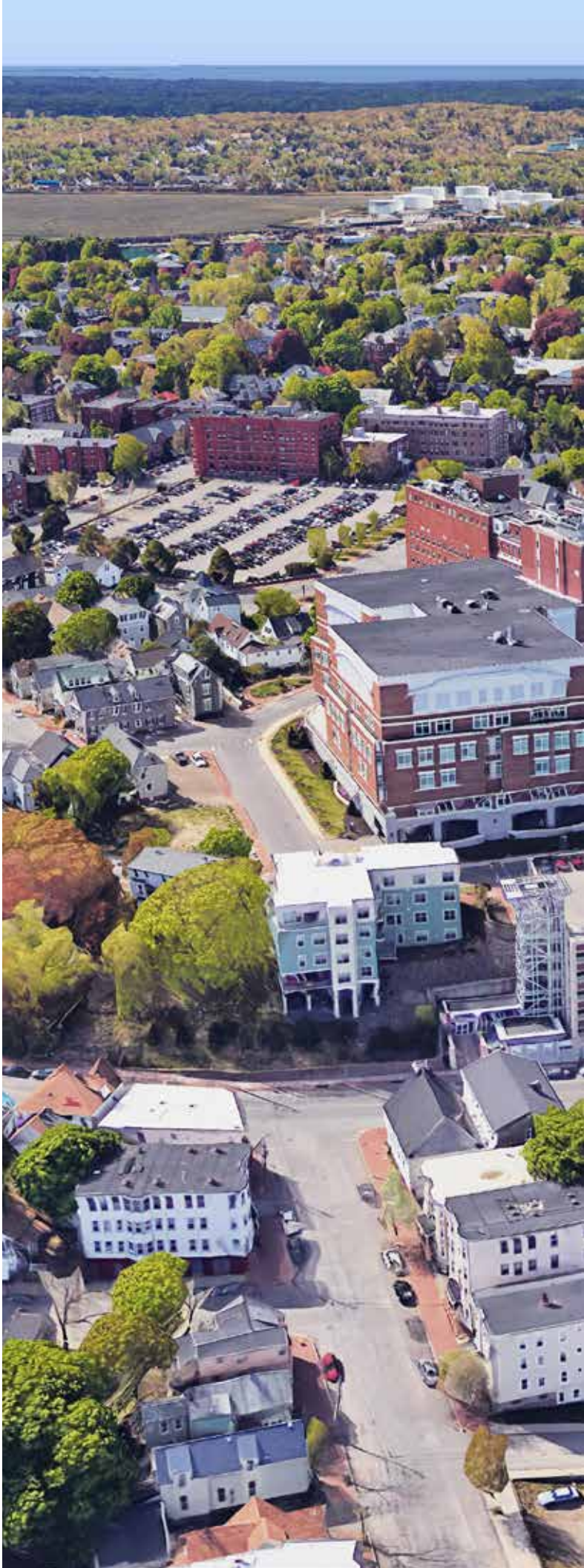


Fig.1.6 Bird's Eye View of the Campus in Context, Looking South

Maine Medical Center

Fig.1.7 Map of MMC-Owned Parcels and Leased Properties

All Parcels within the City of Portland owned by Maine Medical Center or MMC Realty Corp.

Locations where MMC leases space (map extent only)

Table 1.2 List of Properties Owned by MMC within the City of Portland

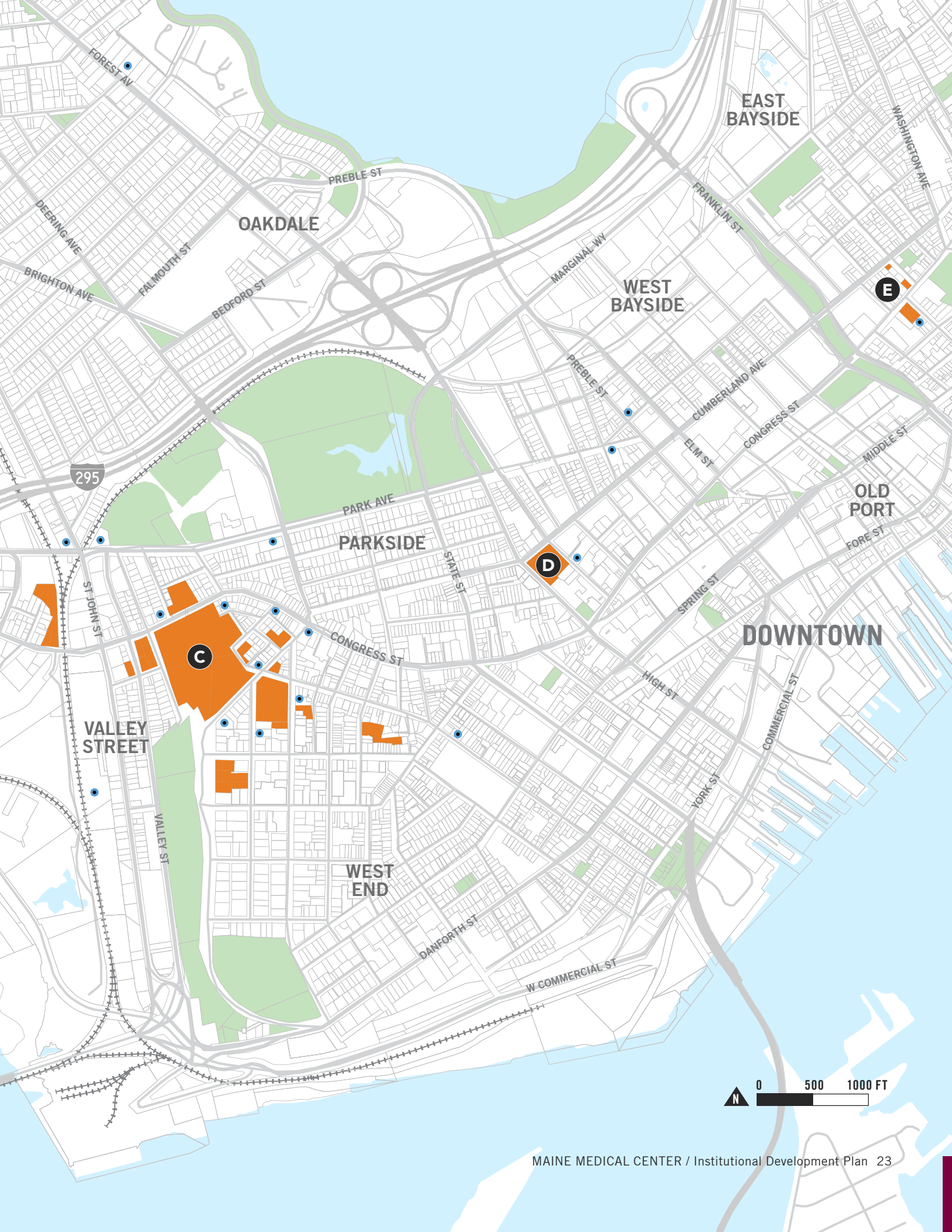
Parcel Address	*Current Use*
A MMC BRIGHTON CAMPUS	
335 Brighton Ave	MMC Brighton
367 Brighton Ave	Residential
27 Hollis Rd	Residential
136 Prospect St	Residential
142 Prospect St	Residential
170 Prospect St	Residential
B MMC BEHAVIORAL HEALTHCARE	
556 St John St	Medical Office
D GATEWAY GARAGE BUILDING	
177 High St	Business Office
429 Cumberland Ave	Business Office
Note: MMC does not own but leases parking spaces in the Gateway Garage.	
E PORTLAND FAMILY MEDICINE	
272 Congress St	Medical Office
263 Congress St	Parking Lot
148 Cumberland Ave	Parking Lot

Parcel Address	*Current Use*
C MMC BRAMHALL CAMPUS AREA	
22 Bramhall St	MMC Bramhall
930 Congress St	Medical Office
932 Congress St	Business Office
887 Congress St	Medical Off. / Pkng
308 Brackett St	Parking (South Lot)
993 Congress St	Parking
995 Congress St	Business Office
98 Chadwick St	Maint. Garage
94 Chadwick St	Parking / Storage
47 Bramhall St	Business Office
229 Vaughan St	Business Office
216 Vaughan St	Medical Office
66 Bramhall St	Medical Office
19 West St	Medical Office
120 West St	Residential
34 Ellsworth St	Vacant Land
40 Ellsworth St	Vacant Land
231 Western Prom	Residential
227 Western Prom	Vacant Land
44 Gilman St	Parking
52 Gilman St	Medical Office
261 Valley St	Parking
262 Valley St	Parking
264 Valley St	Vacant Land

Table 1.3 List of Properties Leased by MMC in the City of Portland

Parcel Address	*Current Use*
131 Chadwick St	Business Office
180 Park Ave	Business Office
233 Vaughan St	Business Office
241 Oxford St	Business Office
315 Park Ave	Business Office
39 Forest Ave	Business Office
509 Forest Ave	Business Office
7 Bramhall St	Bus. Off. / Pkng
794 Congress St	Business Office
295 Park Ave	Medical Office
20 Portland St	Medical Office
818 Congress St	Medical Office
181 High St	Parking
222 St John St	Parking

Parcel Address	*Current Use*
905 Congress St	Parking
98-100 India St	Parking
183 Brackett St	Residential
25-29 Crescent St	Residential
321-325 Brackett St	Res. / Pkng
75 St. James St	Storage
85 St. James St	Storage
Located off the map extent:	
12 Andover Road	Medical Office
1250 Forest Ave	Medical Office
1577 Congress St	Medical Office
901 Washington Ave	Business Office
190 Riverside St	Business Office
87 Central Ave	Medical Office


EAST BAYSIDE
WASHINGTON AVE
FRANKLIN ST
FOREST AV
PREBLE ST
OAKDALE
DEERING AVE
FALMOUTH ST
BRIGHTON AVE
BEDFORD ST
MARGINAL WY
WEST BAYSIDE
E
PREBLE ST
CUMBERLAND AVE
CONGRESS ST
ELM ST
MIDDLE ST
295
PARK AVE
PARKSIDE
OLD PORT
FORE ST
STATE ST
D
SPRING ST
ST JOHN ST
CONGRESS ST
C
DOWNTOWN
HIGH ST
COMMERCIAL ST
VALLEY STREET
YORK ST
VALLEY ST
WEST END
DANFORTH ST
W COMMERCIAL ST
N
0
500
1000 FT

COMPLIANCE WITH THE COMPREHENSIVE PLAN

MMC, being a long term member of the Portland community, recognizes the Comprehensive Plan contains the City's overall goals for growth and change through the articulation of a variety of policy directives and goals for the development. Among other things, the Plan addresses the City's infrastructure, commercial/business development, transportation resources, industry, and commerce and residential housing plans.

The MMC IDP and Regulatory Framework are in basic harmony with the City's overarching goals and policies. With its IDP and Regulatory Framework, MMC has balanced and accommodated the many City goals and policies in a way that advances the City's overall best interests while at the same time addresses the high priority healthcare needs of Portland's residents and the people of the State of Maine. This balancing is exactly the type of flexibility that the City's recently drafted IOZ ordinance is meant to facilitate.

The Comprehensive Plan challenges the City to "support the vision of large, transformative projects [such as the MMC modernization project] through strategic, cost effective, and incremental actions" (*Comprehensive Plan*, p.74).

MMC IDP: COMPLIANCE WITH THE COMPREHENSIVE PLAN

In this IDP, MMC conveys the need to modernize its facility in order to meet the healthcare needs of the people of northern New England. This includes not only upgrading clinical space and providing for the needs of patients and families, but also continuing its investment in its personnel and their ability to travel to and from the workplace and secure needed parking. The adopted 2035 Comprehensive Plan "promotes the orderly expansion of institutional uses, such as educational and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies" (*Comprehensive Plan*, p.45).

Economic Growth

Employee engagement indicators reveal that one of the issues of greatest importance to current and future employees, in addition to compensation, is parking availability. In order to attract a high quality, highly educated workforce, MMC factors into its operations these two important considerations. Following the completion of its short-term modernization project, MMC projects a growth in its employment base into the future in part because of its status as an excellent academic medical center. Portland's Comprehensive Plan promotes the growth in employment base and supports sustainable growth in education and medical institutions (*Comprehensive Plan*, pp. 44 and 88)

Transportation

MMC has considered its transportation needs holistically, factoring into its future development alternative means of transportation. Since 2009, MMC has implemented a Transportation Demand Management (TDM) plan called "Get on Board!". MMC is updating that plan and considering enhancements to encourage more walking, cycling, and public transportation by its employees.

MMC's ability to promote alternative modes of transportation and success in TDM relies on the availability of a regional system of safe and reliable alternative modes of transportation. Therefore, MMC supports the City's effort to 'explore the technical and financial feasibility of a Transportation Management Association (TMA) as a means of improving access to, and mobility around, downtown, and the waterfront.' (Comprehensive plan, p.76)".

MMC has been, and continues to be, committed to the process and has often been cited by the City of Portland Planning Department as a TDM role model in the City.

Environment

A clean environment is important for healing and health. MMC is environmentally conscious and engages in recycling to minimize the generation and environmental impacts of solid waste. The Hospital conserves water when possible, and has switched away from pesticides to more organic landscape solutions reflecting Portland's goal of "model[ling] environmentally sound landscape management practices, such as planting native species, and limiting the use of pesticides and fertilizers" (*Comprehensive Plan*, p. 20). Buildings are built with energy efficiency standards in mind. Local farmers visit the campus weekly during harvest months and employees are encouraged to support the local food movement. The Comprehensive Plan also notes the need to "support a healthy, resilient, and sustainable food system by collaborating with local and regional stakeholders" (*Comprehensive Plan*, p.20).

MMC REGULATORY FRAMEWORK: COMPLIANCE WITH THE COMPREHENSIVE PLAN

In keeping with the goals of the Comprehensive Plan, MMC has projected its future expansion needs, taking into account the neighborhood context in which it is situated. MMC has minimized future expansion into residential areas adjacent to its campus, thereby preserving housing stock in the City (*Comprehensive Plan*, pp. 48-50). It has appreciated the neighborhood involvement in

its zoning process and has been responsive to the concerns raised.

MMC is taking the bold step of reorienting its front entrance to Congress St, which serves as a gateway corridor to the City of Portland. The area presently is commercial in nature and in need of investment and activation as is recognized by the City's *Comprehensive Plan* (pp. 84, 86). Welcoming the public at the new entrance accomplishes a number of land use goals: it adds tremendous activity to the streetscape, with people coming and going. It also eliminates traffic in the residential neighborhoods of the West End and Western Promenade by providing clear wayfinding directly off of Interstate 295 and the major arterials entering the City. Further, investment in this area will transform the area with the expectation that other properties in the vicinity will likewise invest. In fact, the owners of Union Plaza, located at the junction of Congress St and St John St, testified before the Portland Planning Board that they have been waiting for such investment before they took the step of redesigning and investing further in that property. MMC expects, and is excited about, a transformation of the area into a more vibrant, active and clean area, good for local merchants, hospitality businesses, restaurants and residents.

The *Comprehensive Plan* identifies the St John St / Congress St area as a "priority node, an area that has seen disinvestment, grown in sprawling patterns, simply have the potential to serve as focal points for change in the forms of increased density or, height, streetscape improvements, or diversification of uses to better serve neighborhood needs" (*Comprehensive Plan* p. 84, see **Fig.1.8 on page 27**). MMC's IDP will serve as the catalyst to stimulate new development, investment and reinvestment in this area of the City.

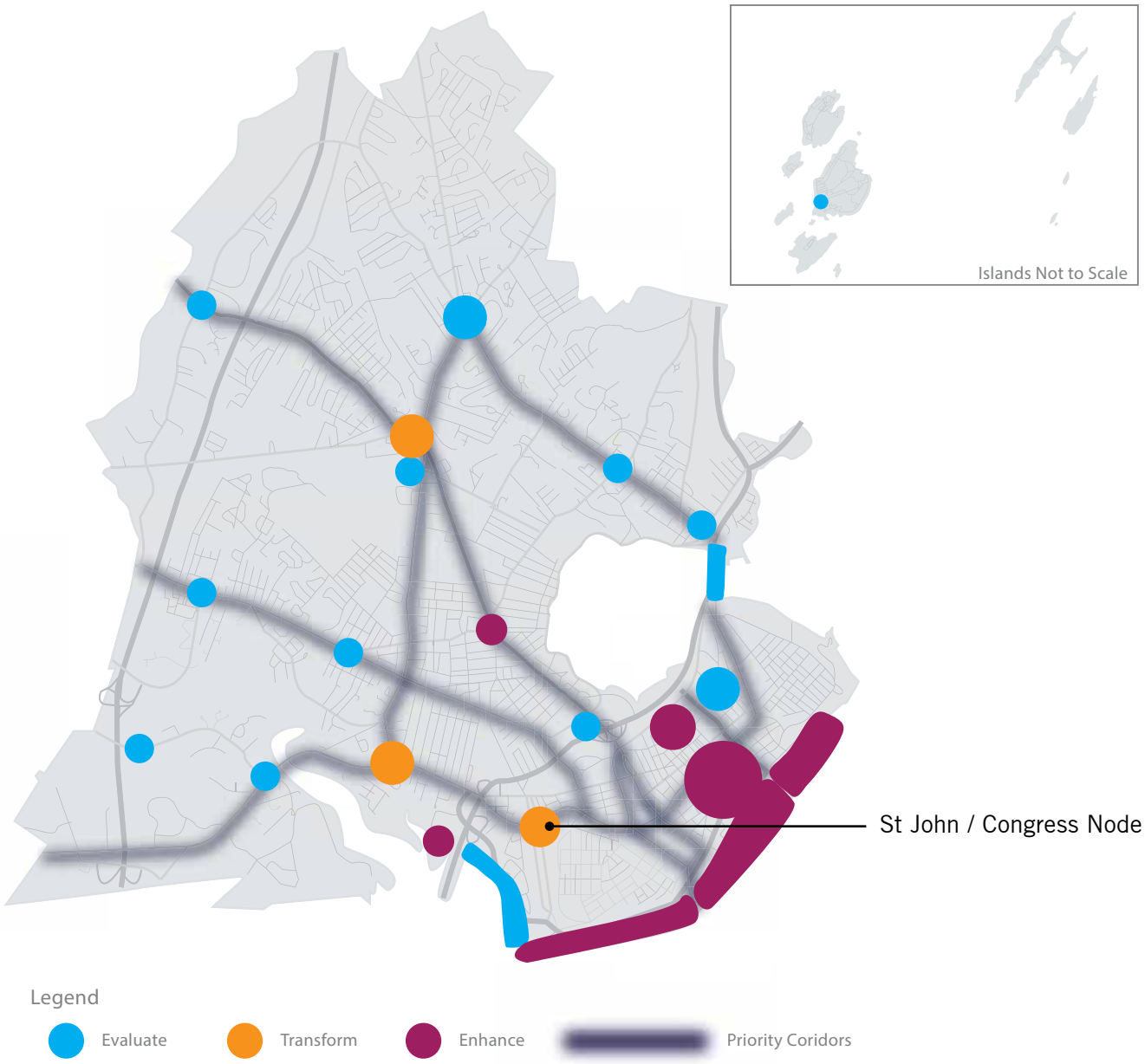
MMC's IOZ Regulatory Framework provides the mechanism for thoughtful, future development to transform the priority corridor identified by the City into an area of "additional mixed uses, higher density growth to take advantage of the transit benefits and services that well-designed, diverse corridors can offer" (*Comprehensive Plan*, p.84).

CONCLUSION

From an analysis of MMC's IDP, it becomes clear that the IDP is consistent with the City's Comprehensive Plan and the purposes contained within the City's IOZ ordinance.

From an analysis of the Regulatory Framework that accompanies MMC's IDP, it becomes clear that the Regulatory Framework is consistent with the City's Comprehensive Plan and with MMC's IDP.

Fig.1.8 Diagram Showing Priority Nodes and Corridors, City of Portland Comprehensive Plan (2017)



PUBLIC INPUT ON IDP

MMC appreciates the importance of maintaining an open dialogue with its neighbors and keeping its neighbors up to date on its evolving plans for replacement and modernization at its Bramhall Campus. In August 2016, MMC leadership met with the neighborhood representatives of its four adjacent neighborhood groups: St John Valley, West End, Western Promenade, and Parkside to explain its need to modernize its campus. Shortly thereafter the Libbytown Neighborhood Association was added to the group.

Since November 2016, MMC has met on a monthly basis with two representatives of each neighborhood ("Expansion Group") to engage in a productive dialogue regarding the City's new IOZ process and MMC's IDP. The City's Planning Director and the City's District 2 Councilor has been invited to each of these monthly meetings. The minutes of the monthly meetings are distributed to the Group members who are asked to disseminate them to respective neighborhood constituents.

MMC also has created a website (http://www.mmc.org/modernization) to ensure open communication with the community at large and specifically its adjacent neighbors. The minutes of each Expansion Group meeting are posted on the website, as are any updates or current events occurring which involve MMC's plan. These include dates for the Planning Board workshops and hearings and a link to the City's Planning website. A designated contact

Fig.1.9 Public Meeting #1 (January 12, 2017): Open House Portion for Collecting Public Comments

email has been established where residents can ask questions, provide suggestions, etc., and a text about sign-up is provided for those who want to receive them.

Finally, to date, MMC has held two larger neighborhood meetings where information has been shared about MMC's needs and its plans to address its issues of bed capacity, operating needs and transportation and parking. These meetings have been well attended and have allowed time for participants to ask questions, voice opinions and to get answers. The minutes of these meetings are posted on the MMC website as well as submitted to the City of Portland.

MAJOR AREAS OF PUBLIC CONCERN

At the initiation of MMC's Master Facility Planning engagement with its neighbors, it was recognized there would be concerns identified by neighborhood residents that would require ongoing dialogue and an openness to new ideas or suggestions. It was understood that there may be many areas where consensus of approach will be reached, and other areas where reasonable minds could differ. MMC and the participants in this process have identified the following "areas of major public concern":

- By far the biggest concern with the MMC proposed IDP revolves around transportation and parking, and specifically with the location of future parking structures;
- The extent of IOZ boundaries and a fear of property acquisition by MMC in residential zones;
- Fear of loss of local amenities, and the desire for mixed-use development that includes street-level retail and restaurants;
- Patients, visitors, or employees smoking in the neighborhood; and,
- Hope for continued public engagement between MMC and its neighbors.

MMC's IDP has addressed each of these concerns in the following chapters. In addition, the public indicated concern with the height of the proposed Gilman St parking structure as well as the need for a well-thought-out Construction Management Plan to apply during the course of construction. MMC has listened to each of these concerns and has addressed them as follows:

- MMC has relocated the parking structure from Gilman St to a nearby location that is tucked behind existing buildings on St John St. By doing so it was able to lower the height of the structure while also removing it from the priority node designated by the City for gateway treatment.
- MMC has hired Turner Construction Company to manage the daily operations of construction. Turner is well-versed in managing construction projects adjacent to residential uses and has agreed to comply with all requirements of the City Construction Management Template, which is attached as an appendix to this IDP.

CHAPTER TWO

MASTER FACILITY PLAN

As it nears its 150th anniversary, Maine Medical Center continues to improve its facilities and services to fill its role as Maine's leader in patient care, education, and research. MMC is engaged in master facility planning to address clinical, building, and parking needs.

MASTER FACILITY PLANNING PROCESS

The goal of any healthcare facility planning process is to evaluate the suitability of the campus or facility to meet anticipated needs for the delivery of healthcare with enough flexibility to allow for adjustments within an ever-changing healthcare market. Future development opportunities are identified in this process.

Maine Medical Center's campus has grown in size and complexity throughout the years. This growth brought changes in programmatic and infrastructure needs and to allow it to serve patients in the State.

PLANNING FACTORS SPECIFIC TO HEALTHCARE

There are a multitude of factors to consider in healthcare planning that are unique to the industry and some that limit the ability to plan too far into the future. Due to the unpredictability of many of these factors, healthcare planning beyond three years with relative accuracy is challenging. Therefore, healthcare planning is typically completed in three-year increments. For example, the rate of change in healthcare payment and policy often follows federal and state election cycles but can change as often as annually. A summary of factors that affect healthcare planning is included in the **Table 2.1** at right.

MMC'S MASTER FACILITY PLAN: PROCESS

Each of the following are aspects of a master facility plan and have been evaluated to determine the needs and projected growth for MMC.

Facility Assessment

The baseline for any master plan is to evaluate the current state of the campus including age of buildings, capacity of infrastructure, and appropriateness of building layout to accommodate the modern delivery of healthcare. This helps the organization identify areas which must be addressed by any future facility work.

Programmatic Requirements

Anticipating the healthcare needs of a community is challenging beyond a three-year period. Healthcare facilities are designed to last several years and attempt to anticipate change by allowing for flexibility and multi-use spaces. Best-practices and industry standards in healthcare delivery are used as benchmarks to anticipate programmatic needs.

Adjacencies

Maximizing key programmatic adjacencies is next in developing a functional master plan once a campus baseline and programmatic requirements are understood. Currently dispersed programs and long travel distances existing on the campus are to be evaluated and studied as an opportunity for improvement. Assessing the flow patterns and travel distances enables proper reorganization of program adjacencies for current and future design interventions.

Table 2.1 Planning Factors Specific to Healthcare

Factor	Definition
POPULATION	Changes in utilization due to population growth: — Population increase or decrease — Population aging — Population distribution — Consumer preference
EPIDEMIOLOGY	The underlying causes of disease (divided into two categories): — Disease-based: Estimates the incidence and prevalence that are impacted in the long-run by preventative measure (i.e. vaccinations effectiveness) — Behavioral-based: Changes in disease incidence and prevalence due to behavioral and sociocultural factors (i.e. obesity, smoking, diet)
ECONOMICS	Macro-economic factors that affect healthcare utilization: — Employment — Healthcare Consumer Price Index — Gross domestic product growth or decline — Employer-based coverage levels — Benefit level and out-of-pocket expense — Regional/Local healthcare environment
PAYMENT & POLICY	Legislative and market-driven reform, including specific payment and policy innovations that will impact utilization: — Health insurance coverage expansion — Bundled payment initiatives/pilots — Accountable Care Organizations (ACOs) — Publicly-funded prevention and wellness initiatives
INNOVATION & TECHNOLOGY	Structural technology that shifts the site at which care is delivered or innovations that affect utilization across different care settings: — Imaging and diagnostics — New therapeutics — Pharmaceutical advancements — Quality innovations
SYSTEMS OF CARE	Increased efficiency resulting from better care coordination and serve integration across various care sites: — Clinical Integration: Use of evidence-based practices and elimination of redundant care — Alignment: Coordination between providers, including inpatient and outpatient providers — Information Technology: Includes computerized physician order entry (CPOE) and e-care
WORKFORCE AVAILABILITY	The healthcare workforce is highly specialized which requires years of training. The availability of qualified individuals can severely limit a healthcare organization's ability to provide care.

KEY INSTITUTIONAL NEEDS

MMC's facility needs are multi-factorial but can be summarized into four categories:

1. Clinical Need
2. Building Need
3. Campus Reorganization
4. Parking Need

1. CLINICAL NEED

Increasing Severity of Case Mix

MMC treats Maine's sickest patients and estimates that the average patient seeking care at MMC will continue to get sicker. MMC's case mix index (CMI) was 1.86 in fiscal year 2015 (October – September); the highest in the state of Maine. A hospital's case mix index is calculated by finding the average severity of diagnosis-related groups at that hospital. The average case mix index for a hospital in the United States is 1.31 (CMS.gov). MMC's CMI grew to over 2.00 in fiscal year 2016 and is expected to continue to increase in the future.

Bed Shortage

Over half of MMC's inpatient beds are located in semi-private rooms (see **Fig.2.2)**. MMC closes an average of 60 inpatient beds in semi-private rooms every day to prevent infection due to disease-resistant organisms (DROs), or to address behavior related issues or other room sharing restrictions. This, along with construction closures for renovations and repairs, reduces MMC's licensed bed capacity of 637 beds to an effective bed capacity closer to 560 on an average day (see **Fig.2.3).**

On a routine day, MMC can expect approximately 100 admissions from Surgery and the Emergency Department and 35 to 50 transfer requests per day from other healthcare and provider organizations. When 500 patients are in the hospital and over 60 beds are closed, a limited number of inpatient beds are available for new patients. Inpatient beds are specialized for medical/surgical, intermediate care,

Fig.2.1 MMC's Case Mix Index: Historic Data and Projections

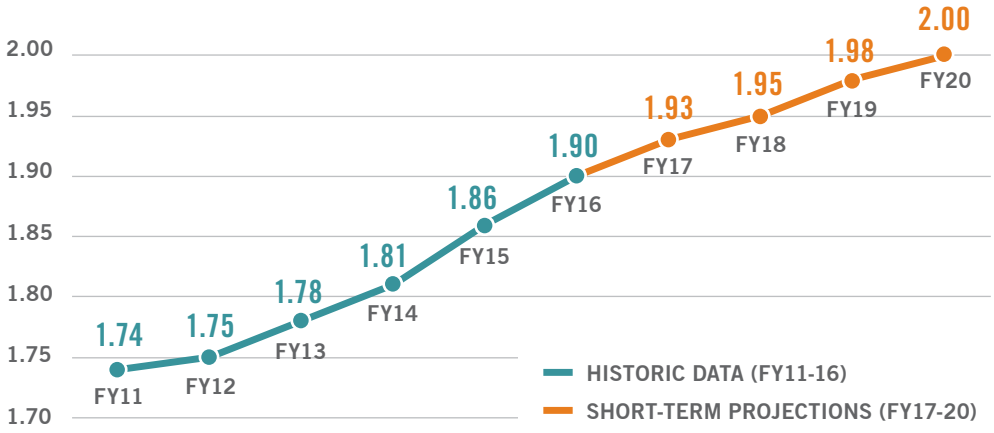


Fig.2.2 Existing Inventory of Private vs Semi-Private Beds

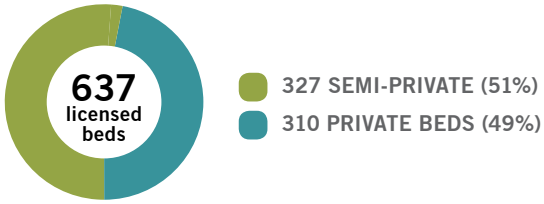
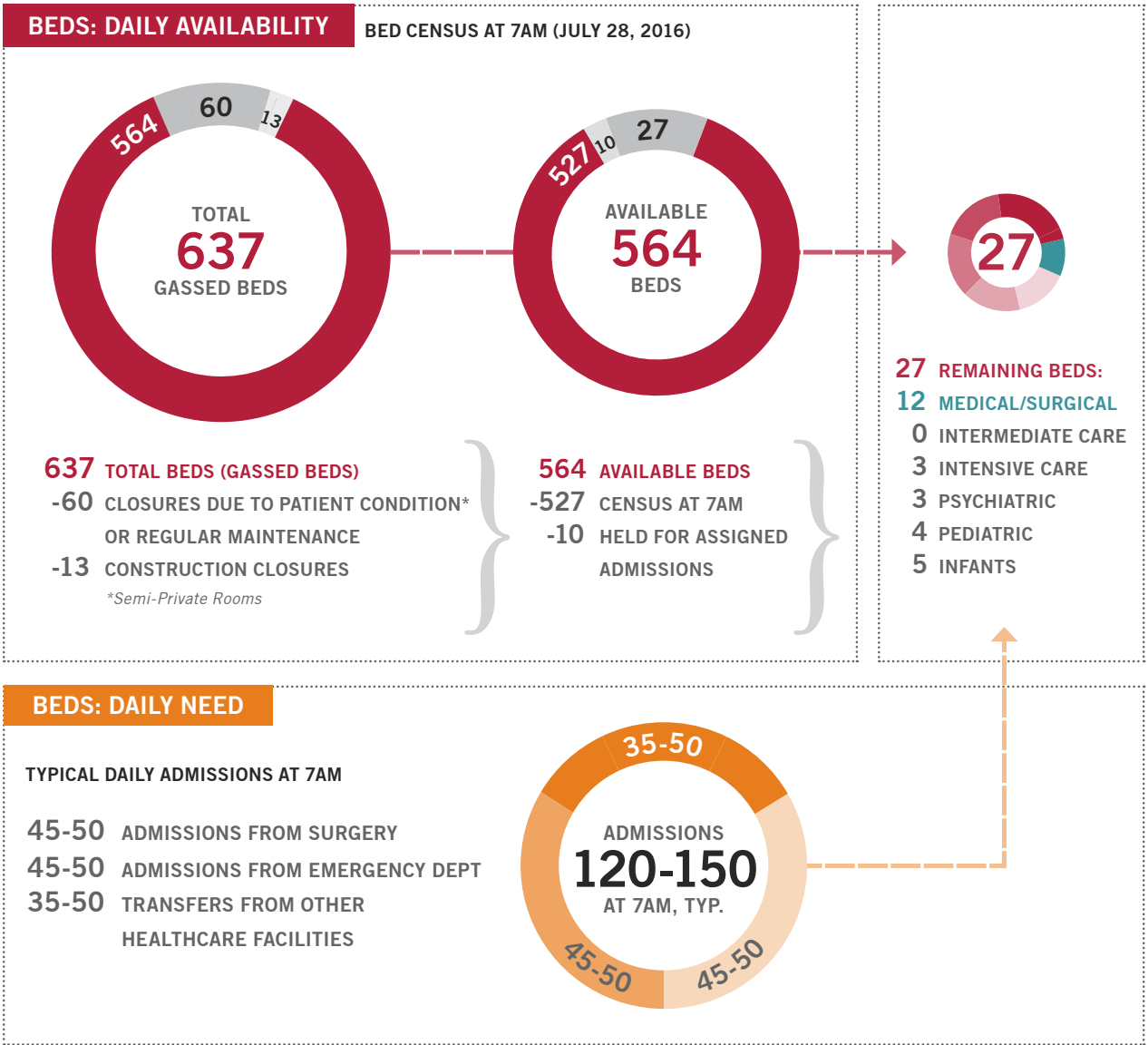


Fig.2.3 A Day in the Life of MMC: Bed Shortage



intensive care, psychiatric, pediatric, or infant care services. The actual number of beds available for specific populations of patients is much smaller. For example, if a patient needs a critical care bed but, the only beds that are available are general medical/surgical, then MMC struggles to meet that patient's needs.

Fig.2.3 demonstrates a snapshot of the challenge MMC is faced with daily to meet the needs of the community due to bed shortages. The challenge is expected to grow in complexity as patients get sicker and require highly specialized care. Many of the rooms are also too small and not flexible enough to meet the demands of the growing universality of medical equipment. The Master Facility Plan recommends adding private patient rooms and procedural capacity to meet current needs and to plan for the future. Adding new private rooms was also identified as a key strategy to decompress existing buildings, maximizing infrastructure capacity.

2. BUILDING NEED: AGING FACILITIES

The age of campus buildings is the first key element of assessing the overall suitability as structures for continued use in healthcare delivery. Facilities at MMC date back to the 1870's with the construction of the Maine General Building. Since the early 1900s, MMC has grown to meet the needs of patients. Close to 77% of MMC's clinical activities occur in buildings more than 30 years old.

MMC regularly conducts building assessments to inform future investment and development decisions on campus. The assessments evaluate the condition of building structure and systems, and compliance with current building codes and regulations including fire safety. The 2015 assessment illustrates the age and condition of the buildings on campus (see **Fig.2.4 and Fig.2.5**). Among those that are listed, continued investment is cautioned in the Pavilions, the Richards Building and the LL Bean Building, which together host a large percentage of the hospital's bed inventory. These include a large number of semi-private beds that must be replaced by beds in private rooms to conform to current patient care standards. The Employee Garage is identified for replacement in the short-term due to its structural challenges.

MMC's Care teams work collaboratively with MMC's Facilities and Engineering teams to ensure patients are cared for in the best possible environment. This requires continuous maintenance and improvements to the facilities. The remaining opportunities for

improvement and retrofits in the existing buildings are marginal. It is impossible to enlarge operating rooms or make semi-private rooms private without major disruptions to the delivery of patient care, reduction in capacity, major facility expansion, or some combination.

The proposed short-term projects (see page 40) will partially replace and modernize MMC's campus to meet anticipated future need. Proposed patient rooms will be private and adaptable to the level of care needed by patients. They will be "universal rooms" capable of being occupied by a wide spectrum of patient populations from intensive care to general medical or surgical care. Procedure rooms will be large enough to fit the equipment and technology needed for the complex procedures that patients increasingly require at MMC.

3. CAMPUS REORGANIZATION

Healthcare facility plans seek to optimize adjacencies between critical departments to reduce travel distances across campus for staff and patients.

Currently dispersed programs and long travel distances present an opportunity for future improvement on the MMC campus. The planning team assessed multiple flow patterns and travel distances to enable proper reorganization of program adjacencies to improve safety and efficiency of healthcare delivery, and ease of wayfinding for patients and families.

4. PARKING NEED

MMC hosts a wide variety of people on the Bramhall campus every day. Patients, families, staff, and students all require access to the facility. Patients and families from all over northern New England come to MMC for care. These people do not live close enough to take advantage of alternative methods of transportation like buses, cycling, or walking that are provided locally. Clinical and support staff require safe, reliable, and often emergent, access to the facility in order to provide services to patients. Providing parking is a priority at MMC, and a key driver of the Master Facility Plan (see **Chapter 3. Transportation Plan** for details).

Fig.2.4 Existing Facilities by Age

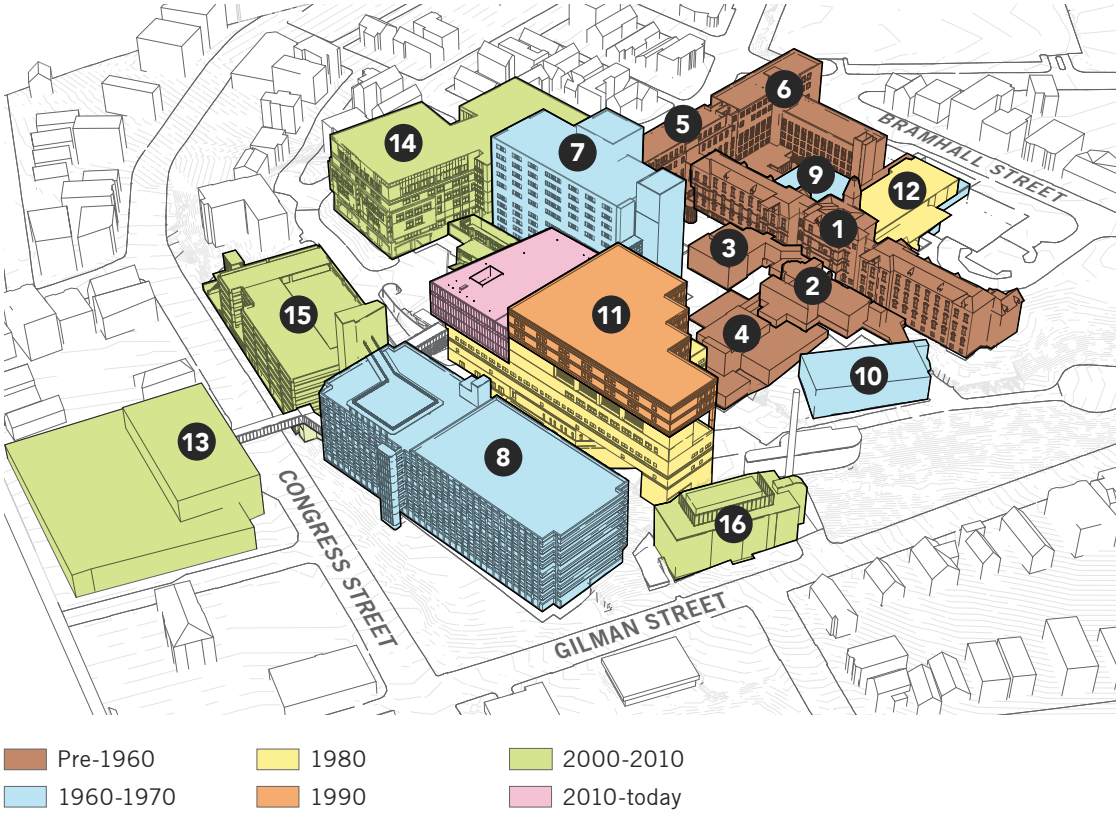


Table 2.2 Inventory of Existing Facilities

#	Building Name	Date	Gross SF
1	Maine General	1870s	72,920
2	Annex B	1870s	36,250
3	Annex C	1870s	13,190
4	Annex A	1929	10,110
5	Pavilion A	1929	66,380
6	Pavilions C & D	1956	83,460
7	Richards Building	1968	228,920
8	Employee Garage	1970s	--
9	Diagnostics Building	1976	89,150
10	Engineering Services Bldg	1978	23,840
11	LL Bean Building	1985	231,830
12	Dana Building	1987	19,310
13	Congress St Medical Office Building	1999	47,000
14	East Tower	2008	200,000
15	Patient and Visitor Garage	2008	--
16	Central Utility Plant	2008	--
		TOTAL	**1,122,360 GSF**

Fig.2.5 2015 Facility Assessment Results

Continued investment in this building is:

Recommended Cautioned Not recommended for future use.

See Table 2.2 on opposite page for building numbers.

PROJECTED DAILY CENSUS

While the number of patients, visitors, and employees on MMC's Bramhall campus varies day-to-day, a daily census estimate can be produced for a typical week day using a variety of data sources, including the annual patient counts (see **Table 2.3 at right**). The estimated daily census of individuals on campus is included in **Table 2.4** and exceeds six-thousand individuals.

The anticipated change in campus users over time is summarized in **Table 2.4**. MMC developed this estimate considering the following summarized factors:

- MMC is Maine's largest medical center, the only American College of Surgeons Level 1 trauma center, only American Academy of Pediatricians Level III nurseries and the largest academic medical center, in partnership with Tufts University School of Medicine and is therefore best equipped to meet the rising patient need.
- The number of Maine residents seeking care outside of Maine has been decreasing over the past several years.
- MMC's share of inpatient discharges has increased over the past several years.
- MMC's Case Mix Index is increasing.
- Complex healthcare services are consolidating across the country.

MMC uses national healthcare consulting firm Sg2 and The Advisory Board to consider additional factors impacting the evolving healthcare industry and local demand for services. Additional factors considered in the volume estimate include the following and those listed in **Table 2.1 on page 33**:

- Changes in healthcare utilization as a result of changes in the population within the hospital's service area;
- Changes in the underlying causes of disease (i.e. incidence and prevalence of disease and the impacts of a focus on prevention) and behavioral-based impacts to health (i.e. smoking and obesity);
- Macro-economic factors affecting healthcare utilization (i.e. employment, employer-based insurance coverage, health care consumer price index);
- Legislative and market-driven healthcare reform;
- Innovations in technologies and models of care;
- Improvements in the systems of care that improve coordination among providers; and,
- Continuous process improvements within care models that reduce potentially avoidable admissions and 30-day readmissions.

The Projected Daily Census is the basis of calculations for future campus transportation needs discussed in the following chapter.

Table 2.3 Historic Data: Annual Census of Patients on Bramhall Campus (FY 2013-2016)

	2013	2014	2015	2016
Inpatient Discharges	29,253	29,401	30,196	30,889
Outpatient Activity	138,626	132,257	140,862	154,434
Bramhall Outpatient Clinics	39,829	40,694	38,209	39,709
TOTAL	**207,708**	**202,352**	**209,267**	**225,032**

Table 2.4 Individuals on Campus on an Average Week Day: 2016 Estimates and 2026 Projection

	2016 (FYE Sept-Oct)	Forecast, 2026	Projected 10-Year Growth	CAGR (2016-2026)
Inpatient Discharges	100	110	7.84 %	0.76 %
Inpatient Visitors	250	270	7.84 %	0.76 %
Outpatient Activity	600	620	4.45 %	0.44 %
Outpatient Visitors	600	620	4.45 %	0.44 %
Bramhall Outpatient Clinics	150	150	-1.79 %	-0.18 %
Employees: Shift 1 (inc. volunteers)	3,640	3,900	6.96 %	0.67 %
Employees: Shift 2	210	220	6.96 %	0.67 %
Employees: Shift 3	520	550	6.96 %	0.67 %
Students on Campus: Medical	100	110	10 %	0.96 %
Students on Campus: Nursing	100	100	10 %	0.96 %
Other Students (PA, Pharma, etc.)	20	25	10 %	0.96 %
Non-MFP Related Contractors	25	25	--	--
TOTAL / AVERAGE	**6,315**	**6,700**	6.43 %	0.63 %

CAGR = Combined Annual Growth Rate

Assumptions:

- Daily inpatient discharges for 2016 estimated from annual count, using six-day weeks to accommodate for reduced activities Sun-Tue.
- Daily outpatient activity for 2016 estimated from annual count, using five-day weeks.
- Inpatient visitors estimated at 2.5 per patient for the base year of 2016.
- Outpatient visitors estimated at one per patient for the base year of 2016.
- 60% of employees are estimated to be on campus at one time for the base year of 2016.

IDENTIFICATION OF PROJECTS

In considering all possible scenarios for development to meet the goals outlined above, the Master Facility Plan has identified the following necessary projects needed to modernize of the MMC Bramhall campus:

- Vertical expansion of East Tower to add private, universal patient rooms;
- Removal of the Employee Garage, which is nearing the end of its structural lifespan;
- Construction of a new building in place of the Employee Garage that can provide new private, universal patient rooms and surgery suites in close proximity to the Emergency Department and the hospital's core diagnostic and treatment services located in the LL Bean Building;
- Providing a new patient entrance on Congress St that clarifies the arrival sequence for the majority of patients and visitors arriving on campus via Congress St, and parking in the Visitor Garage; and,
- Construction of a new Employee Garage within walking distance to campus will provide reliable access to parking spaces for all campus employees who choose to drive to work.

See **Fig.2.6** on the opposite page for an illustration of projects included in the Master Facility Plan.

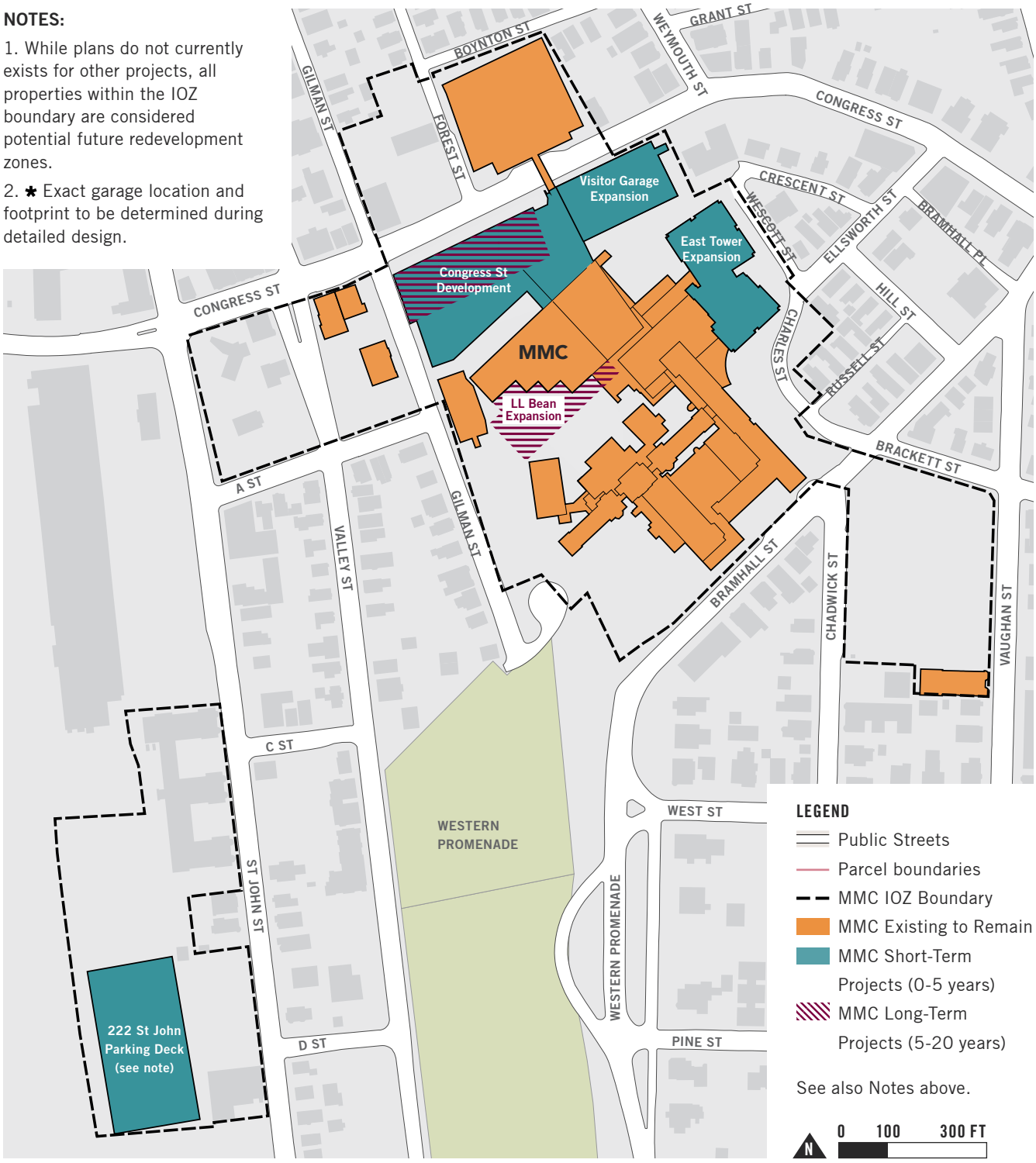
The short- and long-term project plans do not represent the only projects within this timeframe. Due to the various factors impacting healthcare planning and their short horizons, there may be other projects proposed within this timeframe.

Fig.2.6 MMC Facilities Master Plan: Projects

NOTES:

1. While plans do not currently exists for other projects, all properties within the IOZ boundary are considered potential future redevelopment zones.

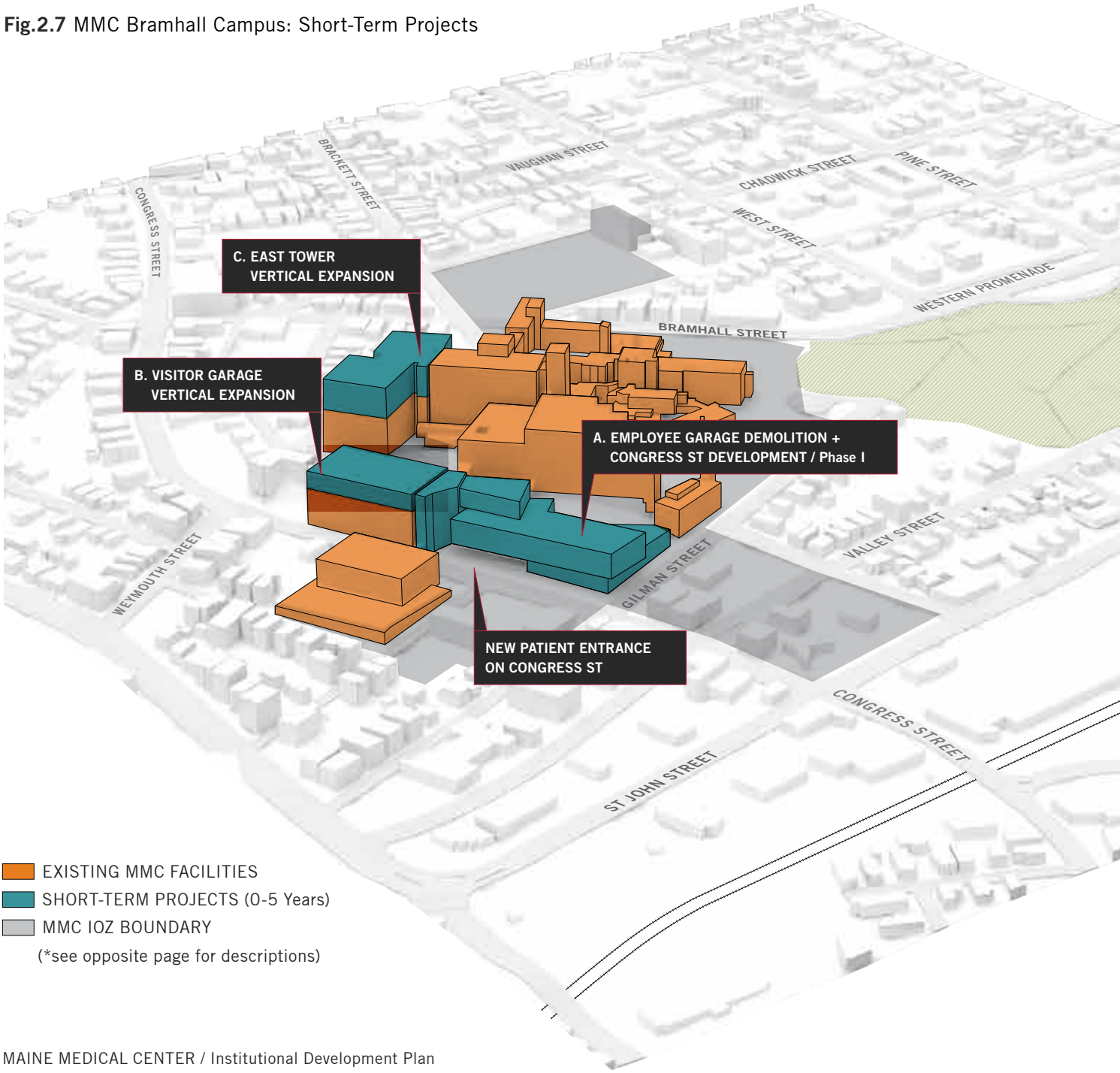
2. ✱ Exact garage location and footprint to be determined during detailed design.



SHORT-TERM PROJECTS (0-5 YEARS)

A series of short-term projects are in the planning stages to meet MMC's current needs and to improve the efficiency of care delivery. These do not represent the only projects that could be proposed within this timeframe: due to the various factors impacting healthcare planning and their short time horizons (0-3 years), there may be other projects proposed within this timeframe.

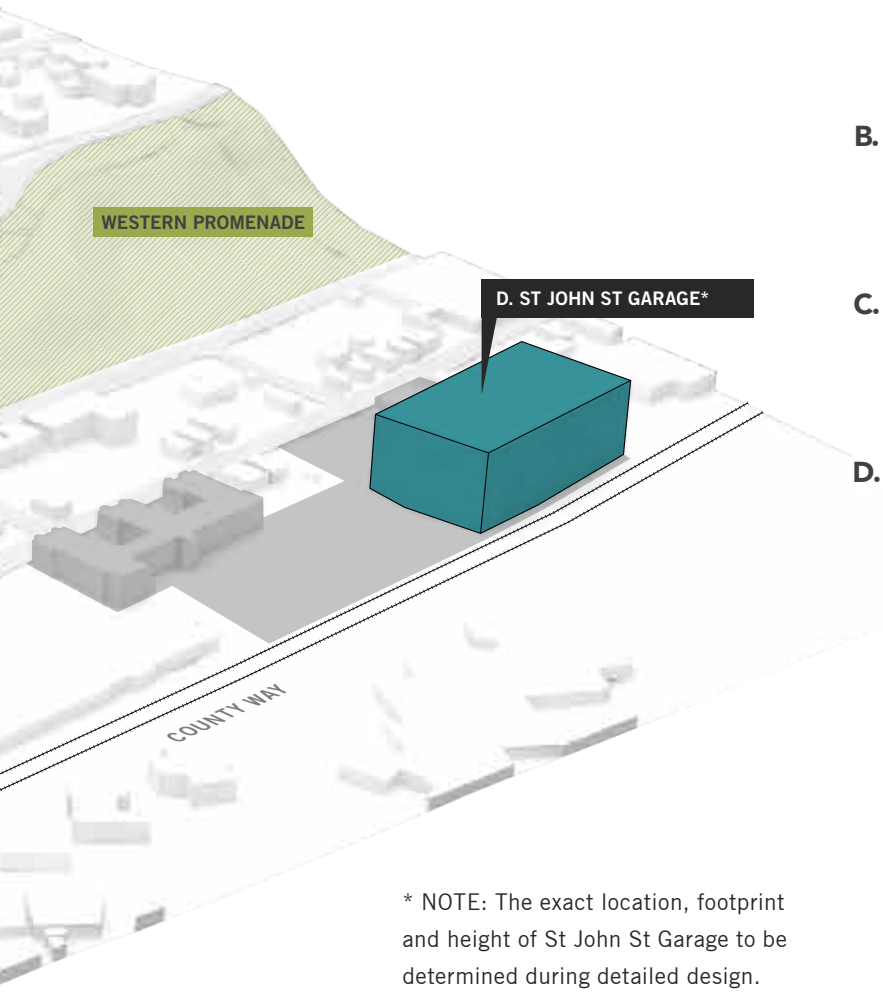
Fig.2.7 MMC Bramhall Campus: Short-Term Projects



Demolitions

A. Employee Garage Demolition

The 2015 building assessment does not recommend continued investment in this structure (see **Fig.2.5 on page 39**).



* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

Additions / New Construction

A. Congress St Development, Phase I (285,000 GSF)

New six-story building along Congress St on former site of the Employee Garage, plus two-story connector to the LL Bean Building. Building program includes: a new patient entrance, universal, private inpatient beds and new procedure rooms. The new entrance changes the campus's orientation to Congress St.

B. Visitor Garage Vertical Expansion

Addition of three floors at top to accommodate 225 new parking spaces.

C. East Tower Vertical Expansion (60,000 GSF)

Addition of two floors at top to accommodate 64 inpatient beds and relocated heliport.

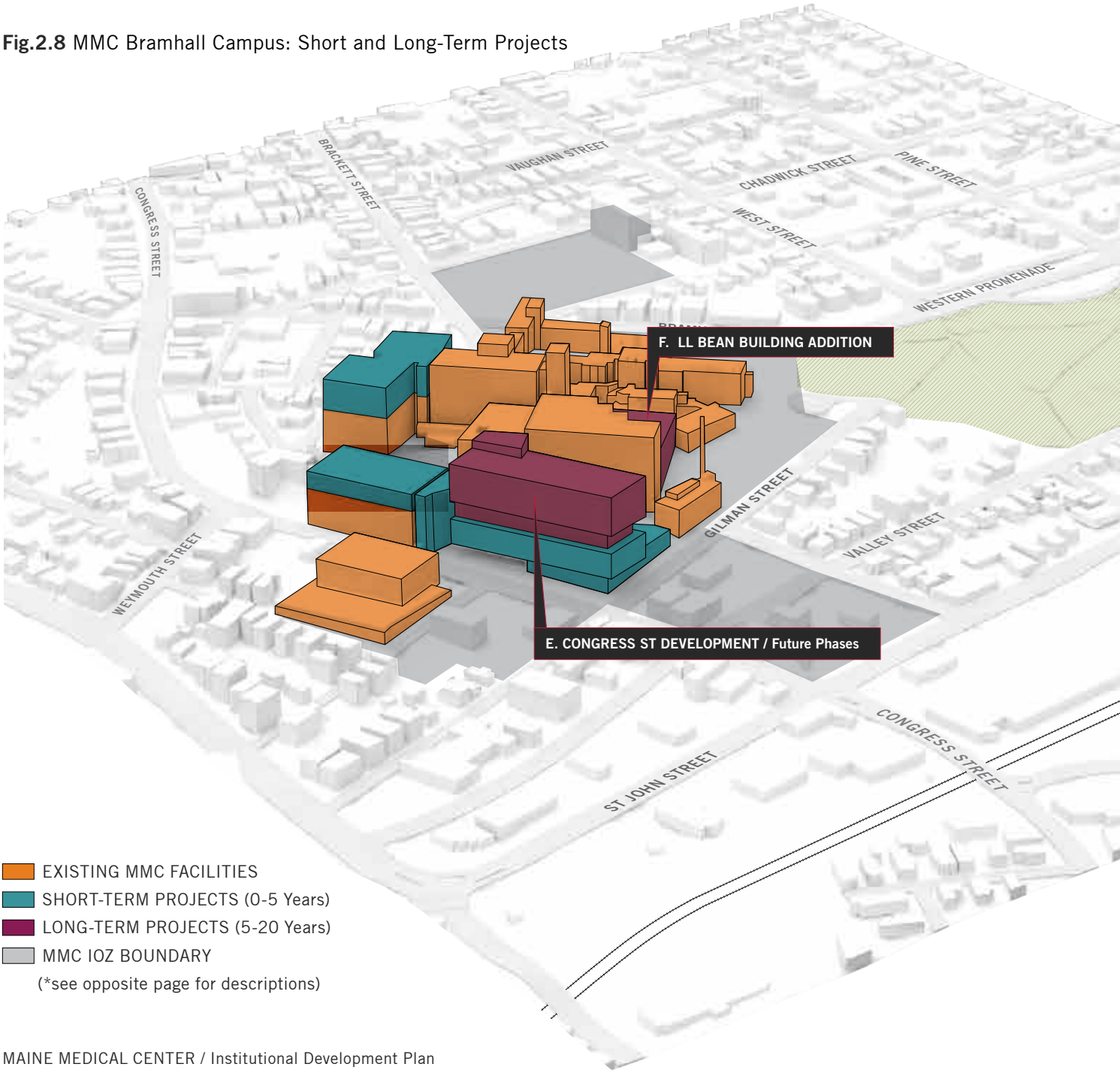
D. St John St Garage

New 10-story, free-standing garage at 222 St John St to accommodate roughly 2,200 new parking spaces. The garage replaces spaces lost in the Employee Garage, in addition to consolidating parking from multiple surface lots owned or leased by MMC. (See **Chapter 3. Transportation Plan** for details).

LONG-TERM PROJECTS (5-20 YEARS)

The facility planning process has also identified potential long-term projects that are identified below. Given the changing nature of the healthcare industry, it is currently uncertain if these projects will be implemented. MMC will continue to evaluate its facility needs following the implementation of short-term projects by 2022. These do not represent the only projects that could be proposed within this timeframe: due to the various factors impacting healthcare planning and their short time horizons (0-3 years), there may be other projects proposed within this timeframe.

Fig.2.8 MMC Bramhall Campus: Short and Long-Term Projects



Additions / New Construction

E. Congress St Development, Future Phases (Approx. 300,000 GSF)

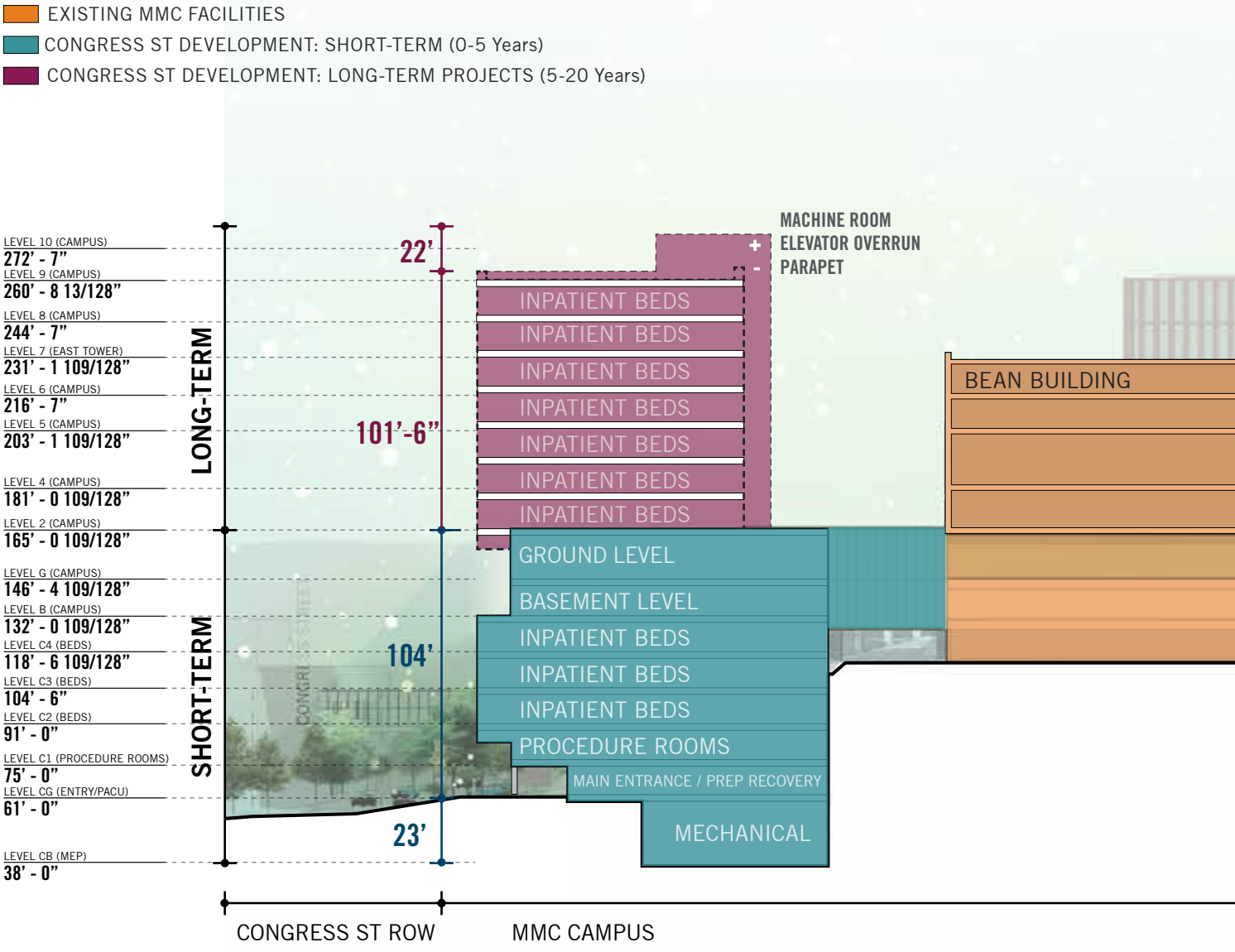
Future vertical expansion to include additional private inpatient beds.

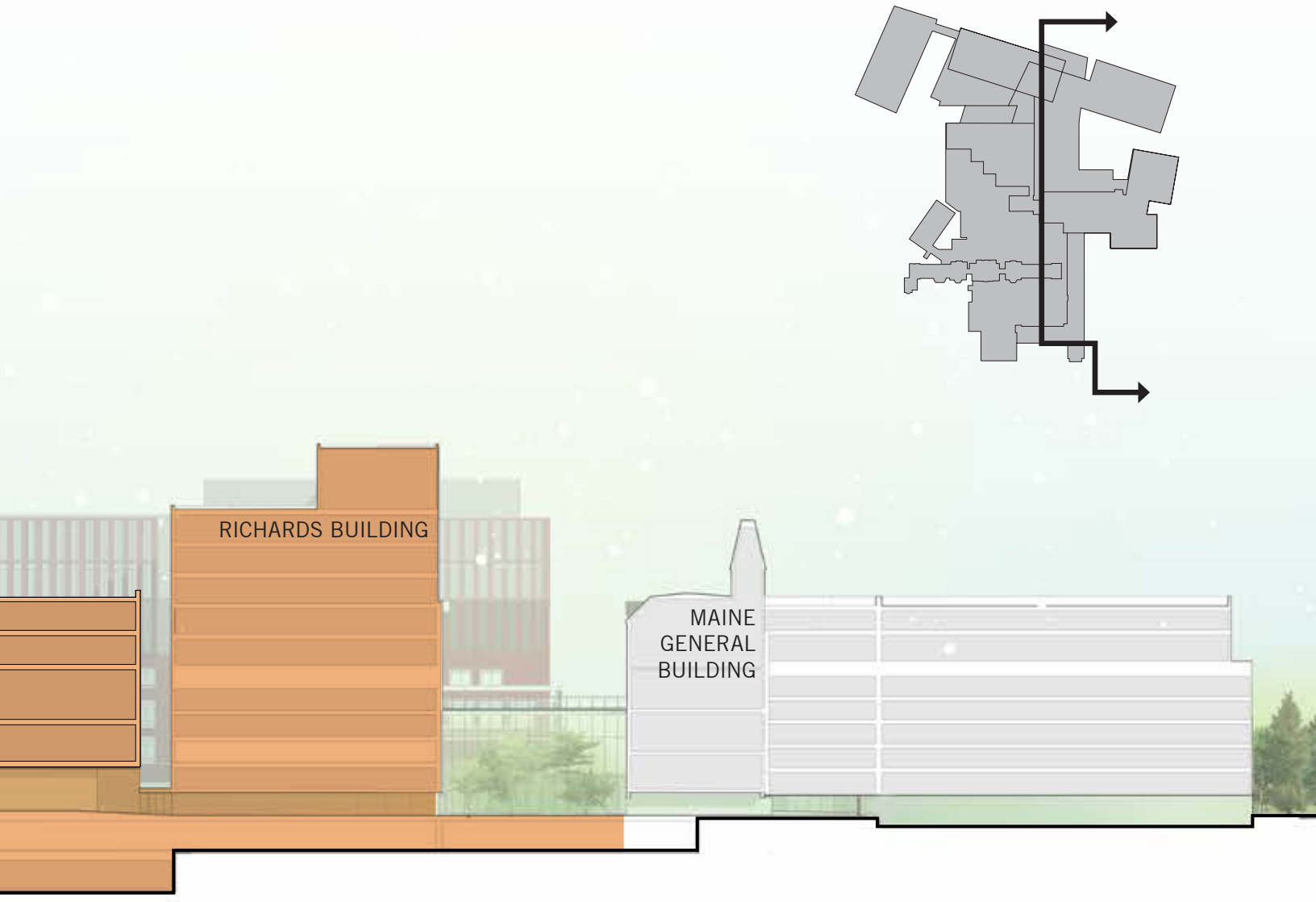
F. LL Bean Building Expansion (Approx. 120,000 GSF)

Expansion of diagnostics and treatment, and interventional platforms. If necessary, existing Laundry Building and Engineering Services Building may be modified or removed to facilitate expansion.

* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

Fig.2.9 MMC Bramhall Campus: Longitudinal Cross-Section through the Proposed Congress St Development

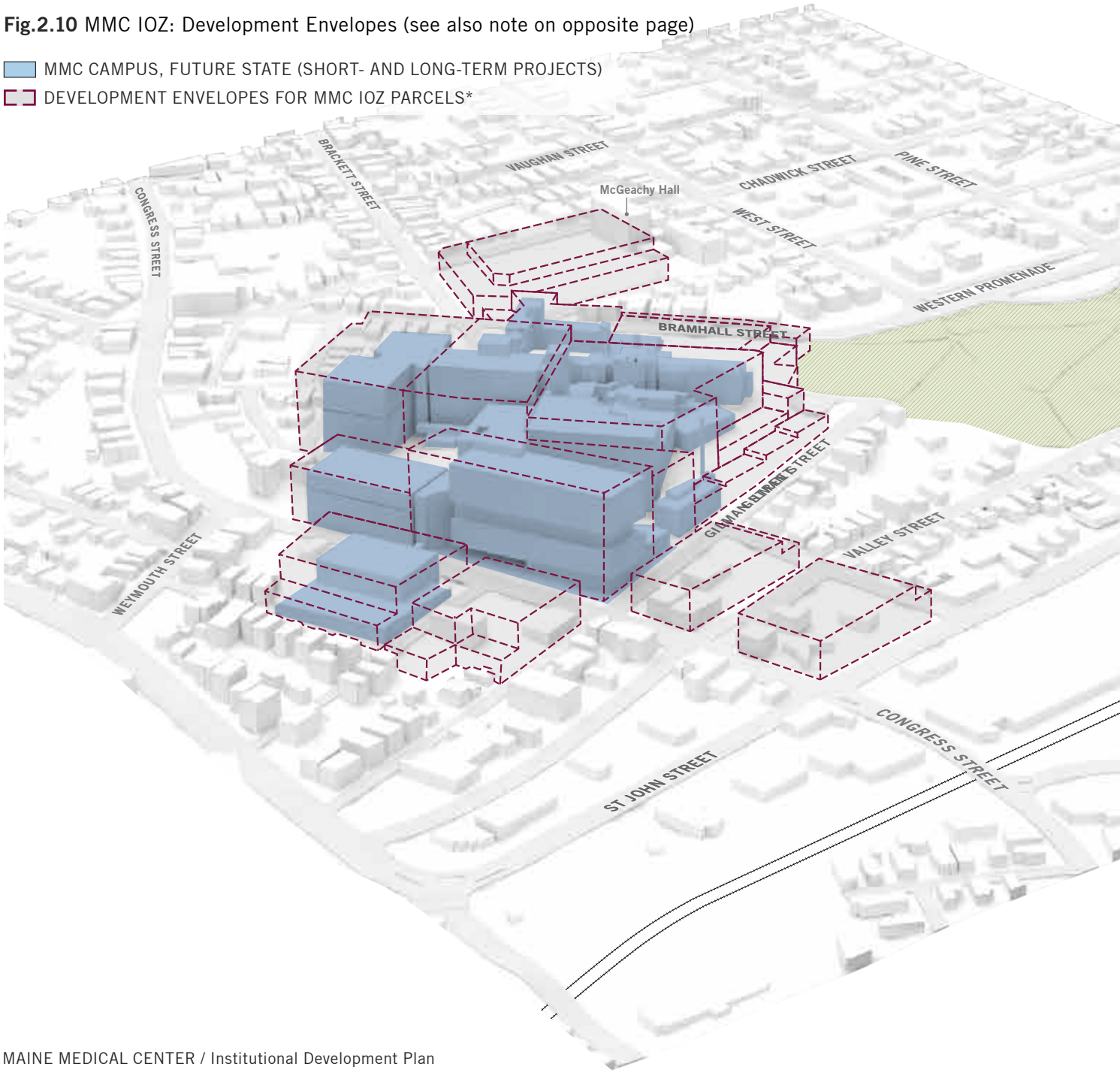



RICHARDS BUILDING
MAINE
GENERAL
BUILDING

LONG-TERM DEVELOPMENT ENVELOPES

While MMC's Master Facility Plan does not identify specific projects other than those listed on the previous pages (see Fig.2.7 on page 42), all parcels included within MMC's IOZ boundary are considered to be potential zones for redevelopment that supports the effective delivery of healthcare services by MMC to our community in the long-term. Towards this end, MMC has identified context-appropriate uses (see **Table 2.5** at right), development envelopes and design criteria for all IOZ parcels.

Fig.2.10 MMC IOZ: Development Envelopes (see also note on opposite page)



NOTE: **Fig.2.10** illustrates the maximum height envelopes listed in the MMC IOZ Regulatory Framework. Per the IOZ, the development envelopes only apply to properties that MMC holds right, title, or interest at the time of development. All future development within the IOZ boundary is subject to review for compliance with guidelines and requirements included in MMC's IDP, Regulatory Framework and City of Portland site plan review requirements.

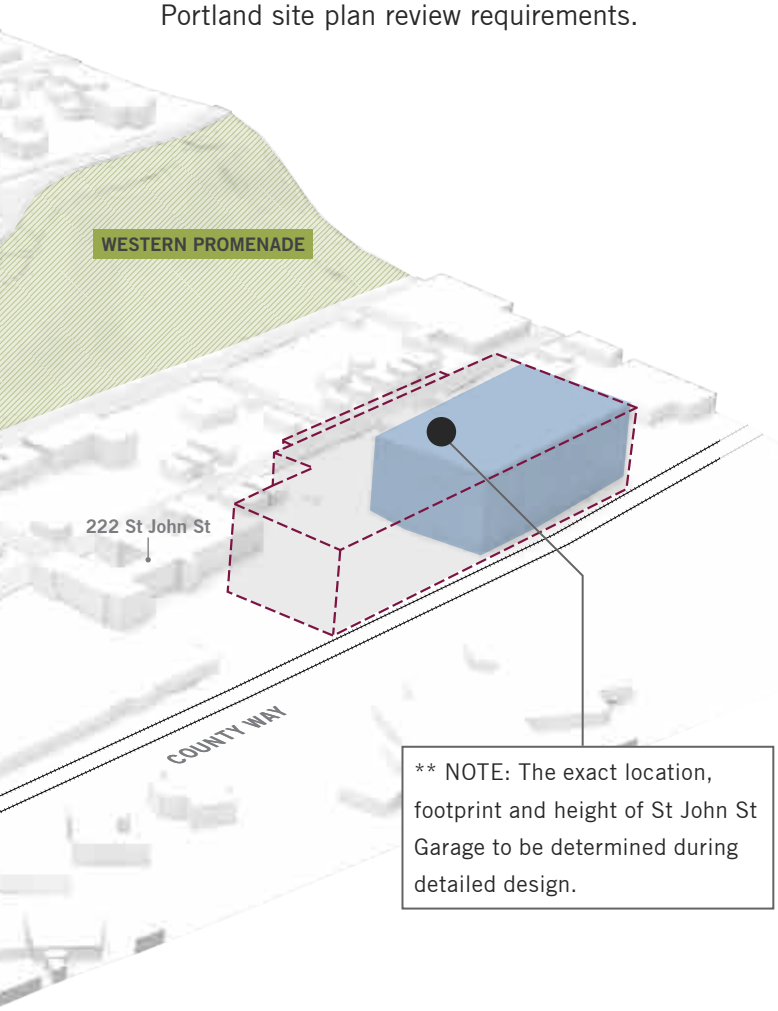


Table 2.5 MMC Potential Future Uses

MMC may locate the following uses within its IOZ boundary:

In addition to the uses permitted in the underlying zone, the following uses are permitted as a matter of right:

Healthcare facilities including but not limited to the following ancillary and/or supporting uses:

- **Hospital**
- **Medical Office / Clinic**
- **Laboratory Center / Services**
- **Research and Development (R&D) Laboratory or Facility**
- **Educational Facility / Conference Center**
- **Administrative / Business Office**
- **Accessory Service or Trade Uses**
- **Guest House**
- **Multi-family housing for healthcare staff and students**
- **Rehab / Skilled Nursing Facility**
- **Retail Facility**
- **Restaurant / Café**
- **Employee Service Amenities**
- **Day Care Center**
- **Fitness Center or Gymnasium**
- **Parking Lot**
- **Parking Garage**
- **Bicycle Storage**
- **Heliport**
- **Antenna Station**
- **Outdoor use areas, such as green areas, parks, gardens, art installations, and other active and passive non-commercial recreation spaces**

CHAPTER THREE

TRANSPORTATION PLAN

Maine Medical Center is developing a long-term transportation plan that will improve campus access, circulation, and wayfinding for patients and visitors. Ongoing initiatives are aimed at providing alternative transportation options to reduce traffic and parking impacts as well as to be responsive to neighborhood concerns about a large parking structure near residential properties.

TRANSPORTATION PLAN: OVERVIEW

Maine Medical Center is developing a long-term Transportation Plan that will improve campus access, circulation, and wayfinding for patients and visitors. It is also developing a Transportation Demand Management (TDM) plan focused on reducing the number of single occupancy vehicles on campus. Ongoing initiatives are aimed at providing alternative transportation options to reduce traffic and parking impacts.

MMC's Transportation and TDM plans are designed to address neighborhood concerns, and to improve campus access, circulation, and wayfinding for patients, visitors, physicians, and staff. The Transportation Plan will be developed and refined during the Maine Department of Transportation (MDOT) required Traffic Movement Permit (TMP) process, with input from the Medical Center's neighbors and City of Portland's traffic engineer. The TDM includes an explanation of the assessment of the Hospital's parking needs to adequately support the Bramhall Campus, and includes strategic initiatives aimed at providing alternative transportation options to reduce long-term traffic and parking impacts. The goal is to provide effective and intuitive transportation solutions that emulate best management practices in transportation infrastructure and operations that support tertiary academic medical centers, enhance and optimize the patient experience, and improve overall traffic flow in the surrounding area.

The purpose of this chapter is to provide an overview of the key transportation elements of the Transportation Plan and the TDM.

The Traffic Management Permit process may require modifications that MMC does not anticipate. The following provides MMC's best analysis of traffic generation and traffic patterns in the short term.

VEHICULAR ACCESS AND CIRCULATION

MMC's service area includes all of Maine and parts of New Hampshire. The majority of MMC patients and visitors do not live within walking distance or near public transportation and arrive by car (see **Fig.3.1 on page 57** for a map of patient origin). The nature and acuity of patient needs create a challenge to the use of alternative modes of transportation. This situation is not atypical for a hospital, but rather is the norm, even in locations with a robust public transit system.

MMC is open to patients every hour, every day of the year. Most MMC staff and physicians, who also fill shifts 24 hours a day, do not live within walking distance or near public transportation (see Fig.3.6 for a map of MMC employee residences). Work responsibilities that require the use of an automobile, a lack of transit options to accommodate staff schedules, seasonal weather extremes, and an insufficient bicycle infrastructure in the surrounding municipalities are all factors that contribute to a high drive share by staff.

EXISTING VEHICULAR FLOWS

Vehicle access and circulation on the MMC Bramhall Campus was planned and designed to maintain a safe and efficient transportation system. Most notably, the concept of separating patients, employees, emergency department operations and loading/service are all considerations that exist at MMC currently and have been approved by the City of Portland. Existing vehicular circulation patterns in and around the Bramhall campus are illustrated on **Fig.3.2 on page 58** and summarized below.

One advantage of its proximity to I-295 is the ease of vehicular access to campus by patients/visitors, employees, and emergency and service vehicles, and the avoidance of high traffic volumes in neighborhood streets.

Patients and Visitors

Patients and visitors have several choices when accessing the hospital. Through a strong wayfinding and signage plan, they are directed to park directly in the Patient / Visitor Garage or the South Lot. They also have access to a convenient patient drop-off area that is located off of Bramhall St, with direct access to parking in the South Lot.

Well-designed curbside drop-off / pick-up areas for patients and visitors are critical to the functionality of any medical center campus. These amenities provide the opportunity for patients and visitors to quickly reach their destination, without the need to park their vehicle, and in some cases, having to

walk long distances, often times unprotected from weather conditions.

MMC provides both inpatient and outpatient care at the Bramhall campus. Outpatient care services experience higher curbside demands for patient drop-off / pick-up activities because of the shorter visits whereas inpatient care generates less turnover, but requires greater accessibility. In addition to general patient access and egress by private vehicles, MMC drop-off / pick-up zones also experience other demands created by taxis (including ride-share such as Uber, Lyft, etc.), shuttle buses, short-term deliveries (like flowers, etc), and staff—vehicles that do not necessarily park, but intend to only drop-off passengers and then exit the hospital campus.

Emergency Department Access

MMC's Emergency Department (ED) is located near the main entrance but is clearly delineated and separated from it. Within the ED area, ambulances have their own dedicated area and are separated from patient ED access and short-term ED parking.

Staff Access

Staff primarily park in the Employee Garage, which is located on Congress St with access off of Gilman St. Other employee parking locations include the various satellite lots listed in **Fig.1.7 on page 22**. This design limits the mixing of patient and staff traffic, resulting in fewer staff vehicles near patient access zones.

Service Access

Trucks destined for MMC are directed to a dedicated loading and service facility located off of Gilman St, separate from all active patient access and circulation functions. MMC does not accept large deliveries from any location other than through the loading dock area.

EXISTING TRAFFIC CONDITIONS

An analysis of existing traffic conditions on and around the Bramhall Campus was completed by Gorrill Palmer, a South Portland based land development, transportation and municipal engineering firm. Gorrill Palmer observed several street intersections during the morning and afternoon in December 2016. In order to estimate the peak summer traffic volume on the two busiest intersections observed (Congress St / St John St and Congress St / Valley St), trip counts were increased by 1.1% on St John St and 11.4% on Congress St. The trips observed are summarized on **Table 3.1** below.

Table 3.1 Seasonally Adjusted 2016 Volumes

	2016 ESTIMATED VOLUMES		MMC TRAFFIC AS A PERCENT OF TOTAL TRAFFIC	
INTERSECTION	AM	PM	AM	PM
Valley St. / Congress St.	1,170	1,200	17%	7%
Congress St. / Saint John St.	1,860	2,100	14%	7%

Fig.3.1 Dot Density Map Showing Patient Origin by Zipcode (2016)

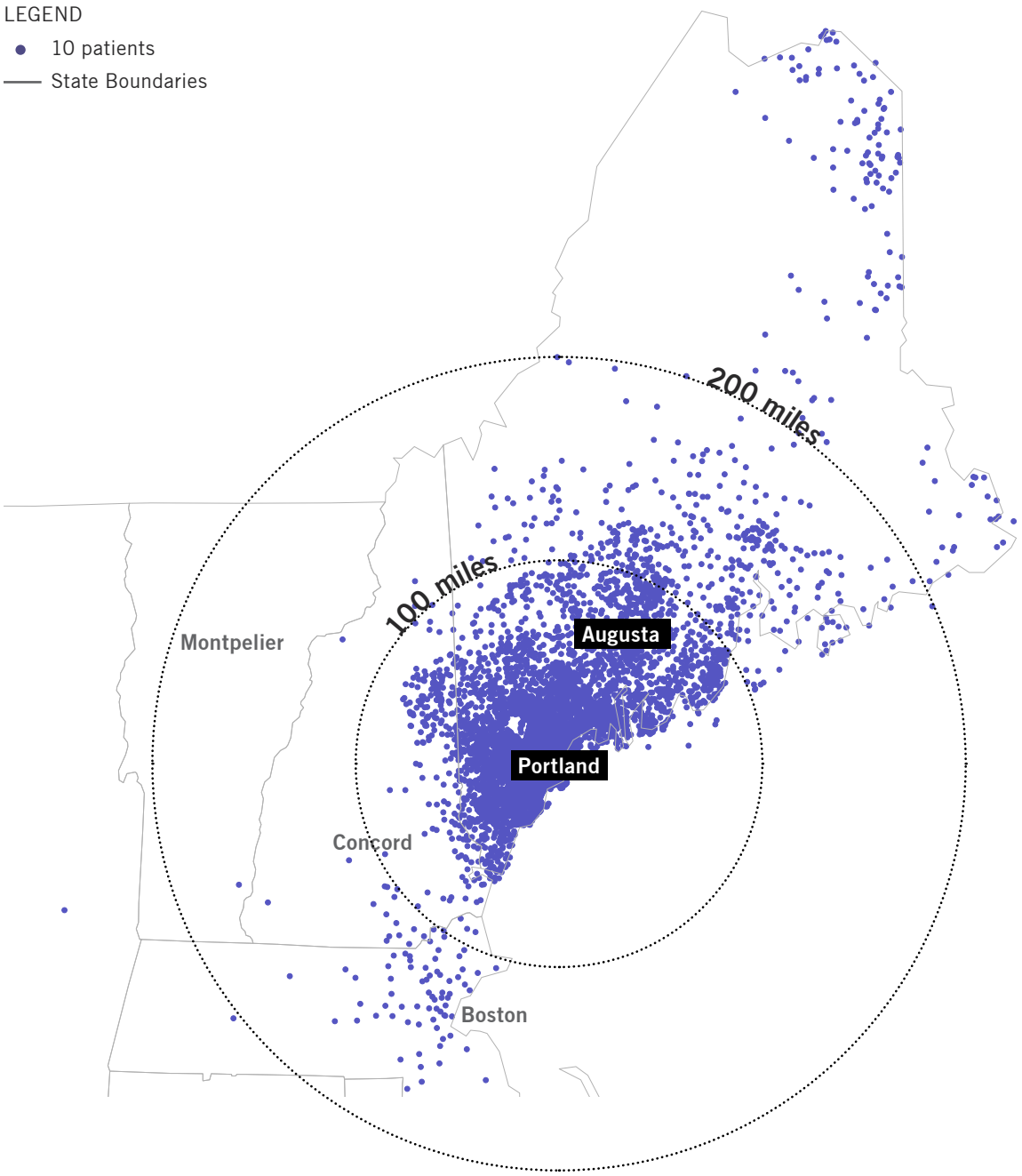


Fig.3.2 MMC Existing Circulation Routes and Access Points

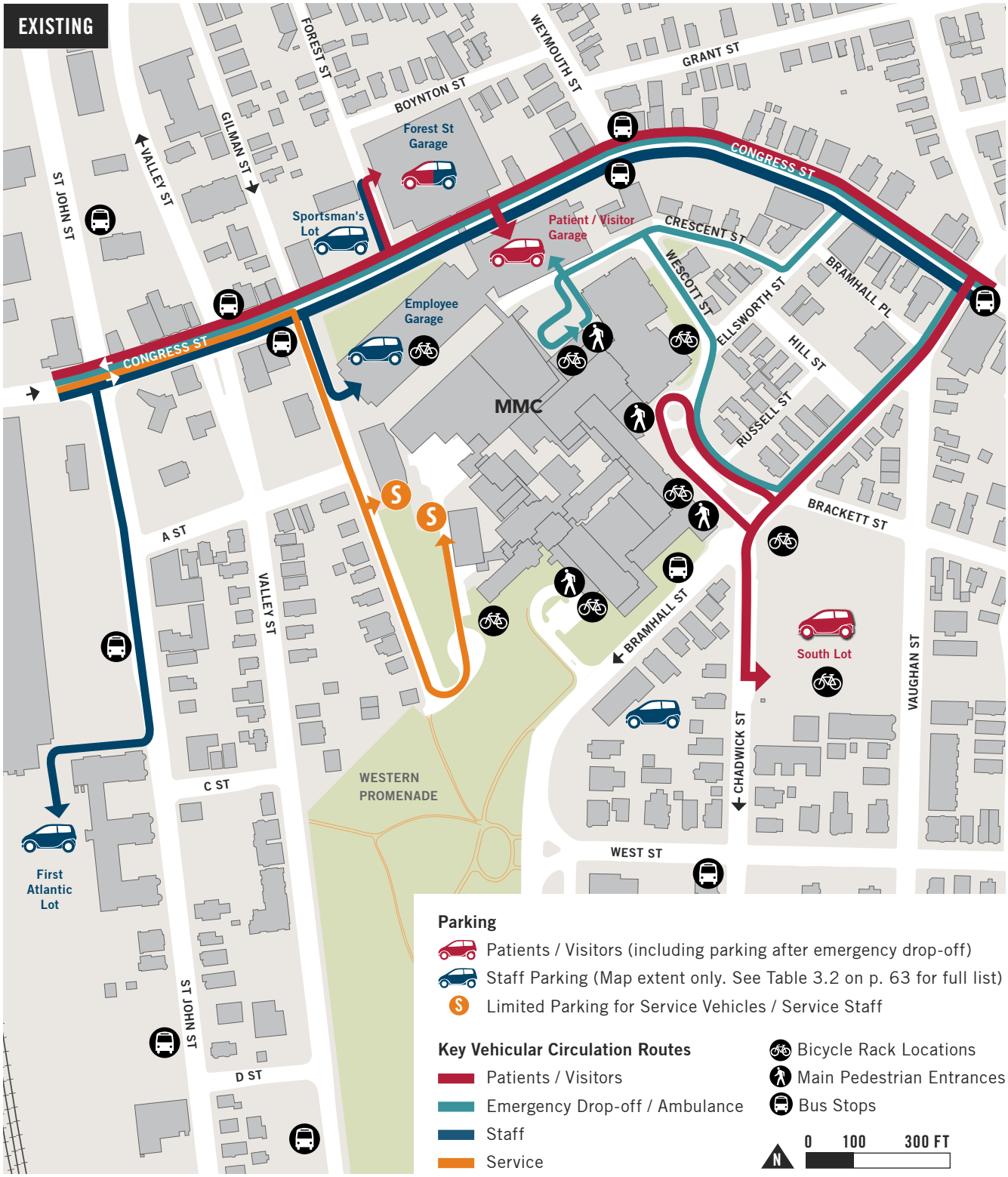
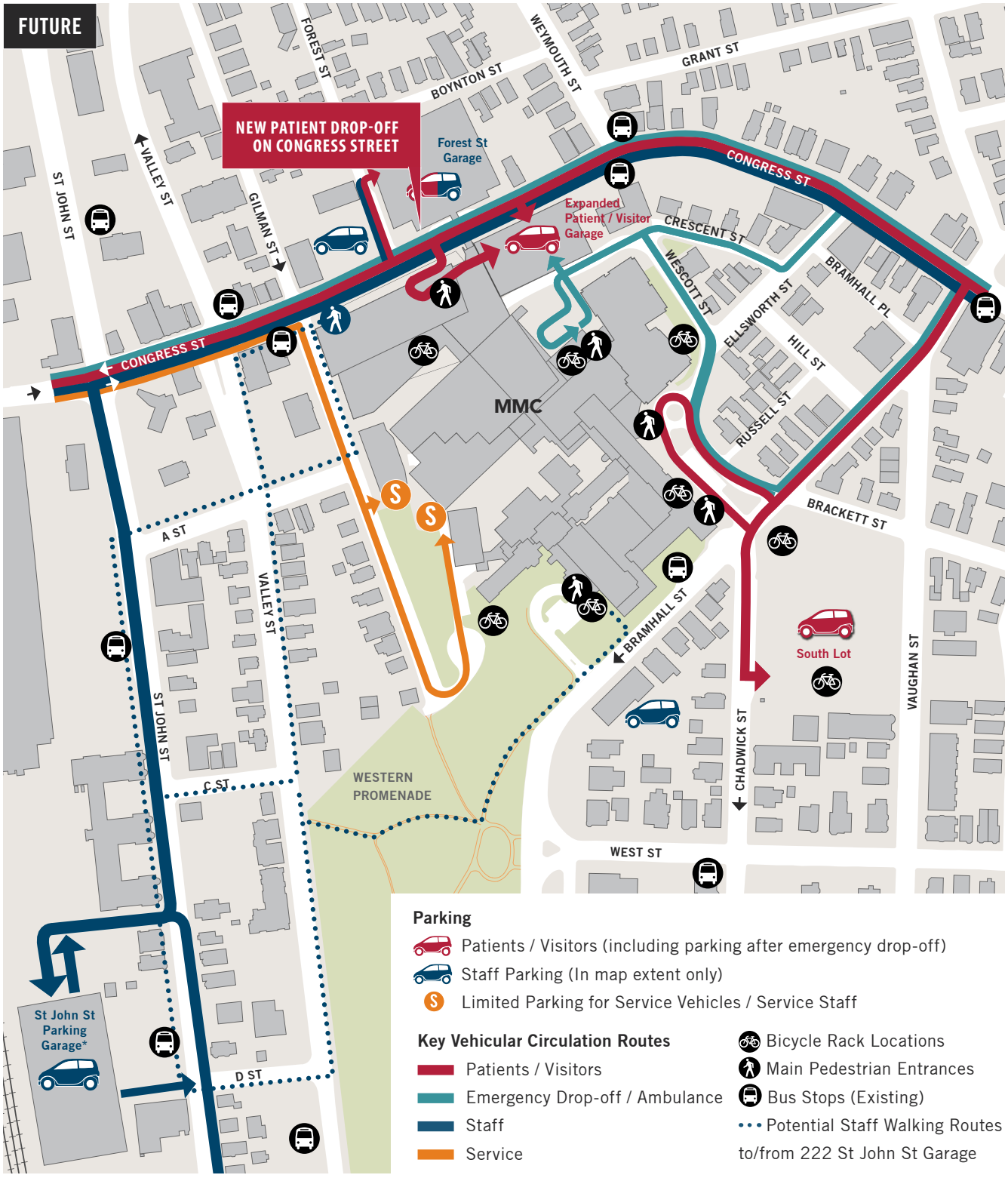


Fig.3.3 Transportation Plan (Future): Circulation Routes and Access Points



* NOTE: The exact location, footprint and access for St John St Garage to be determined during detailed design.

The safety evaluation considered crash data provided by MaineDOT for the period of 2014-2016, the most recent available at the time the analysis occurred. In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order for a location to be classified as an HCL:

1. A critical rate factor (CRF) of 1.00 or more for a three-year period. A CRF compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average, and:
2. A minimum of eight crashes over the same three-year period.

Based on the crash data provided by MaineDOT, the HCLs in the vicinity of the site are: the intersection of Congress St with Bramhall St and Deering Ave, the intersection of Congress St with Gilman St, the intersection of Park Ave with Valley St, Congress St from Forest St to Weymouth St, and St. John St from Congress St to just south of Park Ave.

PROPOSED MODIFICATIONS TO ACCESS AND CIRCULATION

Proposed New Entrance

MMC's short-term projects include a new entrance on Congress St to improve access and egress for patients and visitors. Today, most motorists arrive on campus via Congress St: they either park off Congress St in the Patient / Visitor Garage, or use Bramhall St to reach the emergency room or entrance on Charles St, which also allows access to the Patient / Visitor Garage on an upper floor.

It is anticipated that the new Congress St entrance will be used primarily by vehicles dropping off or picking up patients, shuttle buses, or short-term deliveries (like flowers, etc). The entrance will be designed to allow vehicles to either exit back onto Congress St or directly enter the adjacent Patient / Visitor Garage after passing through the drop-off zone without having to go back onto the public street. The Charles St entrance (at the East Tower) will remain open and continue to accommodate some defined patient demand. Changes to patient / visitor circulation and the impacts on Congress St traffic operations will be studied as part of the Traffic Movement Permit Application (TMP) process.

The new entrance on Congress St is expected to improve access to the campus while reducing vehicular traffic on neighborhood streets. Work is currently underway to identify design options for the new entrance and drop-off that minimizes impact on existing pedestrian, bicycle, transit and vehicular traffic along Congress St. The proposed site plan will be reviewed as part of the State's Traffic Movement Permit (TMP) Application during the City's Site Plan review process.

Proposed Employee Parking

As part of MMC's short-term projects, the existing Employee Garage will be demolished. MMC is collaborating with a third-party developer to build a 2,200 space parking garage at 222 St John St. All staff parking will be consolidated to this new location.

PROJECTED TRAFFIC IMPACT

As mentioned previously, the traffic impacts of the MMC Short-Term Projects will be studied comprehensively as part of the Maine Department of Transportation (MaineDOT) Transportation Movement Permit (TMP) application process delegated to the City of Portland.

Some of the traffic items reviewed as part of the TMP will include:

- Trip generation methodology.
- Trip distribution assumptions.
- Weekday morning and evening traffic operations/capacity analyses.
- Average and 95% queue analyses for key intersection approaches.
- Pedestrian and bicycle safety evaluations.
- Identification of potential mitigation to address identified deficiencies created or exacerbated by the proposed development.

A high-level analysis of the projected changes in traffic as a result of estimated growth in the City of Portland and MMC's short-term projects was completed. Traffic volumes in the vicinity of MMC's Bramhall campus are anticipated to increase by approximately 3.5% between 2016 and 2023, without any MMC development, due to background traffic growth throughout the City. This increase is based on an estimated growth of 0.5% per year and compares the 2016 traffic volumes to the 2023 Pre-development traffic volumes (with no MMC development).

If the MMC employees utilize the 222 St John St garage, then traffic volumes at the intersection of St John Street / Congress Street may increase by approximately 17% and traffic volumes at the intersection of Valley St / Congress St may decrease by approximately 5% during peak commuter hours between 2016 and 2023. This increase compares the 2016 (seasonally adjusted) predevelopment traffic volumes to the 2023 Postdevelopment traffic volumes (with MMC development). This change in traffic volumes is due to the additional garage traffic (i.e. MMC expansion), the relocation of the existing employee garage traffic from Gilman Street to St John Street, and the background City traffic growth.

In 2023, the development of the employee parking garage at 222 St John St may increase total traffic volumes at the intersection of St John St / Congress St by approximately 12% during the peak commuter hours and approximately 56% during the peak hours of MMC shift changes that primarily occur during non-peak commuter hours. This is the increase

between 2023 Predevelopment volumes (with no MMC development) and 2023 Postdevelopment volumes (with MMC development). This increase is due to the additional garage traffic and the relocation of existing employee garage traffic from Gilman to St. John. Although the percentage increase during the peak hour of MMC shift changes appears high, the traffic volumes during the non-commuter peak hours with additional MMC development are still lower than the volumes during the peak hours of commuter traffic without significant additional MMC development.

MMC's traffic volume is expected to decrease at other intersections near satellite parking locations as a result of consolidating parking at 222 St John St. Although traffic due to MMC is anticipated to decrease at intersections near the satellite parking lots, total traffic volumes at those intersections may not change significantly, since different users may still utilize the lots. However, regardless of traffic volumes, there will be less vehicle miles travelled on the roadway network, since MMC employees will no longer be driving around the streets seeking out the last remaining parking spaces.

PARKING

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 2,027 parking spaces are subscribed to staff and physicians. About 1,538 of these employee parking spaces are located on the Bramhall Campus..

In addition to their on-campus parking spaces, MMC controls an additional 489 spaces for employees in remote parking facilities that serve the Bramhall Campus. Off-site spaces that are used by employees require shuttle services to the Bramhall Campus by dedicated shuttle services. **Table 3.2** on the following page provides a summary of existing MMC parking facilities. MMC has continued to see demands on the existing supply intensify due to increased patient volumes and higher acuity patients (longer lengths of stay).

In order to assess MMC's existing and future parking demand, a nationally recognized consulting firm was hired that specializes in this work. Vanasse Hangen Brustlin, Inc. (VHB) began working with MMC in January 2017. VHB also has done work for the City of Portland.

EXISTING PARKING ANALYSIS

The existing parking garages and surface lots are not equipped to readily collect and compile entrance, exit, and occupancy data electronically. As a result, in order to collect baseline data,

Table 3.2 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS 850 patient / visitor 1,538 employee spaces	Employee Garage	0	1,274	1,274	Owned
	Patient / Visitor Garage	480	0	480	Owned
	South Lot	370	0	370	Owned
	887 Congress (Forest St Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS 489 employee spaces	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The Forest St Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

detailed hourly parking occupancy counts were conducted on March 8, 2017 and March 9, 2017 by VHB. The goal of these parking counts was to collect temporal parking data at the Employee garage, the Patient / Visitor garage, and the South Lot to confirm parking surge (between daytime and evening staff shift changes) and overnight demand. Hourly counts were conducted from 5am to 12pm, 3pm to 8pm, and 10pm to 12am. This data have been compiled to quantify the existing conditions parking demand estimates.

Additional parking occupancy counts were conducted daily between April 24, 2017 and April 28, 2017 at 10am and 2pm by MMC. MMC parking was 93% occupied throughout the week.

Overall, existing parking demand conditions at MMC were quantified via a combination of distinct actions:

- Weekday occupancy parking counts were conducted to understand utilization at key points in time to assess peak occupancy, overnight occupancy, and intervals of weekday garage entries and exits. These counts were conducted in March and April 2017.
- Intermittent spot checks of parking utilization and access/egress were conducted from January through March 2017 by MMC and its consulting team.

- MMC Parking and Security staff and the City of Portland Parking Director provided input regarding their observations and experiences relating to the utilization of parking.

These counts, observations and input indicate that the parking system typically operates at or above capacity during weekday daytime.

CURRENT PARKING SHORTAGE

MMC's 850 patient/visitor parking spaces equates to +/- 1.33 parking spaces per bed. This is low when compared to other New England and national peers. Patient drive rate is consistently high among large academic medical centers regardless of location. Therefore it is appropriate and reasonable to compare MMC patient parking needs on a space per bed basis to highly urban, suburban, and rural settings. MMC would need about 340 additional patient/visitor parking spaces to achieve the midpoint parking space/bed ratio (approximately 1.87) of its peers.

MMC's 2,027 staff parking spaces equates to about 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions. When studying employee parking needs, it is important to compare institutions that would reside in similar contexts where driving behavior and auto mode shares would be similar.

During the analysis, MMC's consultant team attempted to identify comparable medical centers. A significantly similar comparison medical center does not exist due to the number of factors impacting parking. The medical centers that were determined to be somewhat similar and adequate comparisons had median parking ratios of 1.87 for patients/visitors and 4.38 for employees.

Under current conditions, MMC will require 150-200 additional on-campus parking spaces to alleviate current staff parking shortfalls that have been estimated via observations and data collection activities and eliminate on-street parking by MMC staff. To help existing demand pressures, MMC continues to pursue a number of strategies to address its constrained parking situation, including:

- The study of enhanced Transportation Demand Management (TDM) actions to reduce single-occupancy vehicle trips and parking demand,
- Moving employees to off-campus locations (both program and parking), and,
- Securing additional remote parking and serving that remote parking with convenient shuttle services for staff.

MMC's existing decentralized parking solution creates management challenges and is an employee dissatisfier. Management challenges include multiple shuttle routes that add to traffic congestion on Portland's streets and the high cost of servicing and operating multiple shuttles. MMC employees frequently share that the employee parking at the Bramhall Campus is unreliable. There are eight

parking locations available for MMC employees. When one location is full, employees have to search other locations for available parking which adds to traffic congestion on Portland's streets. On days when MMC is near or at capacity, finding a parking spot in a reasonable amount of time is a challenge.

PLANNING GOALS FOR PARKING

With regard to Parking, MMC's goal is to accomplish the following key objectives:

1. Support a predictable arrival experience for patients and visitors,
2. Where feasible, allow for segregation of MMC patients/visitors and staff parking,
3. Address neighborhood concerns of MMC staff occupying on-street parking spaces,
4. Provide a parking supply that is sufficient to support the Medical Center,
5. Rely upon an enhanced TDM program to help reduce vehicle trips and parking demands when reasonably feasible.

FUTURE DEMAND PROJECTIONS

Future patient, visitor, staff and physician parking needs were quantified based on an assessment of MMC's patient volume (inpatient and outpatient activity) and staff growth projections. The demand for patient care at MMC is growing as described under **"Projected Daily Census" on page 40**. MMC anticipates that the overall patient demand will grow by approximately 8 percent over the next ten years (or 0.75 percent per year). Similarly, employment at MMC is expected to grow by approximately 7 percent over the next ten years (or 0.7 percent per year). We expect patient and patient-related and employee parking demand will increase at similar rates. This demand will be offset by Transportation Demand Management methods described later in this chapter. These expected trends have been used to estimate the increased parking needs of the Hospital.

The following key points summarize MMC parking activity under current conditions, and provide the context for assessing and understanding the parking objectives that are proposed for the transportation plan:

- Under current conditions, the MMC parking system typically operates at or above capacity during weekday daytime hours.
- The hospital requires about 150-200 additional on-campus parking spaces to alleviate current 2017 staff parking shortfalls. These estimates are based on several iterations of counts, observations, and input from MMC, as described previously.
- When compared to other peer academic medical centers, MMC generally has a lower parking-to-licensed bed ratio both for its patients as well as its physicians and staff. There is not an industry standard method for comparing hospital parking supply. The number of patient beds was used as the common factor in this analysis because of its relative uniformity among academic medical centers.

PROPOSED MODIFICATIONS TO PARKING

MMC's short-term projects include:

1. Patient / Visitor Garage Addition: MMC will expand its existing 480-space Patient / Visitor Garage by three levels to accommodate an additional 225 spaces by 2019.

2. New St John St Garage: MMC will deconstruct the existing 1,274-space Employee Garage and will construct a replacement garage that will supply approximately 2,200 spaces for MMC. MMC intends to provide a reliable and complete parking solution for employees.

FUTURE PATIENT / VISITOR PARKING

Once the Patient / Visitor Garage Addition is completed, the patient parking supply will be adequate to meet the growing needs of the patients and visitors.

MMC's short-term projects will increase patient/visitor parking supply from 850 spaces to 1,075 spaces. As a ratio of parking spaces per bed, MMC's on-campus patient parking system will improve from an existing ratio of 1.33 (a rate that is low when compared to peers) to 1.68 (average to its peers).

FUTURE EMPLOYEE PARKING

In total, MMC estimates a need for 500-600 additional staff/physician parking spaces to accommodate future demands and resolve the existing parking shortage. The 2,200 employee parking spaces in the new St John St Garage are intended to accomplish the following:

- Accommodate expected staff growth,
- Provide for replacement parking to support demolition of the existing Employee Garage,
- Consolidate existing remote surface parking, and
- Reduce parking by staff on surrounding neighborhood streets.

This increase in employee parking supply will improve MMC's ratio of employee parking to patient beds from their existing ratio of 3.18, which is very low when compared to peer academic medical centers.

The proposed St John St Garage will consolidate the majority of MMC's employee parking which will improve employee satisfaction and minimize management challenges. A smaller and more reliable shuttle service will be available to MMC employees getting to and from the parking garage. In addition, the St John St location is 3 tenths of a mile from the Bramhall Campus and MMC will encourage walking.

ALTERNATIVE TRANSPORTATION

MMC supports and aims to increase the use of alternative transportation by its employees, patients and visitors through the implementation of its Transportation Demand Management (TDM) Plan outlined on page 74. Ongoing collaboration with the City of Portland, local and regional transit agencies, and neighborhood and advocacy organizations is planned to ensure the improvement of pedestrian, bicycle and transit infrastructure and networks serving the campus.

MMC solicited input from neighbors on the topics of vehicular, bicyclist and pedestrian safety around the campus at its January 12, 2017 Open House. Key findings from this meeting are summarized at the end of this section under the heading "Future Transportation Planning Considerations." MMC has shared the Open House results with the City of Portland and neighborhood representatives. MMC will continue working with neighbors, City staff, and elected officials to address vehicular, pedestrian and bicyclist safety concerns around its campus as part of its ongoing community engagement process (see page 130).

PUBLIC TRANSIT ACCESS

METRO provides bus service throughout the Greater Portland region and makes stops within walking distance to the MMC Bramhall campus. The campus is also served by the ZOOM Turnpike Express route operated by ShuttleBus–ZOOM.

Multiple METRO routes accessible from the campus provide connections to the nearby Portland Transportation Center (PTC) and the Downtown Hub, which are served by additional METRO and regional bus lines. The PTC also serves as the local connection to Amtrak's Downeaster service that runs along the coast between Boston and Brunswick. See **Fig.3.4** and **Table 3.3** on the following pages for an illustration of bus routes and bus stops within walking distance of the MMC campus. All buses serving the campus are equipped with bike racks to enable multi-modal commutes.

MMC supports mass transit commutes and provides financial incentives to employees choosing public transit as part of its Transportation Demand Management (TDM) program. MMC will provide enhanced incentives and work with METRO to improve transit access for all campus users as part of its future TDM Plan. See "Supporting Mass Transit Commutes" on page 78 for details.

Detailed design of each new development on campus will consider the location of nearby transit stops, and identify any necessary changes to locations to better serve transit users.

Fig.3.4 Map of Existing Transit Routes and Stops

MMC Main Pedestrian Entrance
Bicycle Rack Locations
Existing Bus Stops around Campus (see opposite page for transit route legend)

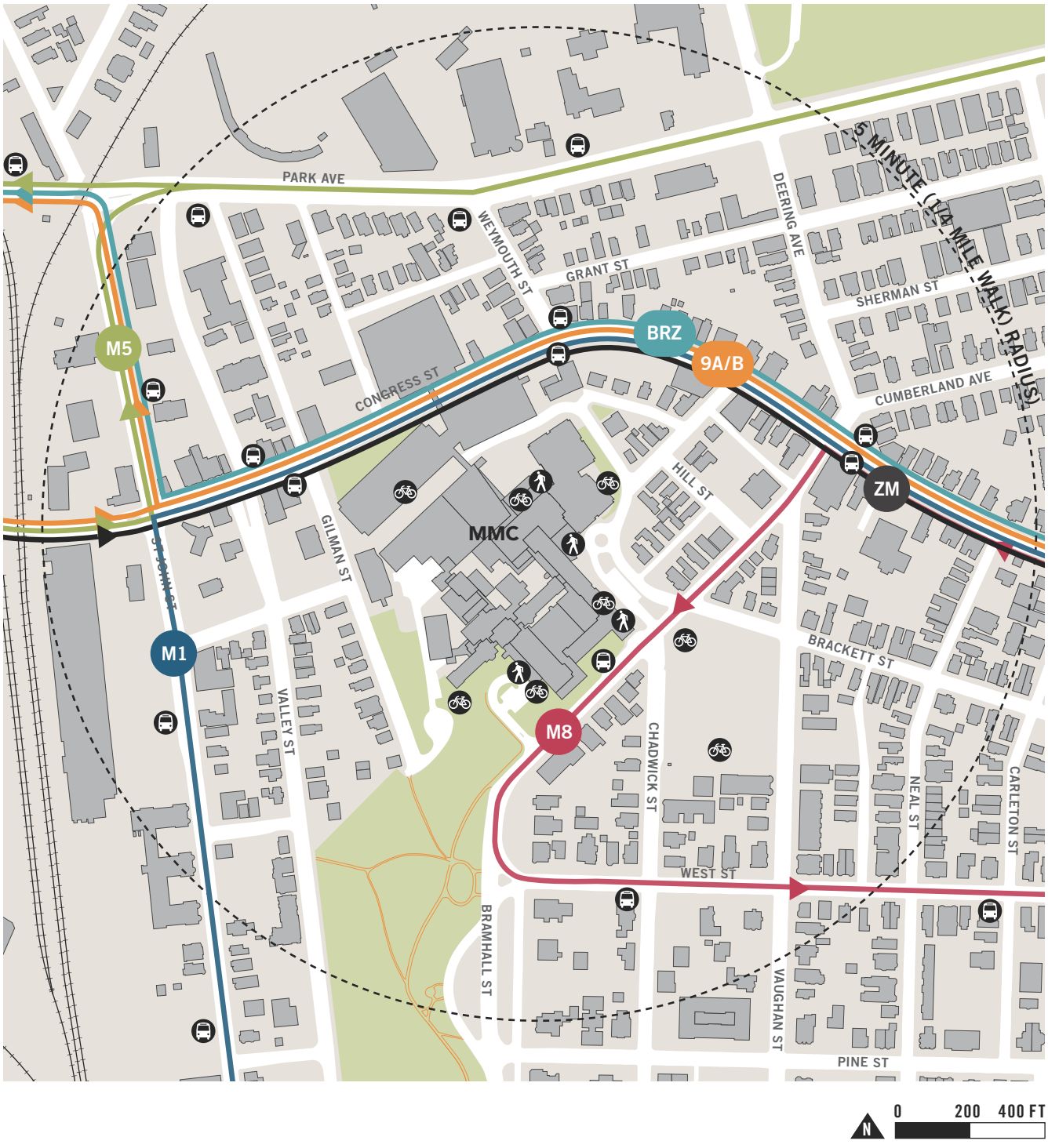


Table 3.3 Bus Routes Serving MMC Bramhall Campus

The following bus routes are accessible within a five minute walk of the MMC campus. See **Fig.3.4 on** opposite page for location of routes and bus stops.

M1 **M1 – CONGRESS STREET**
Connection to Portland Transportation Center (PTC), Downtown, Munjoy Hill and Eastern Promenade

M5 **M5 – JETPORT / MAINE MALL**
Connection to Downtown, Hannaford Plaza, Maine Mall and Portland Jetport

M8 **M8 – PENINSULA LOOP**
Connection to Downtown, Franklin Towers, Whole Foods Plaza and Hannaford Plaza

9A/B **M9A / 9B – NORTH DEERING VIA STEVENS AVENUE**
Connection to MMC Brighton campus, Highlands, Rosemont, and North Deering

BRZ **METRO BREEZ EXPRESS (BRZ)**
Connection to PTC, Downtown, Falmouth, Yarmouth, Freeport

ZM **ZOOM Turnpike Express (ZM)**
Connection to Biddeford and Saco

Rte #	Closest Stop	Times of Operation	Headways
M1	Congress St	5:35am to 11:10pm (M-F) 7:45am to 6:05pm (Sat) 8:10am-6:35pm (Sun)	Varies between every 30 minutes during daytime to every 45 minutes late evenings
M5	St John St	5:30am to 10:45pm (M-F) 6:05am to 10:45am (Sat) 7:55am to 6:40pm (Sun)	Varies between 25-35 minutes during weekdays (daytime) to every 40-45 minutes on weekend evenings
M8	Bramhall	6:40am to 6:00pm (M-F) 7:50am to 6:17 pm (Sat) 9:35am-4:17pm (Sun)	Varies between every 30-40 minutes during weekdays to every hour during weekends
M9A/9B	Congress	5:35am to 10:35pm (M-F) 7:35am to 10:30pm (Sat) 8:35am-4:35pm (Sun)	Varies between 10 minutes on weekday mornings to every 1 hours on weekends and evenings
BRZ	Congress	6:00am to 7:45pm (M-F) 8:20am to 6:10pm (Sat) No Sunday Service	Varies between 45 minutes on weekday mornings to every 2 hours on Saturdays
ZOOM	Bramhall and Congress	6:00am to 6:40pm (M-F) No Weekend Service	5 buses in the morning b/w 6am-8:17am 6 buses in the afternoon b/w 2:46pm-5:35pm

Fig.3.5 Heatmap Showing Popular Bicycle Routes in the Area, as Recorded by Strava App Users

less more

Source: Based on self-tracking app data mapped by Strava Labs (labs.strava.com/heatmap)

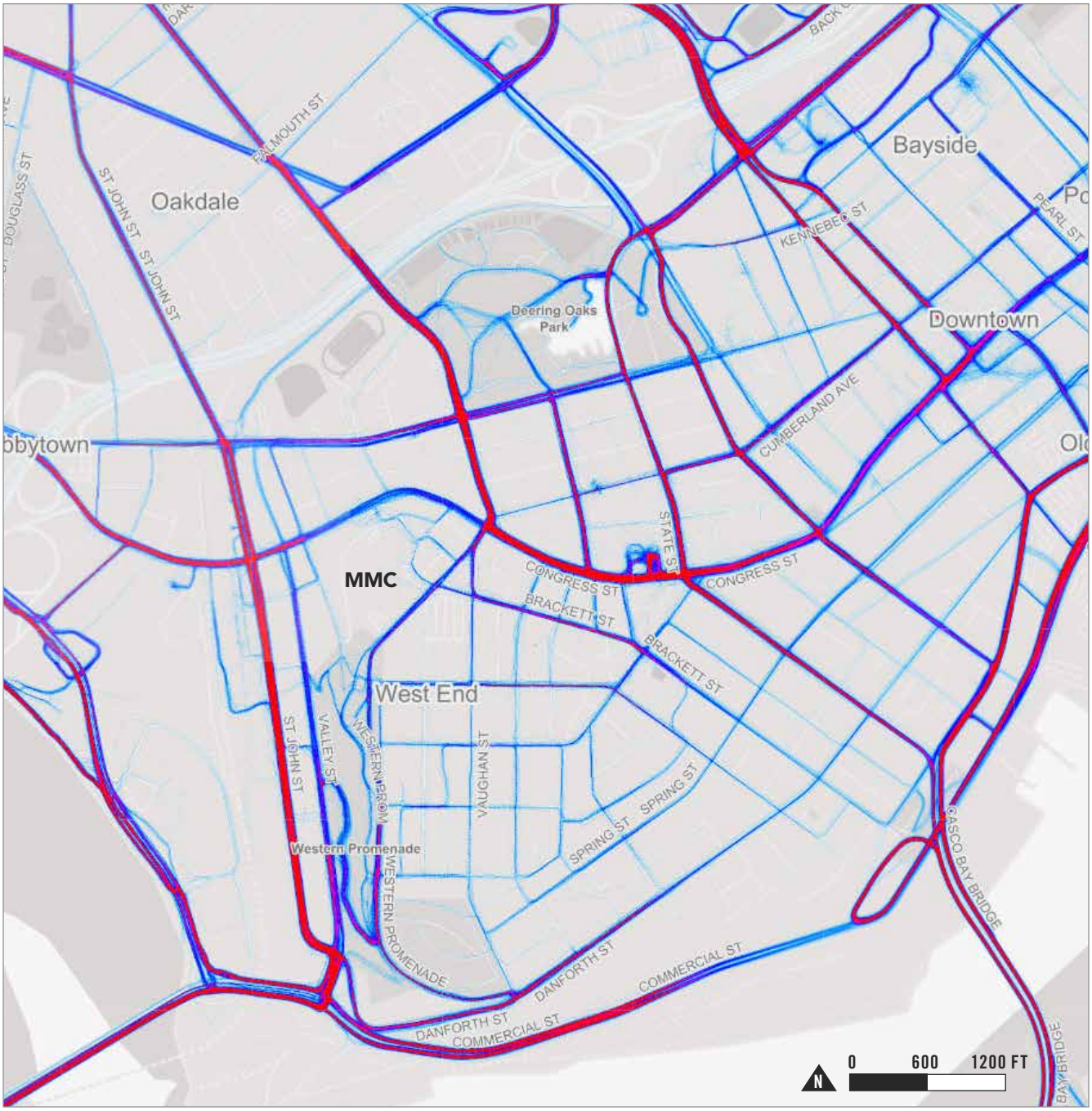


Fig.3.6 Portland Bikeway and Pedestrian Network *(Source: City of Portland, 2014)*

EXISTING FACILITIES

- Bicycle Lane
- Paved Shoulder
- Neighborhood Byway
- Shared Use Pathway
- Shared Lane, with Marking
- Shared Lane

PLANNED FACILITIES

- On Road Bikeway
- Neighborhood Byway
- Shared Use Pathway or Rail with Trail

BICYCLE ACCESS AND STORAGE

As shown in **Fig.3.5 on page 70**, bicycling is prevalent within the City of Portland, however, bike use at and around the MMC campus is generally lower than in other Portland locations. This could be a result of the severe grades in the Bramhall neighborhood, but also the lack of strong municipal bicycling infrastructure, including dedicated bike lanes, paths and sharrows.

MMC is committed to supporting bicycle access to the Bramhall campus by all users, including employees. In recent years, the hospital has invested in bicycle racks, showers, and lockers, and currently has the capacity to accommodate parking for up to 193 bicycles on campus (see **Fig.3.2 on page 58** for locations). MMC aims to continue support employees who bike to work as a part of its TDM plan (see "Supporting Bicycle Commutes" on page 79).

MMC is an advocate of the City of Portland's Bikeway Network Plan, which will provide bicycle infrastructure on campus adjacent streets with linkages to existing and planned shared use pathways (see **Fig.3.6 on page 71**).

Detailed design of each new development on campus will identify any necessary changes to bike infrastructure to better serve the needs of those arriving by bike.

PEDESTRIAN ACCESS AND CIRCULATION

Whether they arrive on campus by car, by bus or by bicycle, all campus users are pedestrians at some point in their journey to their MMC destination. Like other medical centers of its size, MMC provides elevated, covered, and temperature-controlled pedestrian walkways between its parking garages and key campus circulation corridors. This limits exposure to adverse weather conditions, facilitates wayfinding for patients / visitors, and minimizes on-street vehicle / pedestrian conflicts.

MMC also maintains its network of campus pathways and campus-adjacent public sidewalks to ensure safe pedestrian access to campus facilities (see **Fig.3.2 on page 58** for location of key pedestrian entrances).

MMC will complete a campus-wide ROW Plan at the time of its first site plan review that includes sidewalk materials to clarify the need for any variations from current city policies and how they would be integrated into the public realm. In order to improve slip resistance and ADA accessibility, MMC may request waivers from the city's sidewalk material policy under site plan review.

MMC aims to improve pedestrian access to campus with future building projects by orienting building entrances to public streets and providing active ground floor uses where possible. (See "Design Guidelines" on page 116 for details.). MMC will also work with the City and other stakeholders

including the St. John Valley Neiighborhood Association to identify potential improvement that could be implemented to pedestrian routes between the proposed St John Garage (see **Fig.2.7 on page 44**) and the core campus.

FUTURE TRANSPORTATION PLANNING CONSIDERATIONS

MMC continues to solicit input from its neighbors to identify transportation-related issues and possible improvements that should receive additional consideration during the planning and design of future projects by MMC and the City. Key issues identified in this process to date include the following:

- Chadwick Street: A portion of Chadwick Street is one-way. The conversion to two-way could reduce the amount of traffic going further into the West-end neighborhood and help slow vehicular speeds to levels that are safer for pedestrians and bicyclists.
- Chadwick Street at West Street: Neighbors have observed low compliance with stop-signs and two-way travel on one-way streets.
- Vaughan Street at Bramhall Street: This is a difficult intersection geometry for pedestrians, cyclists and vehicles.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

MMC has an active Transportation Demand Management (TDM) program that was one of the first in the state of Maine when launched in 2008. The program aims to reduce MMC's impact on peninsular traffic by subsidizing and marketing of alternative commute options including walking, bicycling, public transit, and rideshare. Known as "Get on Board!," this voluntary program has grown each year through increased enrollment.

In 2017, MMC engaged VHB, a consulting firm with expertise in this area, to update and enhance its TDM program and to inform its long-term plans for parking, in particular.

This section provides a summary of VHB's analysis of existing employee commuter behavior, and outlines proposed updates to the "Get on Board!" program that will be implemented in the near- and long-term to further reduce single-occupant vehicle (SOV) commutes by employees.

EMPLOYEE COMMUTES: 2017 BASELINE

As part of its efforts to monitor and enhance the "Get on Board!" program, MMC recently administered a voluntary transportation survey with its employees. The survey showed that 9% of employees use alternatives to SOV commutes (see **Fig.3.7 on page 75**). Based on the expert knowledge and experience of VHB, the high percentage of employees driving to work alone and parking near campus is not unexpected given the nature of the services provided, the dispersed geographic footprint of where MMC employees live, and the availability of viable transportation alternatives to driving. Detailed analysis of employee driving distance to work is illustrated in **Fig.3.8** and **Fig.3.9** on the following pages.

FUTURE TDM TARGETS

Based on a review of census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 1.5% of the daytime population could be shifted into alternative modes of accessing the campus. This represents approximately 65 fewer individuals driving alone to campus.

The reduction would be achieved through MMC's existing TDM initiatives, as well as new strategies that will be implemented over time. MMC will endeavor to increase its employees' overall use of alternative modes of travel beyond the target identified above through further enhancements or program expansions in the coming years and depending upon initiatives by the City, GPCOG, and others.

MMC's enhanced TDM Plan draws on national best practices and suggested examples from the City of Portland Planning Staff. City suggestions included evaluating the Downtown Parking Management

Fig.3.7 MMC Bramhall Campus Employees Commuting Mode Split (2017)

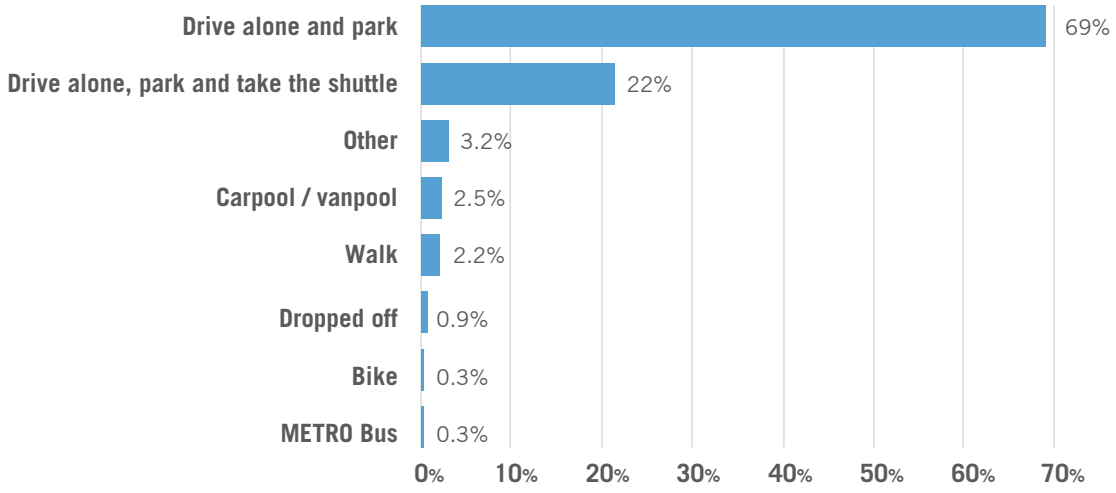


Fig.3.8 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

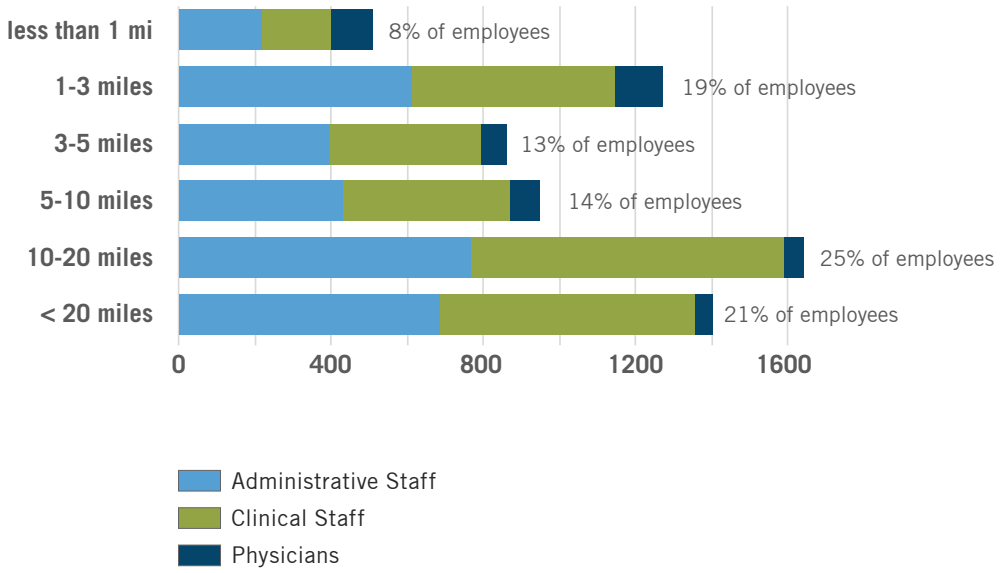
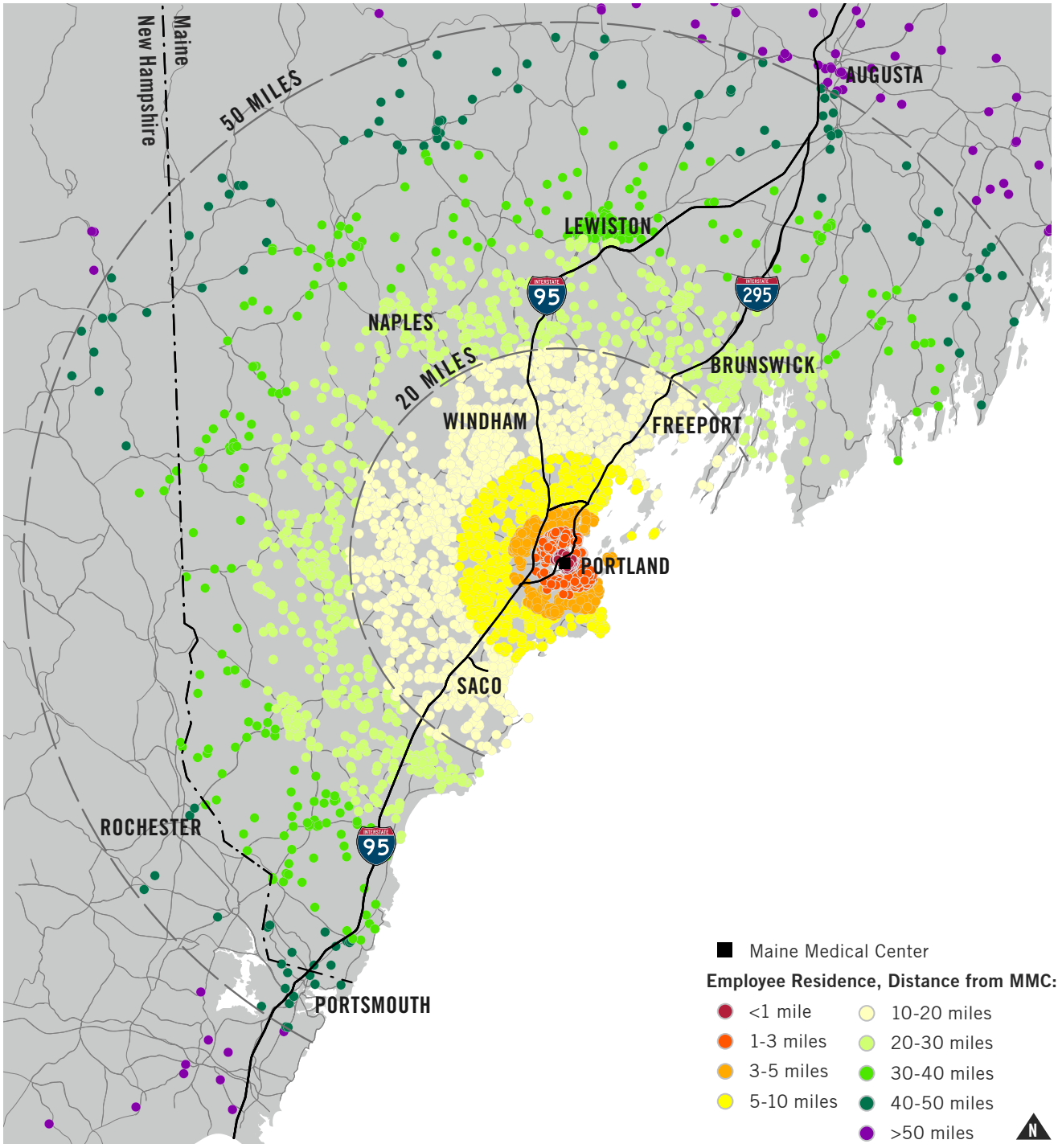


Fig.3.9 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



Plan for Burlington, VT, an Institutional Parking Management Plan also for Burlington, VT, and a Transportation Demand Management Study for Downtown Syracuse, NY. Additionally, MMC also examined the commuting program instituted by Boston's Longwood Medical and Academic Area (LMA), known as CommuteWorks, and operated by MASCO, a consortium of hospitals, colleges and universities, and other related institutional uses. These programs were evaluated because of their efforts to manage SOV driving in a highly concentrated employment district.

Applicable Best Practices

- Collaboration among organizations in the area impacted
- Regular communication and education of alternative transportation benefits
- Pay for parking
- Complimentary support programs (i.e. guaranteed ride home, carpool)
- Regular monitoring of commute mode (i.e. surveys, automated data collection)

TDM PROGRAM COMPONENTS

Individual program elements and related incentives of MMC's TDM program are outlined below. These include continuation of existing initiatives, as well as the following new initiatives / enhancements that will be implemented starting in 2018:

- Data Collection
- "Get on Board!" Coordinator
- Increased Education of Employees about the "Get on Board!" Program
- Bi-Annual Transportation Survey
- Regional Connections Partnership
- Enhanced Transit Fare Discount / Partnership with METRO
- Enhanced Carpool/Vanpool Matching
- Active Transportation Incentives

MMC aims to achieve a 1.5 percent reduction in SOV commutes 5 years after the approval of the IDP. This target will be revised when a new baseline is established.

Data Collection

MMC will explore methods to improve data collection and implement a reasonable system to collect data on the transportation habits of employees and parking garage utilization.

"Get on Board!" Coordinator (New)

MMC will enlist the services of a "Get on Board!" Coordinator responsible for the implementation, operation and continuing sustainability of MMC's TDM. This individual will continually monitor the

program, its operations and future opportunities to reduce vehicle dependency by staff at MMC. The Coordinator will also be responsible for data collection and TDM updates as required.

Increased Education of Employees about the "Get on Board!" Program (New)

MMC will be enhancing the "Get on Board!" promotion and education process by periodically educating existing employees of the options and benefits available through the "Get on Board!" program. Additionally, newsletters will be distributed highlighting the environmental, health and other benefits of TDM.

Bi-Annual Transportation Survey (New)

MMC will conduct a Transportation Survey of its employees every 2 years to collect data about commuting mode split, barriers to TDM use and marketing effectiveness. Information from this survey will be included in the TDM plan updates.

Regional Connections Partnership (New)

MMC will seek to form partnerships with other major employers in the region, including the City of Portland, to foster a holistic approach to transportation demand management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland.

Supporting Mass Transit Commutes (Enhanced)

MMC employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently in the cafeteria. MMC buys the tickets at the regular price and offers them to employees at the reduced prices listed in **Table 3.4** below. This is a clear demonstration of MMC's commitment to making "Get on Board!" work.

Table 3.4 MMC Current Transit Incentives

	MMC COST	EMPLOYEE COST
METRO (10 RIDES)	$13.50	$8
S. PORTLAND (10 RIDES)	$13.50	$8
ZOOM (10 RIDES)	$39	$29.60
ZOOM MONTHLY	$100	$84.50
ZOOM QUARTERLY	$260	$197.50

MMC will fully subsidize the cost of METRO bus tickets for employees who wish to use the bus for the foreseeable future so long as the cost of METRO bus tickets remains as illustrated in **Table 3.4**. If METRO bus ticket costs change, then MMC will evaluate utilization and work with METRO to find the best solution to support employees who wish to use the METRO. Subsidizing METRO tickets would provide employees with an additional financial incentive to use the transit system serving the MMC district.

METRO's existing routes and schedules cannot meet all of MMC's employees' transportation needs, however. Although the MMC campus is well served by bus transit (See **Fig.3.4 on page 68**), the limited hours of operation and the long headways

between runs do not provide a viable alternative to the car even for those employees who can walk to a bus stop from their residence. (See **Table 3.3 on page 69).**

MMC intends to explore a partnership with the Greater Portland Transit District (METRO) to identify strategies for increasing MMC ridership, such as service updates and/or pricing agreements. The formation of a partnership could be mutually beneficial, by providing METRO with feedback for increasing ridership while maximizing the usefulness of the transit system for MMC employees. As MMC formalizes its ties to other local institutions through a regional partnership, its collaboration with METRO could also extend to other employers.

Supporting Employee Carpools (Enhanced)

"Get on Board!'s" most successful initiative to date has been its carpooling program. Most of these connections are ad-hoc. MMC will promote increase participation by actively matching potential riders. Additionally, while Go Maine is the primary administrator of vanpools in the state, MMC will work to proactively identify and assist with the formation of vanpools.

The employee "Get on Board!" portal is linked to the GoMAINE Commuter Connections website, which is an alternative commuting program operated by MDOT. GoMAINE provides commuters with additional commuting resources and benefits that supplement those provided by MMC. These benefits include a carpool ride-matching program and a rewards program for participants.

Supporting Bicycle Commutes (Enhanced)

The MMC campus is located in close proximity to popular bicycle corridors, including St John and Congress Sts which connect riders to destinations across the City of Portland (see **Fig.3.5 on page 70**). MMC has worked diligently to support bicycle commuters. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on their Bramhall Campus. Three new bicycle racks were added in the vicinity of the Main entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus (see **Fig.3.2 on page 58** for location of bicycle racks on campus). Bicycle commuters also have access to a shared toolshed with basic tools.

MMC will undertake an internal marketing program which offers fun and useful prizes for those participating in alternative modes of transportation. Making alternative transportation fun and a community-wide effort is likely to increase participation by some who might not otherwise engage in the process.

Pay for Parking

MMC will charge its employees no less than $3 per paycheck to utilize MMC parking. MMC employees are paid bi-weekly. MMC will evaluate employee parking fees in the mid-term.

Guaranteed Ride Home (GRH) Program

For those employees who regularly use alternative modes of transportation to and from its Bramhall Campus, MMC will guarantee a ride home in emergency situations.

UCar

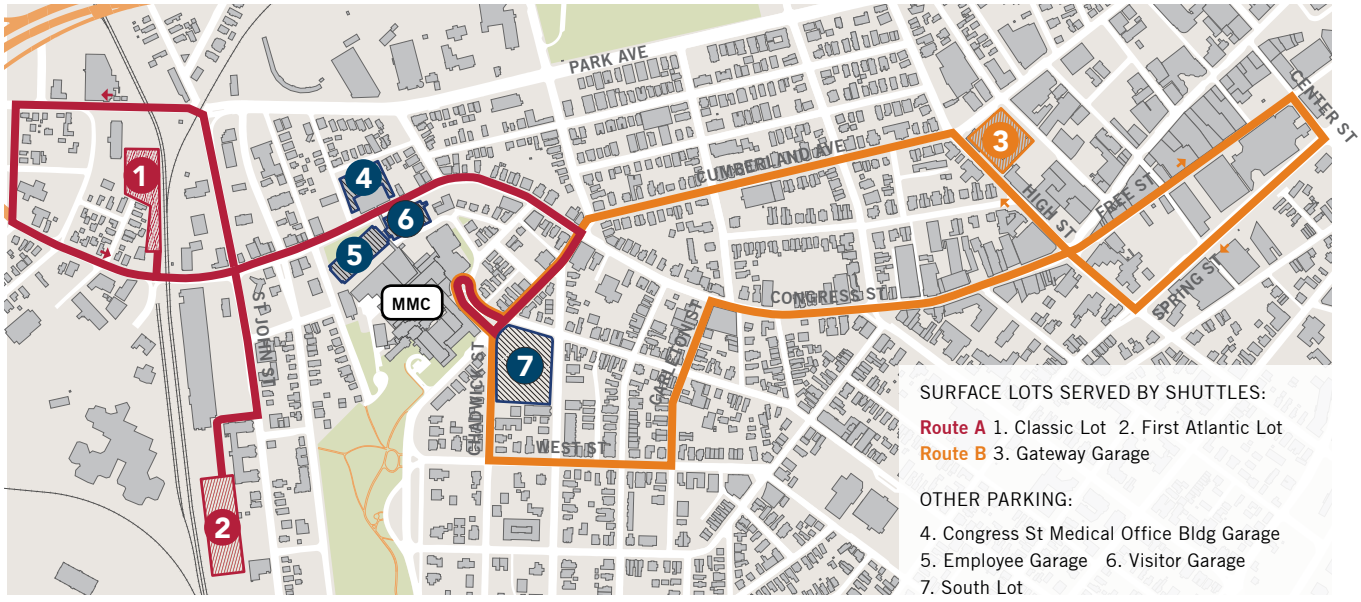
Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar presently located in its Congress St parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the UCar.

MMC Employee Shuttles: Current Service

The MMC employee shuttle operates Monday-Friday from 6am to 11pm. The number of shuttles running to off-site parking locations at any given time varies from 1-5 shuttles depending on traffic volume. These off-site lots fill to capacity on a daily basis. The employee shuttle service has three distinct routes and schedules:

A. Service to and from the off-site 1st Atlantic and Classic parking lots runs from Monday through Friday from 6am to 11pm, in a continuous loop. The 1st Atlantic parking lot (222 St John St) is utilized first in the mornings. Once it nears capacity, service shifts to the Classic parking lot (993 Congress St). Return trips in the evenings service both lots.

Fig.3.10 Map of MMC Shuttle Routes A & B.



B. The Gateway shuttle moves employees between the MMC Bramhall campus, the Gateway office building / garage and the MaineHealth home office at 110 Free St. The shuttle leaves every 20 minutes from the south entrance Monday through Friday from 6am to 4pm. Transportation is provided on an "On Call" basis between 4pm and 11pm. This shuttle also provides a limited courtesy transportation service to patient families staying at the Ronald McDonald House (250 Brackett St.).

C. A courtesy shuttle runs between Brighton Medical Center (335 Brighton Ave) and MMC every 20 minutes from 6am to 4pm.

The shuttles provide a predictable alternative to employees commuting between the three sites while reducing vehicular traffic in and around campus.

MMC has instituted a shuttle service for contractors from the Classic Parking Lot (993 Congress St) to the hospital to reduce traffic and parking impact on the campus and surrounding neighborhoods. In 2015, MMC added a 20-space contractor lot on Forest St. Only essential contractor vehicles are permitted to park on campus: contractor parking passes are distributed by the Engineering Department on a case-by-case basis.

MMC Employee Shuttles: Future Routes

Once the St John St garage is complete and the majority of MMC employee parking is consolidated to that location, a new shuttle route will be established that reduces the amount of traffic around City streets and provides a reliable method of transportation for MMC employees. Future shuttle routes will be determined during the site plan review process.

CHAPTER FOUR

ENVIRONMENTAL AND INFRASTRUCTURE PLAN

Sustainable and resilient infrastructure is key to ensure safe and efficient operations of healthcare facilities in the 21st century. Maine Medical Center is seeking to advance its good stewardship of environmental and infrastructure resources through its Institutional Development Plan.

NATURAL RESOURCE PROTECTION

The Maine Medical Center Bramhall campus is located at a high point in the west end of the Portland peninsula. There are several locations where natural resources are significant:

- The Western Promenade, a culturally significant public park that is listed in the National Registry of Historic Places (NRHP'89, see **Fig.4.1)**;
- MMC-owned landscape along Bramhall St abutting the Western Promenade and serving as a foreground to the Maine General Building and original hospital structure;
- MMC, located in an urban setting, maintains small landscaped areas that provide visual respite from surrounding hard scape. These areas are well maintained, flowers watered and mulched and trees fertilized in order to preserve the pleasing aesthetics important to its neighbors, employees and patients; and,
- MMC-owned natural area along Gilman St. This steeply sloping zone contains natural vegetation consisting primarily of mature evergreen tree growth which serves as a natural buffer between the hospital and residences on Gilman St.

The Western Promenade, in particular, is a treasured resource for the public, including employees, patients and visitors to the MMC Bramhall Campus. It is a site from which to take in views of the countryside and the White Mountains. The Master Facility Plan utilizes vertical expansion and/or previously developed sites to minimize impact on natural resources and maintain existing campus open spaces. The plan does not encroach upon or negatively impact any of the natural resources listed above.

Fig.4.2 on page 85 illustrates the location of these natural resources in relation to the proposed short- and long-term projects.

Fig.4.1 MMC IOZ: Relationship to the Western Promenade

Fig.4.2 MMC Environmental Protection and Operations Plan

* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

STORMWATER MANAGEMENT

The MMC Bramhall campus is located at a high point in the west end of the Portland peninsula. From the high point of the property along Bramhall St, runoff from the site drains west, north and east entering the to the City of Portland's separated storm drain system and combined sewer system. The campus terrain and location of high slopes that contribute to stormwater flows is illustrated on **Fig.4.3 on page 86**.

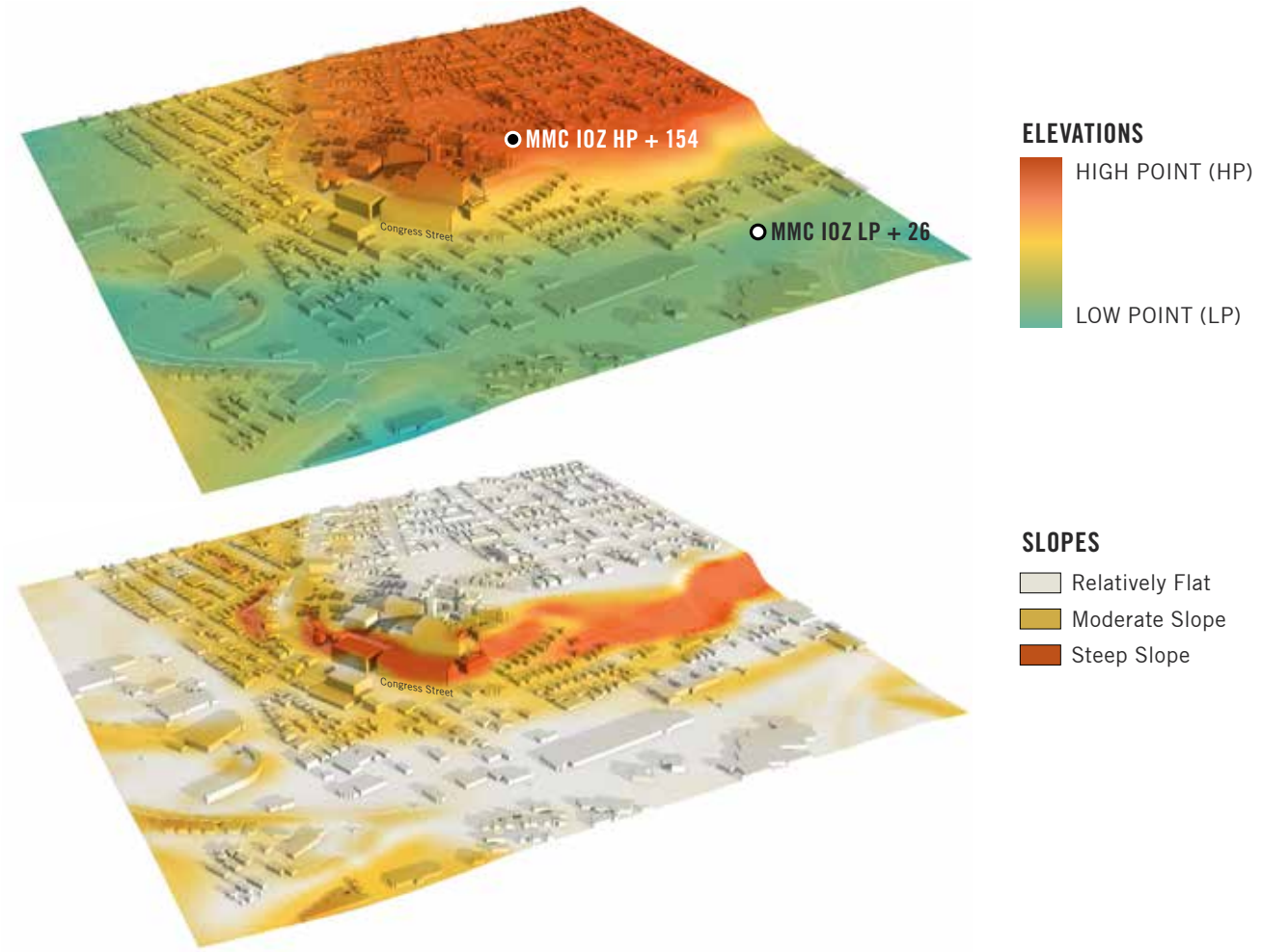
FEMA Floodplains

The campus is not located in a FEMA-designated flood zone. The 100-year flood zone boundary is located at the western edge of the Pan Am rail line and consists of flood-prone flats along the Fore River.

EXISTING STORMWATER INFRASTRUCTURE

In general, the campus redevelopment over the last 15 years has collected runoff from parking lots and new rooftops into a separated storm drainage

Fig.4.3 Diagrams Illustrating Elevation and Location of Steep Slopes around MMC Campus
(See **Fig.5.5 on page 106** for a map of existing elevations within the MMC IOZ boundary).



system, including storm drains in the public right of way. Where feasible, the on-site separated drainage system has been connected to a municipal separated storm drain. This includes the storm drains in A St constructed by the City in 2001 and Gilman St constructed by MMC in 2005.

2004 Improvements

The campus' stormwater conditions were most recently evaluated in a stormwater management report prepared by Sebago Technics, Inc. in 2004 as part of the Planning Board's review of the Bramhall campus expansion project, which included the construction of the Women and Infants Center, Emergency Department Expansion, Congress St Parking Garage and the Central Utility Plant. To meet stormwater treatment requirements for the expansion, MMC installed two Downstream Defender Stormwater treatment units to treat runoff from impervious areas on the site. The redevelopment separated and redirected stormwater runoff from approximately 6.3 acres of existing development from the combined sewers in Crescent St, Ellsworth St, and Congress St to the separated storm drain in A St. A 6' diameter unit was installed in the Congress St Parking Garage and a 10' diameter unit was installed in Gilman St.

Discharges into the City Combined Sewers

Other locations abutting the campus including Congress, Wescott, Charles, Bramhall, and Bracket Sts are only served by the City's combined sewers. At these locations, MMC's recent drainage construction terminates in a separated storm drain manholes connected to adjacent City combined sewer manholes to provide points of connections for future municipal separated storm drains.

Detailed information on MMC's stormwater discharges into the City's combined sewer and separated storm water infrastructure is outlined on **Fig.4.4 on page 88**.

FUTURE STORMWATER FLOWS

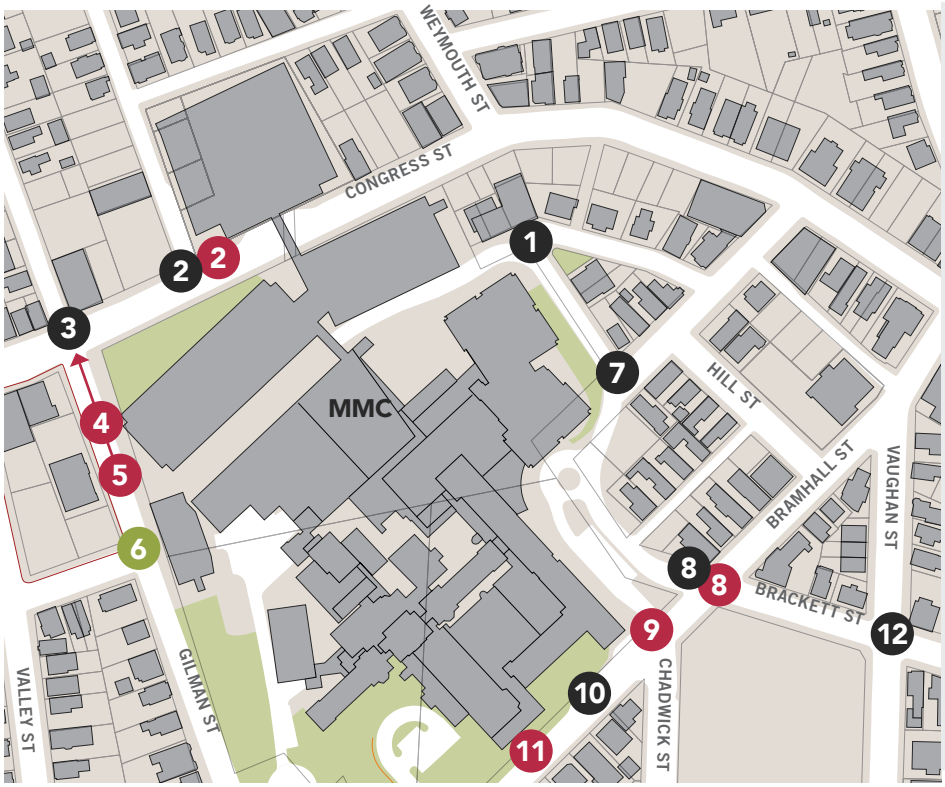
Any development or redevelopment of sites by MMC will be required to meet the City's stormwater management ordinance requirements and mitigate any increases in discharges to the extent practicable.

Projected Impacts of Proposed Development

A high level assessment of short- and long-term projects identified as part of MMC's Master Facility Plan shows no significant change to the amount of impervious surface or peak rate of run-off at the proposed project sites, as outlined below. A detailed discussion about the impacts of any future development will be part of site plan review.

- Proposed vertical additions to existing East Tower and Visitor Garage will not change the amount of impervious surface.
- Replacement of the Employee Garage with the proposed Congress St Development is not anticipated to increase impervious surfaces. The current design of the project site redevelopment includes an extensive green roof component and proposes

Fig.4.4 Existing Sewer Connection Points



Locations where MMC separated stormwater enters the City combined sewer system

Locations where MMC separated stormwater enters the City storm water system

Locations where MMC separated sanitary sewer enters the City combined sewer system

LOC.	MMC STORM WATER FLOWS	MMC SANITARY FLOWS
1	Runoff from the campus and storm drains constructed by MMC in Wescott St enters a combined sewer manhole at the intersection of Wescott St and Crescent St. The outfall of this system a 12" combined sewer that drains in a westerly direction along Crescent St, eventually draining to Park Ave via sewers in Ellsworth St, Congress St and Weymouth St.	N/A.
2 2	Separated runoff from the MMC parking garage enters the municipal combined sewer at the intersection of Congress St and Forest St. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains north in Forest St to Park Ave.	Sanitary sewer outfalls from the MMC parking garages enter the municipal combined sewer at the intersection of Congress and Forest St. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains north in Forest St to Park Ave. Areas tributary to this system include the Emergency Department, Women and Infants Center and Richards Wing.
3	Runoff from areas of the campus along Congress and Gilman St enter catch basins connected to the City's combined sewer system at the intersection of Gilman and Congress St. From this point the combined sewer drains north in Gilman St to Park Ave. Runoff in the roadway that bypasses the catch basins at the intersection runs west along Congress to St John St.	Sanitary sewer flows from #4 and #5 enter the City combined sewer at this location.

LOC.	MMC STORM WATER FLOWS	MMC SANITARY FLOWS
4	N/A.	The sanitary sewer serving the LL Bean Building, Annex B / Maine General Bldg, and the Engineering Services Building enters the City's 12" concrete sewer in Gilman St. From this point the sewer drains north in Gilman St to Congress St (#3) and continues to Park Ave.
5	N/A.	The sewer service from the Central Utility Building enters the 12" concrete City sewer in Gilman St, a short distance above Location 4.
6	Runoff at the intersection of Gilman St and A St at the upstream end of a separated storm drainage system constructed by the City of Portland in 2001 as part of the St John St sewer separation project. The storm drain was extended along A St, from its intersection with St John St to a drain manhole in Gilman St opposite the MMC Central Utility Plant. This storm drain was extended to the hospital property specifically for the purpose of providing a point of connection for separated stormwater runoff from the hospital. In 2005 MMC constructed drainage on campus to collect runoff from areas of the site including the existing emergency room parking area, LL. Bean Wing, and service areas abutting the Central Utility Plant to the A St storm drain. This project also extended the separated storm drain in Gilman St to the south, separating runoff in Gilman St and the Dana Center from the City's combined sewers.	N/A.
7	Runoff at the intersection of Ellsworth St and Wescott St. Separated storm drains constructed by MMC in 2005 connect to a combined sewer system manholes in Ellsworth St. The combined sewer drains in an east in Ellsworth St towards to Congress St.	N/A.
8 8	Separated storm drainage from the MMC parking lot enters the combined sewer in Charles St at its intersection with Bramhall St.	Sanitary sewer manhole in the intersection of Bramhall and Brackett Sts where sewer services from Pavilions A and C connect to the City sewer. The outfall of the manhole at this location is a 15" sewer that drains to the east in Bramhall St.
9	Runoff from small areas of the site along Bramhall St enters the combined sewer system at Location 8.	Sewer service from the south end of Pavilion A enters a City sewer manhole at the intersection of Bramhall and Chadwick St. From this location, the sewer continues east to Location 8.
10	Small areas along Bramhall St enter catch basins in the city right-of-way	N/A.
11	N/A.	Sewer manhole in Bramhall St where a sewer service from the Dana Center enters the City sewer in Bramhall St. From this location, the sewer continues east to Location 9.
12	Runoff at the intersection of Brackett St and Vaughan St where separated MMC storm drains in the Brackett St parking lot connects to the combined sewer draining southeast in Bracket St.	N/A.

removals of existing impervious area. The net impact of this design is expected to result in no increase in the peak rates of runoff from the site. It is expected that the primary post-development stormwater connection will be to the Forest St combined sewer at the intersection of Congress St and Forest Sts..

- 222 St John St is served by a separated stormwater drainage system that travels west under the railroad tracks and past the Cumberland County jail site and Fore River Parkway to discharge to the Fore River. The proposed new parking structure on this property is not anticipated to significantly change the amount of impervious surface or peak rate of run-off.

SANITARY FLOWS INTO CITY COMBINED SEWERS

Issues in areas of the City's stormwater, sewer drainage, and fire hydrant systems in the vicinity of MMC's campus have been identified by City officials but have not been quantified. MMC understands that the site plan review process for individual projects may include measures that minimize new impacts to the combined sewer system. The MMC campus discharges sanitary flows into the City of Portland's combined sewer system at approximately seven locations, as illustrated in **Fig.4.4 on page 88**. This information is provided to the best of MMC's knowledge after researching its own records and those of the City of Portland. Due to the age of the public sewer system and MMC's buildings, record plans of the existing sewer systems may be incomplete and additional currently unidentified connections may exist. We are unaware of capacity issues in the City's existing system at the connection points from the campus to the City sewer system located in the public right of way. Drainage studies completed for the 2004 Bramhall campus expansion and approved through the site plan process did not identify deficiencies at the connection points to the City system.

MMC anticipates increased use of city combined sewers for sanitary flows associated with its short- and long-term projects. The increased sewer flow loads and exact connection locations will be determined during the Site Plan review process as required by the City of Portland:

- The East Tower expansion is anticipated to increase sanitary flows in the combined sewer located at the intersection of Congress and Forest Sts, which connects to the Forest St combined sewer.
- The Congress St Development is anticipated to increase sanitary flows in the combined sewer located at the intersection of Congress and Forest Sts, which connects to the Forest St combined sewer. The Congress St Development may also include a sewer connection that increases sanitary flows into the combined sewer located at the intersection of Congress and Gilman Sts that ultimately discharges to the Gilman St combined sewer.

ENERGY CONSERVATION

CURRENT CONSUMPTION

Because MMC, of necessity, is such a large consumer of energy, it utilizes the services of an energy procurement broker, Competitive Energy Services, to provide it with strategic energy consulting services and management of energy procurement activities for electricity, natural gas, and oil in order to maximize efficiency and to ensure MMC achieves the most competitive pricing. MMC purchases its energy through a competitive bid-based energy procurement process.

In calendar year 2016, MMC consumed:

- 411 gallons of oil,
- 1,633,686 CCF of natural gas, and,
- 35,375,765 Kw-Hr of electricity.

CONSERVATION EFFORTS

Central Utility Plant (2008)

In 2008, MMC's 22 Bramhall St campus went live with its upgraded and centralized utility plant. The Central Utility Plant (CUP) was designed to provide better management of and more efficient results for energy consumption by the hospital. The plant produces steam, chilled water, and back-up power for the Bramhall campus. The peak tonnage of the plant is currently close to 2,400 tons per hour of chilled water.

Since 2008, MMC has experienced dramatic energy consumption decreases directly resulting from the state of the art utility plant. The CUP controls both electrical and gas utilization, and heating and chilling functionality, and will service the short-term modernization project under development at the Bramhall campus, with a minor upgrade to the existing systems. The CUP contains state-of-the-art dual natural gas /oil system allowing for switching between oil and gas depending upon price and availability.

Infrastructure Improvements

In addition to its conservation methods in the electric, oil and gas arena, MMC has also undertaken investment in infrastructure upgrades at its 22 Bramhall Campus to reduce building air changes and temperature set-points allowing for the monitoring and control of humidity and temperature during high demand use times. Upgrades in sequencing and timing of set points have achieved efficiencies of HVAC run times and energy demand.

Further, MMC has been investing in lighting and plumbing features that allow for reduced energy consumption. LED lights have been installed in its garages and in the public corridor within the Bean Building. Low flow plumbing fixtures with aerators are installed when replacements or renovations are required. These fixtures lower overall water consumption at the hospital.

Future MMC projects are expected to integrate with ongoing major utility initiatives impacting the area including Unitil's Natural Gas SURE project and the City's LED street light conversion program.

Table 5.1 Projected Electricity Demand

		Projected Net Energy Demand	Potential On-Site Energy Production (Rooftop PV)
East Tower Vertical Expansion	Utilizing new systems for efficiency	300 KW	--
Visitor Garage Vertical Expansion	Utilizing existing systems	350 KW	150 KW
Congress Street Development	Net demand with the deletion of the existing garage currently on site	1,700 KW	
St John St Garage	Stand-alone project not connected to core campus primary metered system	230 KW	500 KW
Central Utility Plant Expansion	Additional summer cooling demand	1,800 KW	
TOTAL ENERGY DEMAND		4,380 KW	650 KW

Green Buildings

The historic Maine General Hospital incorporated natural light and ventilation as an important part of the healing process. To continue this legacy, new campus buildings will take advantage of natural light, heat, and ventilation to improve building performance while also contributing positively to the healing qualities of patient and family spaces. Specific designs will aim to lower Energy Use Intensity (EUI) beyond the traditional code minimum baseline. Use of industry standards such as LEED will serve as a model for evaluating the sustainability of future MMC buildings.

PROJECTED ENERGY DEMANDS

Each project in the Master Facility Plan has specific needs and vary in their impacts. The proposed projects combined are anticipated to generate 5,400 KW of additional electricity demand (see **Table 5.1** above for details). MMC is currently working with Central Maine Power to identify capacity for the projected electricity loads.

The steam loads are met by MMC's CUP and will not impact city infrastructure. The CUP has the capacity needed to service MMC's short-term growth needs. The gas infrastructure has capacity to handle any increases to the current steam load.

OPERATIONAL SUSTAINABILITY

HAZARDOUS WASTE MANAGEMENT

MMC has a Hazardous Materials and Waste Plan supported by policies for the handling and disposal of hazardous waste, universal hazardous waste and biomedical waste.

Biomedical and Hazardous Waste

Biomedical waste sharps, biomedical waste, pathological waste (tissues, etc), and hazardous pharmaceutical and other chemical waste are collected by MMC Environmental Services or contractors, and stored at secure locations across campus prior to pick up, transfer, and ultimate disposal by contractors. DEA controlled substances are wasted at the point of generation (e.g. medication rooms), solidified, and collected by MMC Environmental Services at a secure holding room for pick-up, transfer and ultimate disposal by contracted vendor. All hazardous materials leave the campus through the loading docks (see **Fig.4.2**).

MMC's short-term projects are not expected to create significant increases waste volumes. No changes are currently planned to hazardous materials storage and transfer locations on campus.

Grease Discharge

MMC will be installing a grease trap system capable of separating grease from waste water as part of its short-term projects.

Soiled Linen

MMC has its own Linen Services department that is responsible for overseeing the processing of laundry for all of MMC and Maine Medical Partners (MPP) locations. The plant is located in Westbrook, and the linen is transported between these locations by MMC's Materials Management team.

SUSTAINABLE OPERATIONS

MMC expects to continue, and where possible, expand on the following sustainable operation strategies as part of its long-term plan.

Campus Recycling

MMC separates paper and cardboard out of the waste stream through on-campus recycling. MMC Kitchen and Café provide recycling for can and bottle returnables, and separate compos items from the waste stream. MMC has also switched to reusable needle boxes to reduce plastic waste. Expired medical equipment and devices are reprocessed by contractors.

Landscaping

MMC contracts with an outside landscaping company. In renewing its contract, MMC is requiring the use of organic pesticides and fertilizers for all planting and green space on campus.

Snow Removal

MMC contracts with an outside snow removal company. The environment requires the use of melting agents, but MMC has taken steps to minimize its use by installing heated sidewalks at the front entrance and South lot entrance as well as the Emergency Department entrance. MMC will continue to use replace calcium chloride instead of salt, when possible, to reduce environmental impact of snow removal.

NOISE IMPACT

MMC's Master Facility Plan aims to minimize noise and disturbance both for the benefit of its neighbors and its patients. Key to this is relocating the main campus entrance to Congress St. This will limit traffic and associated noise from moving up onto the hill. The relocation of the helipad will maintain current flight paths, which were designed to minimize neighborhood noise impacts by following the recommended approach to the hospital over the Congress St corridor as opposed to over dense residential areas. MMC will document the noise complaints it receives electronically and at its dedicated noise complaint phoneline at 207-662-6699, and review all such complaints with the neighborhood council as they arise.

MITIGATING IMPACT OF HELIPAD OPERATIONS

MMC's helipad is currently located on top of the Employee Garage, which is slated for deconstruction in the short-term per MMC's Master Facility Plan (MFP). The MFP calls for a new helipad to be built on top of the East Tower following its planned vertical expansion (see "Short-Term Projects" on page 44).

MMC is in the process of identifying preferred flight routes for the new helipad, to be approved by the City of Portland, that will minimize noise impact of helicopter flights on surrounding residential areas. Initially, such preferred flight routes shall be proposed to the Federal Aviation Administration (FAA) as shown on the flight map (see **Fig.4.5 on page 95**). At the initiative of either the City or MMC, the map of preferred flight routes may be amended from time to time by agreement between MMC and the City. MMC will notify all flight providers likely to use the Helicopter Landing Pad of such preferred routes, and shall take the following measures to ensure that such preferred routes are utilized whenever weather conditions, safety considerations and the best interests of the patient being transported permit, with the expectation that this will be the usual case.

MMC will instruct all providers which regularly use the Helicopter Landing Pad that pilots must file an exception report with the Air Medical Provider Administration of Lifeflight of Maine or its

Fig.4.5 Proposed Flight Routes for the new MMC Helipad

NOTE: Path #3 is new and will only be used under high wind conditions if required by the Federal Aviation Administration.

successor entity for operations modified for safety considerations or at the direct request of Approach Control at the Portland International Jetport. Logs of these exception reports will be made available to MMC and to the City upon request but no more frequently than annually.

When and if the Portland Jetport has the capacity to maintain and preserve data which specifically identifies flight routes actually taken by aircraft utilizing the Helicopter Landing Pad, the City shall consult such data to review compliance with this paragraph, and MMC, upon request of the City, shall be responsible for the cost of translating this data into usable form but not for the costs of the flight monitoring.

MMC will continue to engage providers of helicopter emergency medical transport who are accredited by the Commission on Accreditation of Medical Transport Systems (CAMTS) or its successor agency (unless special circumstances warrant a non-accredited provider, such as the Air National Guard, US Coast Guard and others), and who operate in compliance with the "Fly Neighborly Guide," third edition (and any subsequent revisions) prepared by the Helicopter Association International.

Helicopter landings on the Helipad shall be used for emergency patient care only, and on the rare occasion for emergency management training by federal or state management agencies or US military or government aircraft.

Compliance with Helistop Overlay Zone Regulations

Because the proposed helipad location is on the roof of an existing structure, the landing pad shall not be required to meet the setback requirements of Section 14-327(3), or the fencing requirements of Section 14-327(4) of the Helistop Overlay Zone.

MMC will continue to honor the following exception to the Helistop Overlay Zone included in the 2005 Conditional Rezoning Agreement (Order 172-04/05):

1. Equipment. In generating any specifications in connection with the negotiation of any contract or agreement with any provider of emergency medical transport by helicopter, MMC will specify that helicopters utilizing the Helicopter Landing Pad (with the exception of U.S. military or government aircraft) are relatively new turbine powered aircraft meeting requirements under ICAO Annex 16 Chapter 8 for in-flight noise levels and complying with FAA airworthiness standards, 14 CFR part 36.11 and 14 CPR 21 Sub-part D, or any amended or successor requirements or standards.

MMC shall conduct a noise study as part of the site plan process if any changes to the helipad are being proposed, and work to mitigate any potential noise impacts.

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CHAPTER FIVE

DESIGN

Maine Medical Center aims to continue its tradition of design excellence with its new campus projects. Future buildings will be designed to improve care delivery while also providing a new gateway to Portland on Congress St.

DESIGN DRIVERS

The campus transformation of Maine Medical Center (MMC) draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the Hospital will reflect its location within Portland and of Maine. Within this framework, the Hospital aims to preserve the historic character of the existing campus yet provide the opportunity for new identities to develop that represent the modern delivery of healthcare and the future of MMC.

Fig.5.1 MMC Campus: Key Design Drivers

COMMUNITY

Positive Patient, Family & Community Experience

ADAPTABILITY

Spatial and Programmatic Flexibility

HEALING

Spaces that Promote Healing

A NEW GATEWAY ON CONGRESS STREET

MMC key design drivers and interventions envisioned for the MMC balance the clinical needs of the hospital with the campus' place within the City of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with its urban context. This is achieved by focusing the new entrance towards Congress St to create an improved presence on the urban edge of the campus. This key intervention improves the visitor and patient experience from arrival to the City all the way to entering MMC buildings themselves. Providing a new entry on Congress St connects a campus entry directly to the existing and expanded visitor parking garage, simplifying the drop-off and parking sequence. This move creates a clear arrival sequence from drop-off, to parking, to movement through the MMC campus.

AN EFFICIENT, WELL-ORGANIZED CAMPUS

The inclusion of a new entry coupled with clear primary circulation along the ground level connects major interior programmatic functions with the site, further reinforcing the wayfinding and activating the building interior and exterior. Engaging with Congress St with a sensitivity to human scale and experience will be the focus of the transition between exterior to interior including transitions from urban to natural environments. This approach extends to vertical connections, both physical and visual, to mitigate the large grade changes that exist on campus and with the surrounding sites. These interventions will provide a positive patient

Fig.5.2 Artists' rendering of new Congress Street entrance, part of the proposed Congress Street Development (Note: Façade design is subject to change during detailed design.)

and visitor experience as well as improve the surrounding neighborhood.

DESIGN THAT SUPPORTS HEALING

The creation of healing environments is an essential element to the design within the IOZ boundary. This will be achieved through the incorporation of access to and views of nature and natural daylight, which are proven to improve positive patient outcomes within a healthcare environment. Proper location and use of glass and transparency provides connections to the exterior to improve patient, visitor and staff experience but also to further reinforce wayfinding, and activate and energize the streetscape.

A SUSTAINABLE AND RESILIENT CAMPUS

Hospitals are vital partners within the communities they serve. Due to this relationship, design modifications will further improve MMC's status as a resilient campus that provides both a responsive exterior environment and healing indoor environment. Buildings take advantage of natural light and air, coupled with the use highly efficient mechanical systems. These drivers will reduce the energy necessary to operate the buildings, further increasing resilience in the face of unanticipated events.

CONTEXTUAL LANDSCAPE FRAMEWORK

The long-term landscape framework for the MMC campus draws its inspiration from the landscape typologies of coastal Maine reconciled to the site's rich historical and urban context. The campus commands a high promontory adjacent to the historic Western Promenade, and extends down the hill to Portland's bustling main street, Congress. The landscape design will respond to this context with elements that provide transitions between the historic and pastoral to contemporary and urban.

The landscape design at the southern end of the campus is conceived as a visual extension of the Western Promenade's historic landscape design, while the new entrance on Congress St is thought to be a contemporary expression aligned with modern healthcare design. The new entrance on Congress St is contemplated to accommodate ADA-compliant access from the street along with stairs and a vehicular drop-off. The streetscape improvements along Congress St itself will rely on the existing City standards, providing continuity along the length of the street and completing the transition to the urban realm.

The intermediate landscape spaces may be located on the campus to provide the transition between these two primary expressions, with landscapes and outdoor spaces that include courtyards, viewing gardens and green roofs.

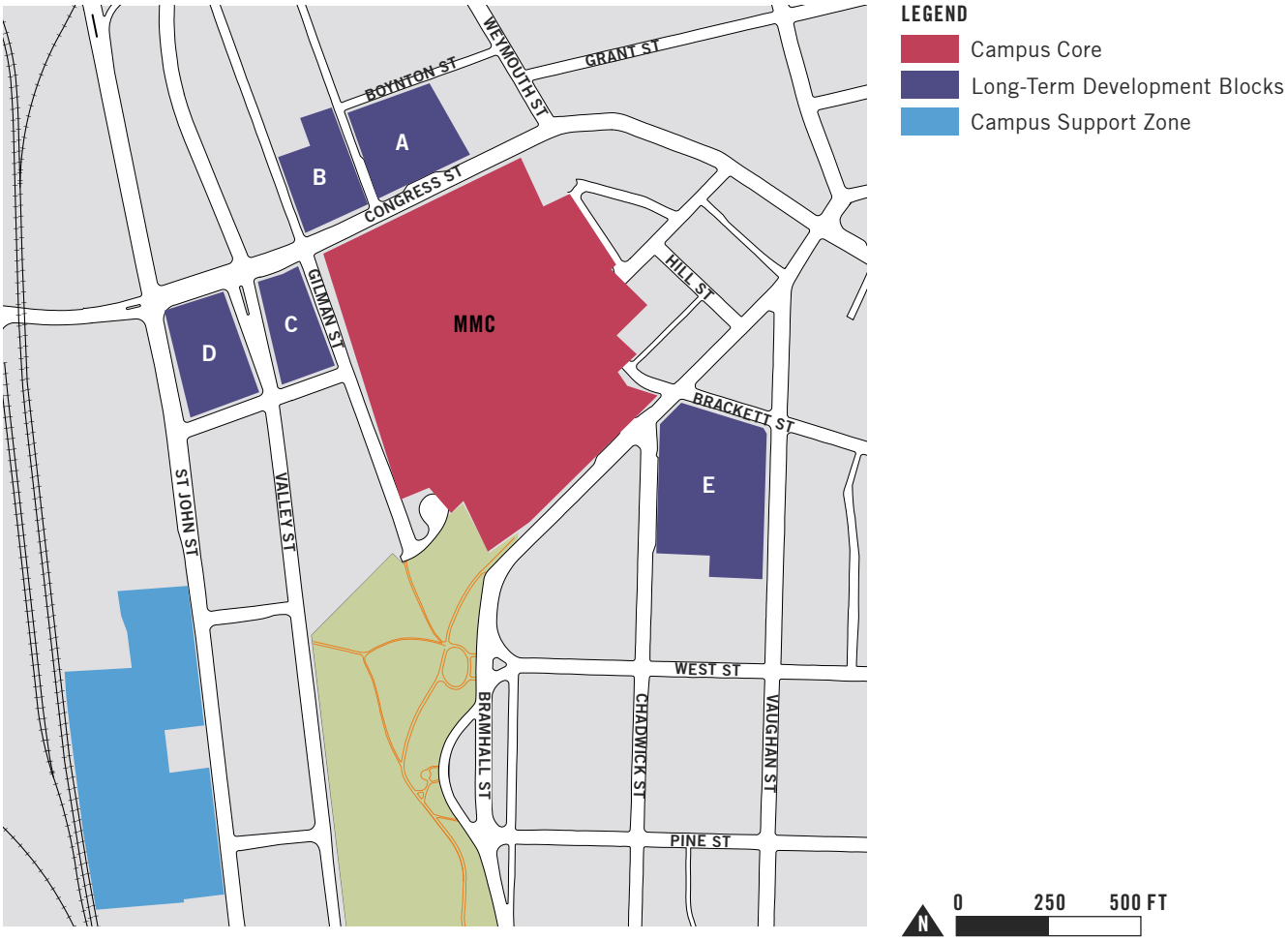
NEIGHBORHOOD INTEGRATION

Like many urban medical centers established in the 19th century, neighborhoods have grown up around MMC while the Medical Center has continued to grow. The historically synergistic relationship between MMC and surrounding neighborhoods, commercial corridors and parks is described in detail under "History" on page 10). The growth of MMC in the automobile era brought forward challenges related to traffic and parking that are common to medical centers located in urban settings. These issues continue to be at the forefront of MMC's ongoing dialogue with its neighbors and the City, and are addressed in the "Transportation Plan" section of this document (see page 53). Equally important to the relationship between MMC and its neighbors, however, is the integration of campus buildings, open spaces, and parking lots into the physical fabric of the neighborhoods through careful consideration of location, height / massing, use, and overall design.

As outlined in the introduction to this chapter, improving the interface between campus and community was an objective of the MMC Master Facility Plan. The new hospital building proposed in the short-term will transform MMC's frontage on Congress St, which was previously defined by parking structures only.

During the IDP process, the City of Portland encouraged MMC to look beyond its limited zoning boundary to identify areas for potential long-term growth. MMC has worked with abutting land owners

Fig.5.3 MMC IOZ Development Zones



and the City to identify key parcels contiguous with its core campus that can accommodate potential expansion of healthcare-related or supporting uses in the long-term (see **Fig.5.3**).

A majority of these are under-developed parcels on either side of Congress St—an area envisioned for transformation into a new gateway node in the City's Comprehensive Plan (see **Fig.1.8 on page 27).** Nearby but non-contiguous parcels along St John St were identified to accommodate additional supporting uses, and in particular, the potential for a future employee parking deck.

The following sections summarize MMC's methodology for identifying an appropriate height envelope for these future development zones that will ensure appropriate integration with and transition into adjoining neighborhoods.

DETERMINING MAXIMUM HEIGHTS: OVERVIEW OF METHODOLOGY

MMC has used a multi-part methodology to determine the appropriate height profile for potential future development within the IOZ boundary:

1. Project Definition. The Master Facility Plan has identified heights for short- and long-term projects that reflect MMC's campus modernization needs. These approximate heights, which are expected to be refined through detailed design, were taken as a starting point to determine maximum heights for the proposed building sites.

2. Urban Design Analysis. Heights for zones that are not identified for specific projects were determined using context-sensitive urban design best practices from urban hospital campuses and health districts around the US. These included:

    » Enabling larger and taller buildings within the campus core while providing height transitions to the scale of residential and historic neighborhoods along campus edges (see "Transitional Zones" **page 110**);

    » Testing future development blocks for a variety of uses appropriate for mixed-use health districts to identify heights that accommodate desired uses; and,

    » Using computer-generated shadow analysis of existing versus proposed height profiles to minimize potential shadow impacts of future development on adjoining public spaces and properties (see "Minimizing shadow impacts" **page 122** for details).

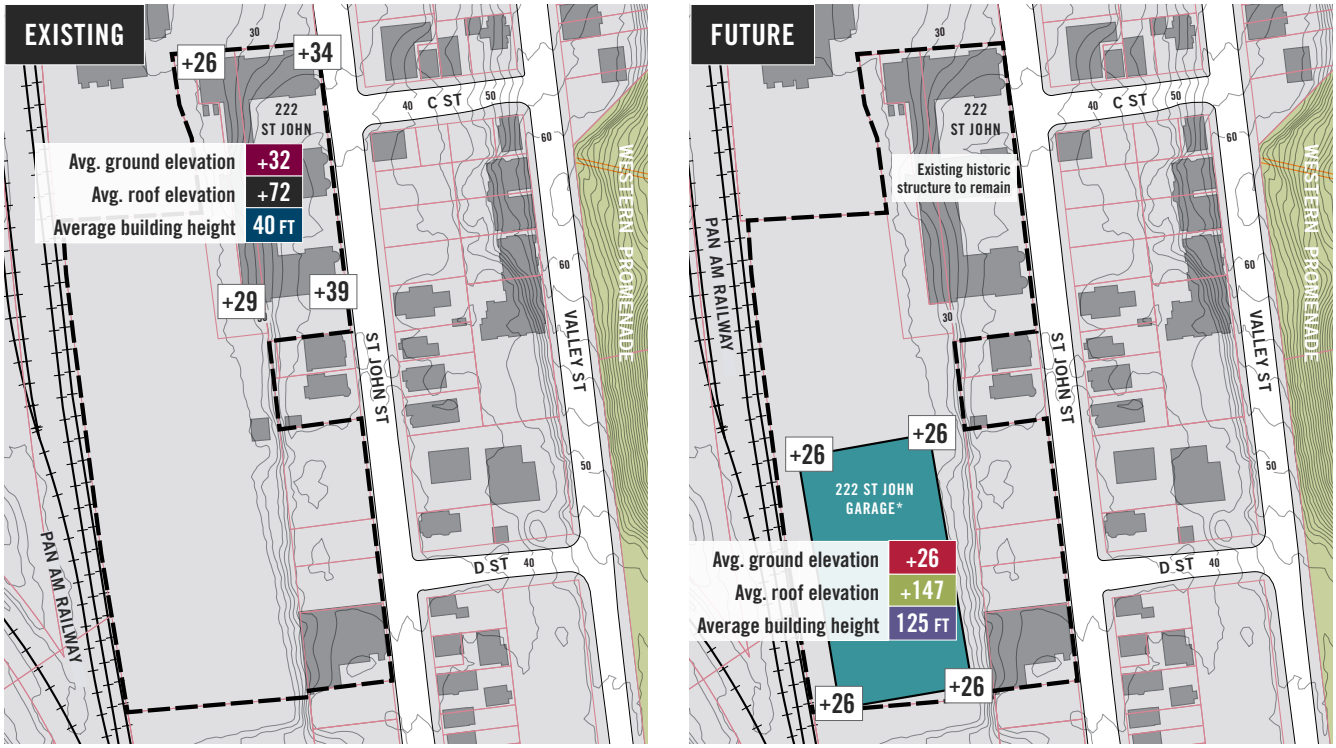
3. Slope Analysis. A 3D terrain model was used to optimize maximum heights based on the average grade of each building site and/or development zone within the IOZ.

4. Visioning. MMC has worked with the City of Portland planning staff to identify maximum and minimum heights and number of stories for new development along Congress St that can provide "gateway" experience that is called for in the City's Comprehensive Plan. The target heights have been identified as 75 feet (6 stories) maximum, and 3 stories minimum along Congress Street. (Note: Actual heights listed vary depending on the average slope within each block).

The resulting future height profiles, which are the basis of the maximum heights requested in the Regulatory Framework, are illustrated in **Fig.5.4** through **Fig.5.8,** along with the existing height profiles for ease of comparison.

The regulatory framework also identifies the maximum number of stories allowed within each

Fig.5.4 Existing and proposed future heights for long-term development parcels along St John Street

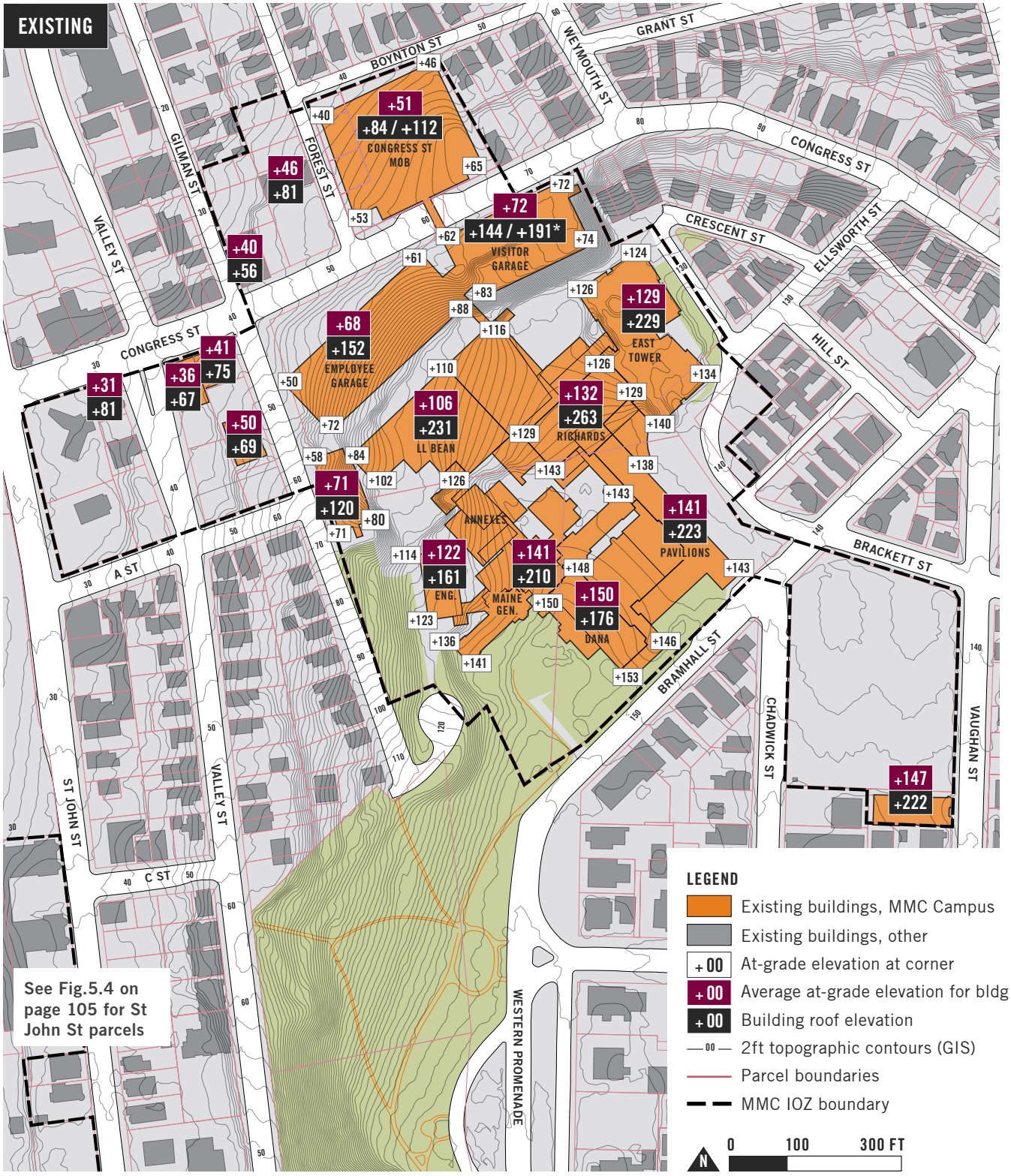


*** NOTE: The exact location, footprint and access to St John Garage to be determined during detailed design.**

height zone, which are based on a minimum floor-to-floor height of 10ft for allowed uses. Floor heights of actual buildings will vary widely based on program use, and can exceed 20ft for intensive healthcare uses.

A 3D rendering of the maximum height envelopes requested in the Regulatory Framework can be seen in **Fig.5.13 on page 114.**

Fig.5.5 Existing Structures within IOZ: At-Grade and Rooftop Elevations



* Height of existing elevator tower on the Visitor Garage, excluding mechanical room on top of tower.

Fig.5.6 MMC Long-Term Development Vision: At-Grade and Rooftop Elevations

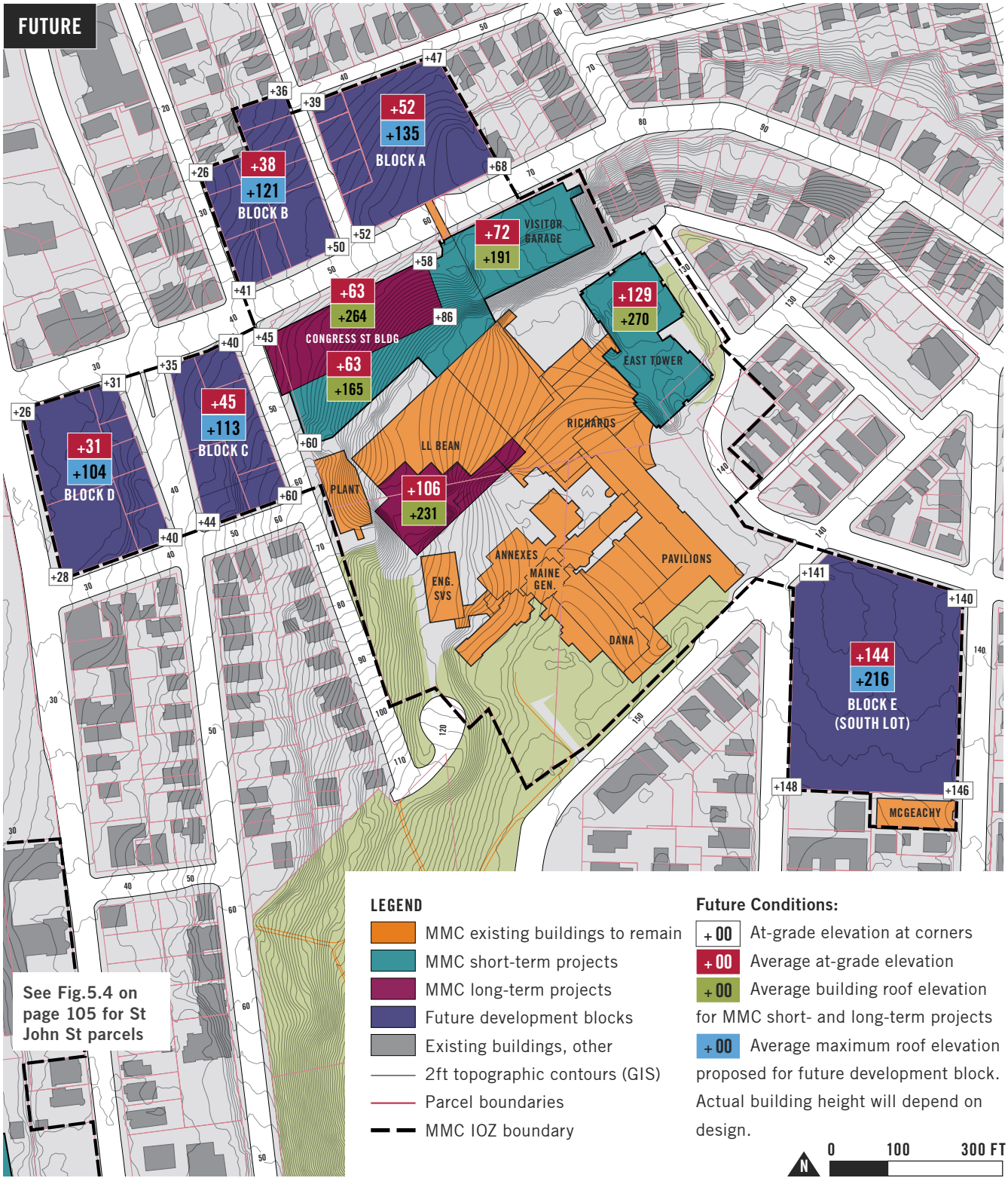
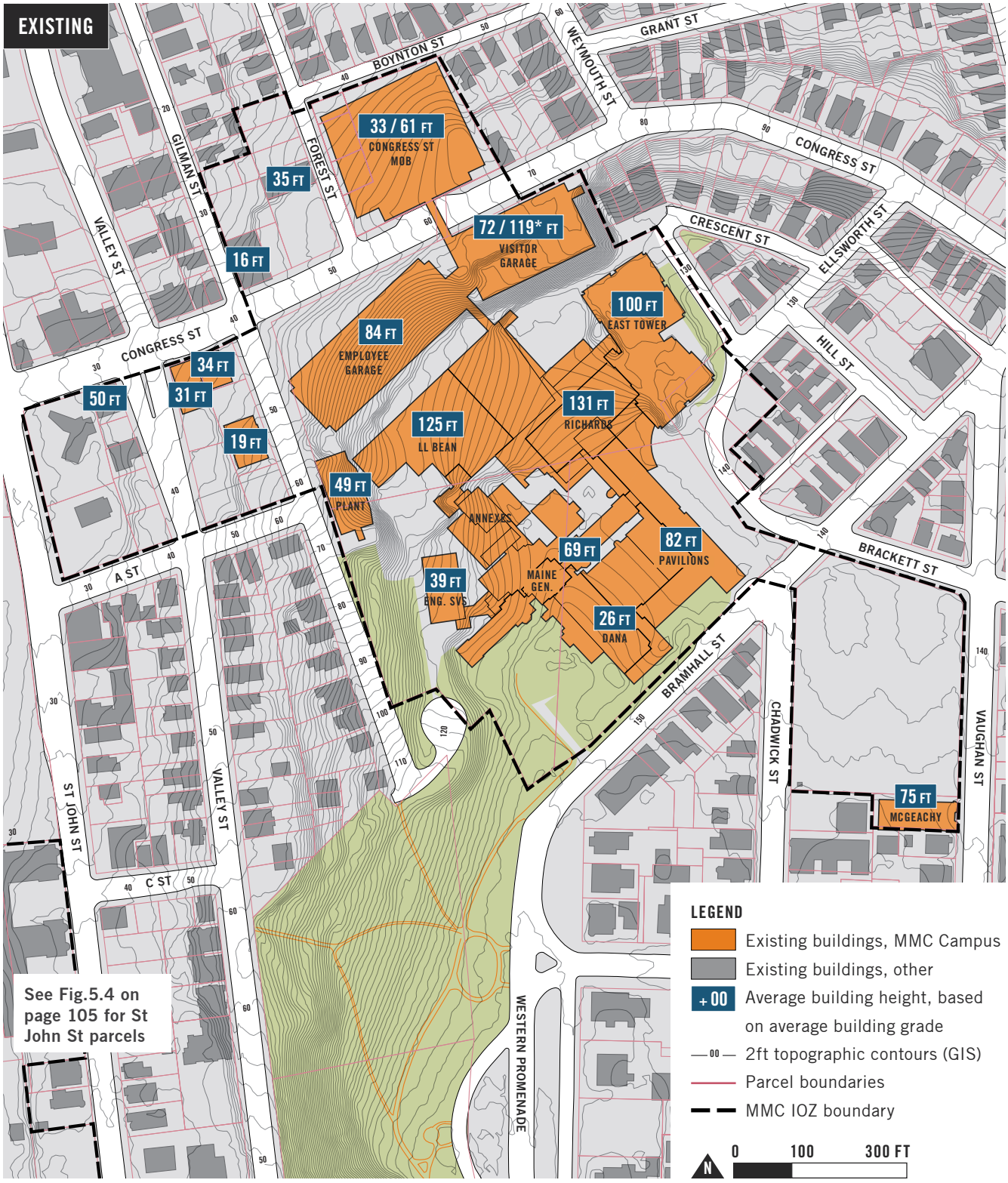
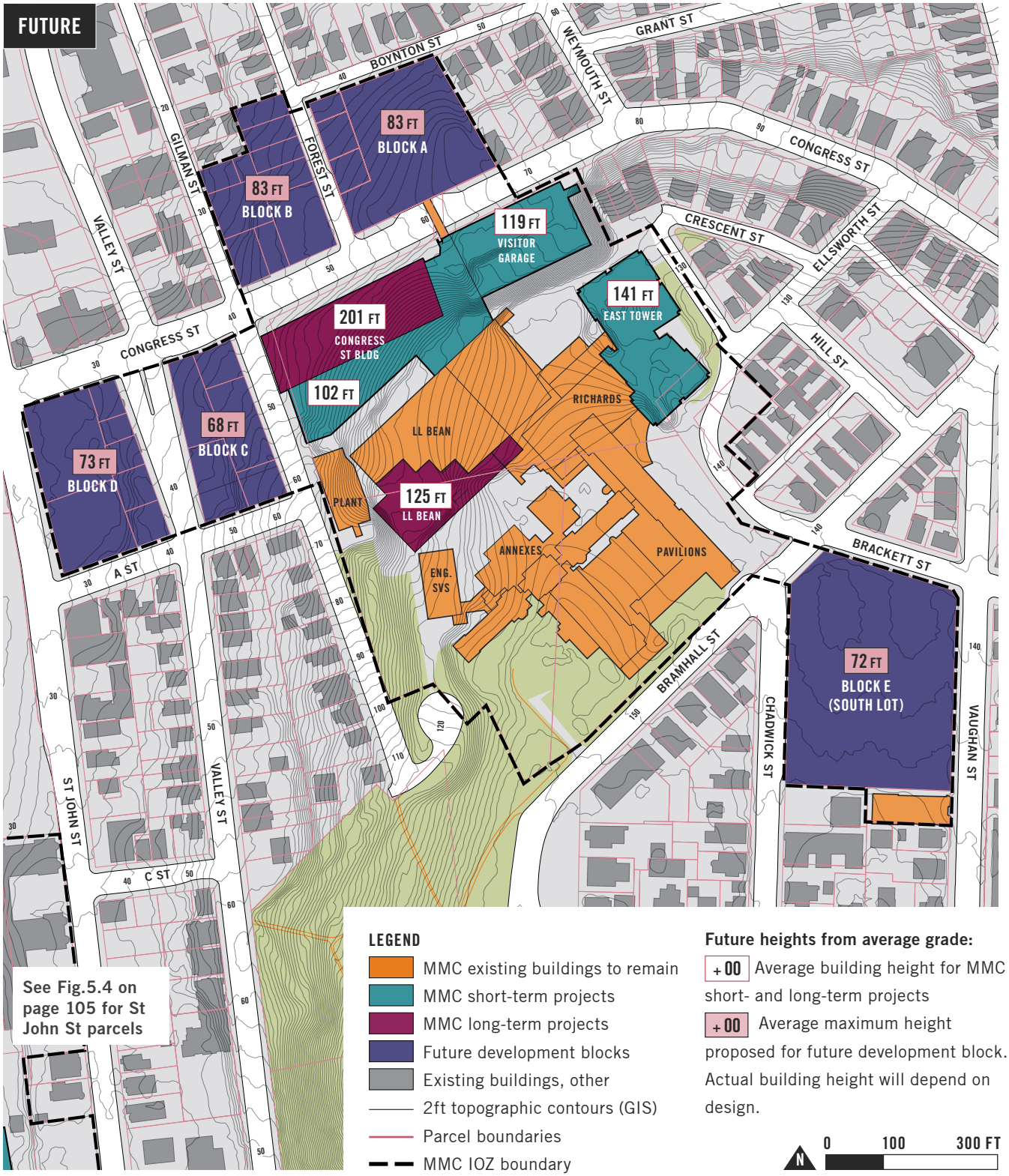


Fig.5.7 Existing Structures within IOZ: Average Building Heights at Average Grade



* Height of existing elevator tower on the Visitor Garage, excluding mechanical room on top of tower.

Fig.5.8 MMC Short- and Long-Term Projects: Average Building Heights at Average Grade



TRANSITIONAL ZONES

In accordance with urban design best practices, MMC has identified "transitional zones" along the edges of the IOZ boundary that abut residential zones where the height of new development can step down to better integrate with the character of local residential streets and neighborhoods. A diagram illustrating this concept is shown in **Fig.5.9** below**.** The location of specific transitional zones within the IOZ is illustrated in **Fig.5.10** on the following page.

Transition zones are designed to create a consistent scale of development on either side of a given public street. To achieve this goal, most transition zones dictate a height limit matching the maximum height allowed by the zone across the street. The specific depth of the transition zone where the height limit applies is typically determined by using the "transitional height plane" test whereby a 45˚ angle line is extended inward from the maximum height line. This test ensures that taller structures on the inner side of the parcel do not negatively impact views from the public street whose character is being preserved.

MMC has used this widely accepted practice to identify and set a 50-ft depth to transition zones illustrated in **Fig.5.10** and required as part of the Regulatory Framework. Diagrams illustrating the testing of key MMC IOZ transitional zones with the "transitional height plane" are included on the following pages.

Fig.5.9 Transition zones: concept diagram

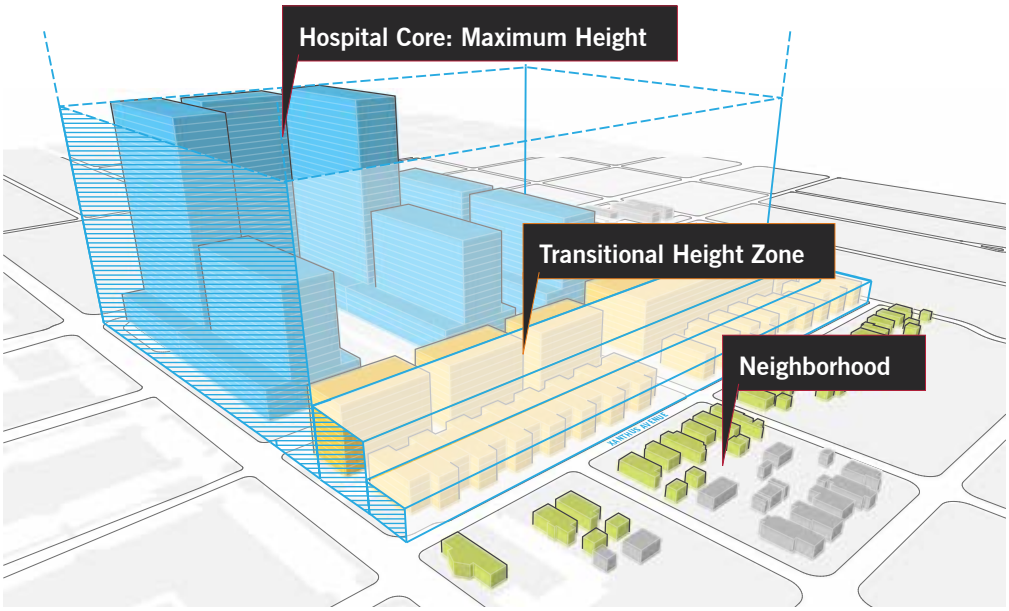


Fig.5.10 Map of proposed transitional zones within MMC IOZ

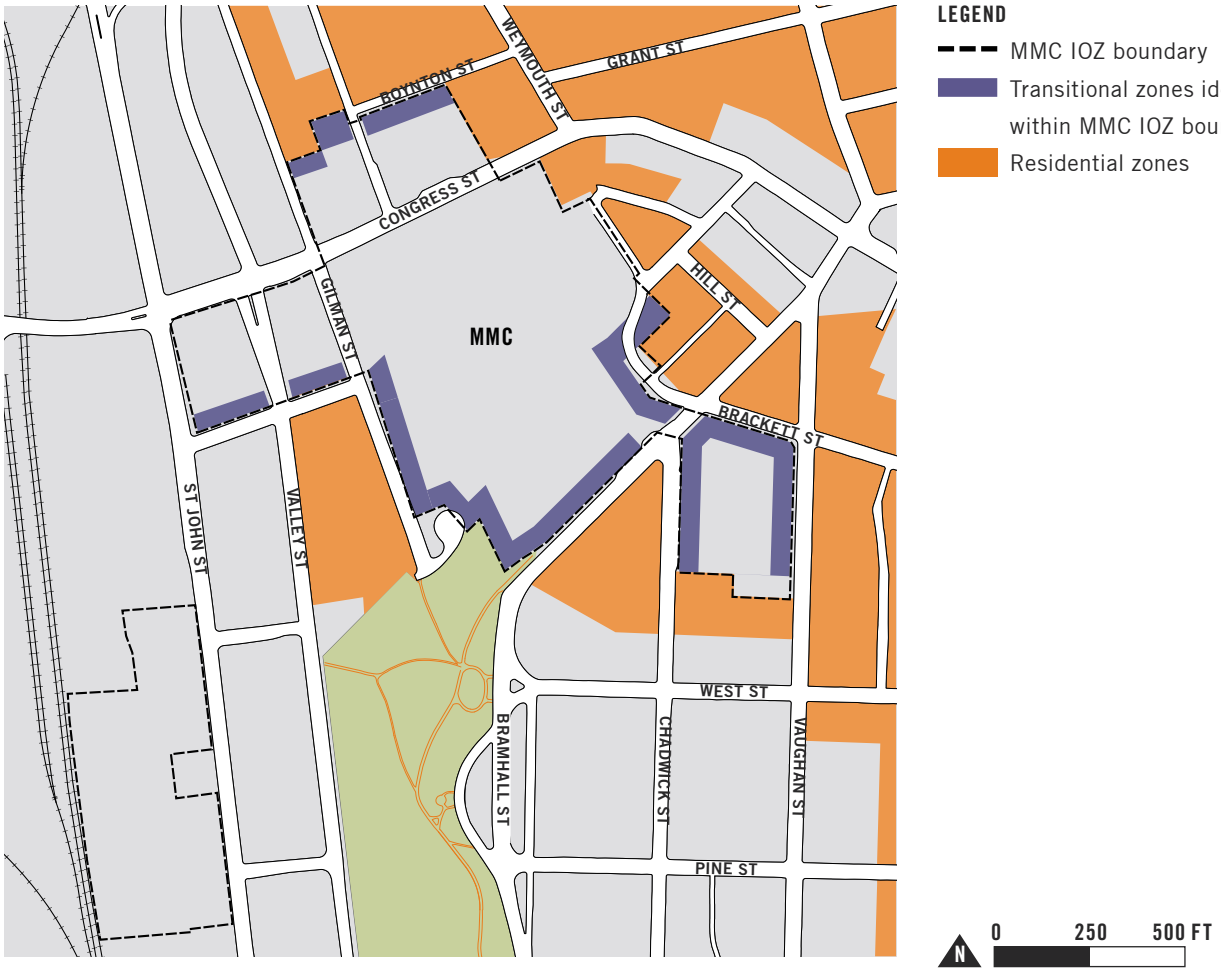
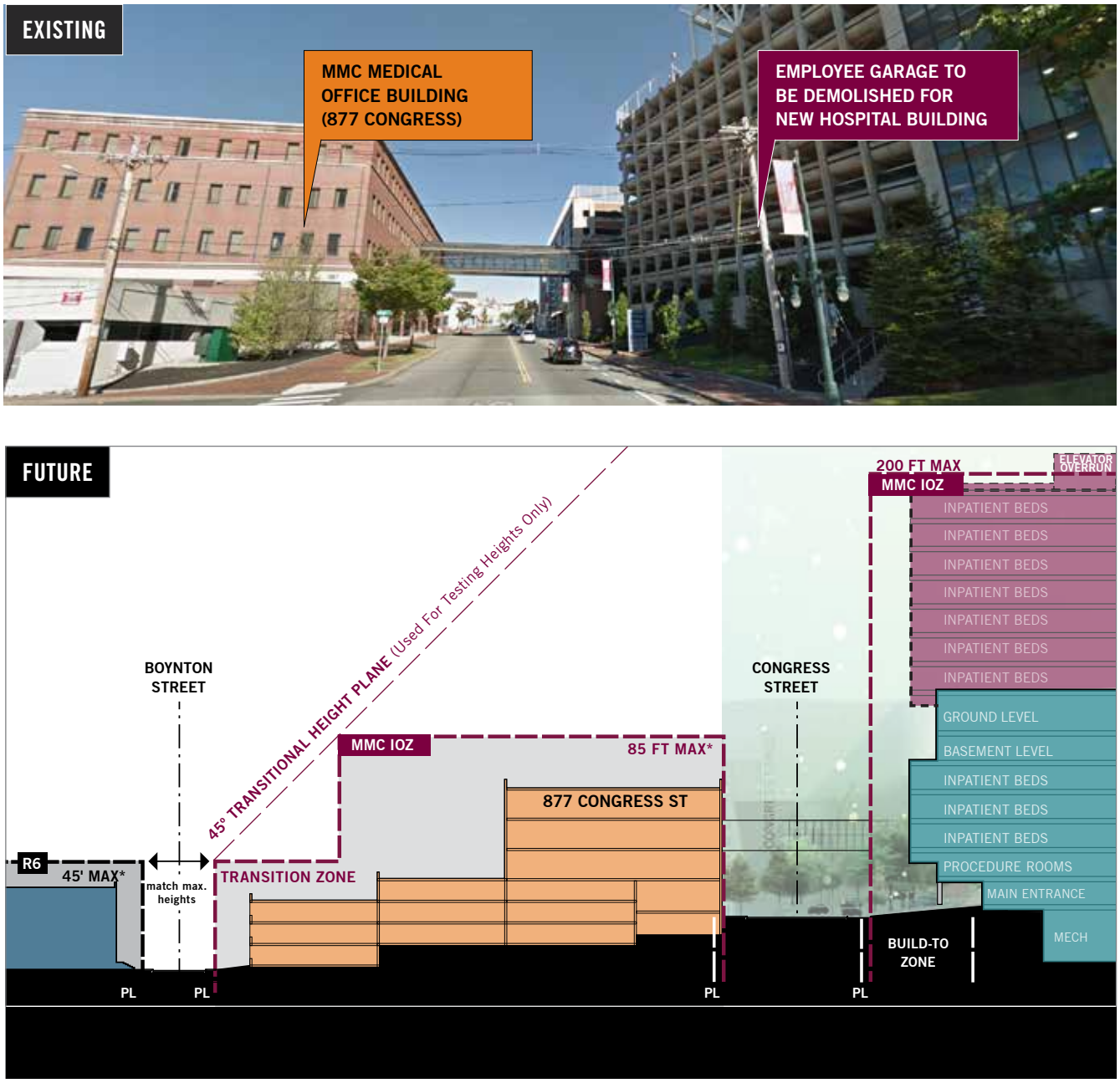
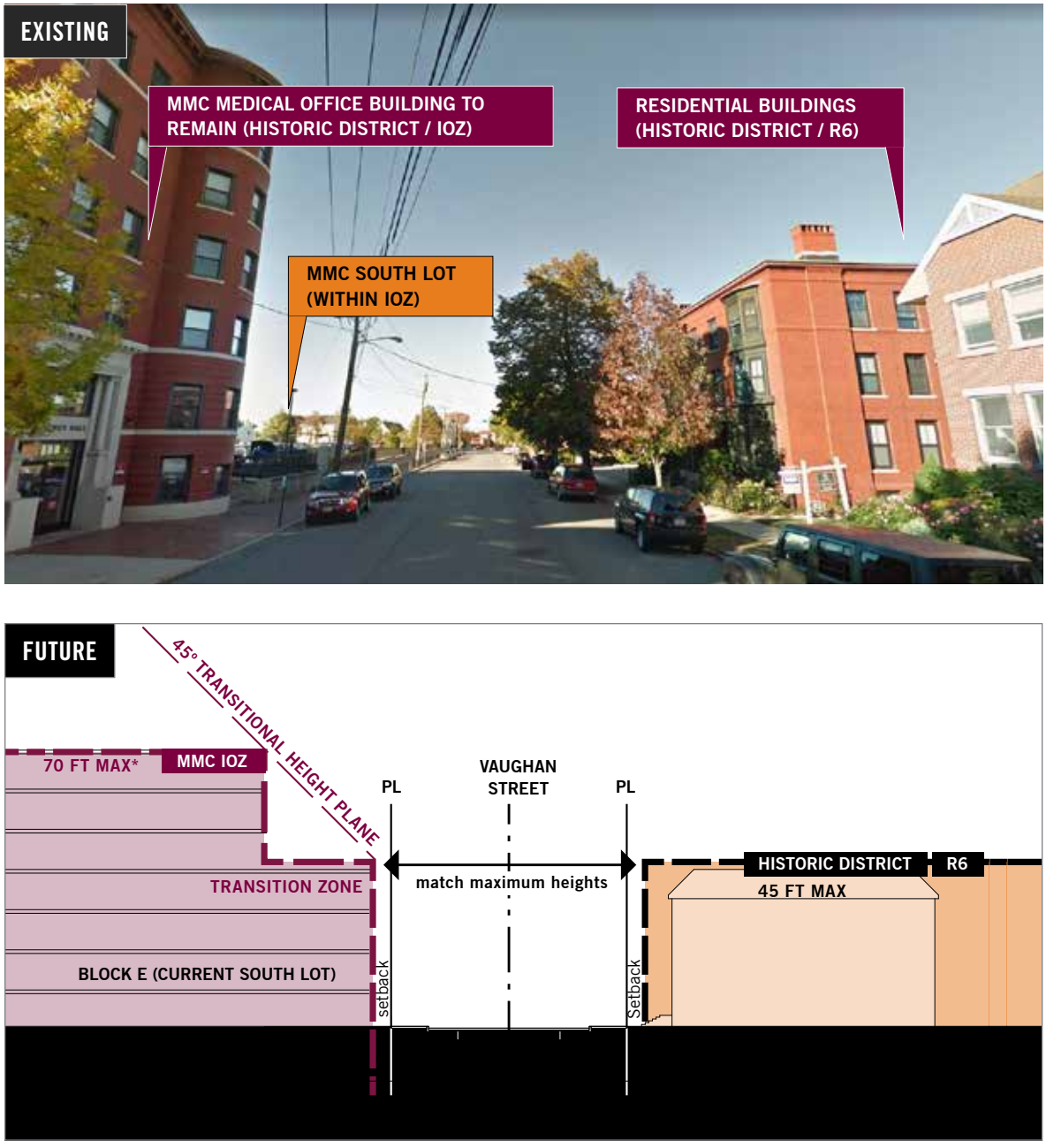


Fig.5.11 Cross-section illustrating height transition from MMC IOZ to Boynton St residential zone north of Congress St



* Average maximum height needed to provide a 75-ft tall structure along Congress St given changes in topography across this site. See "Determining Maximum Heights" on page 104 for details on methodology.

Fig.5.12 Cross-section illustrating height transition from future development Block E (South Lot) within the MMC IOZ to the West End Historic District on Vaughan Street

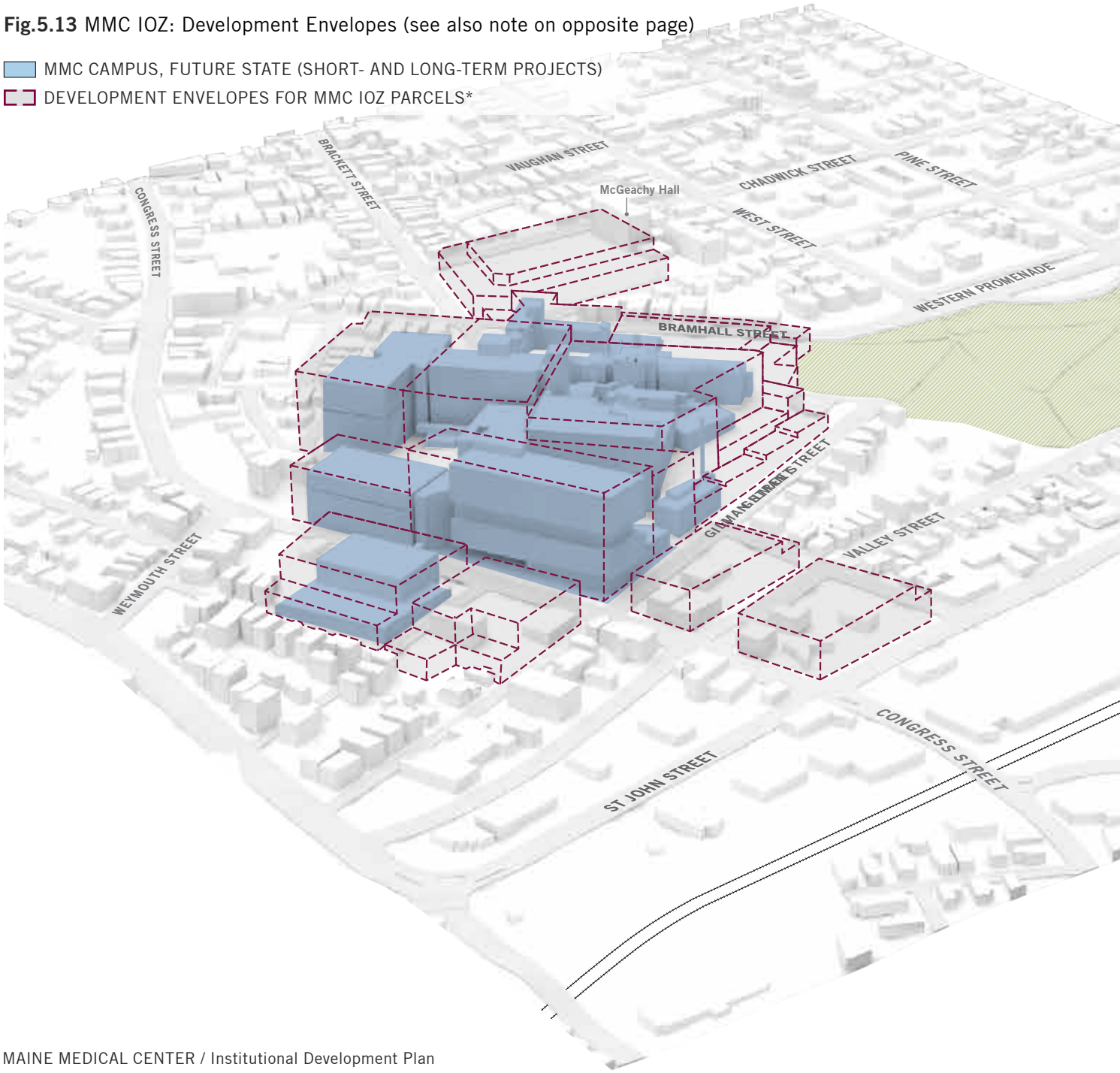


* Average maximum height needed to provide a 75-ft tall structure along Congress St given changes in topography across this site. See "Determining Maximum Heights" on page 104 for details on methodology.

LONG-TERM DEVELOPMENT ENVELOPES

While MMC's Master Facility Plan does not identify specific projects other than those listed on the previous pages (see Fig.2.7 on page 42), all parcels included within MMC's IOZ boundary are considered to be potential zones for redevelopment that supports the effective delivery of healthcare services by MMC to our community in the long-term. Towards this end, MMC has identified context-appropriate uses (see **Table 5.1** at right), development envelopes and design criteria for all IOZ parcels.

Fig.5.13 MMC IOZ: Development Envelopes (see also note on opposite page)



NOTE: **Fig.5.13** illustrates the maximum height envelopes listed in the MMC IOZ Regulatory Framework. Per the IOZ, the development envelopes only apply to properties that MMC holds right, title, or interest at the time of development. All future development within the IOZ boundary is subject to review for compliance with guidelines and requirements included in MMC's IDP, Regulatory Framework and City of Portland site plan review requirements.

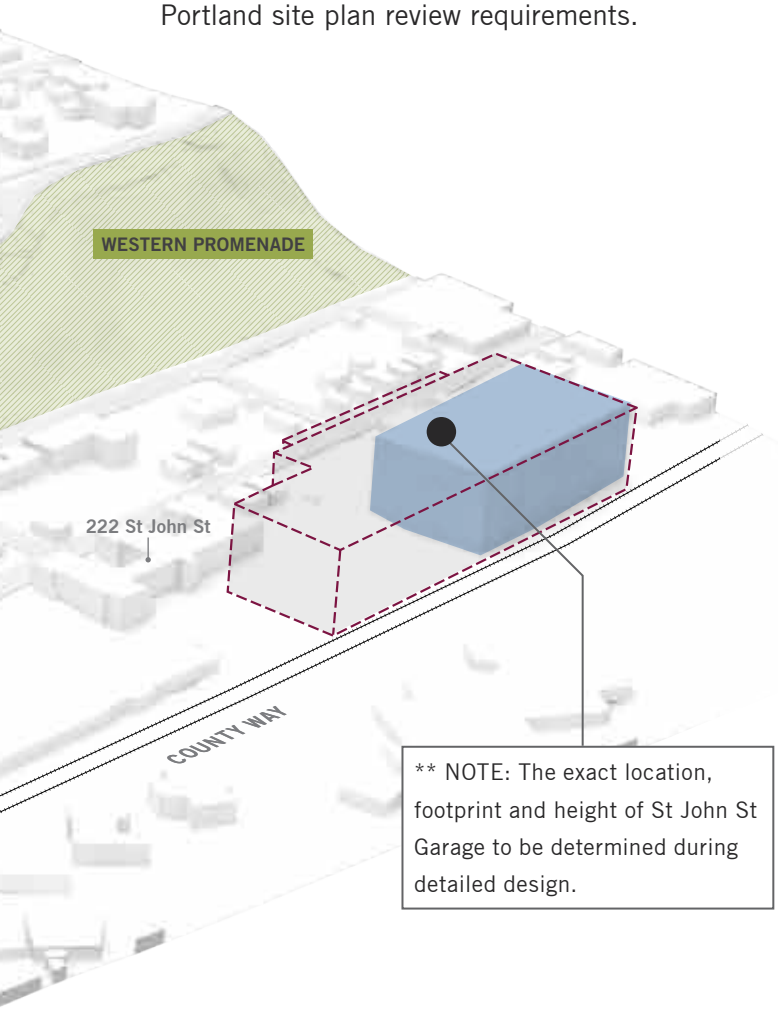


Table 5.1 MMC Potential Future Uses

MMC may locate the following uses within its IOZ boundary:

In addition to the uses permitted in the underlying zone, the following uses are permitted as a matter of right:

Healthcare facilities including but not limited to the following ancillary and/or supporting uses:

- **Hospital**
- **Medical Office / Clinic**
- **Laboratory Center / Services**
- **Research and Development (R&D) Laboratory or Facility**
- **Educational Facility / Conference Center**
- **Administrative / Business Office**
- **Accessory Service or Trade Uses**
- **Guest House**
- **Multi-family housing for healthcare staff and students**
- **Rehab / Skilled Nursing Facility**
- **Retail Facility**
- **Restaurant / Café**
- **Employee Service Amenities**
- **Day Care Center**
- **Fitness Center or Gymnasium**
- **Parking Lot**
- **Parking Garage**
- **Bicycle Storage**
- **Heliport**
- **Antenna Station**
- **Outdoor use areas, such as green areas, parks, gardens, art installations, and other active and passive non-commercial recreation spaces**

DESIGN GUIDELINES

MMC has collaborated with the City of Portland planning staff and sought input from its neighbors to create context-specific "Design Guidelines" for future development within the IOZ boundary. These Guidelines, which are outlined below, are informed by design best practices seen in Portland, and in and around urban hospitals across the US; from City staff recommendations; and from information presented by neighbors in the various public forums held by MMC. They are intended to assist future development in the IOZ to meet the goals and vision for the MMC campus and create context-sensitive buildings.

GENERAL GUIDELINES

MMC will follow these general guidelines for building design within the IOZ boundary:

1. New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan (see Chapters 2 and 3), and best practice design standards for healthcare.

2. The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress St and I-295.

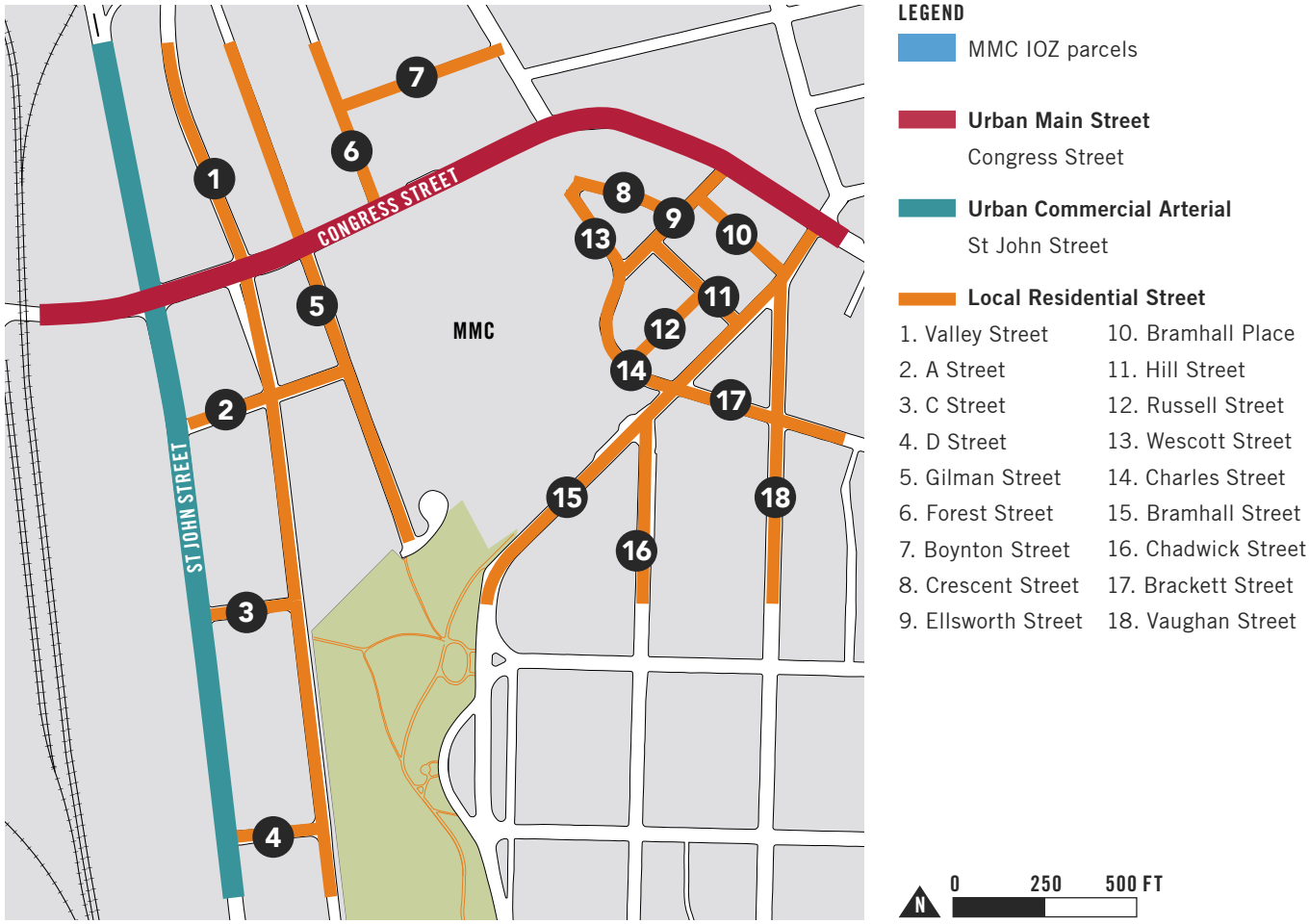
3. Building entrances will be oriented toward, located adjacent to, or accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

4. Buildings designs will relate to and be compatible with the existing, or—in areas of change—planned character of residential and commercial neighbors. Design elements and characteristics to consider include:
    - » Building placement and relationship to the street
    - » Overall massing and scale
    - » Roof forms
    - » Proportion, directional expression, and composition of facades
    - » Rhythm of solids to voids
    - » Rhythm and proportion of openings
    - » Rhythm of entries and projections
    - » Relationship of materials, texture, and color
5. Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

6. The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach. (The helipad cannot be screened for safety reasons.)

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node

Fig.5.14 Typologies of Public Streets in and around MMC IOZ

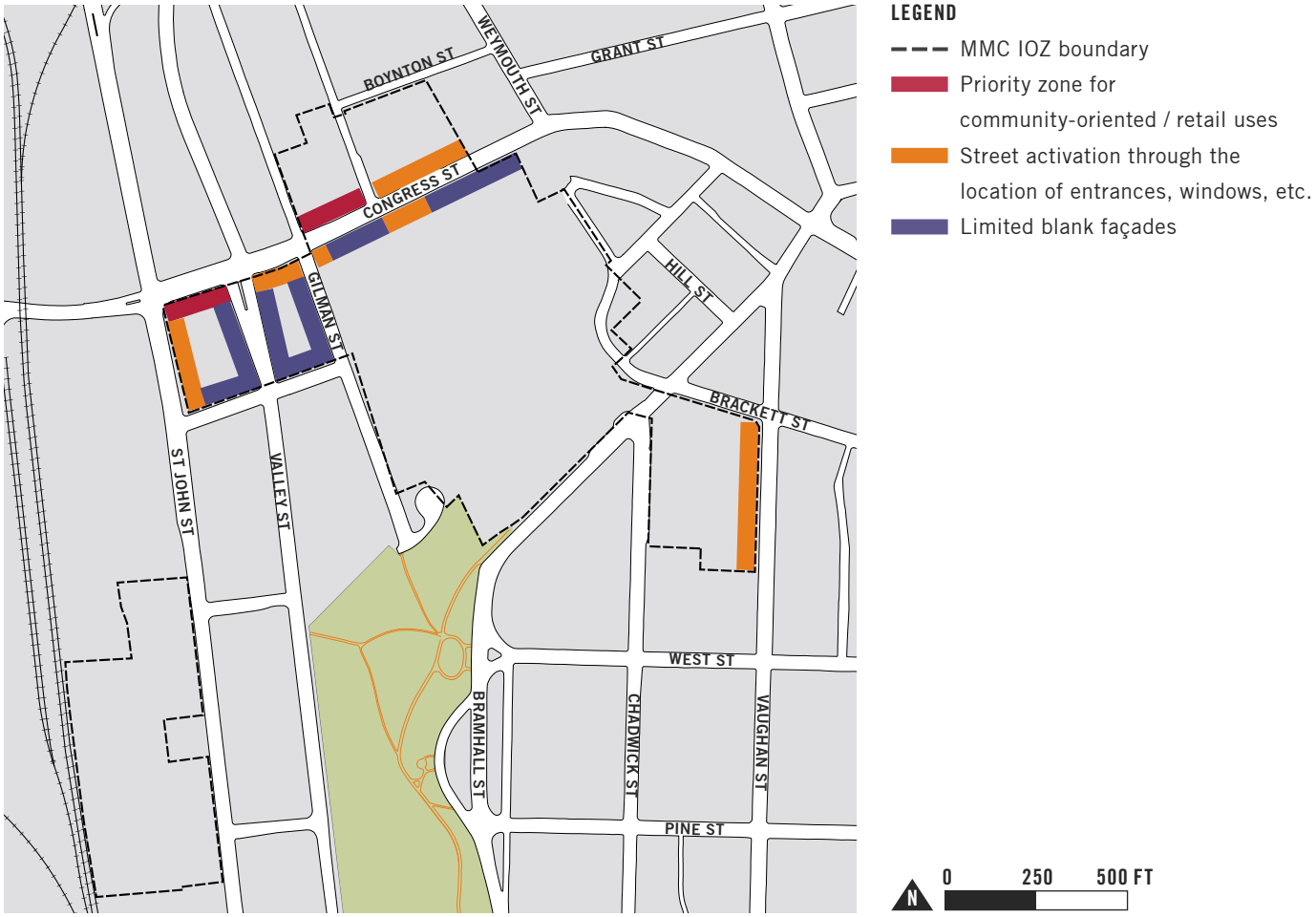


identified in the City's Comprehensive Plan. **Fig.5.15 on page 118** illustrates zones along Congress St deemed to be most suitable for community-oriented uses / retail.

8. In areas where the occurrence of limited blank façades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:
   - » providing elements of visual interest along any blank walls facing public streets, and,
   - » working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

Fig.5.15 on page 118 illustrates potential locations of blank walls within the IOZ boundary.

Fig.5.15 Frontage: Types of Activation



9. Any parking structure within the IOZ will:
   - » screen views of cars from public rights-of-way;
   - » provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches; and,
   - » for garage structures within 20' of the public right-of-way, meet street activation intent according to street type (see **Fig.5.15** above).

BUILDING RELATIONSHIP TO PUBLIC STREET

In walkable urban environments, buildings are designed with pedestrian scale and uses in mind. Buildings contribute to the public realm through the siting and design of street-facing façades, and of lower floors that engage with street-level activity.

A building's relationship to a public street should be informed by the typology of that street, which in turn is defined by the character of existing or planned development lining the street. MMC has identified three distinct typologies of streets within the MMC's IOZ boundary (see **Fig.5.14 on page 117)**. Design guidelines for future redevelopment along these street types are outlined below.

1. Urban Main Street (Congress Street)

Congress St is considered by many to be Portland's "main street". The winding street is defined by "zero-lot line" developments that border the sidewalk, and a series of civic monuments and squares distributed along its length. The IDP planning process has identified an opportunity to extend this "main street" feel from the emergent Bramhall Square (at Bramhall and Congress Sts) all the way to the railroad crossing where Congress St emerges from the influence of the I-295 interchange. MMC aims to contribute positively to the regeneration of Congress St in this area by ensuring orderly redevelopment of abutting IOZ parcels.

MMC buildings abutting Congress St will be designed to:

- provide urban-levels of density;
- create an urban street wall that provides a sense of enclosure to the public realm;
- have their primary orientation towards Congress St;
- activate the public sidewalk with building entrances, lobbies, etc.;
- to the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk;
- to the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors and the broader Portland community; and,
- support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.

The topography and orientation of Congress St in this zone, however, poses significant challenges to achieving some of these design goals. The steady, steep climb of the street makes it impractical for large footprint buildings to align ground floor windows with the rising profile of the sidewalk (see

Fig.5.5 on page 106 for an analysis of building ground elevations). The east-west orientation of the street, combined with the more than 50-ft rise of Bramhall Hill south of Congress St, makes it challenging to provide an urban street wall that does not shade Congress St for most of the time (see shadow studies on page 124). To the extent possible, MMC buildings will utilize the general guidelines related to blank façades to mitigate these conditions (see page 117).

In addition to the guidelines listed above, buildings that have frontage on Congress St and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress St. MMC has no plan to develop a stand-alone garage on Congress St as of the date of this IDP.

2. Urban Commercial Arterial (St John Street)

St John St is a significant arterial linking vehicular traffic between I-295 / Park Drive / Congress Street to the north, and Veterans Memorial Bridge / W Commercial Street to the south. The commercially-zoned street is flanked by a wide variety of uses that hint at its railroad-era origins (warehouses and workers' homes) as well as its current-day arterial use (strip centers and fast food restaurants). While it has some elements of a walkable street such as sidewalks and on-street parking, large stretches of the street prioritize the car with frequent curb-cuts, and street-facing parking lots.

MMC's IOZ boundary abuts St John Street between Congress and A Streets. MMC envisions this block to be redeveloped, in the long-term, in accordance with the Congress St design guidelines outlined on the previous pages. The new development will aim to provide architectural definition to the corner of Congress and St John Streets, and—to the extent possible—extend the character developed for the Congress St frontage along St John St.

3. Local Residential Street

The MMC IOZ boundary is crossed by and abuts a number of local streets that are lined with a wide variety of residential structures ranging from 3-4 story multi-family apartments on Boynton St to single-family mansions along the Western Promenade. During the IDP process, MMC has worked with the City of Portland planning staff, the Planning Board, and neighborhood representatives to identify a balanced approach to redevelopment along local streets that provides appropriate height transition from institutional to residential character. This approach is outlined in detail under "Transitional Zones" on page 110.

Fig.5.16 Photographs illustrating existing character of streets in and around the MMC IOZ

Urban Main Street (Congress Street)

Urban Commercial Arterial (St John Street)

Local Residential Street

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

MMC aims to create a safe environment for all in and around its campus. MMC will incorporate the following design strategies that have been demonstrated to deter crime:

- Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials
- Providing clear and properly-sized signs in safe locations to ensure safe wayfinding
- Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines
- Designing street-level elevations to minimize potential hideouts
- To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"
- Generating foot traffic on public sidewalks with pedestrian entrances

MITIGATING IMPACTS THROUGH DESIGN

MMC is committed to addressing any perceived negative impacts that campus development may have on adjoining neighborhoods. This includes actions to mitigate impacts of daily campus operations, which are discussed under "Operational Sustainability" on page 93. A plan for mitigating construction impacts is outlined, along with a plan for continuous neighborhood input and engagement, in the "Neighborhood Engagement" chapter on page 128. This section summarizes strategies that may be used, as appropriate, to minimize negative impacts of proposed new development.

Minimizing Shadow Impacts

In order to understand the potential shadow impact of proposed campus projects on surrounding properties, MMC has prepared detailed shadow studies during the Master Facility Planning process (see **Fig.5.17** through **Fig.5.20** on the following pages). The overall building heights were kept to a minimum to minimize shadow impacts in areas such as Congress St where street alignment and topographic changes contribute to longer shadows. The proposed Congress St Development (see "Short-Term Projects on page 44) was pulled back from the street to the extent possible to minimize this impact, while also providing a more generous public sidewalk that supports pedestrian activity in front of this new gateway structure.

Context-Sensitive Lighting Design

The location and context of buildings are considered in the design of artificial lighting for new development. While a majority of this work is completed later during the design process and presented during Site Plan review, MMC has already incorporated some preliminary concepts related to lighting intensity into its Master Facility Plan. A key example is the concept design for the Congress St Development, which is intended to animate the Congress St frontage 24/7 with light emanating from its glazed circulation and waiting areas facing the street on the lower floors.

Mitigating Wind Impact

Upon final design of applicable site plans, MMC will consult with the City of Portland's Arborist to selectively determine the placement of trees or other landscape features on any new landscape areas to minimize any wind impacts created by the mass of new development.

Preserving and Enhancing Viewsheds

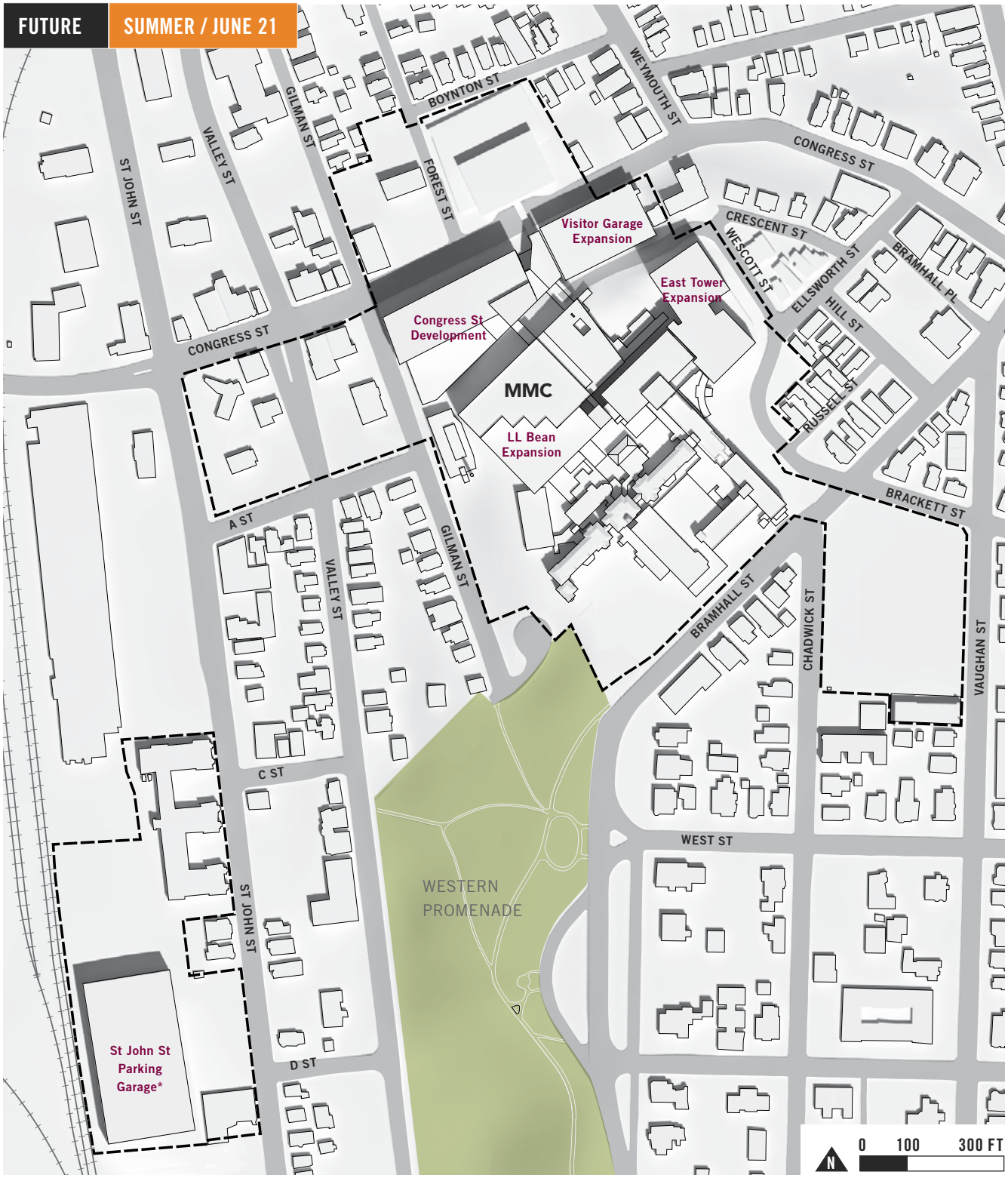
MMC understands the significance of historic and gateway viewsheds to the Portland community. The Maine General Hospital, a landmark civic building situated atop a hill, was designed to complement the sweeping views of the Fore River from the Western Promenade. Likewise, MMC will design new buildings along Congress St to provide an aesthetically pleasing gateway experience for all entering into the peninsula at this point.

MMC embraces the historic Western Promenade as a site from which to take in views of the countryside and the White Mountains, and a valuable open space amenity for campus users as well as for the broader community.

MMC has met with the Parks Department to review the potential impact of the proposed 222 St John St Garage to public views from the Western Promenade towards the White Mountains, and will work to mitigate potential impacts through design. MMC will also work to minimize potential impacts to the Maine Central Railroad Building as a designated historic landmark.

Fig.5.17 Computer-generated shadow study / Existing conditions on June 21, noon

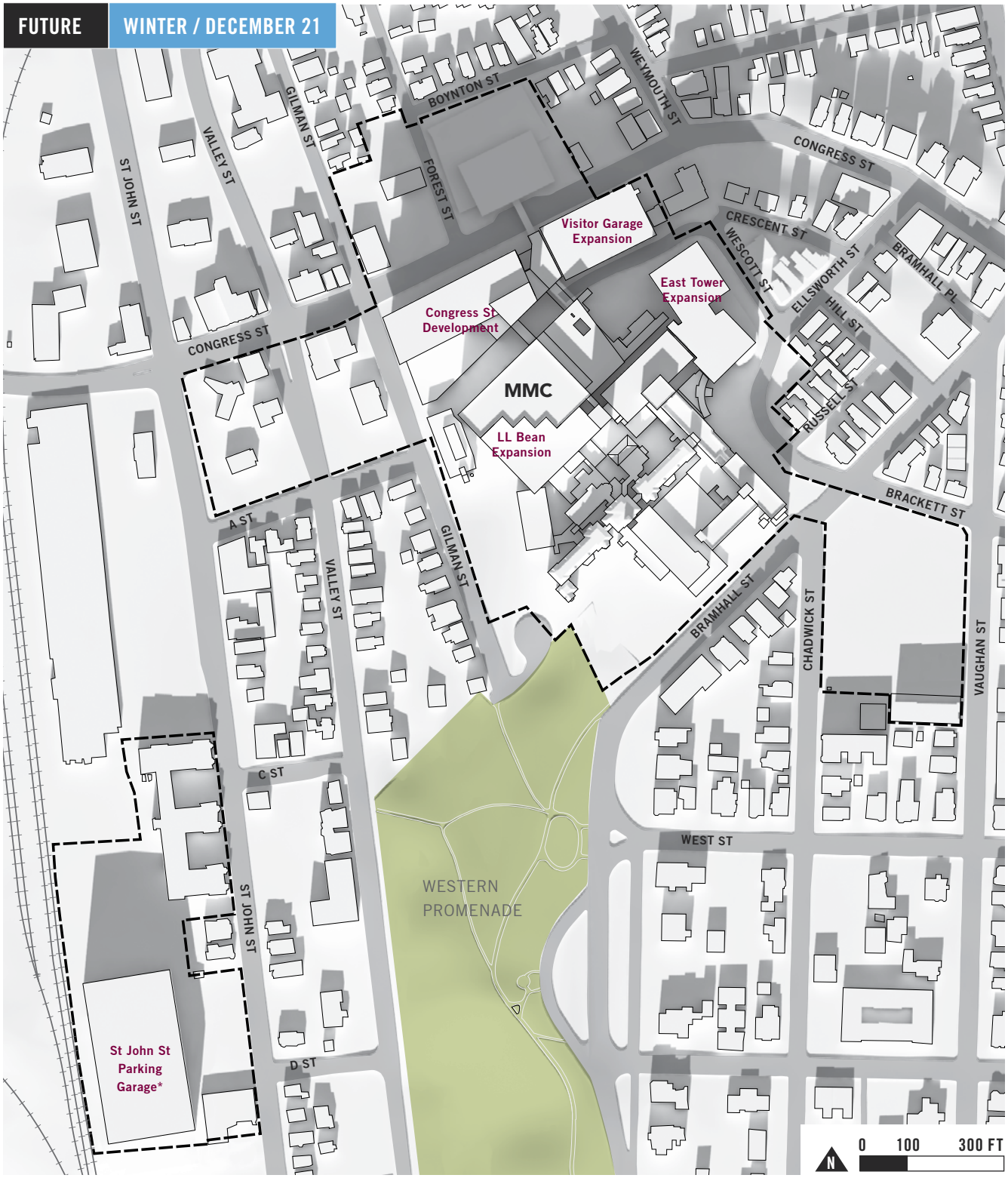
Fig.5.18 Computer-generated shadow study / Proposed long-term projects on June 21, noon



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

Fig.5.19 Computer-generated shadow study / Existing conditions on December 21, noon

Fig.5.20 Computer-generated shadow study / Proposed long-term projects on December 21, noon



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

CHAPTER SIX

NEIGHBORHOOD ENGAGEMENT

Maine Medical Center strives to be a good neighbor to surrounding communities. Ongoing dialogue and exchange of information and ideas is a core tenant of MMC's neighborhood engagement plan.

ONGOING COMMUNITY ENGAGEMENT

MMC's number one priority is superior patient care. In order to achieve this goal, it must address its employees' needs. However, MMC also recognizes that realizing its vision depends on its success as a corporate citizen and a neighbor.

MMC's main campus is situated at the intersection of several diverse residential and mixed-use neighborhoods. MMC considers itself a part of the West End, Western Promenade, Parkside, St John Valley, and Libbytown neighborhoods (see **Fig.1.5 on page 19**). MMC values its role in these neighborhoods and seeks to be a productive force in maintaining their health and quality of life. To this end, MMC endeavors to maintain an open dialogue with its neighbors, to quickly and fairly resolve disputes, and to ensure that its growth enhances its neighborhoods' vibrancy, economy, and livability. Building and maintaining trust is essential to successfully achieving these shared goals. MMC commits to building and maintaining trust not only by providing superior care to its neighbors and the larger community, but by clearly communicating and consistently engaging its neighbors on both the institution's core mission and neighborhood concerns.

It is important for MMC, its neighbors and the City to maintain the dialogue that has been established during the development of MMC's IDP. As a result, MMC proposes the following ongoing community engagement to ensure the surrounding neighbors are kept apprised of MMC's future development plans, and to understand any neighborhood issues related to the operations of the MMC campus, the following engagement process shall be established:

- On a quarterly basis, MMC's Chief Operating Officer shall host a group meeting comprised of the following members:
  - » the President or Chair (or a designee of the same) of the following Neighborhood Associations: St John Valley, Western Promenade, West End, Parkside, and Libbytown
  - » The Director of Planning at the City of Portland, and,
  - » The District 2 Portland City Councilor
- The group shall develop a Charter by which these quarterly meetings shall be conducted and minutes shall be made of each meeting. The Charter and the minutes shall be delivered to the City's Neighborhood and Island Liaison within 30 days of their adoption.
- In addition, the group shall annually complete a "checklist of actions" to be addressed by the group and the completed checklist shall also be filed with the City's Neighborhood and Island Liaison.

- To further an open dialogue, MMC will engage neighbors in more routine dialogue during major planning efforts. These meeting invitations shall also be extended to the Director of Planning at the City of Portland and to the District 2 Councilor.
- During construction, MMC shall provide contact information for a designated community liaison on its website for day-to-day inquiries and comments. Inquiries and comments shall be logged by MMC and responses shall be provided by MMC in a timely fashion.
- MMC shall also employ social media to make information about a pending project readily available to the public. This shall include a dedicated website page and a dedicated email address for residents to ask questions, provide suggestions or voice concerns.
- Finally, MMC will set up a text alert system to notify any subscriber of advance construction impacts which may be necessary during construction.

CONSTRUCTION MANAGEMENT PRINCIPLES

The following section provides an overview of the construction management principles that MMC has identified to minimize impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding buildings and communities. It is MMC's full intent to schedule and conduct operations in a manner that will minimize, to the extent feasible, the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity. MMC will adhere to the Construction Management Template requirements attached to the IDP as Appendix A.

COMMUNICATION INITIATIVES

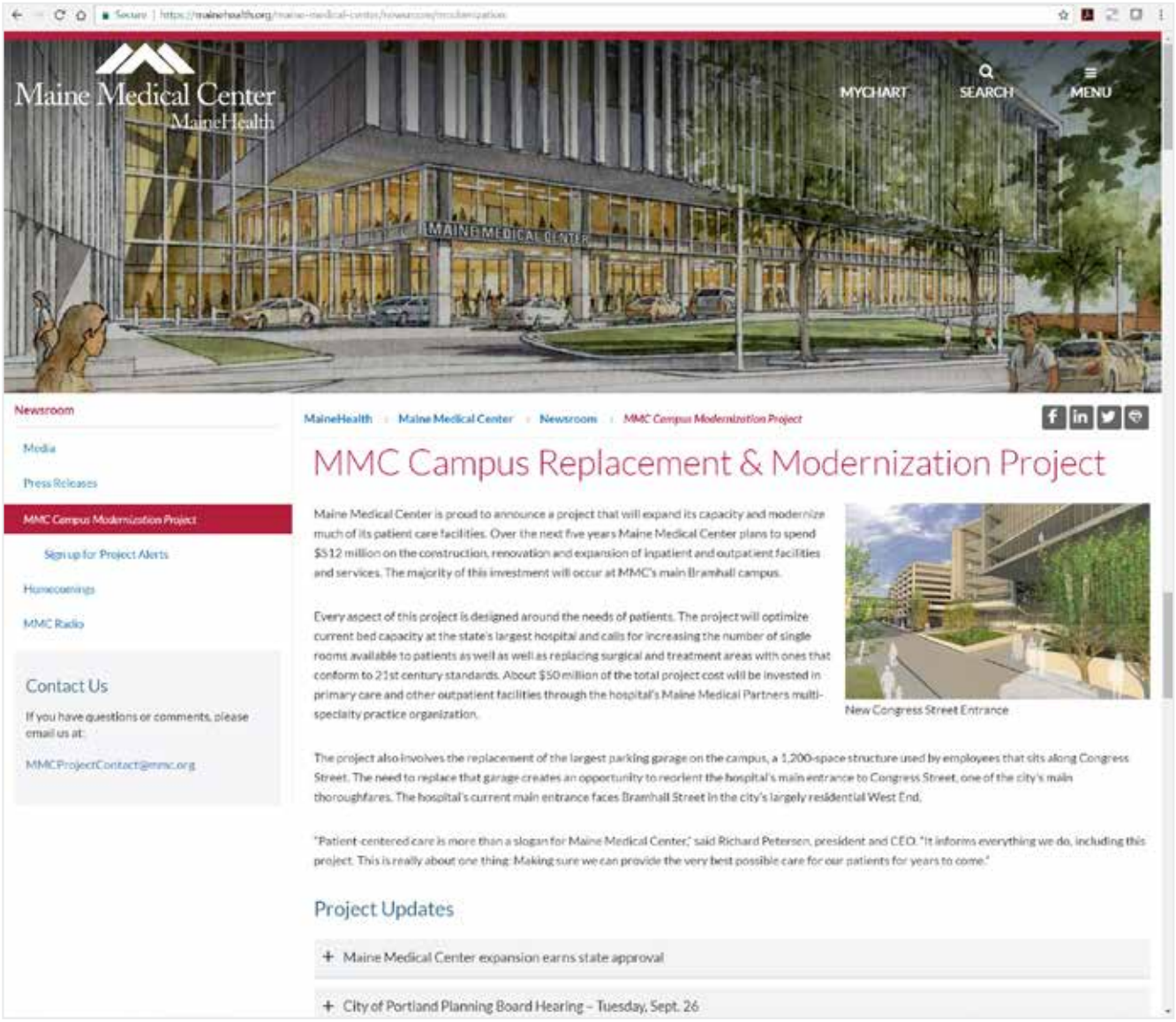
MMC will provide a method of communication between City of Portland, neighbors, and the construction team based on the anticipated impact of the construction project. For large construction projects, MMC will use its website, social media, and provide a dedicated email address to enable communication with its neighbors.

For short-term projects identified in the Master Facility Plan, MMC will implement a communication strategy using social media and texting to alert surrounding neighbors of activities that may cause disruption.

MMC has created a dedicated webpage on its website devoted to the short-term projects to inform the public of important information related to the Project (http://www.mmc.org/modernization).

Information and updates on the Project are regularly posted including project updates, neighborhood meeting minutes, Portland Planning Board information related to the project, news releases, fact sheets and frequently asked questions. As construction commences, important alerts regarding construction activity such as activities impacting roadways, potential creation of dust, vibration, or noise, etc. will also be posted. To the extent possible, MMC will provide two week advance notice of such activities.

Fig.6.1 Screenshot of MMC Website dedicated to the Project at http://www.mmc.org/modernization.



MMC has created a dedicated email address that allows members of the public to ask questions and provide information. These emails will be answered in a timely fashion by the people directly involved in the construction activities.

Information about the construction project will be proactively shared on a regular basis for the duration of the project.

CONSTRUCTION SCHEDULE

MMC will provide an estimated project schedule at the beginning of a construction project and provide regular updates through-out construction. The frequency of construction schedule updates will be determined by the project's estimated impact on the surrounding area.

CONSTRUCTION MANAGEMENT PLAN

Prior to construction, MMC will develop comprehensive Logistics and Safety Program. Maintaining normal campus operations and public safety, and minimizing impacts to areas surrounding the campus, will be the primary considerations in this process. MMC will utilize the City's Construction Management Plan template to develop a Construction Management Plan that will be submitted with a Site Plan application.

PROJECT WORK HOURS

Construction work hours will be predetermined before the start of any construction project and limited in order to minimize impact on the areas surrounding campus and to complete the project expediently.

PUBLIC SAFETY AND ACCESS

Pedestrian walkways and business access will be clearly marked and maintained through-out the construction period.

In general, secured fencing will be used to isolate construction areas from pedestrian traffic and Police Details will be provided, when necessary, to facilitate traffic flow. MMC will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow. The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed. Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities. MMC will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed. Residents will be able to contact MMC at a designated email posted prominently on the project website (see **Fig.6.1 on page 132**). MMC will also provide regular updates to the Fire Department regarding any detours necessitated by construction.

CONSTRUCTION NOISE IMPACTS

MMC is committed to mitigating construction noise impacts. Increased community sound levels, however, are an inherent consequence of construction activities. When these events are scheduled, advance notice will be provided.

CONSTRUCTION TRAFFIC AND PARKING IMPACTS

Construction Workers

For Short-Term Projects, the number of workers required during the construction will vary with an estimated average daily workforce of 150 during the peak of construction. Jobsite personnel shall park at an off-site parking area and will be shuttled to the construction site. MMC will work with the Construction Management Company to identify an off-site parking location and shuttle service. No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets. The construction company and its subcontractors shall encourage the use of public transportation by their workers, if available.

Truck Routes and Volumes

Truck routes shall be as far away as possible from residential and other sensitive uses.

MMC may install wayfinding signage at strategic locations identifying no travel zones for construction vehicles. Once at the site, all vehicles will be brought within the fence line and will make every attempt to avoid queueing on public roadways, unless during specific times, as addressed on the site logistics plans.

Construction Staging Areas

Construction staging areas shall be as far away as possible from residential and other sensitive uses.

CONSTRUCTION AIR QUALITY IMPACTS

To reduce emission of fugitive dust and minimize impacts on the local environment, MMC will adhere to a number of strictly enforced mitigation measures. These include the use of wetting agents to control and suppress dust; covering stock piles of soils and trucks transporting debris; managing construction practices to reduce unnecessary transfers of loose materials; periodic cleaning of streets and sidewalks; and, use of wheel wash stations.

IMPACT TO SURROUNDING BUILDINGS AND RESIDENCES

Foundation surveys of surroundings buildings and homes will be completed within a reasonable distance from the anticipated center of construction and in accordance with current regulations. The results of foundational surveys will be shared with the City of Portland and the property owner.

MMC COMMUNITY BENEFITS

MMC provides much to the City of Portland community including employing over 2,000 Portland Residents. These benefits are not only to our adjacent neighbors but also to the residents elsewhere in the City and the state of Maine.

SMOKING POLICY AND RELATED INITIATIVES

MMC, as a health care institution, understands that smoking is an addiction that has harmful effects—effects from directly inhaling nicotine, as well as the effects of second hand smoke. The effects are serious and can be life threatening. In order to advance its vision to make the people in Maine the healthiest in America, MMC, like other businesses in the City of Portland—including the City itself—has instituted a no smoking policy on its premises.

But the hospital also recognizes that addiction is difficult to overcome and the ability to quit smoking is often difficult. That is why MMC offers assistance to its employees, patients and visitors to quit smoking and to reduce and eliminate noxious fumes in the environment. MMC provides free smoking cessation classes to its employees. It offers free nicotine gum to visitors to the hospital in an effort to reduce the desire to smoke. MMC has conducted periodic "walk-abouts" in the neighborhood to talk with people about smoking and its health impacts.

Neighborhoods throughout the City all deal with unwanted smoke. MMC has heard the concerns of its neighbors relating to people walking on the public sidewalks in their neighborhoods while smoking.

Whether or not people smoking in MMC's adjacent neighborhoods are affiliated with the Hospital, MMC has taken significant measures to respond in a positive fashion to these concerns. MMC provides education about smoking and resources to assist in quitting (such as providing the hotline telephone number for the Center for Tobacco Independence). The Hospital has taken steps to alleviate the unsightliness of cigarette butts on public streets near its campus. As documented in its MMC Neighborhood Council Meeting minutes of June 23, 2016, MMC has purchased 30 "butt butlers" for use by the City in areas around the MMC main campus. In 2016, MMC and the neighbors collaboratively walked the neighborhood and identified areas for installation of the butt butlers.

At the request of the neighborhood representatives, MMC also modified its smoking policy as follows:

- Limits the distance from entrances within which individuals can smoke from 50 feet to 20 feet;
- Remove MMC Tobacco Free signs installed along the perimeter of the open "South Lot" (Bramhall, Chadwick, Vaughan, and Brackett Sts).
- Letter to employees sent by the MMC CEO and COO regarding these changes and the expectations for employees to abide by them
- MMC has hired a trash removal vendor to collect cigarette butts and trash in the areas surrounding the hospital. This vendor

provides such service between April 1 and first snow, on M, W, and F at 4–6 hours per day.

- MMC has a telephone line dedicated to the receipt of concerns from neighbors regarding MMC related events in their neighborhoods.

MMC is committed to its ongoing efforts to address this public health issue of tobacco use.

NEIGHBORHOOD GARDEN

The St John Valley Neighborhood (SJVNA) requested the use of property owned by MMC at 268-270 Valley St. In an effort to respond to the neighbors, MMC contacted the City for guidance on how it permitted use of public property for such community gardens. MMC fashioned an agreement with SJVNA which mimicked the Agreement used by the City for use of its land by gardening neighbors. As of June 2016 SJVNA was looking into procuring insurance of the same type required by the City.

NEIGHBORHOOD CLEAN UP DAYS

MMC has sponsored neighborhood clean-up days in the past in an effort to partner which its adjacent Neighborhood Associations to beautify the neighborhood. It has supplied lunch, trash bags, gloves and water for those participating.

SNOW BAN PARKING

MMC allows its neighbors the use of its parking garage at 887 Congress St on those days when the City calls a snow ban.

CITY-WIDE BENEFITS

MMC is actively involved in giving back to the City of Portland. The following initiatives provide some examples of the actions undertaken by MMC to give back to the community.

- MMC-Preble St Learning Collaborative: MMC nurse practitioners, primary care residents, medical students, and MMC Homeless Health Partners, have provided services to the most vulnerable underserved people in Portland, allowing them access to quality, barrier-free health care.
- Portland School Based Health Clinics were successful due to the partnership between MMC and Portland Public Health.
- Portland School Athletic Contributions: The Sports Medicine division at MMC's Family Medicine Center provides physical exams and training room support for area school teams, marathons and other sports events.
- MMC RN Health Fairs: MMC RN's routinely hold community health fairs on MMC's time to benefit vulnerable populations. Locations of health fairs include: the Preble St Teen Center, Boys and Girl's Club of Portland, and the Florence House, a permanent shelter for chronically homeless women. The events are frequently accompanied by a collection of supplies.

- Sagamore Village Health Center: MMC has provided staff and support at the Sagamore Health Resource Center, a community-based nurse managed clinic that provided public health, primary care and mental health services to residents. MMC collaboration with the USM School of Nursing and Portland Housing Authority in providing these services. In addition to staff and administrative support, MMC provided direct financial support to the Health Clinic.

- MMC Care Partners: A "safety net" program designed to provide care for those who cannot afford commercial insurance but are not eligible for government programs. CarePartners provides administrative support to help serve the target population, including comprehensive eligibility assessment, care management, and access to low cost or free pharmaceuticals.

- Virology Treatment Center: A resource to patients and physicians caring for patients with HIV / AIDS; it also provides education and conducts clinical trials, including many that otherwise would not be available in the community.

- International Clinic: Provides services and healthcare education to immigrants and refugees from around the world who have settled in Portland.

- Northern New England Poison Center: MMC is the home of the NNEPC. The NNEPC provides a 24x7 hotline and chat service to provide 24x7 consultation with healthcare professionals and the public regarding accidental pediatric or geriatric poisonings, therapeutic errors and adverse effects/ interactions, management of drug- or poison-related suicide attempts and substance abuse misadventures, environmental exposure, food poisoning and other toxic exposures. The Center also provides education for the public and healthcare professionals, including school nurses and law enforcement, assists with preparedness and toxic-surveillance for events including food or water contamination/ tampering, weapons of mass destruction, regional antidote management, and infectious disease.

- Sexual Assault Response Services of Maine (SARSSM): MMC, through its Emergency Department, teaches classes to support SARSSM. Emergency department members present at meetings and conferences in support of these services.

- The Maine Medical Center Research Institute (MMCRI) is the largest hospital-based biomedical research facility in northern New England. Many clinicians author scholarly work or participate in various studies and research activities, and the institute offers a summer

student program. Residents and community members participate in clinical trials to manage and treat diseases and medical conditions, which would otherwise not be available in the community.

- MMC Classroom Facilities at the MMC Dana Center are used by health care mission focused community groups for meetings and educational sessions. Local Chapters of Alcoholics Anonymous, Al-Anon, the National Alliance for the Mentally Ill and Take Off the Pounds Sensibly meet weekly at the Dana Center. HOPE Support Group, Making Strides against Breast Cancer, an Autism Parent Support Group, and Survivors of Suicide are some of the organizations that make use of MMC's facilities on a weekly basis throughout the year.
- MMC's Certified Nursing Assistant (CNA) Program: In affiliation with Portland Adult Education this program has graduated approximately 1,200 graduates to date. Offered 3 times a year at no charge to students, this state-approved 180-hour course incorporates experienced MMC nursing staff as faculty/ mentors within classroom presentations, skills labs, and supervised clinical experiences. Clinical nurses and others throughout MMC instruct and mentor these student team members, highlighting MMC's belief in CNAs as integral to the comfort, care, and outcomes of our patients and services. An average of 75 participants attend per session. Near the end of this eleven-week program, students take the state certification examination during the course at no cost to the student.
- Medical Explorers: Provides opportunity for High School students to experience a combination of lecture, experiential learning, and hand-on skills practice. MMC also offers summer internships and opportunities through the school year for High School students to meet, observe and interact with many disciplines in the medical profession.
- Doc for a Day: MMC provides students, chosen from underrepresented minority groups or educationally or economically disadvantaged backgrounds, an overview of what is involved in becoming a physician, and participate in hands on clinical activities in the simulation lab.
- Disaster Preparedness and Emergency Services: MMC is deeply involved in disaster planning at the local and State levels. It is one of three state Regional Resource Centers for Emergency Preparedness, and the hospital has a full-time Director of Emergency preparedness. Additionally, MMC is a member Southern Maine Regional Resource Center for Health Emergency Preparedness, which coordinates all Emergency Preparedness Activities of the Southern 4 Counties of Maine including: York, Cumberland, Sagadahoc and Lincoln. These Public Healthcare Emergency services include

Fig.6.2 Photographs from Community Benefit Events Supported by MMC

The Annual Maine Children's Cancer Program (MCCP) Walk

Tobacco Cessation Program

Park Clean-Up

services and support to other local Hospitals and Medical Centers, Laboratories, Clinics and Ambulatory Centers, Assisted Living and Long Term Care Facilities and Home Health Agencies in the greater Portland Community.

- Financial Support to Community Agencies: MMC supports financially and provides in kind services to various community agencies and sponsors events throughout the City, including the Heart Walk; American Cancer Society walk, Hospice of Southern Maine, Let's Go Program, Ronald McDonald House, March of Dimes and National Multiple Sclerosis Society. MMC and its employees participate in the United Way, which donations benefit numerous local agencies.

APPENDICES

Appendix A / Construction Management Plan Template

Appendix A: Construction Management Plan Template

DRAFT 7-31-2017 General Construction Management Plan Template

Construction Management Plan
General Template
[Applicant and Project Name]

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City's goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

The Construction Management Plan will be submitted as part of the Site Plan Review and it shall address the construction logistics for a project. The Construction Management Plan shall include the following submissions: 1) a construction management site plan, 2) a construction schedule (time frame); and 3) a written narrative addressing the categories below.

A. Construction Management Principles
The following narrative provides an overview of the construction management principles that the [Applicant and Contractor] has identified to minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

B. Development Review of Construction Management Plan
[Applicant and Contractor] shall submit a construction management plan that provides a comprehensive logistics and safety program for the construction project, which will be reviewed and approved as part of the site plan review process. The plan minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process. The following details define the intended approach to the successful management of the project construction and the construction management plan will address the general conditions contained below.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits
Prior to scheduling a preconstruction meeting and the issuance of any city required permits, [Applicant and Contractor] shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.

DRAFT

2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

[Applicant and Contractor] will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Construction Manager will work closely with adjacent abutters, businesses and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. The final construction management plan shall provide for the following:

1. Contact Person and contact information for the [applicant and contractor] and who is available 24 hours
2. Construction Signage posted on the site with Contact Information for Contractor
3. Describe any additional communication strategies
4. All construction site signage is temporary and shall be removed at project completion.

E. Construction Schedule

1. The contractor shall submit a schedule or time line for the construction project, including any Phasing.
2. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
3. Extended Hours or Night Work: Pursuant to Section 17-18, this section not apply to emergency utility work or "Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority."
4. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

F. Security & Public Safety

1. The Construction Management Plan will depict all proposed fencing or other barriers and access gates (with knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*
3. Fire Safety Program. An overall construction of demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security

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- Installation of new fire protection systems as construction progresses
- Preservation of existing systems during demolition
- Organization and training of an on-site fire brigade
- Development of a pre-fire plan with the local fire department
- Rapid communication
- Consideration of special hazards resulting rom previous occupancies
- Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations

4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.
2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along arterial and or collector streets are required to submit a satisfactory 'maintenance of traffic" (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

   Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for n the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic
   - Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
   - In extreme situations, flaggers may be required.

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- Police detail is required at lighted intersections and may be requested by the City's transportation engineer or his designee.

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

- Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance shall be maintained.

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

H. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
    1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
    2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or site lines with the piles of snow.
    3) Clear all walks & ramps with the work zone
    4) Sand or Salt as needed
    5) Clear all basin or drainage to help snow melt
    6) This would include Monday-Friday Sat/Sunday/Holidays

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I. Erosion Control and Preservation of Trees

1. The [contractor] shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The [contractor] shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. Delivery Truck Holding Areas Off-Site: In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

K. Parking During Construction

1. Construction Parking: Adequate parking for construction workers shall be provided on site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.
2. Parking: Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.
3. Truck Routes and Volumes: The Construction Management Plan shall address the designated truck routes and expected truck volumes.

L. Special Measures as Necessary

For construction work that will take place over a long period (e.g. 12 months or more), involve major demolition/ deep excavation/ piling and/or special construction techniques, or are located near sensitive uses (e.g. medical care facilities, schools), the Construction Management Plan should provide details and demonstrate that all appropriate special measures have been taken to avoid, minimize, or possibly compensate for potential impacts. This may include taking baseline measurements before construction, such as arranging to

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photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.

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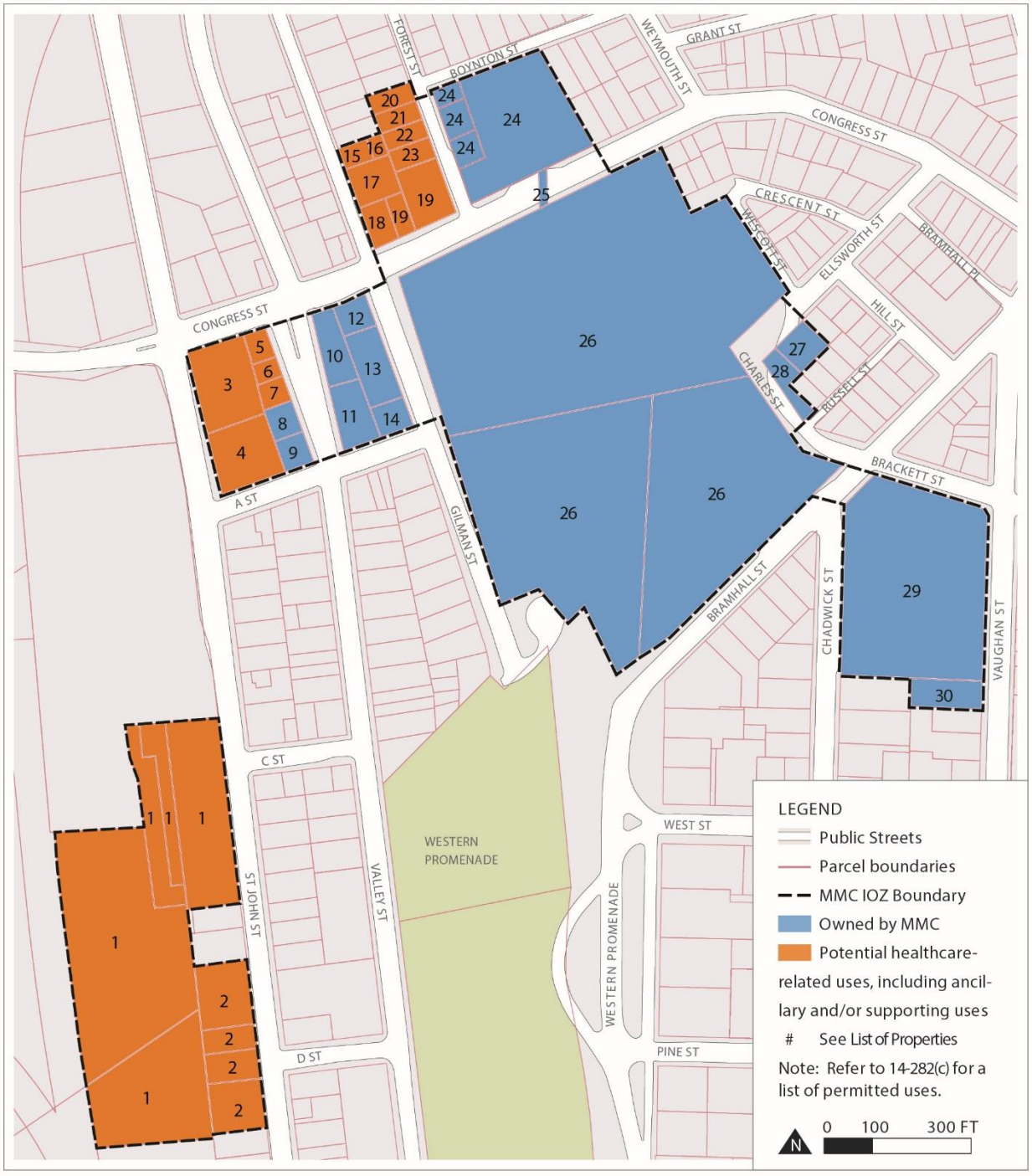
14-282. Maine Medical Center Institutional Overlay Zone Regulatory Framework.

(a) Applicability. All development proposed by Maine Medical Center (MMC) within the boundary of the Institutional Overlay Zone (IOZ) shall be consistent with the approved Institutional Development Plan (IDP), consistent with the Comprehensive Plan, and meet applicable standards of the land use code, unless such standards are superseded by the following Regulatory Framework. This Regulatory Framework shall govern future development by MMC within the IOZ unless amended by the Portland City Council upon formal application of MMC.

1. The MMC Institutional Overlay Zone shall have the boundaries depicted in the map, below, and shall include the properties listed in the table, below.

MMC IOZ Boundary



List of Properties Included in the MMC IOZ

Map#	Legal Description	Address	Acreage	Ownership
1	64-A-2-8-9-11 74-A-7 / 75-A-6	222 St John St	4.6516	Owned by others
2	68-D-1-3-13-14-16	180 St John St	0.9494	Owned by others
3	65-G-1	950 Congress St	0.4628	Owned by others
4	64-B-1	275 St John St	0.4163	Owned by others
5	65-G-2	942 Congress St	0.0659	Owned by others
6	65-G-3	940 Congress St	0.0482	Owned by others
7	65-G-4	274 Valley St	0.0667	Owned by others
8	65-G-5	268-270 Valley St	0.0978	MMC
9	64-B-2	262-266 Valley St	0.0895	MMC
10	65-H-1	932 Congress St	0.1864	MMC
11	65-H-9	261 Valley St	0.2185	MMC
12	65-H-2	930 Congress St	0.1040	MMC
13	65-H-5	52 Gilman St	0.2384	MMC
14	65-H-8	44 Gilman St	0.1128	MMC
15	65-E-22	85 Gilman St	0.0565	Owned by others
16	65-E-32	85 Gilman St	0.0282	Owned by others
17	65-E-24	81 Gilman St	0.1653	Owned by others
18	65-E-28	919 Congress St	0.1059	Owned by others
19	65-E-29-30	909 Congress St	0.3233	Owned by others
20	65-E-19	22 Forest St	0.0826	Owned by others
21	65-E-21	18 Forest St	0.0831	Owned by others
22	65-E-23	14 Forest St	0.0826	Owned by others
23	65-E-25	12 Forest St	0.0883	Owned by others
24	53-I-1-2-3-12	887 Congress St	1.3400	MMC
25	53-X-1	Congress St Air Rights and Pedestrian Walkway	---	MMC
26	53-D-7 54-H-1 64-C-1	22 Bramhall St	12.563	MMC
27	54-C-6	34 Ellsworth St	0.1341	MMC
28	54-C-10	40 Ellsworth St	0.1155	MMC
29	54-I-1	308 Brackett St	2.5200	MMC
30	63-B-8	214 Vaughan St	0.1983	MMC

Notes:

1. Properties owned by MMC are listed under MMC or MMC Realty Corp.
2. MMC will not extend its functionally-related Bramhall campus hospital operations beyond the boundary of the IOZ within the City of Portland without further amendment to the IDP. This includes any expansion of functionally-related operations that displace residential uses outside of the IOZ boundary. A functional relationship is defined as uses or activities that are traditionally or customarily linked to the day-to-day operations of the MMC Bramhall Campus that would relocate a significant proportion of the total employee population or activities.

(b) Updates and amendments.

1. It is intended that the IDP will be updated on a regular basis to ensure that the data is current and that the document remains accurate. Accordingly, monitoring reports will be filed every three years and shall include a summary of progress on IDP implementation and of acquisitions and divestment since the date of IDP approval. At the time of the submission of the monitoring report, MMC shall identify any updates to the IDP which may result from updated master planning, changes in baseline information, or changes in the adjacent neighborhoods which affect MMC, to allow the IDP to remain current. Updates and minor amendments not described below shall be reviewed administratively by the Planning Authority.

2. Minor amendments that impact phasing of the long-term development blocks or change the approach to parking, transportation, neighborhood engagement or design shall be reviewed by the Planning Board for consistency with the objectives of the IDP. In addition to consistency with the objectives of the IDP, review of phasing and development program amendments shall focus on integration with the campus and impacts on transportation or infrastructure. This review may occur simultaneously with the site plan review of an anticipated project.

3. Major amendments shall be reviewed by the Planning Board and are required under the following circumstances:

    a. A change to the Regulatory Framework is required;

    b. The IDP is no longer representative of the institutional mission or approach to community as a result of redevelopment in the area or City upgrades to neighborhood planning (such as roadway changes, infrastructure upgrades, community design, lighting, etc.); or

    c. Development proposed by MMC is inconsistent with the master facility plan, transportation plan intent, design plan intent, or environment and infrastructure plan intent identified in the IDP.

4. Annual monitoring reports will be submitted for MMC's Transportation Demand Management (TDM) Plan. TDM monitoring reports shall include a summary of progress toward targets established in the TDM Plan.

(c) Uses. In addition to the uses permitted in the underlying zone, the following uses are permitted as a matter of right.

List of Uses Permitted by Right within the IOZ	
Healthcare facilities including but not limited to the following ancillary and/or supporting uses: • Hospital • Medical Office / Clinic • Laboratory Center / Services • Research and Development (R&D) Laboratory or Facility • Educational Facility / Conference Center • Administrative / Business Office • Accessory Service or Trade Uses • Guest House • Multi-family Housing for Healthcare Staff and Students • Rehab / Skilled Nursing Facility	• Retail Facility • Restaurant / Cafe • Employee Service Amenities • Day Care Center • Fitness Center or Gymnasium • Parking Lot • Parking Garage • Bicycle Storage • Heliport • Antenna Station • Outdoor use areas, such as green areas, parks, gardens, art installations, and other active and passive non-commercial recreation spaces

1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for

commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.

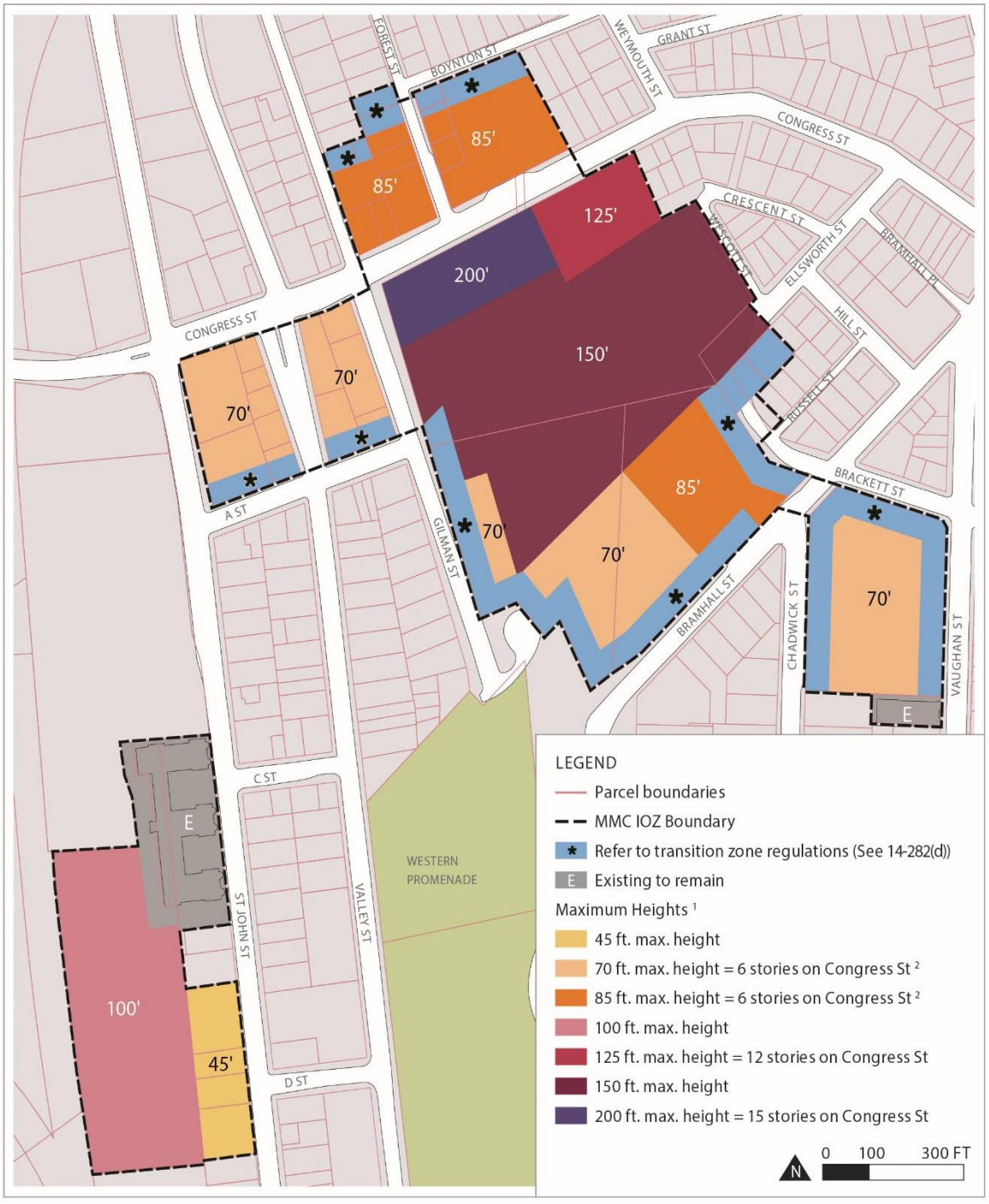
(d) Dimensional requirements. The MMC Institutional Overlay Zone shall have the dimensional requirements listed in the table and depicted in the maps, below.

Dimensional Requirements	
Max. Building Heights	Max. building heights for new buildings within the IOZ shall be governed by the Maximum Building Heights Map, or by the Transition Zones clause of this table (see below) for those buildings located in Transition Zones. Refer to IDP "Chapter 5. Design" for methodology on determining heights.
Minimum Building Heights	Three stories, except in transition zones, where the minimum building height shall be two stories. Minimum building heights shall not apply to building awnings, associated kiosks, pavilions or similar building components.
Maximum Building Length	Length of proposed parking garage at 222 St John St shall not exceed 500 feet as measured roughly parallel to St John St.
Minimum Building Setbacks	Minimum building setbacks shall be governed by the Minimum Setbacks Map. Additional requirements are listed in the Transition Zones and Congress Street Build-to-Zone sections of this table.
Congress Street Build-to-Zone*	A Build-to-Zone is identified for some properties that abut Congress Street. See Minimum Setbacks Map for the location of Build-to-Zone. i. The Congress Street Build-to-Zone extends between 0 to 40 feet from the right-of-way boundary. ii. Buildings located in these parcels must have a minimum of 70% of the façade facing Congress Street located within the

Transition Zones	Transition zones are identified inside the IOZ boundary in areas where the IOZ abuts or is located across a public right-of-way from a residential zone or a historic-designated district. See Maximum Building Heights Map for location of transition zones. i. Transition zones shall extend 50 feet into the parcel from the parcel boundary. ii. Transition zones that abut a Residential zone with or without an intervening public right-of-way shall have a maximum height limit that matches the maximum height permitted within that Residential zone. iii. In areas where the IOZ abuts a Residential zone without an intervening public right of way, minimum side and rear yard requirements of the abutting Residential zone apply within the IOZ boundary, unless noted otherwise in Minimum Setbacks Map.

*A "build-to zone" is the area on the lot where all or a portion of the street-facing building facade must be located, measured as a minimum and max. yard (setback) range from the public right-of-way boundary.

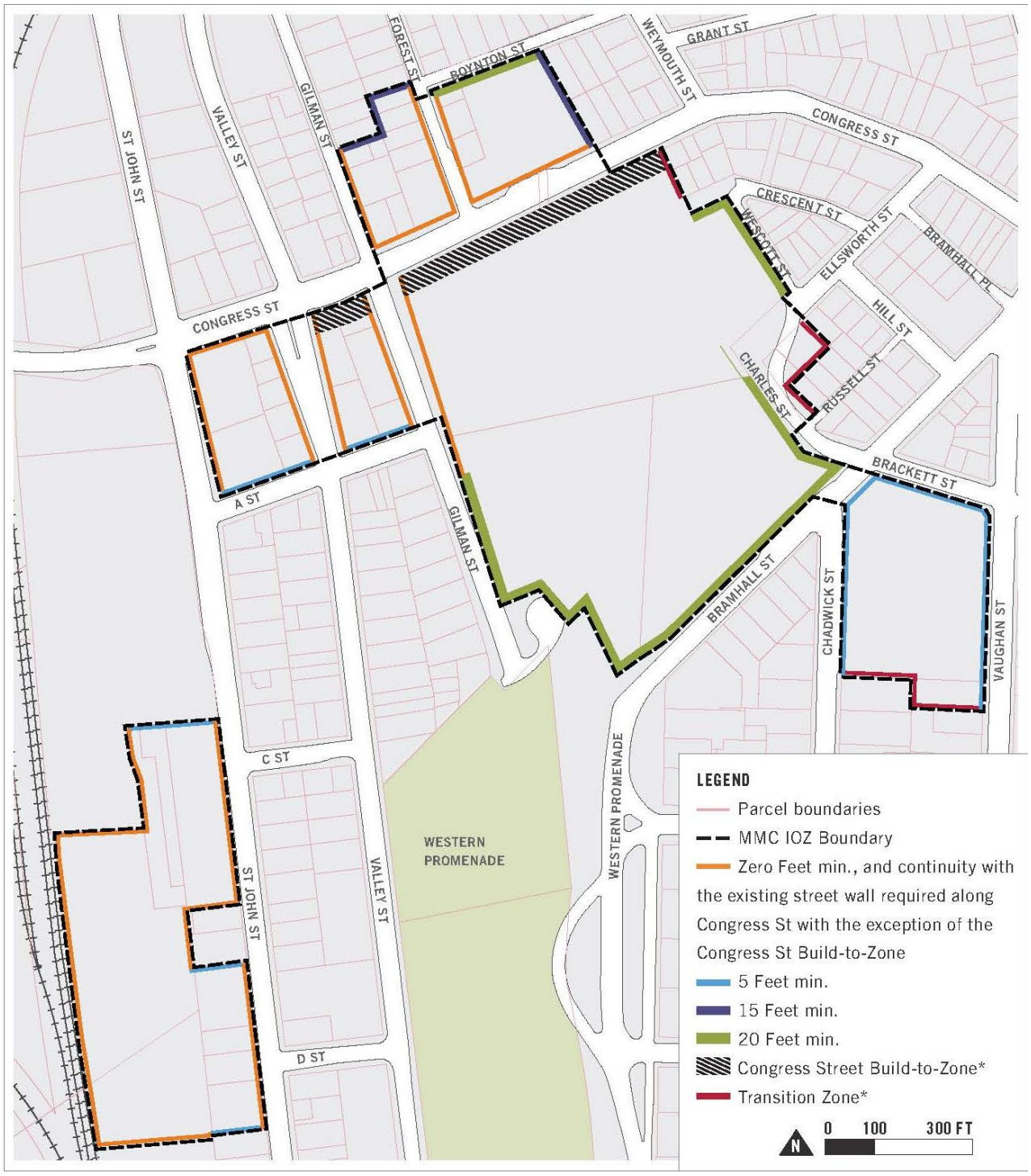
Maximum Building Heights



Notes: 1. Minimum building heights also apply. Refer to 14-282(d).

2. For buildings with residential use above the ground floor, the following height maximums apply: 70 ft. maximum height = 7 stories, and 85 ft. maximum height = 8 stories.

Minimum Setbacks



* **Note:** See Table 4.1 Dimensional Requirements.

(e) Design. New buildings within the IOZ shall adhere to the Design Guidelines set forth in Chapter 5: Design of the IDP and the site plans standards of the City of Portland.

(f) Signs.

1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP.

2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.

(g) Transportation.

1. Transportation Demand Management (TDM):

   a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time.

   b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors.

   c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.

2. Parking:

   a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand

study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods.

b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.

(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.

(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.

(j) Neighborhood Integration and neighborhood engagement.

1. For the purpose of keeping surrounding residential areas appraised of its future development plans, and to address any neighborhood issues related to the operations of the MMC Bramhall campus, MMC shall adhere to the ongoing community engagement principles identified in the approved Institutional Development Plan.

2. MMC shall conduct ongoing community engagement, including the formation of a Neighborhood Advisory Committee comprised of representatives of MMC, the Parkside neighborhood, the West End neighborhood, the Western Promenade Neighborhood Association, the St. John Valley neighborhood, the Libbytown neighborhood, and the City.

(k) Construction management.

1. At the time of site plan review, MMC shall submit a Construction Management Plan substantially in accordance with those construction management principles identified in the approved Institutional Development Plan for review and approval by the Planning Authority.

2. The Construction Management Plan shall include a construction schedule, as well as strategies for managing neighborhood communication and noise, air quality, traffic, and parking impacts associated with the construction as set forth on the Construction Management Template developed by the City and attached and incorporated to the IDP as Appendix A.

(l) Other requirements.

1. Helipad. MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions:

   a. Setback requirements of Section 14-327(3); and

   b. Fencing requirements of Section 14-327(4).

2. Snow Ban Parking. When the City of Portland declares a Snow Parking Ban, MMC shall make parking available to neighbors in a designated parking area on or near its campus upon the following condition:

   a. Hours: Due to the patterns of patient flow in the hospital, the hours of snow ban parking for registered vehicles during an announced City of Portland Snow Parking Bans are 6:00 p.m. until 6:00 p.m. Vehicles that are not moved out of these parking areas by the applicable time each morning are subject to towing at the owner's expense.

3. Healthy Communities- Recognizing that a stable residential and commercial environment is key to the health of any neighborhood, MMC commits to supporting its existing and future neighbors in the St. John Valley, Parkside, West End, Western Prom and Libbytown neighborhoods. Accordingly, MMC shall implement and participate in the healthy communities programs as described below.

   a. Caring Community Grants- MMC shall develop an annual grant program with available funds of up to $30,000. Goals, priorities, eligibility requirements, program guidelines and allocation approach will be developed by the MMC Neighborhood Council, as described in Chapter 6

of the IDP approved on September 26, 2017. Neighborhood associations or other entities located or operating in the St. John Valley, Parkside, West End, Western Promenade and Libbytown neighborhoods may apply for grant funding relating to the following initiatives:

i. Neighborhood Investment and Infrastructure- focused on creating strong, safe, accessible and vibrant neighborhoods;

ii. Quality of life- Focused on improving access to recreation, arts or cultural experiences in the neighborhoods;

iii. Diversity and Inclusion- Focused on fostering the building of relationships and understanding among diverse groups, including capacity building and outreach activities;

iv. Public Safety- Focused on supporting public safety programs through training programs, equipment or other means in the neighborhoods; and

v. Environmental sustainability- Focused on preventing waste, increasing recycling or supporting other programs that work to improve the environment.

b. Healthy Neighborhoods Program- MMC shall initiate and adopt a memorandum of understanding (MOU) by and between the MMC, the City of Portland, an identified Community Housing Development Organization and any other community partners that may be identified later establishing a Healthy Neighborhoods program. Such a program shall be designed to fund and execute housing and community improvement and development programs in St. John Valley and the other neighborhoods surrounding MMC’s Bramhall Campus.

Memorandum

Maine Medical Center

To:	Members of the City of Portland Planning Board
From:	Jeff Sanders, Chief Operating Officer, MMC
Date:	December 15, 2017
Re:	Site Plan Application: East Tower and Visitor Garage Expansions

Maine Medical Center is pleased to submit this Level III Site Plan Application for the East Tower and Visitor Garage expansion. This is the first of three site plan applications related to MMC's Short-Term Development plan outlined in the Institutional Development Plan approved by the Planning Board on September 26, 2017.

INTRODUCTION

The East Tower and Visitor Garage Expansions represent a significant step towards modernizing the facilities at Maine Medical Center. Almost 80% of the clinical care space at MMC is over 30 years old. MMC is constantly innovating in these facilities to meet patient needs. The patient acuity at MMC is the highest in the State of Maine. MMC had an average Case Mix Index of 1.99 in 2017 while the average in the state was 1.23. These patients require advanced equipment, skilled care teams, and, most of all, private rooms.

MMC inpatient services are currently compressed into semi-private inpatient rooms. This creates a daily capacity challenge at MMC to manage the growing demand. The challenge is exacerbated by the need to close up to 60 beds per day due to patient condition, construction, or staffing. The objective of the East Tower expansion is to begin to decompress the campus by decoupling semi-private rooms and adding more private rooms.

Approximately 49% of MMC's inpatient rooms are private today. MMC's private room ratio will be almost 80% once the expansion of the East Tower and construction of the Congress building is complete. The license bed count of 637 will remain the same. These projects will significantly increase the number of private rooms at MMC and correspondingly reduce bed closures that will improve the operational efficiency and patient and care giver experience.

MMC anticipates that the East Tower and Visitor Garage expansions will be complete in the fall of 2020.

The first phase of this project also adds 225 parking spaces to the patient and family garage at MMC. This application includes a detailed parking analysis that outlines the need for more patient and visitor parking on-campus. Providing adequate parking to patients and families during their time at MMC is essential to a low-stress visit and patient and visitor experience.

PROJECTED DAILY CENSUS

The information below expands on the daily census information provided in MMC's Institutional Development Plan on pages 40-41 specifically for the purposes of the East Tower and Visitor Garage expansion site plan application.

The number of patients, visitors, and employees on MMC's Bramhall campus varies day-to-day. For the purpose of the Site Plan application for the East Tower and Visitor Garage expansions, MMC estimated the daily census for a typical week day. The estimated daily census is included in Table 1 - Estimated Number of Individuals on Campus on an Average Week Day in 2016 and 2020.

Table 1 - Estimated Number of Individuals on Campus on an Average Week Day in 2016 and 2020

Fiscal Year End (Oct-Sept)	Historic 2016	Forecast 2020	4 Year Growth	Net Add 2016-2020
Individuals on Campus on an Average Week Day				
Inpatient Discharges	99	100	1.01%	1
Inpatient Visitors	248	250	1.01%	2
Outpatient Activity	594	600	1.01%	6
Outpatient Visitors	594	600	1.01%	6
Bramhall Outpatient Clinics	153	150	-1.79%	(3)
Employees				
Shift 1	3,639	3,700	1.68%	61
Shift 2	206	210	1.86%	4
Shift 3	519	530	2.12%	11
Students				
Medical	100	105	5.00%	5
Nursing	86	90	4.65%	4
Other (PA, Pharm, etc.)	20	20	0.00%	-
Non-MFP Related Contractors	25	25	0.00%	-
Total Individuals on an Average Day	**6,282**	**6,380**	**6.65%**	**98**

The estimated net change in individuals on campus per day will be approximately 100 between 2016 and 2020. The estimated increase of 100 individuals is anticipated to be spread throughout the 24 hour per day operations at MMC. However, outpatients, visitors, and the majority of shift 1 employees will likely be on campus between 7:00 AM and 6:00 PM.

Approximately 5% of the estimated increase can be directly attributed to the East Tower and Visitor expansion. This is the result of the estimated number of beds per day that MMC will be able to keep open as a result of the 64 private universal rooms in the East Tower Expansion. The rest of the increase is estimated as a result of growing demand for MMC services and the expected efficiencies gained on the Bramhall campus and at other MMC care locations and pending decisions about vacated spaces at Bramhall.

HEALTHY COMMUNITIES

MMC is in the process of developing a community grant program that will make $30,000 available annually. The program is already undertaking its first project in the Bramhall Square Park. There is a process underway to redesign the park which will improve the quality of life in the neighborhood.

MMC has initiated discussions with the City of Portland and a Community Housing Development Organization to establish a Health Neighborhoods program.

CONCLUSION

We are excited about these projects and the enhancements they will provide our patients, visitors and care teams. This project will improve MMC's ability to meet the needs of patients in our community by de-coupling semi-private rooms and providing adequate parking for patients and families. We look forward to reviewing the Site Plan Application for the East Tower and Visitor Garage Expansions.

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

Planning and Urban Development Department
Planning Division

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

Level III: Site Plan Development includes:

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

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

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

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

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

Project Name:	Maine Medical Center East Tower / Visitor Garage Vertical Expansions
Proposed Development Address:	22 Bramhall Street
Project Description:	Add 2 floors to East Tower/ Relocate Heliport to East Tower /Add 3 levels to garage
Chart/Block/Lot:	053D007 / 054H001/ 064C001
Preliminary Plan	No
Final Plan	Yes

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

APPLICANT

Name:	Maine Medical Center : Attn : Alexander Green
Business Name:	Maine Medical Center
Address:	22 Bramhall Street
City/State:	Portland, Maine
Zip Code:	04102
Work #:	207-662-3689
Home #:	
Cell #:	
Fax #:	
E-mail:	AGreen@mmc.org

OWNER

Name:	Same as Applicant
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

AGENT/REPRESENTATIVE

Name:	William Conway, Sebago Technics
Address:	75 John Roberts Road
City/State:	South Portland , Maine
Zip Code:	04106
Work #:	207-200-2055
Home #:	
Cell #:	
Fax #:	
E-mail:	wconway@sebagotechnics.com

BILLING (to whom invoices will be forwarded to)

Name:	Maine Medical Center / Attn : Alexander Green
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ENGINEER

Name:	Sebago Technics
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

SURVEYOR

Name:	Sebago Technics
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ARCHITECT

Name:	Perkins + Will
Address:	225 Franklin Street Suite 1100
City/State:	Boston, Massachussetts
Zip Code:	02110
Work #:	617-478-0300
Home #:	
Cell #:	
Fax #:	
E-mail:	Jeffrey.Keilman@perkinswill.com

ATTORNEY

Name:	Maine Health Corporate Counsel : Attn : Penelope St. Louis
Address:	110 Free Street
City/State:	Portland, Maine
Zip Code:	04101
Work #:	207-661-7157
Home #:	
Cell #:	
Fax #:	
E-mail:	STLOUP@mmc.org

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	William Conway
E-mail:	wconway@sebagotechnics.com
Name:	Jeffrey Keilman
E-mail:	Jeffrey.Keilman@perkinswill.com
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

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

PLAN AMENDMENTS (check applicable review)

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

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☐	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [ ] x $25.00 each	$
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☑	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		$ 2,500.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

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

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

TOTAL AREA OF SITE	12.52 Acres	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	0	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	415,220	sq. ft.
Impervious Area (Total Proposed)	0	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	56,144	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	352,350	sq. ft.
Building Floor Area (Total Proposed)	137,961	sq. ft.
ZONING		
Existing	IOZ	
Proposed, if applicable	IOZ	
LAND USE		
Existing	Hospital	
Proposed	Hospital	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	N/A	
# of Residential Units (Total Proposed)	N/A	
# of Lots (Total Proposed)	N/A	
# of Affordable Housing Units (Total Proposed)	N/A	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	N/A	
# of One-Bedroom Units (Total Proposed)	N/A	
# of Two-Bedroom Units (Total Proposed)	N/A	
# of Three-Bedroom Units (Total Proposed)	N/A	
PARKING SPACES		
# of Parking Spaces (Total Existing)	2328	
# of Parking Spaces (Total Proposed)	225	
# of Handicapped Spaces (Total Proposed)	6	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	193	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$ 70,000,000.00	

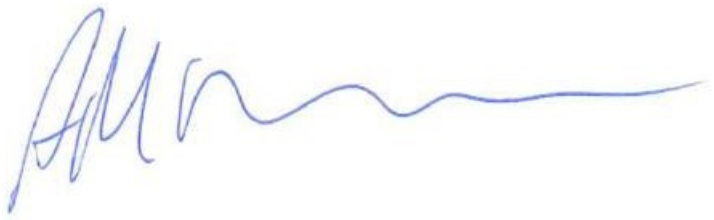
VI. APPLICANT SIGNATURE

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

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

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

Signature of Applicant:	ALEXANDER M. GREEN, DIR. PLANNING, MMC
Date:	12/12/2017



PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
		Proposed grading and contours;	
		Existing structures with distances from property line;	
		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
		Preliminary infrastructure improvements;	
		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
		Exterior building elevations.	

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

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

- Continued on next page -

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

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

TOTAL AREA OF SITE	12.52 Acrres	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	0	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	415,220	sq. ft.
Impervious Area (Total Proposed)	0	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	30,470	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	152,350	sq. ft.
Building Floor Area (Total Proposed)	60,940	sq. ft.
ZONING		
Existing	IOZ	
Proposed, if applicable	IOZ	
LAND USE		
Existing	Hospital	
Proposed	Hospital	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)		
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)	2328	
# of Parking Spaces (Total Proposed)	225	
# of Handicapped Spaces (Total Proposed)	6	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	193	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$TBD	

VISITOR GARAGE

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

TOTAL AREA OF SITE	12.52 Acres	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	0	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	415,220	sq. ft.
Impervious Area (Total Proposed)	0	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	25,674	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	200,000	sq. ft.
Building Floor Area (Total Proposed)	77,021	sq. ft.
ZONING		
Existing	IOZ	
Proposed, if applicable	IOZ	
LAND USE		
Existing	Hospital Parking Garage	
Proposed	Hospital Parking Garage	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)		
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)	2328	
# of Parking Spaces (Total Proposed)	225	
# of Handicapped Spaces (Total Proposed)	6	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	193	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$ TBD	

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Know all Men by these Presents, That

I William H. Bailey of Portland in the State of Maine

in consideration of the Sum of Two Hundred and fifty Dollars paid by The Maine General Hospital, a Corporation established by law at Portland the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital heirs and assigns forever,

Bailey to Maine General Hospital

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

a certain lot of land situated on the Northwestern slope of Bramballs Hill in Portland, the same being lot numbered nine, on a plan made by Howe and Osgood September 1863 recorded in the Cumberland Registry of Deeds in Plan Book number two page 36. The said plan is of a tract of land extending from the rear of the State Arsenal lot to Congress street. The lot hereby conveyed is about forty feet in breadth and about sixty feet in length on the Southwest side of an unopened street laid down on said plan; the same conveyed to me by Moody F. Walker Oct. 14. 1863. Subject to the location of said street over any part of said lot, subject also to a mortgage for $137.50 given to Moody F. Walker which mortgage with all unpaid interest thereon, the present grantee is to assume and discharge.

To Have and to Hold the aforegranted and bargained Premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital heirs and assigns, to their use and behoof forever. And I do covenant with the said Grantee heirs and assigns, that I am lawfully seized in fee of the Premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I will and my heirs, shall and will warrant and defend the same to the said Grantee heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Grantor and Elvira W. my wife ~~of the said~~ in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hand and seal this sixth day of June in the year of our Lord one thousand eight hundred and seventy.

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

P. Barnes to W. H. B. — William H. Bailey. Seal.

Joseph S. Bailey to E. W. B. — Elvira W. Bailey. Seal.

State of Maine. Cumberland, ss. June 6th 1870. Personally appeared the above-named William H. Bailey and acknowledged the above instrument to be his free act and deed. Before me,

P. Barnes Justice of the Peace.

Received June 6. 1870, at 12 o'clock 54 m., P. M., and recorded according to the original.

Attest, Eben Leach Register.

Know all Men by these Presents, That

I, Hugh Carney of Portland in the State of Maine

Book 377 Page 297

in consideration of the sum of Five Hundred Dollars paid by The Maine General Hospital, a Corporation established by law at Portland aforesaid the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital ~~heirs~~ and assigns forever,

Carney to Maine General Hospital

U. S. I. R. 50 Cents No. 6. June 6. '70

a certain parcel of land situated on the North-western slope of Bramhall hill in Portland, bounded on the East by the State Arsenal lot and on the North by land of the City; the same conveyed to me by Moody F. Walker Oct. 14, 1863, in two lots about forty feet in width by about sixty feet in length, which are numbered two and four on a plan of the same and adjoining lands made by Howe and Osgood Sept. 1863, which is recorded, under date of January 21, 1864 in Plan Book number two page 36 of the Cumberland Registry of Deeds. Subject to the location of Ash street over any part of said lots.

To Have and to Hold the aforegranted and bargained Premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital ~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee ~~heirs~~ and assigns, that I am lawfully seized in fee of the Premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Grantor and Bridgett D. my wife ~~of the said~~ in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hand and seal this sixth day of June in the year of our Lord one thousand eight hundred and seventy.

Signed, Sealed and Delivered in presence of

P. Barnes to No. 6.
Witnessed by Edward N. Bates

Hugh his × mark Carney Seal.
Bridgett Carney Seal.

State of Maine
Cumberland, ss. June 6th 1870. Personally appeared the above-named Hugh Carney and acknowledged the above instrument to be his free act and deed. Before me,

P. Barnes Justice of the Peace.

Received June 6 1870, at 12 o'clock 54 m., P. M., and recorded according to the original.

Attest, Eben Leach Register.

State of Maine, Cumberland ss. Portland May 19th 1870.
Then personally appeared the abovenamed Sarah M. Bridges and acknowledged the foregoing instrument to be her free act and ded.

Before me, George R Davis, Justice of the Peace

Received May 19. 1870 at 5 h. 20 m. P. Me. and recorded according to the original.

Attest. Eben Leach Register

Agreement of Joseph S. Bailey with Maine Hospital

Agreement made the 27th day of April 1870 by Joseph S Bailey of Portland for the conveyance of certain land to the Maine General Hospital.

For a valuable consideration the said Bailey agrees to convey by deed of warranty to the Maine General Hospital, upon the conditions hereinafter named, a certain parcel of land situated on the slope of Bramhall's Hill in Portland, being the western part of a parcel of about two acres extending from the Arsenal ground to Congress street, formerly owned by M. F. Walker and others, described as divided into lots on a plan made by Kent and Osgood in 1863 through which two acre parcel a street called Oak street has recently been laid out, and being all of said two acre parcel, except the ten lots nearest the Arsenal and except the part of the street adjoining the ten lots. The conveyance hereby agreed to be made is to include the fee of the land covered by the new street west of the ten lots, but subject to the location of the street.

This agreement is to be in force for the term of forty days from and after this date.

The conditions upon which the conveyance is to be made, are, that the Hospital shall within the said forty days pay to the said Bailey, or to his written order, the sum of two thousand dollars, upon which payment the ded is to be made and delivered, and shall therefore make and deliver to the said Bailey or to his written appointment, its two several negotiable promissory notes, one for two thousand dollars payable in two years from the date of the deed, and one for one thousand dollars payable in three years from the same date, both with interest half yearly at the rate of seven and one half per cent. per annum, with liberty to pay not less than one thousand dollars on said notes at any time before maturity, together with a mortgage of the premises to secure the same, and shall assume and pay according to its tenor a mortgage now subsisting

on a part of said premises for one thousand dollars, given by said Bailey in 1866 in six years, subject to which mortgage this agreement is made, interest accrued on said mortgage to the date of this conveyance to be paid by said Bailey.

In witness whereof the said Bailey has hereunto set his hand and seal the day and year first above written.

U. S. Inter. Revenue 5 cts. J. S. B. Sept. 27. 1870. Witness, P. Barnes Joseph S. Bailey. Seal.

State of Maine. Cumberland ss. On this 21st day of May 1870 personally appeared Joseph S. Bailey and acknowledged the foregoing instrument by him subscribed to be his free act and deed.

Before me. P. Barnes. Justice of the Peace.

Received May 21, 1870 at 4h. 10m. P. M. and recorded according to the original.

Attest. Eben Leach Register

U. S. I. R. $2.00 H. S. L. May 21 1870.

Know all men by these presents that I, Horatio J. Libby of Portland in the County of Cumberland and State of Maine in consideration of Two Thousand and Dollars paid by John Lindsey of Standish 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 John Lindsey, a certain lot of land and the buildings thereon situated on the Southwesterly side of Chestnut Street in said Portland and bounded: beginning at the Northerly corner of land of Benjamin Tukey formerly Leonard Crosse's land and running thence Northwesterly on said street thirty five feet; thence Southwesterly at right angles with said street eighty nine feet to a stake or stones; thence Southeasterly on a line parallel with said street thirty five feet to a stake or stones; thence at right angles with the last line by Mrs. H. Hay's land and said Tukey's land eighty nine feet to the bound begun at; containing about two thousand and four hundred feet; being a part of the land conveyed to me by Miriam Libby sale by deed dated January 18th 1854 and recorded in Cumberland Registry of Deeds Book 257 Page 27. Subject to a mortgage to the City of Portland on which is now due about two thousand dollars.

To have and to hold the above granted premises

Libby to Lindsey

Witness

Portland May 7th 1874. This mortgage having been paid and fully satisfied, is hereby cancelled and discharged. Per Fire Dep.

their hands and seals this twentieth day of October A. D. 1870.

Richard D. Rice {President of Maine Central Railroad Company

Countersigned by Joshua Nye, Treas. of Maine Central R. R. Co.

William L. Putnam Seal
Artemas Libbey Seal.
James T. Patten. Seal.

Cumberland ss. Oct. 20, 1870. Then personally appeared Richard D. Rice, President of the Maine Central Railroad Company and acknowledged the foregoing instrument to be the free act and deed of said Corporation, before me,

Josiah H. Drummond Justice of the Peace.

Received Nov. 2, 1870 at 2 h. 30 m. P. M. and recorded according to the original.

Attest: Eben Leach Register

City of Portland to Me. Gen. Hospital

Whereas the City Council of the City of Portland, upon the petition of the Maine General Hospital, praying that the City would grant to the Corporation certain lands for the purpose of enlarging the building site of the Hospital, and rendering the same more commodious and useful for the objects thereof, by concurrent order of the two Branches, passed by the same respectively, on the 23d and 24th days of May 1870, and approved by the Mayor on the 31st day of the same month, ordered, that the prayer of the petition be granted, and that a deed in furtherance thereof be executed and delivered for the conveyance prayed for.

Now, know all men by these presents that the City of Portland, in pursuance of the foregoing order, and in consideration of Ten Dollars paid by the Grantee hereinafter named, the receipt whereof is hereby acknowledged, doth hereby give, grant, bargain, sell and convey to the Maine General Hospital, a Corporation established by law at Portland aforesaid, a certain parcel of land, belonging to the City, situated on the slope of Bramhall's Hill, bounded on

the Northeast by a line, as now fenced, in continuation of the Northeast side line of the Maine State Arsenal lot, and on the Southwest by lands of Joseph S. Bailey and others, and extending Westward, between those limits, from the Arsenal lot to Congress street.

Also another parcel of land belonging to the City, situated on the Southwest side of the Arsenal lot and of the lands of Bailey and others, having a front on a line in continuation of the Northwest side line of Arsenal street as far as to the Northeast side line of a contemplated street, and extending Westwardly from Arsenal street between the contemplated street on the South and the Arsenal lot and Bailey land on the North to Congress street.

The said contemplated street is laid down and designated by the name of Gilman street on a Plan made by J. F. Chappell, Engineer, May 21, 1870, to which Plan, verified as required by the Order of the City Council, by the signature of the City Treasurer, reference is made for more exact ascertainment of the position and courses of said street.

This conveyance is made upon the condition that the lands hereby granted and conveyed shall be held for the purposes of the Hospital, as a part of its building site and grounds; and that whenever the same shall cease to be so used, they shall revert to the City.

Also upon the further condition, that if the Hospital shall acquire a title to the lands of Bailey and others above mentioned, and the contemplated street shall, at any time, thereafter be laid out and opened across the same, as described on said Plan, no damages or compensation shall be claimed by the Hospital therefor.

To have and to hold the premises, with the privileges and appurtenances thereof, to the said Maine General Hospital, to its use and behoof forever, subject to the conditions aforesaid.

In witness whereof, these presents are subscribed and sealed, in behalf of the City, by Henry W. Kenney, City Treasurer, duly authorized by the Order aforesaid, this fourth day of June in the year of our Lord

one thousand eight hundred and seventy.
Signed, sealed and
delivered in presence of } Henry W. Kersey
Benj. Kingsbury Jr. City Treasurer.

State of Maine.
Cumberland ss. On this sixth day of August 1870, personally appeared Henry W. Kersey and acknowledged the foregoing instrument by him subscribed to be the deed of the City of Portland.
Before me,
Benj. Kingsbury Jr. Justice of the Peace.

Received Nov. 14, 1870 at 1h. P.M. and recorded according to the original.
Attest: Eben Leach Register

2
P. & O. R. R. Co
to
Davis et als

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

Know all men by these presents, that the Portland and Ogdensburg Railroad Company, a corporation established by the Legislature of the State of Maine, and authorized and empowered by the Legislature of New Hampshire to construct and extend its Railroad across said State of New Hampshire, subject to the laws thereof relating to Railroads, and having its principal office for the transaction of business at Portland in the County of Cumberland and State of Maine, for the purpose of effecting the several trusts and securities hereinafter set forth, created and declared, designed to enable and provide for the more speedy construction and equipment of the Railroad of said Company, and in consideration of One Dollar paid by the Grantees and Trustees hereinafter named, doth hereby give, grant, bargain, sell and convey to Woodbury Davis, Samuel E. Spring, and Weston F. Milliken, all of Portland aforesaid, Gentlemen, their survivors and successors as hereinafter designated, all that part of the Railroad of said Company extending and to be extended from the terminus in Portland, in the State of Maine to Bartlett in the State of New Hampshire, located and to be located within said limits, called the Portland and Ogdensburg Railroad, including all the rights of way and lands taken and

Discharge Book 102 Page 65

Book 382
Page 450

Know all Men by these Presents, That

I Phinehas Barnes of Portland, in the County of Cumberland, State of Maine

in consideration of Four Thousand and Seventy one 97/100 Dollars paid by

The Maine General Hospital, a corporation established by the Laws of said State

the receipt whereof I do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quit claim unto the said Maine General Hospital, its successors

~~heirs~~ and assigns forever, all my right, title and interest in and to Twenty several lots of land situated on the Northwestern slope of Bramhall Hill in said Portland described and numbered on a plan of a tract of about two acres, extending from the Maine State Arsenal Grounds, to Congress Street which plan was made in September 1863, by Howe and Osgood, and is recorded in the Cumberland Registry of Deeds, in Plan Book, number two, page thirty six - the lots hereby conveyed being numbered one, three, five, seven, eight, ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, twenty one, twenty two, twenty three, and twenty four. 1. 3. 5. 7. 8. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22, 23 & 24. together with all my right title, and interest in and to the land adjoining any of said lots, embraced within the location of Noble Street, as laid out by the City the last year: The design of this Deed being to discharge liens mentioned in Deeds to said Barnes from Moody F. Walker & wife dated 6 June 1870, recorded in said Registry, Book 377, page 302 & from Joseph S. Bailey dated 6 June 1870, recorded in said Regis. by Book 377, page 301, the mortgage obligations of said Barnes mentioned in said Deeds, having been discharged, by said Hospital.

Barnes
to
Maine G Hospital

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

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to them the said Corporation, its successors

~~heirs~~ and assigns forever. And I do covenant with the said Corporation its successors

~~heirs~~ and assigns, that I will warrant and forever defend the premises to them the said Corporation its successors

~~heirs~~ and assigns forever, against the lawful claims and demands of all persons, claiming by, through, or under me.

In Witness Whereof, I the said Phinehas Barnes, and Ann B. Butler wife of the said Barnes, in testimony of her relinquishment of her right of Dower in the above described Premises

have hereunto set my hand and seal this Eighth day of July in the year of our Lord one thousand eight hundred and seventy one.

Signed, Sealed and Delivered in presence of
Wilfred Barnes to P. B.
Wilfred Barnes to A. B. B.

P. Barnes. Seal.
Ann B. Barnes. Seal.

State of Maine
Cumberland, ss. 8th July 1871. Personally appeared the above-named Phineas Barnes and acknowledged the above instrument to be his free act and deed. Before me,

James T. McCobb. Justice of the Peace.

Received July 11 1871, at 11 o'clock 21 m., A. M., and recorded according to the original.

Attest, Eben Leach Register.

with interest, and all cost and expenses, including all sums paid by said Grantee or assigns for insurance of the premises and for taxes: paying the surplus, if any, to the said Grantors, or their assigns: and such sale shall forever bar the said Grantors, and all persons claiming under them from all right and interest in the premises, at law or in equity. It being mutually agreed that the said Grantee or assigns may purchase at said sale, and that no other purchaser shall be answerable for the application of the purchase money.

In witness whereof, we the said Grantors, Emily F. Bailey and Benjamin H. Bailey have hereunto set our hands and seals this thirteenth day of January in the year of our Lord eighteen hundred and seventy one.

Signed, sealed, and delivered in presence of Benj. Kingsbury Jr. — Emily F. Bailey. Seal — Benj H. Bailey. Seal

State of Maine.
Cumberland ss. Portland, January 13, 1871. Then personally appeared the abovenamed Benjamin H. Bailey and Emily F. Bailey and acknowledged the foregoing instrument to be their deed.

Before me,
Benj. Kingsbury Jr. Justice of the Peace.

Received Jan. 14, 1871 at 12 h. 29 m. P. M. and recorded according to the original.
Attest: Eben Leach Register

State of Maine
to
Maine General Hospital

State of Maine.

Resolves in favor of the Maine General Hospital.

Resolved, That all the right, title and interest of this State in and to the lot of land, not including the buildings thereon, situated on Bramhalls Hills, in the City of Portland and County of Cumberland, being the present site of the State Arsenal, is hereby granted to the Maine General Hospital, a corporation established by act of the Legislature, passed February twenty-fourth, one thousand eight hundred and sixtyeight, to have and to hold to

said corporation for the purpose of erecting and maintaining thereon its hospital buildings; and when such land ceases to be so used, it shall revert to the State. But this grant shall not take effect until it is shown to the satisfaction of the Governor that said Corporation has raised by responsible private subscriptions or donations the sum of Twenty Thousand Dollars; nor until the Governor has certified on a copy of this resolve certified by the Secretary of State, that the aforenamed condition precedent has been complied with; but when that is done, the grant shall take effect; and the recording of such certified copy, with the Governor's certificate thereon, in the Registry of Deeds in the County of Cumberland, shall be sufficient record evidence thereof.

Resolved That when said Corporation has raised, received into its treasury and actually expended towards the construction of its hospital buildings on said lot, the sum of Thirty thousand dollars, and this fact is shown to the satisfaction of the Governor, he may draw his warrants on the Treasurer of State for the sum of Ten thousand dollars in favor of said Corporation and payable to its Treasurer; and when said Corporation has so raised, received into its Treasury and expended in the construction of its hospital buildings the sum of Ten thousand dollars more, or Fifty thousand dollars in all, including the Ten thousand from the State, and this fact is shown to the satisfaction of the Governor, he shall draw his warrants on the Treasurer of State for the sum of Ten thousand dollars more in favor of said Corporation and payable to its Treasurer; and the sum of Twenty thousand dollars is hereby appropriated to carry into effect the purposes of this Resolve, to be paid from any money in the Treasury not otherwise appropriated.

In the House of Representatives March 18, 1870.

Read and passed finally.

Reuben Foster Speaker

In Senate March 18" 1870

Read and passed finally.

Wm. H. Bolster President.

March 19th. 1870. Approved. Joshua L. Chamberlain, Governor.

State of Maine

Office of Secretary of State,

Augusta, Dec. 15. 1870

I hereby certify that the foregoing is a true copy of the original as deposited in this Office.

Franklin M. Drew.

Secretary of State.

I, Joshua L. Chamberlain Governor of Maine in compliance with the terms of the Resolve of which the foregoing is a copy certified by the Secretary of State, hereby certify that it has been shown to my satisfaction that the Maine General Hospital the corporation within named has raised by responsible private subscriptions and donations the sum of twenty thousand dollars.

In witness whereof I have hereunto set my hand this sixteenth day of December A. D. 1870.

In presence of
F. L. Chamberlain
Charlotte M. Packard

Joshua L. Chamberlain
Governor of Maine.

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

Attest: Eben Leach Register

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

Kneeland to Kneeland

Know all men by these presents, that I, Wm. M. Kneeland of Stoneham, Mass. in consideration of Four Hundred Fifty Dollars to me paid by Seth Kneeland of Harrison, County of Cumberland, State of Maine, the receipt whereof is hereby acknowledged, do hereby sell, remise, release, and forever quitclaim unto the said Seth Kneeland all my right, title and interest in and to a certain farm or parcel of real estate described as follows, to wit, the same deeded to me by the said Seth Kneeland by his deed; said deed dated Jany. fourth 4. 1869, said deed recorded Book 364 Page 288, being the same farm Seth Kneeland now lives on in Harrison all taxes excepted.

To have and to hold the above released premises, with all the privileges and appurtenances to the same belonging, to the said Seth, his heirs and assigns, to their use and behoof forever. And I the said

Book 388 Page 92

Know all Men by these Presents, That

I, Barthol omew Kreiu of Portland, in the county of Cumberland, State of Maine

in consideration of five hundred dollars paid by

The Maine General Hospital a corporation doing its business in said Portland

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital its successors its and their heirs and assigns forever, a certain lot of land on the easterly side of (what is or

Know, To Maine Gen Hospital

U. S. I. R.	
$0.50	
B. W.	
Sept. 15.	
1871.	

latelywas) Ash Street, in said Portland, being sixty five feet in length, & running back from the line of said Ash Street & forty feet in width, being the same lot indicated as number six (No 6) on a certain plan of land surveyed for Moody F. Walker September 23. 1863. by Howe & Osgood Civil Engineers, which plan is placed on file in the office of the Registry of Deeds for Cumberland county for the purpose of reference in the matters of conveyances that have been or may be made by said Moody F. Walker of the lots of land specified in said plan. The same property conveyed to me by said Moody F. Walker by deed dated the 14th October 1863 recorded in said Registry Book 328 page 199.

To Have and to Hold the aforegranted and bargained Premises, with all the privileges and appurtenances thereof, to the said Corporation its successors its & their heirs and assigns, to their use and behoof forever. And I do covenant with the said Corporation its successors its & their heirs and assigns, that I am lawfully seized in fee of the Premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Corporation to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors, its & their heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Barthol omew Kreiu and Margaret wife of the said Barthol omew Kreiu in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hands and seals this twenty eighth day of August in the year of our Lord one thousand eight hundred and seventy one

Signed, Sealed and Delivered in presence of

James T. McCobb

Witness

Michael White

Barthol omew Kreiu — Seal

her Margrett + Kreiu — Seal mark

Cumberland, ss. 15 September 1871 Personally appeared the above-named Barthol omew Kreiu and acknowledged the above instrument to be his free act and deed. Before me,

James T. McCobb Justice of the Peace.

Received Sept 18 1871, at 4 o'clock & 1/m. P.M., and recorded according to the original.

Attest, Register.

Book 408
Page 457

Know all Men by these Presents, That

The City of Portland, a corporation in the County of Cumberland, State of Maine, in consideration of One Dollar & other considerations paid by The Maine General Hospital, a corporation in said State & County & City,

the receipt whereof We do hereby acknowledge, do hereby remise, release, bargain, sell, and convey, and forever QUIT-CLAIM unto the said Maine General Hospital, its successors ~~heirs~~ and assigns forever, all our right, title, and interest in and to a lot of land, on Portland the slope of "Bramhalls Hill", in said city, To. being the land which lies between the M. General land owned by said Hospital & Gilman Hospital Street & Arsenal Street extended westerly & southerly, bounded: Beginning at the southwest corner of a lot of land conveyed to said Hospital by said city in 1870, thence southwesterly on the northerly line of Arsenal Street produced 138 feet, more or less, to Gilman Street, thence northerly by east line of Gilman Street 653 feet, more or less, to Bailey's land, thence southeasterly by Bailey's land 71 feet, more or less, to land of said Hospital, thence by said Hospital land 544 feet, more or less to point of beginning: Provided, That the Powder House now on said lot be allowed to remain, without expense to the city until such time as the city shall provide some other house for powder, or remove this one from the lot.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said Grantees, their successors and assigns, their heirs & assigns forever. ~~And do covenant with the said heirs and assigns, that will warrant and defend the premises to the said heirs and assigns forever, against the lawful claims and demands of all persons, claiming by, through, or under~~

In Witness Whereof, We the said Grantors, by Henry W. Hersey City Treasurer, authorized thereto by vote of the City Council of said City, approved the 2 March instant have hereunto set our hand and seal this sixth day of March in the year of our Lord one thousand eight hundred and seventy-five.

Signed, Sealed, and Delivered in presence of

3 printed words erased & 1 interlined before execution.

S. B. Beckett.

City of Portland
by H. W. Hersey, Treas.

State of Maine.

Cumberland, ss. March ---, 1874. Personally appeared the above-named Henry W. Hersey and acknowledged the above instrument to be his free act and deed, & the free act & deed of said city.

Before me S. B. Beckett, Justice of the Peace.

Received March 19, 1875, at 9 o'clock, 45 m., A.M., and recorded according to the original.

Attest, Henry C. Houston Register.

Know all Men by these Presents, That

I, Margaret E. L. Sherman, of Norwalk, in the County of Fairfield and State of Connecticut,

in consideration of one dollar and other valuable consideration, paid by Maine General Hospital, a corporation organized and existing under the laws of the State of Maine, and located at Portland, in the County of Cumberland and State of Maine the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on the northwesterly side of Arsenal Street in said Portland, bounded and described as follows: Beginning at a point on said northwesterly side of Arsenal Street where the northeasterly side line of land of said Maine General Hospital, formerly known as the Arsenal Lot, adjoins the lot hereby conveyed; thence running northeasterly by said Arsenal Street forty (40) feet to a point; and from these two points extending northwesterly, adjoining said land of Maine General Hospital and keeping a width of forty (40) feet, one hundred (100) feet more or less to Ellsworth Street.

Meaning and intending hereby to convey the same premises conveyed to William H. Bigelow by John B. Brown by deed dated March 30, 1863, recorded in Cumberland Registry of Deeds, Book 317, page 321, my title to the same having been acquired as devisee under the will of said William H. Bigelow, extract from which is recorded in said Registry of Deeds, Book 627, page 231, in which will I am designated as Margaret Eva Lena Taylor, and by deed of Joshua L. Taylor to me dated January 11, 1897, recorded in said Registry of Deeds, Book 640, page 282.

Said premises are conveyed subject to a mortgage to Portland Savings Bank upon which there is due the principal sum of $1,650, which the grantee hereby assumes and agrees to pay as a part of the consideration hereof.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; except said mortgage; that I have good right to sell and convey the same to the said grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons. except as aforesaid.

In Witness Whereof, I, the said Margaret E. L. Sherman, and I, John C. Sherman, husband of the said Margaret E. L. Sherman joining in this deed as grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises, have hereunto set our hand s and seal s this third day of December in the year of our Lord one thousand nine hundred and twenty-six.

Signed, Sealed and Delivered in presence of

John F. Dana to M.E.L.S.
Geo. Davis, C. G. Hanson } as to J.C.S.

Margaret E. L. Sherman Seal.
John C. Sherman Seal.

State of Maine, CUMBERLAND, ss. December 3, 1926. Personally appeared the above named Margaret E. L. Sherman and acknowledged the above instrument to be her free act and deed.

Before me, John F. Dana, *Justice of the Peace.*

Received December 4, 1926, at 9 o'clock - m. A. M., and recorded according to the original.

Know all Men by these Presents, That

I, Emma W. Hill of Portland in the county of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations, paid by Maine General Hospital, a corporation existing by law, with an established place of business in said Portland, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated in said Portland, and bounded and described as follows: Beginning at the intersection of the northerly side line of Arsenal street and the westerly side line of a passageway extending from Arsenal street to Ellsworth street;thence north 20° west sixty-one and five tenths (61.5) feet by the westerly side line of said passageway to a point;thence south 70°west about thirty-four and three tenths (34.3) feet to land formerly of Nathan Moses; thence southerly by said Moses land sixty-seven (67) feet to a point on the northerly side of Arsenal street;thence north 60° 58' east by the northerly side line of Arsenal street thirty-four (34) feet,more or less, to the point of beginning.

Together with the rights of the grantor in a twelve (12) foot passageway.

Meaning and intending to hereby convey the same premises conveyed to Everett L. Hill by Milcah M. Gwynn,by deed dated February 2,1920, recorded in Cumberland Registry of Deeds,Book 1042, page 256, and the same conveyed to this grantor by said Everett L. Hill by deed dated October 15,1924, recorded in Cumberland Registry of Deeds,Book 1168, page 351.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee,its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Emma W. Hill and Everett L. Hill,husband of the said Emma W. Hill,joining in this deed as grantor, and relinquishing and conveying his rights by descent and all other rights in the above described premises have hereunto set our hand s and seals this sixteenth day of December in the year of our Lord one thousand nine hundred and twenty-seven.

Signed, Sealed and Delivered in presence of

John B. Kehoe to both

Emma W. Hill Seal.
Everett L. Hill Seal.

State of Maine, CUMBERLAND, ss. December 16, 1927. Personally appeared the above named Emma W. Hill and acknowledged the above instrument to be her free act and deed.

Before me, John B. Kehoe, *Justice of the Peace.*

Received December 16, 1927, at 11 o'clock 10 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

I, Harriet L. Stevens of Portland in the County of Cumberland and State of Maine,

in consideration of one ($1.00) dollar and other valuable considerations, paid by Maine General Hospital, a corporation organized and existing under the laws of said State of Maine, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon,situated in said Portland, bounded and described as follows: Beginning on the westerly side of a twelve (12) foot passageway leading from Arsenal Street to Ellsworth Street at a point sixty-one and five-tenths (61.5) feet distant from the intersection of the northerly side line of Arsenal Street with the westerly side line of said passage-way; thence south seventy (70°) degrees west,thirty-four and three-tenths (34.3) feet,more or less, to land formerly of Nathan Moses;thence northerly by said Moses land thirty-three (33) feet, more or less, to the southerly side line of Ellsworth Street;thence easterly along the southerly side line of Ellsworth Street thirty-four (34) feet, more or less, to its intersection with the westerly side line of said passageway;thence southerly along the westerly side line of said passageway thirty-eight and five-tenths (38.5) feet, more or less, to the point of beginning.

The above described premises are in the northerly portion of the premises conveyed to Shailer G. Cushing by Seth C. Gordon by his warranty deed dated September 21, 1907, and recorded in Cumberland County Registry of Deeds,Book 814,page 37.

Being the same premises conveyed to me under the name of Hattie L. Stevens by Perley W. Stevens by warranty deed dated December 24, 1912, and recorded in said Registry of Deeds, Book 906,page 161.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee,its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all encumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Harriet L. Stevens, and I, Perley W. Stevens,husband of the said Harriet L. Stevens,joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises have hereunto set our hands and seals this nineteenth day of February in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

R. E. Snow to both

Harriet L. Stevens Seal.

Perley W. Stevens Seal.

State of Maine, CUMBERLAND, ss. February 19, 1928. Personally appeared the above named Harriet L. Stevens and acknowledged the above instrument to be her free act and deed.

Before me, Reuben E. Snow, *Justice of the Peace.*

Received March 20, 1928, at 2 o'clock30 m. P. M., and recorded according to the original.

Book 1290
Page 192

Know all Men by these Presents, That

I, Eunice M. Chase (formerly Eunice Margaret Graham) of Portland, in the County of Cumberland and State of Maine,

in consideration of One dollar ($1.00) and other valuable considerations, paid by Maine General Hospital,a corporation organized and existing under the laws of said State of Maine, and located at said Portland,
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land with the buildings thereon,situated on the westerly side of a thirty foot passage way leading Northerly from Ellsworth Street,in the City of Portland, State of Maine, and now known as Charles Street,and bounded and described as follows,namely;

Beginning in the westerly side line of said Charles Street at the northeasterly corner of land now or formerly of Charles A. Donnell,thence northerly, by said Charles Street,thirty feet,thence westerly,on a line parallel with the northerly line of said Donnell's land seventy-four and two-tenths (74 2/10) feet to the Arsenal Lot,so called, now owned by said Maine General Hospital;thence southerly by said Arsenal Lot,thirty feet to said Donnell's land;thence easterly by said Donnell's land seventy-four and two tenths (74 2/10) feet to the point of beginning.

Being the same premises conveyed to me under the name of Eunice Margaret Graham Chase by William Graham by warranty deed dated July 1,1919,recorded in Cumberland Registry of Deeds,Book 1042,page 471.

Also a certain other lot or parcel of land with the buildings thereon situated in said Portland on the westerly side of Charles Street, and bounded and described as follows,to wit:

Beginning on the westerly side line of said Charles Street at a point distant seventy-three (73) feet northerly from the northeasterly corner of land now or formerly of Wiggins;thence northerly by said Charles Street forty-seven (47) feet to a stake; and from these two points extending back westerly,at right angles with said Charles Street and keeping said width of forty-seven (47) feet,about seventy-four and two-tenths (74.2) feet to the "Arsenal Lot" so called, now owned by said Maine General Hospital; and being the same premises conveyed to Mary Rich Graham,deceased,by Charles A. Donnell,by his deed dated July 1, 1893, recorded in the Cumberland Registry of Deeds,Book 604,page 124.

My title to said premises was acquired as an heir-at-law of said Mary Rich Graham, and by warranty deed from William Graham and Paul G. Graham to me under the name of Eunice Margaret Graham,dated August 2,1912,recorded in said Registry of Deeds,Book 898,page 83.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Eunice M. Chase,and I, Harold B. Chase,husband of the said Eunice M. Chase joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises have hereunto set our hands and seals this twentieth day of April in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

John F. Dana to both

Eunice M. Chase Seal
Harold B. Chase Seal

State of Maine, CUMBERLAND, ss. April 20, 1928. Personally appeared the above named Eunice M. Chase and acknowledged the above instrument to be her free act and deed.

Before me, John F. Dana, *Justice of the Peace.*

Received April 20, 1928, at 10 o'clock 50 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

Book 1296
Page 351

I, Elizabeth Naylor, of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable consideration, paid by Maine General Hospital, a corporation organized and existing under the laws of said State of Maine, and located at said Portland, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon,situated in said Portland, on the northerly side of Ellsworth Street and westerly side of Charles Street,bounded and described as follows: Beginning at the corner formed by the intersection of the westerly side of Charles Street and the northerly side of Ellsworth Street, and running westerly by said Ellsworth Street to land conveyed by William R. Naylor to Samuel W. Joy by deed dated November 3,1905, and recorded in Cumberland County Registry of Deeds,Book 776,page 200;thence northerly by said Joy land to land now or formerly of Levi J. Jones;thence easterly by said Jones land to said Charles Street;thence southerly by said Charles Street to the point of beginning.

Being the same premises conveyed to William R. Naylor by John B. Brown by deed dated February 20,1872, recorded in Cumberland County Registry of Deeds,Book 393, page 105, excepting therefrom the portion thereof conveyed by William R. Naylor to Samuel W. Joy by deed aforesaid. My title to said premises having been acquired as devisee under the will of William R. Naylor, extract from which is recorded in said Registry of Deeds,Book 783,page 307.

Also hereby conveying any right,title and interest I may have in said Ellsworth Street.

Taxes for the year 1928 are to be prorated between the grantor and grantee.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee,its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Elizabeth Naylor, being unmarried,

have hereunto set my hand and seal this 3rd day of July in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

Nathan W. Thompson

Elizabeth Naylor Seal

State of Maine, CUMBERLAND, ss. July 3, 1928. Personally appeared the above named Elizabeth Naylor and acknowledged the above instrument to be her free act and deed.

Before me, Nathan W. Thompson, *Justice of the Peace.*

Received July 7, 1928, at 10 o'clock45 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

Book 1296
Page 352

I, Samuel W. Joy, of Portland, in the County of Cumberland and State of Maine, in consideration of one dollar and other valuable considerations, paid by Maine General Hospital, a corporation organized and existing under the laws of said State of Maine, and located at said Portland, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on the northerly side of Ellsworth Street in said Portland, being numbered forty-three (43) on said Street, and bounded and described as follows: Beginning at a point thirty-two (32) feet westerly from the intersection of the northerly side line of said Ellsworth Street with the westerly side line of Charles Street; thence westerly by said Ellsworth Street forty-four (44) feet to the Arsenal lot, so called, now owned by the Maine General Hospital; thence northerly by said Arsenal or Hospital lot eighty-seven (87) feet to land now or formerly of Levi J. Jones; thence easterly thirty (30) feet to land now or formerly of William R. Naylor; thence southerly by said Naylor land eighty-seven (87) feet more or less to the first bound.

Being the same premises conveyed to me by William R. Naylor by deed dated November 3, 1905, recorded in Cumberland County Registry of Deeds, Book 776, page 200.

Also hereby conveying any right, title and interest I may have in and to said Ellsworth Street.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Samuel W. Joy, having no wife, have hereunto set my hand and seal this seventh day of July in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

John F. Dana

Saml W. Joy Seal

State of Maine, CUMBERLAND, ss. July 7, 1928. Personally appeared the above named Samuel W. Joy and acknowledged the above instrument to be his free act and deed.

Before me, John F. Dana, *Justice of the Peace.*

Received July 7, 1928, at 10 o'clock 46 m. A. M., and recorded according to the original.

IN WITNESS WHEREOF, the said Lessor has hereunto set his hand and seal on the day and year first above written.

Signed, Sealed and Delivered in Presence of

It is further understood that no liquor, beer, or cigarette advertising shall be displayed on any structure that might be erected.

JOHN DONNELLY & SONS -------

WEST SCARBORO M.E.CHURCH -------

By A. W. Hodgman, Treas.

State of Maine. County of Cumberland,ss. March 31, 1939.

Personally appeared the above named Lessor and acknowledged the above instrument to be his free act and deed.

Before me, F. H. Tewksbury Justice of the Peace

Received March 31, 1939, at 3h 40m P. M., and recorded according to the original

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Canal Nat'l.Bk. of Port. Tr. & to Maine General Hospital Deed

KNOW ALL MEN BY THESE PRESENTS, That

WHEREAS, The Canal National Bank of Portland as Trustee having filed its Bill of Complaint against Vaughan Hall, Incorporated and Harry M. Verrill, Conservator of Casco Mercantile Trust Company dated May 20, 1938, praying for foreclosure of a certain mortgage indenture on property described in said Bill of Complaint, said mortgage indenture being dated as of the fifteenth day of September, 1925, and recorded in the office of the Registry of Deeds for Cumberland County in Book 1219 at Page 41, the Supreme Judicial Court within and for the County of Cumberland in proceedings numbered 5830 on the docket of said Court entered its decree of foreclosure and order of sale therein decreeing and ordering the sale of the property described in said mortgage and hereinafter described, and

WHEREAS, it was, among other things, ordered, adjudged and decreed by said decree of foreclosure that said sale should be made by and under the direction of Raymond J. Callahan who was thereby appointed Special Master for that purpose and who was thereby directed to make and conduct said sale and to execute a deed of conveyance of the property sold to the purchaser thereof upon an order of Court confirming such sale and upon payment or settlement of the purchase price as therein provided, and that such sale be made in the County Court House in the City of Portland, Maine, on a day and at an hour as fixed by said decree of said Supreme Judicial Court and that notice of the time, place and terms of said sale describing briefly the property to be sold and referring to said decree should be published at least once a week for three successive weeks prior to said sale in a newspaper of general circulation published in Portland, Maine, and that upon confirmation of the sale by the Court and upon payment by any purchaser of the purchase price of the property purchased by him in accordance with the decrees of said Court the Special Master should execute a deed conveying, assigning and transferring to such purchaser the property sold to him, and

WHEREAS, the Supreme Judicial Court, pursuant to said decree, duly fixed the time for said sale as February 15, 1939, at ten o'clock in the forenoon and on said date the Special Master, pursuant to the provisions of said decree dated January 17, 1939, and pursuant to order of Court dated February 15, 1939, adjourned said sale from time to time in accordance with orders and decrees of said Court until March 28, 1939, at the time and place ordered by said decree of Court dated January 17, 1939, and orders and decrees subsequent thereto and said Special Master made due advertisement of said sale in the manner described in said decree dated January 17, 1939, and posted all of said notices as required by the orders of Court made subsequent thereto and the Special Master did at the time and place and in the manner and subject to the conditions of said decree and orders of Court subsequent thereto fairly strike off and sell said property to Maine General Hospital, a corporation duly organized and existing under the laws of the State of Maine and having a usual place of business at Portland, in the County of Cumberland and State of Maine, and

WHEREAS, The Canal National Bank of Portland thereafter duly presented to the Court for confirmation the bid so received by said Special Master and the said Special Master duly made a report of said sale to said Court, and a decree of confirmation and a certain decree amending said decree of foreclosure and sale were made and entered therein on the thirty-first day of March, 1939, confirming said bid, report and sale, and making said sale subject to taxes levied against said premises or any part thereof which are or may be chargeable upon said property and directing the Special Master, upon payment of the purchase price in the manner prescribed by said decree of confirmation, to execute and deliver to said purchaser a deed or other instrument conveying, assigning and transferring to said purchaser said property so sold as aforesaid, and

WHEREAS, said Supreme Judicial Court, in accordance with said decree of confirmation, by a decree made and entered herein on the thirty-first day of March, 1939, approved the form of this deed as required by said decree of confirmation dated March 31, 1939, and

WHEREAS, said sale has been conducted and made in all respects in accordance with law and with the provisions of said decrees and order of sale;

NOW, THEREFORE, I, the said Raymond J. Callahan, in my capacity as Special Master and in consideration of these presents and of one dollar and other valuable considerations paid by Maine General Hospital, receipt whereof is hereby acknowledged, do hereby remise, release, bargain, sell and convey and quitclaim unto the said Maine General Hospital, a corporation organized and existing under the laws of the State of Maine, its successors or assigns, all the right, title and interest which said Vaughan Hall, Incorporated and/or Harry M. Verrill, Conservator of Casco Mercantile Trust Company, and all persons claiming under it or him has or have in and to the following described real estate situated in Portland, in the County of Cumberland and State of Maine, and all future rents and profits thereof arising

therefrom, subject, however, to the equity of redemption as provided in the Statutes of the State of Maine and subject also to the terms and conditions set forth in the decree of the Supreme Judicial Court dated January 17, 1939, and certain decrees dated March 31, 1939, and to any other decree which may be hereafter made which relates to the property hereby conveyed, together with the rights and privileges pertaining to said property subject to the conditions described in the decrees of the Supreme Judicial Court dated January 17, 1939, and March 31, 1939, and any unpaid taxes, but subject, however, at all times to the exceptions and provisions particularly described and set forth in the various decrees of said Supreme Judicial Court heretofore made and any that may be hereafter made during the period of redemption:

A certain lot or parcel of land with the buildings thereon situated in said Portland, and bounded and described as follows:- Beginning on the westerly side of Vaughan Street at the southeasterly corner of land now or formerly of the Portland Water District; thence southerly on Vaughan Street sixty (60) feet, more or less, to land now or formerly of John W.Deering; thence westerly by said Deering land one hundred and forty (140) feet, more or less, to land now or formerly of Portland School for Medical Instruction; thence northerly by land of said Portland School for Medical Instruction sixty (60) feet, more or less, to said land of said Portland Water District; thence easterly by said land of said Portland Water District one hundred and forty (140) feet, more or less, to the point of beginning; said lot containing eighty-four hundred (8400) square feet, more or less. Being the same premises conveyed to Vaughan Hall, Incorporated, by Ralph N. Bryant by his warranty deed dated December 19, 1913, and recorded in Cumberland County Registry of Deeds, in Book 927, Page 26.

For title to the above described premises reference is also hereby made to a certain mortgage indenture dated September 15, 1925, securing the First Mortgage Sinking Fund 5 1/2% Gold Bonds of Vaughan Hall Incorporated, said mortgage indenture being by and between said Vaughan Hall, Incorporated and The Canal National Bank of Portland, said mortgage indenture being recorded in Cumberland County Registry of Deeds in Book 1219, Page 41.

TO HAVE AND TO HOLD and possess and enjoy said property and every part and parcel thereof free from all claims, rights, interests whatsoever in or to the same by or of the said Vaughan Hall, Incorporated, its successors and assigns, or of Harry M. Verrill as Conservator of Casco Mercantile Trust Company and by or of the creditors of the Receiver appointed by the Supreme Judicial Court in the equity proceedings hereinbefore referred to, or by or of the stockholders of said Vaughan Hall, Incorporated, and by or of all persons claiming by, through or under them or any of them, including the said Receiver of said Vaughan Hall, Incorporated, and by or of all the parties to said cause hereinbefore described, but subject, however, to any and all taxes levied against said premises or any part thereof which are or may be chargeable upon said property or premises or any portion thereof prior to the

U.S.I.R. $31.50 R.J.C. 3/31/39

lien of the mortgage foreclosed in said proceedings and subject to the right of redemption of said property granted by the Statutes of the State of Maine and subject to the terms and conditions of all decrees of said Supreme Judicial Court made and entered in the cause herein referred to and to any other decree which may be hereinafter entered by said Court which relates or pertains to the property herein conveyed.

IN WITNESS WHEREOF, Raymond J. Callahan, as Special Master, has hereunto set his hand and seal this thirty-first day of March, 1939.

Signed, Sealed and Delivered in Presence of

Porter Thompson — Raymond J. Callahan Seal
Special Master

State of Maine. Cumberland,ss. March 31, 1939.

Personally appeared Raymond J. Callahan and acknowledged the foregoing instrument to be his free act and deed and his free act and deed in his said capacity.

Before me, Porter Thompson Justice of the Peace

APPROVED:

Guy H. Sturgis

Justice Supreme Judicial Court

Received March 31, 1939, at 4h -m P. M., and recorded according to the original

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Casco Mer. Tr. Co., Cons. of to Maine General Hospital Deed

WHEREAS, Harry M. Verrill of Portland, in the County of Cumberland and State of Maine, was appointed Permanent Conservator of Casco Mercantile Trust Company, a banking corporation organized and existing under the laws of the State of Maine and located at said Portland, by decree of the Supreme Judicial Court in Equity in and for the County of Cumberland and State of Maine, dated April 14, 1933, in an action in equity commenced by Sanger N. Annis against Casco Mercantile Trust Company in said Court by Bill in Equity dated March 18, 1933, and

WHEREAS, upon petition of Harry M. Verrill, Conservator as aforesaid, dated March 29, 1939, a decree issued out of said Court authorizing said Conservator to sell to Maine General Hospital, a corporation organized and existing under the laws of the State of Maine and located at said Portland, all the right, title and interest of said Casco Mercantile Trust Company in and to the following described real estate, which said decree is dated March 31, 1939, and

WHEREAS, said Conservator has sold, pursuant to the terms of said decree, to said Maine General Hospital all the right, title and interest of said Casco Mercantile Trust Company in and to the real estate hereinafter described.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS, That I, the said Harry M. Verrill, by virtue of the power and authority in me vested as aforesaid, and in my capacity as Conservator of Casco Mercantile Trust Company, and in consideration of one dollar and other valuable consideration, paid by Maine General Hospital, receipt whereof is hereby acknowledged, do hereby remise, release, bargain, sell, convey and quitclaim unto the said Maine General Hospital, its successors and assigns, all the

Know all Men by these Presents, That

Book 2127
Page 269

I, John T. Lennon of Portland in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations paid by Maine Medical Center, a corporation organized and existing under the Laws of the State of Maine and located at said Portland

the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and assigns forever, certain lots or parcels of land with the buildings thereon situated in said Portland and bounded and described as follows:

First:

Beginning on the northerly side of Bramhall Street at the southwesterly corner of land now or formerly of Thomas H. Pratt, running thence westerly by said Bramhall Street fifty (50) feet to land now or formerly of Sophia M. Knight, and from these two points extending northerly towards Arsenal Street, holding to said width of fifty feet, and adjoining said Pratt premises on one side and said Knight premises on the other for a distance of sixty (60) feet to land now or formerly of Edward T. Burrowes. The said lot is the southerly portion of the premises conveyed to Albert B. Cole, Frank H. Cole and Warren W. Cole by Nettie E. Pierce by deed dated September 26, 1911 and recorded in the Registry of Deeds for said County of Cumberland in Book 882, Page 188. Said premises are numbered thirty (30) on said Bramhall Street.

Second:

A certain lot of land with the buildings thereon on the southerly side of Arsenal Street in said Portland bounded and described as follows:

Commencing at a point on the Westerly line of land of Maude E. Pratt at a point sixty (60) feet northerly from the northerly side of Bramhall Street, thence westerly on a line parallel with and sixty (60) feet from said Bramhall Street, fifty (50) feet, more or less, to land of Sophia M. Knight; thence northerly from these two points keeping a width of fifty (50) feet and bounded on the West by land of said Knight and on the East by land of said Pratt and George H. Fletcher, forty-nine (49) feet, more or less, to said Arsenal Street.

Being the same property conveyed to me by Harriet B. Foster by her warranty deed dated February 24, 1945 and recorded in the Cumberland County Registy of Deeds in Book 1771 Page 131.

Also conveying all my right, title and interest in and to Arsenal Street, recently abandoned by the City of Portland.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors and assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

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

In Witness Whereof, I the said John T. Lennon and Ann C. Lennon wife of the said John T. Lennon joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises,

have hereunto set our hand_ and seal_ this fifth day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

John J. Devine to both

John T. Lennon Seal
Ann C. Lennon Seal

State of Maine, CUMBERLAND, ss. May 5, 1953. Personally appeared the above named John T. Lennon and acknowledged the foregoing instrument to be his free act and deed.

Before me, John J. Devine, Justice of the Peace

Received May 5, 19 53, at 2 o'clock 30 m. P. M., and recorded according to the original.

Know all Men by these Presents, That

I, Donald D. McPhee of Portland in the County of Cumberland and State of Maine,

in consideration of one dollar ($1) and other valuable considerations paid by Maine Medical Center, a corporation duly organized and existing under the laws of the State of Maine and located at Portland in said County and State the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated in said Portland and being the premises conveyed to me by Hope K. Fletcher by deed dated November 22, 1946 and recorded in Cumberland County Registry of Deeds in Book 1848, Page 160, in which deed said premises are described as follows:

Beginning at the Northeast corner of Sophia T. Jones lot, so-called, on Arsenal Street; thence Northeasterly on Arsenal Street fifty (50) feet to land of one Raymond; thence Southeasterly by line of Raymond forty-eight (48) feet, more or less, to land of one Haskell; thence Southwesterly along line of said Haskell land thirteen (13) feet and two (2) inches to a point; thence Northwesterly parallel to land of said Raymond three (3) feet to a point; thence Southwesterly along the line of said Haskell land thirty-six (36) feet, more or less, to land of said Jones; thence Northwesterly forty-six (46) feet, more or less to point of beginning.

Also conveying all my interest in and to said Arsenal Street, recently abandoned by the City of Portland.

U.S.I.R.
$14.30
D.D.McP.
5/9/53

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances: that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Donald D. McPhee and I, Lorraine J. McPhee wife of the said Donald D. McPhee joining in this deed as Grantor, and relinquishing and conveying my rights by descent and all other rights in the above described premises, have hereunto set our hand s and seal s this 9th day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana
to both

Donald D. McPhee Seal
Lorraine J. McPhee Seal

State of Maine, Cumberland, ss. May 9, 1953. Personally appeared the above named Donald D. McPhee and acknowledged the above instrument to be his free act and deed.

Before me, Edward F. Dana, Justice of the Peace

Received May 9, 1953, at 9 o'clock 37 m. A.M., and recorded according to the original. ,p

Know all Men by these Presents, That

Book 2127
Page 443

I, Hazel B. Therio of Portland in the County of Cumberland and State of Maine

in consideration of One Dollar and other valuable considerations paid by Maine Medical Center, a corporation duly organized and existing under the Laws of the State of Maine and located at said Portland
the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated on the Westerly side of Bramhall Street in said Portland, being more particularly described in deed from Hazel E. Skillings to the Grantor, dated September 18, 1945 and recorded in Cumberland County Registry of Deeds in Book 1790, Page 500, in which deed said premises are described as follows:

A certain lot or parcel of land, with the buildings thereon situated in said City of Portland, on the Northwesterly side of Bramhall Street, bounded and described as follows: Beginning at the most easterly corner of land now or formerly of Sophia P. Jones; thence Northeasterly on said Bramhall Street fifty (50) feet to land now or formerly of one Raymond; thence Northwesterly by said Raymond land fifty-nine (59) feet; thence Southwesterly thirteen (13) feet two (2) inches, more or less, to a fence; thence Northwesterly by the line of the division fence three (3) feet two (2) inches; thence Southwesterly by said fence thirty-six (36) feet five (5) inches, more or less, to said Jones land; thence Southeasterly by said Jones land sixty-two (62) feet two (2) inches to the point begun at.

Also, all my right, title and interest in and to Arsenal Street recently abandoned by the City of Portland.

U.S.I.R.
$9.90
H.B.T.
5/16/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors and Assigns ~~heirs and assigns~~, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors and heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Hazel B. Therio, being unmarried, have hereunto set my hand and seal this 16th day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana — Hazel B. Therio — Seal

State of Maine, CUMBERLAND, ss. May 16, 1953 Personally appeared the above named Hazel B. Therio and acknowledged the above instrument to be her free act and deed.

Before me, Edward F. Dana Justice of the Peace

m Received May 16 19 53, at 10 o'clock 35 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

We, Albert N. Tardif and M. Louise Tardif, both of Portland, County of Cumberland, State of Maine

in consideration of one dollar ($1.00) and other valuable considerations paid by Maine Medical Center, a Corporation established by law at said Portland

the receipt whereof we do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated on the northerly side of Bramhall Street in said Portland which was conveyed to the grantors by Wilhelmina M. Mantine, by deed dated September 16, 1935 and recorded in Cumberland County Registry of Deeds in Book 1478, Page 294 and therein described as follows: Beginning on the northerly side of Bramhall Street at the easterly corner of land formerly of James Miller; thence northeasterly by Bramhall Street twenty-one and seven twentieths (21 7/20) feet to a stake; thence northwesterly about one hundred eleven (111) feet to a point in the southerly side of Arsenal Street; thence southwesterly by Arsenal Street twenty-two and three quarters (22 3/4) feet to said Miller's land; thence southeasterly by said Miller's land one hundred eleven and four tenths (111 4/10) feet to the point of beginning.

Also all our right title and interest in and to Arsenal Street recently abandoned by the City of Portland.

U.S.I.R. $16.50 A.N.T.Et 6/11/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And we do covenant with the said Grantee, its successors and Assigns, ~~heirs and assigns~~, that we are lawfully seized in fee of the premises; that they are free of all incumbrances: that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs, shall and will warrant and defend the same to the said Grantee, its successors and Assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, We the said Albert N. Tardif and M. Louise Tardif, the said Grantors, being Husband and Wife each joining in this deed as Grantors, and each relinquishing and conveying our respective rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this 11th day of June in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana — Albert N. Tardif — Seal

to both — M. Louise Tardif — Seal

State of Maine, CUMBERLAND, ss. June 11, 1953 Personally appeared the above named Albert N. Tardif and M. Louise Tardif and acknowledged the above instrument to be their free act and deed.

Before me, Edward F. Dana Justice of the Peace

Received June 12 1953, at 11 o'clock 5 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

We, Fred A. Patterson and Ella H. Whidden both of Derry in the County of Rockingham and State of New Hampshire, Ruby E. McKenzie of Raymond in said County and State and Alzo F. Patterson of Portland in the County of Cumberland and State of Maine

Book 2133
Page 311

in consideration of One dollar ($1.00) and other valuable considerations paid by Maine Medical Center, a Corporation organized and existing under the laws of Maine and located at said Portland,
the receipt whereof we do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its Successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon, situated in said Portland on the northerly side of Bramhall Street and bounded and described as follows:

Beginning on the northerly side of Bramhall Street at the southwesterly corner of land formerly of Frederick A. Carle; thence running westerly by said Bramhall Street twenty-five (25) feet to a stake or point, and from these two points extending northerly adjoining said Carle land, keeping a width of twenty-five (25) feet, to Arsenal Street, being the premises conveyed to Daniel W. Patterson by Maria M. Jose by deed dated September 12, 1921 and recorded in Cumberland County Registry of Deeds in Book 1085, Page 228.

The said Daniel W. Patterson died intestate on September 3, 1952 leaving no widow and as his sole heirs-at-law, the Grantors herein.

The Grantee as part of the consideration hereof assumes and agrees to pay the taxes for the taxable year of 1953.

Also conveying all our right, title and interest in and to Arsenal Street recently abandoned by the City of Portland, Maine.

U.S.I.R.
$13.20
A.F.P.Et
5/20/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its Successors and Assigns to its and their use and behoof forever. And we do covenant with the said Grantee, its Successors and Assigns, ~~heirs and assigns~~, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; except as aforesaid.

that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs, shall and will warrant and defend the same to the said Grantee, its Successors and Assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, We the said Fred A.Patterson and Chrystine I.Patterson,wife of the said Fred A.Patterson;Ella H.Whidden and Charles F.Whidden,husband of the said Ella H.Whidden;Ruby E.McKenzie and Elmer W.McKenzie,husband of the said Ruby E.McKenzie,and Alzo F.Patterson and Bessie E.Patterson,wife of the said Alzo F.Patterson joining in this deed as Grantors,and relinquishing and conveying our rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this twentieth day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

R.E. Jensen
R.E. Jensen
Carmela Chase
Carmela Chase
Arthur K. Smith
Arthur K. Smith
P. J. Campbell
P. J. Campbell

Alzo F.Patterson Seal
Bessie E. Patterson Seal
Fred A. Patterson Seal
Chrystine I. Patterson Seal
Ella H. Whidden Seal
Charles F. Whidden Seal
Ruby E. MacKenzie Seal
Elmer MacKenzie Seal

State of Maine. CUMBERLAND, ss. May 20, 1953 Personally appeared the above named Alzo F. Patterson and acknowledged the above instrument to be his free act and deed.

Before me, Raymond E. Jensen Justice of the Peace

Received June 12 1953, at 11 o'clock 5 m. A.M., and recorded according to the original.

Know all Men by these Presents, That

Book 2133
Page 317

We, Leola J. Noyes and William H. Noyes, Jr., both of Portland, County of Cumberland, State of Maine,

in consideration of one dollar ($1.00) and other valuable considerations paid by Maine Medical Center, a Corporation established by law in said Portland

the receipt whereof we do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated in said Portland between Bramhall and Arsenal Streets adjoining land formerly belonging to Sophia P. Jones and conveyed to us by Maud L. Pillsbury by deed dated October 2, 1951, recorded in Cumberland County Registry of Deeds in Book 2060, Page 419, and therein bounded and described as follows: Beginning on the northerly side of Bramhall Street at the southwesterly corner of said Jones land; thence running westerly by said Bramhall Street twenty-five (25) feet to a stake and from these two points extending northerly adjoining said Jones land keeping a width of twenty-five (25) feet, a distance of sixty-eight feet and two incles (68' 2"), which distances are marked by stakes and which stakes are twenty-six (26) feet distant from the southerly boundary line of Arsenal Street.

U.S.I.R. $11.00 L.J.N.Et 6/12/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And we do covenant with the said Grantee, its successors and Assigns, ~~heirs and assigns~~, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs, shall and will warrant and defend the same to the said Grantee, its successors and Assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, We, the said Leola J. Noyes and William H. Noyes, Jr., the said grantors, both being unmarried

have hereunto set our hand s and seals this 12th day of June in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana	Leola J. Noyes	Seal
to both	William H. Noyes, Jr.	Seal

State of Maine, CUMBERLAND, ss. June 12, 1953 Personally appeared the above named Leola J. Noyes and William H. Noyes, Jr. and acknowledged the above instrument to be their free act and deed.

Before me, Edward F. Dana Justice of the Peace

Received June 12 19 53, at 1 o'clock 44 m. P. M., and recorded according to the original.

Know all Men by these Presents, That

Maine Medical Center a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

in consideration of One Dollar and other valuable considerations paid by Maine General Hospital, a corporation organized and existing under the laws of the State of Maine and located at said Portland
the receipt whereof it does hereby acknowledge, does hereby, give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors and assigns forever, a certain lot or parcel of land with the buildings thereon, situated in said City of Portland, between Bramhall and Arsenal Streets, adjoining land formerly owned by John W. Yeaton, and bounded and described as follows:

Beginning in the northerly line of Bramhall Street at the southeasterly corner of said Yeaton land; thence running easterly by Bramhall Street forty (40) feet and from these two points extending northerly, adjoining said Yeaton land, and keeping said width of forty (40) feet to Arsenal Street, being the same premises described in deed of J. B. Brown to Leon M. Bowdoin in 1867 by deed recorded in Cumberland County Registry of Deeds, Book 351, Page 340.

Being the same premises conveyed to this Grantor by Frederick W. McCarthy by deed dated June 30, 1953 and recorded in said Registry of Deeds in Book 2140, Page 92.

U.S.I.R.
$33.55
M.M.C.
8/18/53

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital, its successors and assigns, to its and their use and behoof forever. And the said Grantor Corporation does hereby covenant with the said Grantee, its successors and assigns,

~~heirs and assigns~~, that it is lawfully seized in fee of the premises; that they are free of all incumbrances:

that it has ~~have~~ good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors ~~heirs~~, shall and will warrant and defend the same to the said Grantee, its successors and assigns

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

In Witness Whereof, the said Maine Medical Center has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Phillips M. Payson, its President, thereunto duly authorized,

~~hand and seal~~ this 18th day of August ~~have hereunto set~~ in the ~~year of our Lord~~ one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana

MAINE MEDICAL CENTER
CORPORATE SEAL
By Phillips M. Payson
President.

State of Maine, County of CUMBERLAND, ss. August 18, 1953.

Then Personally appeared the above named Phillips M. Payson, President of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said corporation.

Before me, Edward F. Dana, Justice of the Peace.

Received August 19, 1953, at 1 o'clock 40 m.P. M., and recorded according to the original.

Know all Men by these Presents, That

Book 2147
Page 110

I, Henry H. Grant of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable consideration paid by Maine Medical Center, a corporation organized and existing under the laws of the State of Maine and located at said Portland,

the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its Successors and assigns forever, a certain lot or parcel of land with the buildings thereon situated between Bramhall and Arsenal Streets in said Portland, adjoining land now or formerly belonging to Sophia P. Jones, and more particularly bounded and described as follows:

Beginning on the northerly side line of said Bramhall Street, at the southwesterly corner of said Jones' land; thence westerly by said Bramhall Street, twenty-five (25) feet to a stake and from these two points extending northerly adjoining said Jones land, keeping the width of twenty-five (25) feet, to Arsenal Street.

Excepting and reserving however, a certain lot or parcel of land with the buildings thereon out of the aforesaid property, a conveyance by Westprom Realty Company to Maud L. and Janice M. Pillsbury by deed dated January 23, 1946 and recorded in Cumberland County Registry of Deeds in Book 1803, Page 444, to which reference may be had.

Meaning and intending to convey a parcel of land at the rear of 26 Bramhall Street, which parcel of land is approximately 26'x25' and contains a garage thereon.

Being the same premises conveyed to me by Westprom Realty Company by their warranty deed dated April 11, 1951 and recorded in said Registry of Deeds in Book 2040, Page 192.

U.S.I.R.
$3.30
H.H.G.
9/4/53

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its Successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its Successors and assigns, ~~heirs and assigns~~, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its Successors and assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Henry H. Grant and I, Gladys H. Grant, wife of the said Henry H. Grant joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises, have hereunto set our hands and seals this 4th day of September in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

H. Edwin Gee

Henry H. Grant Seal
Gladys H. Grant Seal

State of Maine, CUMBERLAND, ss. September 4, 1953. Personally appeared the above named Henry H. Grant and acknowledged the above instrument to be his free act and deed.

Before me, H. Edwin Gee, Notary Public, Notarial Seal, My Commission Expires June 29, 1956

Received September 9, 1953, at 9 o'clock 50 m. A. M., and recorded according to the original. p/

Know all Men by these Presents, That

I, James S. Bell of Portland, County of Cumberland and State of Maine, Executor under the Will of Ethel B. Bell, deceased, late of Portland.

having on the 24th day of November A. D. 19 53, obtained License from the Honorable Nathaniel M. Haskell Judge of Probate, within and for the County of Cumberland and State of Maine, to sell and convey at private sale the Real Estate hereinafter described of the said Ethel B. Bell for the sum of

Eleven thousand seven hundred fifty ($11750.00) dollars

the same being an advantageous offer therefor, and having agreeably to the order and decree of said Court, given due notice upon the petition for license to make such sale, and having given the bond required by law, by virtue of the power and authority with which I am as aforesaid vested, and in consideration of the aforesaid sum of Eleven thousand seven hundred fifty ($11750.00) dollars, to me paid by Maine Medical Center, a corporation duly organized and existing by law with an office and place of business at Portland, said County and State. the receipt whereof I do hereby acknowledge, have given, granted, and sold, and by these Presents do Give, Grant, Sell and Convey to the said Maine Medical Center, its Successors ~~Heirs~~ and Assigns forever, the following described Real Estate, viz.:

A certain lot or parcel of land with the buildings thereon, situated on Arsenal and Brackett Streets in said Portland, bounded and described as follows:

Beginning at the southwesterly side of said Brackett Street at the northwesterly corner of a lot of land conveyed by Mary J. Raymond to George E. Raymond by deed dated November 3, 1897, and recorded in the Cumberland County Registry of Deeds in Book 657, Page 411; thence southwesterly by said last named lot forty seven (47) feet; thence northwesterly and at right angles with the last described course to said Arsenal Street; thence northeasterly by said Arsenal Street to said Brackett Street; thence southeasterly by said Brackett Street to the point of beginning.

Excepting and reserving from the southeasterly portion of said above described premises so much thereof, as was described and conveyed in a certain deed from Ella C. Gardner to Gemma A. Applebee et al., said deed being dated November 27, 1935 and recorded in the Cumberland County Registry of Deeds, Book 1485, Page 206, and subject also to such easements and rights as were therein granted to said Gemma A. Applebee et al; by said deed above referred to.

Being the same premises conveyed to Kathryn Ireland by deed of Mary Dyer dated August twenty eighth, A. D. 1950 recorded in said Registry of Deeds for the County of Cumberland in Book 2014, Page 62.

Being the same premises conveyed to Sarah Friedman by deed of Kathryn Ireland which deed is recorded in the Cumberland County Registry of Deeds in Book 2051, Page 193.

Being the same premises conveyed to Ethel B. Bell by Sarah Friedman which deed is recorded in said Registry of Deeds.

U.S.I.R. $13.20 E.B.B. Est. 11/25/53

To Have and to Hold the same, with all the privileges and appurtenances to the same belonging, in manner as aforesaid, to the said Maine Medical Center, its Successors ~~Heirs~~ and Assigns forever.

And I the said James S. Bell in my said capacity do Covenant to and with the said Maine Medical Center, its Successors ~~Heirs~~ and Assigns, that I have in all things observed the rules and directions of law relative to the selling of said Estate, and have good right and lawful authority to sell and convey the same in manner aforesaid.

In Witness Whereof, I hereunto set my hand and seal in my said capacity, this 25th day of November in the year of our Lord one thousand nine hundred and fifty three

Signed, Sealed and Delivered in presence of

Morris Greenberg

Estate of Ethel B Bell
James S. Bell
Executor

Seal

State of Maine, Cumberland, ss. November 25, 1953. Personally appeared the above named James S. Bell and acknowledged the ~~above~~ foregoing instrument to be his free act and deed, in said capacity.

Before me, Morris Greenberg Justice of the Peace

Received November 25 19 53, at 4 o'clock 56m., P. M., and recorded according to the original.

e/

(102)

Know All Men by these Presents,

That MAINE GENERAL HOSPITAL ~~Company~~

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations (being less than $100)

paid by MAINE MEDICAL CENTER; a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

Maine General Hospital

to

Maine Medical Center

War

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center

its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land being a portion of Arsenal Street discontinued by the City of Portland and a small portion of land of the Grantor adjoining said discontinued land in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a point in the center line of discontinued Arsenal Street at its easterly extremity; thence northwesterly by said easterly extremity of discontinued Arsenal Street thirty (30) feet to land of the Grantor; thence southwesterly by land of the Grantor, being the northerly sideline of the former location of Arsenal Street and at right angles to the last described course about thirty (30) feet to the easterly face of the new Maine Medical Center building; thence northwesterly at about right angles to the last described course and by the easterly face of said new building about five (5) feet to a corner of said building; thence southwesterly by the northerly face of said new building and by a line between said new building and the old building, said old building being known as the pavilion and again by the northerly face of said new building about forty-five (45) feet to a corner of said new building; thence southeasterly by the face of said new building at about right angles to the last described course about five (5) feet to the former location of the northerly sideline of said Arsenal Street; thence southwesterly by other land of the Grantor being the northerly sideline of the former location of Arsenal Street and at about right angles to the last described course and ten (10) feet to a point; thence southeasterly at right angles to the last described course thirty (30) feet to the center line of the former location of said Arsenal Street; thence northeasterly by said center line and passing through said aforementioned new building about eighty-five (85) feet to the point of beginning.

22 **To have and to hold** the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said Maine Medical Center, its successors ~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, its successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Maine General Hospital ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Phillips M. Payson, its Treasurer, thereunto duly authorized, this 9th day of July in the year one thousand nine hundred and fifty-six.

Signed, Sealed and Delivered in presence of

Edward T. Dana

MAINE GENERAL HOSPITAL

~~Company~~

By Phillips M. Payson

Treasurer.

State of Maine.

County of Cumberland ss. July 9, 19 56

Then personally appeared the above named

Phillips M. Payson, Treasurer of said Grantor 23
Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Edward F. Haun Justice of the Peace.

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE JUL 10 1956
Received at 4 H 5 M P M, and recorded in
BOOK 2301 PAGE 21 Robert N. Carter Register

Know All Men by These Presents.

That M. S. Hancock, Inc.

M S Hancock Inc to Gordon --- War

a Corporation organized and existing under the laws of the State of Maine and located at Casco in the County of Cumberland and State of Maine in consideration of one dollar and other valuable consideration

paid by Benjamin H. Gordon of New Britain in the County of Hartford and State of Connecticut the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said Benjamin H. Gordon, his

heirs and assigns forever, ~~a certain lot or parcel of land~~

Three certain lots or parcels of land situate in said Casco and on the southerly shore of Coffee Pond, so-known, the lots herein conveyed being Lot #13, Lot #14 and Lot #15 and delineated on a certain plan entitled "Coffee Pond Pines, Part II" as recorded in the Cumberland County Registry of Deeds, Plan Book 44, Page 40, together with a right of user in common with others who may have been or who may hereafter be granted a similar right in and to the road or right of way leading to said lots from Route #11, so-known, said road being delineated on said plan.

It shall be a condition of this conveyance and the Grantee, for himself and his heirs, administrators, executors or assigns, agrees that no dwelling shall be erected or constructed on any of said lots unless the same shall equal or exceed the sum of $1500.00 to build exclusive, however, of any necessary outbuildings or garages.

(24)

Know all Men by these Presents,

161

That the CITY OF PORTLAND, a body politic and corporate, located in the County of Cumberland and State of Maine,

Portland City of

to

Maine General Hospital

Q C

~~a corporation organized and existing under the laws of the State of~~ ~~and located at~~ ~~in the County of~~ ~~and State of~~

in consideration of One ($1.00) Dollar and other valuable considerations, the total of which is less than One hundred ($100.00) Dollars

paid by Maine General Hospital, a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine,

the receipt whereof it does hereby acknowledge, does hereby **remise, release, bargain, sell and convey,** and forever **quit-claim** unto the said

Maine General Hospital, its successors

~~heirs~~ and assigns forever,

A certain lot or parcel of land situated in said Portland and bounded and described as follows:

Beginning at the point of intersection of the Northwesterly side line of Ellsworth Street extended in a Southwesterly direction and the Southwesterly side line of Charles Street; thence Southwesterly along a continuation of the Northwesterly side line of Ellsworth Street extended, a distance of thirty-eight (38) feet, more or less, to a point; thence in a Southeasterly direction parallel to and fifty (50) feet measured perpendicularly Southwesterly of the Northeasterly side line of Charles Street Extension, so-called, a distance of one hundred fifty-five (155) feet, more or less, to the Northerly terminus of Brackett Street as established and renamed by the City Council of the City of Portland; thence Northeasterly along the line terminating said Brackett Street a distance of thirty-eight (38) feet, more or less, to the point of intersection formed by the above-mentioned line and the Southwesterly side line of Charles Street Extension, so-called; thence Northerly along the Southwesterly side line of Charles Street Extension, so-called, a distance of one hundred fifty-five (155) feet, more or less, to the point of beginning.

Being the same premises conveyed to the Grantor by warranty deed of the Grantee dated April 9, 1954, recorded in Cumberland County Registry of Deeds in Book 2173, Page 412.

162

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said

Maine General Hospital, its successors

~~Heirs~~ and Assigns forever.

And the said Grantor Corporation does **covenant** with the said

Maine General Hospital, its successors

~~Heirs~~ and Assigns, that it will **Warrant** and **Forever Defend** the said premises to it the said Grantee , its successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Edwin T. Simmons, Acting City Treasurer ~~xxxxx~~ thereunto duly authorized, this Fifteenth day of August in the year one thousand nine hundred and fifty-six.

Signed, Sealed and Delivered in presence of

M. Jane King

CITY OF PORTLAND

By Edwin T. Simmons
Acting City Treasurer

(CORPORATE SEAL)

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE AUG 21 1956
Received at 1 H — M and recorded in
BOOK 2308 PAGE 161
Register

State of Maine, Cumberland ss. August 15, 1956.

Personally appeared the above named Edwin T. Simmons, Acting City Treasurer of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me

Justice of the Peace

Know all Men by these Presents, That

223

We, Albert E. Doak and Amelia Doak, both of Portland, County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations paid by MAINE GENERAL HOSPITAL, a corporation organized and existing under the laws of the State of Maine, and having its principal place of business at said Portland,

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said MAINE GENERAL HOSPITAL, its successors and assigns, forever,

A certain lot or parcel of land with the buildings thereon, situated on the westerly side of Charles Street in said Portland, bounded and described as follows: Beginning at a fence post standing on the westerly side line of Charles Street and distant northerly seventy-three and eighty-four hundredths (73.84) feet from the northwesterly corner of Ellsworth and Charles Streets; thence northerly by said Charles Street forty (40) feet to land now or formerly of Frank Abbott; thence westerly by said Abbott's land seventy-four and fifty-six hundredths (74.56) feet to land of the said grantee; thence by land of said grantee southerly forty (40) feet to land now or formerly of W. R. Naylor; thence easterly by said Naylor's land seventy-four and forty-two hundredths (74.42) feet to the point of beginning.

Being the same premises conveyed to these grantors by Henry T. Orlando by deed dated May 29, 1951, and recorded in Cumberland County Registry of Deeds in Book 2044, Page 288.

The grantee corporation herein assumes and agrees to pay the 1957 real estate taxes as part consideration for this transfer.

Doak & to Maine General Hospital -- War

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said MAINE GENERAL HOSPITAL, its successors

and assigns, to its and their use and behoof forever. And we do covenant with the said Grantee, its successors and assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; except as aforesaid; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, we, the said Albert E. Doak and Amelia Doak, husband and wife,

joining in this deed as Grantors, and relinquishing and conveying our rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this third day of May in the year of our Lord one thousand nine hundred and fifty-seven.

Signed, Sealed and Delivered in presence of

Edward B. Berry
to both

Albert E Doak
Amelia Doak

State of Maine, Cumberland ss. May 3, 1957.

Personally appeared the above named Albert E. Doak

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

Before me, Edward B. Berry
NOTARY PUBLIC.

$6.05

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received MAY 3 1957 at 2 o'clock 35 m. P. M., and recorded in BOOK 2349 PAGE 229 Attest: Martha H. S. Daley Register's Clerk

Book 2619
Page 499

Know All Men by These Presents,

That We, Henry H. Grant and Gladys H. Grant, both of Portland in the County of Cumberland and State of Maine,

Grant & to Maine Medical Center -- War

in consideration of one ($1.00) dollar and other valuable considerations

paid by Maine Medical Center, a corporation duly organized and existing under the laws of the State of Maine and located at said Portland,

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

heirs and assigns forever, a certain lot or parcel of land with the buildings thereon, situated in Portland in the County of Cumberland and State of Maine, on the northwesterly side of Bramhall Street, bounded and described as follows:

Commencing at the southwesterly corner of land, now or formerly, of James Miller and Charlotte Johnson on Bramhall Street; thence northwesterly by land of said James Miller and Charlotte Johnson, sixty (60) feet to land formerly of William J. Knowlton; thence southwesterly along said Knowlton land, parallel with said street, fifty-five (55) feet to a corner of land formerly of William J. Knowlton; thence parallel with first mentioned line sixty (60) feet, more or less, to said street; thence northeasterly by said street fifty-five (55) feet to the place of beginning.

Being the same premises conveyed to us by Russell Fanning by deed recorded in Cumberland County Registry of Deeds in Book 1833, Page 415, and are conveyed subject to the conditions contained in said deed.

The Grantee herein, as part of the consideration hereof, assumes and agrees to pay taxes for the taxable year 1961.

500

500

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said

Maine Medical Center, its successors

heirs and assigns, to its and their use and behoof forever.

And we do covenant with the said Grantee, its successors and assigns, that we are lawfully seized in fee of the premises, that they are free of all incumbrances;

that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs shall and will Warrant and Defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, We the said Henry H. Grant

and Gladys H. Grant, being husband and

wife

joining in this deed as Grantors, and relinquishing and conveying all right by descent and all other rights in the above described premises, have hereunto set our hands and seals this thirty-first day of July in the year of our Lord one thousand nine hundred and sixty-one.

Signed, Sealed and Delivered
in presence of

Josephine G. Wall — Henry H. Grant
R. E. Jensen — Gladys H. Grant

State of Maine. Cumberland, ss. July 31, 1961.

Personally appeared the above named Henry H. Grant

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

Before me,

Raymond E. Jensen
Justice of the Peace
Notary Public

AUG 4 1961
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 28 M A M, and recorded in
BOOK 2619 PAGE 499 Lowell P. Hyson Register

Book 2685
Page 369

Know All Men by These Presents,

That Sewall M. Hobson, 2nd, of Portland, County of Cumberland and State of Maine

in consideration of one dollar and other valuable consideration

paid by Maine Medical Center, a corporation duly organized and existing under the laws of the State of Maine with its principal office in said Portland

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and assigns forever, a certain lot or parcel of land with the buildings thereon, situated on the northwesterly side of Bramhall Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the northwesterly side line of Bramhall Street with the easterly side line of Western Promenade; thence northeasterly by Bramhall Street One Hundred Four and one-tenth (104.1) feet to the southerly corner of land conveyed by John W. Yeaton to William J. Knowlton, by deed dated April 4, 1885, and recorded in Cumberland County Registry of Deeds, in Book 517, Page 386; thence northwesterly at right angles with Bramhall Street and by said Knowlton land Sixty (60) feet to the southeasterly side line of land conveyed by John W. Yeaton to William J. Knowlton by deed dated June 6, 1882, and recorded in said Registry of Deeds, in Book 488, Page 204; thence southwesterly by said Knowlton land Forty-one and seven tenths (41.7) feet to the easterly side line of Western Promenade at a point Seventy-seven and five tenths (77.5) feet southerly thereon from the southeasterly side line of Arsenal Street; thence southerly by Western Promenade Eighty-six and seventy-eight hundredths (86.78) feet to the point of beginning.

For Grantors title reference is made to the will of Annie H. Dana, and abstract of which is recorded in said Registry of Deeds, in Book 2423, Page 273, and to a certain deed from Saint Germain Foundation et als. dated February 1, 1960, and recorded in said Registry of Deeds in Book 2526, Page 80.

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

heirs and assigns, to it and their use and behoof forever.

And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises, that they are free of all incumbrances;

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and any heirs shall and will Warrant and Defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof. We the said Sewall M. Hobson, 2nd

and Anne S. Hobson

wife of the said Sewall M. Hobson, 2nd

joining in this deed as Grantor, and relinquishing and conveying her right by descent and all other rights in the above described premises, have hereunto set our hands and seals this Tenth day of July in the year of our Lord one thousand nine hundred and sixty-two.

Signed, Sealed and Delivered
in presence of

Gerald S Cope
to both

Sewall M. Hobson, 2nd
Anne S. Hobson

State of Maine. Cumberland ss. July 10th 1962.

Personally appeared the above named Sewall M. Hobson, 2nd

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

Before me, Gerald S Cope
Justice of the Peace
~~Notary Public~~

JUL 10 1962
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H 51 M. M, and recorded in
BOOK 2685 PAGE 369 Edward P. Thomas Register

Book 2901
Page 326

326 (106)

Know all Men by these Presents,

That I, VINCENT C. NEWTON of Portland in the County of Cumberland and State of Maine

Newton

to

Maine General Hospital

-

War

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE GENERAL HOSPITAL, a corporation organized and existing under the laws of Maine and located at Portland in the County of Cumberland and State of Maine,

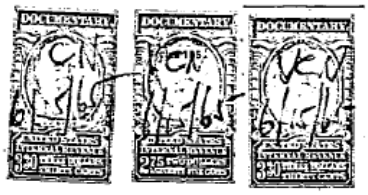
the receipt whereof I do hereby acknowledge, do hereby

give, grant, bargain, sell and convey, unto the said Maine General Hospital,

its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land with the buildings thereon situated on the westerly side of Charles Street in said Portland, bounded and described as follows:

Beginning on the westerly side line of said Charles Street at the northeasterly corner of land formerly of John M. Jones, now of Maine General Hospital; thence running northerly by said street thirty-eight (38) feet to land formerly occupied by one Graham, now owned by Maine General Hospital; and from these two points extending back westerly at right angles from said street keeping the width of thirty-eight (38) feet and bounded southerly by said Jones land and northerly by said Graham land about seventy-four and two tenths (74.2) feet to the Arsenal Lot, so-called, now of Maine General Hospital; being the same premises conveyed to me by Charles H. Abbott et al by deed dated February 10, 1944, recorded in Cumberland County Registry of Deeds in Book 1737, Page 278.



327

To Have and to Hold the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said Maine General Hospital, its successors ~~heirs~~ and assigns, to its and their use and behoof forever.

And I do COVENANT with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises that they are free of all encumbrances:

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs shall its successors and will WARRANT and DEFEND the same to the said Grantee, ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

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

~~and~~

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

~~joining in this deed as Grantor, and releasing and conveying~~ ~~right by descent and all other right in the above described~~ ~~premises~~ have hereunto set my hand and seal this 15th day of June in the year of our Lord one thousand nine hundred and sixty-five.

Signed, Sealed and Delivered in presence of

Edward J. McGoldrick — Vincent C. Newton (L.S.)

State of Maine, Cumberland } ss. June 15, 1965.

Personally appeared the above named Vincent C. Newton and acknowledged the above instrument to be his free act and deed.

Before me, Edward J. McGoldrick
Notary Public ~~Justice of the Peace~~.

EDWARD J. McGOLDRICK NOTARY PUBLIC MAINE
MY COMMISSION EXPIRES OCTOBER 8, 1971

STATE OF MAINE
CUMBERLAND, ss. REGISTRY OF DEEDS
Received at 1 H. 36 M. P. M. on JUN 15 1965 and recorded in
Book 2901 Page 326 Attest
Edward J. McGoldrick Register

(154)
EXECUTOR'S AND TRUSTEE'S DEED.
[WHEN THE WILL AUTHORIZES A SALE.]

927

Know all Men by these Presents,

That I, HELEN M. GRIFFIN

of Portland in the county of Cumberland

sole acting executor of the last will and testament

of Mary Davis late of Portland

deceased, testate, by virtue of the authority to me given by

the said Mary Davis in her last will and

testament, in my capacity of executor as afore-

said, and in consideration of One Dollar ($1.00) and other

valuable considerations

to me paid by MAINE MEDICAL CENTER, a corporation organized under the laws of Maine and situated in Portland

the receipt whereof is hereby ac-

knowledged, do hereby sell and convey unto the said Maine Medical Center, its successors and assigns, the following described real estate, which was

the property of the said Mary Davis.

A certain lot or parcel of land with the buildings thereon situated in Portland on the northerly side of Brackett Street, bounded and described as follows:

Beginning at the intersection of the northerly side of Brackett Street with the westerly side of Russell Street; thence running northeasterly by Russell Street thirty-seven (37) feet, more or less, to land formerly owned by Hobart W. Richardson; thence running northwesterly by said Richardson land seventy-four (74) feet, more or less, to land formerly owned or occupied by W. S. Dunn; thence southwesterly by the line of said Dunn's land forty-one (41) feet, more or less, to a lane; thence southeasterly by said lane forty-one (41) feet, more or less, to Brackett Street; thence easterly by Brackett Street thirty-seven (37) feet, more or less, to the point of beginning.

Being the same premises conveyed to Mary Davis by Harry E. Davis by deed dated March 18, 1915, recorded in Cumberland County Registry of Deeds in Book 945, Page 109.

Reference is made to Will of said Mary Davis, abstract of which is recorded in said Registry of Deeds in Book 3025, Page 28.

Davis Est

to

Maine Medical Center

Exec

928

To have and to hold the above-granted premises unto the said Maine Medical Center, its successors ~~and~~ and assigns forever. And I the said Helen M. Griffin, in my said capacity, do hereby covenant to and with the said Maine Medical Center, its successors ~~and~~ and assigns, that I am the lawful executor of the last will and testament of the said Mary Davis ; that I have power under said will to sell as aforesaid; and that in making this conveyance, I have in all respects, acted in pursuance of the authority granted in and by the said last will and testament.

In Witness Whereof, I the said Helen M. Griffin in my said capacity of executor as aforesaid have hereunto set my hand and seal . this 31st day of March in the year of our Lord one thousand nine hundred and sixty-six.

Signed, Sealed and Delivered in presence of

Helen M. Griffin

March 31 1966.

State of Maine, Cumberland } ss.

Then personally appeared the above named Helen M. Griffin and acknowledged the above instrument to be her free act and deed in her said capacity.

Before me,

Justice of the Peace.

MAR 31 1966
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 9 H 55 M, and recorded in
BOOK 2957 PAGE 927 Register

2081

722

Know all Men by these Presents,

J B Brown & Sons

to

Maine Medical Center

Q C

That —— J. B. BROWN & SONS ——, a corporation organized and existing under the laws of the State of —— Maine ——, and located at Portland in the County of -- Cumberland and State of —— Maine ——

In consideration of one dollar and other valuable considerations, being less than $100.00 paid by —— MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine, and located at said Portland, the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said —— MAINE MEDICAL CENTER, its successors and assigns forever, ——

—— All its right, title and interest in a strip of land, in the City of Portland, County of Cumberland and State of Maine, said strip being that portion of Charles Street lying between Brackett Street and Ellsworth Street bounded as follows: Beginning at a point on the southeasterly line of Ellsworth Street distant southwesterly One Hundred Sixty-three and seven tenths (163.7) feet from a point in said street line Fifty-seven (57) feet at right angles from a stone monument on three feet offset at the northwest corner of Ellsworth and Wescott Streets; thence running southeasterly making an included angle with the northwesterly direction of Ellsworth Street of One Hundred and One degrees and Twenty minutes (101° 20') a distance of One Hundred and Sixteen (116) feet, more or less, to the northerly line of Brackett Street near Arsenal Street. Said strip is Thirteen (13) feet wide and lies on the southerly side of the above described line.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said —— MAINE MEDICAL CENTER, its successors —— heirs and assigns forever.

—— In Witness Whereof, the said —— J. B. BROWN & SONS —— has caused this instrument to be sealed with its corporate seal and signed in its corporate name by , its thereunto duly authorized, this —— 4th —— day of May —— in the year of our Lord one thousand nine hundred and —— sixty-six. ——

Signed, Sealed and Delivered in presence of

Ruth M. Dyman

J. B. BROWN & SONS

By Lyman A. Cousens Jr. Treas.
Philip G. Clifford Director

(Corporate Seal)

May 4 1966

State of Maine, Cumberland ss. 19 66.

Personally appeared the above named Lyman A. Cousens Jr. & Philip G. Clifford

of said Grantor Corporation, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said corporation.

Before me, Ellen H. Foster

NOTARY PUBLIC. ~~JUSTICE OF THE PEACE.~~

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received MAY 4 1966 at 3 o'clock 17 m. P. M., and recorded in BOOK 2955 PAGE 722

Attest: Lucas R. Tyson Register.

Book 2988
Page 139

Know all Men by these Presents, That

We, FRANK S. NEUTS and DELLA J. NEUTS, both of Portland, in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable consideration s paid by JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, both of said Portland

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, as joint tenants and not as tenants in common, their heirs and assigns forever.

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

Beginning on the westerly side of Charles Street at the northerly corner of land formerly owned by C. B. Saunders; thence westerly by said Saunders northerly line seventy-five (75) feet, more or less, to land of the Maine General Hospital; thence northerly by line of said Hospital land thirty-six (36) feet to a point; thence easterly on a line parallel with Saunders northerly line seventy-five (75) feet, more or less, to the westerly side line of Charles Street; thence southerly by said Charles Street thirty-six (36) feet to the point begun at.

Being the same premises conveyed to us by Maine General Hospital by deed dated January 30, 1962 and recorded in Cumberland County Registry of Deeds in Book 2657, Page 19.

This conveyance is made subject, however, to the common passageway established by agreement between Maine General Hospital and Clarence D. Read, et al, dated October 29, 1954 and recorded in said Registry of Deeds in Book 2203, Page 413.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, as joint tenants and not as tenants in common, their

heirs and assigns, to them and their use and behoof forever. And we do covenant with the said Grantees, their heirs and assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances, except as aforesaid, that we ha ve good right to sell and convey the same to the said Grantees to hold as aforesaid; and that we and our heirs and assigns shall and will warrant and defend the same to the said Grantees, their except as aforesaid. heirs and assigns forever, against the lawful claims and demands of all persons,

In Witness Whereof, we, the said FRANK S. NEUTS and DELLA J. NEUTS, being husband and wife,

joining in this deed as Grantors, and relinquishing and conveying our/ respective rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this second day of March in the year of our Lord one thousand nine hundred and sixty-seven.

Signed, Sealed and Delivered in presence of

Frank S. Neuts

Della J. Neuts

State of Maine, Cumberland, ss. March 2, 1967.

Personally appeared the above named Frank S. Neuts and Della J. Neuts

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

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

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received MAR 3 1967 at 11 o'clock 8 m. A M., and recorded in BOOK 2988 PAGE 139 Attest: Register.

2238

KNOW ALL MEN BY THESE PRESENTS

THAT OLD COLONY TRUST COMPANY a Corporation located in Boston, County of Suffolk and Commonwealth of Massachusetts, sole surviving Trustee under a Trust Agreement created by ALICE A. BURKITT late of Portland and dated March 30, 1961 by virtue of the authority to it given by said Trust Agreement in its capacity of Trustee as aforesaid, and in consideration of One Dollar ($1.00) and other valuable considerations to it paid by MAINE MEDICAL CENTER of Portland, Maine, the receipt whereof is hereby acknowledged, does hereby sell and convey unto the said Maine Medical Center its successors and assigns forever, the following described real estate, which was the property of Alice A. Burkitt late of Portland, situated in said Portland, Maine and bounded as follows:

a certain lot or parcel of land with the buildings thereon, situated in said Portland, bounded and described as follows: Beginning at a point on the easterly side of Western Promenade, which point is eighty-five (85) feet from the intersection of the northeasterly side line of said Promenade with the northwesterly side line of Bramhall Street; thence northerly by the line of said Promenade seventy-seven and five tenths (77.5) feet, more or less, to Arsenal Street; thence northeasterly by said Arsenal Street seventy-four and one tenths (74.1) feet, more or less, to land now or formerly of William J. Miller et al; thence southeasterly at right angles to Arsenal Street by said Miller land fifty-five and five tenths (55.5) feet, more or less, to land formerly of Hiram Knowlton; thence southwesterly parallel with said Arsenal Street one hundred and twenty-seven (127) feet, more or less, to the Western Promenade and point of beginning, containing fifty-six hundred (5600) square feet more or less.

Also another parcel of land adjoining the above described lot, and bounded and described as follows: Commencing at a point on the northwesterly side of Bramhall Street, which point is the northeasterly corner of land of Frederick C. Hussey et al, and ninety-eight and two tenths (98.2) feet, more or less, from the intersection of said northwesterly side line of Bramhall Street with the easterly side line of the Western Promenade; thence northeasterly on said Bramhall Street thirty-three and five tenths (33.5) feet to a point and land formerly of Hiram Knowlton, and from these two points extending northwesterly keeping a width of thirty-three and five

tenths (33.5) feet a distance of sixty (60) feet to the first parcel herein conveyed, containing two thousand and ten (2010) square feet.

Meaning and intending to convey and hereby conveying the real estate acquired by Alice A. Burkitt by Warranty Deed of Good Will Home Association dated December 11, 1930 recorded in the Cumberland County Registry of Deeds Book 1361, page 373; said real estate having been devised to the Grantor as Trustee by the Will of Alice A. Burkitt duly probated in the Cumberland County Probate Court.

TO HAVE AND TO HOLD the above-granted premises unto the said Maine Medical Center its successors and assigns forever. And the said Old Colony Trust Company in its said capacity does hereby covenant to and with the said Maine Medical Center its successors and assigns that it is the sole surviving Trustee under said Trust Agreement; that it has power under said Trust Agreement to sell as aforesaid; and that in making this conveyance it has in all respects acted in pursuance of the authority granted in and by said Trust Agreement.

IN WITNESS WHEREOF, the said Old Colony Trust Company in its said capacity as Trustee as aforesaid has caused this instrument to be signed in its corporate name and sealed with its corporate seal by S. Vincent its ~~Trust Officer~~ Vice President thereunto duly authorized this 4th day of February 1969.

Witness:

James E. Marsalan Jr

OLD COLONY TRUST COMPANY

By S. Vincent

Its ~~Trust Officer~~ Vice President

COMMONWEALTH OF MASSACHUSETTS
SUFFOLK, SS. February 4, 1969.

Then personally appeared the above-named S. Vincent who made oath that the foregoing instrument was his free act and deed and the free act and deed of the Grantor corporation in its said capacity as Trustee as aforesaid.

Before me,

Mary F. Archoska

Notary Public

Mary F. Archoska
NOTARY PUBLIC
My commission expires May 28, 1971

CERTIFICATE OF TRUSTEE

I, JAMES R. KINGSBURY of Newton Massachusetts, Trust Officer of Old Colony Trust Company of Boston, Massachusetts, hereby certify that Old Colony Trust Company became a Co-Trustee of a certain Revocable Inter Vivos Trust created by ALICE A. BURKITT with said Old Colony Trust Company and NORMAN A. BURKITT as Co-Trustees under a Trust Agreement dated March 30, 1961;

That Norman A. Burkitt is deceased and the Old Colony Trust Company is now acting as sole surviving Trustee;

That said Trust is no longer revocable inasmuch as the Settlor who reserved the power of revocation has since died;

That among the powers given to the Trustees is the following:

> "The Trustees, in addition to and not in limitation of all common law and statutory authority, shall have power, as to any real or personal property in the trust fund or any part thereof, to mortgage, to lease with or without option to purchase and although for a term extending beyond the termination of the trust, to sell in whole or in part at public or at private sale without approval of any court and without liability upon any person dealing with the Trustees to see to the application of any money or other property delivered to them; . . ."

Dated at Boston, Massachusetts, this 4TH day of February 1969.

James R. Kingsbury

COMMONWEALTH OF MASSACHUSETTS
SUFFOLK, SS.

February 4, 1969.

Personally appeared the above named James R. Kingsbury and made oath to the truth of the foregoing certificate by him subscribed.

Before me,

Mary F. Archoska
Notary Public

Mary F. Archoska
NOTARY PUBLIC
My commission expires May 28, 1971

FEB 17 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H 35 M. and recorded in
BOOK 3673 PAGE 169 Edward R. Hayes Register

No. 116

Know All Men by these Presents.

That I, CLARA G. READ, of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations

paid by MAINE MEDICAL CENTER, a Maine corporation having a place of business in said Portland, in said County and State,

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

its Successors ~~Heirs~~ and Assigns forever,

the following described property:

A certain lot or parcel of land, with the buildings thereon, situated on the southwesterly side of Charles Street in said Portland, bounded and described as follows:

Beginning on said southwesterly side of Charles Street at a point thirty (30) feet northwesterly by said Street from the northeasterly corner of land formerly of Charles A. Donnell; thence northwesterly by said Street thirty (30) feet; thence southwesterly parallel with the line of said Donnell land seventy-four and two-tenths (74.2) feet to land formerly known as the Arsenal property; thence southeasterly by said Arsenal lot thirty (30) feet; thence northeasterly parallel with said Donnell land seventy-four and two-tenths (74.2) feet to the point of beginning.

Being the same premises conveyed to this Grantor and Clarence D. Read, as joint tenants, by Grace R. Loomis by deed dated September 1, 1948 and recorded in Cumberland County Registry of Deeds in Book 1926, Page 336. The said Clarence D. Read having deceased and his estate is of record in the Registry of Probate for Cumberland County, Maine.

The Grantor herein shall have the right to occupy the premises hereby conveyed until September 15, 1969.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
JUL 23'69
Bureau of Taxation
$13.75

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

~~Heirs~~ and Assigns, to them and their use and behoof forever.

And I do **covenant** with the said Grantee, its/ Successors ~~Heirs~~ and Assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances;

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its Successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Clara G. Read, being a widow,

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

~~joining in this deed as Grantor, release and quitclaim and surrender all~~ ~~rights by curtesy and all other rights in the above~~ ~~described premises,~~ have hereunto set my hand and seal this 22nd day of July in the year of our Lord one thousand nine hundred and sixty-nine.

Signed, Sealed and Delivered in presence of

John W. Sawyer — Clara G. Read

State of Maine, CUMBERLAND } ss. July 22, 1969.

Personally appeared the above named CLARA G. READ and acknowledged the above instrument to be her free act and deed.

Before me, John W. Sawyer
Justice of the Peace

JUL 23 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 58 M., and recorded in BOOK 3095 PAGE 34
Bernard R. Tyler Register

211

No. 106

Know All Men by these Presents.

That We, WILLIAM C. GOKEY and SUZANNE E. GOKEY, both of Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of Maine and located at Portland, County of Cumberland and State of Maine

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

its successors ~~Heirs~~ and Assigns forever,

the following described property:

A certain lot or parcel of land with the buildings thereon situated on the southeasterly side of Ellsworth Street in said Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the northeasterly corner of a lot of land on Bramhall's Hill which John B. Brown sold to one Tuttle; thence northeasterly on said Ellsworth Street forty (40) feet; thence southeasterly about seventy-four (74) feet to land formerly of Davis; thence southwesterly by said Davis's land to land formerly of said Tuttle forty (40) feet; thence northwesterly to said Ellsworth Street, the bounds begun at, seventy-four (74) feet.

Being the same premises conveyed to William C. Gokey and Suzanne E. Gokey by Thelma A. Barter, by deed dated June 19, 1968, recorded in Cumberland County Registry of Deeds in Book 3045, Page 187.

This conveyance is made subject to taxes for the year 1969 which the Grantee assumes and agrees to pay.

020136 STATE OF MAINE REAL ESTATE TRANSFER TAX REVENUE 18.15

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

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

And we do **covenant** with the said Grantee, its successors ~~Heirs~~ and Assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, we the said William C. Gokey and Suzanne E. Gokey, being husband and wife

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

~~joining in this deed as Grantors, and relinquishing and conveying rights by descent and all other rights in the above described premises~~, have hereunto set our hands and seals this 11th day of August in the year of our Lord one thousand nine hundred and sixty-nine.

Signed, Sealed and Delivered
in presence of

Edward F. Dana

William C. Gokey

Suzanne E. Gokey

State of Maine,
Cumberland } ss. August 11, 1969

Personally appeared the above named

William C. Gokey

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

Before me,

Edward F. Dana
Justice of the Peace

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

(106)

396

Know all Men by these Presents,

That JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, both of Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of Maine, and located at Portland, County of Cumberland and State of Maine

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

a certain lot or parcel of land, with the buildings thereon, situated on Charles Street, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the westerly side of Charles Street at the northerly corner of land formerly owned by C. B. Saunders; thence westerly by said Saunders northerly line seventy-five (75) feet, more or less, to land of the Maine General Hospital; thence northerly by line of said Hospital land thirty-six (36) feet to a point; thence easterly on a line parallel with Saunders northerly line seventy-five (75) feet, more or less, to the westerly side line of Charles Street; thence southerly by said Charles Street thirty-six (36) feet to the point begun at.

Being the same premises conveyed to us by Frank S. Neuts, by deed dated March 2, 1967, recorded in Cumberland County Registry of Deeds in Book 2988, Page 139.

This conveyance is made subject, however, to the common passageway established by agreement between Maine General Hospital and Clarence D. Read et al, dated October 29, 1954, recorded in said Registry of Deeds in Book 2203, Page 413.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
Bureau of Taxation
$ 14.85

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said Maine Medical Center, its successors and assigns, to its and their use and behoof forever.

And we do COVENANT with the said Grantee, its successors and assigns, that we are lawfully seized in fee of the premises that they are free of all encumbrances except as aforesaid; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs shall and will WARRANT and DEFEND the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, we the said John P. Constantine and Charlene M. Constantine, being husband and wife,

and

wife

have hereunto set our hands and seals this 7th day of November in the year of our Lord one thousand nine hundred and sixty-nine.

Signed, Sealed and Delivered in presence of

Edward T. Long

Edward T. Long

John P. Constantine

Charlene M. Constantine

State of Maine, Cumberland } ss. 19 69.

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

Before me, Edward T. Long

Justice of the Peace.

NOV 7 1969

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE

Received at 11 H 18 M. and recorded in BOOK 3108 PAGE 396

Edward T. Long Register ~~Notary Public~~

Book 3183
Page 576

No. 106

14804

Know All Men by these Presents,

That I, AGNES E. TWEEDIE, formerly AGNES E. BROWN, of Portland, County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable consideration

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine and having its principal place of business at Portland, County of Cumberland and State of Maine

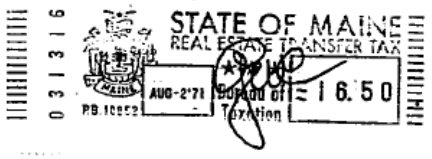
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said MAINE MEDICAL CENTER,

its successors ~~Heirs~~ and Assigns forever,

the following described property: A certain lot or parcel of land, with the buildings thereon, situated in the City of Portland, County of Cumberland and State of Maine, on the corner of Brackett and Russell Streets and bounded as follows: Southwesterly by said Brackett Street; northwesterly by said Russell Street; northeasterly by land formerly of J. K. Emery and southeasterly by land now or formerly of Annie F. Chapman; containing about twenty-one hundred and fifty-one (2151) square feet.

Being the same premises conveyed to the Grantor herein and her late husband, Kenneth C. Brown, by deed dated January 22, 1962 and recorded in the Cumberland County Registry of Deeds, Book 2655, Page 344.

This conveyance is made subject to taxes for 1971 which the Grantee assumes and agrees to pay.



To have and to hold the aforegranted and bargained premises, with all privileges and appurtenances thereof to the said

MAINE MEDICAL CENTER, its successors

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

And I do **covenant** with the said Grantee, its successors ~~Heirs~~ and Assigns, that I am **lawfully seized in fee of the premises;** that they are free of all incumbrances; except as aforesaid that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons, except as aforesaid

In Witness Whereof, I the said

AGNES E. TWEEDIE, being a widow

and ~~wife of the said~~

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

day of in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

Agnes E. Tweedie

State of Maine,
Cumberland } ss.

July 30 1971

Personally appeared the above named AGNES E. TWEEDIE

and acknowledged the above instrument to be her free act and deed.

Before me,

~~Justice of the Peace~~ Notary Public

My commission expires Oct. 2, 1974

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 2 8:41 M., and recorded in
BOOK 3183 PAGE 576 AUG 2, 1971
Register

16674

Know all Men by these Presents, That

I, MARGUERITE M. BROOKS of Portland, County of Cumberland and State of Maine

in consideration of one dollar and other valuable consideration
paid by MAINE MEDICAL CENTER, a corporation organized under the laws of the State of Maine with a place of business at Portland, County of Cumberland and State of Maine,
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said
MAINE MEDICAL CENTER, its successors and assigns forever.

A certain lot or parcel of land with the buildings thereon, situated on the southeasterly side of Ellsworth Street, in the City of Portland, County of Cumberland and State of Maine, and at present numbered forty-four (44) on said street; said lot of land being bounded and described as follows:

Beginning at the northeasterly corner of Ellsworth Street and a lane running from said Ellsworth Street to the junction of Brackett and Arsenal Streets; thence northeasterly by said Ellsworth Street, twenty-six (26) feet, more or less, to land now or formerly of Neal P. Thompson; thence southeasterly by said Thompson land, seventy-four (74) feet, more or less, to land now or formerly owned by John Russell; thence southwesterly by said Russell land, forty (40) feet, more or less, to said lane; thence northwesterly by said lane, seventy-five (75) feet, more or less, to the point begun at.

Being the same premises conveyed to me by Walter E. Mangum et al by deed dated October 15, 1957 and recorded in Cumberland County Registry of Deeds in Book 2379, Page 181.

This conveyance is made subject to taxes for 1971 which the Grantee assumes and agrees to pay.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
AUG 23 '71
Bureau of Taxation
30.80

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said
MAINE MEDICAL CENTER, its successors
~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances except as aforesaid, that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, I, the said MARGUERITE M. BROOKS, being single,

~~joining in this deed as Grantor, and relinquishing and conveying rights by descent and all other rights in the above described premises,~~ have hereunto set my hand and seal this 23rd day of August in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

Charles F. Chatterton

Marguerite M. Brooks

State of Maine, Cumberland ss. August 23 1971.
Personally appeared the above named MARGUERITE M. BROOKS

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

Before me, Charles F. Chatterton
~~NOTARY PUBLIC~~ JUSTICE OF THE PEACE.

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*
Received AUG 23 1971 *at* 1:45 o'clock 40 m. P. M., *and recorded*
in BOOK 3187 *PAGE* 234 *Attest:* Lucille Reg Lee *Register.*

17180

710

Know all Men by these Presents, That

PORTLAND WATER DISTRICT, a quasi-municipal corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine and located at said Portland in said County and State

the receipt whereof it does hereby acknowledge, do es hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said MAINE MEDICAL CENTER, its successors and assigns forever,

A certain lot or parcel of land situated in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the westerly side line of Vaughan Street with the southwesterly side line of Brackett Street; thence northwesterly by Brackett Street, two hundred forty-two and seventy-two hundredths (242.72) feet, more or less, to Bramhall Street; thence southwesterly by Bramhall Street, eighty-one and five hundredths (81.05) feet, more or less, to Chadwick Street; thence southerly by Chadwick Street, three hundred fifty-seven and forty-five hundredths (357.45) feet, more or less, to land of Chadwick Realty Corp.; thence by land of said Chadwick Realty Corp. and land of Maine General Hospital, two hundred eighty-eight and sixty-five hundredths (288.65) feet, more or less, to Vaughan Street; thence northerly by Vaughan Street, three hundred fifty-three and sixty-two hundredths (353.62) feet, more or less, to Brackett Street and the point of beginning. Containing 2.52 acres, more or less, and being known as the Bramhall Reservoir Lot.

A portion of the above-described premises, known as the J. & W. Warren Lot, was conveyed to the Portland Water Company by the following warranty deeds all dated May 1, 1869: deed of George Warren et al of a 1/3rd interest, recorded in Cumberland County Registry of Deeds, Book 368, Page 421; deed of John G. Warren of a 1/3rd interest, recorded in said Registry of Deeds, Book 368, Page 424; deed of Caroline Chadbourne et al of a 1/9th interest, recorded in said Registry of Deeds, Book 368, Page 423; and deed of Benjamin F. Chadbourne et al of a 2/9ths interest, recorded in said Registry of Deeds, Book 368, Page 425; and the remaining portion of said premises, known as the Payson Lot, was conveyed to said Portland Water Company by Henry M. Payson by warranty deed dated July 17, 1885, and recorded in said Registry of Deeds, Book 531, Page 32; all of said premises having been conveyed to said Portland Water District by Portland Water Company by quit-claim deed dated August 10, 1908, and recorded in said Registry of Deeds, Book 827, Page 147.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said

MAINE MEDICAL CENTER, its successors

~~heirs~~ and assigns forever. And it do es covenant with the said Grantee , its successors ~~heirs~~ and assigns, that it will warrant and forever defend the premises to the said Grantee , its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said PORTLAND WATER DISTRICT has caused this instrument to be sealed with its corporate seal and signed in its corporate name by William D. Monie , its Treasurer , thereunto duly authorized,

~~I (We) the said Grantor(s) and relinquishing and conveying rights by descent and all other rights in the above described premises, have hereunto set my (our) hand(s) and seal(s)~~ this first day of September in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

Robert B. Williamson Jr.

PORTLAND WATER DISTRICT

By William D. Monie
Its Treasurer

PORTLAND WATER DISTRICT

State of Maine, Cumberland **ss.** September 1, 1971.

Personally appeared the above named William D. Monie, Treasurer of said Grantor Corporation, as aforesaid

and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said corporation.

Before me, Robert B. Williamson Jr.
~~Notary Public.~~ Justice of the Peace.

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*

Received SEP 1 1971 *at* 12 *o'clock* 06 *m.* P *M., and recorded in BOOK* 3188 *PAGE* 710 *Attest:* Margaret E. Schaefer *Register.*

17050

209

Know All Men by These Presents,

That the CITY OF PORTLAND, a body politic and corporate,

~~[illegible]~~ located at Portland

in the County of Cumberland and State of Maine

in consideration of Thirteen Thousand Five Hundred ($13,500.00) Dollars

paid by the MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine, whose address is 22 Bramhall Street, Portland, Maine

the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey and Forever Quit-Claim unto the said

Maine Medical Center, its successors

~~heirs~~ and assigns forever,

a certain lot or parcel of land in the City of Portland, County of Cumberland and State of Maine, being bounded and described as follows:

Beginning at a point marking the intersection of the westerly terminus of the northerly side line of Bramhall Street and the Northerly terminus of the easterly side line of Western Promenade; thence on a course of South 61° 00' 30" West along a prolongation of the northerly side line of said Bramhall Street, a distance of eighty-six and eight hundredths (86.08) feet to a point; thence North 50° 49' 20" West, a distance of one hundred fifty-one and thirty-nine hundredths (151.39) feet to a point which point is on the southeasterly side line of Arsenal Street as it was formerly laid out; thence North 62° 24' 00" East fifty (50) feet to a point; thence North 27° 36' 00" West, a distance of forty (40) feet to a point on the northwesterly side line of Arsenal Street, as it was formerly laid out; thence North 62° 24' 00" East, a distance of two hundred seventy-two (272) feet, more or less, to a point which point is two hundred forty-eight (248) feet from the starting point hereof when measured on a course of North 16° 58' 00" East from said starting point; thence South 16° 58' 00" West, a distance of two hundred forty-eight (248) feet to said starting point.

Being a portion of the premises conveyed to the Grantor by deed of Sarah Little dated July 11, 1856, recorded in Cumberland County Registry of Deeds in Book 274, Page 6.

By acceptance of this deed, the Grantee covenants and agrees for itself, its successors and assigns:

(1) That the Grantee shall secure Planning Board review and approval of the site plan for its proposed development prior to beginning construction of any building and landscaping of the land herein conveyed.

(2) That the Grantee shall submit to the Planning Board for review and approval a grading plan within three months from the date hereof; that it will initiate actual grading work within six months from the date hereof; and that it will complete such grading work within three months from the date of completion of the proposed building.

(3) That the Grantee shall provide and forever maintain access for fire equipment satisfactory to the Fire Chief of the City of Portland to the proposed building and the remainder of the Medical Center Building Complex.

210

(4) That in the event of failure of the Grantee to complete or substantially complete the construction of the proposed building, landscaping, and grading in accordance with the approved site plan within three (3) years from the date hereof, the Grantee shall be required at the election of the Grantor, to reconvey to the Grantor all or such portion of the premises herein conveyed as the Grantor shall require for an amount which bears the same per square foot price as was paid for the premises herein conveyed.

(5) That if within a period of eight (8) years from the date hereof, the Grantee shall decide to sell any portion of the premises herein conveyed without selling all of its premises, it shall notify the Grantor in writing by registered mail directed to the City Manager of the City of Portland of its desire to sell such portion and thereupon the Grantor shall have the exclusive option for a period of sixty (60) days from the receipt of such notice to buy such portion for an amount which bears the same per square foot price as was paid for the premises herein conveyed.

(6) That the Grantee shall simultaneously with delivery of this deed to it, deliver to the Grantor at no cost to it a deed covering a parcel of land located at the intersection of the easterly side line of Gilman Street and the northwesterly side line of Arsenal Street for the purpose of providing a turn-around area serving Gilman Street.

(7) That the Grantee shall construct or cause to be constructed at no cost to the Grantor said turn-around area in accordance with specifications to be approved by the Director of Public Works of the City of Portland.

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said Maine Medical Center its successors and Assigns forever.

And the said Grantor Corporation does covenant with the said Maine Medical Center, its successors and Assigns, that it will Warrant and Forever Defend the premises to it the said Grantee, its successors and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND has caused this instrument to be sealed with its corporate seal and signed in its corporate name by JOHN G. DePALMA, its Director of Finance thereunto duly authorized, this 4th day of August in the year one thousand nine hundred and seventy-two.

Signed, Sealed and Delivered in presence of

Patricia E. Meady

CITY OF PORTLAND

By John G. DePalma
Director of Finance

(CORPORATE SEAL)

State of Maine. CUMBERLAND ss. August 4 1972.

Personally appeared the above named JOHN G. DePALMA, Director of Finance of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Patricia E. Meady
Justice of the Peace
Notary Public

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

23119

115

KNOW ALL MEN BY THESE PRESENTS that STATE OF MAINE, a body corporate and politic existing by law, in consideration of One Dollar ($1.00) and other valuable considerations paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine with its principal place of business in the City of Portland, County of Cumberland and State of Maine, the receipt whereof it does hereby acknowledge, does hereby RELEASE, GRANT and TRANSFER unto the said MAINE MEDICAL CENTER, its successors and assigns, all and any rights and interests in the former site of the State Arsenal situated on Bramhalls Hill, so-called, in the City of Portland, County of Cumberland and State of Maine, being all and the same premises described by Chapter 180 of the Resolves of the State of Maine, 1870, and Chapter 107 of the Resolves of the State of Maine, 1951, including any right of entry, reversion or other interest of the State of Maine in said premises reserved in the State of Maine by either of said Resolves and State of Maine does hereby waive as to said Maine Medical Center its successors and assigns any such rights which may now exist or which may in the future exist in State of Maine by virtue of said Resolves.

TO HAVE AND TO HOLD the aforegranted premises, with all privileges and appurtenances thereof to the said MAINE MEDICAL CENTER, its successors and assigns, and State of Maine does hereby covenant with said Maine Medical Center, its successors and assigns that State of Maine lawfully holds rights in said premises by virtue of said Resolves; that said rights are not encumbered; that it has good right to grant the same to Maine Medical Center as aforesaid; and that State of Maine, its successors and assigns, shall and will warrant and defend the same to Maine Medical Center, its successors and assigns forever against the lawful claims and demands of all persons; provided, nevertheless, that any and all liability of State of Maine for any damage or loss to Maine Medical Center, its successors and assigns, by virtue of any breach of the foregoing covenants and warranties shall be and hereby is limited forever to the total amount of One Dollar ($1.00).

IN WITNESS WHEREOF, Kenneth M. Curtis, Governor of the State of Maine, and Edmund C. Darey, Chairman of the Executive Council of the State of Maine, acting for and with the advice and consent of the said Executive Council given this date, have caused this instrument to be executed and sealed on behalf of the State of Maine this 6th day of September, 1972.

Witness:

Peter M. Dawbarn

Thea L. Stewart

STATE OF MAINE

By Kenneth M. Curtis
Its Governor

By Edmund C. Darey
Its Chairman - Executive Council

STATE OF MAINE
KENNEBEC, ss.

September 6, 1972

Personally appeared the above-named Kenneth M. Curtis, Governor of the State of Maine, and Edmund C. Darey, Chairman of the Executive Council of the State of Maine and acknowledged the foregoing to be their free act and deed in said capacity and the free act and deed of said State of Maine.

Before me,

Approved as to form:

Leon V. Walkley
Assistant Attorney General

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

STATE OF MAINE

CUMBERLAND, ss. REGISTRY OF DEEDS

Received at 11 H. 16 M. A M on OCT 12 1972 and recorded in Book 3310 Page 115 Attest Loretta Murphy Register

116

23120

KNOW ALL MEN BY THESE PRESENTS, that CITY OF PORTLAND, a body corporate and politic existing by law, situated at Portland, County of Cumberland and State of Maine, in consideration of One Dollar ($1.00) and other valuable considerations paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine with its principal place of business in the City of Portland, County of Cumberland and State of Maine, the receipt whereof it does hereby acknowledge, does hereby RELEASE, GRANT and TRANSFER unto the said MAINE MEDICAL CENTER, its successors and assigns, all its rights and interests in the land situated on Bramhall's Hill, so-called, in the City of Portland, County of Cumberland and State of Maine which land was conveyed by City of Portland to Maine General Hospital by deed dated June 4, 1870, which deed is duly recorded in the Cumberland County Registry of Deeds, Book 381, Pages 260, 261 and 262, to which deed reference is made for a particular description of said land, including any right of entry, possibility of reverter, reversionary or other interest of the City of Portland in said land reserved to said City in said deed and City of Portland does hereby waive as to said Maine Medical Center, its successors and assigns, said right of entry and any such other rights which may now exist or which may in the future exist in the City of Portland by virtue of said deed.

TO HAVE AND TO HOLD the aforegranted premises, with all privileges and appurtenances thereof to the said MAINE MEDICAL CENTER, its successors and assigns, and City of Portland does hereby covenant with said Maine Medical Center, its successors and assigns that City of Portland lawfully holds rights in said land by virtue of said deed of June 4, 1870; that said rights are not encumbered; that it has good right to grant the same to Maine Medical Center as aforesaid; that City of Portland, its successors and assigns, shall and will warrant and defend the same to Maine Medical Center, its successors and assigns forever against the lawful claims and demands of all persons; provided, nevertheless, that any and all liability of City of Portland for any damage or loss to Maine Medical Center, its successors and assigns, by virtue of any breach of the foregoing covenants and warranties shall be and hereby is limited forever to the total amount of One Dollar ($1.00).

IN WITNESS WHEREOF, City of Portland has caused this deed to be sealed and executed by John G. DePalma, its Director of Finance, hereunto duly authorized, this 14th day of September, 1972.

Witness:

CITY OF PORTLAND

By _____
Its Director of Finance

STATE OF MAINE
CUMBERLAND, ss.

September 14, 1972

Personally appeared the above-named John G. DePalma, Director of Finance of said City of Portland and acknowledged the foregoing to be his free act and deed in said capacity and the free act and deed of said City of Portland.

Before me,

_____
~~Justice of the Peace~~ Notary Public

OCT 12 1972
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H/7 M/4M, and recorded in
BOOK 3310 PAGE 116 _____ Register

Book 3995
Page 53

53

No. 106
6367

Know All Men by these Presents,

That We, LEROY E. APPLEBEE and ROBERTA M. APPLEBEE, both of Portland, in the County of Cumberland and State of Maine,

in consideration of One Dollar ($1) and other valuable considerations,

paid by MAINE MEDICAL CENTER, a Maine corporation with a place of business in Portland, in the County of Cumberland and State of Maine,

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said MAINE MEDICAL CENTER, its successors

~~Heirs~~ and Assigns forever,

~~the following described property~~

See attached Exhibit A.

54

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

~~Heirs~~ and Assigns, to it and their use and behoof forever.

And we do **covenant** with the said Grantee, its/ ~~Heirs~~ Successors and Assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances;

that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, We, the said LEROY E. APPLEBEE

and ROBERTA M. APPLEBEE, ~~wife of husband~~ husband and wife,

joining in this deed as Grantors, and relinquishing and conveying our/ mutual rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this 7th day of April in the year of our Lord one thousand nine hundred and seventy-seven.

Signed, Sealed and Delivered in presence of

LEROY E. APPLEBEE

ROBERTA M. APPLEBEE

55

State of Maine,
Cumberland, } ss. April 7 1977

Personally appeared the above named LEORY E. APPLEBEE and ROBERTA M. APPLEBEE and acknowledged the above instrument to be their free act and deed.

Before me,

Justice of the Peace

EXHIBIT A

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

Beginning at a stone monument on the westerly corner of Brackett and Bramhall Streets; thence North 57° 20' West, 70.7 feet by the westerly sideline of Brackett Street; thence South 61° 07' West, 42.3 feet by the northerly sideline of a garage on the lot under description; thence South 27° 57' East, 62-1/2' feet to a point on the northerly sideline of Bramhall Street; thence North 61° 51' East, 77.5 feet by the northerly sideline of Bramhall Street to the stone monument aforesaid and point of beginning, together with the right to have the eaves of said garage which project over land of Ella C. Gardner remain as now constructed as long as said garage is maintained in its present position.

Being the same premises conveyed to Leroy E. Applebee and Roberta M. Applebee by Edna M. Sharp by deed dated September 27, 1972, and recorded in Cumberland County Registry of Deeds in Book 3303, Page 200.

APR 7 1977
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 22 M A M, and recorded in
BOOK 3995 PAGE 53. Margaret L Fisher Register

319

WARRANTY DEED

15732

Know all Men by these Presents,

That JAMES H. SULLIVAN, Jr. of 26 Charles Street, Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE MEDICAL CENTER, a Maine corporation with a place of business in Portland, in the County of Cumberland and State of Maine whose mailing address is 22 Bramhall Street, Portland, Maine

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

heirs and assigns forever,

A certain lot or parcel of land, with the buildings thereon, situated on the southwesterly side of Charles Street and the southeasterly side of Congress Street, in Portland, Maine, bounded and described as follows: Beginning at a point on the southwesterly side of said Charles Street at the northerly corner of land conveyed by Edward E. Proctor to Lulu M. Stickney by warranty deed dated May 16, 1890 and recorded in the Cumberland County Registry of Deeds in Book 567, Page 348; thence running southwesterly by said Stickney land a distance of seventy-five (75) feet, more or less, to land of the Maine General Hospital; thence running northwesterly by said Hospital land to the southeasterly side of Congress Street; thence running northeasterly by the southeasterly side of Congress Street seventy-five (75) feet, more or less, to land conveyed by Henry A. Sargent to Lucinda B. Proctor by warranty deed dated August 14, 1896, and recorded in said Registry of Deeds in Book 639, Page 284; thence running southeasterly by said Proctor land and by the southwesterly side line of said Charles Street to said Stickney land and the point of beginning.

Being the same premises conveyed to James H. Sullivan, Jr. by deed dated August 23, 1976 and recorded in said Registry of Deeds in Book 3936, Page 282.

320

To have and to hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors ~~heirs~~ and assigns, to it and ~~his~~ its use and behoof forever.

And I do covenant with the said Grantee, its/ successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises, that they are free of all encumbrances

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs shall and will **warrant and defend** the same to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said James H. Sullivan, Jr. being unmarried ~~and~~ ~~husband/wife of the said~~ ~~joining herein and~~ relinquishing and conveying all rights by descent and all other rights in the above described premises, have hereunto set my hand and seal this 25th day of the month of May, A.D. 19 83.

Signed, Sealed and Delivered in presence of

James H. Sullivan, Jr.

State of Maine, County of Cumberland ss. 25 May, 19 83.

Then personally appeared the above named James H. Sullivan, Jr.

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

Before me,

~~Justice of the Peace~~ Notary Public ~~Attorney at Law~~

My Commission expires Sept. 20, 1986

MAY 26 1983

REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 12:01 P.M., and recorded in
BOOK 6179 PAGE 319 James J. Walsh Register

0243397 BK8309PG0005

Book 8309
Page 5

QUITCLAIM DEED
With Covenant

Know all Men by these Presents,

That we, JOHN J. HAMMETT and ELIZABETH B. HAMMETT, both of Portland, County of Cumberland, Maine

in consideration of One Dollar ($1.00) and other valuable consideration

paid by MMC REALTY CORP., a Maine corporation with a place of business at 22 Bramhall Street, in the County of Cumberland, Maine

whose mailing address is 22 Bramhall Street, Portland, Maine 04102

the receipt whereof we do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quitclaim unto the said MMC Realty Corp., its

successors~~xxx~~ and assigns forever,

A certain lot or parcel of land, with the buildings thereon, situated on the northwesterly corner of Bramhall and Brackett Streets, in said Portland, and bounded and described as follows:

Beginning at the northwesterly corner of Brackett and Bramhall Streets; thence westerly on Brackett Street seventy-five (75) feet ten (10) inches, more or less, to land conveyed by William H. Chapman to Charles E. Graham by deed of April 29, 1920 and recorded in the Cumberland County Registry of Deeds in Book 1050, Page 213; thence northerly by land now or formerly of said Graham sixty-one (61) feet six (6) inches, more or less, to land conveyed by Alden J. Blethen to James K. Emery by deed dated April 30, 1880 and recorded in said Registry of Deeds in Book 467, Page 152; thence easterly by land now or formerly of said Emery sixty-six (66) feet six (6) inches to Bramhall Street; thence southerly by said Bramhall Street thirty (30) feet three (3) inches, more or less, to the point of beginning.

Being the same premises conveyed to the Grantors herein by Sumner J. Goffin by deed dated February 4, 1950 and recorded in said Registry of Deeds in Book 1985, Page 483.

MAINE REAL ESTATE TRANSFER TAX PAID

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to the said MMC Realty Corp., its successors

~~heirs~~ and assigns forever.

And we do covenant with the said Grantee, its/ successors ~~heirs~~ and assigns, that we shall and will warrant and defend the premises to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under us.

In Witness Whereof, we, the said John J. Hammott and Elizabeth B. Hammott

~~wife~~

~~husband/wife of the said~~

~~[struck-out line]~~

~~[struck-out text]~~ have hereunto set our hands and seals this 31st day of the month of May, A.D. 19 88.

Signed, Sealed and Delivered in presence of

[signature]	[signature] John J. Hammott
[signature]	[signature] Elizabeth B. Hammott, By John J. Hammott as her Attorney in Fact pursuant to Power of Attorney dated August 16, 1984 and recorded herewith in the Cumberland County Registry of Deeds

State of Maine, County of Cumberland ss. May 31, 1988.

Then personally appeared the above named John J. Hammott

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

Before me,

[signature]
Notary Public
Attorney at Law

Printed Name Lee D. Urban

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

BK8855PG0081

MAINE REAL ESTATE TAX PAID

036413 WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that GILMAN STREET LAND COMPANY, a Maine corporation, and GILMAN STREET ASSOCIATES, a Maine limited partnership, for consideration paid, grant to MMC REALTY CORP., a Maine Corporation with a principal place of business in Portland, County of Cumberland, State of Maine, whose mailing address is 22 Bramhall Street, Portland, Maine 04103, with WARRANTY COVENANTS a certain lot or parcel of land, with the improvements thereon, located at 52 Gilman Street, in the City of Portland, County of Cumberland, State of Maine, all as more particularly described in Schedule A attached hereto and incorporated herein.

IN WITNESS WHEREOF, the said GILMAN STREET LAND COMPANY has caused this instrument to be sealed with its corporate seal and signed in its corporate names by William H. Webster, its President, hereunto duly authorized, this 4th day of August, 1989, and the said GILMAN STREET ASSOCIATES has caused this instrument to be signed and sealed by William H. Webster, President of its General Partner MORSE, PAYSON & NOYES PROPERTIES, hereunto duly authorized, this 4th day of August, 1989.

WITNESS:

Robert B. Patterson, Jr.

GILMAN STREET LAND COMPANY

By: _____
William H. Webster
Its President

GILMAN STREET ASSOCIATES

By: MORSE, PAYSON & NOYES PROPERTIES,
Its General Partner

Robert B. Patterson, Jr.

By: _____
William H. Webster
Its President

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

August 4, 1989

Then personally appeared before me the above named William H. Webster, President of Gilman Street Land Company, and President of Morse, Payson & Noyes Properties, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporations and partnership.

Before me,

Robert B. Patterson Jr.
~~Notary Public~~/Attorney at-Law

Robert B. Patterson, Jr.
Printed Name

~~My Commission Expires~~ _____

SCHEDULE A TO WARRANTY DEED

PARCEL ONE

A certain lot or parcel of land with the buildings thereon known as 52 Gilman Street, in Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at a point on said street distant one hundred six and fifty-five one hundredths (106.55) feet northerly from the intersection of the westerly side of Gilman Street with the northerly side of A Street, and running thence northerly on said Gilman Street, thirty-seven and one half (37-1/2) feet to a point; thence westerly with an included angle of 91° 11' seventy and forty-two one hundredths (70.42) feet to a point; thence southerly and parallel to said Gilman Street, thirty-seven and one half (37-1/2) feet to land formerly of S. H. Jose, now of Gilman Street Land Company; thence easterly with an included angle of 91° 11' seventy and forty-two one hundredths (70.42) feet to the point of beginning.

PARCEL TWO

A certain lot or parcel of land with the buildings thereon, situated in said Portland, bounded and described as follows:

Beginning at a point in the Westerly side line of Gilman Street distant sixty-six (66) feet and one (1) inch South from the Southerly side line of Congress Street; thence running South by the side line of Gilman Street twenty-four (24) feet and eight (8) inches, more or less, to the Northerly line of land formerly of Winfield L. Smith, now of Gilman Street Land Company; thence by said line formerly of Smith and through the center of the partition wall between the house on said former Smith lot and the house on the lot herein described and by said line extended seventy and forty-two hundredths (70.42) feet and to land formerly of the City of Portland; thence North by said City of Portland land twenty-three (23) feet and eight (8) inches, more or less, to land conveyed by William B. Jordan to Willis B. Moulton et als, by deed dated May 14, 1897, and recorded in Cumberland County Registry of Deeds, Book 648, Page 450; thence in an easterly direction by said Moulton land seventy (70) feet and eight (8) inches to said Gilman Street and the point of beginning.

PARCEL THREE

A certain lot or parcel of land with the buildings thereon, situated on the westerly side of Gilman Street in said Portland and bounded as follows:

Beginning at a point on said westerly side of Gilman Street sixty-nine and five hundredths (69.05) feet northerly

from the northwesterly corner of Gilman and A Streets, and running thence northerly on Gilman Street thirty-seven and one-half (37-1/2) feet; thence westerly with an included angle of ninety-one degrees eleven minutes (91° 11') seventy and forty-two hundredths (70.42) feet to a stake; thence southerly with an included angle of eighty degrees forty-nine minutes (80° 49') thirty-seven and one half (37-1/2) feet; thence easterly with an included angle of ninety-one degrees eleven minutes (91° 11') seventy and forty-two hundredths (70.42) feet to the starting point. Being the southerly half of the lot conveyed to Samuel H. Jose by Charles F. Jose by deed dated December 6, 1886, and recorded in Cumberland County Registry of Deeds in Book 530, Page 255, to which reference is made. The premises herein conveyed are designated as No. 50 on said Gilman Street.

PARCEL FOUR

A certain lot or parcel of land with the buildings thereon situated on the westerly side of Gilman Street in Portland, County of Cumberland and State of Maine, the house being the southerly house in a block of two houses built on this and the adjoining lot, bounded and described as follows:

Beginning on the westerly sideline of Gilman Street ninety and seventy-eight hundredths (90.78) feet from the southerly line of Congress Street; thence southerly on line of Gilman Street fifty (50) feet to land formerly of Charles F. Jose, now of Gilman Street Land Company; thence westerly by said land formerly of Jose, seventy and forty-two hundredths (70.42) feet to land formerly of City of Portland; thence northerly by said City of Portland land fifty (50) feet; thence easterly seventy and forty-two hundredths (70.42) feet passing through the center of the division wall between said two houses to the point of beginning; containing 2520 square feet.

Meaning and intending to convey and hereby conveying the same premises which were conveyed to Gilman Street Land Company by John A. Godsoe, John E. Knowles, John T. Libby, Marvin C. Adams, Thomas A. Martin, Jr., and Vincent N. Oliviero, Trustees, by Trustees Deed dated December 28, 1984 and recorded in the Cumberland County Registry of Deeds in Book 6653, Page 290.

Subject to partition wall rights and obligations as set forth in deed from Virginia R. Buckley to Helen M. Sawyer dated May 4, 1948 and recorded in Cumberland County Registry of Deeds in Book 1912, Page 424 and in deed from Judith P. Johnson to Edgar J. Murphy and Louise M. Murphy dated August 31, 1948 and recorded in Cumberland County Registry of Deeds in Book 1926, Page 311.

RECEIVED
RECORDED REGISTRY OF DEEDS
1989 AUG -4 PM 4:02
CUMBERLAND COUNTY

056000

MAINE REAL ESTATE TAX PAID

KNOW ALL MEN BY THESE PRESENTS, That CASCO AERIE, NO. 565, FRATERNAL ORDER OF EAGLES, a/k/a CASCO AERIE FRATERNAL ORDER OF EAGLES #565, a/k/a FRATERNAL ORDER OF EAGLES CASCO AERIE NO. 565, a Maine corporation with a mailing address of 265 Valley Street, Portland, Maine 04112, and having a place of business at Portland, in the County of Cumberland and State of Maine, in consideration of $1.00 and other valuable consideration paid by MMC REALTY CORP., a Maine corporation, whose mailing address is 22 Bramhall Street, Portland, Maine 04102, the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said MMC REALTY CORP., its successors and assigns forever, certain lots or parcels of land in the City of Portland, County of Cumberland, State of Maine, with any buildings thereon, bounded and described as follows:

261-269 Valley Street

A certain lot or parcel of land with the buildings thereon, situated in Portland and described as follows:

Beginning at a point on the North side of A Street, Portland, Maine, said point being the intersection of said North side line of A Street with the East side line of B Street, the name of which was changed to Valley Street in 1939; thence Northerly and making an included angle of Eighty-two (82) degrees Fifty-nine (59) minutes with the East direction of said North side line of A Street a distance of Two hundred eighty-five (285) feet, more or less, to a point in the South side line of Congress Street, said point being thirty-five (35) feet East along said South side line of Congress Street from its intersection with the East side line of Valley Street as now laid out and accepted; thence East along said South line of Congress Street and making an included angle of Ninety-four (94) degrees 49', a distance of forty-five (45) feet, more or less, to a point in the division line between the lot of land of the Grantor under description and land now or formerly of one Charles F. Jones; thence South along the said division line between land of the Grantor and land now or formerly of Charles F. Jones and land now or formerly of Charles C. Plummer, Ellsworth W. Stuart, Charles F. Jose, Maris M. and Charles F. Jose, Trustees, and Charles F. Jose a distance of 281.17 feet, more or less, to a point in the North side line of A Street; thence West and making an included angle of 89 degrees 57' and along the North side line of A Street a distance of Eighty (80) feet more or less to the point of beginning, containing 17,570 square feet, more or less.

Excepting therefrom a portion bounded and described as follows, to wit:

Beginning at a point on the East side line of said Valley Street One Hundred Fifty (150) feet South from the intersection of said East side line of Valley Street with the South side line of Congress Street, thence North by said East line of Valley Street One Hundred Fifty (150) feet to the South side line of Congress Street; thence East along said South side line of Congress Street making an included angle of 94 degrees 49', a distance of Forty-five (45) feet more or less, to a point in the division line between the lot of land under description and land now or formerly of one Charles F. Jones; thence South along the said division line between the land under description and the land of said Charles F. Jones and others One Hundred Fifty (150) feet, to a point; thence West 63.48 feet, to the point of beginning.

42 - 46 Gilman Street

A certain lot or parcel of land with the buildings thereon situated on the northwesterly corner of Gilman and A Streets in the City of Portland, County of Cumberland, State of Maine, and bounded and described as follows:

Beginning at the intersection of the westerly side of said Gilman Street with the northerly side of said A Street, and running thence northerly on said Gilman Street, sixty-nine and five one-hundredths (69.05) feet to land formerly of S.H. Jose; thence westerly by said S. H. Jose land, seventy and forty-two one-hundredths (70.42) feet to a stake; thence southerly and parallel with said Gilman Street seventy and forty-seven one-hundredths (70.47) feet to A Street; thence easterly by said A Street, seventy and forty-one one-hundredths (70.41) feet to the place of beginning.

268 - 270 Valley Street

A certain lot or parcel of land with the buildings thereon situated on the westerly side of Valley Street, formerly called B Street, in said Portland, bounded and described as follows:

Beginning at a point on said westerly side line of Valley Street at a point distance one hundred thirty six (136) feet northerly from the intersection of the westerly side of Valley Street and the northerly side of A Street; thence running southerly by said westerly side of Valley Street seventy-one (71) feet to a point; thence running westerly sixty (60) feet to land now or formerly of George W. Billings and Catherine A. Reed, at a point which is distant sixty-five (65) feet northerly from the northerly side line of A Street; thence running northerly by said Billings and Reed land sixty-four and seventy-six hundredths (64.76) feet to land formerly of William G. Davis and continuing northerly by said Davis land six and forty-three hundredths (6.43) feet; thence easterly approximately fifty-seven (57) feet to the point of beginning.

Being the same premises conveyed to the within grantors by the following deeds: Deed from Mid-Central Fish Company of Maine dated January 15, 1963 and recorded in Cumberland County Registry of Deeds in Book 2727, Page 347; Deed from Sebastiano Pennisi, et al dated June 25, 1963 and recorded in Cumberland County Registry of Deeds in Book 2759, Page 254; and Deed from Eugene S. Martin dated March 28, 1980 and recorded in Cumberland County Registry of Deeds in Book 4582, Page 291.

Subject to the following:

1. Taking of Valley Street as referenced in the deed from the City of Portland to the Unity Company dated October 20, 1937 and recorded in Cumberland County Registry of Deeds in Book 1527, Page 318 (261-269 Valley Street).

To have and to hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said MMC REALTY CORP., its successors and assigns, to them and their use and behoof forever.

AND the said Grantor Corporation does hereby covenant with the said Grantee, its sucessors and assigns, that it is lawfully seized in fee of the premises, that they are free of all encumbrances except as aforesaid, that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said CASCO AERIE, NO. 565, FRATERNAL ORDER OF EAGLES has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Robert James, Richard Brichetto, Hilbert Welch, Reginald Conohan and Fred Darling,

its Trustees thereunto duly authorized, this 21ST day of November, A.D. 1990.

CASCO AERIE, NO. 565,
FRATERNAL ORDER OF EAGLES

Witness

By: Robert S. James
Robert James
Its Trustee

Witness

By: Richard Brichetto
Richard Brichetto
Its Trustee

Witness

By: Hilbert Welch
Hilbert Welch
Its Trustee

Witness

By: Reginald Conohan
Reginald Conohan
Its Trustee

Witness

By: Fred Darling
Fred Darling
Its Trustee

STATE OF MAINE
COUNTY OF CUMBERLAND

November 21, 1990

Then personally appeared the above named Robert James, Richard Brichetto, ~~Hilbert Welch,~~ Reginald Conohan and ~~Fred Darling,~~ Trustees of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be their free act and deed in their said capacity, and the free act and deed of said Corporation.

Before me,

Attorney at Law
Notary Public
SHERRIE LYNN FONTAINE
NOTARY PUBLIC, MAINE
MY COMMISSION EXPIRES NOVEMBER 19, 1996

Printed Name

SEAL

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

Instr 47527 Bk 9722 Pg 45

47527

DEED OF SALE BY PERSONAL REPRESENTATIVE
(Testate)
Maine Statutory Short Form

Book 9722
Page 45

Know all Men by these Presents,

That Thomas F. Kane, Jr.

of Scarborough, County of Cumberland, State of Maine,

duly appointed and acting personal representative of the estate of Edna Faye Kane,

deceased (testate), as shown by the probate records of the County of Cumberland, Maine,

(and having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale) ~~(and not having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, such notice not being required under the terms of the decedent's will)~~, by the power conferred by the Probate Code, and every other power, for consideration paid, grants to Maine Medical Center* of Portland,

*a nonprofit corporation organized and existing under the laws of the State of Maine

County of Cumberland, State of Maine,

whose mailing address is 22 Bramhall Street, Portland, ME 04102,

the real property in Portland, County of Cumberland,

State of Maine, described as follows:

A certain lot or parcel of land with the buildings thereon, situated in said Portland on the southeasterly side of Ellsworth Street, bounded and described as follows: -viz;-Beginning on the said southeasterly side of Ellsworth Street at land now or formerly of S.F. Haggett; thence southeasterly by said Haggett's land seventy-five (75) feet, more or less, to land now or formerly of J.T. Walton; thence southwesterly by said Walton's land and land now or formerly of N. Waterhouse eighty (80) feet, more or less, to land now or formerly of N.P. Thompson; thence northwesterly by said Thompson's land seventy-five (75) feet, more or less, to said Ellsworth Street; thence northeasterly by said Ellsworth Street to point begun at. Containing five thousand eight hundred forty (5,840) square feet, more or less. Said lot is numbered 34-36 and 38 as shown upon valuation plan of the City of Portland.

Being the same premises conveyed to Edna F. Kane by May Porter by her Warranty Deed, dated April 3, 1940 and recorded in Cumberland County Registry of Deeds in Book 1603, Page 134.

MAINE REAL ESTATE TAX PAID

Instr 47527 Bk 9722 Pg 46

Witness my hand and seal this 20th day of September, 19 91.

Signed, Sealed and Delivered in presence of

Samuel J. Shatz

Personal Representative of the Estate of Edna Faye Kane

Thomas F. Kane, Jr.

Samuel J. Shatz

Thomas F. Kane, Jr.

State of Maine, County of Cumberland **ss.** September 20, 19 91

Then personally appeared the above named Thomas F. Kane, Jr.

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

Before me,

Samuel J. Shatz

Samuel J. Shatz
Justice of the Peace
~~Notary Public~~
Attorney at Law

Recorded
Cumberland County
Registry of Deeds
09/20/91 03:59:12PM
Robert P. Titcomb
Register

54881

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that I, **William H. Leschey, Jr.**, whose mailing address is 930 Congress Street, Portland, ME 04102, for consideration paid, GRANT to **MMC Realty Corp.**, a Maine corporation with an established place of business at and mailing address of 22 Bramhall Street, Portland, Maine 04102, with WARRANTY covenants, the land in Portland, County of Cumberland, State of Maine, which is more particularly described as follows:

A certain lot or parcel of land, with any buildings or improvements that may be thereon, situated on the southerly side of Congress Street, bounded and described as follows: BEGINNING on the southerly sideline of Congress Street at its intersection with the westerly sideline of Gilman Street; thence southerly by the westerly sideline of Gilman Street, sixty-six feet, one inch (66' 1") to the northeasterly corner of land now or formerly of Helen M. Sawyer; thence westerly by said Sawyer land seventy feet, eight inches (70' 8") to the easterly sideline of land now or formerly of Schwartz Bros. Inc.; thence northerly by said Schwartz Bros. Inc. land, sixty-two feet, one inch (62' 1") to the southerly sideline of Congress Street; thence easterly by the southerly sideline of Congress Street, seventy feet, eight inches (70' 8") to the point of beginning.

Being the same premises conveyed to the Grantor herein by deed of Edythe D. Field, dated May 11, 1987, and recorded in the Cumberland County Registry of Deeds in Book 7784, Page 182.

MAINE REAL ESTATE TAX PAID

WITNESS my hand and seal this 1st day of SEPTEMBER, 1994.

SIGNED, SEALED AND DELIVERED
in the presence of:

William H. Leschey, Jr.

STATE OF MAINE
COUNTY OF CUMBERLAND, ss SEPTEMBER 1, 1994

Then personally appeared the above-named William H. Leschey, Jr. and acknowledged the foregoing instrument to be his free act and deed.

Before me,

~~Notary Public~~/Attorney at Law
Printed Name: CHRISTOPHER J.W. COGGESHALL

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

BEL/4078/AAO/DE

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION C STATE / FEDERAL APPROVALS

THE MAINE DEPARTMENT OF HEALTH AND HUMAN SERVICES HAS GRANTED A CERTIFICATE OF NEED APPROVAL TO MAINE MEDICAL CENTER , A COPY OF THAT APPROVAL LETTER IS ATTACHED. THE PROJECT WILL ALSO REQUIRE A MAINE STATE FIRE MARSHALL PERMIT, WHICH WILL OCCUR AFTER SITE PLAN REVIEW. FEDERAL APPROVALS ARE LIMITED TO THE FAA PERMIT FOTR THE HELIPORT, WHICH IS INCLUDED WITH WRITTEN SUBMISSION S-5 .

Department of Health and Human Services
Commissioner's Office
221 State Street
11 State House Station
Augusta, Maine 04333-0011
Tel.: (207) 287-3707; Fax: (207) 287-3005
TTY Users: Dial 711 (Maine Relay)

Paul R. LePage, Governor Ricker Hamilton, Acting Commissioner

September 26, 2017

Mr. Alexander M. Green
Director of Planning
Maine Medical Center
22 Bramhall Street
Portland, ME 04102

RE: MMC Capital Expenditures - Private Rooms and Universal Procedure Rooms

Dear Mr. Green:

This letter will serve as notification that, on this date, I have decided to **grant with conditions** a Certificate of Need (CON) that authorizes Maine Medical Center to construct universal single patient rooms and universal procedure rooms as well as other associated capital expenditures outlined in your CON application.

My approval is conditioned on the following:

- If the holder of this certificate determines it will complete the C4 floor at any time before 3 years are completed after the project is operational, the holder will inform the CONU in writing of its decision to complete construction / outfitting the C4 floor as described in the application, at least 30 days before this portion of the project commences.

- The applicant is to report improvements in quality and outcome measures for services affected by the project on an annual basis, within 90 days of its fiscal year-end, beginning with the time period when the Certificate of Need was approved until a full three years have elapsed since the date of project completion.

- The applicant is to report operating room utilization and private room utilization for facilities affected by the project on an annual basis within 90 days of its fiscal year-end beginning with the time period when the Certificate of Need was approved until a full three years have elapsed since the date of project completion.

In order for this CON to remain valid, the project must be "commenced" within two years from the date of the original approval, noted above. You must complete implementation reports on your activities as specified for this type of Project (CON Procedures Manual, Chapter 11, Sec. 3). Limited extensions may be available, if requested in a timely manner and for good cause, as explained in the Manual, Chapter 9, Sec. 3. Failure to commence the project within this 24-month period will result in expiration of the CON, unless extended, as cited above.

I am granting this CON because I have determined that the project meets the criteria set forth in the CON Act Sec. 335 (1) and the Departments regulations. The specific details of the project for which I have granted this CON are contained in the record.

Please be aware that in accordance with Section 346 of the Maine Certificate of Need Act this Certificate, as modified herein, is valid only for the stated scope, premises and facility named in the above referenced application and is not transferable or assignable.

Furthermore, it should be clearly understood that our analysis and findings regarding the need for the proposed project, as well as its financial and economic feasibility, are predicated on the application record as described in the Manual, Chapter 8, Subsection 5. Consequently, the proposal must be implemented consistent with the approval stated in this letter, as informed and clarified by the Department's analysis and findings as summarized in the following Department staff reports:

FINAL REVIEW: Briefing memo to Ricker Hamilton, Acting Commissioner, DHHS, dated September 18, 2017.

No significant changes to the project, no variations from the projected operating costs, no modifications of the terms of financing the project, and no increase in the capital expenditures to be made are permitted without the prior written approval of the Department. Any such variances may result in either the disallowance of related expenses, financial penalties or the immediate revocation of the Certificate of Need.

Please work closely with my staff in Health Care Oversight to assure this project is implemented in accordance with the provisions of this Certificate and applicable rules and regulations.

The Certificate of Need statute requires that a holder of a CON make a written report at the end of each six-month period following its issuance. Details regarding this and related requirements will be made the subject of a separate letter from Health Care Oversight.

My staff will work with you as necessary.

Sincerely,

Ricker Hamilton
Acting Commissioner

RH/klv

cc: Sarah Taylor, Director, DLC
Larry Carbonneau, Manager Health Care Oversight, DLC
Herb Downs, Director, Audit
Colin Lindley, Rate Setting
File

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION D Compliance with Applicable Zoning Requirements

The proposed East Tower Expansion and Visitor Garage Expansion comply with the applicable zoning requirements.
The projects are in alignment with short-term projects as approved within the approved Maine Medical Center IDP and IOZ Regulatory Framework, including maximum building heights as required by Map 4.1 in the Regulatory Framework.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION E EASEMENTS

AS DEPICTED ON PLAN 2 , EXISTING CONDITIONS PLAN, A SUMMARY OF EASEMENTS IS STATED BELOW :

A. UNDERGROUND ANCHOR SYSTEM EASEMENT RESERVED BY MMC IN CONVEYANCE TO CRESCENT HEIGHTS LLC IN DEED BOOK 26288 PAGE 49.
B. UTILITY/DRAINAGE EASEMENT FOR A DRAIN/SEWER PIPE FROM THE PROPERTY NOW OF CRESCENT HEIGHTS, LLC. FORMERLY AS DESCRIBED IN DEED BOOK 1938 PAGE 248 AND 1946 PAGE 370.
C. UTILITY EASEMENT: TO NET&T NEAR THE NORTHERLY CORNER OF THE PARKING GARAGE ON CONGRESS ST. PER DEED BOOK 8573 PAGE 121.
D. CERTIFICATE OF VARIANCE APPROVAL GRANTING RELIEF FROM SECTION 14-137(7) MAXIMUM STRUCTURE HEIGHT OF 45 FEET, DATED JUNE 25, 1996, AND RECORDED IN DEED BOOK 12629 PAGE 295.
E. SITE LOCATION OF DEVELOPMENT DEPARTMENT ORDER BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR MAINE MEDICAL CENTER, PER DEED BOOK 13919 PAGE 114.
F. UTILITY EASEMENT: MMC TO NET&T 6' X 8' NEAR GILMAN AND CONGRESS PER DEED BOOK 13027 PAGE 207.
G. AMENDMENT TO CITY CODE SEC. 14-49 (ZONING MAP AMENDMENT) RE: CONDITIONAL REZONING FOR PROPERTY IN VICINITY OF WESTERN PROMENADE/MAINE MEDICAL CENTER. DATED MAY 24, 2005 AND RECORDED IN DEED BOOK 22671 PAGE 60.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION

EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS

WRITTEN SUBMISSION G EVIDENCE OF FINANCIAL & TECHINICAL CAPACITY

Maine Medical Center will fund the project from three different sources: equity, philanthropy, and debt. The exact proportions of funding sources are yet to be determined. MMC's financial capacity to establish and operate the project

The health care landscape has been in a state of change, particularly since the signing of the Affordable Care Act (ACA). Given the recent changes in the executive and legislative branches of the federal government and continued references to "repealing" the ACA, it is nearly impossible to anticipate the scope of future changes. Maine Medical Center's strategic financial plan assumes continued market basket increases at or near 3% annually. Additionally, the strategic financial plan assumes the following:

- Little or no increase in Medicare or Medicaid payments
- Stable payer mix
- No expansion to the Medicaid program
- Achievement of operational efficiencies based on analyses of national benchmark data
- Stable utilization of hospital services
- Continuation of provider-based billing at existing locations
- Stable levels of bad debt and charity care

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

MMC is fully licensed and accredited, and has been providing services of this scale and scope for years.

Through multiple building projects throughout the history of the organization, MMC has demonstrated its ability to develop new and renovated facilities that meet all licensure and accreditation requirements.

The proposed project's program, and design, developed by a team of health care architects and engineers, and hospital physicians and staff, are in conformance with Guidelines for Design and Construction of Health Care Facilities, 2006 Edition, Facilities Guidelines Institute, (American Institute of Architects, Washington, DC, 2006) as required by the State of Maine Department of Health and Human Services' Division of Licensing and Regulatory Services. In addition, the guidelines for Design and Construction of Health Care Facilities, 2014 Edition, Facilities Guidelines Institute, (American Institute of Architects, Washington, DC, 2014) were also used in the proposed project's design.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION H BOUNDARY SURVEY

BOUNDARY SURVEY PLANS ARE SUBMITTED AS PLAN SUBMISSIONS, PLAN NOS. 2A THROUGH 2H. THESE PLANS DEPICT THE DISCONTINUANCE OF A FORMER CITY STREET (CHARLES STREET) , AS WELL AS LAND TRANSFERS BETWEEN THE CITY AND MAINE MEDICAL CENTER.

STREET VACATION AND LAND TRANSFER PLANS ARE SUBMITTED AS PLAN SUBMISSIONS. PLAN NOS. 2I AND 2 J. ALTHOUGH THE CITY REVIEWED AND APPROVED THESE PLANS WHEN THE EAST TOWER WAS ORIGINALLY PERMITTED, THE ACTUAL TRANSFER DID NOT OCCUR. MAINE MEDICAL CENTER PROPOSES TO BRING THIS MATTER TO THE CITY'S ATTENTION AND PROCEED WITH THE ACTUAL TRANSFER CONCURRENT WITH THE CURRENT SITE PLAN REVIEW.

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management Plan

December 15, 2017

[Updated for 1/23/18 Planning Board Meeting]

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

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MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management

Plan 12.15.17

Purpose Statement

The purpose of this document is to provide the details of the first phase of construction for MMC's Master Facility phase IIB. This document outlines Turner Construction's plan for controlling impacts from noise, ground movement, truck traffic, and other construction related factors to the surrounding neighborhoods and buildings.

Maintaining normal campus operations and Public Safety are high priorities during the construction phase. This plan will be presented to the appropriate City and Neighborhood representatives. The City of Portland Planning Board will approve the final plan. It has been the goal of these programs to define the construction plan before construction begins. Turner's experience on projects with similar logistic constraints has proven that pre-planning and constant communication are necessary for a smooth efficiently run, incident free project.

It is Turner Construction's full intent to follow the guidelines set by the contract documents.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will control the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

1.0 CONSTRUCTION MANAGEMENT PLAN

This Construction Management Plan (CMP), submitted to the Portland Department of Planning & Urban Development for approval by the City of Portland Planning Board prior to the start of construction, includes specific mitigation measures and staging plans to minimize impacts to surrounding residences and businesses. The Construction Manager and its trade contractors will be bound by the CMP.

Turner Construction Contacts:

Project Superintendent: Scott Griffin
Email: SGriffin@tcco.com / Cell - 203-943-0950

Project Manager: Adam Parys
Email: AParys@tcco.com / Cell – 617-201-0710

Project Engineer : Rick Martineau
Email: RMartineau@tcco.com / Cell – 617-438-1263

Project Director: Gregg Scholler
Email: GScholler@tcco.com / Cell – 203-219-4022

2.0 CONSTRUCTION SCHEDULE & WORK HOURS

Construction work hours will be in accordance with Section 17-18 and Section 25-129.

2.1 Work Hours

- The construction period for the project is expected to be approximately 20 months in duration.
- It is anticipated that the project is estimated to start on or about Spring 2018 and last through Fall 2019.
- Work hours will be 7AM to 7 PM Monday thru Friday.
- Workers will gather at their workplace from 6 AM to 7AM.
- Saturday work will be required on a periodic basis with hours from 7 AM to 6 PM.

2.2 Construction Timeline

2.2.1 Spring 2018 to Fall 2019

East Tower – Crescent Street

A new 60,000 SF addition is being added to the top of the East Tower. The addition consists of two new floors, level 6 and 7. On the roof is a helipad system capable of landing two helicopters. The exterior wall at Level 5 is being replaced in conjunction with

a new exterior wall for Level 6 and 7. This project is expected to start in March 2018 and complete by October 2019. (20 Months)

Visitor Garage- Congress Street

Three new floors of parking are being added to the Visitor Garage. These floors will be Level 8, 9 and 10. The added floors are precast and are being added to a garage which has been designed for this expansion. The added parking capacity is 220 cars. This project is expected to start in May 2018 and complete in November 2018. (6 Months)

Central Utility Plant – Gilman Street

The Central Utility Plant is increasing cooling capacity by adding one 2,400 ton chiller and two cooling towers. This project is expected to start in November 2018 and complete in March 2019. (5 months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical as a part of the CMP.

- Monthly "look ahead" schedules and narrative for upcoming construction activities.
- Schedule of over-size deliveries to the site that will impact roadways
- Schedule of deliveries that will be outside the City of Portland's allowable work hours.
- Proposed schedule for utility connection or work in public roadways or sidewalks as a part of Turner work.
- Proposed off-hours or Saturday work.
- Construction activities that may impact the neighborhood in an adverse way, including noise, dust, on-street parking or work outside construction limits or times. Also, proposed options to mitigate these impacts.
- An estimate of the number of vehicles that will require off-site parking.

2.4 Construction Logistics

The proposed Logistics Plans included in the CMP are designed to isolate the construction while providing safe access for pedestrians, hospital operations, and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Congress Street and Gilman Street. The logistics plan define the timeline of construction activities and the location of cranes, gates, access for each Phase.
Each site will be secured by an 8-foot high fence with privacy screening in accordance with the Logistics Plan.

Logistics plans on the construction sequencing for East Tower Overbuild are Slides 2 to 9.

Logistics plans on the construction sequencing for Visitor Garage Overbuild are Slides 10 to 21.

Logistics plans on the construction sequencing for Central Utility Plant cooling upgrade Slides 22 to 24.

2.5 Perimeter Protection / Public Safety

- Turner Construction will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow.
- The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed.
- In general, secured fencing will be used to isolate construction areas from pedestrian traffic.
- Flagmen or Police Details will be provided at all active gates when there are deliveries.
- Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.
- Subcontractors will implement and manage their own Health and Safety Program for the project.
- All Subcontractors are required to wear appropriate personal protective equipment.
- Snow removal and ice treatment will be provided on the surrounding area within the construction fence.
- Sidewalks will be cleaned of trash and debris as needed.
- If existing street lights need to be removed for the duration of the project,
- Turner Construction will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed Light levels will be tested prior to temporary removal of site lighting.

2.6 Worker Parking & Traffic Impacts

- Turner Construction and its subcontractors shall encourage the use of public transportation by their workers.
- Jobsite personnel will be required to park at an offsite parking area and will be shuttled to the construction site.
    - Jobsite personnel will be required to park at MMC's Scarborough Campus
    - Subcontractors who violate this requirement will be fined $500 per offense
    - The following language will be included in the contracts with all subcontractors
        - *"Parking: There shall be absolutely no parking on the project site, in the Hospital Parking Garages and / or Hospital Surface Parking lots, and on street parking adjacent to the Hospital. This is including but not limited to employee vehicles, company vehicles, delivery trucks, trucks containing equipment such as welders, etc. Turner to provide remote parking location, and transportation to and from the jobsite. Any workers found in violation of this policy will be subject to permanent removal from the project and the subcontractor shall be assessed a $500*

fine per incident."

- Worker parking shall not be allowed on site except for company vehicles required to perform the work.
- Turner will qualify subcontractors' with a legitimate reason to park onsite and manage that parking within the construction fence and not impact parking in the surrounding area.
- No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets.

The number of workers required during the construction will vary by Construction Phase.

Construction Phase - March 2018 to September 2019

- Spring 2018- Fall 2018 – average workers – 40 to 50
- Fall 2018 – Spring 2019 – average workers – 70 - 90
- Spring 2019- Fall 2019 - average workers – 100

2.7 Truck Routes and Volumes – Refer to Site Logistics Plans

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- Truck traffic will vary throughout the construction period, depending on the activity.
- An offsite marshalling area will be utilized for large deliveries such as precast and structural steel.
- All trucks will be brought to the construction areas at MMC by experienced dedicated drivers from the marshalling lot.
- Radio and cell phones will be utilized to coordinate all trucking.
- Trucks routes must be submitted and approved by the City of Portland and the Owner before the start of construction.
- Truck idling will be held to a minimum on-site, to minimize the impact to adjacent properties..
- Turner Construction and its subcontractors shall ensure that haul routes, debris and soil removal, and staging areas are conducted in a manner that minimizes the impacts to the abutting communities,
- Wheel wash stations will be installed and maintained by Turner and its subcontractors as needed and maintained at construction site exit areas.
- Street sweeping / vacuuming of all impacted City streets and sidewalks shall be performed by Turner Construction and its subcontractors on an as-needed basis.
- Streets, sidewalks, bicycle ways or other means of travel may not be obstructed or closed without permission from the Owner and other authorities having jurisdiction. The Owner shall be notified one week in advance of any such obstructions or closures.

Construction - East Tower Overbuild – (Refer to Logistics Slides 2 thru 9)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Ellsworth Street to Wescott Street. **(Refer to Logistics slide 9)**
- Turner will install way finding signage at strategic locations identifying no travel zones for construction vehicles
- All subcontractors and vendors will be provided with pamphlets indicating the appropriate truck routes to access the site.
- Trucks will be brought within the fence line.
- During crane erection a portion of Ellsworth Street and Wescott will be closed. **(Refer to logistics slide 8)**

Construction Visitor Garage Overbuild – (Refer to Logistics Slides 10-22)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Congress Street.
- During an eight week period when precast erection is occuring, Congress Street will need to be closed at the location of the Visitor Garage. Detailed logistics plans are included to identify the street closure requirements**.(refer to logistics slides 16-21)**
- This street closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

Construction - Central Utility Plant – (Refer to Logistics Slides 22-24)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to the Central Utility Plant utilizing a truck path from Congress Street to Gilman Street, and an exiting path from A Street. **(refer to logistics slides 23-24)**
- During a two week period when the chillers and cooling towers are installed, trucks and a crane will be set up on Gilman Street. This is expected to occur in Fall/Winter 2018.Police detail will be fulltime during this period. Gilman Street will remain open.
- Lane closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

3.0 Air Quality & Noise

3.1 Dust Control

To reduce emission of dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks used for transportation of construction debris will be fully covered with tarps intended to keep material in the truck.
- Construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.
- Stock piles of soils will be covered with tarps and/or poly when they are not being utilized for current site activities.

3.2 Noise

- The project will require the use of equipment that can be heard from off-site locations. This project will strive to mitigate construction noise impacts, to the extent possible.
- Increased community sound levels are an unavoidable consequence of construction activities.
- Construction will occur during the daytime hours as defined by the City of Portland Code of Ordinances (7:00 a.m. to 6:00 p.m. Monday through Friday).
- In some instances, a second shift, off hour, holiday and weekends may be required.
- When these events arise, all required permits will be obtained and notification will be posted in accordance with section 2.3
- Work shall be performed so as to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).
- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels. Noise reduction methods shall include, but not be limited to:

  Use of:
  - Tie to local power grid to reduce the use of on-site generators.
  - Noise-deadening / isolating surrounds around exceptionally noisy work equipment or operations
  - The maintenance of the access roadways to minimize the “bouncing” of construction vehicles within the construction site.
  - Enforcing the site logistics plan, so as to maximize to every extent possible the forward movement of construction vehicles. This will, in turn, minimize the sound of back-up alarms.

Attaching:

- Intake / exhaust mufflers, shields or shrouds
- Noise-deadening material to equipment and fencing

Maintaining:

- Equipment mufflers and lubrication
- Pre-cast decking and plates to avoid rattling
- Smooth surfaces on construction sites and public ways to prevent unnecessary noise from surface irregularities.

Minimizing

- Noise from the use of backup alarms, using measures that meet OSHA regulations. The construction logistics has been designed such that the backing-up of equipment and trucks is limited.
- Use of self-adjusting ambient-sensitive backup alarms.
- Manually adjustable alarms on low setting
- Scheduling of activities so that alarm noise is minimized

3.3 Air Monitoring

- Turner Construction and its subcontractor's shall employ dust, odor, and gas control measures to minimize the creation of airborne dusts, odors, and gases during the entire construction process. At a minimum, standard dust control techniques shall be employed where heavy equipment will be traveling, standing, or loading, such as watering down the site or utilizing dust control measures. All measures shall be taken in accordance with Turner's approved Health & Safety plan.
- Turner Construction and its subcontractors shall perform dustless street sweeping / vacuuming for all construction activities including demolition, excavation, slurry / soil mixing operations on an as needed basis.
- An air monitoring plan shall be developed by the Owner based on site contaminants of concern, particulate quantities / densities, and risk-based evaluations. The plan will be developed for off-site impacts. Turner Construction and its subcontractors will be responsible for on-site health and safety issues.
- The Owner will engage a qualified consultant to monitor for dust along the perimeter of the construction site. Results of this monitoring that indicate exceedances of air quality criteria will be immediately brought to the attention of Turner Construction. Turner and its subcontractors shall immediately address the site condition, including terminating construction activities to remedy the site conditions to the satisfaction of the Owner.
- Ductwork snorkels will be installed as required on building air intakes surrounding the job-site to minimize the amount of dust and construction vehicle gases being taken in through the air handling systems. The maintenance of the filters is by the individual building managers.

4.0 Communication Strategies

4.1 Contacts, Distribution Lists

- Turner Construction shall develop a project contact list (e-mail addresses, office and cell phone numbers), to be posted by MMC on the project web site and supplied to Maine Medical Center (MMC) for 24/7 contacts.
- Turner Construction will request similar contact lists from the neighborhood associations. (e-mail addresses, and phone numbers) of key contacts for the specific project.
- Turner Construction will set-up a project bulletin board for each Phase. These boards will be used as communication tools to the surrounding community. There will be a project website thru MMC, developed that also will communicate construction related activities to the community.
- Any last minute changes to the project schedule that may impact the neighborhood or Maine Medical Center (MMC) community will be communicated per section 2.3.
- Turner Construction will participate in the neighborhood council meetings as needed to discuss progress and issues.
- Turner shall maintain a log of all construction-related concerns, via the MMC website.
- MMC shall communicate final resolution of all complaints and concerns to the neighborhood, Maine Medical Center (MMC) community, and when appropriate, to the City of Portland.
- MMC has created an email distribution list in order to maintain open communications throughout the process and provide regular project updates. Any interested can sign up for the email on MMC's website - https://mainehealth.org/maine-medical-center/newsroom/modernization.
- MMC and Turner construction continue to explore additional methods of communication with neighboring residences and businesses.

5.0 Vibration Monitoring – Not Applicable

Maine Medical Center
MaineHealth

Construction Management Plan

[Logistics Plans and Studies]
East Towers and Visitors Garage

Turner

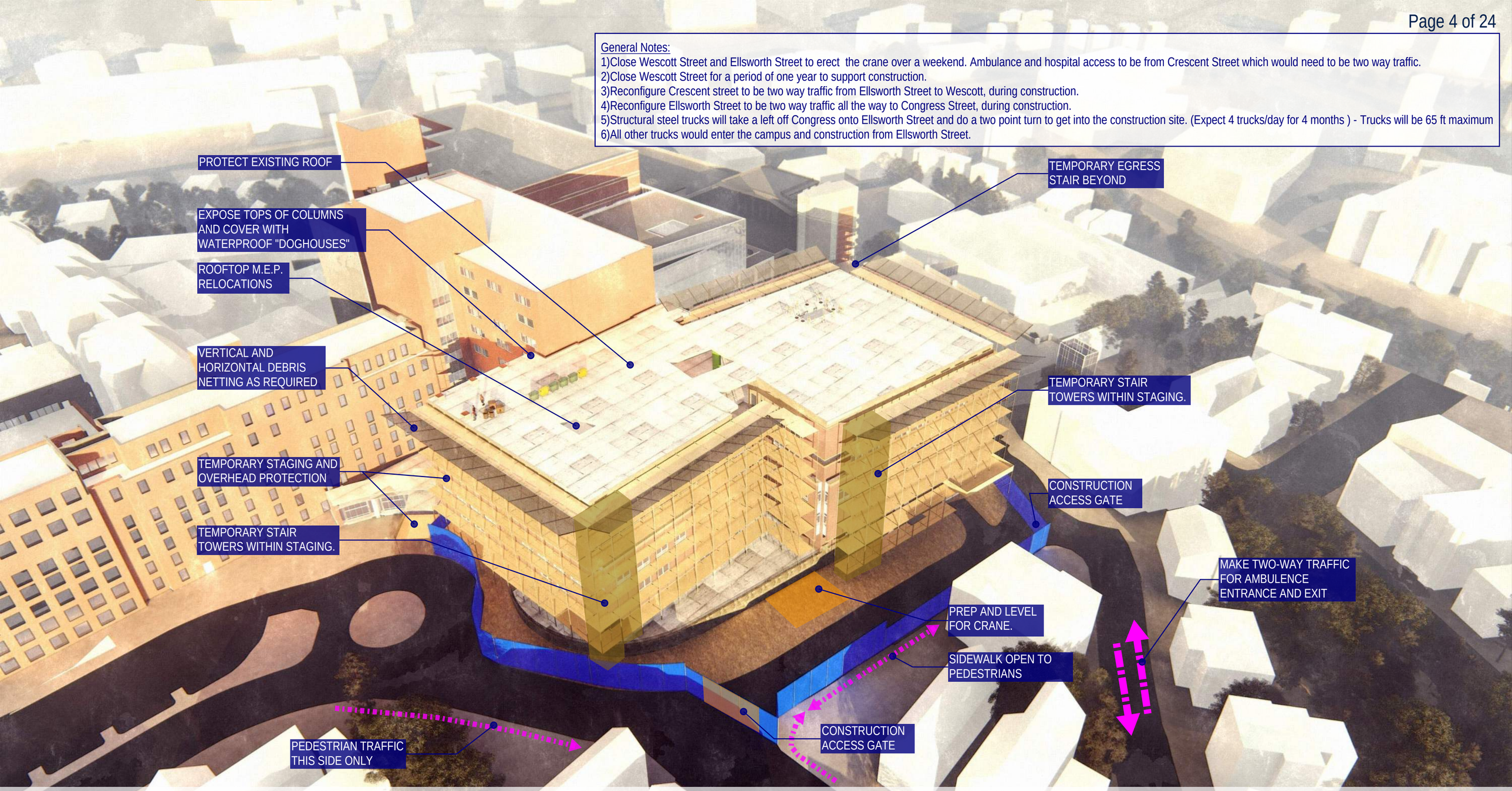
[East Towers] Logistics Plans and Studies

Turner

Maine Medical Center
Additions and Renovations [Logistics Plans] EAST TOWERS - EXISTING

Turner

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.



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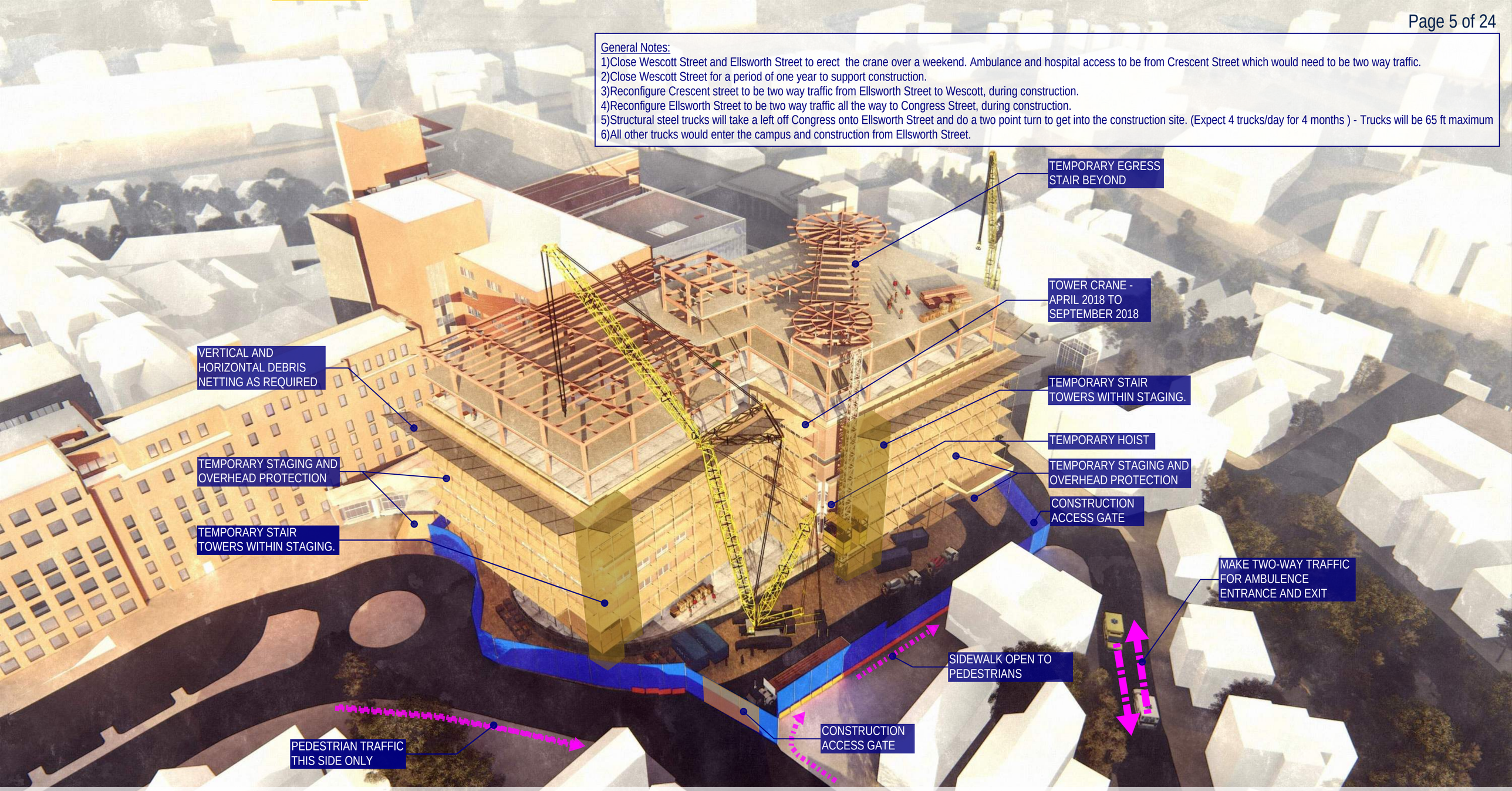

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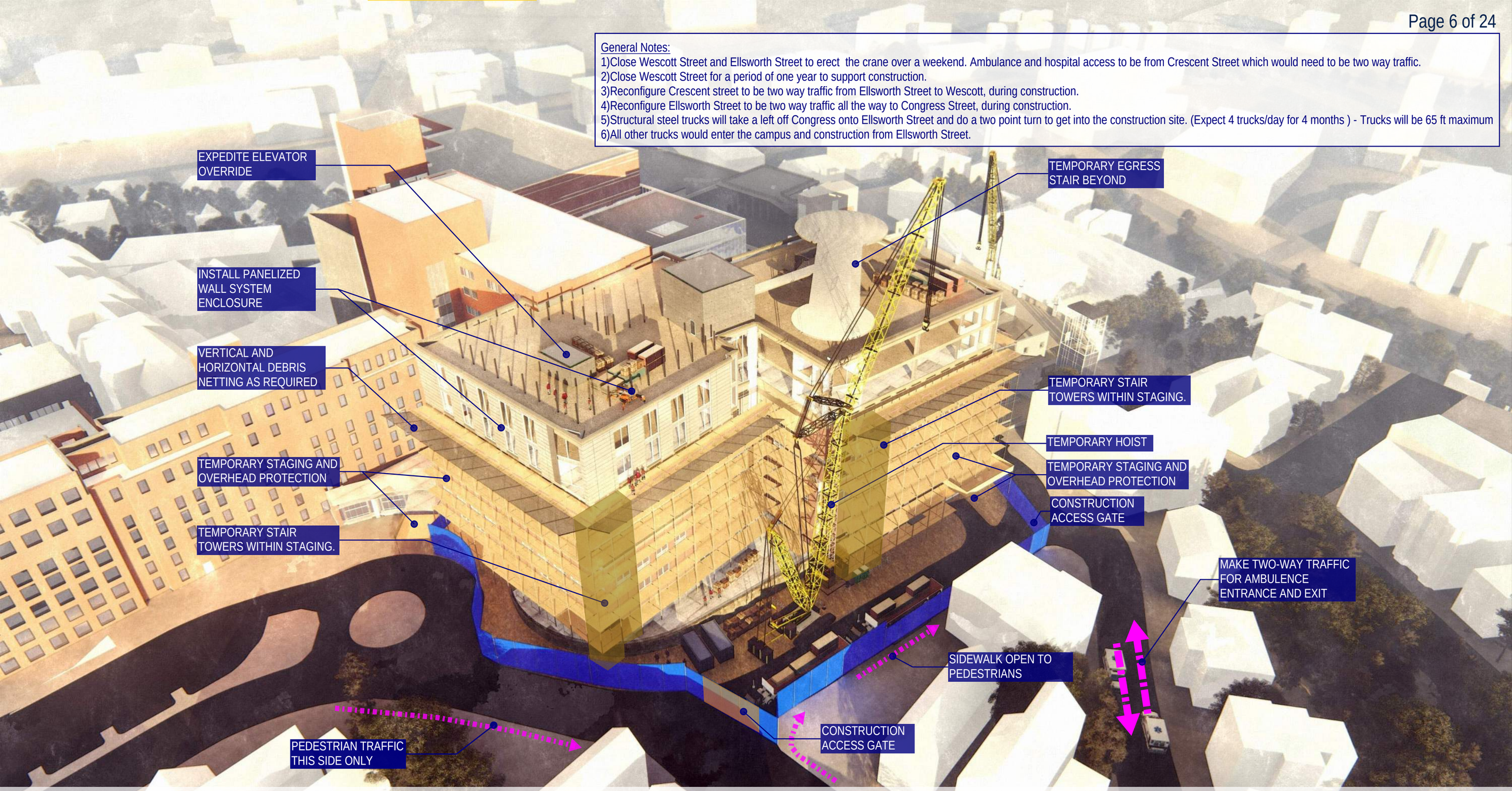

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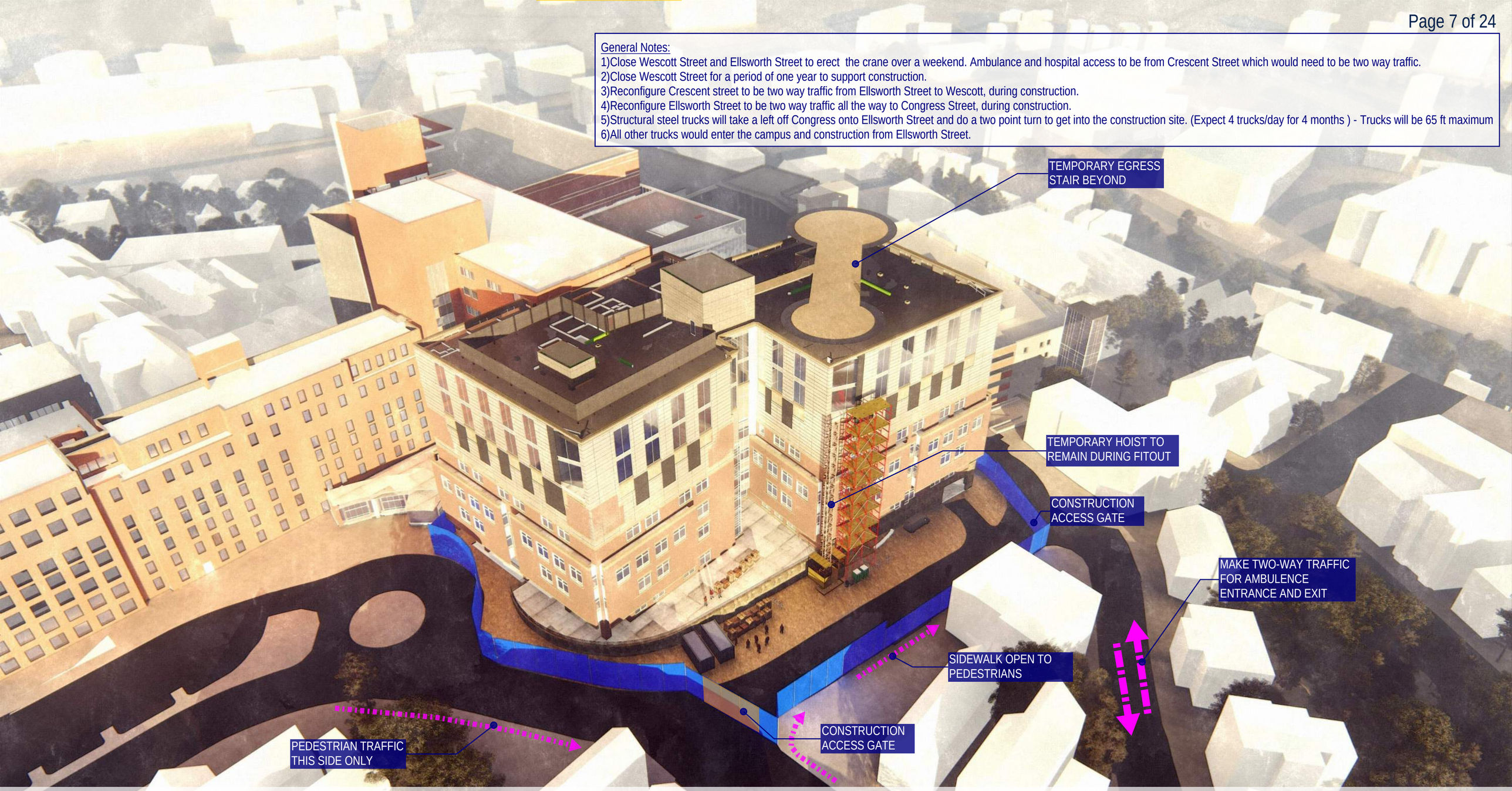
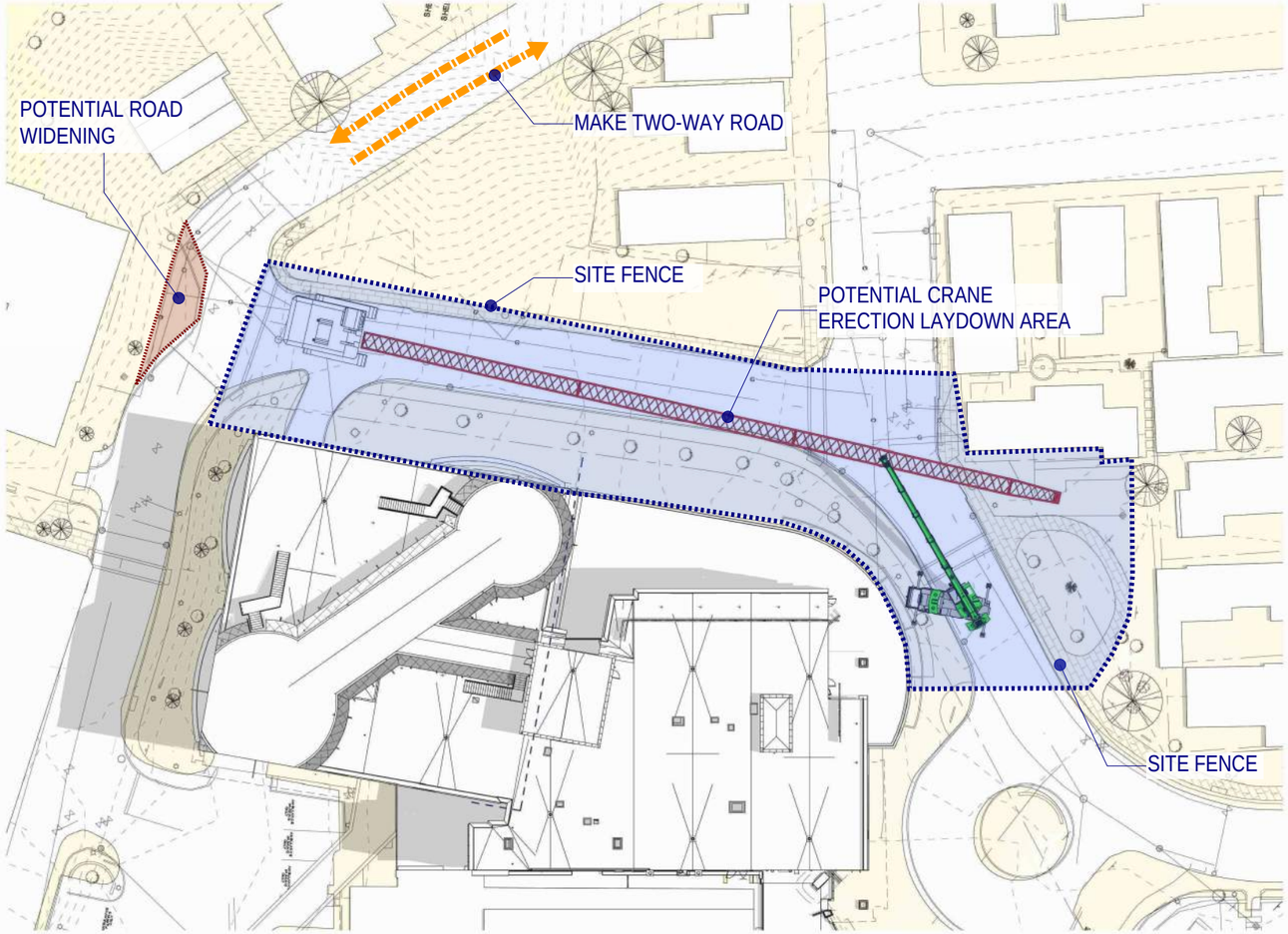
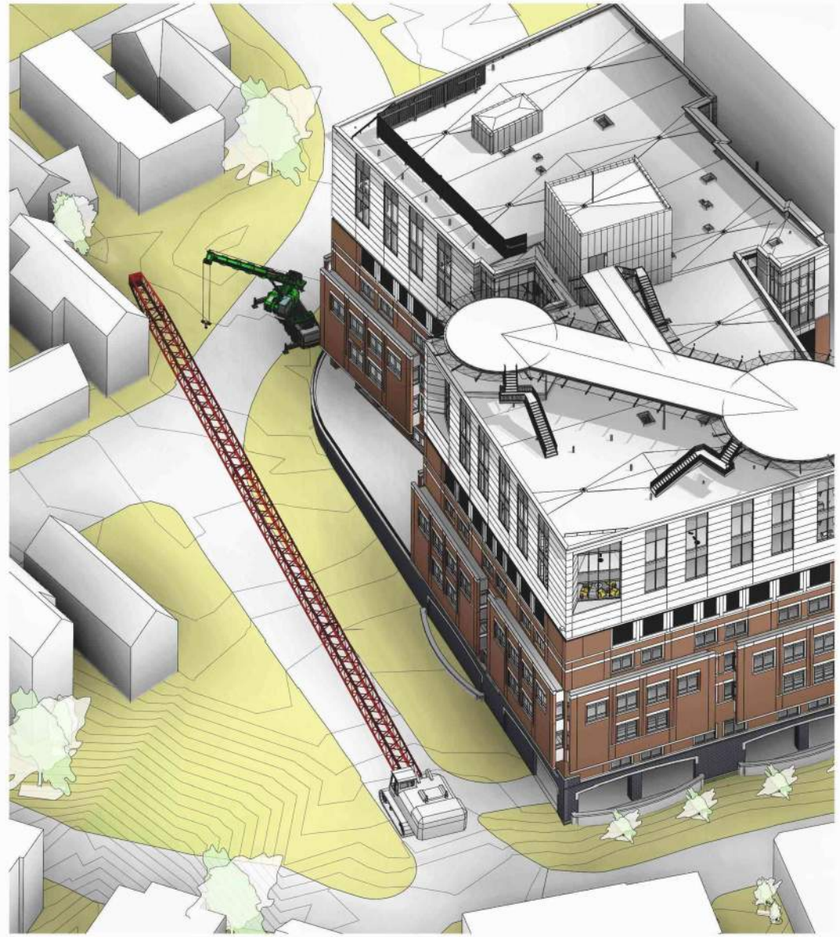




1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"



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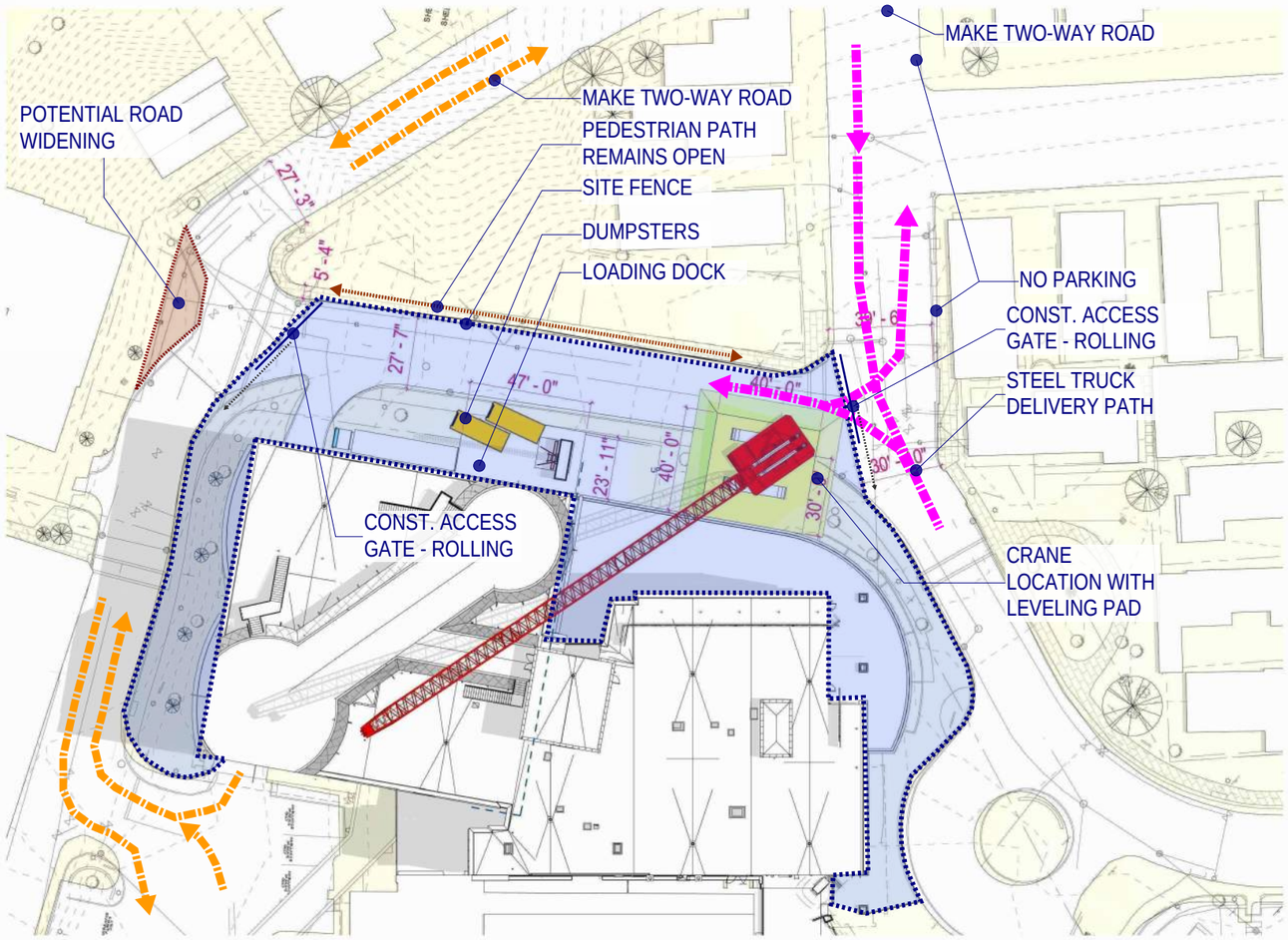

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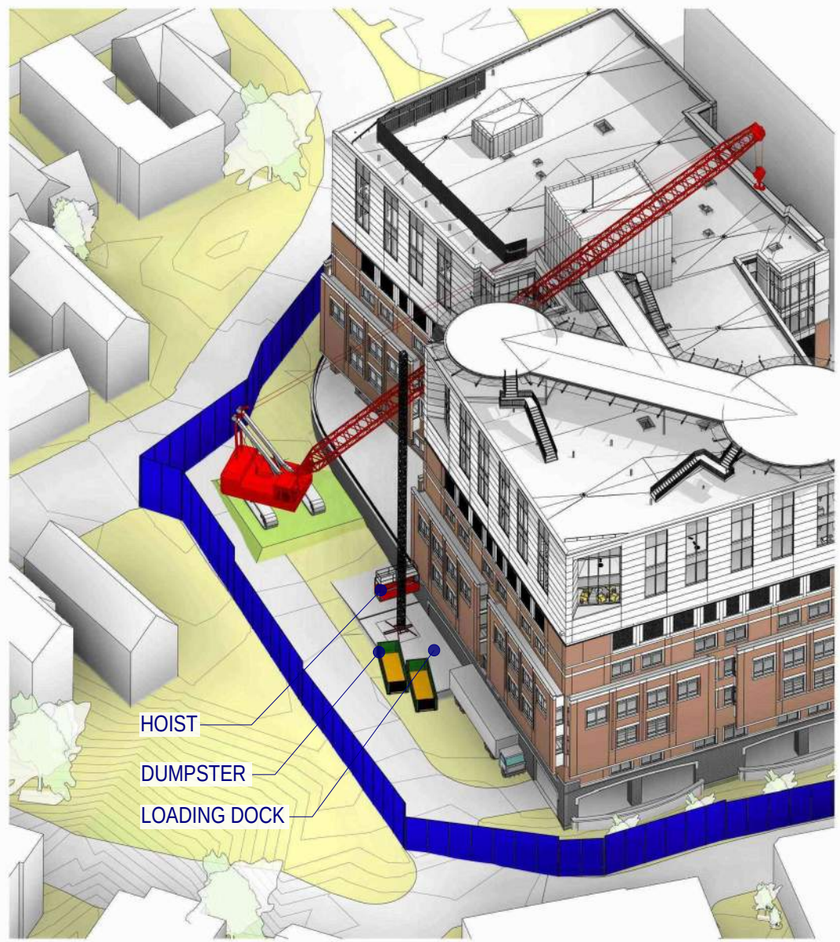

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[Visitors Garage] Logistics Plans and Studies

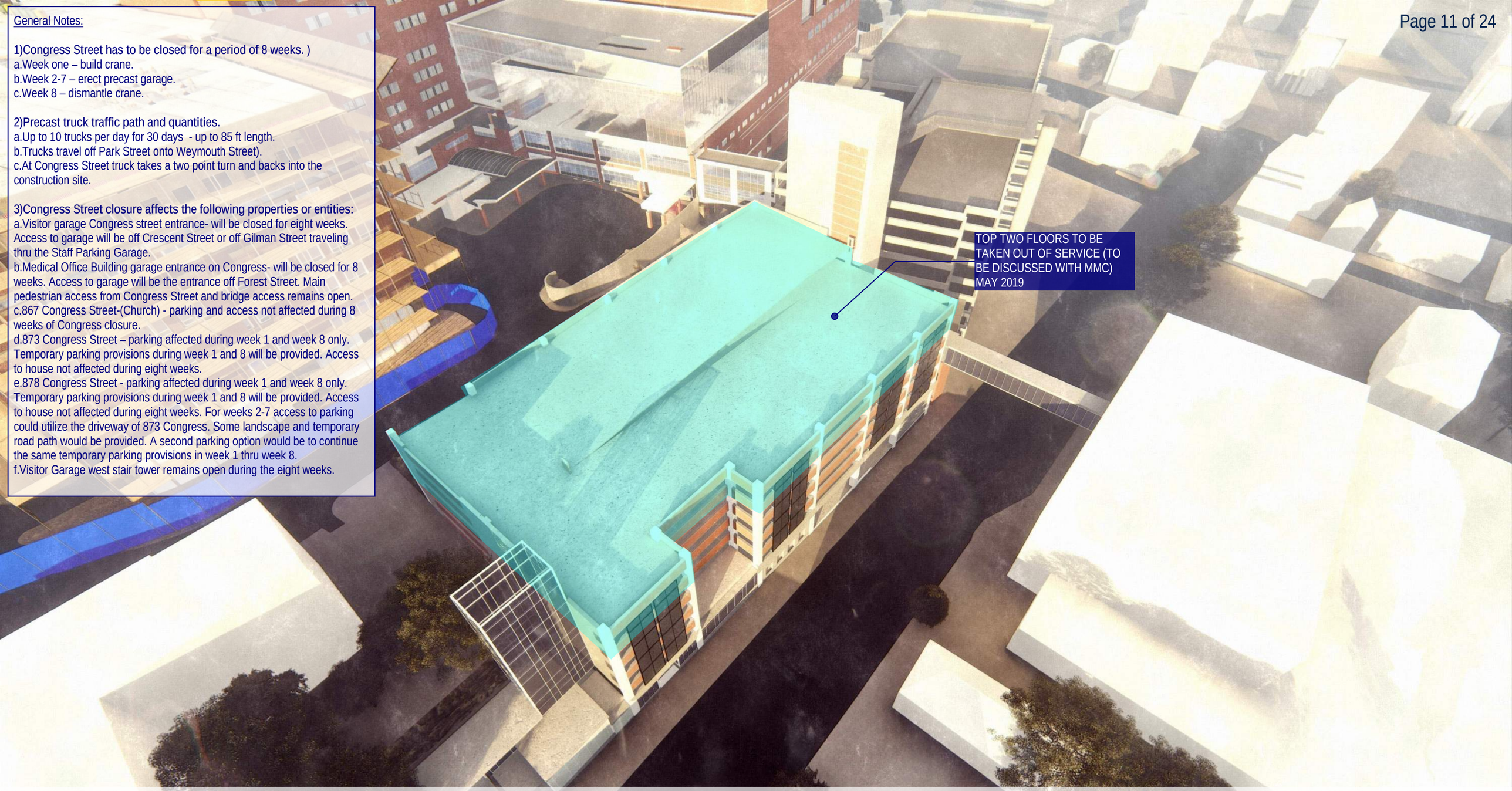
Turner

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.



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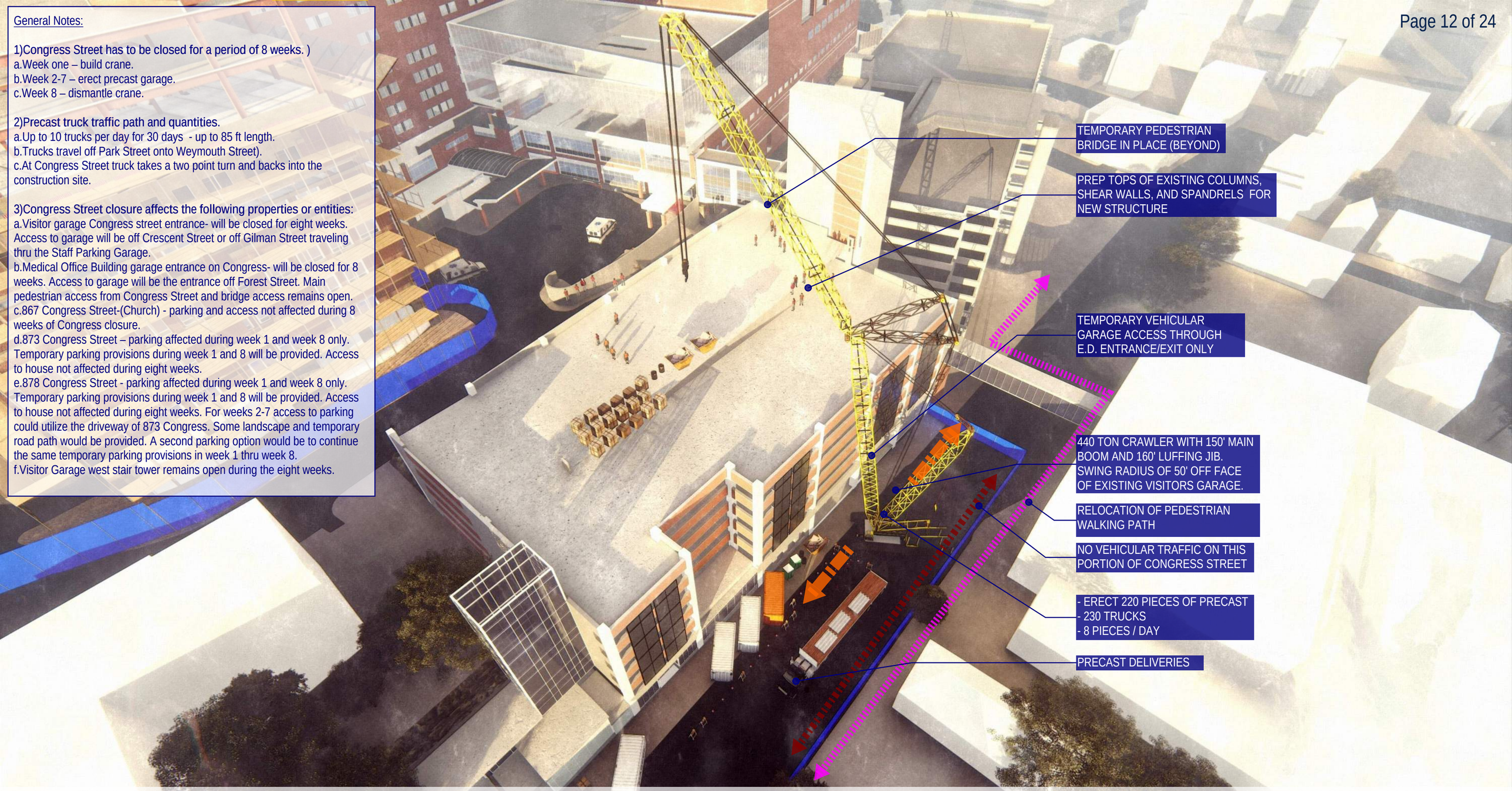

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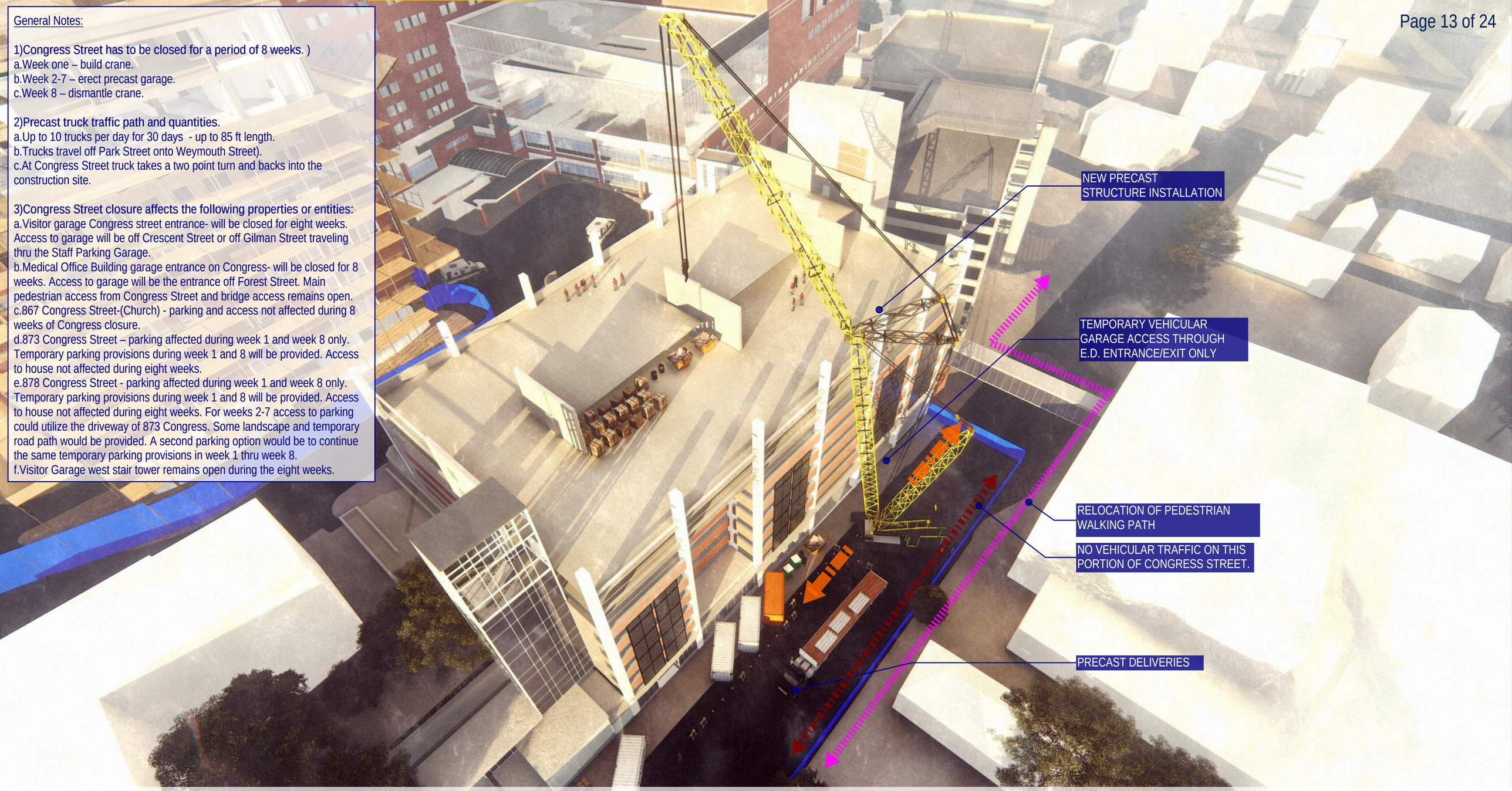

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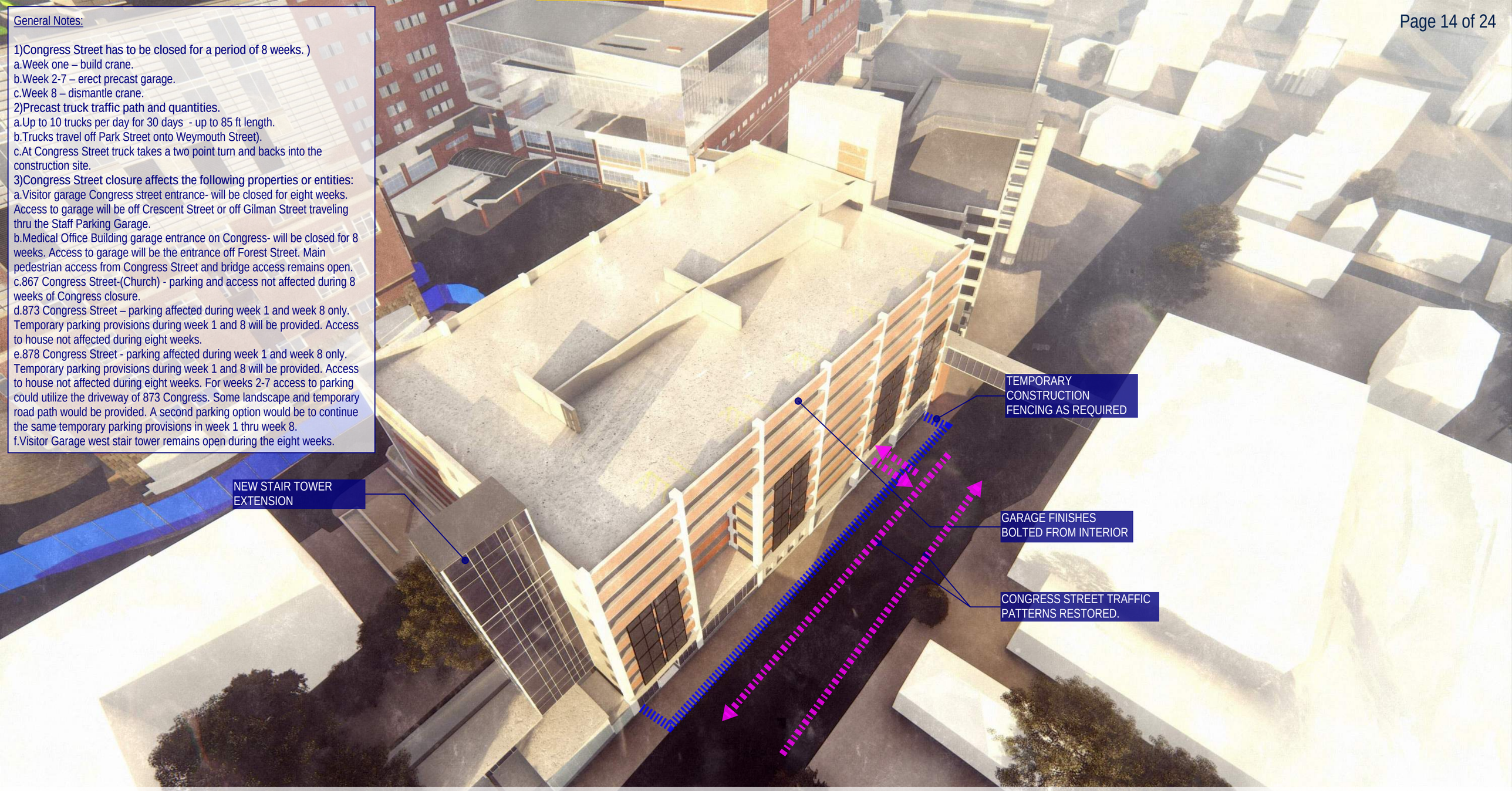
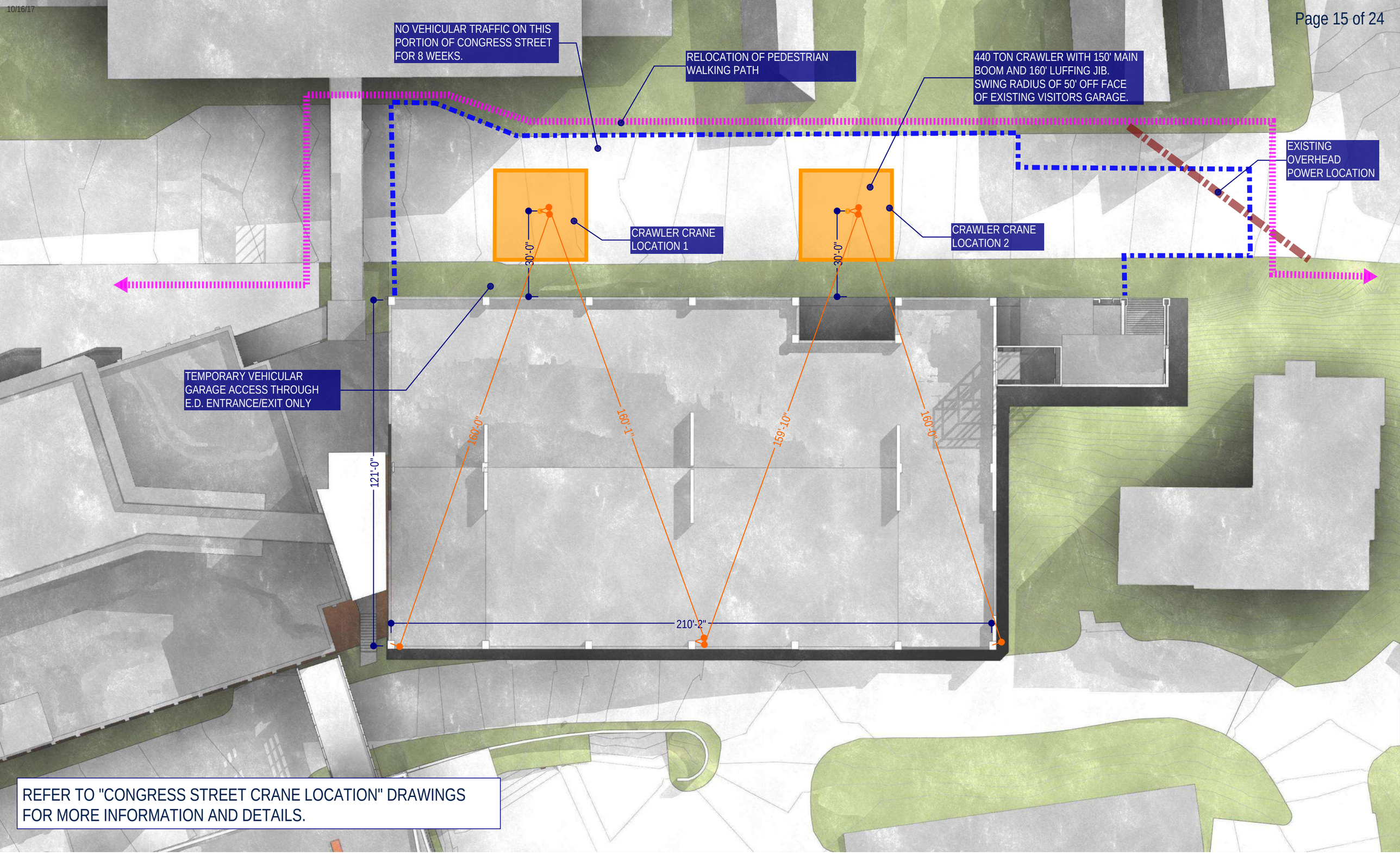
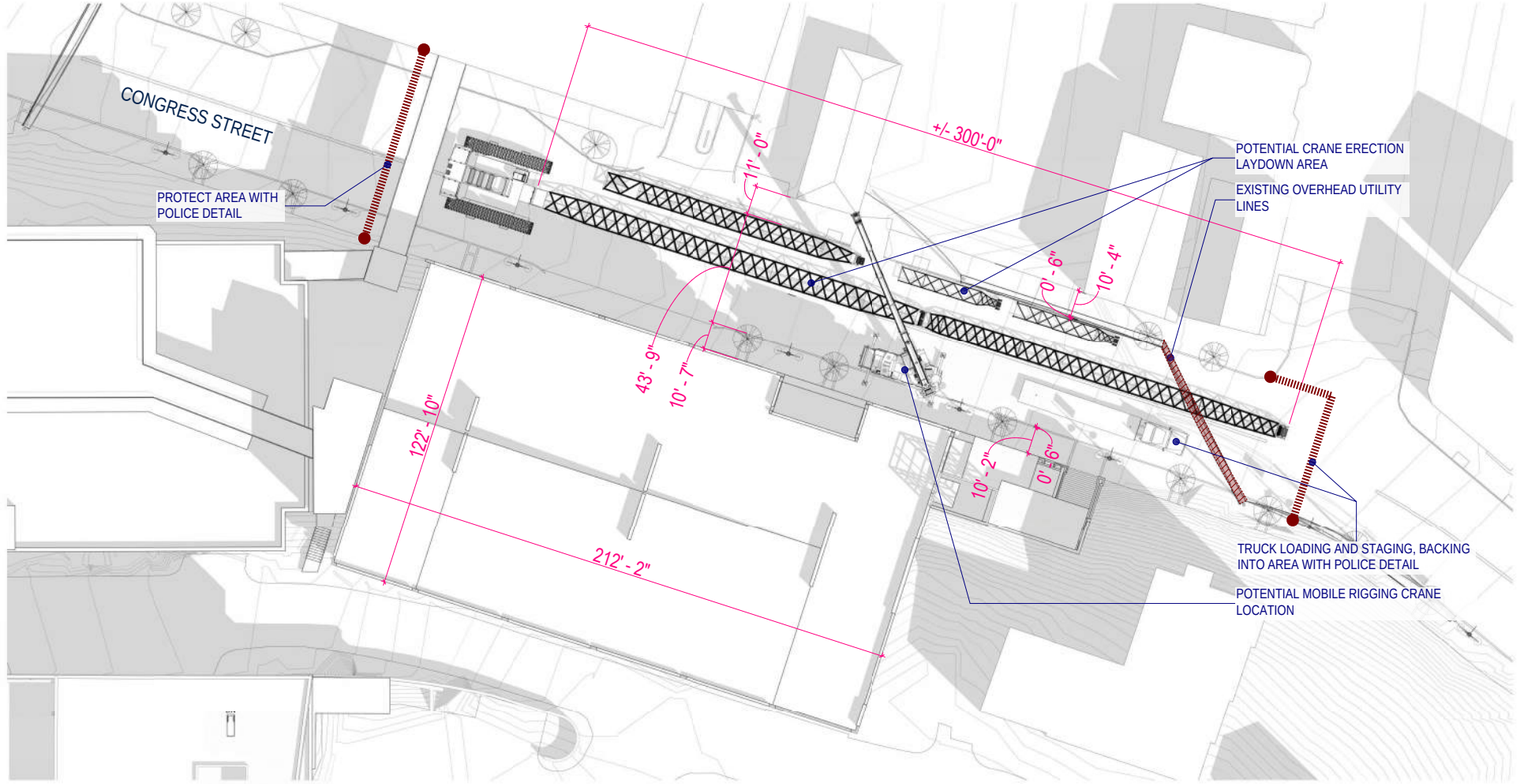




REFER TO "CONGRESS STREET CRANE LOCATION" DRAWINGS FOR MORE INFORMATION AND DETAILS.



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3/64" = 1'-0"

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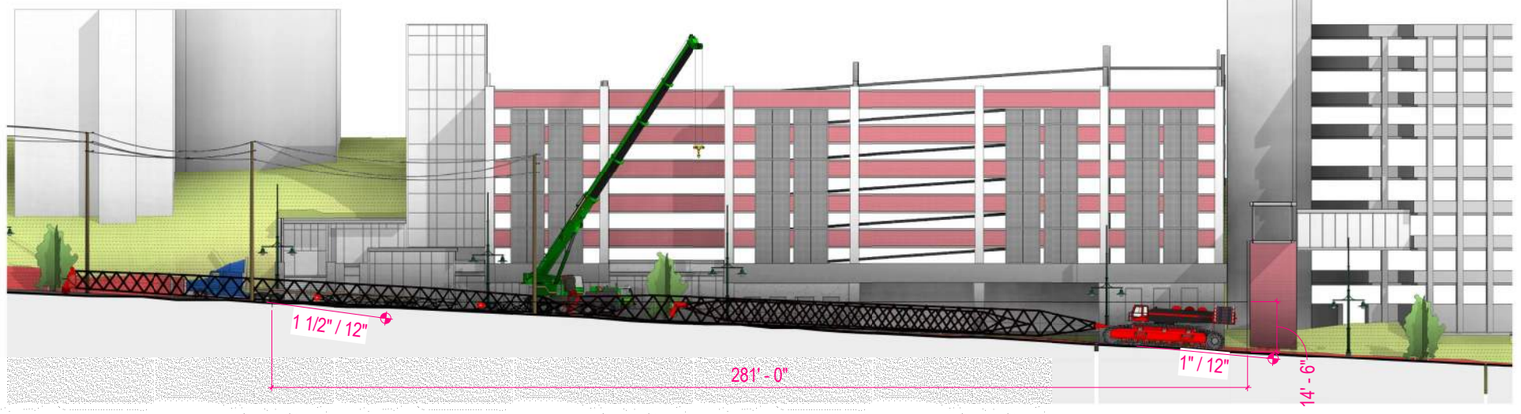

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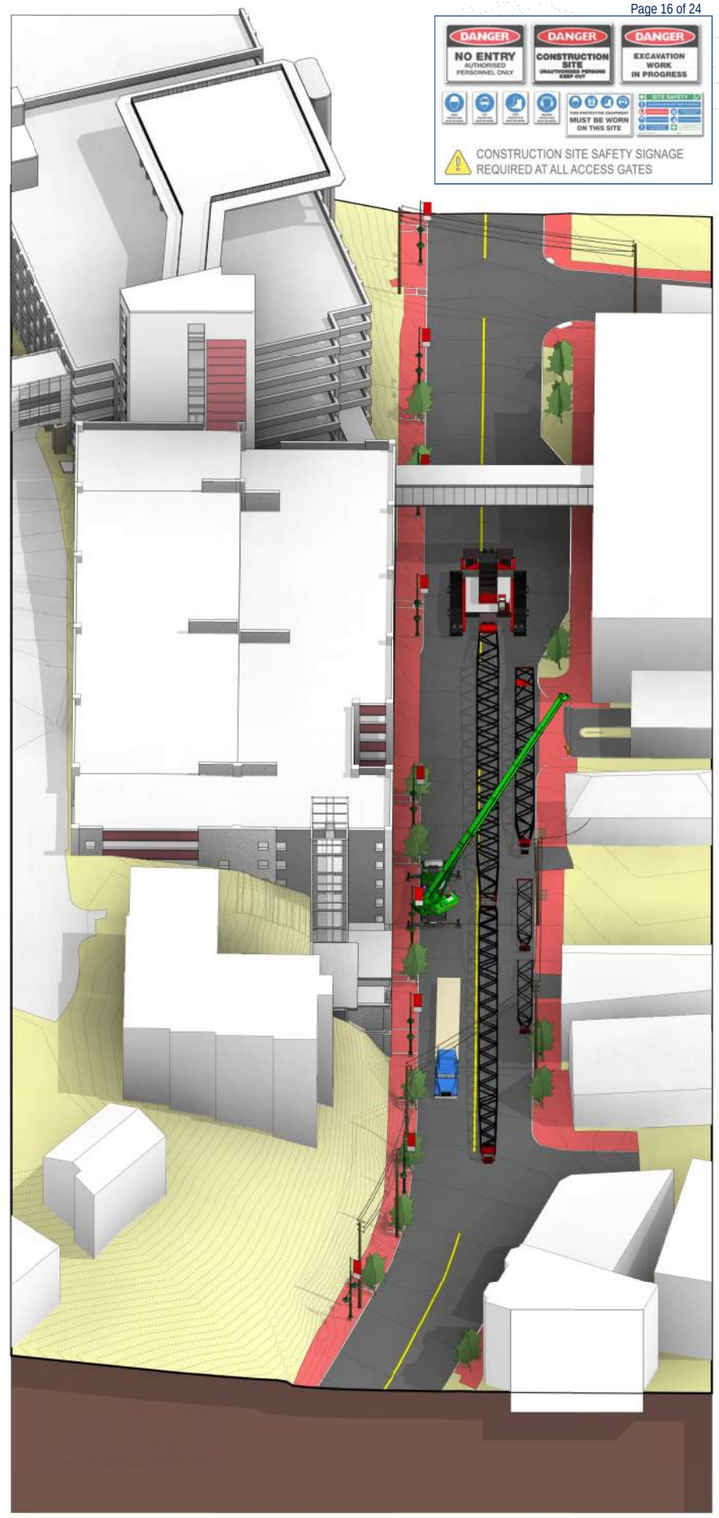
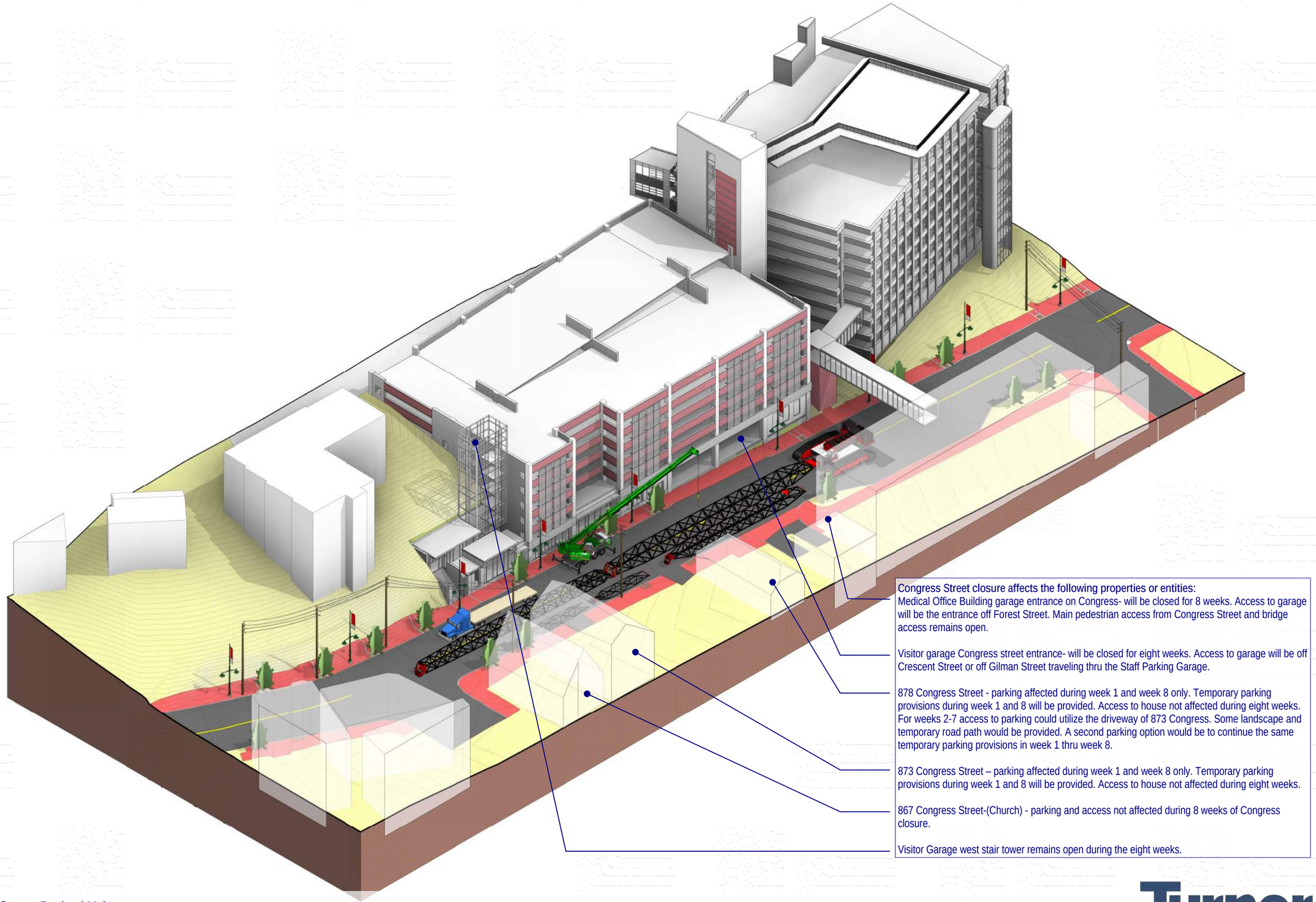


3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Enabling]

Turner



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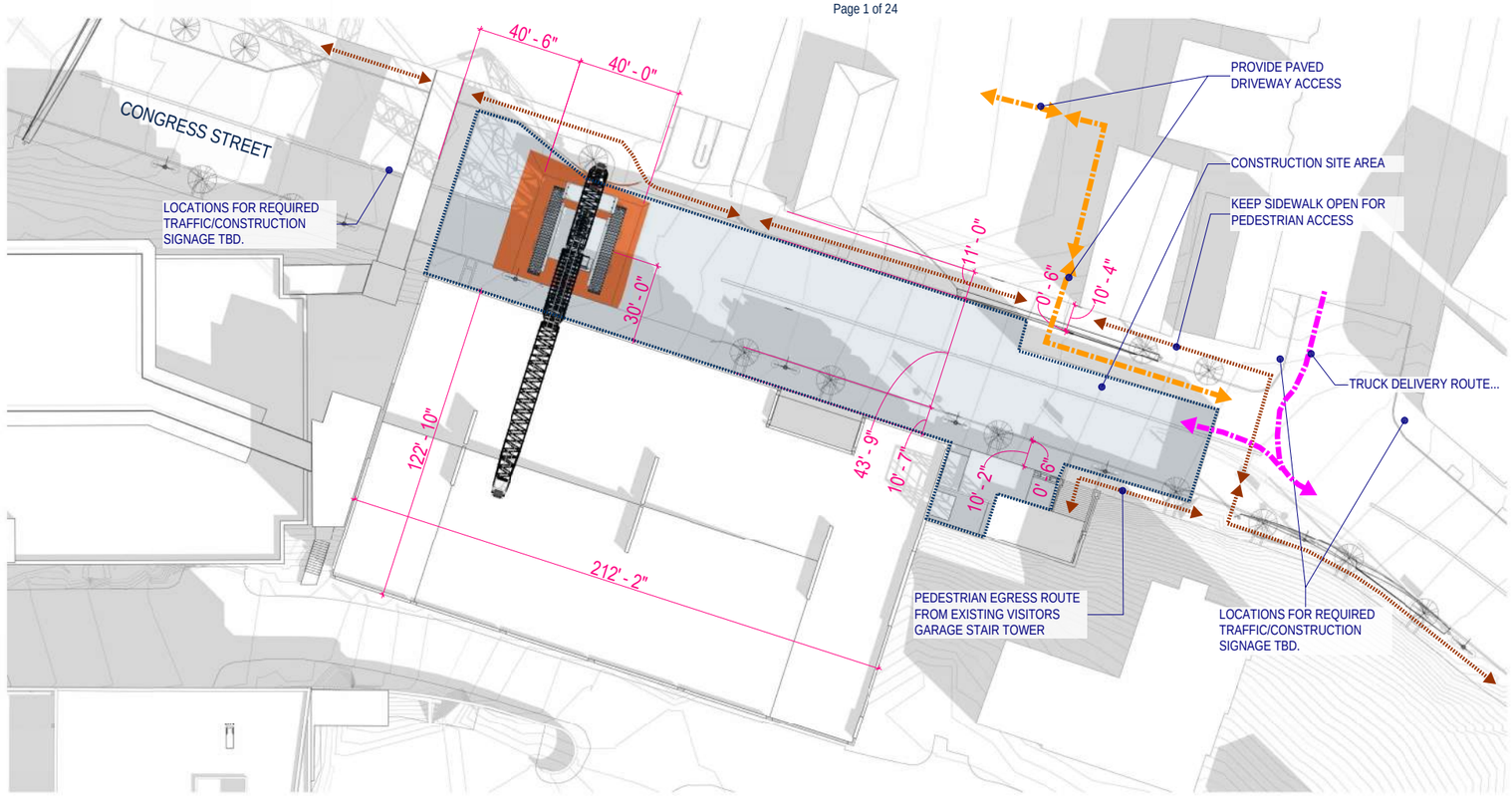

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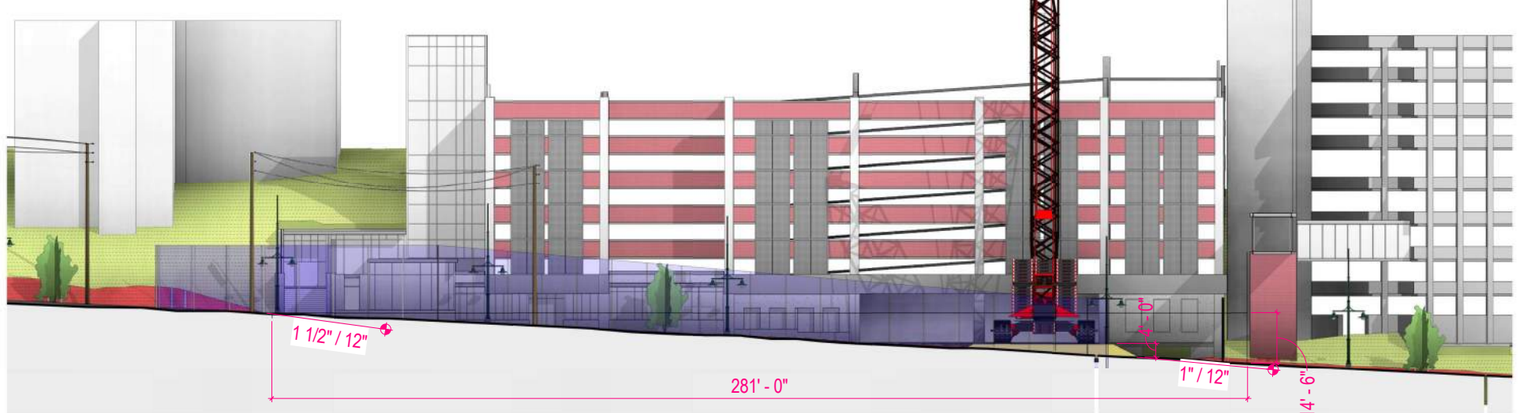

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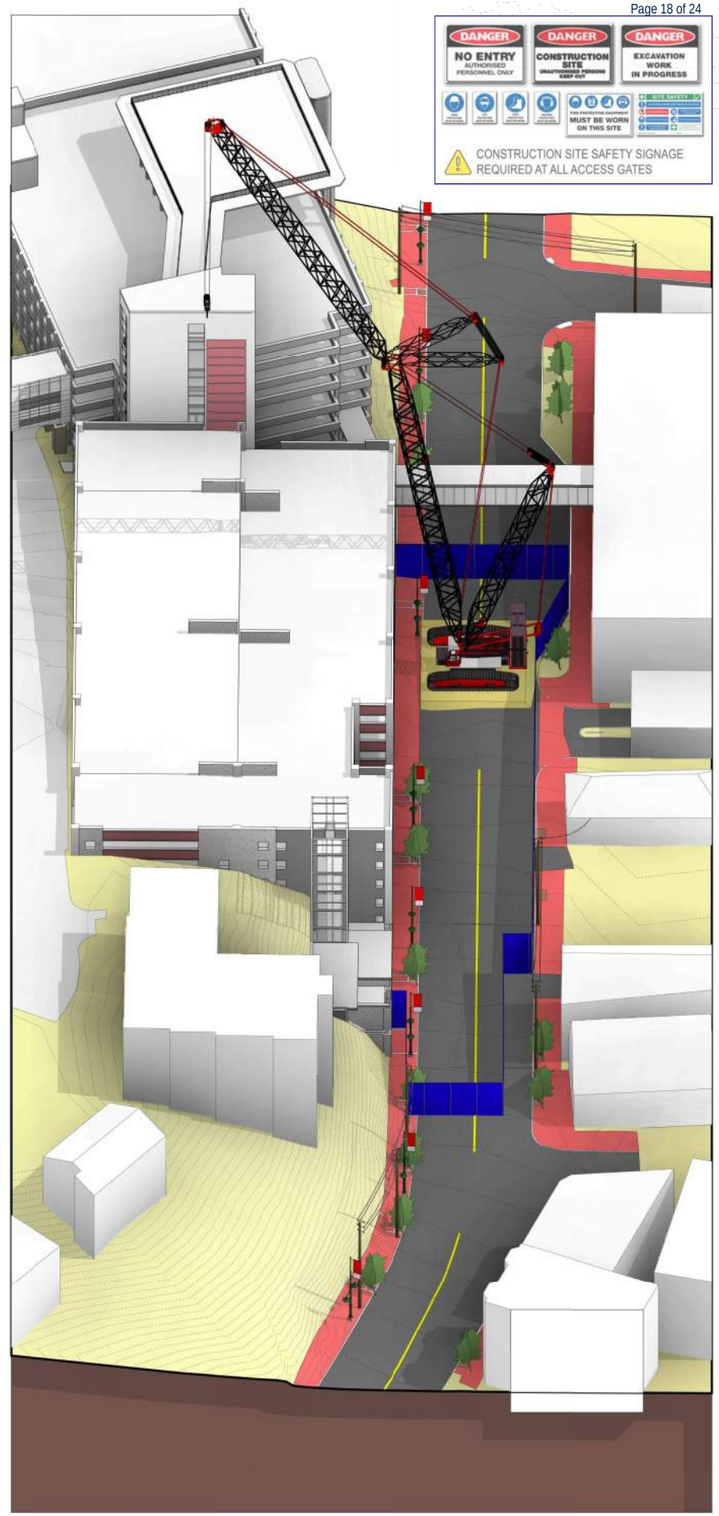

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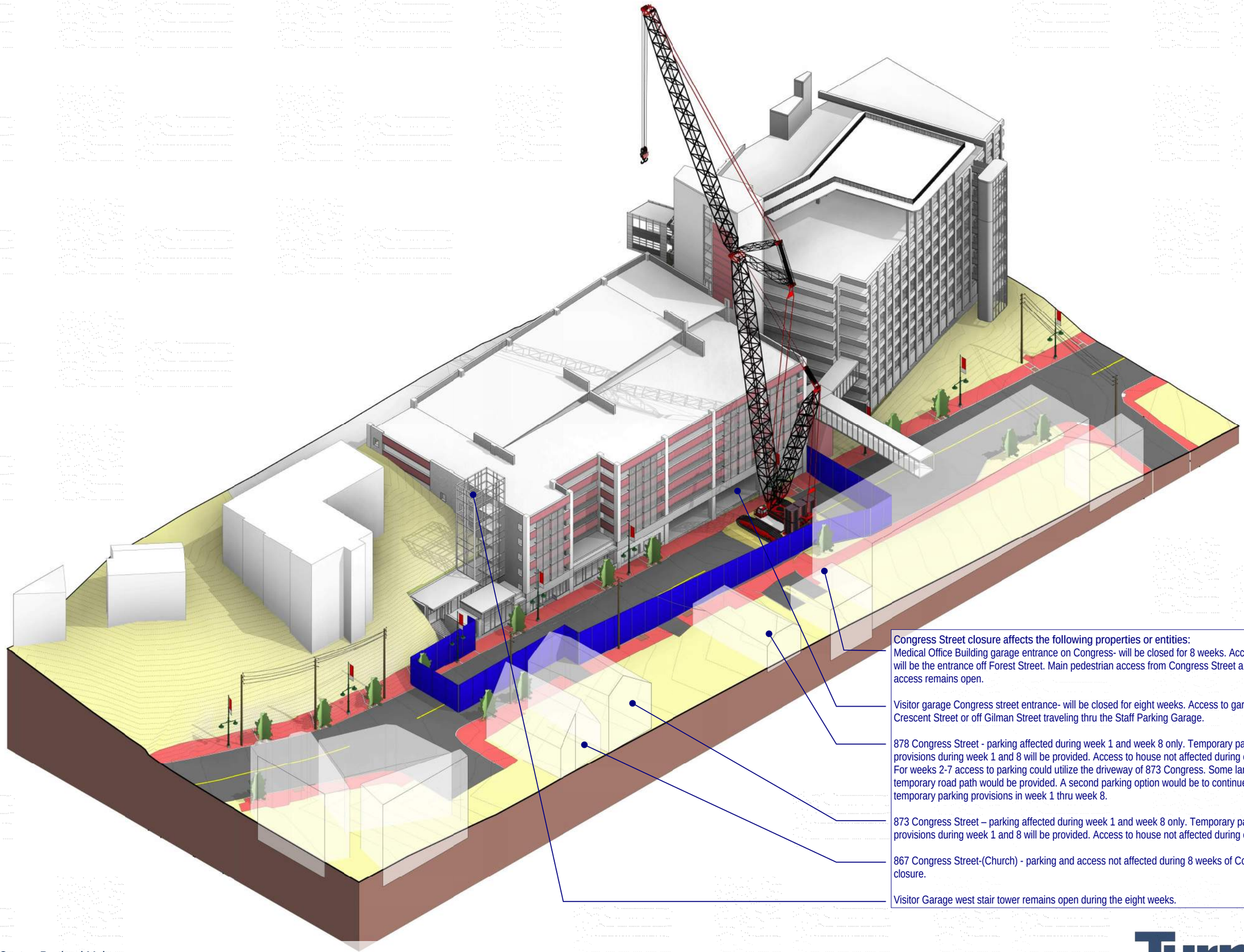

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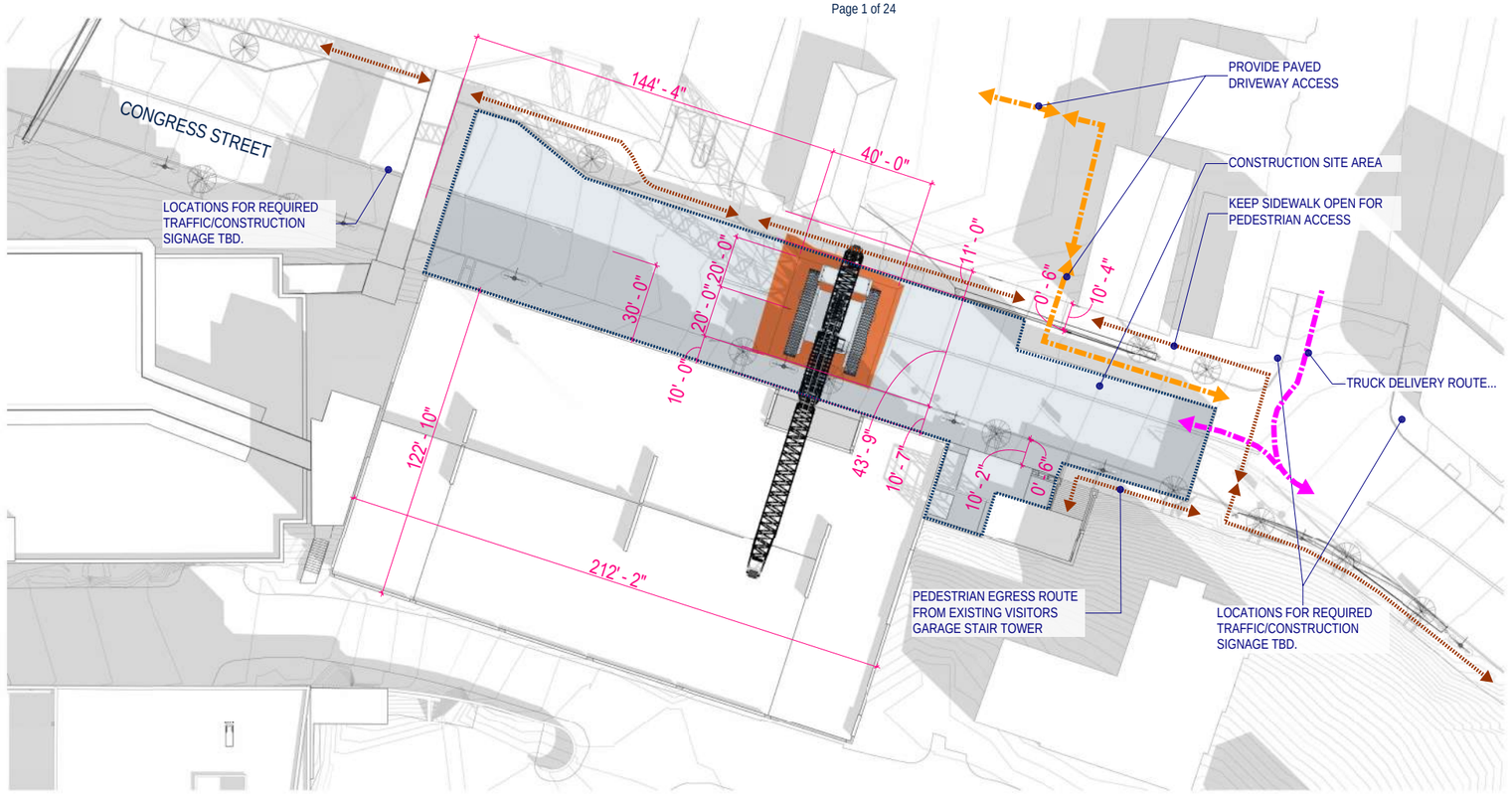
Turner



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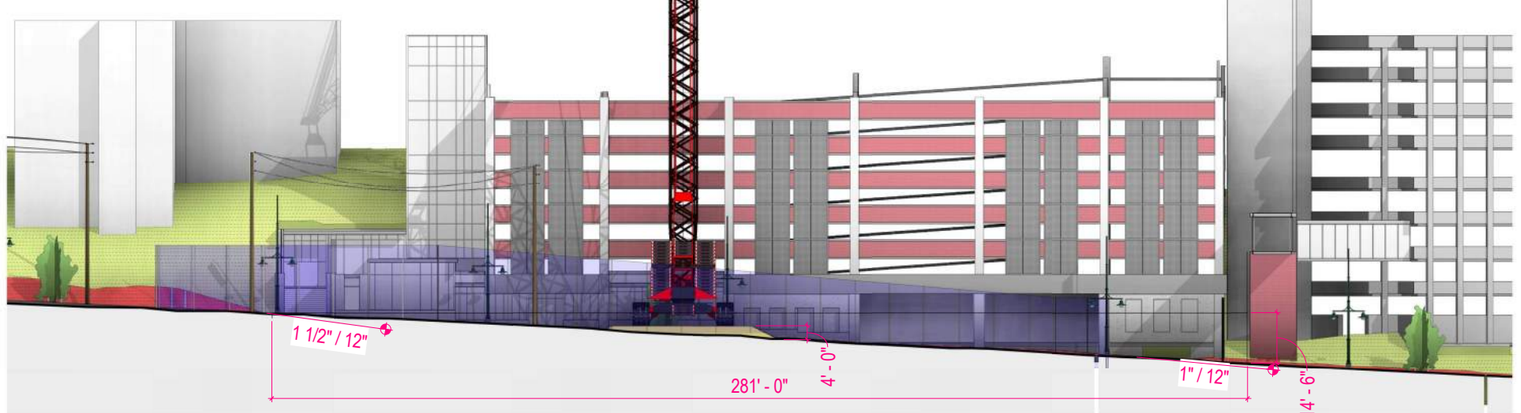

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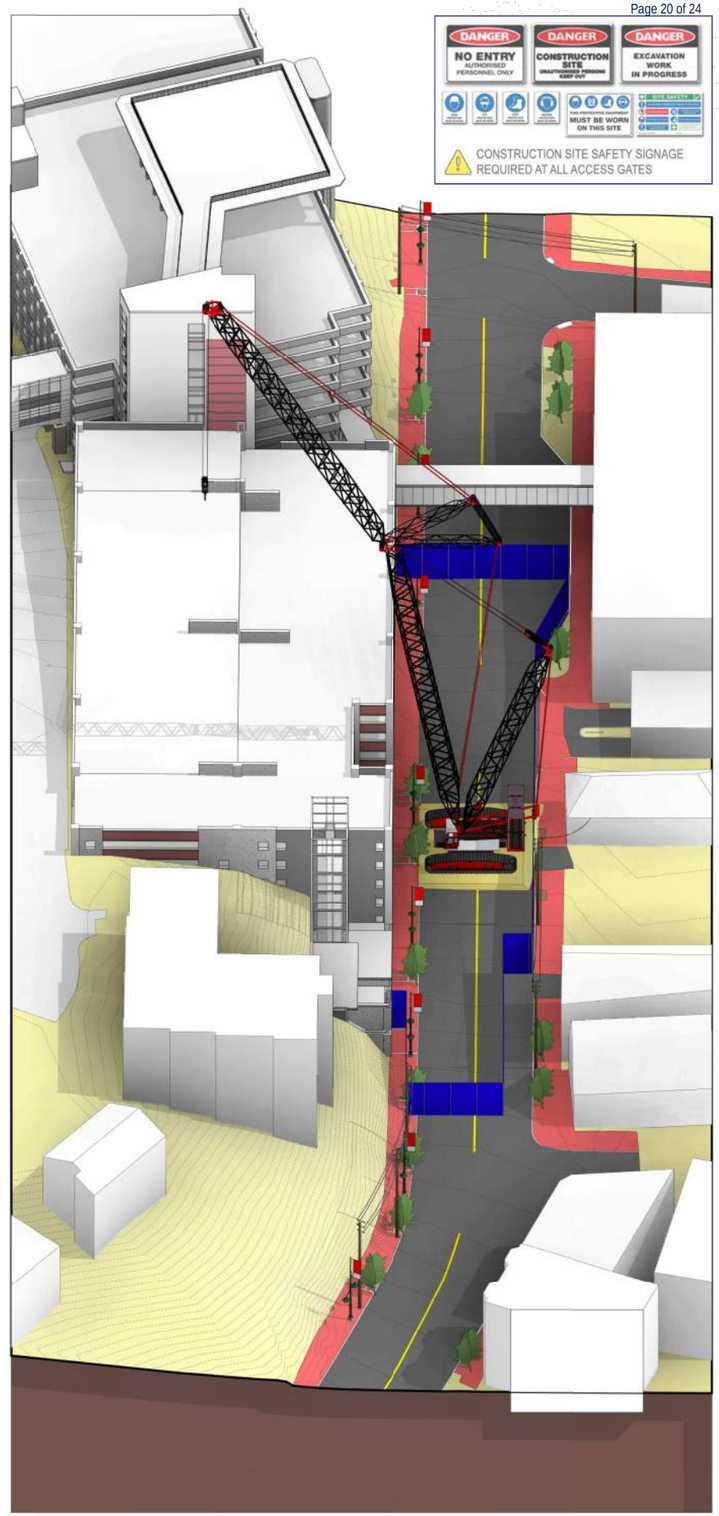

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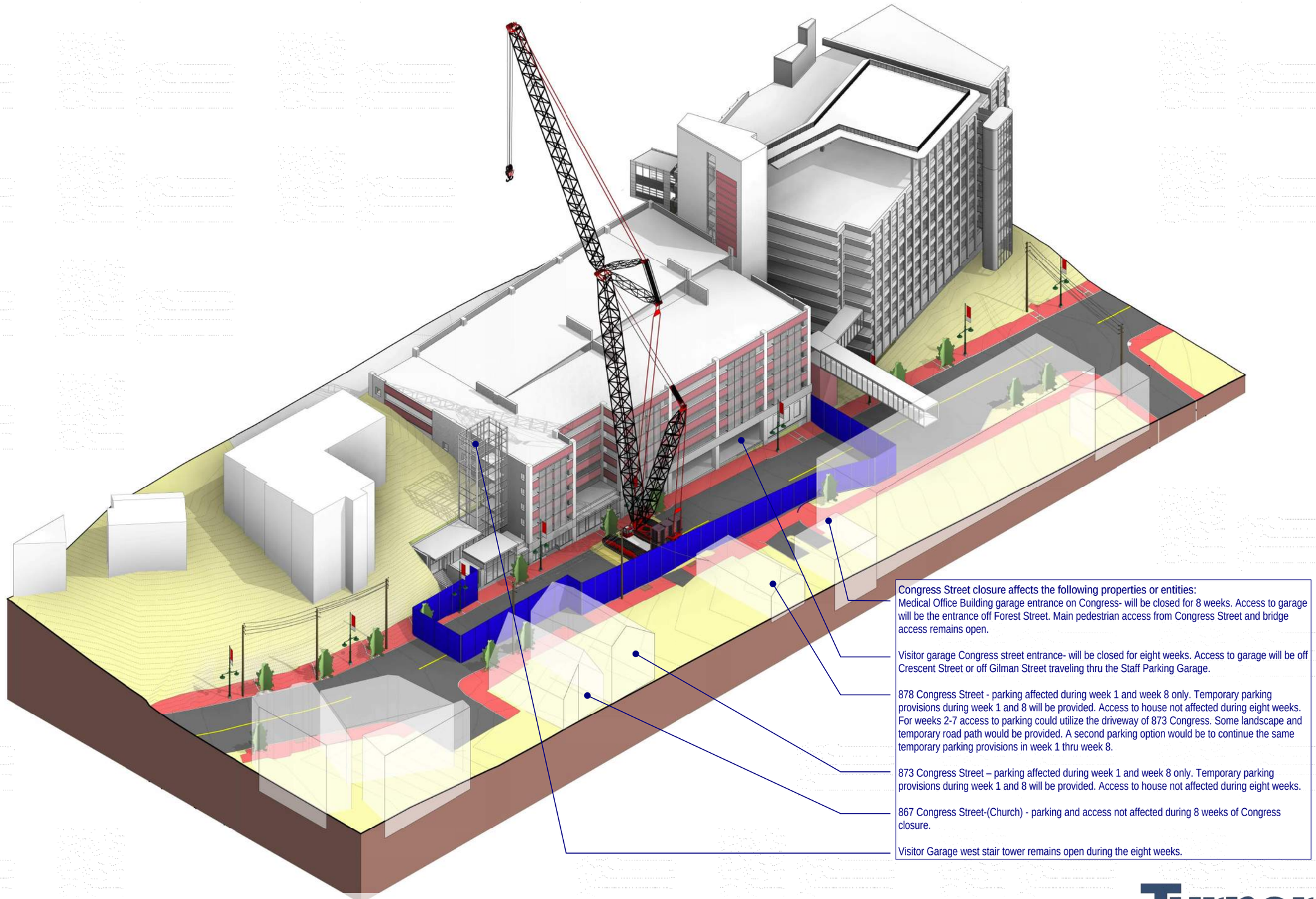
Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 2]

Turner



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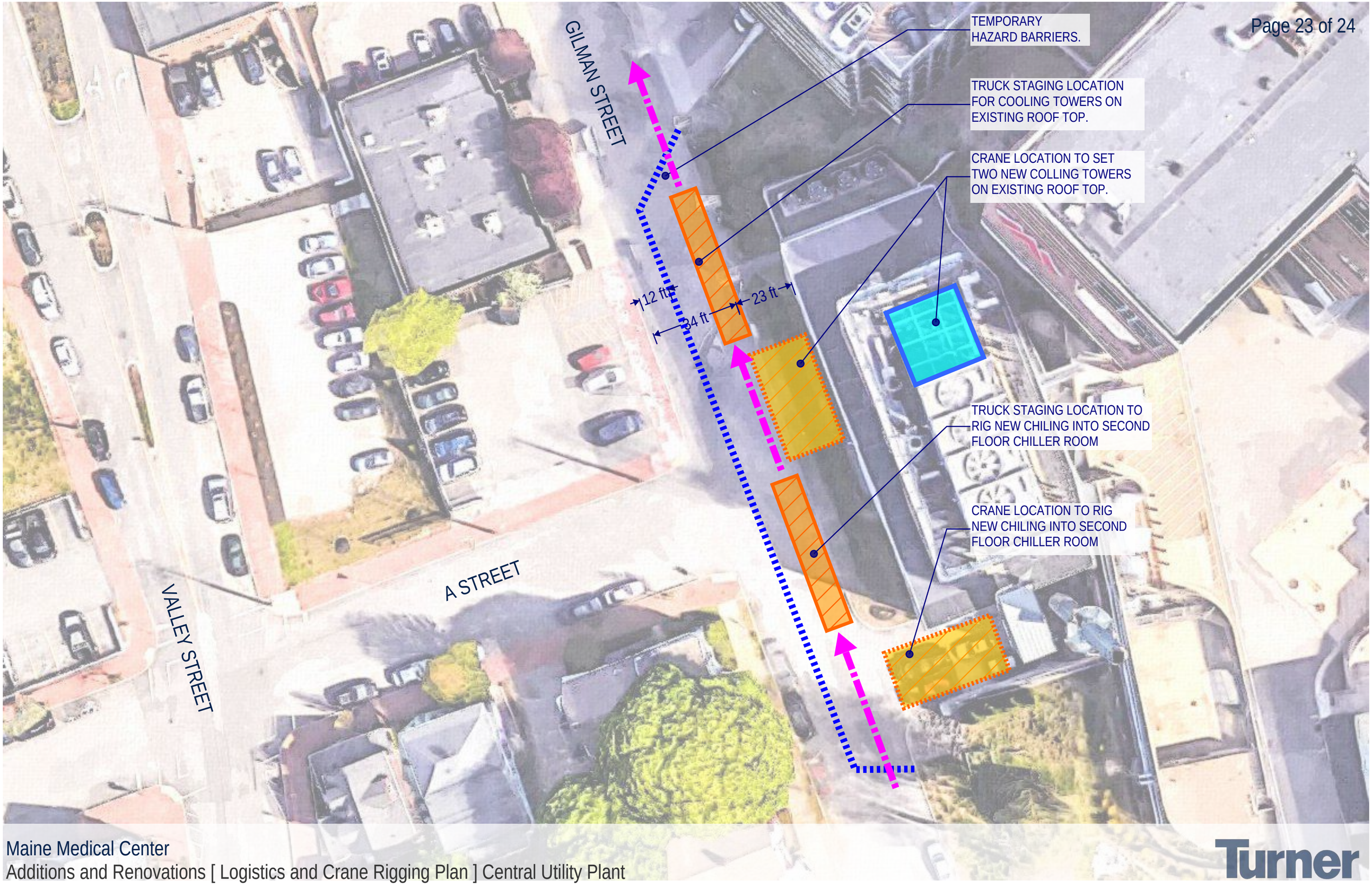
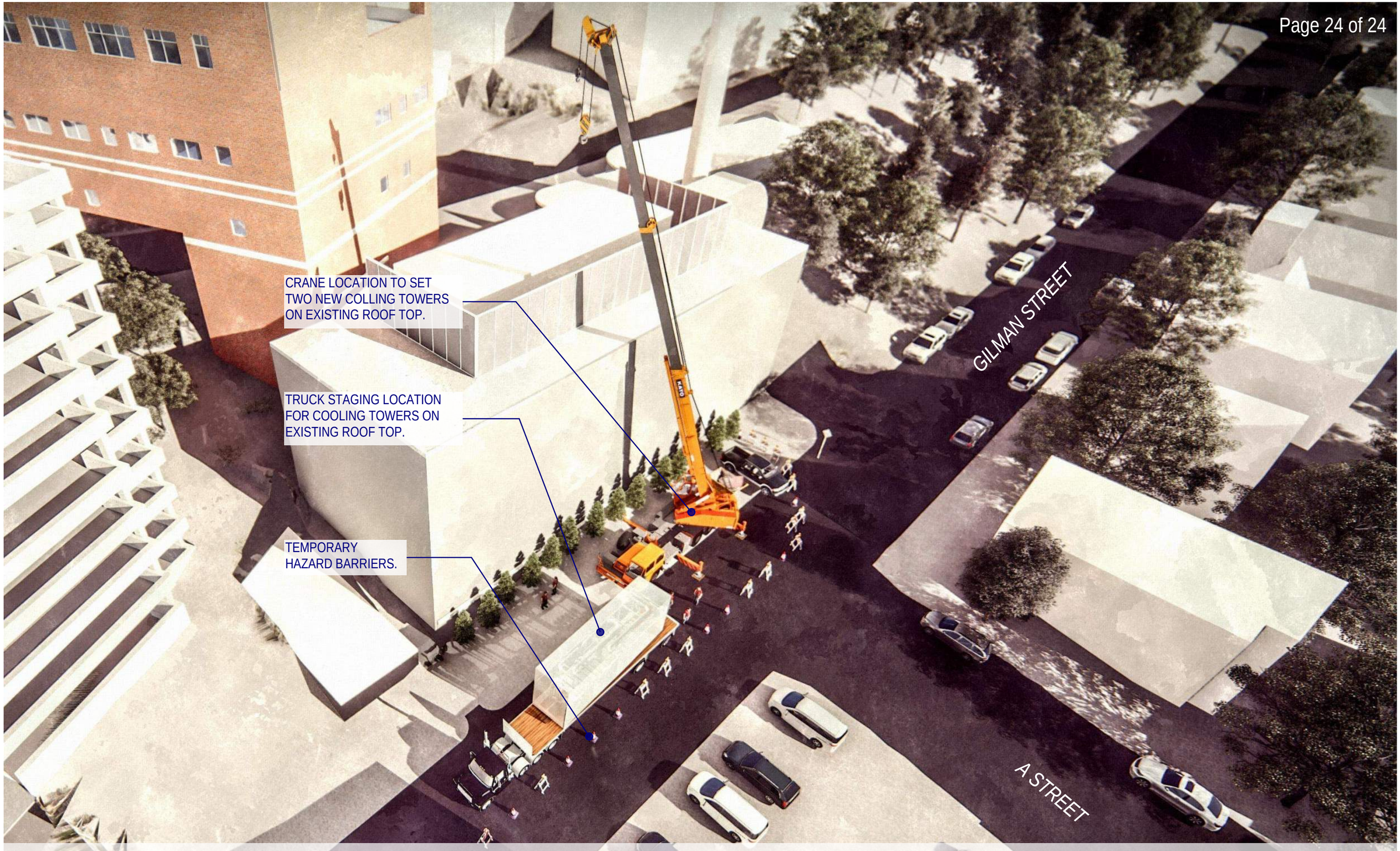
[Central Utility Plant] Logistics Plans and Studies

Turner


GILMAN STREET
A STREET
VALLEY STREET
TEMPORARY HAZARD BARRIERS.
TRUCK STAGING LOCATION FOR COOLING TOWERS ON EXISTING ROOF TOP.
CRANE LOCATION TO SET TWO NEW COLLING TOWERS ON EXISTING ROOF TOP.
12 ft
34 ft
23 ft
TRUCK STAGING LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM
CRANE LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM



Maine Medical Center

Additions and Renovations [Logistics and Crane Rigging Plan - Typical Both Locations] Central Utility Plant

Turner

MMC East Tower, Visitor Garage, CUP Work Estimated Schedule
Friday, January 05, 2018

ID	Task Name	Duration	Start	Finish
184	CONSTRUCTION EAST TOWER	83.3 wks	Fri 3/9/18	Mon 10/14/19
185	EAST TOWER OVERBUILD	83.3 wks	Fri 3/9/18	Mon 10/14/19
186	Enabling Work	11 wks	Fri 3/9/18	Fri 5/25/18
194	CONSTRUCTION	81.3 wks	Fri 3/23/18	Mon 10/14/19
195	Site Logistics Prep Work	68.3 wks	Fri 3/23/18	Mon 7/15/19
196	Remove Landscaping - Pave	5 wks	Fri 3/23/18	Fri 4/27/18
197	Site Fence	1 wk	Fri 4/6/18	Fri 4/13/18
198	Set up traffic barriers	1 wk	Fri 3/30/18	Fri 4/6/18
199	Install TMP Measures	1 wk	Fri 3/30/18	Fri 4/6/18
200	Wescott Street Closed	0 wks	Fri 4/6/18	Fri 4/6/18
201	Crescent Two way	0 wks	Fri 4/6/18	Fri 4/6/18
202	Wescott Street Opened	0 wks	Mon 7/15/19	Mon 7/15/19
203	Crescent Back to One Way	0 wks	Mon 7/15/19	Mon 7/15/19
204	Crane & Hoist	61.3 wks	Fri 4/6/18	Mon 6/10/19
205	Set up Mobile Crane	3 days	Thu 5/31/18	Mon 6/4/18
206	Setup Scaffold Stair Access	2 wks	Fri 4/6/18	Fri 4/20/18
207	HOIST	40 wks	Tue 9/4/18	Mon 6/10/19
208	Setup Hoist & Run	3 wks	Tue 9/4/18	Mon 9/24/18
209	Run Hoist	36 wks	Tue 9/25/18	Mon 6/3/19
210	Service Car Ready	0 wks	Mon 4/8/19	Mon 4/8/19
211	Remove Hoist	1 wk	Tue 6/4/19	Mon 6/10/19
212	Structural Steel/Concrete/SOFP	20 wks	Mon 6/4/18	Mon 10/22/18
220	Helipdad Steel Structure	36 wks	Tue 9/4/18	Mon 5/13/19
224	Exterior Wall	51 wks	Tue 7/3/18	Mon 6/24/19
283	MEP ROUGHING/CRITICAL WALLS	20 wks	Tue 10/23/18	Mon 3/11/19
303	MECHANICAL ROOFTOP	35 wks	Tue 7/3/18	Mon 3/4/19
311	EXTENSION of ELEVATORS	42 wks	Mon 10/8/18	Mon 7/29/19
328	Interior Fitout	37.4 wks	Fri 11/2/18	Mon 7/22/19
450	Helipad Structure	8 wks	Tue 5/14/19	Mon 7/8/19
454	Commissioning & Life Safety	22 wks	Tue 3/12/19	Mon 8/12/19
484	Cleaning	5 wks	Tue 7/16/19	Mon 8/19/19
487	TCO FINAL Inspections	1 wk	Tue 8/13/19	Mon 8/19/19
488	MMC OCCUPIES EAST TOWER	0 wks	Mon 8/19/19	Mon 8/19/19
489	MMC OPERATIONAL	8 wks	Tue 8/20/19	Mon 10/14/19
490	VISITOR GARAGE	53.4 wks	Fri 9/29/17	Tue 10/9/18
491	PRECONSTRUCTION	36.5 wks	Fri 9/29/17	Tue 6/12/18
492	VG Construction Documents	17 wks	Fri 9/29/17	Fri 1/26/18
496	Visitor Parking Structure-Procurement	32.5 wks	Fri 10/27/17	Tue 6/12/18
506	Visitor Garage GMP	5 wks	Fri 3/9/18	Fri 4/13/18
510	CONSTRUCTION-VISITOR PARKING GARAGE	25.3 wks	Fri 4/13/18	Tue 10/9/18
511	Project Start	0 wks	Fri 4/13/18	Fri 4/13/18
512	Logistics Setup	5.9 wks	Fri 4/13/18	Fri 5/25/18
513	Mobilize	0 wks	Fri 4/13/18	Fri 4/13/18
514	Site Logistics-fencing	1 wk	Fri 5/18/18	Fri 5/25/18
515	Establish Traffic Patterns	1 wk	Fri 5/18/18	Fri 5/25/18
516	Prep for precast connections	4 wks	Mon 4/16/18	Fri 5/11/18
517	Garage Precast Ready-210 pieces	0 wks	Fri 5/18/18	Fri 5/18/18
518	Precast Erection	17.2 wks	Fri 5/18/18	Mon 9/17/18
519	Cranes	8 wks	Fri 5/18/18	Fri 7/13/18
520	CONGRESS STREET	8 wks	Fri 5/18/18	Fri 7/13/18
521	CONGRESS STREET CLOSED	0 wks	Fri 5/18/18	Fri 5/18/18
522	Crane 1 - Congress Street -	4 days	Fri 5/25/18	Thu 5/31/18
523	Remove Congress Crane	4 days	Mon 7/9/18	Fri 7/13/18
524	Precast Erection-FROM CONGRESS	5.4 wks	Thu 5/31/18	Mon 7/9/18
525	Congress Street Precast -Level Elev 154'	5 days	Thu 5/31/18	Thu 6/7/18
526	ED Precast Level Elev 154	5 days	Thu 6/7/18	Thu 6/14/18
527	Congress Street Precast -Level Elev 164'	5 days	Thu 6/14/18	Thu 6/21/18
528	ED Precast Level Elev 164	4 days	Thu 6/21/18	Wed 6/27/18
529	Congress Street Precast -Level Elev 164'	4 days	Wed 6/27/18	Tue 7/3/18
530	ED Precast Level Elev 174	4 days	Tue 7/3/18	Mon 7/9/18
531	PRECAST DETAILING	10 wks	Mon 7/9/18	Mon 9/17/18
534	East Stair Tower	9 wks	Tue 7/3/18	Tue 9/4/18
538	TEMP BRIDGE	6 wks	Tue 7/17/18	Tue 8/28/18
541	EXTERIOR CLADDING	8 wks	Tue 7/17/18	Tue 9/11/18
542	PLUMBING	10 wks	Tue 7/17/18	Tue 9/25/18
543	ELECTRICAL	10 wks	Tue 7/17/18	Tue 9/25/18
544	FIRE ALARM	4 wks	Tue 8/28/18	Tue 9/25/18
545	MISC METALS	8 wks	Tue 7/17/18	Tue 9/11/18
546	MEP Equipment Rooms	6 wks	Tue 8/21/18	Tue 10/2/18
547	SIGNAGE	1 wk	Tue 9/25/18	Tue 10/2/18
548	TCO Garage	3 days	Tue 10/2/18	Fri 10/5/18
549	OPEN GARAGE	0 days	Tue 10/9/18	Tue 10/9/18
550				
551	CENTRAL UTILITY PLANT - CUP	66 wks	Fri 12/22/17	Fri 3/29/19
552	CUP Construction Documents	5 wks	Fri 12/22/17	Fri 1/26/18
555	CUP-Procurement	61 wks	Mon 1/29/18	Fri 3/29/19
556	Cooling Tower Award	36 wks	Mon 1/29/18	Fri 10/5/18
563	Chiller Award	37 wks	Mon 1/29/18	Fri 10/12/18
570	COOLING SEASON OVER	0 wks	Fri 11/9/18	Fri 11/9/18
571	Mechanical piping	12 wks	Mon 11/12/18	Fri 2/1/19
572	Electrical	12 wks	Mon 11/12/18	Fri 2/1/19
573	INSTALL EQUIPMENT	2 wks	Mon 1/7/19	Fri 1/18/19
574	Gilman Street Lane Closure	2 wks	Mon 1/7/19	Fri 1/18/19
575	MEP Hookups	5 wks	Mon 1/21/19	Fri 2/22/19
576	MEP startup	5 wks	Mon 2/18/19	Fri 3/22/19
577	MEP CX	3 wks	Mon 3/11/19	Fri 3/29/19

GORRILL PALMER

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

Traffic / Trip Generation Assessment
Maine Medical Center East Tower and Visitor Garage Expansions

Date: December 11, 2017
Subject: Traffic / Trip Generation Assessment
Maine Medical Center Expansion – Phase I
To: Maine Medical Center
From: Randy Dunton, Gorrill Palmer (JN 2866.01)

Gorrill Palmer (GP) has prepared this Traffic Assessment Memorandum to address traffic impacts and trip generation associated with construction of MMC's East Tower addition and Visitor Garage expansion. This Traffic Assessment is based on discussions at a pre-application meeting with the City Staff and traffic peer reviewer (Mr. Errico) on November 15, 2017 at City Hall. Details of the project and associated traffic impacts, if any, are described as follows:

East Tower Addition / Helipad

This effort includes the addition of two floors (approximately 60,000 sf) to the existing East Tower as well as relocating the helipad to the roof. The purpose of this expansion is to decompress existing patient bed density and allow for more private single patient rooms. The hospital is currently licensed for 637 beds; of which approximately 51% are semi private. As described in the IDP, on average 60 inpatient beds in semi-private rooms are unavailable each day because for some reason a patient can't share a room. It should be noted, that this decompression does not significantly increase patient volume.

Conclusion: The expansion of the East Tower will not increase trip generation to / from the hospital.

Patient / Visitor Garage Addition

This effort includes the addition of three new floors to the existing Patient / Visitor Parking Garage, an increase of approximately 225 spaces to the existing 480 space garage. This increase in parking spaces will not generate additional traffic to the adjacent roadway network and may actually reduce vehicle miles traveled on the adjacent roadway system by reducing the number of vehicles driving around looking for parking spaces.

Conclusion: The expansion to the Patient / Visitor Parking Garage will not increase trip generation to / from the immediate area and may reduce the traffic on the surrounding roadway network / neighborhoods by reducing drivers looking for parking spaces.

Future Phases

This assessment only details the traffic impacts of the projects described above. Future phases include; new six story Congress Street building and relocation of the employee parking garage to St. John Street. These future Phases will require a MaineDOT Traffic Movement Permit (TMP) and full Traffic Impact Study (TIS). Maine Medical Center has already been discussing these future phases with the City and will continue to work closely with the City through the traffic studies.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER AND VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION M CONSISTENCY WITH CITY MASTER PLANS

THE PROJECT DESIGN IS GOVERNED BY THE CONDITIONS SET FORTH IN THE INSTITUTIONAL DEVELOPMENT PLAN (IDP). THE IDP, PAGE 24 , ARTICULATES COMPLIANCE WITH WITH THE CITY COMPREHENSIVE PLAN .

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION N UTILITIES

AS REQUIRED BY THE PORTLAND WATER DISTRICT, THE MMC MECHANICAL ENGINEER HAS POPULATED THE EXCEL SPREADSHEET PROVIDED BY BTHE WATER DISTRICT (SEE ATTACHMENT). AS STATED IN WRITTEN SUBMISSION S-1, THE EAST TOWER EXPANSION IS A DECOMPRESSION OF FACILITIES AND WILL NOT INCREASE THE NUMBER OF HOSPITAL BEDS. THERE WILL BE A SLIGHT INCREASE IN STAFF, HOWEVER , AND THE INCREASED WATER USE IS CALCULATED AS FOLLOWS :

(6) ADDITIONAL STAFF TOILETS @ (325) GPD = 1950 GPD
(2) ADDITIONAL STAFF SINKS @ (50) GPD = 100 GPD
TOTAL INCREASED WATER USE = 2050 GPD

THE VERTICAL EXPANSION WILL TIE INTO EXISTING WATER, SANITARY SEWER AND ELECTRICAL INFRASTRUCTURE, WHICH HAVE THYE CAPACITY TO SERVE THE EXPANSION.

Peak Flow Based on Fixture Count

Customer	Maine Medical Center
Street Address	22 Bramhall Street
City	Portland

Fixture		Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub		8	x	0	=	0
Bedpan Washers		10	x	2	=	20
Bidet		2	x	0	=	0
Dental Unit		2	x	0	=	0
Drinking Fountain - Public		2	x	0	=	0
Kitchen Sink		2.2	x	0	=	0
Lavatory		1.5	x	64	=	96
Showerhead (Shower Only)		2.5	x	64	=	160
Service Sink		4	x	2	=	8
Toilet	-Flush Valve	35	x	70	=	2450
	-Tank Type	4	x	0	=	0
Urinal	-Pedestal Flush Valve	35	x	0	=	0
	-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)		4	x	8	=	32
Dishwasher		2	x	0	=	0
Washing Machine		6	x	0	=	0
Hose (50 ft. Wash Down)	-1/2 in.	5	x	0	=	0
	-5/8 in.	9	x	0	=	0
	-3/4 in.	12	x	0	=	0
Combined Fixture Value Total						2766

Customer Peak Demand From Fig. 4-2 or 4-3	400
Pressure Factor From Table 4-1	1.17

No. of Irrigation Sections (Areas of 100 sq. ft.)			0
Irrigation Factor	(1.16-Spray Systems, 0.40-Rotary Systems)		
Hose Bibs for Irrigation:			
	Size	Fixture Value	No. of Fixtures
	1/2"		
	5/8"		
	3/4"		

Total Fixed Demand (Peak Flow) 468 gpm

Table 4-1 Pressure Adjustment Factors

Working Pressure at Meter Discharge (psi)	Pressure Adjustment Factor
35	0.74
40	0.80
50	0.90
60	1.00
70	1.09
80	1.17
90	1.25
100	1.34

Adapted from AWWA Manual M22 table 4-1

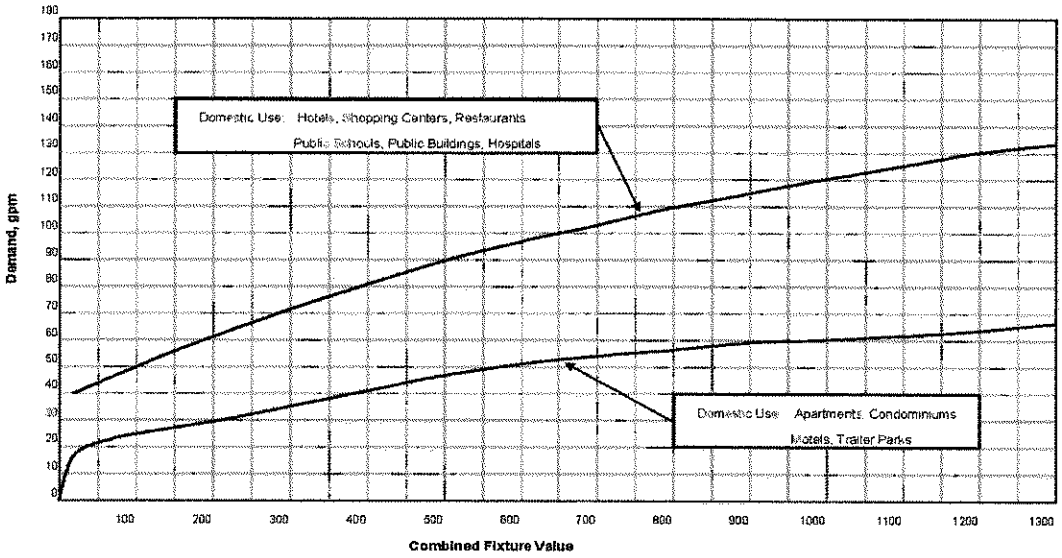


Figure 4-2 Water flow demand per fixture value - low range

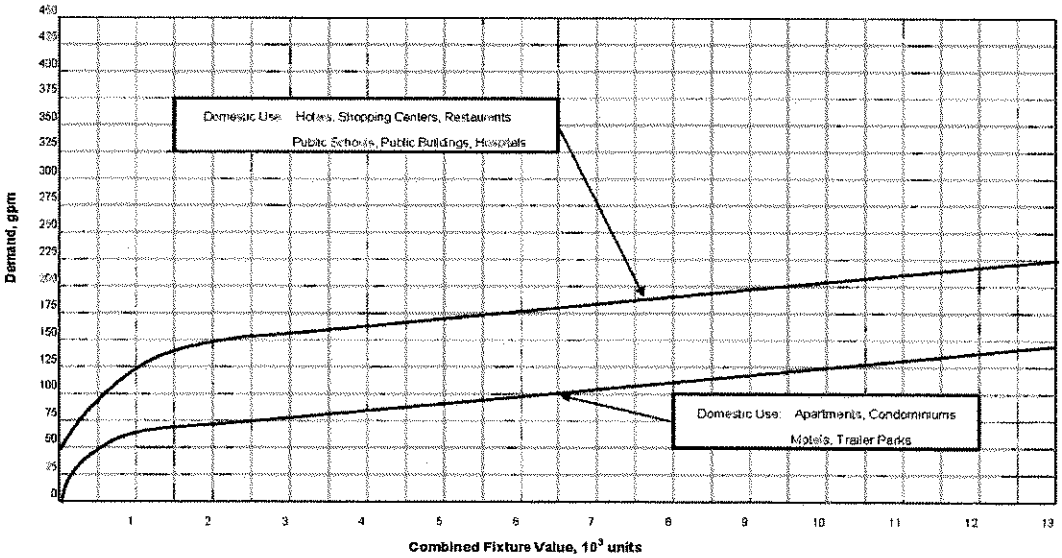


Figure 4-3 Water flow demand per fixture value - High range

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION O SOLID WASTE

AS STATED IN WRITTEN SUBMISSION S – 1 , THE EAST TOWER EXPANSION IS A DECOMPRESSION OF FACILITIES AND WILL NOT INCREASE THE NUMBER OF HOSPITAL BEDS. THERE WILL BE A SLIGHT INCREASE IN STAFF, HOWEVER, THE QUANTITY OF SOLID WASTE WILL NOT INCREASE SUBSTANTIALLY. MMC HAS A SOLID WASTE HANDLING CONTRACT WITH TROIANO WASTE MANAGEMENT, AND ALL DISPOSALS COMPLY WITH APPLICABLE REGULATIONS.

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	City of Portland Planning Department
From:	Jeffrey Keilman, Perkins+Will; Al Green, MMC
Date:	January 19, 2018
Subject:	**MMC East Tower Expansion – Phase 1 Design Narrative**
Attachments	
	Slides shared with City Staff on January 16, 2018

Campus Vision

The campus transformation of Maine Medical Center draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the hospital will reflect its location within Portland and the state of Maine. The goal is to preserve the historic character of the existing campus yet provide the opportunity for new design identities to develop that represent the modern delivery of healthcare and the future of Maine Medical Center.

Many key design drivers and interventions envisioned for Maine Medical Center's campus transformation balance the clinical needs of the hospital with the campus' place within the city of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with the city. This goal is balanced with the clinical needs of the patients served by MMC. Healthcare design has to start with the internal program and layout to ensure a successful and functional design. From there, the exterior design can begin to take shape and be informed by the internal concepts.

The ultimate success of the project will be to provide a positive patient and visitor experience. The creation of healing environments is an essential element to the design of the submitted projects. This is through the incorporation of nature, natural light, and the blending of interior and exterior. Access to views and light are proven to improve positive patient outcomes. Proper location and use of glass and transparency provides connections to the exterior to improve patient experience but also to further reinforce wayfinding.

The current projects submitted within this Site Plan application were developed as a continuation of existing conditions. The façade of the East Tower expansion will relate to the existing conditions and massing of the East Tower by utilizing metal panel and glass.

The internal planning strategies, critical for a clinically driven building, aimed to blend the exterior with the interior through strategic planning that enabled the interiors to be opened up to and expressed on the exterior through the large corner windows.

The East Tower Expansion is conceived as the next phase in the campus replacement and modernization that will continue to blend and blur the new and existing campus architecture. The

addition will continue to link the vision started with the Bean 2 surgical expansion and will culminate with the Congress St. addition.

Context

The East Tower and Visitor Garage expansions are extensions of existing conditions, and as such derive many of the material choices from the existing adjacent construction.

Through the design process, the team explored the impact of the structures from various viewpoints understanding the additions scale within the urban context. Multiple angles and views were analyzed by the design team in conjunction with Maine Medical Center, including long-views, which influenced the decisions of various fenestration patterns and scale. This is particularly important for the East Tower addition which is visible from many points in the city. The design responds to both the long views with the use of scale of fenestration, but also manages to respond to local context through the attention to details, and sensitivity to materials and palate from the campus and neighborhood.

Building Design

The current Site Plan submission outlines (2) projects that are expansions and extensions of existing conditions. Within this context the design process still aimed to express the internal program constraints and create a dialogue between the interior and exterior.

Design is always subjective but the process to reach the current solution was reviewed and vetted by many parties, including critical voices form Maine Medical Center but also internally to Perkins+Will with multiple peer design reviews. The Perkins+Will internal review includes international designers as well as those from across the United States. The proposed design was universally selected as the best option to meet with the campus vision and existing context.

The design team believes the response for the East Tower expansion is in line with the key elements of design outlined through the design guidelines established in MMC's Institutional Development Plan, including the attention to proportion, rhythm, and use of materials. Design iterations were studied and reviewed by multiple stakeholders, including Maine Medical Center. The proposed design was the first solution where all parties agreed that the strategy successfully unifies the existing structure with the new addition while meeting the stringent interior requirements for advanced patient care in a healthcare setting.

By maximizing and utilizing the opportunities provided by the massing and proportions, the design is unified with the existing structure, but also creates urban scale gestures recognizing the prominence within the city. In particular, the scale of multistory fenestration and use of rhythm provided by the interior program.

One key design approach was to limit the current idiosyncrasies that are on the existing East Tower building that are not represented by any of the adjacent structures on the Maine Medical campus. In particular, the pavilions, Richards, and Bean are buildings that have a minimalist approach to massing and detailing on their exterior facades. In essence, the proposed design is more compatible with the existing campus and future goals outlined within the previously approved IDP. This was achieved by

simplifying the palate of materials and utilizing the existing materials on the structure. Introduction of new materials or further reinforcing the banding would have the opposite effect of creating a larger impact of the massing within the city and the campus.

The Visitor Garage expansion will match the current rhythm and proportions of the existing garage. The street façade of the Visitor Garage is an existing condition however opportunities for activation are being considered currently.

Building Materials

The selected materials for each addition are derived from the existing materials on the building and are as follows:

- East Tower – White Aluminum Composite Panels and Glass Curtain Wall
- Visitor Garage – Precast Concrete Panels with imbedded brick

Design Constraints

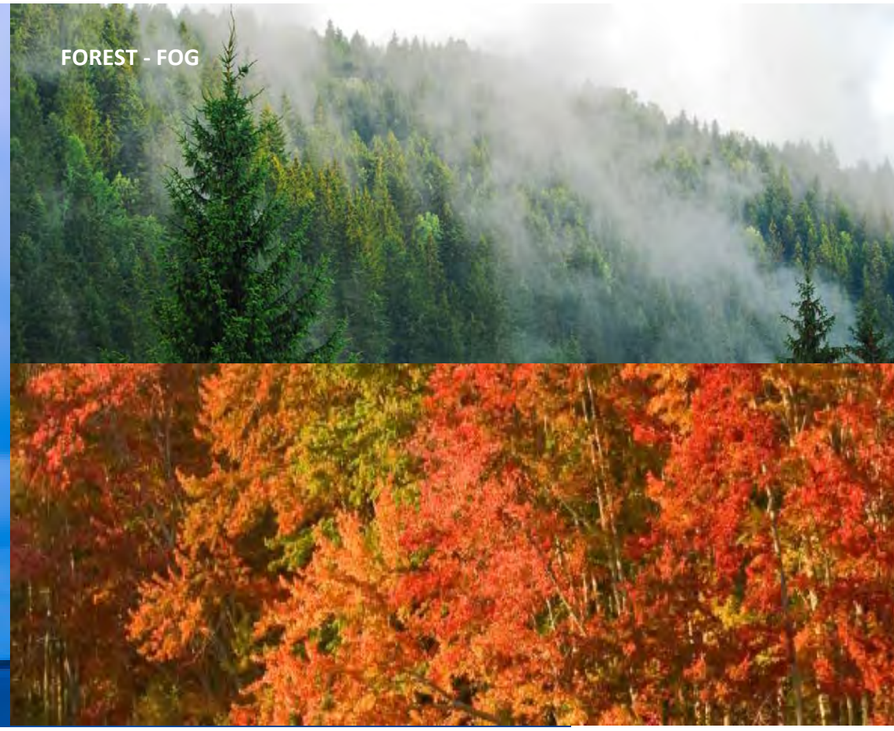
As with any building addition or expansion, existing conditions and real world constraints are critical in determining the final design solution. In particular, constructability for both the East Tower and Visitor Garage were important design drivers. Capacity within the existing structure, feasibility of installation of façade systems, and schedule were considered in selecting the final design solution.

hcc: Project File
Chuck Siconolfi – P+W
Romeo Moreira – P+W
Rashid Ashraf – P+W
Adam Troidl - Colliers
Mark Harris - MMC
Walter Pochebit – MMC
Al Green – MMC
Dennis Morelli - MMC

MMC SITE PLAN SUBMISSION

EAST TOWER & VISITOR GARAGE

CONCEPT DIAGRAMS



SOLID HEAVY

SOLID / LIGHT

ETHEREAL

INTEGRATION OF INSIDE AND OUTSIDE

Blurring the lines between the inside and the outside to bring the garden into the hospital.

CIRCULATION

MATERIALS INSPIRED BY MAINE

50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.

50 PALETTE

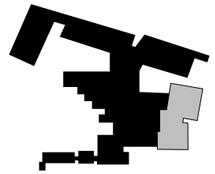
Sky

Sea

Land

COLOR OPTIONS

FLOOR PLAN



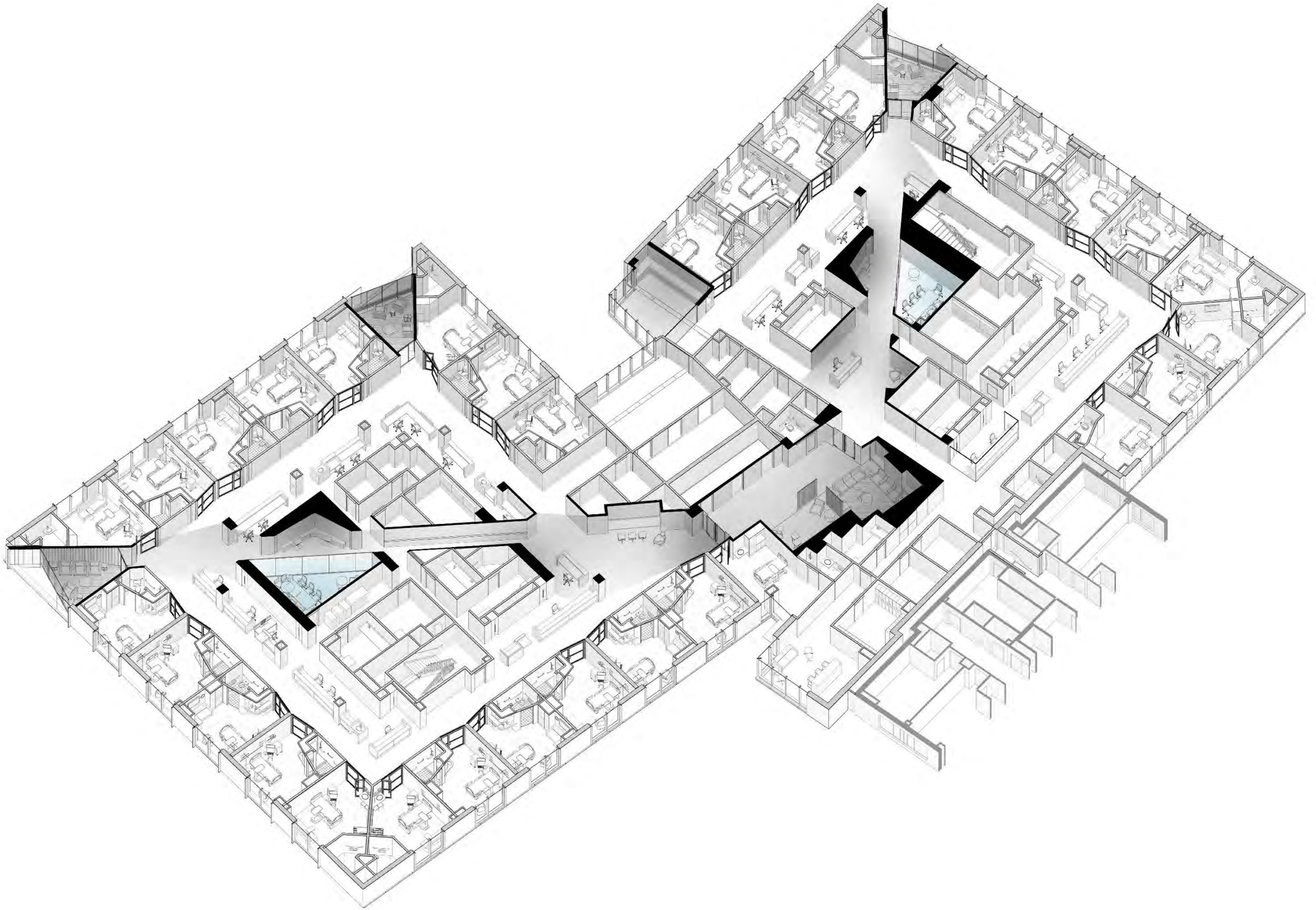
Views to White Mountains

Views to Casco Bay

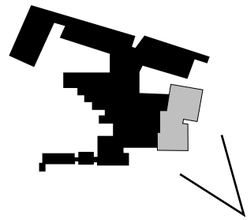
Views to Portland Water Front

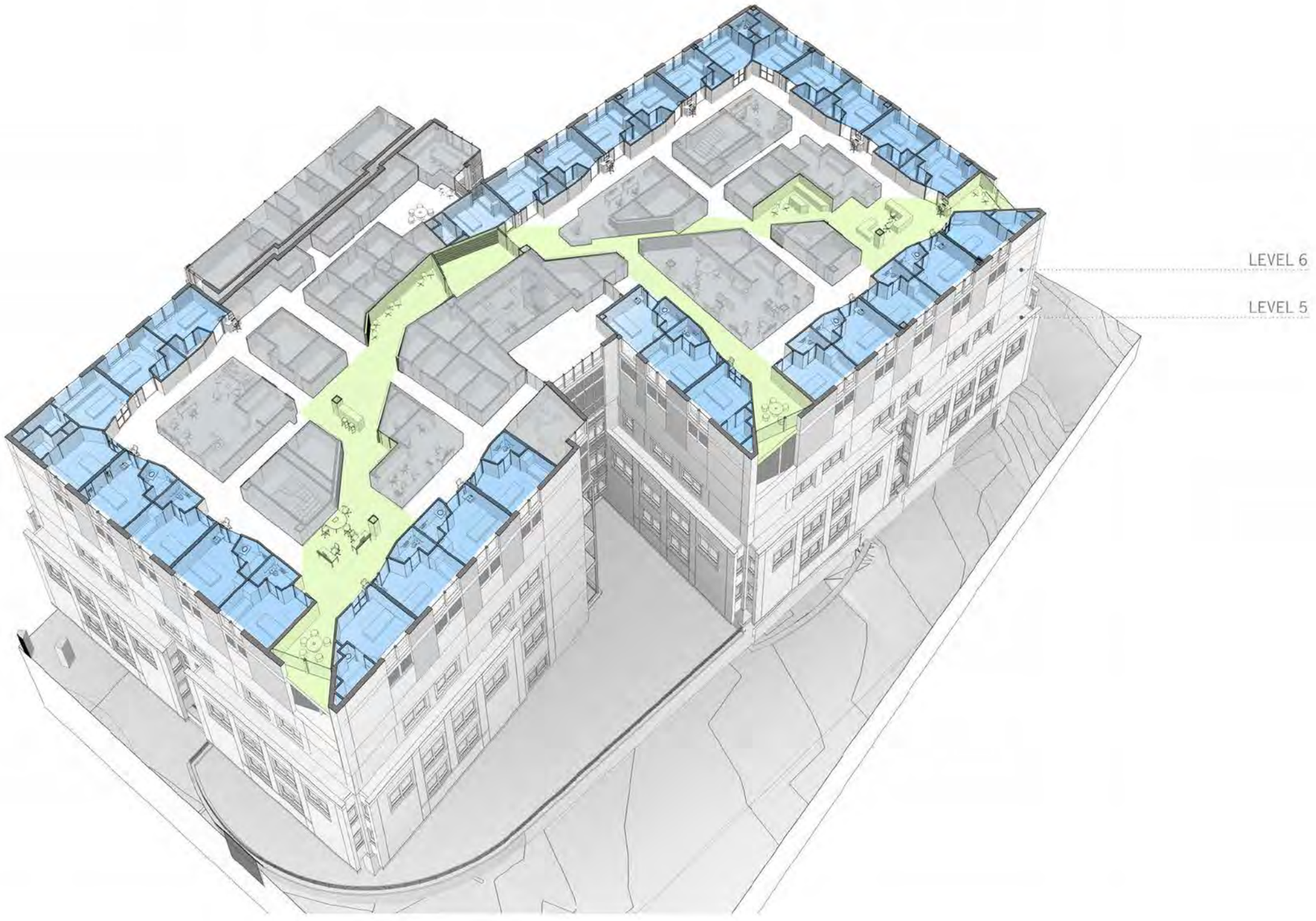
0 10 20 50

AXONOMETRIC

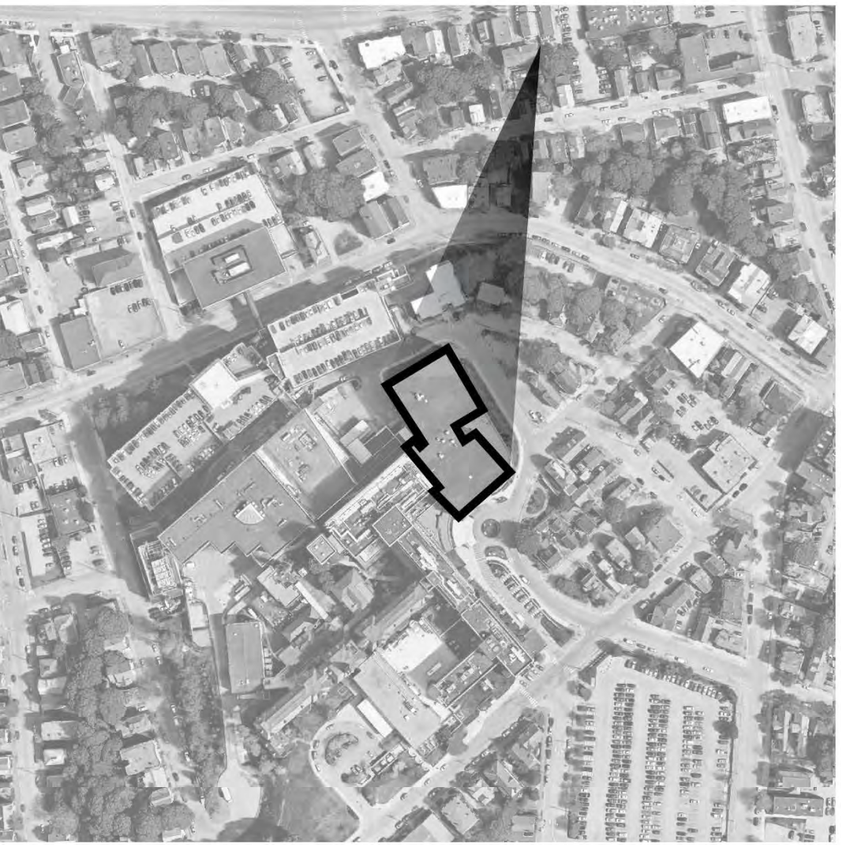


AXONOMETRIC



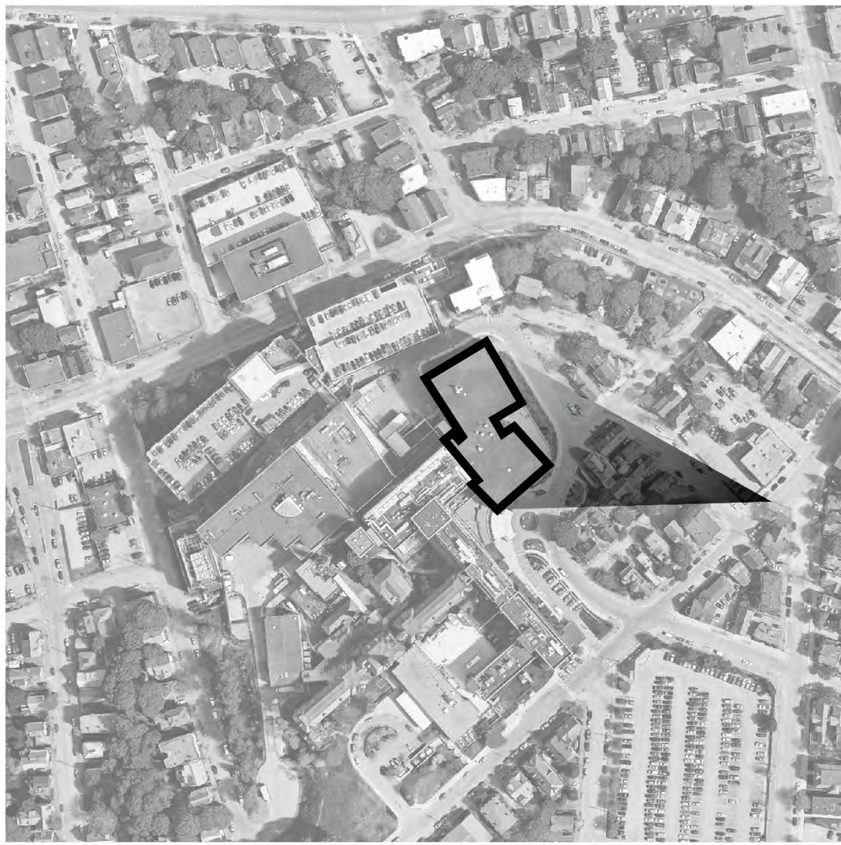


CAMPUS AERIAL



AERIAL VIEW

VIEW FROM BRAMHALL ST



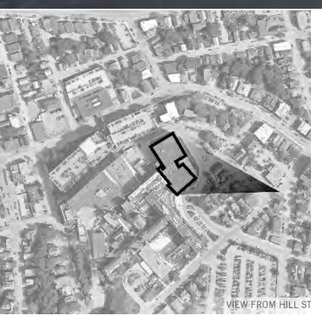
VIEW FROM HILL ST

AERIAL VIEW
South West

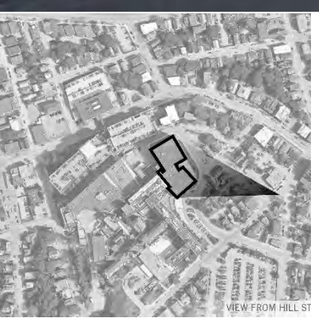
South West

Bramhall and Chadwick Street

Bramhall and Chadwick Street

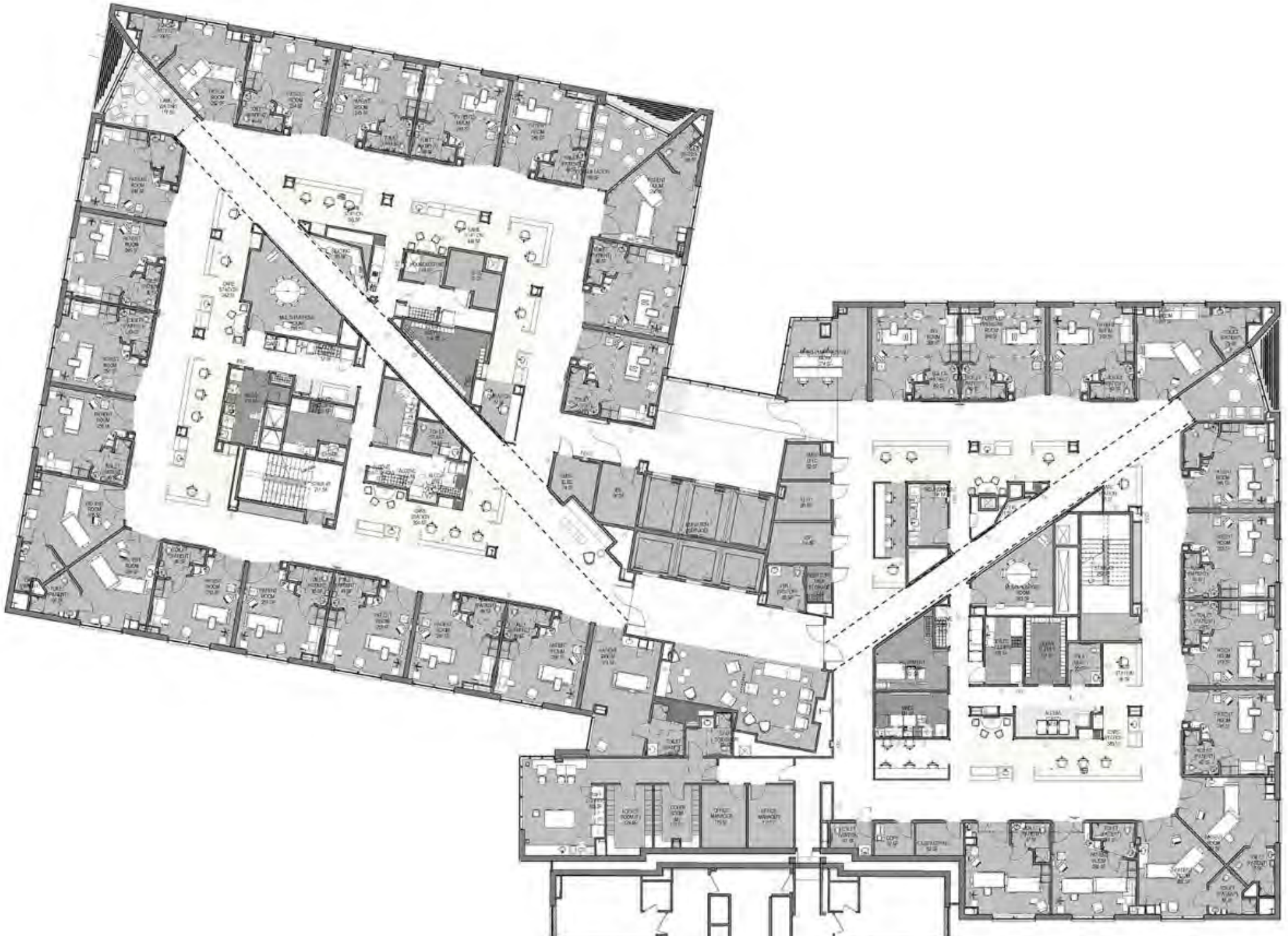


Bramhall and Hill Street



Bramhall and Hill Street

TYPICAL FLOOR PLAN



EAST ELEVATION

NORTH ELEVATION

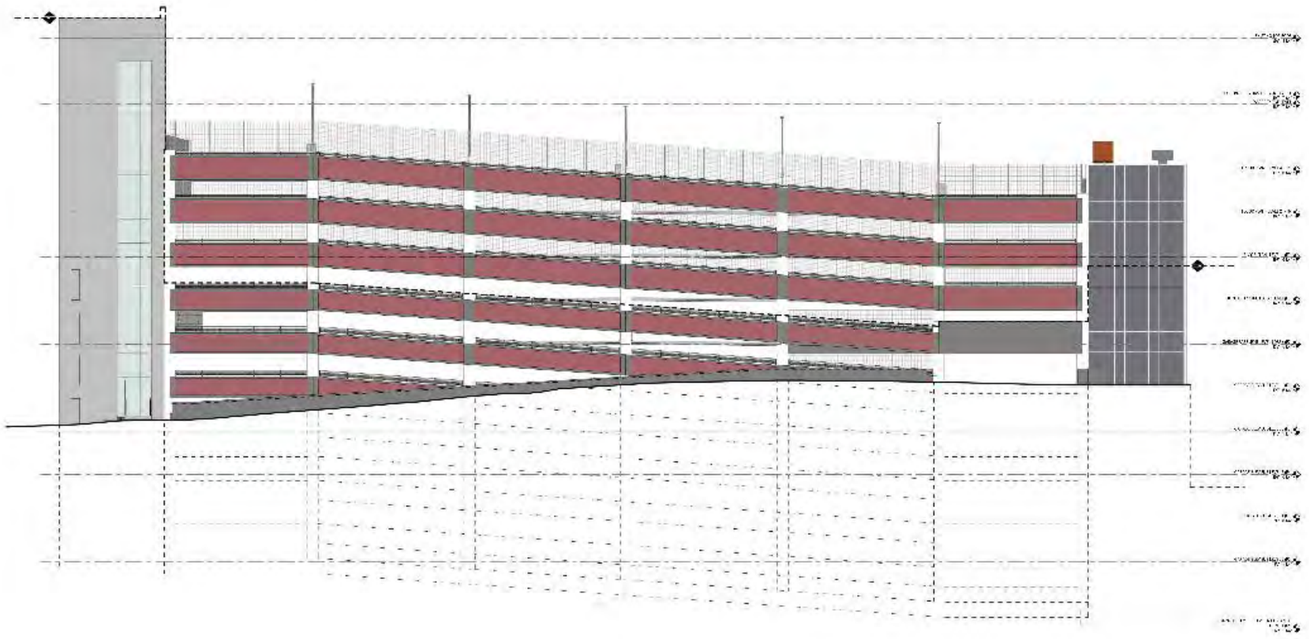
SOUTH ELEVATION

WEST ELEVATION

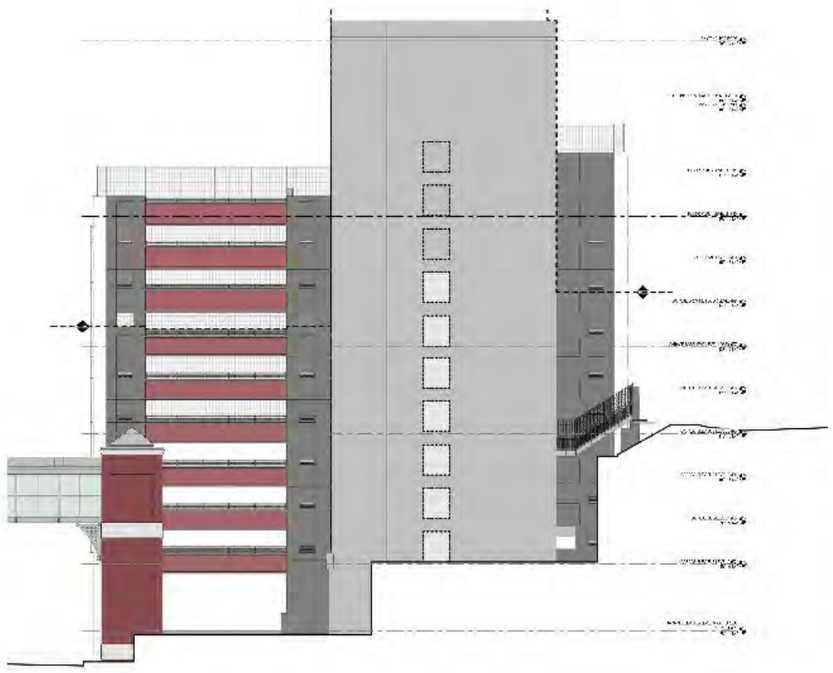
Visitor Garage Expansion

EXISTING

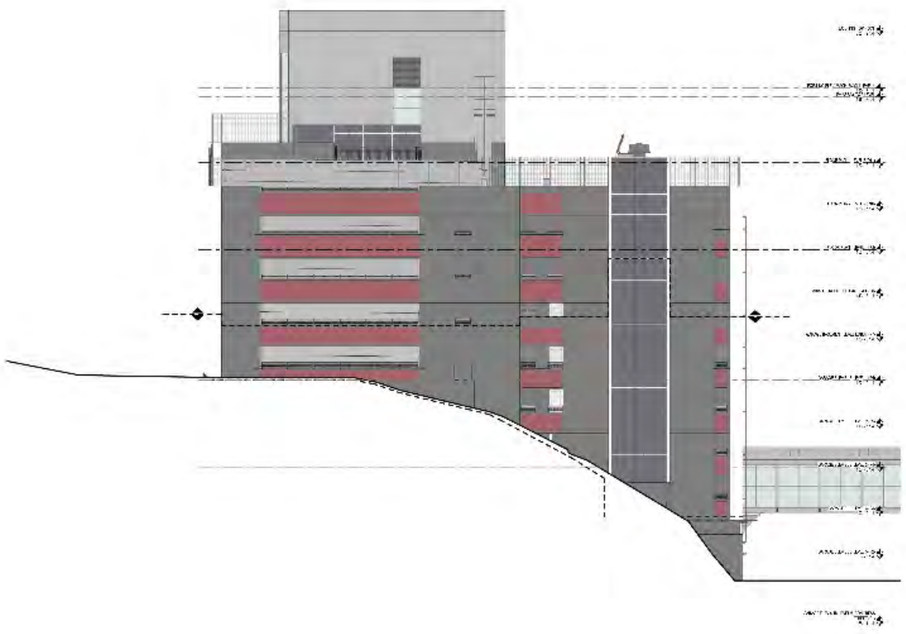
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION

APPENDIX

US-1
Hide imagery

GROVER C
EDITH C. RICHARDS
MEMORIAL
MAIN

WESCOTT ST
ELLSWORTH ST
STOP
NO PARKING ANY TIME
Maine Medical Center
EMERGENCY
Trauma Center
Parking Garage
Main Entrance
South Entrance
South Lot

Medical Center
Maine

CMAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION Q Design Review / Consistency with Design Standards per Zoning Ordinance Section 14-526

The proposed East Tower Expansion and Visitor Garage Expansion comply with the design guidelines as outlined in the approved Maine Medical Center IDP and IOZ Regulatory Framework as well as Zoning Ordinance Section 14-526.

As building expansion to existing structures, the impacts are minimal to the exiting public realm and ground plane. This includes the critical areas outlined by Zoning Ordinance such as massing, wind, mechanical systems, shadows, ad snow and ice loading since the building footprints are not modified. View corridors are preserved since the building expansions increase height of existing structures and are not adjacent to existing structures except those owned by Maine Medical Center. The projects are also not considered part of historic properties and are not located within or adjacent to a historic district.

All of these considerations were documented within the Maine Medical Center IDP and IOZ Regulatory Framework which set the basis for review of the proposed East Tower and Visitor Garage expansions.

The East Tower and Visitor Garage expansions are extensions of existing conditions. These meet the design guidelines in MMC ' s IDP.

- These designs contribute to the campus vision and organizational goals.
- The overall composition and experience of the campus was considered in the design process.
- Building entrances and the public right of way are not impacted by this project.
- The expansions are extensions of existing conditions and are therefore compatible with existing and planned character of the neighborhood.
- Façade materials will be high quality and contribute to an attractive public realm.
- The design process considered the long views. The rooftop helipad will not be screened for safety reasons.
- This project does not impact the ground floor of any existing building.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION R HVAC VERIFICATION

THE APPLICANT'S CONSTRUCTION MANAGER HAS NOT YET SELECTED THE HVAC EQUIPMENT FOR THE EAST TOWER. MMC REQUESTS A CONDITION OF APPROVAL STATING THAT , PRIOR TO OBTAINING A BUILDING PERMIT, THE APPLICANT SHALL SUBMIT EVIDENCE THAT THE EQUIPMENT MEETS APPLICABLE STATE AND FEDERAL EMISSION REQUIREMENTS.

MAINE MEDICAL CENTER KEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION S – 2 BICYCLE PARKING

PER THE INSTITUTIONAL DEVELOPMENT PLAN (IDP) THERE ARE 2,362 VEHICLE PARKING SPACES ON THE BRAMHALL CAMPUS AND 905 CONGRESS STREET . WITH THE ADDITION OF 225 SPACES IN THE VISITOR GARAGE EXPANSION, THE NEW TOTAL SPACE COUNT IS 2587 SPACES.

REQUIRED BICYCLE PARKING :
20 BIKE SPACES FOR THE 1ST 100 VEHICLE SPACES = 20 SPACES
2587 TOTAL VEHICLE SPACES – 100 = 2,487 / 1 BIKE PER 20 VEHICLES = 124 BIKES
TOTAL REQUIRED BIKE SPACES = 20 + 124 = 144 SPACES

THE LOCATIONS OF BIKE RACKS IS DEPICTED ON PAGE 58 OF THE IDP.
PER THE IDP PAGE 72 , THERE ARE 193 BIKE SPACES ON CAMPUS.

Maine Medical Center
East Tower Expansion
Existing Building Code Report
December 8, 2017

Prepared By:

AKF Group
99 Bedford Street
2nd Floor
Boston, MA 02111
Phone: 617-737-1111
FAX: 617-737-4311

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INTRODUCTION

Perkins + Will has retained AKF Group LLC to prepare this existing building narrative code report for the vertical addition to East Tower on the Maine Medical Center Campus located in Portland, ME. The proposed addition will add two additional stories of patient beds as well as a penthouse and helipad on the roof.

QUICK FACTS

- Aggregate Building Area: Approximately 240,000 SF
- Project Area (Level 6 & 7): Approximately 60,000 SF
- Height: 8 stories
- Sprinkler Status: Fully sprinklered
- Standpipe System: Existing standpipe to be extended to addition
- Occupancy: Use Groups B, I-2 (Condition 2), S-1 (accessory), & S-2 (accessory)
- Construction Type: Type IA required

1. APPLICABLE CODES & STANDARDS

The State of Maine requires municipalities with more than 4,000 residents to adopt and enforce the Maine Uniform Building and Energy Code (MUBEC). The next edition of the MUBEC is expected to become effective in 2017 or early 2018. These codes are outlined below and serve as the basis for this report.

- International Building Code (IBC), 2015 Edition with ME Amendments
- International Existing Building Code (IEBC), 2015 Edition with ME Amendments
- International Energy Conservation Code (IECC), 2009 Edition with ME Amendments
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62., Standard for Ventilation and Indoor Air Quality, 2013 edition

In addition to the codes identified above, the State Fire Marshal's Office promulgates the Rules of the State Fire Marshal, which adopt numerous NFPA codes and standards, including the following:

- NFPA 1, Uniform Fire Code, 2006 Edition with ME Amendments
- NFPA 13, Standard for Installation of Sprinkler Systems, 2016 Edition

The Plumbers' Examining Board promulgates the Maine Plumbing Code, which includes the following:

- International Association of Plumbing and Mechanical Officials (IAPMO), 2015 Uniform Plumbing Code (UPC), with ME amendments

The Electricians' Examining Board adopts and amends the following electrical code:

- NFPA 70, National Electrical Code, 2017 Edition

The following federal regulation also applies to the project (as referenced by the Maine Human Rights Commission – 5 M.R.S. §4594-G):

- Americans with Disabilities Act (ADA), 2010 Standards for Accessible Design

The Joint Commission also requires compliance with the following:

- NFPA 101, Life Safety Code, 2012 Edition
- NFPA 99, Health Care Facilities Code, 2012 Edition

The following design standards will also be used for the project:

- Facilities Guidelines Institute (FGI), Guidelines for Design and Construction of Hospitals and Outpatient Facilities, 2014 Edition

- ASHRAE Standard 170, Ventilation of Healthcare Facilities, 2013 edition

2. PROPOSED SCOPE OF WORK & USE

The proposed project will add two stories (Level 6 and 7) to the existing East Tower clinical building on the Maine Medical Center campus in Portland, ME. A penthouse and helipad structure will also be constructed on the new roof of the building. The use groups proposed in the addition are as follows:

Use Group B/business:	Office areas, staff lockers, conference/meeting space less than 750 SF and 50 people
Use Group I-2 (Condition 2)/healthcare:	Inpatient hospital care
Use Group S-1/ordinary hazard storage:	Linen storage (accessory)
Use Group S-2/ low hazard storage:	Storage/utility spaces (accessory)

As indicated in the list above, the Group S-1 and S-2 spaces qualify as accessory to the main Group B and I-2 occupancies because the spaces are less than 10% of the floor area (approximately 7% of the floor area).

3. ADDITION

Since the project includes an addition to the existing building, the project is subject to compliance with Chapter 11 of the IEBC, and Section 43.8 of NFPA 101 which are summarized as follows.

3.1 General Requirements

The addition must comply with the code for new construction while the existing building is permitted to remain without change, except as required by the provisions of IEBC Chapter 11 and NFPA 101 Section 43.8.1.1 for additions. An addition to an existing building cannot create or extend any nonconformity in the existing building with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of MEP systems (IEBC 1101.2 and NFPA 101 Section 43.8.1.2). Any repair or alteration work taking place within the existing building must meet the applicable IEBC and NFPA 101 requirements for such alterations (IEBC 1101.3 and NFPA 101 Section 43.8.1.3).

3.2 Separation

NFPA 101 Section 43.8.1.1 requires the existing portions of the building to comply with requirements contained in NFPA 101 applicable to existing buildings. However, where the existing structure does not conform to the requirements of NFPA 101 Chapter 19 (i.e. existing healthcare occupancies), a 2-hour fire-resistance rated separation is required between the existing building and the addition (NFPA 101 Section 19.1.1.4.1). As indicated in Section 6 below, 2-hour rated floor assemblies

are required for the building. Therefore, the floor assembly will serve as this separation. As such, an evaluation of compliance with Chapter 19 has not been completed for the existing floors.

3.3 Height and Area

An addition cannot increase the height or area of an existing building beyond that permitted by the applicable provisions of IBC Chapter 5 (IEBC 1102.1 & 1102.2 and NFPA 101 Section 43.8.2). Refer to the height and area analysis in Section 5 of this report which describes compliance with height and area requirements.

3.4 Structural

While additions are required to comply with the code requirements for new construction, the Structural Engineer of Record mustperform an investigation and evaluation of the impact of the proposed addition on the existing building with respect to the following elements identified in the IEBC (1103).

- Additional gravity loads,
- Lateral-force-resisting system,
- Snow drift loads, and
- Flood hazard areas.

3.5 Accessibility

Additions to existing buildings are subject to the applicable new construction requirements of the American's with Disabilities Act Standards (ADA) and Chapter 11 of the IBC. Where the addition affects the accessibility to, or contains a primary function area, additional alterations may be required along the path of travel to the primary function area (IEBC 1105.1 and ADA 202.2).

Although the current ME building code does not adopt Chapter 11 of the IBC, the latest proposed state amendments to the 2015 IBC do adopt Chapter 11. Since the 2015 IBC, as amended by ME, will likely be applicable to the East Tower project, this report includes references to IBC Chapter 11 requirements. Refer to Section 11 of this report for further details. Note that the requirements of IBC Chapter 11 are similar to that of the ADA Standards, which apply regardless which edition of MUBEC is applicable.

3.6 Energy Conservation

Additions to existing buildings must comply with new construction provisions of the International Energy Conservation Code (IECC), without requiring the unaltered portions to comply (IEBC 1106.1).

4. HIGH-RISE BUILDING FEATURES

The proposed addition increases the height of the building such that it is considered a high-rise building (i.e. there is an occupied floor located more than 75 feet above the lowest level of fire department vehicle access)(IBC 202 and NFPA 101 Section 3.3.32.7). High-rise buildings must comply with IBC 403 and NFPA 101 Section 11.8. The applicable provisions for high-rise buildings are summarized below.

4.1 Structural

Since the building is considered Risk Category IV per IBC Table 1604.5, the structural integrity requirements of IBC 403.2.3 apply. Section 403.2.3 requires interior exit stairway and elevator hoistway wall assemblies to comply with impact classifications of ASTM C 1629/ C 1629M. Spray fire-resistant materials (SFRM) must have a minimum bond strength of 430 psf (IBC Table 403.2.4).

4.2 Fire Protection Systems

The following fire protection systems are required within the building as noted. Refer to Section 9 of this report for further details regarding fire protection systems.

Automatic Sprinkler System
An automatic sprinkler system is required throughout the building per IBC Sections 403.3 & 903.2.6 and NFPA 101 Sections 11.8.3.1 & 18.3.5.1. A secondary onsite water supply is required if the building is located in seismic design category C, D, E, or F (IBC 403.3).

Standpipe System
Class I standpipes must be provided (IBC 905.3 & 403.4.3 and NFPA 101 Section 11.8.4.1).

Fire Alarm System
A manual fire alarm system with an emergency voice/alarm communication system must be provided in accordance with IBC 907.2.13 (IBC 403.4.2 & 403.4.4 and NFPA 101 Section 11.8.4.1).

Smoke Detection System
An automatic smoke detection system must be provided in accordance with IBC 907.2.13.1 (IBC 403.4.1). See Section 9.2 of this report for additional requirements for smoke detection systems.

Emergency Responder Radio Coverage
Emergency responder radio coverage or a two-way telephone communication system must be provided (IBC 403.4.5, NFPA 1 Section 13.7.2.27.2.2, and NFPA 101 Section 11.8.4.2).

Fire Command Center

A fire command center (FCC) complying with IBC 911 must be provided in a location approved by the fire department (IBC 403.4.6 & NFPA 101 Section 11.8.6). The FCC must comply with the following requirements and contain the following features. The proposed FCC must be coordinated with the local fire official.

1. Location, layout, and features must be approved by the fire chief
2. Must be separated by 1-hr rated construction
3. Must be 200 sf with minimum dimension of 10 ft
4. Unrelated storage is prohibited in the FCC
5. Emergency voice/alarm communication system control unit
6. Fire department communications system
7. Fire detection and alarm system annunciator
8. Annunciator unit visually indicating the location of the elevators and whether they are operational
9. System indicators and controls for air distribution systems
10. Fire fighter's control panel for smoke control systems
11. Controls for unlocking interior exit stairway doors simultaneously
12. Sprinkler valve and waterflow detector display panels
13. Emergency and standby power status indicators
14. Telephone for fire department use with controlled access to the public telephone system
15. Fire pump status indicators
16. Schematic building plans
17. Building Information Card

Smoke Removal

A means of smoke removal in post-fire salvage operations must be provided in accordance with IBC 403.4.7. The means of smoke removal may be provided by natural or mechanical ventilation. Post-fire smoke purge can be achieved through natural or mechanical ventilation. Natural ventilation must consist of operable windows /panels distributed at maximum 50-foot intervals and with a total area of at

least 40 SF per 50 linear feet of perimeter. Mechanical ventilation must provide one air change every 15 minutes with return and exhaust air moved directly to the outside.

4.3 Standby and Emergency Power

Standby power must be provided for the following (IBC 403.4.8.3 and NFPA 101 Section 11.8.5.2.4):

1. Power and lighting for the FCC
2. Ventilation and automatic fire detection equipment for smokeproof enclosures
3. Elevators, including elevators provided for accessible means of egress and fire service access, where applicable
4. Mechanical equipment for smoke control systems
5. Electric fire pump
6. Jockey pump
7. Air compressor serving dry-pipe and pre-action systems

Emergency power must be provided for the following (IBC 403.4.8.4):

1. Exit signs and means of egress illumination
2. Elevator car lighting
3. Automatic fire detection systems
4. Fire alarm systems
5. Electrically powered fire pumps

Standby and emergency power must comply with IBC 2702 and 3003. In addition, standby power for elevators serving as accessible means of egress must comply with IBC 1009.4. Generator sets and fuel line piping located inside the building must be protected in accordance with IBC 403.4.8.1 and 403.4.8.2.

4.4 Means of Egress

Means of egress in high-rise buildings must comply with the additional provisions of IBC 403.5. These provisions include the following.

Remoteness

Required interior exit stairways in the high-rise portions of the building must be separated by a distance of at least 30 feet or at least one quarter of the length of the maximum overall diagonal of the building or area served (whichever is less). This separation distance is measured in a straight line between the closest points of the stairway enclosures. Where three or more interior exit stairways exist, at least two must be separated in accordance with IBC 403.5.1.

Stairway Communication System

Stairway doors other than the discharge doors are permitted to be locked from the stairway side if they can be unlocked simultaneously from the FCC (IBC 403.5.3). If stairway doors are locked, a stairway communication system must be provided on at

least every fifth floor. The communication system must connect to an approved constantly attended station (IBC 403.5.3.1).

Stairway Re-Entry

Since the stairs serve more than four stories, re-entry to other floors from inside the stairwells must be provided in accordance with NFPA 101 Sections 7.2.1.5.8 & 7.2.1.5.8.1 and the ME amendment to IBC 716.5.9.1.2 (NFPA 101 Section 18.2.2.2.9). All stair doors must release upon activation of the fire alarm system, unless selected re-entry is provided in accordance with NFPA 101 Section 7.2.1.5.8.1.

Smokeproof Enclosures

Every required exit stairway serving high-rise portions of the building must comply with the smokeproof enclosure requirements of IBC 909.20 and 1023.11 (IBC 403.5.4). The most common method for providing smokeproof enclosures in sprinklered buildings is through stair pressurization complying with IBC 909.20.5. A ventilated vestibule is not required using this method, provided that the pressure difference between the stair shaft and the balance of the building is a minimum of 0.10 inch of water and a maximum of 0.35 inch of water. The pressure difference must be measured with the stairway doors closed and under maximum anticipated conditions of stack effect and wind effect (IBC 909.20.5).

Luminous Egress Path Markings

Luminous egress path markings must be provided throughout the exit stairs in the building in accordance with IBC 1058.

4.5 Elevators

The following sections provide information regarding the elevator requirements.

Fire Service Access Elevators

A minimum of two fire service access elevators are required in buildings with an occupied floor greater than 120 feet above the lowest level of fire department vehicle access where at least two elevators are provided (IBC 403.6.1). Based on the plans provided to AKF on December 1, 2017 the highest occupied floor (i.e. Level 7) is 112 feet 4 inches above the lowest level of fire department vehicle access. Therefore, fire service access elevators are not required.

Other Elevator Lobbies

Enclosed elevator lobbies are required for all other elevators that serve high-rise levels within the building (IBC 3006.2(5)). These lobbies are required to consist of smoke partitions complying with IBC 710. Doors penetrating the enclosed elevator lobby must comply with IBC 710.5.2.2, 710.5.2.3, and 716.5.9. Ducts and air transfer openings must comply with IBC 717.5.4.1.

5. HEIGHT & AREA

The lowest level of the building (i.e. the Basement) is considered a story above grade plane because the Ground Level is more than 12 feet above ground level (IBC 202). Therefore, the building is 8 stories above grade.

High-rise buildings are permitted a reduction in the required fire-resistance ratings for building elements where sprinkler control valves are provided with supervisory initiating devices and water-flow initiating devices on each floor. Since the building is less than 420 feet in height, the fire-resistance ratings required for Type IB construction may be used while granting unlimited height and area allowances per Type IA construction (IBC 403.2.1). NFPA 101 Table 18.1.6.1 permits 8-story healthcare buildings of Type IB (222) construction.

6. TYPE OF CONSTRUCTION

The following table summarizes the required ratings for modified Type IA construction (i.e. Type IB) in accordance with IBC Table 601 and NFPA 1 Table A.12.2.1. These ratings also meet the requirements of Type IB (222) per NFPA 101.

IBC Table 601 & NFPA 101 Table A.12.2.1 Fire-Resistance Rating Requirements for Building Elements (Hours)

Element	Modified Type IA (i.e. Type IB) Rating (hours)
Primary structural frame (see Section 202) Columns Other	 3 [A] 2 [A]
Bearing walls Exterior Interior	 2[A] 2[A]
Nonbearing walls and partitions Exterior	See Table 602 discussion below.
Nonbearing walls and partitions Interior	0
Floor construction and secondary members (see Section 202)	2[A]
Roof construction and secondary members (see Section 202)	1

[A] Not less than the rating of the assemblies supported, i.e. shaft enclosures, etc.

The non-bearing exterior wall requirements for East Tower are based on the fire separation distance (FSD) of each wall. The FSD is measured perpendicularly from the face of each exterior wall to the closest interior lot line, the centerline of a street, alley, or public way, or an imaginary lot line between two buildings on the same lot. Where the FSD is greater than or equal to 30 feet, the non-bearing exterior walls do not require a fire-resistance rating.

Where Table 601 or 602 requires an exterior wall to be fire-resistance rated and the FSD is less than or equal to 10 feet, the wall must be rated for exposure to fire from both sides

(IBC 705.5). The exterior walls are required to maintain their structural stability for the duration of the time indicated by the fire-resistance rating.

IBC Table 602 Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance Type IA Construction

Fire Separation Distance = X (feet)	Group B, I-2, & S
X < 5	1
5 ≤ X < 10	1
10 ≤ X 20	1
X ≥ 20	0

Note: Unrated nonbearing exterior walls are permitted where the building is permitted to have unlimited unprotected openings (IBC Table 602, footnote (g)). See Section 7.1 for details.

Based on satellite images of the building and the site plan provided in the Visitor Garage Revit model (sent on August 7, 2017) East Tower is provided with a FSD of at least 20 feet around the entire exterior perimeter of the building. Therefore, nonbearing exterior walls are not required to be rated. It is our understanding that the East Tower, Richards, and Bean buildings are constructed as one building. Therefore, exterior wall protection is not required where the exterior walls of East Tower face either the Bean or Richards building.

7. FIRE AND SMOKE PROTECTED FEATURES

7.1 Exterior Walls & Opening Protectives

Openings in the exterior walls must comply with IBC 406.5.2 based on the FSD of each wall. The opening limitations are summarized below for Type IA construction.

IBC Table 705.8 Maximum Area of Exterior Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Area
X < 5	Unprotected, Sprinklered	Not Permitted
5 ≤ X < 10	Unprotected, Sprinklered	10%
10 ≤ X < 15	Unprotected, Sprinklered	45%
15 ≤ X < 20	Unprotected, Sprinklered	75%
X ≥ 20	Unprotected, Sprinklered	No Limit

Based on satellite images of the building and the site plan provided in the Visitor Garage Revit model (sent on August 7, 2017) East Tower is provided with a FSD of at least 20 feet around the entire exterior perimeter of the building. Therefore, unlimited unprotected openings are permitted in the building's exterior walls. It is our understanding that the East Tower, Richards, and Bean buildings are constructed as

one building. Thus, exterior wall protection is not required where the exterior walls of East Tower face either the Bean or Richards building.

7.2 Shaft Enclosures

Vertical openings must be enclosed with shaft construction unless an alternative provision in IBC 712 and NFPA 101 Section 8.6 is met. Shafts connecting four stories or more must be enclosed with at least 2-hour fire-resistance rated construction. Shafts connecting three stories or less must be enclosed with 1-hour rated construction (IBC 713.4 and NFPA 101 Section 8.6.5).

7.3 Corridors

In Group I-2 occupancies, corridors must be continuous to exits and separated from other areas with walls that comply with the requirements for smoke partitions (IBC 407.2 & 407.3 and NFPA 101 Section 18.3.6.1). Doors within corridor walls are not required to be fire-resistance rated; however they must be self-latching, be provided with positive latching hardware, and must provide an effective barrier to limit smoke spread (IBC 407.3.1 and NFPA 101 Sections 18.3.6.2.2, 18.3.6.3.1, & 18.3.6.3.5). Note that there are some spaces that are permitted to be open to corridors as outlined below.

Waiting Areas

Waiting areas that are open to corridors must comply with the following requirements (IBC 407.2.1 and NFPA 101 Section 18.3.6.1(2)).

1. Must be constructed as required for corridors;
2. Does not contain sleeping rooms, treatment rooms, incidental uses, or hazardous uses;
3. The space is protected by an automatic fire detection system complying with IBC 907;
4. The corridor into which the space opens is protected by an automatic fire detection system that complies with IBC 907 or the smoke compartment is protected by quick-response sprinklers;
5. The space does not obstruct access to required exits;
6. The aggregate waiting area open to the corridor in each smoke compartment is no more than 600 SF.

Care Providers' Stations

Corridors may be open to spaces for care providers, supervisory staff, doctors' and nurses' charting, communications, and related clerical areas so long as such spaces are constructed as required for corridors (IBC 407.2.2).

7.4 Smoke Compartments

Level 6 and 7 must be divided into at least two smoke compartments, each with a maximum area of 22,500 SF (NFPA 101 Section 18.3.7.1). The smoke compartments must be separated by 1-hour rated smoke barriers with 20-minute opening protections

complying with IBC 709 and NFPA 101 Section 8.5 (IBC 407.5 and NFPA 101 Section 18.3.7.3).

Smoke dampers must be provided at each duct penetration of the smoke barrier unless one of the following conditions apply: (780 CMR 717.5.5 & NFPA 101 Section 18.3.7.3(2))

1. The openings in the ducts are limited to a single smoke compartment and the ducts are constructed of steel.
2. The HVAC system is fully ducted in accordance with the IMC Section 603; and the building is fully sprinklered and the sprinkler system is equipped with quick-response sprinklers in accordance with Section 903.3.2.

Travel Distance

The travel distance from the most remote point in each smoke compartment to the smoke barrier door must be a maximum of 200 feet (IBC 407.5 and NFPA 101 Section 18.3.7.1(4)).

Refuge Area

Each smoke compartment must contain a refuge area sized to accommodate the inpatient care occupants from adjacent smoke compartments. The refuge areas must be sized using a factor of 30 SF per patient. Refuge areas may consist of corridors, sleeping areas, treatment rooms, lounges, dining areas, and other low-hazard areas (IBC 407.5.1 and NFPA 101 Section 18.3.7.5.1). See the associated Life Safety Plans for illustrations of the refuge areas for each compartment.

Independent Egress

Means of egress from each smoke compartment must be arranged such that once occupants egress from a smoke compartment they are not required to return through the smoke compartment to evacuate the building (IBC 407.5.2 and NFPA 101 Section 18.2.4.4).

Horizontal Assemblies

Where horizontal assemblies support smoke barriers that are part of smoke compartments, such horizontal assemblies must be designed to resist the passage of smoke (IBC 407.5.3).

7.5 Incidental Uses

IBC Table 509 and NFPA 101 Table 8.5 prescribe requirements for the protection of several incidental uses in Group I-2/healthcare occupancies. The requirements of these tables are provided below.

Incidental Uses

Room or Area	Separation and/or Protection	Code Section
Boiler and fuel-fired heater rooms	1 hour	NFPA 101 Table 18.3.2.1
Laboratories not classified as Group H	1-hour and provide automatic sprinkler system	IBC Table 509
Laundry rooms over 100 SF	1 hour	IBC Table 509 & Section 509.4.2
Physical plant maintenance shops	1 hour	IBC Table 509 & NFPA 101 Table 18.3.2.1
Waste and linen collection rooms with containers that have an aggregate volume of 64 gallons or more	1 hour	NFPA 101 Table 18.3.2.1
Storage rooms greater than 100 SF	1 hour	IBC Table 509
Storage rooms less than 100 SF but greater than 50 SF and storing combustible material	Smoke partition	NFPA 101 Table 18.3.2.1 & Section 8.7.1.2

8. INTERIOR FINISH

The interior finishes of the walls, ceilings, and floors of the building are governed by IBC Chapter 8 and NFPA 101 Chapter 10. These chapters outline the testing requirements for the different surfaces. The required tests and finish classifications are summarized in the tables below.

Finish Characteristics

Element	Test Method	Criteria
Wall & Ceiling Finishes	ASTM E84 or UL 723	Class A = FSI 0-25; SDI 0-450
		Class B = FSI 26-75; SDI 0-450
		Class C = FSI 76-200; SDI 0-450
Floor Finish	NFPA 253	Class I = 0.45 W/cm^2 or greater
		Class II = 0.22 W/cm^2 up to 0.45 W/cm2
	DOC FF-1	Pass

Notes: FSI = flame spread index, SDI = smoke-developed index

Interior Wall and Ceiling Finish Requirements by Occupancy (Sprinklered Building)

Use Group	Walls & Ceilings			Floors	
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exits and corridors	Other spaces
B	B	C	C	DOC FF-1	DOC FF-1
I-2	B	B	B[A]	Class II	Class II
S-1 & S-2	C	C	C	DOC FF-1	DOC FF-1

[A] Class C interior finish materials are permitted in rooms with a capacity of four persons or less.

The tables above show the required interior finish classes throughout the building based on the most restrictive requirements of IBC Table 803.11 and NFPA 101 Table A.10.2.2. All floors throughout the building must pass the DOC FF-1 "pill test".

9. FIRE PROTECTION SYSTEMS

In addition to the systems discussed in Section 4 of this report, the following fire protection requirements also apply.

9.1 Automatic Sprinkler System

Since the smoke compartments contain patient sleeping rooms, listed quick-response or listed residential sprinklers must be used (NFPA 101 Section 18.3.5.6).

9.2 Fire Alarm and Detection System

In addition to the manual fire alarm system, an automatic smoke detection system must be provided in the corridors.

9.3 Standpipe System

A standpipe system is required since the building contains an occupied floor more than 30 feet above the lowest level of fire department vehicle access. A Class I standpipe is required since the building is a high-rise building. The existing standpipe system that will be extended to the addition and a Class I hose connection will be provided (i.e. 2 ½" hose connection).

9.4 Emergency Forces Notification

The fire alarm system must transmit an alarm automatically to the municipal fire department (NFPA 101 Section 9.6.4 & 18.3.4.3.2.1).

9.5 Portable Fire Extinguishers

Portable fire extinguishers must be provided in accordance with NFPA 10 (IBC 906 and NFPA 101 Section 18.3.5.12).

9.6 Electrical Systems

The essential electrical system for electrical components, equipment, and systems must be designed and constructed in accordance with IBC Chapter 27 and NFPA 99 (IBC 407.10 and NFPA 101 Section 18.5.1.2).

10. MEANS OF EGRESS

The applicable means of egress requirements for the addition are described below.

10.1 Egress Summary

The occupant loads of the addition were calculated based on the area of the space in accordance with IBC Table 1004.1.2 and NFPA 101 Table 7.3.1.2. The exit capacity from each floor is calculated in accordance with IBC 1005.1 and NFPA 101 Table 7.3.3.1. See sheets G01-60 through G01-90 for details.

10.2 Exit Access Travel Distance

The East Tower exits are required to be arranged such that the maximum exit access travel distance does not exceed the limitations in the table below (NFPA 101 Table A.7.6).

Occupancy	With Sprinkler System (feet)
B	300
I-2	200
S	400

The maximum travel distance allowed from a Group I-2 sleeping room to an exit access door in that room is 50 feet (IBC 407.4.2 and NFPA 101 Section 18.2.6.2.3). The proposed design complies with the above requirements.

10.3 Corridor Width

Corridors must provide the following minimum clear widths (IBC 1020.2 and NFPA 101 Section 18.2.3.4 & 38.2.3.2):

- 96 inches where serving bed movement areas;
- 44 inches in other areas where the occupant load is 50 or more; and
- 36 inches in other areas where the occupant load is less than 50 people.

The exit access must be arranged such that there are no dead ends more than 20 feet in Group I-2 corridors and no more than 50 feet in corridors serving other occupancies (IBC 1020.4 and NFPA 101 Table A.7.6).

10.4 Number of Exits and Continuity

Two means of egress must be provided from individual spaces where the occupant load and/or common path of travel distance exceeds the limitations of IBC Table 1006.2.1 and NFPA 101 Section 38.2.5.3.1 & 42.2.5. The proposed design complies with the below requirements.

Spaces with One Means of Egress

Use Group	Maximum Occupant Load	Maximum Common Path of Travel Distance (ft)
B	49	100
I-2	10	75
S	29	100

In addition, habitable spaces must have an exit access door leading directly to a corridor unless an exit door is provided directly to the exterior at ground level (IBC 407.4.1 and NFPA 101 Section 18.2.5.6.1).

All spaces within each story must have access to the minimum number of independent exits from the story as required by IBC Table 1006.3.1 and NFPA 101 Section 7.4.1.2 below.

Minimum Number of Exits Per Story

Occupant Load (persons per story)	Minimum Number of Exits (per story)
1-500	2
501-1,000	3
More than 1,000	4

Where more than one means of egress is required, the exits must be separated by ⅓ of the overall diagonal distance of the space served (IBC 1007.1.1 and NFPA 101 Section 7.5.1.3.2). This separation distance is measured between the doors to Stair 1 and 2. See Section 4.4 of this report for the required separation between the closest points of the stairway enclosures.

10.5 Doors

Cross-corridor door openings in corridors required to be at least 96 inches wide must have a clear width as follows (NFPA 101 Section 18.2.3.4(6)):

- 6 feet, 11 inches for pairs of doors; and
- 41 ½ inches for a single door.

The above provisions also apply to any doors in the means of egress from the patient rooms (NFPA 101 Section 18.2.3.6). However, exit stair enclosure doors are only required to provide a minimum clear width of 32 inches (NFPA 101 Section 18.2.3.7). Doors not serving healthcare occupants must have a minimum clear width

of 32 inches (IBC 1010.1.1 and NFPA 101 Section 7.2.1.2.3.2). All doors serving an occupant load of 50 or more people must swing in the direction of egress travel (IBC 1010.1.2 and NFPA 101 Section 7.2.1.4.2).

10.6 Locking Devices

Unless complying with IBC 1010.1.9.6 and NFPA 101 Section 18.2.2.2.5, locking devices that restrict access to a care recipient's room from the corridor and that are operable only by staff from the corridor side must not restrict the means of egress from the care recipient's room (IBC 407.4.1.1 and NFPA 101 Section 18.1.3.2(1)).

11. ACCESSIBILITY

Accessibility requirements for medical facilities are provided in both the IBC and the American's with Disabilities Act Standards (ADA). All of the patient sleeping rooms must comply with ADA 805 and the requirements for Accessible units in ICC/ANSI A117.1 (ADA 223.2.2 and IBC 1107.5.4).

12. MECHANICAL

The addition must be provided with mechanical ventilation in accordance with ASHRAE 62.1, 2013 edition.

13. ENERGY CONSERVATION

Additions to existing buildings must comply with the requirements of the IECC that are applicable to new construction; however the existing, unaltered portions of the building are not required to comply with such requirements (IECC 101.4.3).

14. PLUMBING FIXTURES

The UPC requires a minimum number of plumbing fixtures based on the use of the building. Additions must comply with the requirements for new construction, without requiring the existing system to comply with such requirements. The addition cannot cause the existing system to become unsafe, insanitary or overloaded (UPC 102.4). UPC Table 422.1 requires plumbing fixtures in I-2 occupancies in accordance with the following table.

Group I-2 Use	Toilets		Lavatories (Each Sex)		Drinking Water Station, With Drain	Service Sink
	Female	Male	Female	Male		
Individual patient rooms	1 per room		1 per room		1 per 50	1 per floor
Patient Wards	1 per 8 patients		1 per 10 patients			
Waiting Rooms	1 per room		1 per room		1 per room	-
Employee Use	1: 1-15 3: 16-35 4: 36-55 Over 55, add 1 fixture for each add. 40 persons	1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each add. 40 persons	1 per 40	1 per 40	-	-

Drinking fountains are required as indicated in the table above. Water stations are permitted to be substituted for drinking fountains where food is consumed indoors. Water stations are considered to be any hard-piped fixture providing drinking water. Bottle filling stations are permitted to be substituted for up to 50% of the required drinking fountains (UPC 415.2). The UPC recommends that a drinking fountain also be provided with a bottle filling station. The table below summarizes the number of fixtures provided on Level 6 and 7 of East Tower.

Floor Level	Occupant Type	Toilets		Lavatories (Each Sex)		Max. Occupant Load Supported		
		Female	Male	Female	Male	Female	Male	Total
6	Staff	2	1	2	1	15	15	30
	Patient	1 per room		1 per room		32 patient rooms		
	Public	1	1	1	1	1 waiting room		
Floor Level	Occupant Type	Toilets		Lavatories (Each Sex)		Max. Occupant Load Supported		
		Female	Male	Female	Male	Female	Male	Total
7	Staff	2	2	2	2	15	35	30
	Patient	1 per room		1 per room		32 patient rooms		
	Public	1	1	1	1	1 waiting room		

15. HELIPAD REQUIREMENTS

The following sections summarize requirements for rooftop helipads that are applicable to the East Tower project. Note that the 2015 IBC and 2012 NFPA 101 adopt the 2011 edition of NFPA 418: Standard for Heliports. However, the Maine Fire Code adopts the 2006 NFPA 1 and 2009 NFPA 101, which adopt the 2001 and 2006 editions of NFPA 418, respectively. For the most part, the requirements of the 2011 edition are most restrictive and therefore this edition is referenced in the sections below. However, differences in the editions are noted where applicable.

15.1 Landing Area Size

The landing area for small helicopters (i.e. less than 3,500 lbs) must be a minimum of 20 feet in length and width. The landing area must be surrounded on all sides by a clear area having a minimum average width of 15 feet at roof level. The clear area must not be less than 5 feet wide at any point (IBC 412.8.1).

15.2 Landing Area Design & Construction

Helipads must be designed to withstand the loads specified in IBC 1607.6. The contiguous building roof covering located within 50 feet of the landing pad edge must have a Class A rating (NFPA 418 Section 5.4.2). The landing area must be noncombustible and nonporous and must be provided with spill confinement and drainage for flammable liquids (IBC 412.8.2). The landing pad drainage must be provided by the following (NFPA 418 Section 5.3):

1. Sloped surface between 0.5% and 2%; or
2. Passive fire protection grid surface designed and listed for fuel catchment and containment.

The drainage system must drain flammable liquids away from the primary egress path and alternate egress points serving the landing area, including exits, stairways, and structures housing exits and stairways, as well as passenger holding area(s), fire protection activation systems, hatches, and other openings not designed for drainage (IBC 412.8.2 and NFPA Section 5.3.2).

The landing area supports must also be noncombustible and the main structural support members that could be exposed to a fuel spill must have a minimum 2-hour fire resistance rating, unless the landing pad is nonporous, fuel-tight, and the drainage system prevents fuel from flowing to support members (NFPA 418 Section 5.2 & A.5.2).

The allowance provided in Section A.5.2 to use drainage in lieu of 2-hour rated structural members is not provided in the 2001 edition of NFPA 418; however it is provided in the 2006 and 2011 editions.

15.3 Fire Protection Systems

The following fire protection systems are required for the helipad:

1. Class I or III standpipe system must be extended to the roof level (IBC 905.3.6)

2. Foam fire-extinguishing system with either fixed discharge outlets or hose line(s) for use by trained personnel complying with NFPA 418 Section 5.7 and 5.8. The fixed discharge outlet system activation must be by manual pull stations at each egress point from the rooftop landing pad. An additional manual pull station must be located at an approved location inside the building from which the rooftop landing pad can be viewed (NFPA 418

Section 5.8.2). Note that video is an acceptable means of viewing per A.5.8.2.

a. H-1 heliports are permitted to be protected by two portable foam extinguishers each with a 20-A: 160-B rating in lieu of the foam fire-extinguishing system.

3. A means of communication must be provided from the roof area to notify the fire department of emergencies (NFPA 418 Section 5.9).

4. Manual pull stations connected to the fire alarm system must be provided from each designated means of egress from the roof (NFPA 418 Section 5.9).

The Maine Fire Code (Section 21.3.6.8) and the 2001 edition of NFPA 418 (Section 3.7) require a Class II standpipe connection to be provided. It is our understanding that the existing standpipe system will be extended to the roof and a foam extinguishing system will be provided for protection of the helipad. We recommend reviewing the proposed design with the fire official for further direction and approval.

Two access points for fire-fighting/rescue personnel must be provided to the heliport. The access points must be located at least 90 degrees from each other as measured from the center of the landing pad (NFPA 418 Section 4.4.1). Based on the plans provided to AKF on December 1, 2017, the helipad complies with this requirement (access points are approximately 92 degrees apart).

At least one portable fire extinguisher must be provided for each takeoff and landing area, parking area, and fuel storage area. The type of fire extinguisher is based on the size of the helicopter per NFPA 418 Table 9.2 below.

Table 9.2 Minimum Required Ratings of Portable Fire Extinguishers for Heliport Categories

Heliport Category	Helicopter Overall Length (including tail boom and rotors)	Minimum Rating
H-1	Less than 50 feet	4A:80B
H-2	50 feet up to but not including 80 feet	10A:120B
H-3	80 feet up to but not including 120 feet	30A:240B

Based on the memo provided by HeliExperts International LLC, dated June 16, 2017, the heliport is considered an H-2 category. Therefore the minimum fire extinguisher rating is 10A:120B. A fire extinguisher will be located inside the elevator vestibule such that the extinguisher is no further than 50 feet from the edge of the heliport final approach and takeoff (FATO) area.

15.4 Means of Egress

At least two means of egress that lead to a public way must be provided from the landing pad (NFPA 418 Section 4.8 & 5.5; and IBC 412.8.3). The egress points from the landing pad must be located at least 90 degrees from each other as measured from the center of the pad, and must be separated by a minimum of 30 feet. No two egress points may be located on the same side of the landing pad. Means of egress from the landing pad must not obstruct flight operations (NFPA 418 Section 5.5). The means of egress path on the roof level must be illuminated when the helipad/roof is occupied (IBC 1008.1).

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Maine Medical Center
Visitor Garage Expansion
Existing Building Code Report
September 28, 2017

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INTRODUCTION

Perkins + Will has retained AKF Group LLC to prepare this existing building narrative code report for the vertical addition to the Visitor Garage on the Maine Medical Center Campus located in Portland, ME. The proposed addition will add three tiers to the existing garage to create a total ten-tier structure. The roof of the structure will also include parking. The existing garage is consistent with Type IIA construction.

QUICK FACTS

- Approximately 266,000 SF
- 10 tiers
- Not sprinklered
- Existing dry-type standpipe system
- Use Group S-2

1. APPLICABLE CODES & STANDARDS

The State of Maine requires municipalities with more than 4,000 residents to adopt and enforce the Maine Uniform Building and Energy Code (MUBEC). The next edition of the MUBEC is expected to become effective in 2017. Therefore, the following codes are likely applicable to the Maine Medical Center (MMC) Visitor Garage project.

- International Building Code (IBC), 2015 Edition with ME Amendments
- International Existing Building Code (IEBC), 2015 Edition with ME Amendments
- International Energy Conservation Code (IECC), 2009 Edition with ME Amendments
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62., Standard for Ventilation and Indoor Air Quality, 2013 edition

In addition to those codes identified above, the State Fire Marshal's Office promulgates the Rules of the State Fire Marshal, which adopt numerous NFPA codes and standards, including the following:

- NFPA 1, Uniform Fire Code, 2006 Edition with ME Amendments
- NFPA 13, Standard for Installation of Sprinkler Systems, 2016 Edition
- NFPA 101, Life Safety Code, 2009 Edition with ME Amendments

The following federal regulation also applies to the project:

- Americans with Disabilities Act (ADA), 2010 Standards for Accessible Design

2. PROPOSED SCOPE OF WORK & USE

The proposed project will add three tiers of parking to the existing Visitor Garage creating a ten-tier parking structure, with parking also provided on the roof of the garage. The existing garage is consistent with Type IIA construction (i.e. noncombustible, 1-hour rated). The existing and proposed use group within the garage is Group S-2.

3. ADDITION

The project includes an addition to the existing building and is therefore subject to compliance with Chapter 11 of the IEBC, and Section 43.8 of NFPA 101 which are summarized as follows.

3.1 IEBC Requirements

The addition must comply with the code for new construction while the existing building is permitted to remain without change, except as required by the provisions of IEBC Chapter 10 for additions (IEBC 1101.1). An addition to an existing building

cannot create or extend any nonconformity in the existing building with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of MEP systems (IEBC 1101.2). Any repair or alteration work taking place within the existing building to which the addition is being made must meet the applicable IEBC requirements for repairs, Level 1, 2, or 3 alterations, and/or change of occupancy as appropriate in Chapters 5, 6, 7, 8, and 9, respectively (IEBC 1101.3).

Height and Area

An addition cannot increase the height or area of an existing building beyond that permitted by the applicable provisions of Chapter 5 in the code for new construction (IEBC 1102.1 and 1102.2). However, the infilling of floor openings and nonoccupiable appendages such as elevator and exit stair shafts are permitted even if it results in a building area that exceeds that permitted by the applicable provisions of Chapter 5 in the code for new construction (IEBC 1102.2 exception).

Structural

While additions are required to comply with the code requirements for new construction, the Structural Engineer of Record will need to perform an investigation and evaluation of the impact of the proposed addition on the existing building with respect to the following elements identified in the IEBC (1103).

- Additional gravity loads,
- Lateral-force-resisting system,
- Snow drift loads, and
- Flood hazard areas.

Accessibility

Additions to existing buildings are subject to the applicable new construction requirements of the ADA Standards. Where the addition affects the accessibility to, or contains a primary function area, the requirements of ADA Standards 202.4 are applicable.

Energy Conservation

Additions to existing buildings must comply with new construction provisions of the International Energy Conservation Code (IECC) (IEBC 1106.1).

3.2 NFPA 101 Requirements

Additions must comply with NFPA 101 requirements applicable to new construction. The existing portions of the building must comply with the requirements of NFPA 101 applicable to existing buildings (NFPA 101 Section 43.8.1.1). An addition cannot create or extend a nonconformity with regard to fire safety or means of egress in the existing portion of the building (NFPA 101 Section 43.8.1.2). Repair, renovation, alteration, or reconstruction work within the existing building must comply with NFPA 101 Sections 43.3, 43.4, 43.5, and 43.6, as applicable (NFPA 101 Section 43.8.1.3).

Building Height

The addition must not increase the height of the existing building beyond that permitted for new construction (NFPA 101 Section 43.8.2).

Fire Protection

Where there is no approved separation between the existing building and the addition, and the combined areas are required to be protected by an automatic sprinkler system per the provisions for new construction, such system must be provided (NFPA 101 Section 43.8.3). Sprinklers are not required in open parking garages and therefore this section does not apply.

4. HIGH-RISE BUILDING FEATURES

The proposed parking garage is considered a high-rise building since there is an occupied floor located more than 75 feet above the lowest level of fire department vehicle access (IBC 202 and NFPA 101 Section 3.3.32.7). High-rise buildings must comply with IBC 403 and NFPA 101 Section 11.8; however, Exception 2 to IBC 403.1 and NFPA Section 42.8.4 exempt open parking garages from the high-rise requirements of IBC 406.5 and NFPA 101 Section 3.3.254.6. This exempts the building from requirements such as automatic sprinkler system, smokeproof enclosures, smoke detection, voice/alarm communication system, fire command center, standby and emergency power, fire service access elevator, etc. Open parking garage requirements are identified in the next section.

5. OPEN PARKING GARAGE REQUIREMENTS

The following sections outline the requirements for open parking garages in the IBC and NFPA 101.

5.1 Exterior Openings

The area of the exterior wall openings on each tier must be at least 20% of the total perimeter wall area for that tier. The aggregate length of the openings must be at least 40% of the perimeter of the tier, unless the openings are uniformly distributed over two opposing sides of the building (IBC 406.5.2). Where openings are provided below grade, a horizontal clear space must be provided adjacent to the below-grade openings. The width of this clear space must be at least 1.5 times the depth of the space (i.e. grade to the bottom of the lowest required opening) (IBC 406.5.2.1).

In addition, NFPA 101 Section 3.3.254.6 requires open parking structures to have an exterior wall opening area of at least 1.4 SF for each linear foot of exterior perimeter. The openings must be distributed over at least 40% of the building perimeter or uniformly over two opposing sides of the building.

There is an existing retaining wall adjacent to the south and east sides of the building. The retaining wall is approximately 1 foot from the exterior wall of the existing parking garage. This wall therefore obstructs some exterior openings on the south and east sides of the existing garage. As a result, Sub-Level 6 and Sub-Level 5 do not meet the 20% openness requirement of IBC 406.5.2. However, all levels of the garage meet

the openness requirements of NFPA 101 Section 3.3.254.6 (i.e. 1.4 SF/LF and 40% distribution).

The existing garage openings are an existing nonconforming condition per IBC provisions, but the openings comply with the openness criteria of NFPA 101. The proposed addition does not extend the nonconformity since the openings in the existing portion of the garage and the location of the existing retaining wall will not be altered as part of the proposed renovations. Therefore, the existing garage will continue to be treated as an open parking garage since it was originally approved and constructed as such. The three new tiers of the garage will comply with the openness criteria of both the IBC and NFPA 101. Therefore the work is in compliance with IEBC 1101.2 and NFPA 101 Section 43.8.1.2. See sheet G02-01 for further details.

5.2 Construction Type

Open parking garages must be constructed of Type I, II, or IV construction (IBC 406.5.1). It is our understanding that the existing garage is consistent with Type IIA construction and that the addition will be Type IIA construction as well.

5.3 Vertical Clearance

The clear height of each floor level must be at least 7 feet (IBC 406.4.1). However, a vertical clearance of at least 8 feet, 2 inches must be provided for where van access is required per ADA 208.2.4 (ADA 502.5).

It is our understanding that there are structural requirements that require a 10'-6" floor to floor height throughout the garage. However, when the original garage was constructed, this requirement only called for 10'-0" floor to floor. Since the stair and elevator core was constructed for future growth, the design team plans to seek a variance to provide 10'-0" floor to floor on the new tiers to align with the floor levels in the stair and elevator core.

5.4 Vehicle Barrier System

A vehicle barrier system of at least 2 feet, 9 inches in height is required at the end of drive lanes and parking spaces where the vertical distance to the ground or surface directly below exceeds 1 foot (780 CMR 406.4.3).

5.5 Prohibited Uses

The following uses or activities are not permitted in an open parking garage (IBC 406.5.11):

a. Vehicle repair work
b. Parking of buses, trucks, and similar vehicles
c. Partial of complete closing of required openings in exterior walls by tarpaulins or any other means
d. Dispensing of fuel

6. HEIGHT & AREA

Open parking garages are permitted to comply with the height and area provisions of IBC 406.5.4 where the garage is used exclusively for the parking or storage of private motor vehicles, with no other uses in the building (IBC 406.5.4.1). Per IBC Table 406.5.4, Type IIA open parking structures must comply with the following requirements.

Height & Area Summary
Open Parking Structure in Type IIA Construction

Element	Proposed	Allowed	Status
Maximum Area Per Tier (SF)	26,633	50,000	✓
Aggregate Area (SF)	266,015	500,0000	✓
Height (in tiers)	10	10	✓

As can be seen in the table above, the building and proposed addition comply with the height and area limits for open parking garages in Type IIA construction. See Appendix A for further details.

There is an existing unfinished space on Sub-Level 6 of the garage. Clarification on the intended use of this space and the existing separation is needed. A fire-rated separation is needed if the use of the space is unrelated to the parking garage (i.e. retail). Note that in order to use the height and area provisions of IBC 406.5.4, the garage can only be used for the parking and storage of private motor vehicles.

7. TYPE OF CONSTRUCTION

The following table summarizes the required ratings for Type IIA (Type 111) construction in accordance with IBC Table 601 and NFPA 1 Table A.12.2.1.

IBC Table 601 & NFPA 101 Table A.12.2.1 Fire-Resistance Rating Requirements for Building Elements (Hours)

Element	Type IIA (Type 111) Rating (hours)
Primary structural frame (see Section 202)	1[A]
Bearing walls Exterior Interior	 1[A] 1[A]
Nonbearing walls and partitions Exterior	See Table 602 discussion in Section 8.1.
Nonbearing walls and partitions Interior	0
Floor construction and secondary members (see Section 202)	1[A]
Roof construction and secondary members (see Section 202)	1

[A] Not less than the rating of the assemblies supported, i.e. shaft enclosures, etc.

8. FIRE AND SMOKE PROTECTED FEATURES

8.1 Exterior Walls & Opening Protectives

The non-bearing exterior wall requirements for the garage are based on the fire separation distance (FSD) of each wall. The FSD is measured perpendicularly from the face of each exterior wall to the closest interior lot line, the centerline of a street, alley, or public way, or an imaginary lot line between two buildings on the same lot. Where the FSD is greater than or equal to 10 feet, the non-bearing exterior walls do not require a fire-resistance rating.

Where Table 601 or 602 requires an exterior wall to be fire-resistance rated and the FSD is less than or equal to 10 feet, the wall must be rated for exposure to fire from both sides (IBC 705.5). The exterior walls are required to maintain their structural stability for the duration of the time indicated by the fire-resistance rating.

IBC Table 602 Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
Type IIA Construction – Open Parking

Fire Separation Distance = X (feet)	Group S-2
X < 5	1
5 ≤ X < 10	1
10 ≤ X	0

While the garage is required to meet the openness criteria of IBC 406.5.2, the code also requires evaluation of the FSD of each exterior wall in relation to allowed openings. Note that the open area in each wall is unlimited when the FSD is 10 feet or greater. The opening limitations are summarized below for an open parking garage in Type IIA construction.

IBC Table 705.8 Maximum Area of Exterior Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Area
X < 5	Unprotected, Nonsprinklered	Not Permitted
5 ≤ X < 10	Unprotected, Nonsprinklered	10%
10 ≤ X	Unprotected, Nonsprinklered	No Limit[A]

[A] The area of openings in an open parking structure with a FSD of 10 feet or greater is not limited.

Based on AKF's measurement of the site plan, the garage is provided with at least 10 feet of FSD around the entire perimeter. Therefore, unrated nonbearing exterior walls and unlimited unprotected openings are permitted. Note that an imaginary lot line must be placed between the new Congress Street building and the Visitor Garage.

Based on the existing garage openings on the west exterior wall, the imaginary lot line must be placed at least 10 feet from the exterior walls of the garage. This will affect the required rating for the exterior wall of the adjacent Congress Street Building.

8.2 Shaft Enclosures

Vertical openings in open parking garages are not required to be enclosed, including stairways used for egress purposes (IBC 406.5.9 & 1019.3(6) and NFPA 101 Section 42.8.2.2.3.2 & 42.8.3.1.2).

8.3 Fire Wall

It is our understanding that a fire wall will be provided between the west stair tower and the Congress Street development. Direct access will be provided through this fire wall from the Visitor Garage to the Congress Street building.

The fire wall must comply with the requirements of IBC 706 and must have sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for 3 hours. This fire resistance rating is based on the hospital use (i.e. Group I-2) in the Congress Street building (IBC Table 706.4).

Openings
Individual openings in the fire wall cannot exceed 156 SF and the aggregate width of openings cannot exceed 25% of the length of the wall at each floor level (IBC 706.8). Per IBC Table 716.5, fire walls having a required assembly rating of 3 hours also require 3-hour fire doors. Doors must be latching and self- or automatic-closing (IBC 716.5.9).

Horizontal Continuity
Fire walls must be continuous from exterior wall to exterior wall and must extend at least 18 inches beyond the exterior surface of exterior walls (IBC 706.5). However, there are exceptions permitting the fire wall to terminate at the interior surface of the exterior sheathing or siding. Where the fire wall intersects exterior walls and form an angle less than 180 degrees, the exterior walls must have a 1-hour fire-resistance rating with ¾-hour opening protectives for a horizontal distance of 4 feet, or must be rated based on an imaginary lot line drawn between buildings (IBC 706.5.1).

Fire walls must extend to the outer edge of horizontal projecting elements such as balconies, roof overhangs, canopies, marquees, and similar projections that are within 4 feet of the fire wall (IBC 706.5.2). Note however there are some exceptions to this requirement where the exterior wall behind the projecting element is rated. The applicability of the exceptions depends on whether the projection contains concealed spaces.

Vertical Continuity
Fire walls must have vertical continuity such that they extend from the foundation to a termination point at least 30 inches above both adjacent roofs (IBC 706.6). However, there are exceptions to this section, including exceptions for stepped buildings and where both buildings are provided with at least Class B roof coverings.

9. INTERIOR FINISH

The interior finishes of the walls, ceilings, and floors of the building are governed by IBC Chapter 8 and NFPA 101 Chapter 10. These chapters outline the testing requirements for the different surfaces. The required tests and finish classifications are summarized in the tables below.

Finish Characteristics

Element	Test Method	Criteria
Wall & Ceiling Finishes	ASTM E84 or UL 723	Class A = FSI 0-25; SDI 0-450
		Class B = FSI 26-75; SDI 0-450
		Class C = FSI 76-200; SDI 0-450
Floor Finish	NFPA 253	Class I = 0.45 W/cm^2 or greater
		Class II = 0.22 W/cm^2 up to 0.45 W/cm2
	DOC FF-1	Pass

Notes:
FSI = flame spread index
SDI = smoke-developed index

Interior Wall and Ceiling Finish Requirements by Occupancy (Nonsprinklered Building)

Use Group	Walls & Ceilings			Floors	
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exits and corridors	Other spaces
S-2	B	B	C	Class II & DOC FF-1[A]	DOC FF-1

[A] Requirements for corridors are applicable to spaces open to corridors.

The tables above show the required interior finish classes throughout the building based on the most restrictive requirements of IBC Table 803.11 and NFPA 101 Table A.10.2.2. All floors throughout the building must pass the DOC FF-1 "pill test".

10. FIRE PROTECTION SYSTEMS

10.1 Automatic Sprinkler System

An automatic sprinkler system is not required in open parking garages (IBC 903.2 and NFPA 101 Section 42.8.3.5).

10.2 Manual Fire Alarm System

Open parking garages are not required to be equipped with a manual fire alarm system (IBC 907.2 and NFPA 101 Section 42.8.3.4.1.3); however, the existing manual fire alarm system will be maintained and extended to the addition.

10.3 Standpipe System

A standpipe system is required in the parking garage since there is a floor level more than 30 feet above the lowest level of fire department vehicle access (IBC 905.3.1). Class I manual dry standpipes are permitted in open parking garages that are subject to freezing temperatures. The hose connections must be located as required for Class II standpipes per IBC 905.5 (IBC 905.3.1(3)). The existing garage is provided with a dry-type standpipe system. This system will be extended to the addition.

11. MEANS OF EGRESS

The applicable means of egress requirements for new construction are described below.

11.1 Egress Summary

The occupant loads throughout the building are calculated in accordance with IBC Table 1004.1.2 and NFPA 101 Table 7.3.1.2. The capacities of the exits are calculated in accordance with IBC 1005.1 and NFPA 101 Table 7.3.3.1. See sheet G01-01 and G01-02 for detailed egress calculations.

11.2 Exit Access Travel Distance

The exits in the new portions of the parking garage are required to be arranged such that the maximum exit access travel distance is 300 feet. Exit access travel distance is permitted to be measured to an exit door of an enclosed stair or to the closest riser of an unenclosed stairway (IBC 1017.3 and NFPA 101 Table 42.8.2.6.1, Note (2)). Based on AKF's measurement of the proposed floor plans, the exit access travel distance in the garage is within the limit described above.

Note that the exit access travel distance on Sub-Level 6 was measured to the vehicle exit. Although there is not a designated pedestrian path, the existing vehicle exit is marked by exit signage and appears to be serving as a means of egress from Sub-Level 6. This an existing condition that is not being altered by the proposed addition. Therefore, the condition is permitted to remain. We recommend adding a striped pedestrian path should future alterations to the garage facilitate such work.

11.3 Dead Ends

Where more than one exit or exit access doorway is required, the exit access much be arranged such that there are no dead ends in corridors more than 50 feet (IBC 1020.4(2) and NFPA 101 Section 42.8.2.5.2).

11.4 Number of Exits and Continuity

Two means of egress must be provided from individual spaces where the occupant load and/or common path of travel distance exceeds the limitations of IBC Table 1006.2.1 and NFPA 101 Section 42.8.2.5.1.

Spaces with One Means of Egress

Use Group	Maximum Occupant Load	Maximum Common Path of Travel Distance (ft)
S-2	29	50

All spaces within each story must have access to the minimum number of independent exits from the story as required by IBC Table 1006.3.1 and NFPA 101 Section 7.4.1.2 below.

As discussed in Section 11.2 above, the existing vehicle exits are serving as part of the means of egress from Sub-Level 6. Since this existing condition is not being altered by the proposed addition, it is permitted to remain. We recommend adding a striped pedestrian path should future alterations to the garage facilitate such work. Occupants on Sub-Level 6 also have access to the garage stairs on Sub-Level 5.

IBC Table 1021.1 Minimum Number of Exits Per Story

Occupant Load (persons per story)	Minimum Number of Exits (per story)
1-500	2
501-1,000	3
More than 1,000	4

Where more than one means of egress is required, the exits must be separated by ½ of the overall diagonal distance of the space served (IBC 1007.1.1 and NFPA 101 Section 7.5.1.3.2).

11.5 Doors

A minimum clear width of 32 inches is required for doors in accordance with IBC 1010.1.1 and NFPA 101 Section 7.2.1.2.3.2. All doors serving an occupant load of 50 or more people must swing in the direction of egress travel (IBC 1010.1.2 and NFPA 101 Section 7.2.1.4.2).

12. ACCESSIBILITY

The accessibility requirements applicable to new construction apply to the addition (IEBC 1105.1). This includes the following requirements.

12.1 Accessible Route

At least one accessible route must be provided throughout the building and must connect each accessible story (ADA 206.2).

12.2 Accessible Entrances

At least 60% of public entrances must be accessible. Where direct access from parking structures to buildings or facility entrances are provided, such access must be accessible (ADA 206.4.1). In addition, where direct access is provided for

pedestrians from a parking structure to a building entrance, each direct access to the building must be accessible (ADA 206.4.2).

12.3 Parking

Accessible parking spaces must be provided in accordance with the following table (ADA 208.2).

Table 208.2 – Accessible Parking Spaces

Total Parking Spaces Provided	Minimum Number of Accessible Spaces
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1,000	2% of total
1,001 and over	20 plus 1 for each 100 over 1,000

In addition to the accessible spaces required above, van accessible spaces must be provided at a rate of one for every six accessible spaces, but no less than one (ADA 208.2.4). Accessible parking spaces must be provided on the shortest accessible route to an accessible building entrance, or accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, the accessible spaces must be dispersed and located near the accessible entrances; however van accessible spaces are permitted to be grouped on one level (ADA 208.3).

Based on the plans provided to AKF on August 7, 2017, the garage appears to be provided with approximately 713 spaces. Therefore at least 15 accessible spaces, 3 of which are van accessible, must be provided. Based on the proposed plans, approximately 20 accessible spaces are being provided. Although none of the spaces are labeled as being van-accessible, it appears as though at least 3 van accessible spaces are provided based on the width of the parking spaces.

13. STRUCTURAL

This review does not include an analysis of structural requirements. Alterations to existing structural elements and the introduction of new structural loads must be reviewed with the structural engineer.

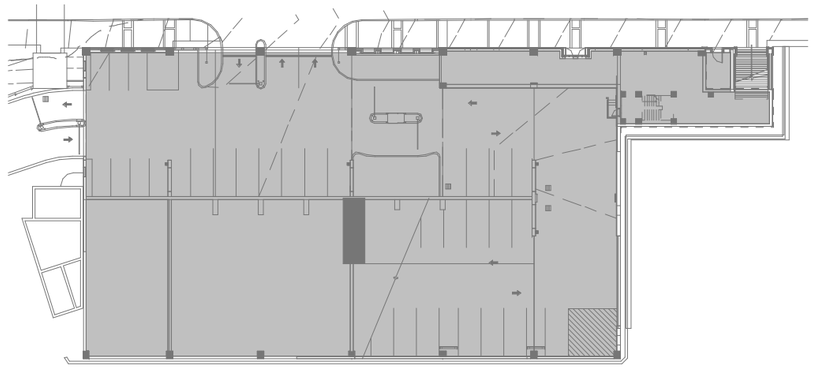
14. MECHANICAL

Open parking garages are not required to be provided with mechanical ventilation (IBC 406.5.10).

15. ENERGY CONSERVATION

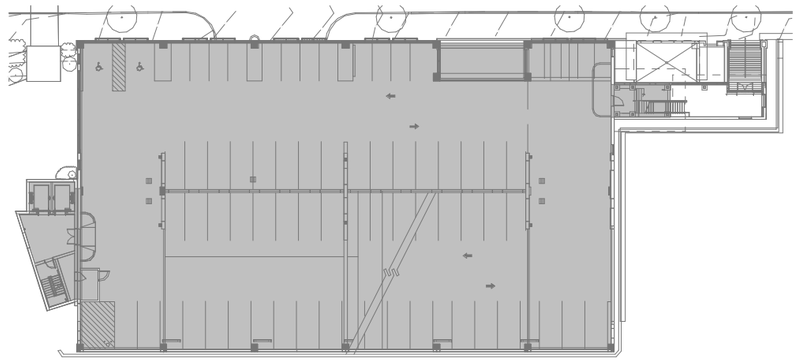
Additions to existing buildings must comply with the requirements of the IECC that are applicable to new construction; however the existing, unaltered portions of the building are not required to comply with such requirements. Additions must comply with IECC C402, C403, and C404 or ASHRAE 90.1 – 2013 (IECC C502.1).

APPENDIX A – HEIGHT AND AREA ANALYSIS



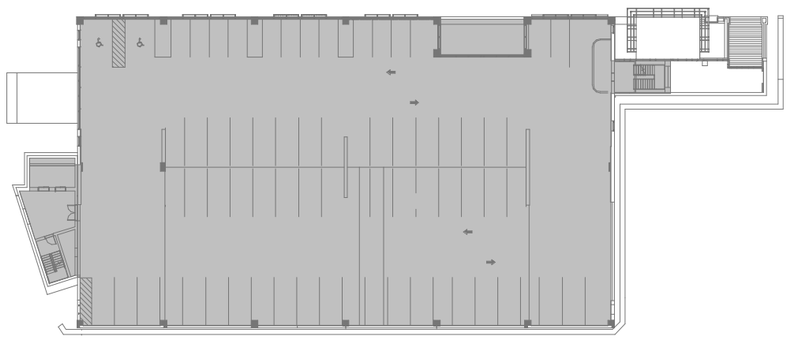
1 SUB-LEVEL 6 = 26,633 SF

SCALE: 1" = 60'-0"



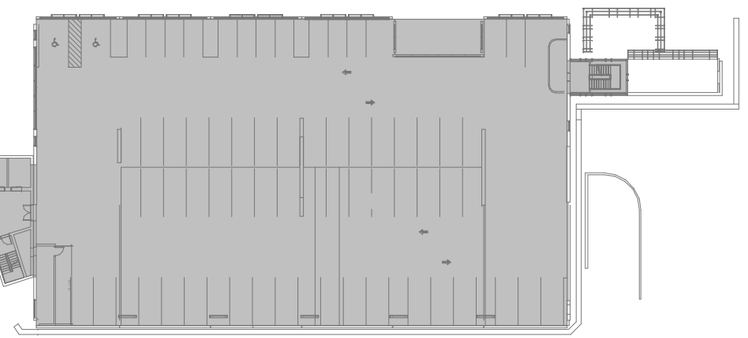
2 SUB-LEVEL 5 = 26,598 SF

SCALE: 1" = 60'-0"



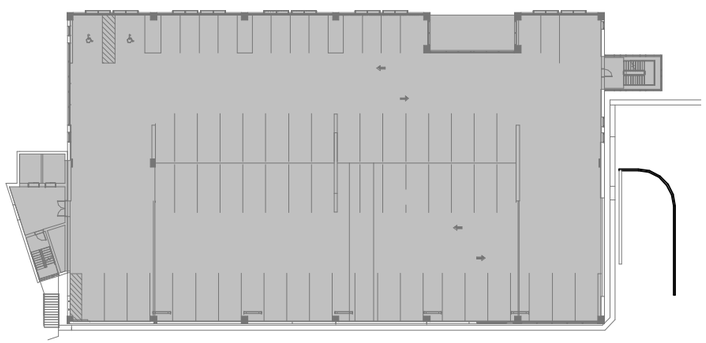
3 SUB-LEVEL 4 = 26,598 SF

SCALE: 1" = 60'-0"



4 SUB-LEVEL 3 = 26,598 SF

SCALE: 1" = 60'-0"



5 SUB-LEVEL 2 = 26,598 SF

SCALE: 1" = 60'-0"

HEIGHT & AREA SUMMARY

OPEN PARKING STRUCTURE IN TYPE IIA CONSTRUCTION

ELEMENT	PROPOSED	ALLOWED	STATUS
MAXIMUM AREA PER TIER (SF)	26,633	50,000	✓
AGGREGATE AREA (SF)	266,015	500,000	✓
HEIGHT (IN TIERS)	10	10	✓

AKF

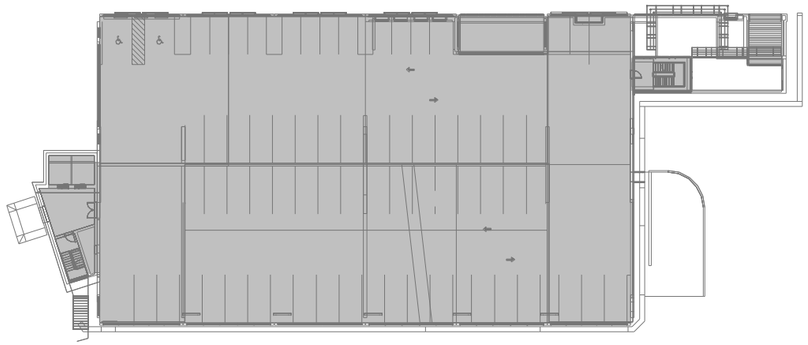
PROJECT: MMC - VISITOR GARAGE EXPANSION

TITLE: HEIGHT & AREA ANALYSIS - S6 THROUGH S2

PROJECT No.: B150311-000 DATE: 09/28/2017 CHKD BY: CMA

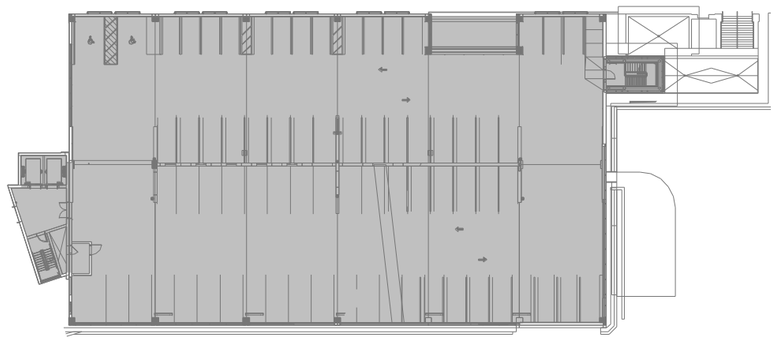
SKETCH No.: HA.001

SCALE: 1" = 60'-0"



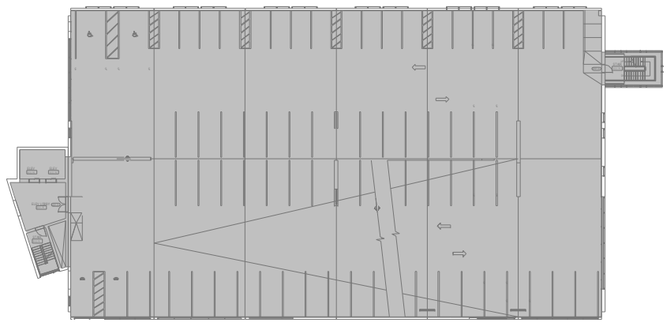
6 SUB-LEVEL 1 = 26,598 SF

SCALE: 1" = 60'-0"



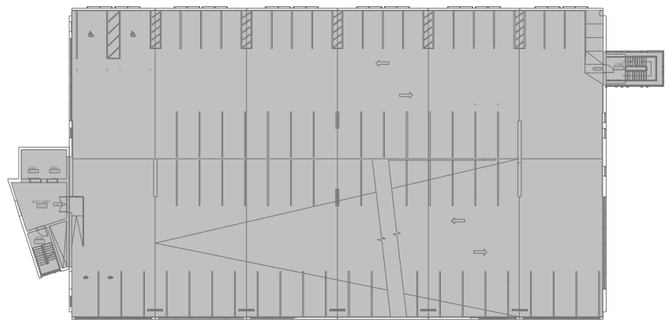
7 BASEMENT = 26,598 SF

SCALE: 1" = 60'-0"



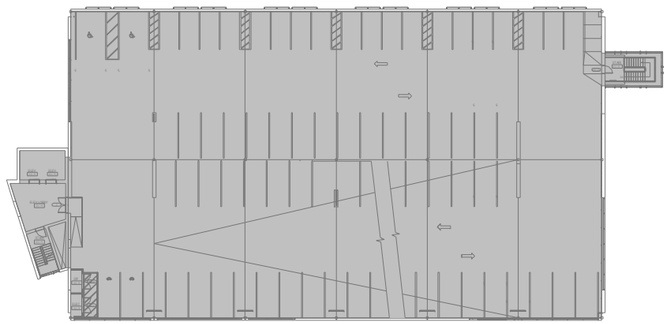
8 GROUND = 26,598 SF

SCALE: 1" = 60'-0"



9 LEVEL 1 = 26,598 SF

SCALE: 1" = 60'-0"



10 LEVEL 2 = 26,598 SF

SCALE: 1" = 60'-0"

HEIGHT & AREA SUMMARY

OPEN PARKING STRUCTURE IN TYPE IIA CONSTRUCTION

ELEMENT	PROPOSED	ALLOWED	STATUS
MAXIMUM AREA PER TIER (SF)	26,633	50,000	✓
AGGREGATE AREA (SF)	266,015	500,000	✓
HEIGHT (IN TIERS)	10	10	✓

AKF

PROJECT: MMC - VISITOR GARAGE EXPANSION

TITLE: HEIGHT & AREA ANALYSIS - S1 THROUGH LEVEL 2

PROJECT No.: B150311-000 DATE: 09/28/2017 CHKD BY: CMA

SKETCH No.: HA.002

SCALE: 1" = 60'-0"

AKF

1655 North Fort Myer Drive
Suite 200
Arlington, VA 22209
T: 703.351.7686

99 Bedford Street
2nd Floor
Boston, MA 02111
T: 617.737.1111

Higuera No. 35 P.B.
Coyoacan
Mexico, D.F. 04000
T: 52.555.659.4573

Quinto Retorno Circuito Osa
Mentor No.8
1Ery 2Do Piso, Reserva Territorial
Cholula, Puebla CP 72810
T: 52.22.210.3378

100 South 5th Street
Suite 2060
Minneapolis, MN 55402
T: 612.354.2442

One Liberty Plaza
165 Broadway, 22nd Floor
New York, NY 10006
T: 212.354.5656

1500 Walnut Street
Suite 1400
Philadelphia, PA 19102
T: 215.735.7290

2768 Superior Drive NW
Suite 200
Rochester, MN 55904
T: 507.208.4488

700 Alexander Park
Suite 204
Princeton, NJ 08540
T: 609.750.9590

750 East Main Street
Suite 501
Stamford, CT 06902
T: 203.323.4333

www.akfgroup.com

U.S. Department of Transportation
Federal Aviation Administration

OMB CONTROL NUMBER: 2120-0036
EXPIRATION DATE: 4/30/2017

NOTICE FOR CONSTRUCTION, ALTERATION AND DEACTIVATION OF AIRPORTS

A. Airport Owner ☑ Check if this is also the Property Owner

1. Name and Address ☑ Check if this is the Airport's Physical Address

Maine Medical Center
22 Bramhall Street
Portland, ME 04102

2. Phone: (732) 870-8883
3. Email: info@heliexp.com

B. Airport Manager (Complete if different than the Airport Owner)

1. Name and Address ☐ Check if this is the Airport's Physical Address

HeliExperts
489 Broadway
Long Branch, NJ 07740

2. Phone: (732) 870-8883
3. Email: info@heliexp.com

C. Purpose of Notification (Answer all questions that apply)

1. Construct or Establish an: ☐ Airport ☐ Ultralight Flightpark ☐ Balloonport ☑ Heliport ☐ Seaplane Base ☐ Other
2. Construct, Alter or Realign a: ☐ Runway ☑ Helipad(s) ☐ Other ☐ Taxiway (Public Use Airports only)
3. Change Status From/To: ☐ VFR to IFR ☐ IFR to VFR ☐ Private Use to Public Use ☐ Public Use to Other
4. Change Traffic Pattern: ☐ Direction _____ ☐ Altitude _____ ☐ Other (Describe Below)
5. Deactivate: ☐ Airport ☐ RWY _____ ☐ TWY _____
6. Description:
Establishment of a new Hospital, Private, PPR rooftop heliport at the Maine Medical Center in Portland, Maine

D. Name, Location, Use and Type of Landing Area

1. Name of Landing Area: Maine Medical Center
2. Loc ID (for existing):
3. Associated City and State: Portland, ME
4. Distance from City: 0 (nm)
5. County (Physical Location): Cumberland
6. Direction from City: W
7. Latitude: 43° 39' 14.3800"
8. Longitude: 70° 16' 32.6300"
9. Elevation: 240
10. Current Use: ☑ Private ☐ Public ☐ Private Use of Public Lands
11. Ownership: ☑ Private ☐ Public ☐ Military (Branch) _____
12. Airport Type: ☐ Airport ☑ Heliport ☐ Ultralight Flightpark ☐ Seaplane Base ☐ Balloonport ☐ Other

E. Landing Area Data (List any Proposed, New or Unregistered Runways, Helipads etc.)

1. Airport, Seaplane Base or Ultralight Flightpark (use second page if needed)			2. Heliport, Balloonport or other Landing Area (use second page if needed)		
RWY ID	/	/	Helipad ID	H1	H2
Lat. & Long.	Show on attachment(s)	Show on attachment(s)	Lat. & Long.	Show on attachment(s)	Show on attachment(s)
Surface Type			Surface Type	Concrete	Concrete
Length (feet)			TLOF Dimensions	54' Diameter	40' Diameter
Width (feet)			FATO Dimensions	97.2' Diameter	68.1' Diameter
Lighting (if any)			Lighting (if any)	Perimeter	Perimeter
Right Traffic (Y/N)	/	/	Ingress/Egress (Degrees)	085/265, 253/073, 251/071	085/265, 253/073, 251/071
Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)	Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)
VFR or IFR	/	/	Elevated Height (AGL)	120	120

F. Operational Data (Indicate if the number provided is Actual or Estimated)

	1. Number of Based Aircraft		2. Average Number of Monthly Landings	
	Present or Estimated	Estimated in 5 Years	Present or Estimated	Estimated in 5 Years
Single Engine	0	0	0	0
Multi Engine	0	0	0	0
Jet	0	0	0	0
Helicopter	0	0	450	750
Glider	0	0	0	0
Military	0	0	0	0
Ultralight	0	0	0	0

3. What is the Most Demanding Aircraft that operates or will operate at the Airport? (Provide approach speed, rotor diameter, etc. if known)
Design Helicopter: Coast Guard MH-60 J-Hawk // Rotor Diameter = 53.8' // Overall Length = 64.8' // Max Gross Weight = 22,000 lbs.

4. Are IFR Procedures for the Airport Anticipated? ☑ **Yes** ☐ **No** **if Yes, Within** 2 **Years**

G. CERTIFICATION: I hereby certify that all of the above statements made by me are true and complete to the best of my knowledge.

1. Name, title of person filing this notice (type or print)
Raymond A. Syms
Authorized Agent

2. Signature (in ink):

3. Date: 08/29/2017
4. Phone: (732) 870-8883
5. Email: info@heliexp.com

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Proposed Site and Aviation Sectional Airspace Overlay

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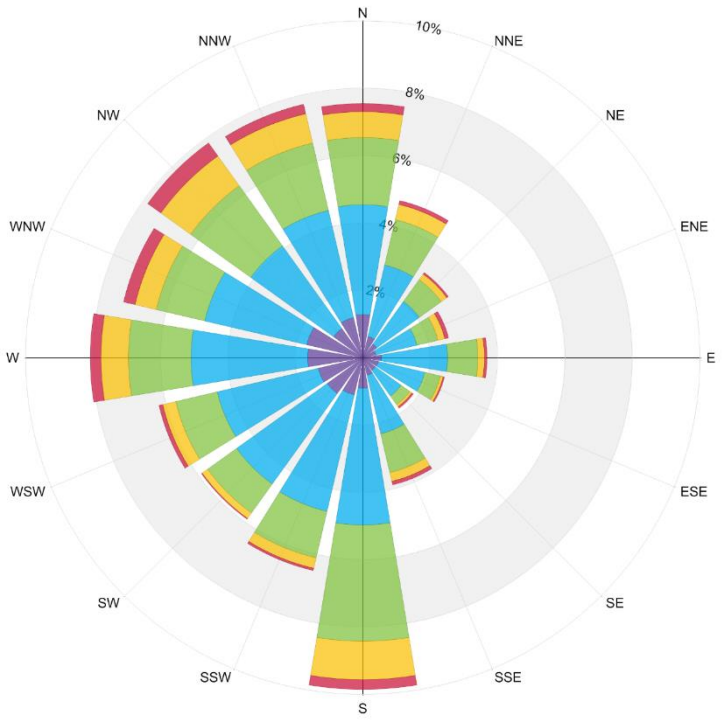
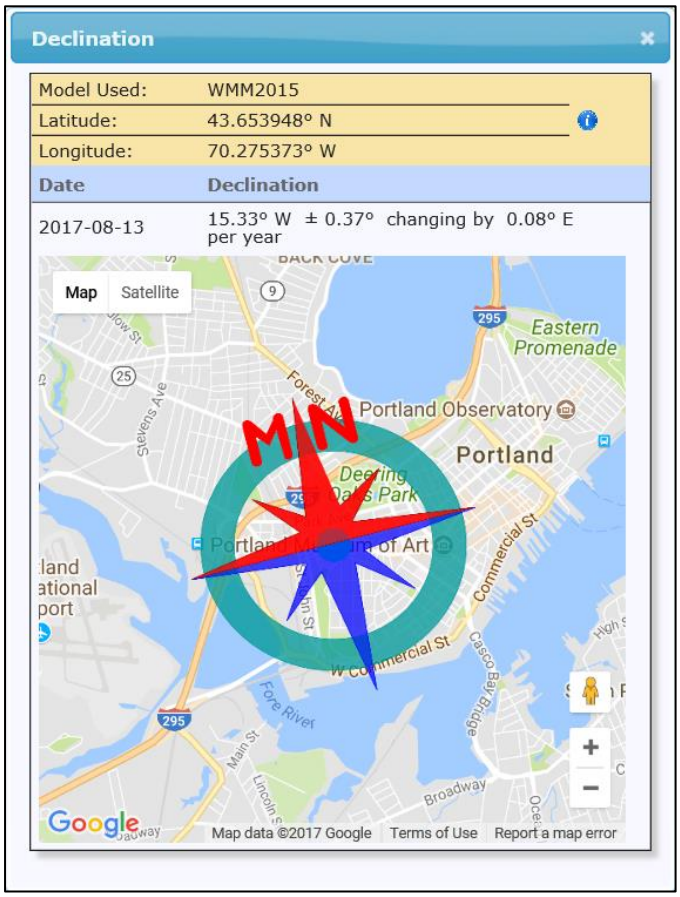
Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

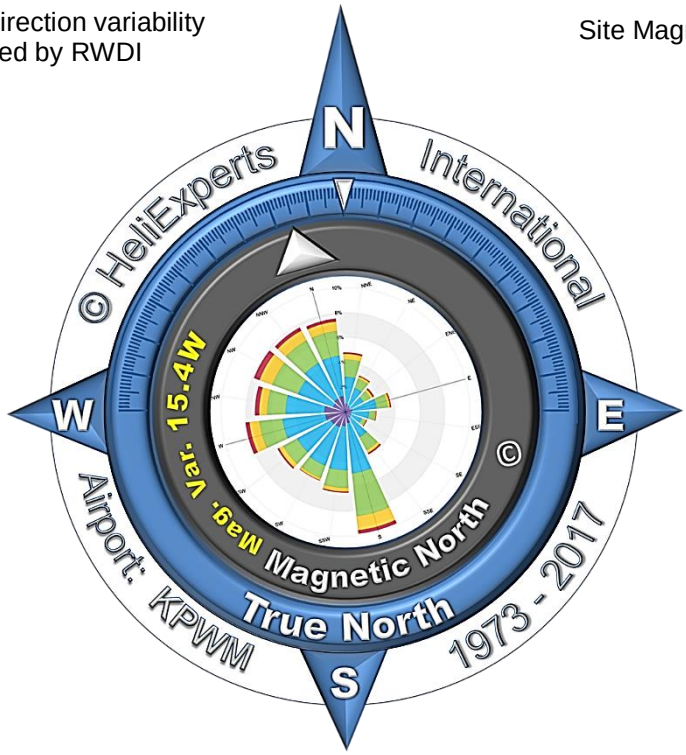
Local Winds and Magnetic Declination



Local wind speed and direction variability
For KPWM Provided by RWDI



Site Magnetic Declination



HeliExperts site specific Wind & Compass
Rose for both Magnetic and True North

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Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Airports and Heliports within 10NM

There are 4-Heliports, 7-Airports and 1 Ultraflight Flightpark (Public, Private and Military) on record and listed in the FAA 5010 Airport Master Record database located within a 10-nautical mile radius of the proposed Maine Medical Center heliport site located at:

Address: Maine Medical Center
22 Bramhall Street
Portland, ME 04102

Coordinates: Latitude: N – 43° 39' 14.38"
Longitude: W – 070° 16' 32.63"

ID	CITY	AIRPORT NAME	WHERE
PWM	Portland	Portland International Jetport Airport	1.5 nm W
ME26	Westbrook	Super Cub Field Airport	3.9 nm W
ME66	Scarborough	Scottow Bog Ultralight Flightpark	4.3 nm SW
67ME	Westbrook	Sta-Kel Heliport	5.2 nm NW
64ME	Falmouth	Dave Libby Heliport	5.4 nm NNW
07ME	Westbrook	Westbrook Heliport	5.8 nm NNW
78ME	Falmouth	Eric's Field Airport	6.0 nm N
21ME	Gorham	Moody Field Airport	6.5 nm WNW
80ME	Scarborough	Bayley's Field Airport	7.7 nm SSW
ME21	Chebeague Island	Chebeague Island Heliport	7.9 nm NE
ME91	Gorham	Webster Field Airport	9.6 nm W
15ME	North Yarmouth	Eagle Field Airport	9.9 nm NNE

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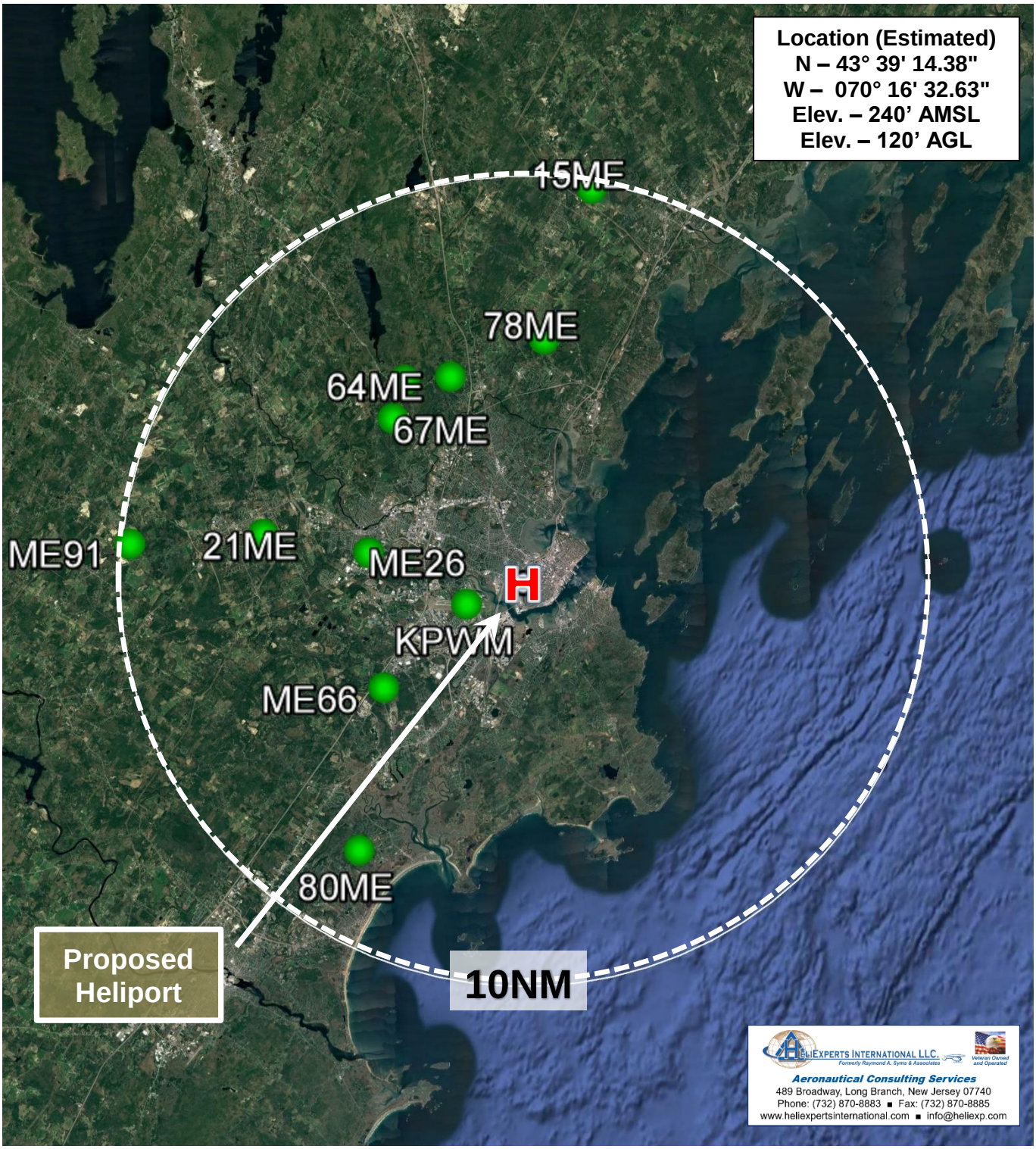
Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Plotted Airports & Heliports within 10NM



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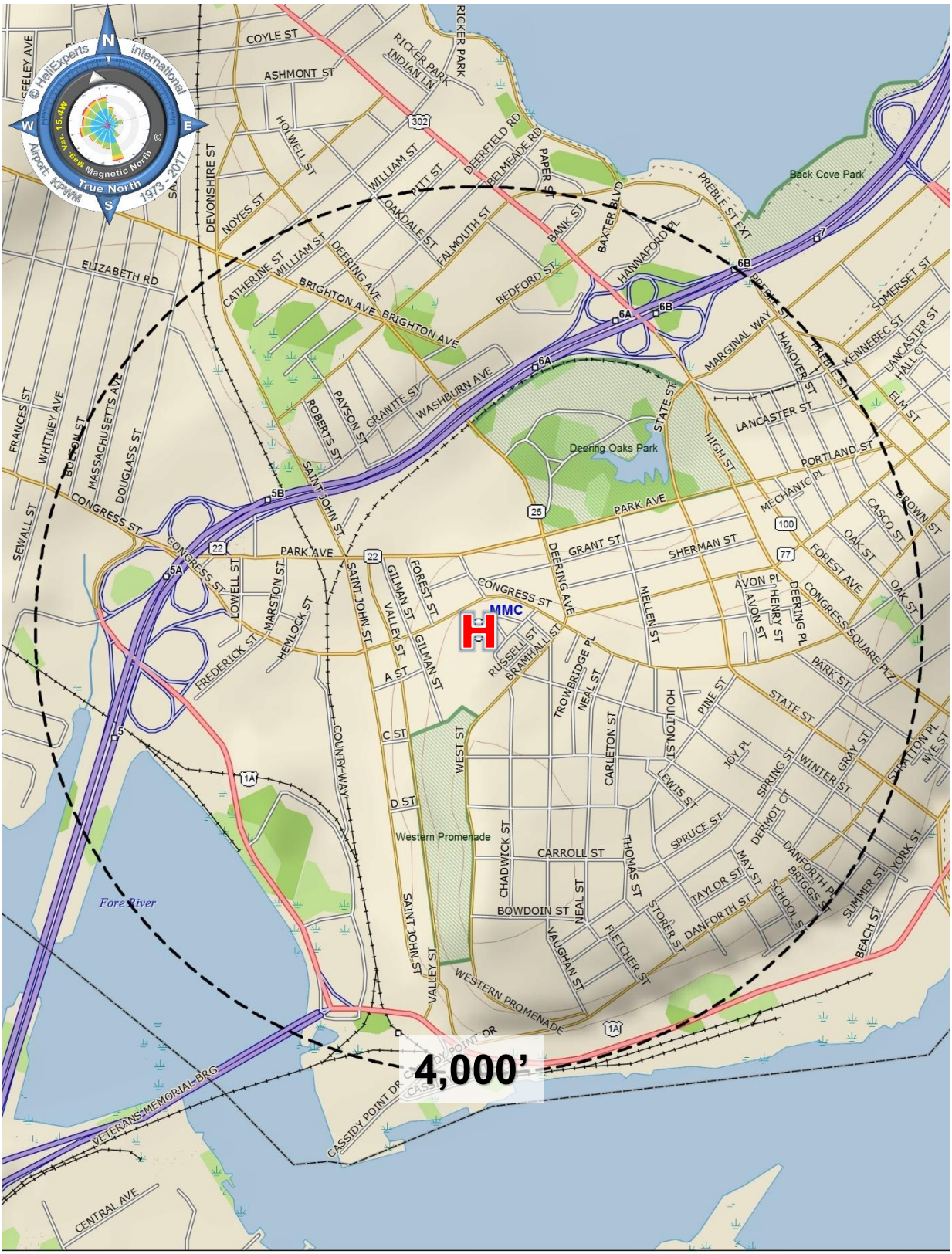
Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Site Location Topographical Airspace Considerations



Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Proposed Approach/Departure Paths (Satellite Overlay)

Proposed Approach/Departure Paths:

A. Straight Approach
   085° / 265° Magnetic // 070° / 250° True

B. Curved Approach, alternate to A *for noise abatement purposes*
   a. 253° / 073° Magnetic // 238° / 058° True

C. Curved Approach
   a. 251° / 071° Magnetic // 235° / 055° True

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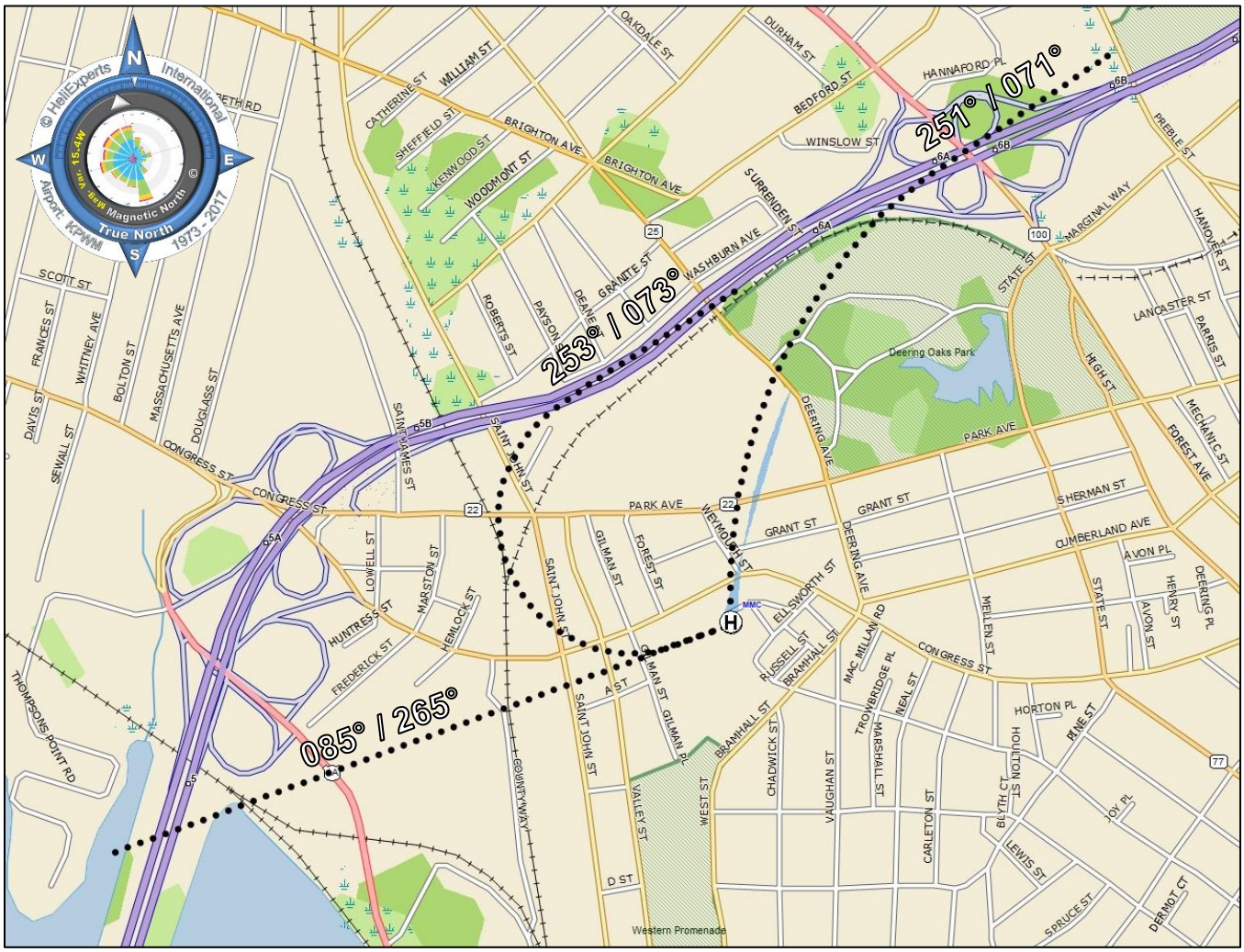
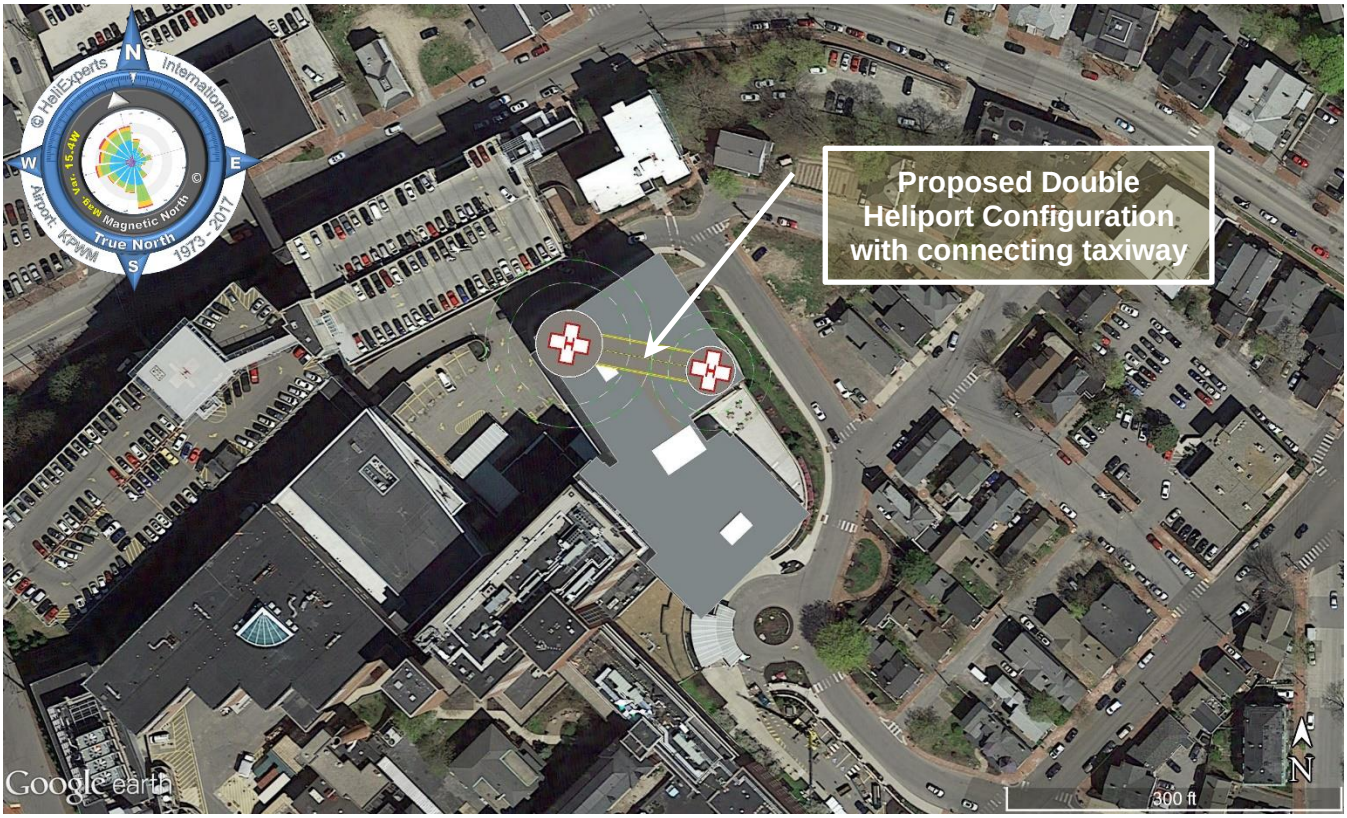
Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

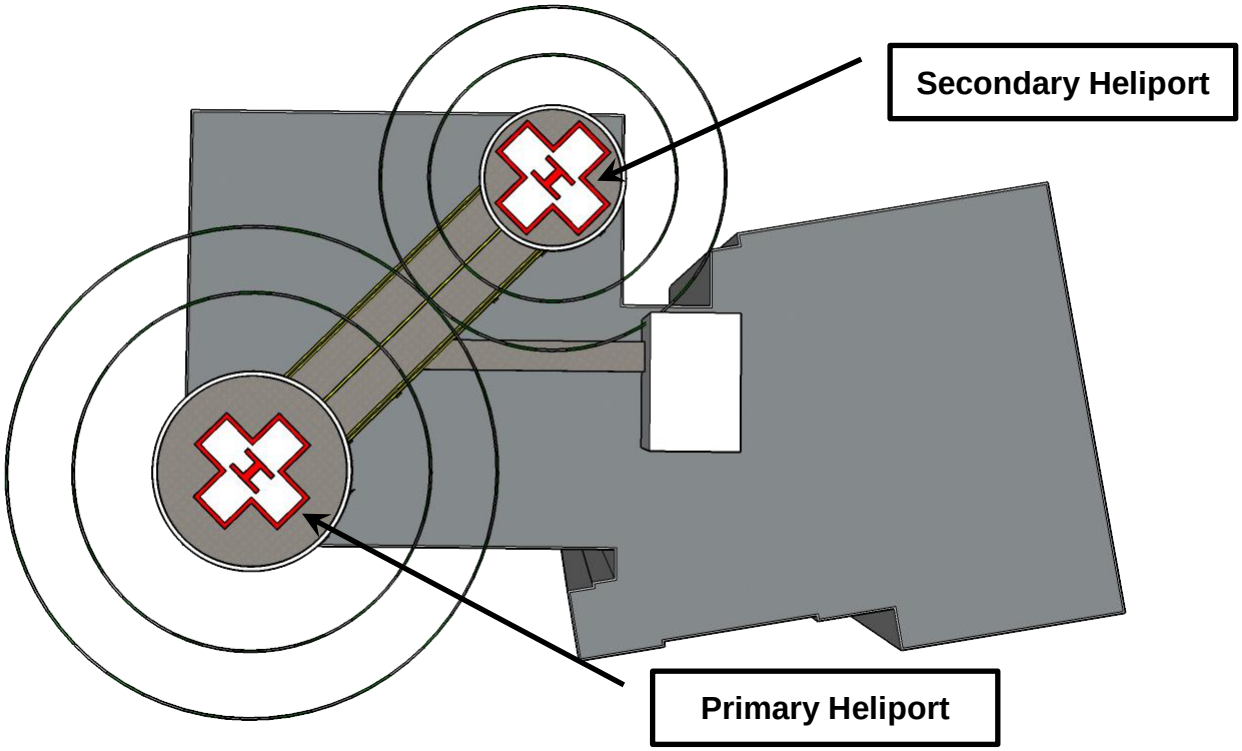
Proposed Approach/Departure Paths (Topographical Overlay)



Proposed Heliport Site Location and Layout



Double Heliport Configuration



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PRIMARY HELIPORT DIMENSIONS

Based on the largest helicopter that will service this location being the Coast Guard MH-60/HH-60 Jayhawk helicopter. The primary heliport will also be the designated landing area for the S-76 as well.

- MH-60 Rotor Diameter: 53.8 feet
- MH-60 Overall Length: 64.8 feet
- MH-60 Maximum Gross Weight: 22,000 lbs.
- MH-60Undercarriage: Length = 29' / Width = 9.7 feet

Minimum Touchdown and Liftoff (TLOF) Dimensions

The minimum TLOF dimension (length, width, or diameter) is equal to the rotor diameter (RD) of the design helicopter but not less than 40 feet (12 m).

- 1 X Rotor Diameter = **53.8 feet** (rounded up to 54')

Minimum Final Approach Departure Area (FATO) Dimensions

Design the FATO so its minimum width, length, or diameter is 1½ times the overall length (D) of the design helicopter.

- 1.5 X Overall Length (64.8) = **97.2 feet**

Minimum Safety Area Width Dimensions

Minimum VFR safety area width based on standard hospital heliport markings is 1/3 Rotor Diameter but not less than 10 feet

- 1/3 RD (53.8) = 18'
- Overall safety area = 18' X 2 + FATO(97.2) = **133.2 feet**

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SECONDARY HELIPORT DIMENSIONS

The secondary heliport is based on the smaller helicopters servicing this location which includes the; AW-109, EC-135 and the EC-145.

*Special note for a hospital heliport the smallest allowable Touchdown and Liftoff Ares is 40 feet.

The following is a composite helicopter representation for the secondary heliport made up of the largest dimensions and weights of the above three aircraft.

- AW-109 & EC-145 Rotor Diameter: 36.1 feet
- AW-109 Overall Length: 42.8 feet
- EC-145 Maximum Gross Weight: 7,904 lbs
- Undercarriage: Length (AW-109): 12.3 / Width (EC-145): 7.9

Minimum Touchdown and Liftoff (TLOF) Dimensions

The minimum TLOF dimension (length, width, or diameter) is equal to the rotor diameter (RD) of the design helicopter but not less than 40 feet (12 m).

- 1 X Rotor Diameter = 36.1 feet / *minimum = **40 feet**

Minimum Final Approach Departure Area (FATO) Dimensions

Design the FATO so its minimum width, length, or diameter is 1½ times the overall length (D) of the design helicopter.

**Special Note: minimum separation between the perimeters of the FATO and TLOF are equal to: ¾ OL – ½ RD*

- 1.5 X Overall Length (42.8) = 64.2 feet
- Minimum Perimeter between TLOF & FATO: ¾ (42.8) – ½ (36.1) = 14.05
  - 14.05 X 2 + TLOF (40) = **68.1 feet**

Minimum Safety Area Width Dimensions

Minimum VFR safety area width based on standard hospital heliport markings is 1/3 Rotor Diameter but not less than 10 feet

- 1/3 RD (40) = 13.3’
- Overall safety area = 13.3’ X 2 + FATO(68.1) = **94.7 feet**

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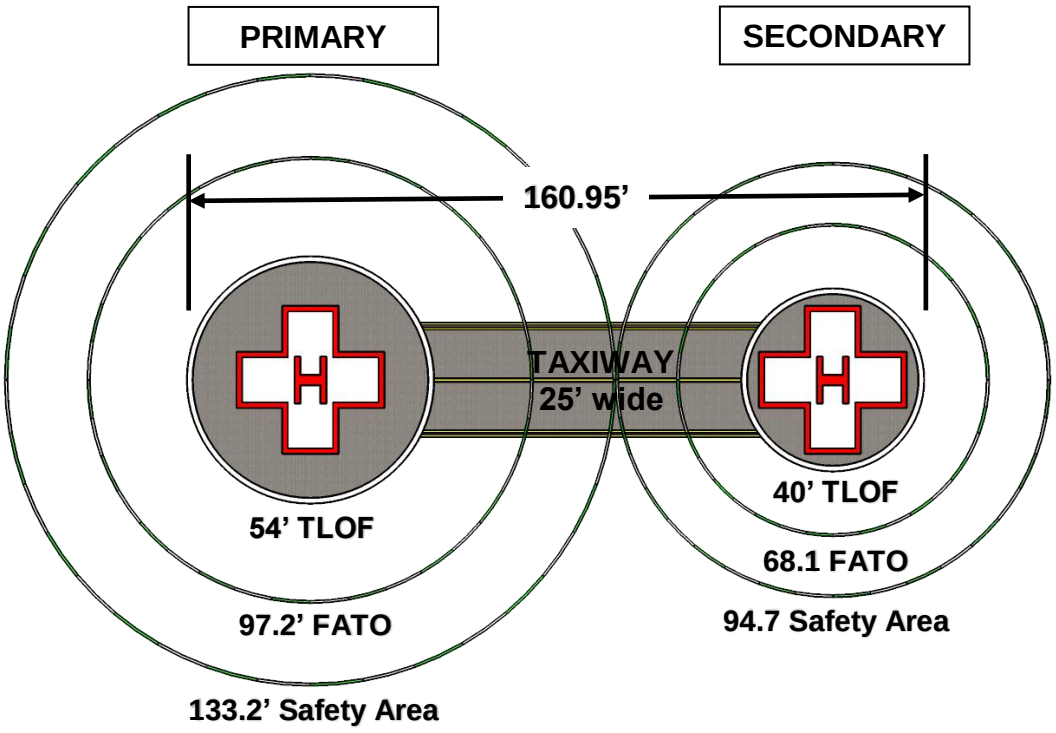
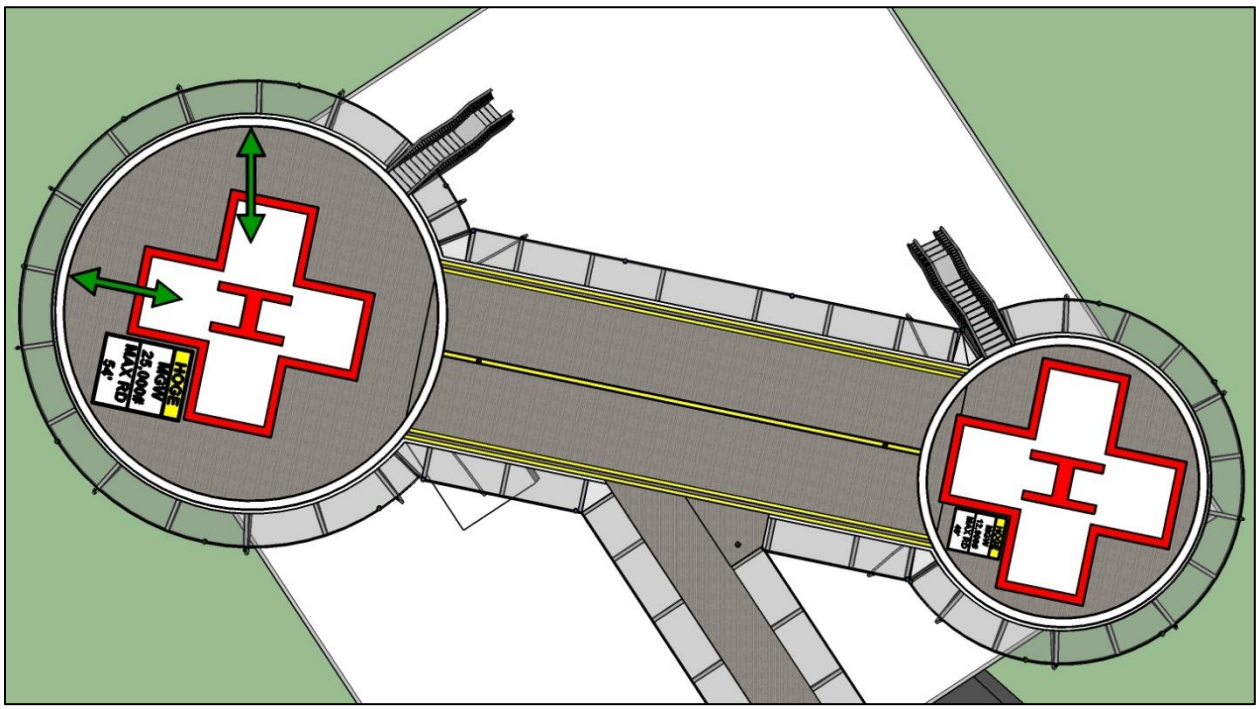
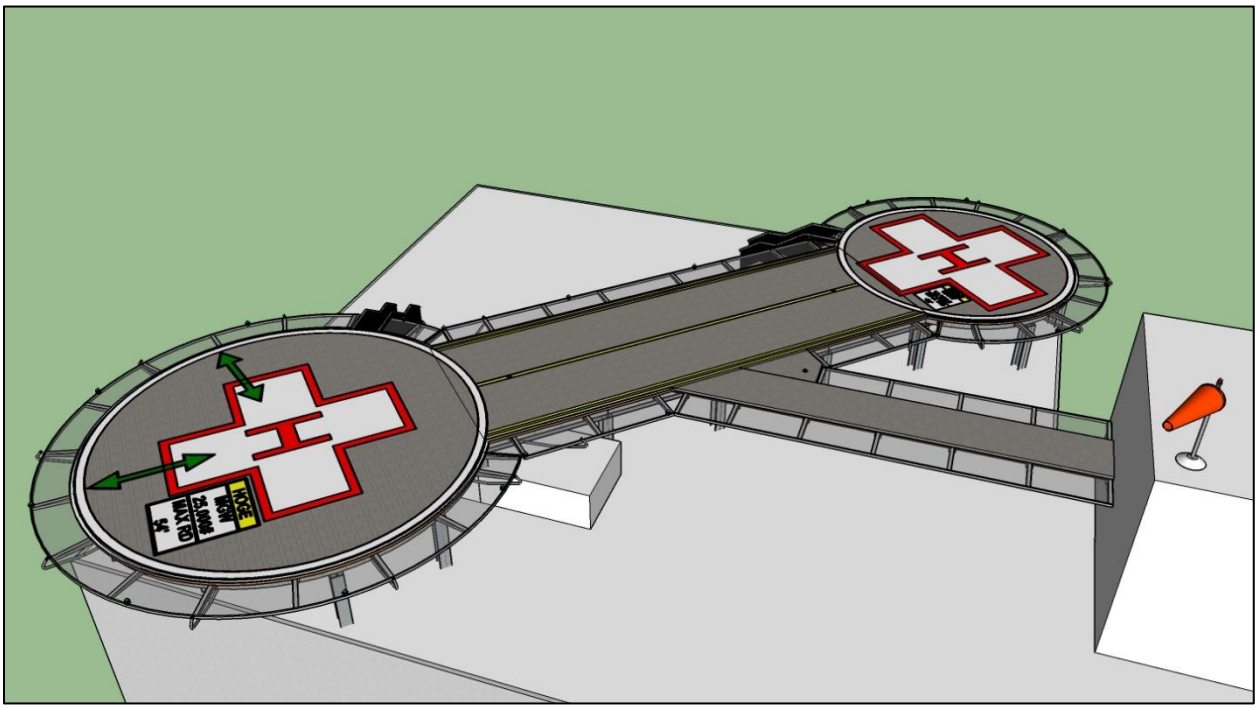
PROPOSED LAYOUT:



CONCEPTUAL EAST WING OVERLAY:





WINDSOCK PLACEMENT

Primary windsock to be located on top of elevator tower. Secondary windsock placement yet to be determined.

ADB WC 807
LED Internally Lit
Wind Cone

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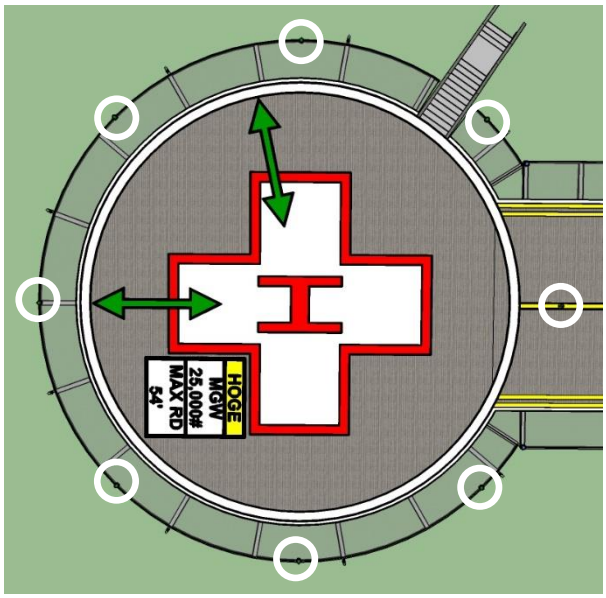
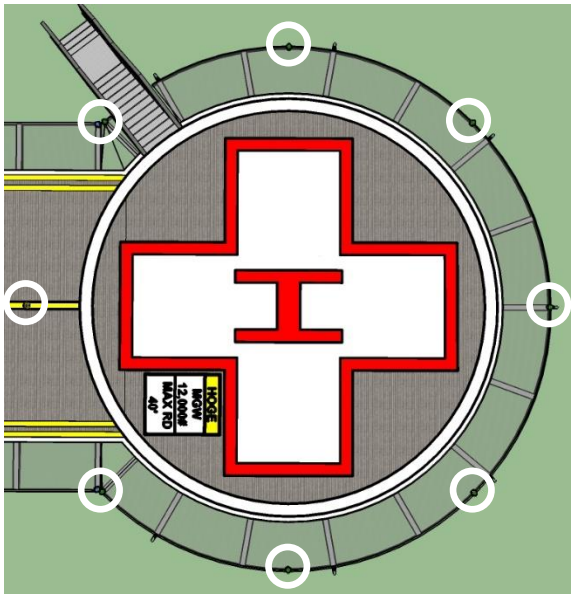
Heliport Lighting Arrangement

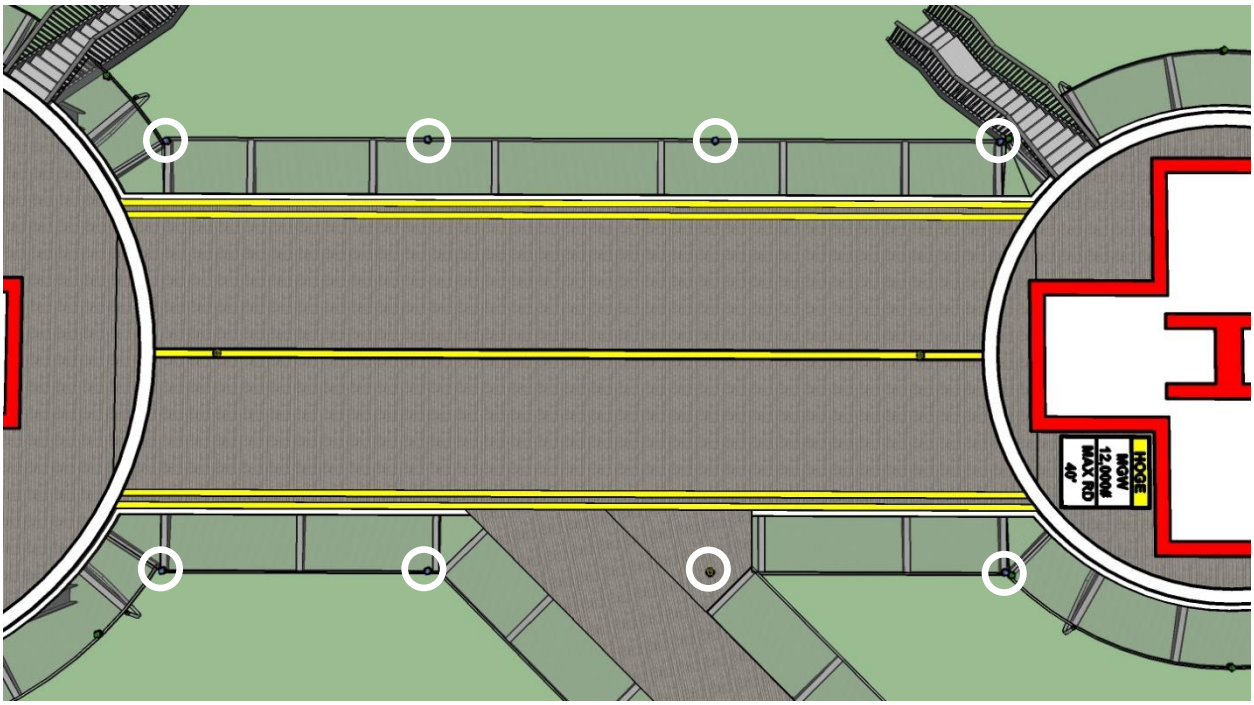


Primary TLOF Perimeter Lighting Layout



Secondary TLOF Perimeter Lighting Layout

Taxiway Lighting



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Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Heliport Lighting

ADB LED Elevated Heliport Perimeter Light EHP-L

Installed on perimeter safety net

ADB LED In-pavement Utility & Heliport Perimeter Light IUL-L

Used in concrete taxiway 1 each

Taxiway Lighting

L-861T Elevated Taxiway Edge LED (ETES) Light

Installed on perimeter safety net

Obstruction Lighting

ADB LED LED Steady Burning Obstruction Light L-810(L)

Installed on all applicable obstructions

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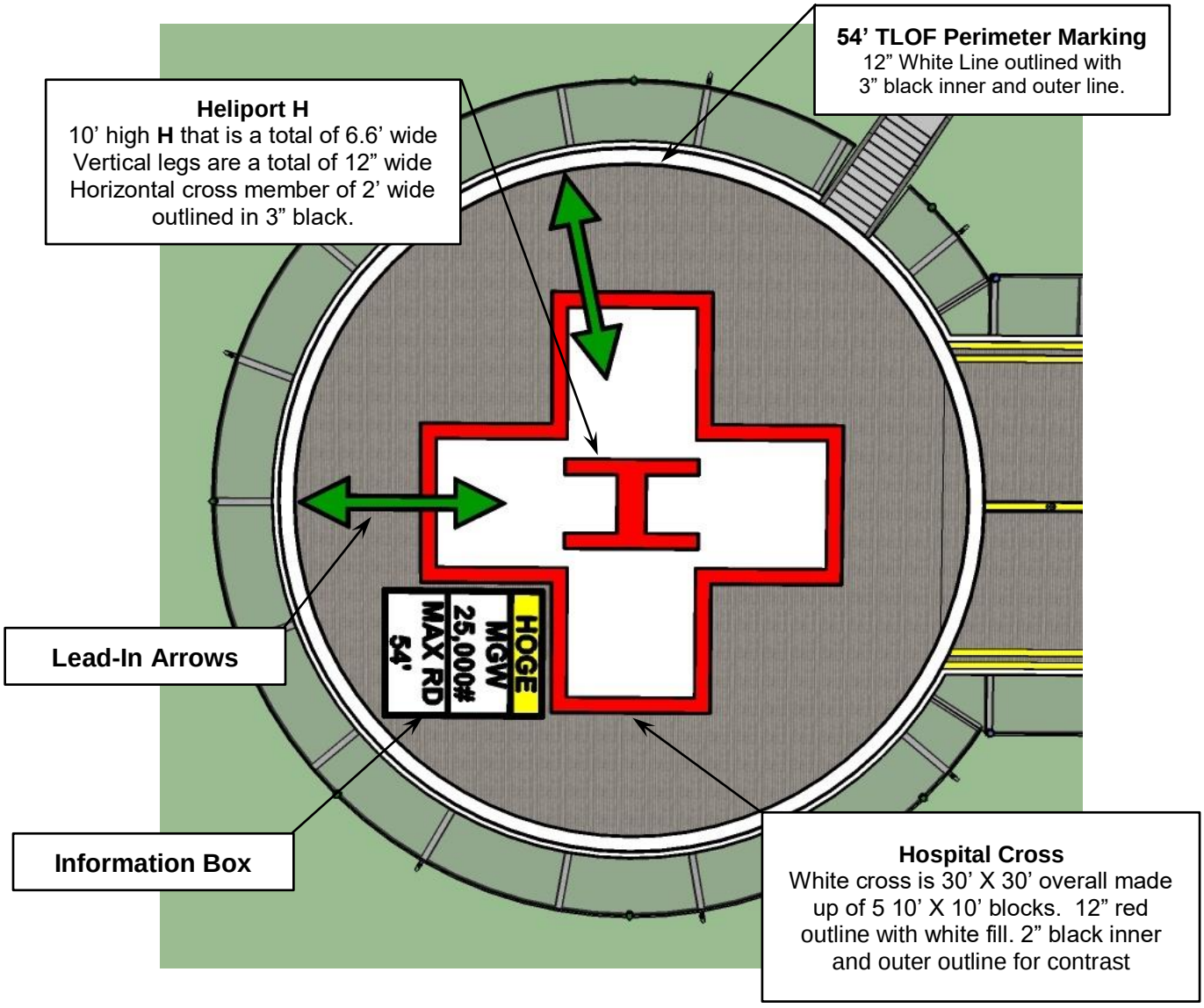
Primary Heliport Markings



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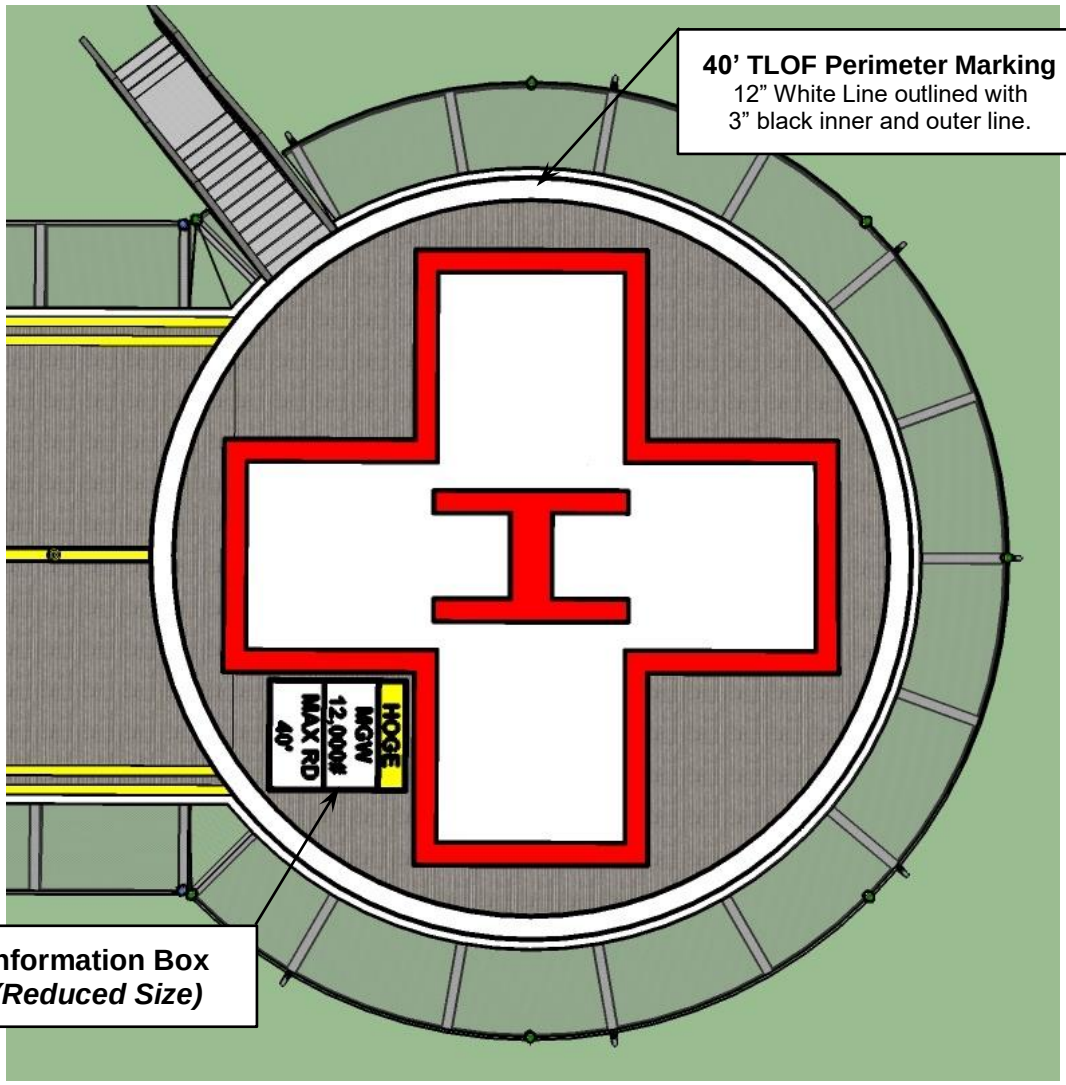
Secondary Heliport Markings



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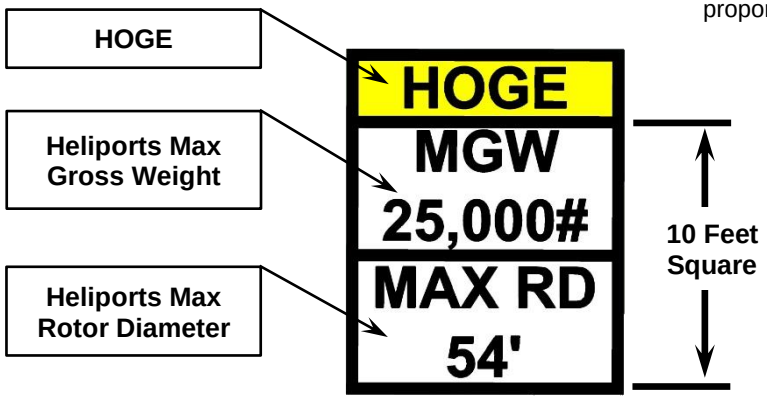
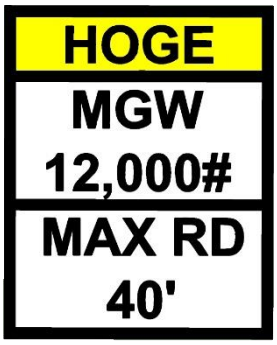
HELIPORT INFORMATION BOX

Heliport Information Box
18” High Letters and Numbers
5” Vertical Stroke with rest in proportion to size



PRIMARY TLOF

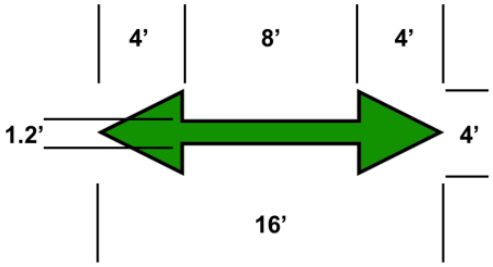


SECONDARY TLOF
Reduced Size

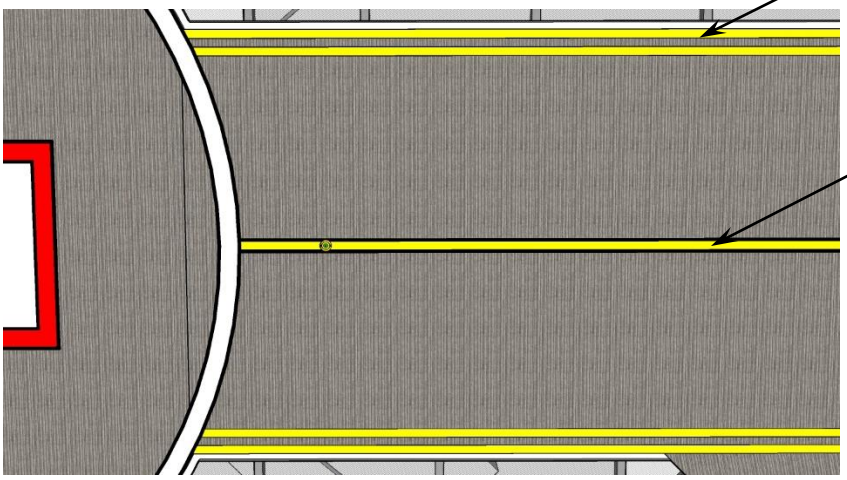
HOGE: Hover Out of Ground Effect Power Required

LEAD-IN ARROWS

Green Lead-In Arrows
Outlined in 2” black



TAXIWAY MARKINGS



Edge Markings
Two Continuous 6” Yellow Lines spaced 6” apart

Center Line Marking
6” Wide Yellow Center Line with 2” Black Outline

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RUSSELL ACOUSTICS, LLC
Consulting Engineers in Sound and Vibration

1525-A BEAVER DAM ROAD
POINT PLEASANT, NJ 08742
973.283.0001
973.464.9724 (CELL)

6 August 2017

Mr. Dennis Morelli, AIA
Manager of Facilities Development
Maine Medical Center
22 Bramhall Street, Portland, ME 04102

Re: Heliport Relocation Project
Sound Exposure Study Methodology

Dear Mr. Morelli:

Russell Acoustics LLC was retained to participate in a study of your new proposed rooftop heliport configuration. Maine Medical Center (MMC) has operated a heliport at this site for several years, on the roof of the parking garage, but increased need for emergency services necessitates a second pad. Further, the need to take down the parking garage means a new location is needed for the heliport.

Over a three day period – 1-3 May, 2017 – sound measurements were made around the hospital and into the nearby neighborhoods to assess both existing ambient sounds (without any helicopter activity) and sounds from a helicopter flying in and out of the proposed routes. Figure 1 shows where the instruments were located during the study; these locations were chosen to be close to where sound measurements were made several years ago as part of the original use application for the heliport.

As the new rooftop pads necessitate some changes in the flight routes into and out of the new heliport the new routes have been defined by Heliports International, LLC; these are shown and named on Figure 2. Figure 3 shows the tracks that were actually flown during our testing, based on on-board GPS data from the helicopter.

Instruments & Measurements

The instruments used for the long-term sound measurements are Larson-Davis Model 703 and 705P digital time-history sound level meters equipped with instrumentation microphones and windscreens. They meet ANSI requirements for Type 2 sound level meters. They measure and store the overall A-weighted sound pressure level ("dBA"), at programmed intervals, for programmed measurement times. Each instrument has an internal clock. These were all set and synchronized using a common digital clock, which was set using time from a GPS receiver.

Each instrument was calibrated prior to the test, and the calibration checked after the tests, with a Bruel & Kjaer Type 4230 sound level calibrator. The calibrator's own calibration is done annually and is traceable to the National Institute of Standards and Technology (NIST), following good acoustical

practice. Sound levels in this report are expressed in terms of decibels relative to the ANSI-preferred reference pressure of 20 uPa. The instrument detectors were set for "slow" response. They stored various sound level metrics at 5-second intervals.

The A-weighted sound pressure level ("dBA") is a measurement method that is modeled after the frequency response of the human ear. Measurements of sound using this frequency weighting correlate very well with how "loud" sounds are. It is probably the single most commonly used method for measuring sound on a world-wide basis. Within the U.S. five major Federal agencies - FAA, DOT, DOL (OSHA), HUD and DOD - use it. The study done several years ago used dBA measurements.

Weather over the three days of the study varied considerably in visibility and cloud ceiling, so we were often uncertain as to when (even if) the helicopter could even fly. The temperature typically was in the 40 to 60 degrees Fahrenheit range, but it wasn't until Wednesday (3 May) afternoon the dew point dropped and visibility improved to where the flights could be made.

The first round of testing was done assuming the helicopter would not be flying and so the goal was to get ambient sound measurements. The nine environmental sound monitors were set up at the locations shown on Figure 1. They operated from noon on Monday, 1 May for 24 hours until noon on Tuesday, 2 May; there were no helicopter flights during this time. The data were then read out and the instruments reprogrammed to run from 2 PM on 2 May until 3 PM on Wednesday, May 3, for 25 hours of data. The hope was the weather would clear enough in this time to get in the flights, the only condition being I wanted them all done within one whole hour so we would have the other 24 (out of 25 overall test hours) for ambient sound data if that detail was later needed. In fact the weather did clear Tuesday afternoon and the flight tests were all done in the 5 to 6 PM hour.

The specific helicopter used for the testing was an Agusta A109E, ID N102H, from LifeFlight of Maine.

Data Files

There are a lot of different way to process and display the resulting data. The direct measurements, on both days, were made at 5-second intervals to be consistent and compatible with what you had done in the study several years ago for the original application. But we can process the data to make longer intervals to use for various presentations. For example, in a previous presentation the 1-minute average levels were plotted. We typically show long-term ambient sound levels in 1-hour increments over several days.

Not knowing at this time what format you'll want for your future work, I've provided you with spreadsheets containing different time intervals for the data, all starting with the 5-second direct readings. If you need them for other intervals (longer than 5 seconds) I can generate them for you.

In an overall spreadsheet you'll see multiple tabs, each for a particular instrument and its data in a time increment. The naming convention of the tabs tells you what's what.

Each tab starts with "MM" for "Maine Medical," followed by an "A" or "H" for ambient or helicopter. Next is a three digit number for the instrument serial number; you can map the instrument to its measurement location during the study with the table below, where the "CP" numbers are shown on the map in Figure 1, which also correspond to the locations used in your previous study.

A two-character (letter and number) indicates the time interval of the data. H, M or S correspond to hours, minutes or seconds. The number that follows shows how many of those units are covered by each row in the "Time History" section of the spreadsheet tab. "H1" indicates 1-hour intervals. "S5" indicates 5-second readings. "M1" has 1-minute increments.

Finally, the tab label ends with an "A" or "H" to indicate whether the measurements were made on the first day, only for "A"mbient readings, or on the second day, when the "H"elicopter was flown during one of the hours.

Thus, the tab "MMA469H1" shows measurements made at CP-6, on the second day of testing when the helicopter was present, and the time history in the spreadsheet is in 1-hour increments

Test Location	**Instrument #**
CP-1	464
CP-2	471
CP-3	904
CP-4	460
CP-5	911
CP-6	469
CP-7	910
CP-8	907
CP-9	461

Graphs

There are also many ways to present/graph the data. The temptation might be to plot all the 5-second levels for 24 hours. This can be done but there are 17,280 5-second intervals in 24 hours; you will probably end up with a mess. Generally, if you want to examine detailed sound levels (e.g., when the helicopter flew in and out) using the 5-second values will work.

When discussing the ambient sound (what some mistakenly call "background," but we'll go along with the term for now) it really isn't the sound level on a moment-by-moment basis that determines a person's attitude or assessment of their environment. Rather, it is the ongoing, around-the-clock, long term sound levels that correlate best with attitudes about whether one lives in a "quiet" or "noisy" neighborhood or something in between. My neighbor mows his lawn once a week for about 20 minutes, and I can clearly hear the sound. Yet I live on a quite dead-end street and that's how I'd characterize it.

Both the FAA and HUD (U.S. Housing and Urban Development) use a dBA-based metric of sound, the "day-night sound level", abbreviated DNL or Ldn. This is a long-term (as in an annual average) measure; what happens on a given day or even for some minute or so during a day has little effect on the annual average sound level. (Conversely, this is why we don't put much faith in "ambient noise studies" that measure the sound at a location for 10 minutes or so and declare that to be the ambient level.)

One sample graph (Figure 4) shows both overall sound level information for the 24-houe study and an hourly breakdown of the sound. The "overall" statistics cover, in this case, all 24 hours of the study. The "Leq" is the average sound level (technically, the energy average, as a decibel is a logarithmic function); Leq weights the average somewhat higher than a straight arithmetic average. The L10 and L90 are the sound levels exceed, respectively, 10% and 90% of the time and are

common metrics use with sound measurements. From these we can also say that for 80% of the time the sound levels were between the L10 and L90 levels. For the measurements shown on Figure 4 this means the sound was between 50.5 and 70 dBA at this location for 80% of the 24 hours.

Each hour also shows its Leq average with the green line and the L10 and L90 levels with the range of the blue bar. In addition the red vertical lines show, for each hour, the minimum and maximum sound levels, which are called Lmin and Lmax.

I've not done it but with a little processing of the second day of measurements, one could take out the one hour when the helicopter was flying and the second 24 hours of measurements could be combined into graphs of the ambient sounds over 48 hours. (This is why I wanted all the helicopter testing done within a single hour.) Other than this one test hour there were no helicopter operations at the hospital during any of our sound testing. Alternatively, the test hour could be included so a comparison can be made between when the helicopter was in use and the other 48 hours when it wasn't.

If you want to drill down to look at specific things I suggest trying to balance the specifics of those things (e.g., the actual helicopter flights) with other times when there weren't flight times. You often find other events having nothing to do with the helicopter that were at similar sound levels.

Figure 5 is a graph showing CP-3 covering eight hours of 5-second data, including the hour when the helicopter was flying. This graph has "only" 5,760 data points. Notice that at about 19:40 – two hours after the helicopter was around - there was something that made a burst of sound that was actually a bit louder than the helicopter. You want to look at not just the sound when the helicopter was present but also at other times. People are frequently surprised at the sounds actually present in what they will insist is a "quiet" area. They are familiar with these other sounds and tend to "tune out" sounds from sources like local vehicle traffic, lawn care or snow removal equipment, swimming pool pumps, appliances, etc. The measurement instruments don't ignore any sounds.

There are times when you really want to drill into the individual measurements, as seen on Figure 6. This graph covers part of the eight hours shown on Figure 5, concentrating on a 20 minute period when the helicopter was actually flying into and out of the proposed new heliport area. We can see details of the individual events that we really can't make out in the 8-hour version of the same kind of data on Figure 5.

This also lets us see the "duration" of each event, as defined for aircraft by the FAA. Duration is the time from when the increasing sound level gets to within 10 dBA of the maximum level to when the sound drops down to 10 dBA below the maximum. The duration depends on what the helicopter is doing (flying by or near a pad where it is slowing down or starting to move away) and, from our experience, how familiar the pilot is (i.e., how comfortable [s]he is) with the setting (the test site was new; yet to be built). It is typically around 20 to 30 seconds and is of significance because about 90% of the total sound energy from the takeoff or landing (out of all the sound made for the entire length of the takeoff or landing) occurs during this duration. (The measurements were made at 5-second intervals to be compatible with the previous sound study, so the measured duration will be in 5-second steps.)

So if the hospital has, say, three helicopter operations per day – three approaches and three departures – each with a duration of 30 seconds, that means that 90% of all the sound from all the helicopter operations occurs in a total of 180 seconds over the day of 86,400 seconds.

Finally, we provided you with Excel spreadsheets with data from both days of testing, ambient only and with the test helicopter in operation, for various time intervals. If you need other time intervals prepared, or want other graphs prepared we will be glad to assist you.

Yours truly,

Norman R. Dotti, PE, PP, INCE
Principal

NRD/me

enclosures

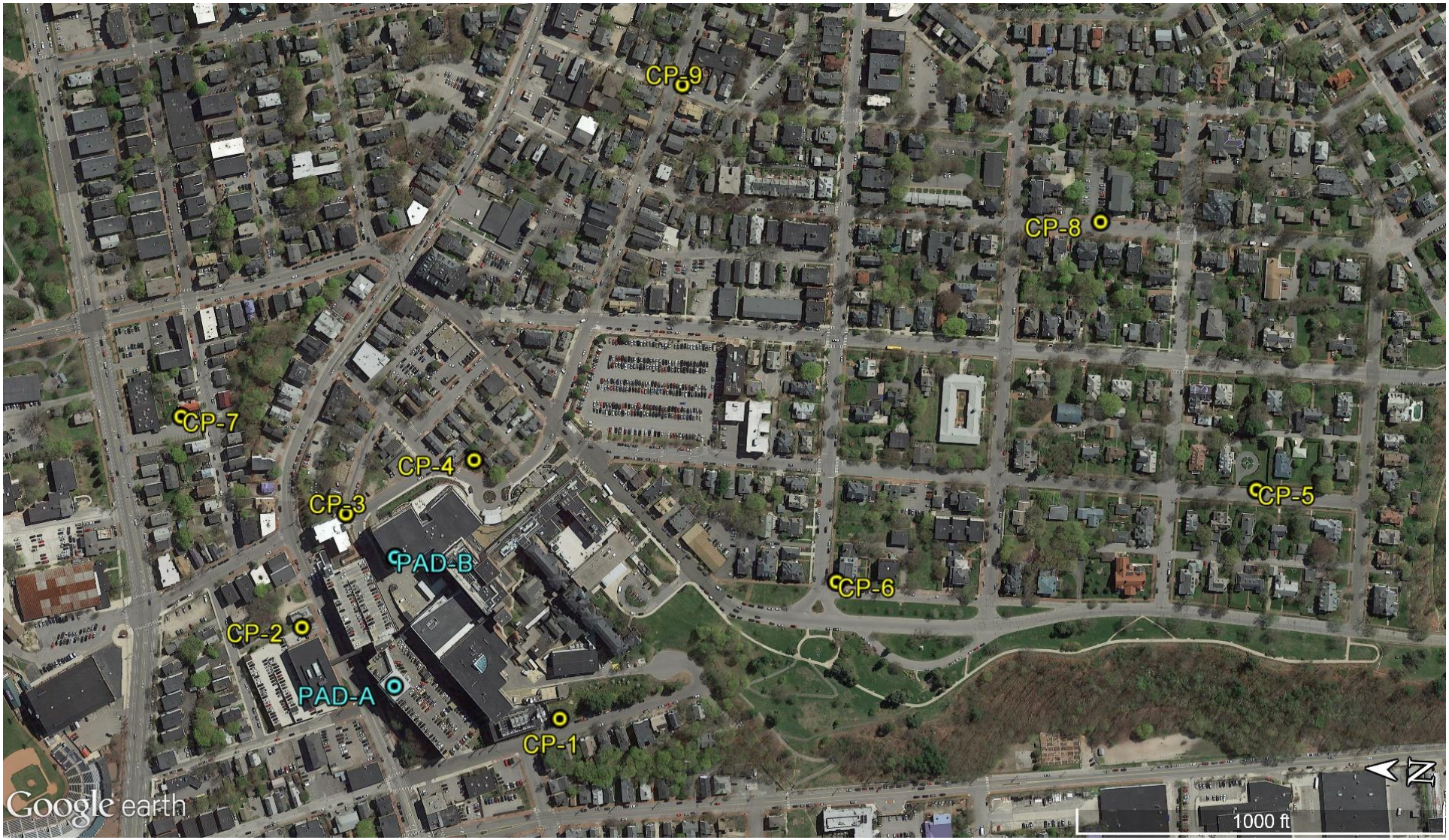

Figure 1 – Sound Measurement Locations

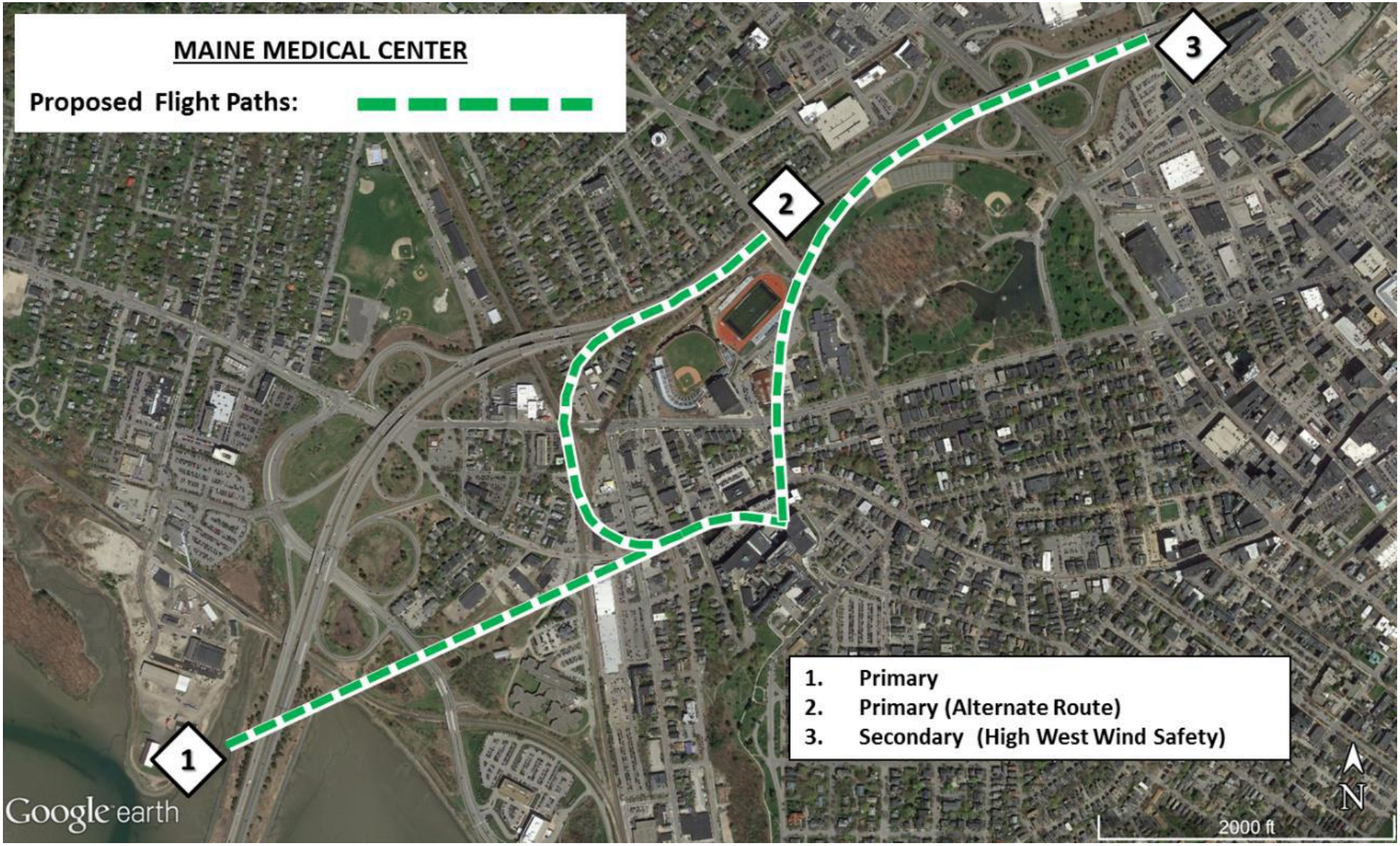

Figure 2 – Planned Flight Tracks

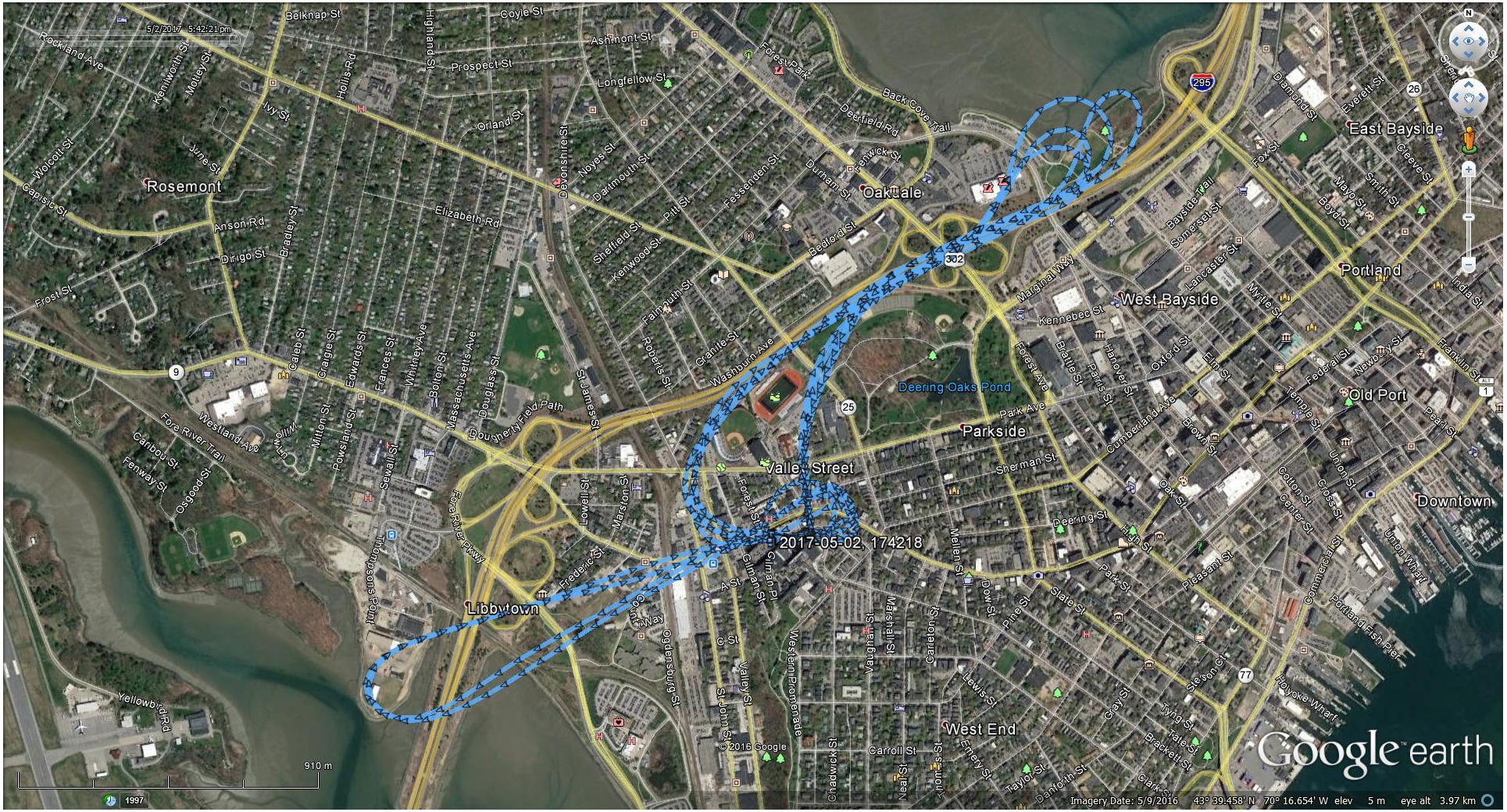

Figure 3 – Flown Tracks (from on-board GPS)

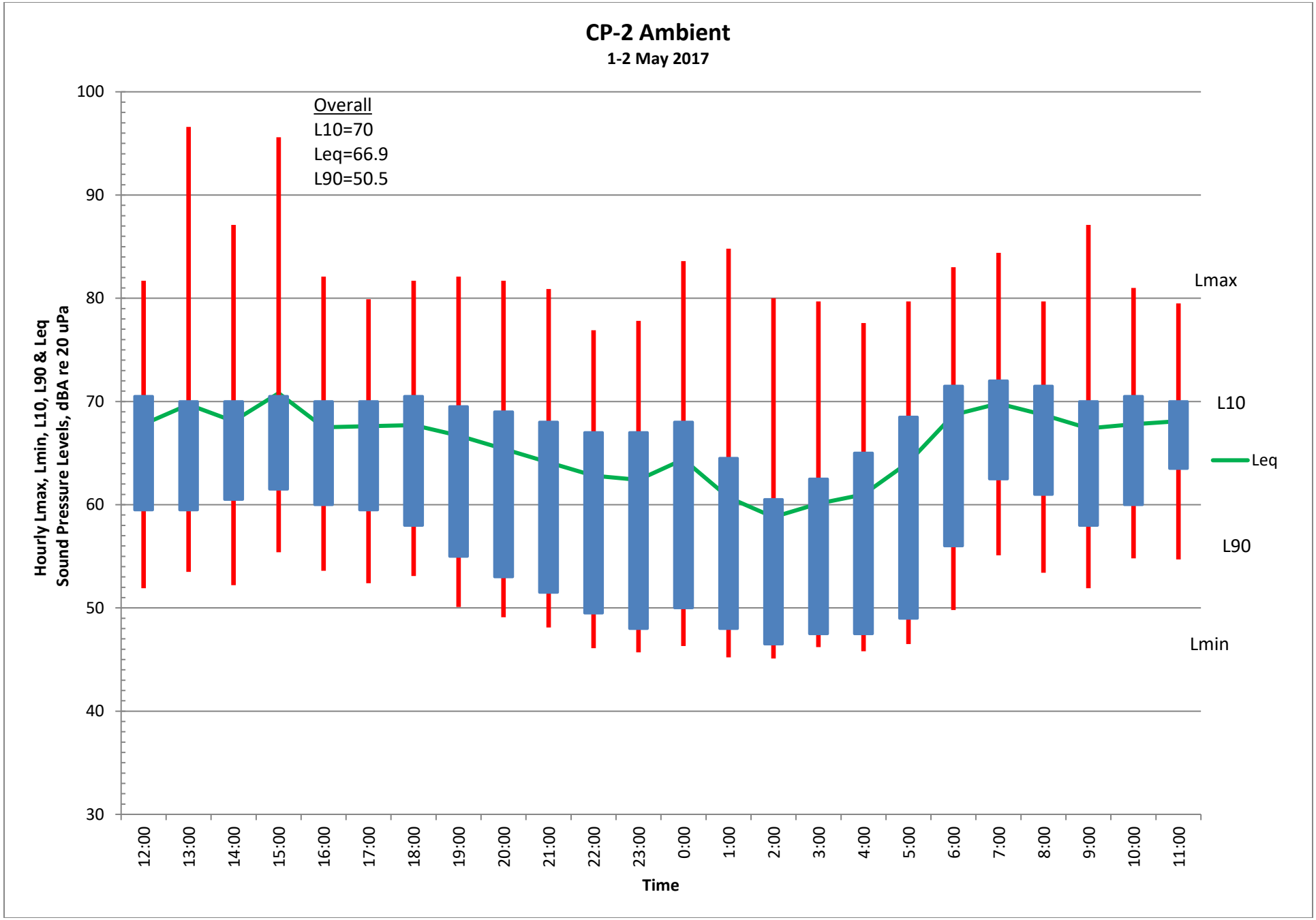

Figure 4 – Sample 24-Hour Ambient Graph

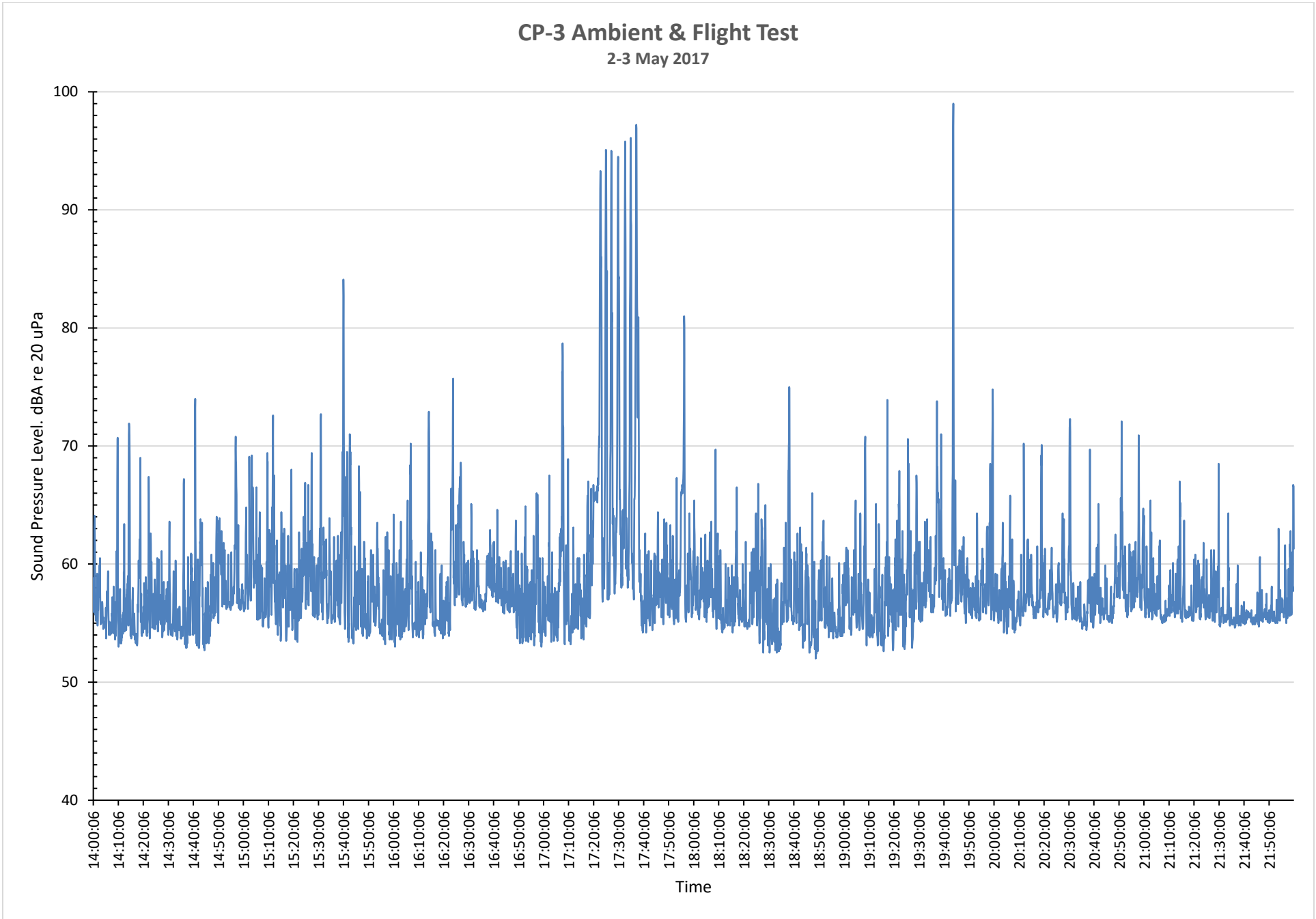

Figure 5 – Sample 8-hour Graph of 5-Second Measurements

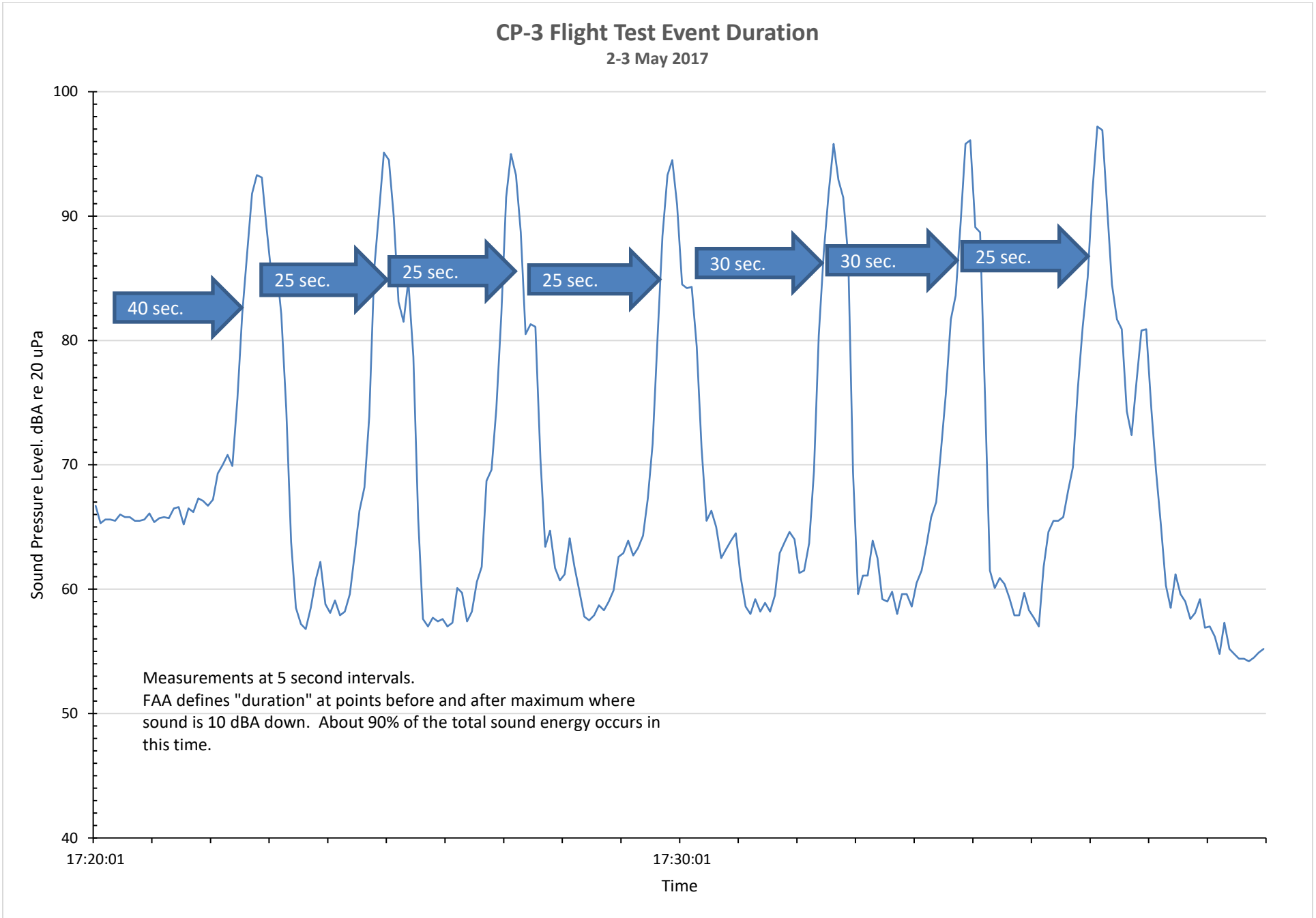

Figure 6 – Individual Helicopter Events with Durations

Maine Medical Center
MaineHealth
centered around you

Get on Board!

Maine Medical Center

Transportation Demand Management Program

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Introduction

Purpose

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees.

Maine Medical Center

Maine Medical Center is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

Incorporated in 1868, Maine Medical Center is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people – with approximately 2,000 of those employees residing in the City of Portland. Maine Medical Center's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

Our care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout greater Portland and the southern Maine region.

Maine Medical Center is the flagship hospital of MaineHealth, a 12-member health system touching central, southern, and western Maine and eastern New Hampshire. The collaboration of MaineHealth's members allows greater availability to community health improvement programs, access to clinical trials and research, and shared electronic medical records.

The strength of the health system, anchored by Maine Medical Center, enables its members to invest in shared programs and services that improve the quality of care while reducing costs whenever possible. As a nonprofit institution, Maine Medical Center has provided more than $200 million annually in community benefits, delivering care to those who need it, regardless of their ability to pay.

MISSION, VISION AND VALUES

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for its community
- Educating tomorrow's caregivers
- Researching new ways to provide care

It proudly carries its unique responsibility as Maine's leader in patient care, education and research. MMC is dedicated to the traditions and ideals of not-for-profit healthcare. It provides care to all who seek it.

MMC's efforts to execute its Mission are aimed at achieving a simple, yet powerful Vision: "Working together so (Maine's) communities are the healthiest in America."

MMC is guided by a set of Values, helping to meet and exceed the expectations of those it is privileged to serve. MMC's Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

MMC Facility Planning

Maine Medical Center recently announced a project that will expand and modernize much of its patient care facilities. Over the next five years Maine Medical Center plans to spend $512 million on the construction, renovation and expansion of inpatient and outpatient facilities and services. The majority of this investment will occur at MMC's main Bramhall campus.

Every aspect of this project is designed around the needs of patients. The project will optimize current bed capacity at the state's largest hospital and calls for increasing the number of single rooms available to patients as well as well replacing surgical and treatment areas with ones that conform to 21st century standards. About $50 million of the total project cost will be invested in other outpatient facilities through the hospital's multi-specialty practice organization - Maine Medical Partners.

The project also involves the replacement of the largest parking garage on the campus, a 1,200-space structure used by employees that sits along Congress Street. The need to replace that garage creates an opportunity to reorient the hospital's main entrance to Congress Street, one of the city's main thoroughfares. The hospital's current main entrance faces Bramhall Street in the city's largely residential West End.

The project is organized into three separate site plan descriptions:

- Site Plan #1:
    - Two floor addition to the East Tower housing 64 private universal rooms.
    - Relocation of the helipad which is currently on the employee garage to the East Tower. This move will align emergency services in the East Tower. Patients arriving via the helipad will have a direct vertical connection via elevator to MMC's Emergency Department and trauma services.
    - Three floor addition to the visitor garage on Congress St.
- Site Plan #2:
    - New employee parking garage on St John St that will include over 2,000 parking spaces. The location of the new garage is roughly a quarter mile from the main campus and MMC will encourage employee to walk during nice weather.
- Site Plan #3:

- Removal of the employee parking garage on Congress St.
- Construction of a new hospital tower with 64 private universal rooms, 19 procedure rooms, and space for an additional 32 private universal rooms. This building will also include a new hospital entrance and drop-off area with direct connection to the visitor garage.

The project is expected to be completed in the fall of 2022.

Commitment to TDM

MMC has a long-standing history of promoting health outside of and within its organization. The medical center developed a Transportation Demand Management (TDM) program in 2008, becoming one of the first in Maine to publish such a plan.

In 2008, MMC became one of the first in Maine to develop an independent TDM program.

Known as "Get on Board!," the program supports alternative commuting options such as carpool, mass transit, bicycling, and walking. MMC also engages in an extensive campaign to educate employees about the benefits of alternative modes of transportation and the Get on Board! program. Total enrollment in Get on Board continues to increase year after year.

Over the years, MMC has added elements to strengthen the program's offerings. In 2015, for example, MMC installed additional bicycle parking in its South Parking Lot to enhance cycling access to the main areas of the campus.

The following Plan documents MMC's current TDM efforts, planned program enhancements, as well as new TDM programs. The Plan is intended to serve as a living document. Monitoring reports will be submitted annually to the City's Planning Department.

While MMC encourages sustainable commuting practices across its organization, this TDM Plan applies to MMC's main campus in the west end of Portland, ME, where the majority of MMC's staff is located. Presently, the main campus employs approximately 4,400 individuals.

Context

Land Use

CURRENT

MMC's Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress St —Portland's main thoroughfare that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.

FUTURE

The area surrounding MMC is identified in the City's Comprehensive Plan as an area with transformational potential. MMC's TDM plan aligns with this future vision. As part of the project, MMC will add a new entrance to Congress Street and envisions providing active ground floor uses in new buildings. This change will heighten the level of pedestrian activity on Congress Street, and serve to promote the corridor.

Parking

CURRENT

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 850 spaces are available for public use by patients and visitors, and 2,027 parking spaces are subscribed to staff and physicians.

TABLE 1 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Employee Garage	0	1,274	1,274	Owned
850 patient / visitor	Patient / Visitor Garage	480	0	480	Owned
1,538 employee spaces	South Lot	370	0	370	Owned
	887 Congress (Forest St Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
489 employee spaces	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The Forest St Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

MMC has continued to witness demands on the existing parking supply intensify due to increased patient volumes and higher acuity patients with longer lengths of stay. Under current conditions, MMC's staff parking system typically operates at capacity during the weekday daytime hours. When off-site, remote staff parking facilities reach capacity, staff is directed to park on-campus in the Congress Visitor Garage. Some staff members independently choose to park nearby utilizing neighborhood on-street parking, although this is discouraged by MMC.

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. The counts indicate that the parking system typically operates at or above capacity during weekday daytime. MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed. This ratio is low compared to other New England and national peers. MMC's 2,027 staff

parking spaces equate to 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions.

FUTURE

Looking towards the future, MMC will undertake a project to modernize its Bramhall campus. The project is detailed above and is anticipated to increase patient/visitor and employee parking demand. This demand will be offset by TDM methods described later in this document, along with expansions in its campus parking capacity.

Data Collection

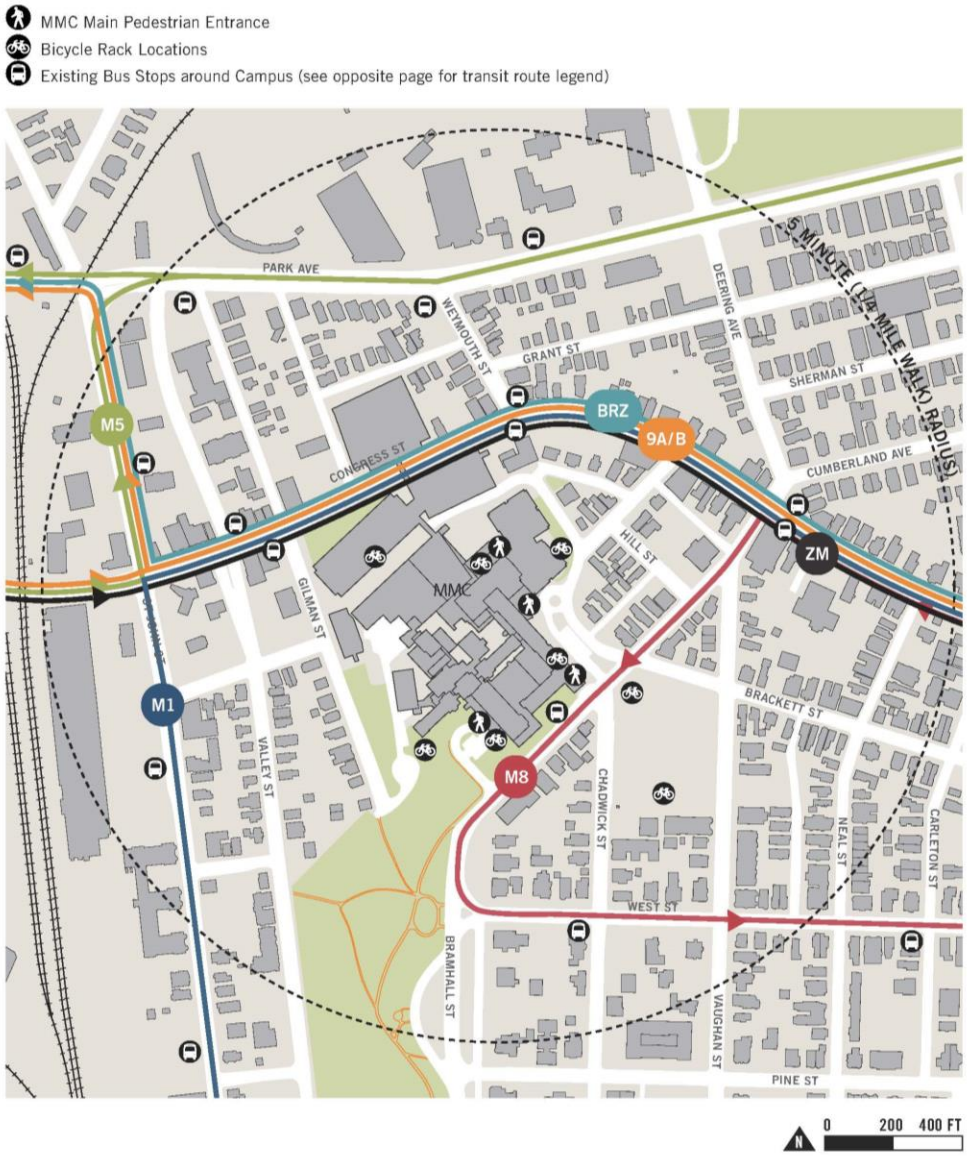
Currently, MMC has a limited transportation mode data collection system. MMC recognizes the need for an improved system. MMC employs a large amount of individuals. Tracking their commute behaviors will require a system that relies on automatic data collection wherever possible. MMC is exploring options to improve data collection such as a card reading system similar to EZ-PASS.

Transit

MMC's main campus is located in a section of the City that is served by the Greater Portland Transit system (METRO), which has multiple routes that stop within walking distance of the Medical Center. The campus is also served by the ZOOM turnpike Express route operated by ShuttleBus-ZOOM.

The METRO routes accessible from the Bramhall Campus have varying service spans with buses generally arriving every 30 to 60 minutes. They provide connections to the nearby Portland Transportation Center (PTC) and the Downtown Hub, which are served by additional METRO and regional bus lines. The PTC also serves as the local connection to Amtrak's Downeaster service that runs along the coast between Boston and Brunswick. The closest bus shelter to the hospital is along Bramhall Street, between the Dana Health Education Center and the South Entrance. This stop is served by METRO Route #8, which provides connections to other parts of the peninsula.

FIGURE 1 Map of Existing Transit Routes and Stops



Bicycle and Pedestrian Infrastructure

MMC understands that all campus users walk at some point to arrive at their MMC destination. To enhance pedestrian accessibility, MMC maintains its network of campus pathways and public sidewalks adjacent to campus. Similar to other medical centers of its size, MMC provides elevated, covered, and temperature-controlled walkways between its parking garages and key campus circulation corridors.

The bike facility network surrounding MMC's campus is fragmented and lacks bicycle infrastructure as illustrated in figure 6 below. In addition, the hilly nature of the Western Promenade impacts bicycling and walking in this area.

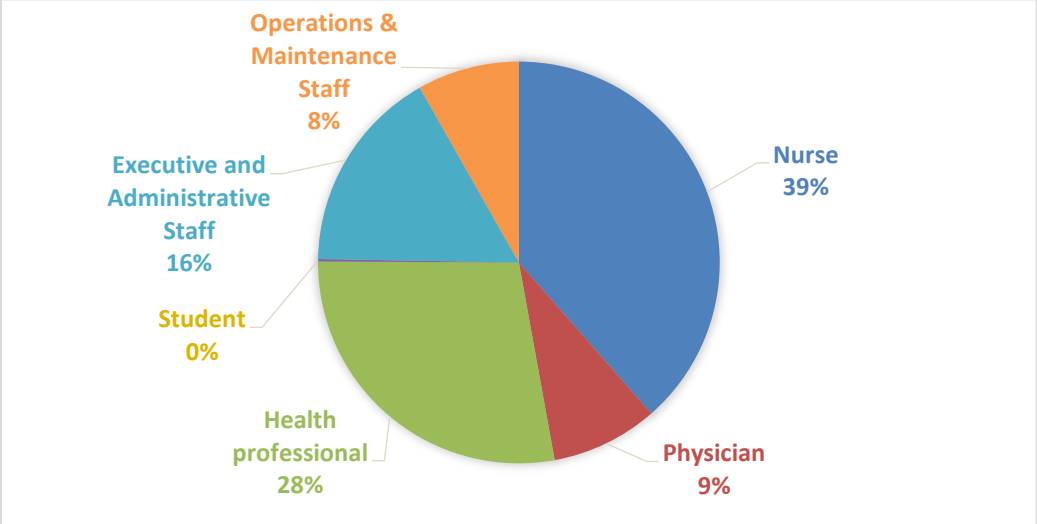
Current Travel Behavior

As part of its efforts to monitor and enhance the Get on Board program, MMC recently conducted a survey of its employees to understand how they commute, any barriers to using alternative transportation, and their interest in other TDM initiatives. The Medical Center also analyzed employee residence data using geospatial analysis tools to better understand employee commuting patterns. The findings from the survey and analysis are summarized below.

Commuting Survey

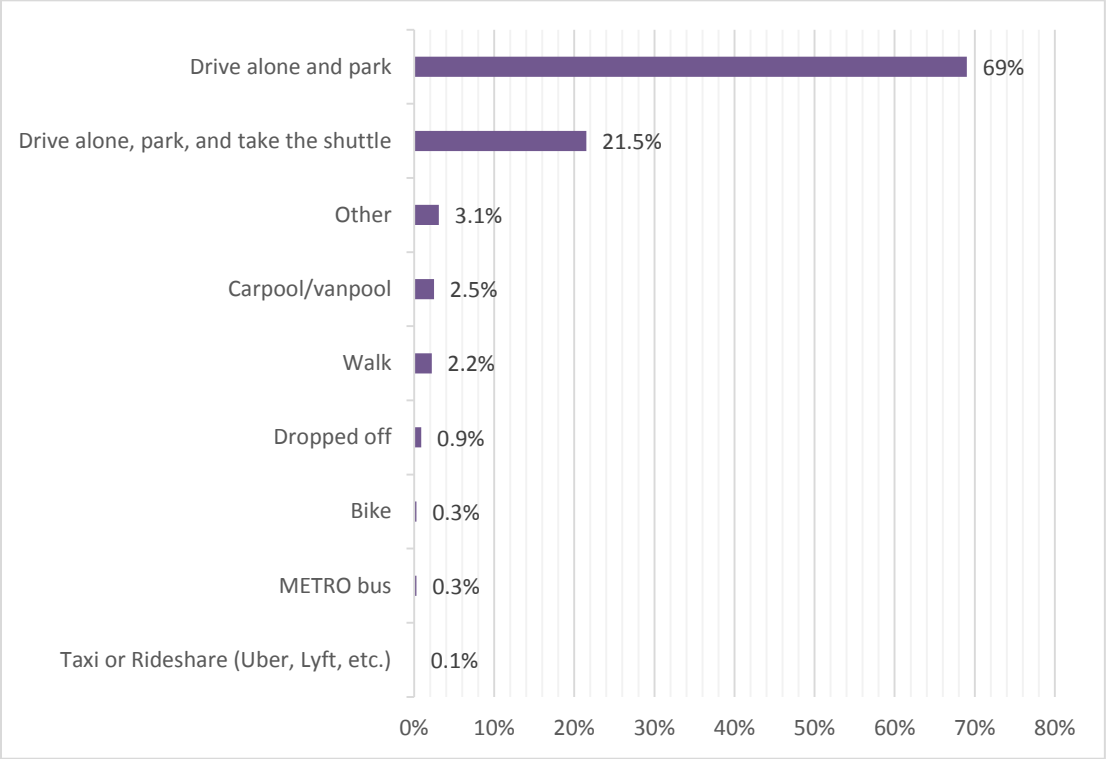
Approximately 1,600 MMC employees participated in the voluntary survey, administered in February 2017 – nearly a 40% response rate. Approximately 81% of the respondents work at the Bramhall campus. The respondents included a diverse spectrum of employees including operations and maintenance staff, students, executive and administrative staff, health professionals, nurses, and physicians. Figure 2 illustrates the various roles held by the survey participants.

FIGURE 2 Survey Respondents by Hospital Affiliation



The survey found that the majority of employees drive to campus. Among alternative modes, carpooling was the most used mode of travel, followed closely by walking. Figure 3 illustrates the commuting modes of MMC employees.

FIGURE 3 Employee Travel Mode To and From MMC



The survey also revealed that among Get on Board enrollees who participate in the program, carpooling benefits were the most used benefits, followed by biking benefits and transit benefits.

As the Get on Board program evolves, MMC intends to administer a commuting survey every 2 years to track travel trends and to gauge the effectiveness of specific initiatives. The information collected will enable MMC to develop informed, data-based enhancements to Get on Board, providing a greater prospect for program success.

Geospatial Analysis

MMC analyzed the residence locations of its employees to understand the commuting patterns of its employees. The analysis showed that approximately 27% of employees live within a 3-mile radius and approximately 73% of employees live beyond a three mile radius of MMC (See, Figures 4 and 5). Three miles is generally considered a reasonable biking distance by industry standards.

FIGURE 4 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

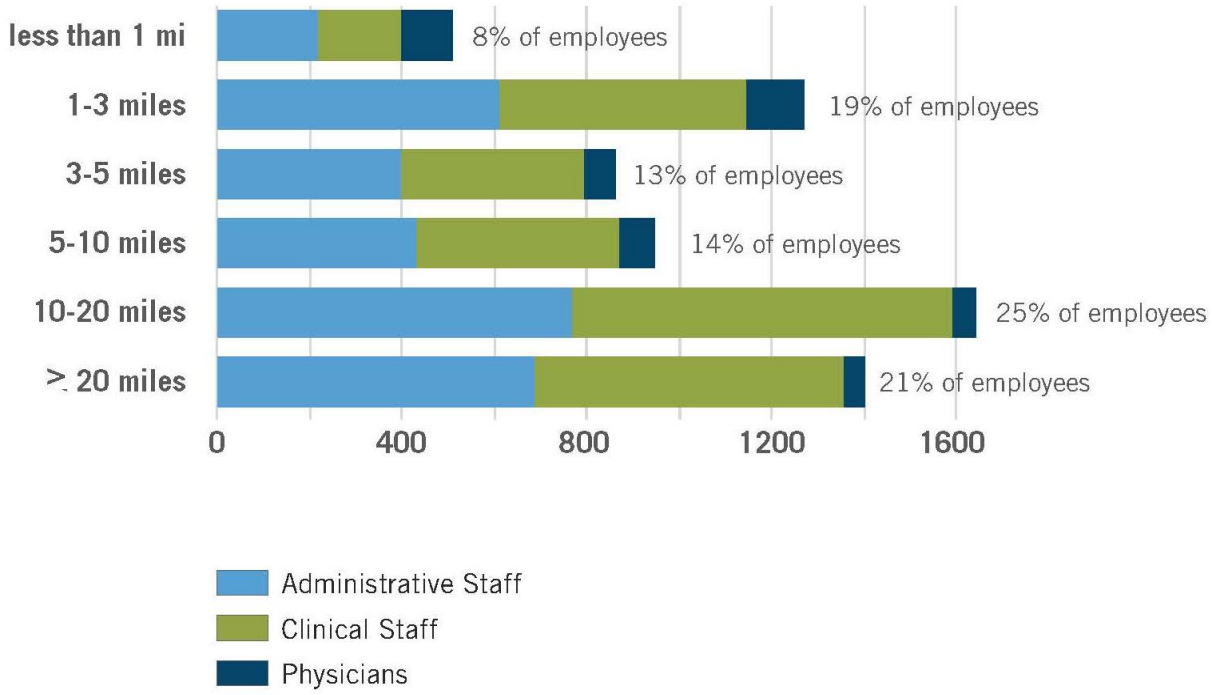
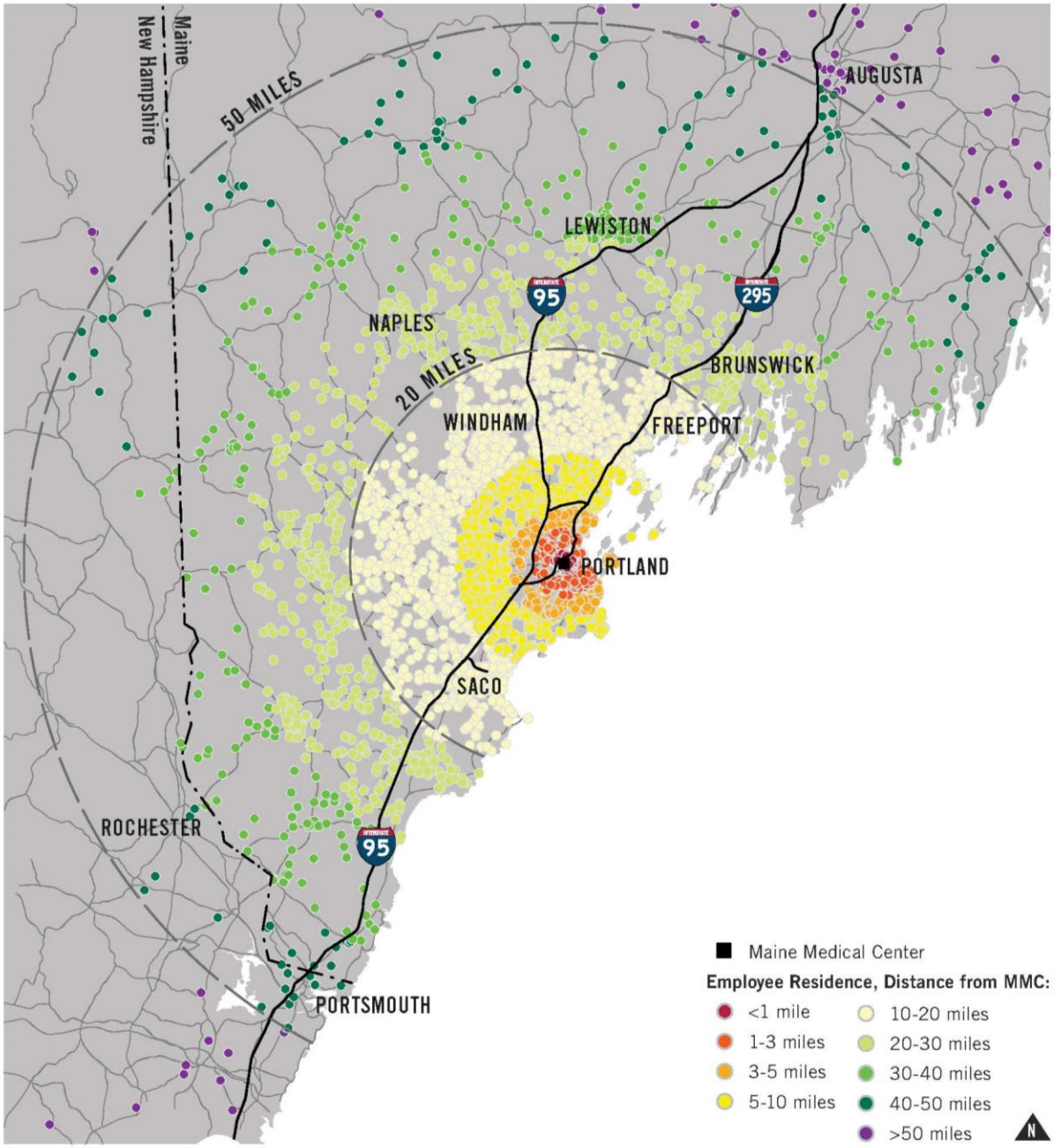


FIGURE 5 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



Program Goals

As described above, VHB collected parking count data in January and March 2017 on MMC's behalf. The observed data reveals that peak parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,122. This number is 4.4% below the expected parking demand (3,264) for a suburban hospital of MMC's size, according to Institute of Transportation Engineers (ITE) parking demand projections. The difference equates to 142 parking spaces. It is also important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 344 spaces, or 40%, to achieve a similar beds-to-spaces ratio as its peers.

Peak parking demand at the Bramhall campus is 4.4% below the expected parking demand for a suburban hospital of MMC's size.

The Get on Board program aims to reduce single-occupancy vehicles on MMC's Bramhall campus through effective TDM measures. These measures include a parking "cash out" program, discounted transit fares, premium parking for carpoolers, and bicycle parking and facilities, among others. Additional details about the program elements are described in the next section. MMC believes the program has had a positive impact on employee travel behavior and has contributed to reduced parking demand over the years.

Based on a review of federal census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 65 individuals who currently drive to MMC could be shifted into alternative modes of accessing the campus over 5 years. This represents an additional 2% reduction from the ITE parking demand projections.

In consultation with the City, MMC has established the following short-term, mid-term, and long-term trip reduction goals.

	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Trip Reduction Target	2%	4%	5%

MMC hopes these targets will be achieved through the strategies outlined below. It will endeavor to reduce the number beyond the target identified above through further enhancements or program expansions in the coming years. MMC will continue to monitor parking demand and needs at the Bramhall campus, and re-evaluate its program goals after the initial five year period as needed.

Parking and TDM Strategies

Current Get on Board Program Elements

Get on Board is advanced through a range of monetary incentives and the provision of facilities to support alternative modes. The individual program elements are described below.

Biking

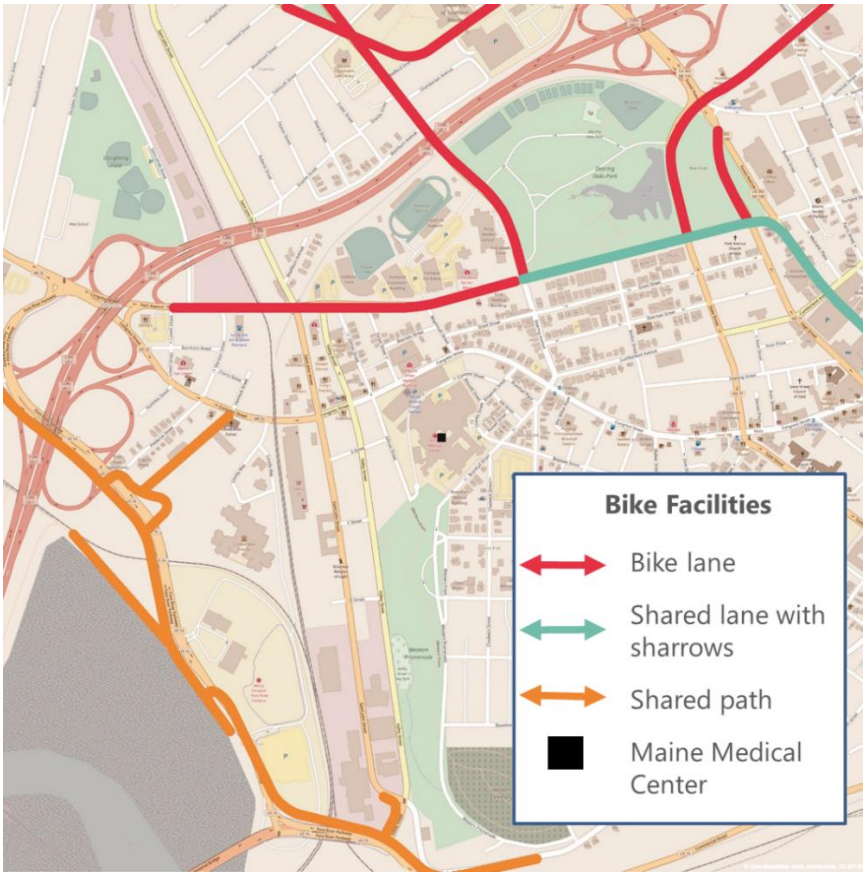
The MMC campus is located in close proximity to existing and planned routes in the City of Portland's growing bicycle network as shown in Figure 6. MMC offers a variety of bike facilities to make bicycle

commuters feel welcome and safe. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on its main campus. Three new bicycle racks were added in the vicinity of the Bramhall entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus. Bicycle commuters also have access to additional on-site facilities such as showers and lockers.

Beyond on-campus facilities, MMC is an advocate of the City of Portland's Bikeway Network Plan, which will provide bicycle infrastructure on streets adjacent to campus to connect bicyclists with existing and shared use paths.

The City of Portland's latest Comprehensive Plan proposes transforming the streets surrounding MMC into "neighborhood byways." This kind of facility would be shared between vehicles, bicyclists, and pedestrians, but the roadway would be enhanced with pavement markings, street signs, and even streetscaping to elevate the safety and comfort of bicyclists and pedestrians. This type of improvement would serve to encourage greater walking and biking for those employees who live within a reasonable distance of the hospital. MMC also supports ongoing collaboration with the City of Portland, local and regional transit agencies, and neighborhood and advocacy organizations to ensure the improvement of pedestrian, bicycle, and transit infrastructure and networks serving the campus.

FIGURE 6 Bicycle Network Surrounding MMC



Mass Transit

Under Get on Board, employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently on campus. This is a clear demonstration of MMC's commitment to making the TDM Plan

work for its employees and for the City of Portland. Table 2 lists the Greater Portland METRO Bus and Shuttle-Bus Zoom discounts provided through "Get on Board!"

TABLE 2 MMC Transit Discounts

	Regular Price	MMC Sale Price
METRO	$13.50	$8.00
S. Portland	$13.50	$8.00
Zoom 10 Ride	$39.00	$29.60
Zoom Monthly	$100.00	$84.50
Zoom Quarterly	$260.00	$197.50

The *Portland Peninsula Transit Study* [1]established several strategies for improving the utilization of transit in Portland. These strategies involved expanding the transit service to development areas, creating more direct connections, and increasing service frequency to compete with drive-along commute times. The *Portland Transportation Hub Link Feasibility Study*[2] also proposed a route alignment along Congress Street that would increase transit frequency near the hospital. These improvements, if implemented, would highly benefit MMC's campus population in light of the distance that most employees reside from MMC and the fluctuating nature of employees' schedules.

Carpool

Carpooling is the most popular component of the Get on Board program. Over half of program participants at the main campus take advantage of this benefit. Currently, employees participating in a carpool are given access to preferred parking in an area of the Employee Garage that connects directly to the Main Lobby on the ground floor of the hospital.

Parking Cash Out

Presently, MMC operates a "parking cash out" program that offers employees monetary payments in lieu of a parking space. Program participants submit a form each week that certifies their use of alternative transportation during the week to commute to work. Upon receipt of a certification, MMC issues the employee a payment equal to the cost of parking at MMC's employee garage ($3.00/week).

MMC Shuttles

MMC operates employee shuttle services between the Bramhall campus and off-site parking locations Mondays-Fridays, 6:00 am to 11:00 pm. The shuttles include:

- MMC and off-site parking lots at 222 St. John Street and 993 Congress Street (Monday – Friday, 6:00 AM to 11:00 PM)
- MMC Bramhall campus and the 110 Free Street Office Building (Monday-Friday, 6:00 AM to 4:00 PM, every 20 minutes)

[1] Portland Transit Committee. *Portland Peninsula Transit Study* (2009), Retrieved from: https://www.portlandmaine.gov/DocumentCenter/Home/View/3383 .
[2] Portland Area Comprehensive Transportation System (PACTS). *Portland "Hub Link" Feasibility Study* (2015), Retrieved from: http://www.portlandmaine.gov/DocumentCenter/View/14793 .

- MMC Bramhall and Brighton Medical Center (335 Brighton Avenue) (Monday-Friday, 6:00 AM to 4:00 PM)

MMC also provides shuttle service for contractors from the parking lot at 993 Congress Street to the hospital. The shuttles provide a predictable alternative to employees commuting between the three sites and serve to reduce vehicular traffic in and around MMC.

Scooters and Motorcycles

The campus provides a designated parking space for scooters and motorcycles on the first floor of the employee parking garage.

UCar

MMC currently dedicates a space in its Congress Street parking garage for a carshare vehicle, as part of the city-wide carshare program called U Car Share. The program allows members to borrow a car by the hour, providing employees who bike, walk, or ride transit to work with additional mobility for off-site meetings.

TDM and GoMAINE website

The current employee GOB portal is linked to the GoMAINE Commuter Connections website, which is an alternative commuting program operated by MaineDOT. GoMAINE provides commuters with additional commuting resources and benefits that supplement those provided by MMC. These benefits include a carpool ride-matching program and a rewards program for participants.

Pay for Parking

MMC will charge its employees no less than $3 per paycheck to utilize MMC parking. MMC employees are paid bi-weekly. MMC will evaluate employee parking fees in the mid-term. In evaluating future price, MMC will consider the prevailing market price for parking in the surrounding area at the time of implementation, as well as best practices in setting affordable parking prices.

Skiing

In the winter months, some employees chose to leverage their wintertime hobbies to get to work.

Enhanced Get on Board Program Elements

Program enhancements are anticipated to occur within 1-3 years.

Walking

As part of the modernization of Bramhall, MMC will orient entrances to public streets and provide active ground floor uses where possible to encourage pedestrian activity.

Biking

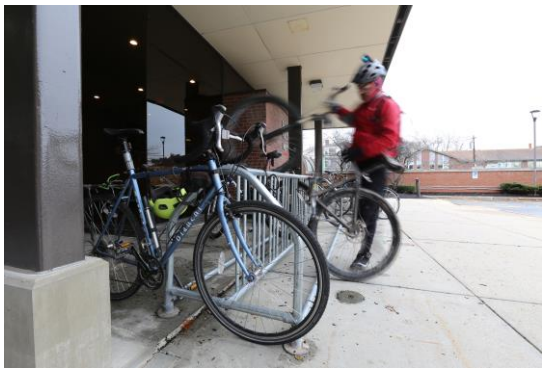
MMC will continue to offer bike storage, bike repair tools, and on-site shower and locker facilities to commuters who choose to bicycle to work.

MMC will also continue its parking cash out program to incentivize current bicyclists. To support "interested but cautious" bicyclists, MMC will seek out local bicycling support organizations to host educational safety seminars and/or adult bicycling skills classes at least once per year on the Bramhall Campus. MMC will also promote rewards programs, such as GO MAINE and Bicycle Benefits, to further motivate increased bicycle commuting.

MMC understands that Portland Bikeshare, a non-profit organization with a goal to establish a bikeshare system in the City of Portland, plans to launch a bikeshare pilot in 2018. MMC will support this effort in the future.

MMC also recognizes the importance of safe and accessible infrastructure to active transportation. The presence of infrastructure can provide the sense of security that cautious bicyclists seek to spur a change in travel behavior. Additionally, as active modes become more widespread throughout the City of Portland, the visibility of walkers and bicyclists in the community can encourage greater participation

among MMC employees. MMC supports the City of Portland in its work to improve public rights-of-way and promote active transportation modes.



Carpooling/Vanpooling

Given the success of its carpooling program, MMC will continue to provide carpoolers with premium parking in the new employee parking garage. Similar to bicyclists, pedestrians, and transit riders, carpoolers will also continue to be eligible for parking "cash out" benefits. To facilitate the formation of carpools and vanpools, MMC will promote GOMAINE's carpool matching program to facilitate carpool matching.

MMC Shuttle

Once the new employee parking garage is constructed, MMC will redesign its shuttle route system to serve employees parking at the new site. The new parking garage will consolidate previously dispersed parking options for MMC employees. MMC anticipates the new route will reduce traffic congestion into and around the campus area.

UCar

Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar vehicle presently located in its Congress Street parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the additional UCar.

Enhanced Transit Subsidies

To further incentivize transit use, MMC will fully cover the cost of METRO bus tickets for employees who elect to use METRO as their primary mode of transit to the campus. If METRO ticket costs change, MMC will address program participation rates and work with METRO to find the best solution to support employees who wish to ride METRO. The type and amount of subsidy will depend upon ongoing discussions with METRO to enhance partnerships (see below).

New Program Elements

In addition to enhancements to the initiatives described above, MMC intends to initiate complementary elements to ensure the program's continued success. MMC is currently exploring the following options. The strategies are prioritized based on their implementation timeframe.

Short-Term (1-3 years)

The following actions MMC will pursue immediately (some are already underway) with the intention that all programs are fully operational within the 3-year time horizon.

Get on Board! Coordinator

MMC intends to hire a designated resource who will be responsible for reducing single-occupancy vehicles on the Bramhall campus through the implementation, facilitation, and continuing sustainability of Get on Board. The coordinator will track the progress of the TDM program, oversee operations, and identify future opportunities to reduce single-occupancy vehicles on MMC's Bramhall campus. The Coordinator will also be responsible for monitoring the progress of programs, data collection, and TDM program updates as required.

Way 2 GO MAINE

In October 2017, MMC participated in GOMAINE's Way 2 GO MAINE program for the first time. Way 2 GO MAINE is a 3-week business to business commuter challenge where employees log commute trips and earn prizes. In the first year participating, MMC ranked 2nd for large companies participating with 1,094 trips logged.

MMC plans to participate in the Way 2 GO MAINE B2B challenge in the future.

Improving Data Collection Capabilities

MMC will improve its data collection capabilities as described below.

Guaranteed Ride Home (GRH) Program

MMC will implement a Guaranteed Ride Home program to ensure that employees who regularly commute using alternative modes will have transportation in emergency situations.

Long-Term Actions (5+ years)

MMC recognizes that the following program elements require partnership with outside partners and agencies and, as such, will take longer to achieve. MMC has already laid the groundwork for all of these elements and will continue to pursue them in the coming years.

Regional Connections Partnership

Through its TDM Coordinator, MMC will seek to form partnerships with other major employers in the city, including the City itself, to foster a wholistic approach to travel management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland. Such collaborations would afford the opportunity to think regionally and help guide both employer provided or sponsored benefits as well as critical external resources such as METRO transit, sidewalks, and bicycle infrastructure.

Supporting Mass Transit Commutes

MMC intends to explore a partnership with the METRO to identify strategies for increasing MMC ridership, such as service updates and/or pricing agreements. The formation of a partnership could be mutually beneficial, by providing METRO with feedback for increasing ridership while maximizing the usefulness of the transit system for MMC employees. As MMC formalizes its ties to other local institutions through a regional partnership, its collaboration with METRO could also extend to other employers.

Education and Marketing Strategies

MMC has a number of approaches to raise awareness about the benefits of alternative transportation and opportunities for participating in the Get on Board program. These strategies are integrated into various aspects of the organization's engagement with employees to reinforce the importance of TDM.

Sharing TDM Program Information

Information about the Get on Board program is available to all MMC employees via the MMC intranet. MMC's intranet is a place where employees routinely go for information. The Get on Board page provides information about all of MMC's TDM programs as well as links to the GOMAINE.org webpage.

MMC intends to develop and deliver information about the Get on Board program using communications best practices that are refined throughout the program's lifespan. Communications methods that are effective will be further refined while elements that are less effective will be reevaluated. Some examples of communication methods include:

- Introducing the program to new employees at orientation: MMC has shared information about the Get on Board program with new employees during orientation but will evaluate whether this is an effective way to educate new employees about the program. There are many factors to consider when providing information to new employees. The biggest factor to consider is the large amount of information shared during orientation.
- Social Media: MMC will use social media is an effective tool to communicate with employees about the Get on Board program.
- Get on Board Kiosks: To supplement information available on the Get on Board intranet site, MMC will designate locations to communicate information to employees in real time. One location under consideration is near shuttle stops.

Get on Board Fair/Seminars

MMC will explore offering educational sessions about the importance of TDM and specific TDM methods such as walking, biking, or riding the bus. Educational sessions will rely on the expertise of local organizations specializing in alternative modes of transportation.

Get on Board Blitz

October is National Rideshare month and the same month of GOMAINE's Way 2 GOMAINE business to business challenge. In the future, MMC will explore ways to increase marketing of the Get on Board program during the month of October, potentially leveraging social media and internal communications vehicles, such as electronic newsletters.

Comprehensive Data and Goal Monitoring

MMC understands from its prior experience with TDM initiatives that achieving change is an iterative process that involves tracking the effectiveness of its programming and making mid-term adjustments if necessary to improve program effectiveness. MMC will collect and analyze data on a regular basis to monitor progress towards its TDM targets. The data would be collected through a range of instruments and will be used to make annual comparisons and to identify trends, and areas for growth. MMC will submit monitoring reports that include a summary of the data monitoring results, comparisons of the data to trip reduction targets, and adjustments to programs as needed.

Parking Utilization Data

MMC is exploring options to improve data collection in the new employee parking garage. The most likely option utilizes Easy-Pass technology to automatically collect information about the vehicles parking in the garage.

In addition, MMC plans to install a parking guidance system in the new employee garage, as well as a controlled-access parking system in the visitor parking garages. Together, these systems will allow MMC to monitor occupancy in each garage and to collect data regarding who uses the parking facilities and the temporal fluctuations in parking demand across various periods of time.

MMC will utilize this parking usage data to assess its parking arrangement on a semi-annual basis.

MMC has received feedback on numerous occasions about inappropriate use of its parking garages. MMC hopes to reduce the misuse of its garages in the future by implementing these monitoring and controlling systems.

Employee Survey

MMC conducted an employee travel survey in 2017 to understand employee commuter preferences, and it intends to administer the survey bi-annually going forward. The survey is administered electronically using a survey platform and will produce data that MMC (or a third party) can use to identify changes and progress from one period to the next. The survey will seek information about the following topics to gauge the effectiveness of initiatives:

- TDM program participation rates
- Individual program effectiveness
- Barriers to TDM use
- Changes in commuting preferences
- Marketing effectiveness

Conclusion

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees. The program has an aggressive short-, mid-, and long-term goals. Success of this program partially relies on a cultural shift away from personal vehicles. Maine Medical Center is committed to implementing the programs outlined in this report and supporting the transition away from single occupancy vehicles.

Memorandum

Maine Medical Center Campus-Wide Parking Study

Overview

Maine Medical Center (MMC) retained VHB to conduct a campus-wide parking study that includes an analysis of demand and supply for patient, visitor, and employee parking on MMC's Bramhall Campus. This parking study incorporates the targeted impact of MMC's Get on Board Transportation Demand Management program.

This study quantifies the existing and future parking conditions, with a focus on peak period demand requirements, to help quantify and formulate sound parking strategies to adequately support MMC's patients, visitors, staff, and physicians into the future. The study took into consideration the assessment of two distinct user groups on-campus: patients/visitors and employees (all staff including physicians, nurses, administration, etc.). It also looked at all MMC-controlled parking, including both the on-campus parking as well as off-site, remote staff parking.

Existing Parking Supply

Table 1 provides a summary of existing MMC parking spaces. Currently, there are 850 patient/visitor parking spaces. All patient/visitor parking spaces are located on-campus. There are 2,027 employee parking spaces.

Table 1: Existing MMC Bramhall Campus Parking Supply Summary

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Employee Garage	0	1,274	1,274	*Owned*
850 patient/visitor spaces	Patient/Visitor Garage	480	0	480	*Owned*
1,538 employee spaces	South Lot	370	0	370	*Owned*
	887 Congress (Forest St Garage)	0	178	178	*Owned*
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
489 employee spaces	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	*Owned*
	321 Brackett St	0	9	9	*Leased*
	Total Parking Spaces	**850**	**2,027**	**2,877**	

Existing Parking Demand

Existing MMC parking demand information was collected and quantified via various sources. A description of each of the data sources is outline below:

- Detailed weekday occupancy parking counts were conducted to understand utilization at key points in time to assess peak occupancy, overnight occupancy, and intervals of weekday garage entries and exits. These counts were conducted on multiple days in March and April 2017;
- Intermittent spot checks of parking utilization and access/egress were conducted from January through March 2017 by MMC and its consulting team; and

- MMC Parking and Security staff and the City of Portland Parking Director provided supplemental input regarding their observations and experiences related to the utilization of parking.
- A hospital peer review of parking facilities.

These counts, observations and input were compiled and used to help quantify the existing parking demand for a typical day on the campus. As shown in **Table 2**, MMC typically operates its employee parking at or above capacity during the weekday daytime. Patient/visitor parking generally operates at or near capacity during typical weekdays as well.

Table 2: 2017 MMC Bramhall Campus Parking Spaces/Demand Summary

	Patient / Visitor	Employee	Total at Facility
Parking Spaces	**850**	**2,027**	**2,877**
Parking Demand	**860**	**2,400**	**3,260**

MMC has approximately 2.3 employees, students, and contractors for every one employee parking space near the Bramhall Campus. Under current conditions, MMC would require about 370 additional parking spaces to alleviate today's employee parking shortfall. MMC manages this shortfall utilizing multiple strategies to address the demand for parking, such as TDM programs and moving employees to off-campus locations and securing additional remote parking with shuttle service. These strategies, however, have no satisfactory long-term solutions. The decentralized parking solution creates management challenges and is an employee dissatisfier. MMC continues to hear from employees that parking at the Bramhall Campus is unreliable. There have also been observations of MMC employees utilizing adjacent streets for parking throughout the day.

According to a hospital peer review, MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed. This ratio is low compared to other New England and national peers. MMC's 2,027 staff parking spaces equate to 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions.

Future MMC Parking Actions

MMC has proposed multiple capital projects and programs in connection with the Master Facility Plan outlined in MMC's IDP. Near-term (completed by 2021) projects to expand parking supply include:

1. Patient / Visitor Garage Addition: Expand the existing 480-space Patient/Visitor Garage by three levels to accommodate an additional 225 spaces; and
2. New St John St Garage: Construct a new 2,450 space parking garage on the nearby St. John Street and demolish the existing 1,274-space Employee Garage.

The resultant 2021 parking supply upon completion of these near-term projects is summarized in **Table 3**.

Table 3: Expected 2021 MMC Bramhall Campus Parking Supply Summary

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Patient/Visitor Garage	705	0	705	*Owned*
1,075 patient/visitor spaces	South Lot	370	0	370	*Owned*
264 employee spaces	887 Congress (Forest St Garage)	0	178	178	*Owned*
	7 Bramhall St	0	26	26	*Leased*
OFF-CAMPUS	New Employee Garage	0	2,450	2,450	*Owned*
2,459 employee spaces	321 Brackett St	0	9	9	*Leased*
	Total Parking Spaces	**1,075**	**2,654**	**3,729**	

Per September 22, 2017 Institutional Development Plan

As shown in **Table 3**, the patient parking supply by 2021 will increase by 225 spaces and the employee parking supply will increase by 696 spaces with these two parking projects completed. With the new Employee Parking Garage located off-campus, the amount of employees who park remotely will increase from about 25 percent to 90 percent.

MMC anticipates consolidating the Gateway Garage and Classic Lot parking spaces into the new employee garage following the opening of the new parking garage.

These efforts are intended to enable MMC to continue with their primary Master Plan goals, which include the expansion of important clinical programs and the de-coupling of semi-private patient rooms to fully private rooms. The proposed new hospital building will be located on the site of the former Employee Garage. As defined in the MMC IDP, the hospital anticipates that the overall patient load will grow by approximately eight percent over the next ten years (or about 0.75 percent per year). Similarly, employment at MMC is expected to grow by approximately 7 percent over the next ten years (or about 0.70 percent per year). The growth rates were applied to the 2017 MMC parking demands to reflect overall anticipated institutional parking growth. **Tables 4 and 5** summarize how the new construction will affect the occupancies over time.

Table 4: Future MMC Bramhall Campus Employee Parking Supply/Demand Summary

	2020	2022	2026
Parking Spaces	**2,654**	**2,723**	**2,723**
Effective Parking Capacity	**2,521**	**2,521**	**2,521**
Parking Demand	**2,465**	**2,500**	**2,570**

For employee parking garages, the effective parking capacity is 95% of striped parking spaces, shown in **Table 4**. This is due to the user group familiarity of the parking garage layout, circulation and general trends of the garage availability due to their daily use of the facility and the low space turnover. Effective capacity for the employee parking spaces is not 100% because of anticipated user compliance with lined spaces (i.e. parking in a way that limits the use of the adjacent parking space).

Table 5: Future MMC Bramhall Campus Patient/Visitor Parking Supply/Demand Summary

	2020	2022	2026
Parking Spaces	**1,075**	**1,075**	**1,075**
Effective Parking Capacity	**970**	**970**	**970**
Parking Demand	**892**	**905**	**933**

For patient/visitor garages, the effective parking capacity is 90% of striped parking spaces, shown in **Table 5**. Patients and visitors are often unfamiliar with the garage layout and operations. Planning to accommodate this targeted utilization will ensure arriving patients and visitors have convenient and available parking.

To help alleviate existing and future parking demands, and to support use of other alternative, sustainable modes of transportation, MMC continues to pursue and bolster its Transportation Demand Management (TDM). The purpose of the TDM Plan, called the Get on Board Program, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees.

In the 2017 Get On Board plan, MMC established the following short-term, mid-term, and long-term single-occupancy vehicle reduction goals shown in **Table 6** below:

Table 6: 2017 TDM Trip Reduction Goals

	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Trip Reduction Target	2%	4%	5%

MMC will continue to monitor parking demand and needs at the Bramhall campus and re-evaluate its program goals. The estimated impacts of the Get on Board program's reduction goals are summarized in **Table 7**.

Table 7: Employee Parking Demand Reduction Due to TDM Efforts Summary

	2020	2022	2026
Parking Demand	**2,465**	**2,500**	**2,570**
Estimated TDM Reduction	**-60**	**-100**	**-120**
TDM Influenced Demand	**2,405**	**2,400**	**2,420**

If Get on Board targets are met, parking demand will reduce by approximately 60 in the short term (2020), 90 in the mid-term (2022) and 120 forecasting out to longer-term (2026). Such reductions strive to follow with less single-occupancy vehicles travelling to and from the Bramhall campus as intended by the Get on Board plan and programs.

Table 8: Employee Parking Demand Reduction Due to TDM Efforts Compared to Effective Employee Parking Capacity

	2020	2022	2026
Effective Employee Parking Capacity	**2,521**	**2,521**	**2,521**
TDM Influenced Demand	**2,405**	**2,399**	**2,420**
Estimated Parking Surplus	**116**	**122**	**101**

Table 8 compares the TDM influenced parking demand to the effective parking capacity for employee parking spaces. The amount of parking surplus fluctuates between 2020 and 2026 because of the time it will take for MMC to enhance the existing TDM program.

This analysis projects parking demand for 2026. The lifespan of the parking garage is expected to exceed 30 years. The estimated parking surplus in **Table 8** is roughly 7% of the total employee parking spaces shown in **Table 4** and is within a reasonable margin of error.

Conclusion

This study quantifies the existing and future parking conditions, with a focus on peak period demand requirements, to help quantify and formulate sound parking strategies to adequately support MMC's patients, visitors, staff, and physicians into the future. VHB determined that existing estimated parking demand at the Bramhall campus exceeds existing supply. The demand for complex healthcare in Maine is growing. As a result, MMC is growing to meet that demand. MMC's forecasts an increase in patient activity at the Bramhall campus by 2026. Using this forecast, VHB estimated a parking demand that will be accommodated only through investments in parking facilities and MMC's Get on Board program.

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Evaluation of East Tower Detour
Maine Medical Center (MMC) – Bramhall Campus
Portland, Maine

1/18/2018

Proposed Detours:

There are three detours associated with the proposed upgrade and expansion of the Maine Medical Center (MMC); East Tower, Patient / Visitor Garage, and Utility Plant. Because each of the three detours has their own challenges, subtleties, and time frames, the three detours are being evaluated separately, keeping in mind any overlapping impacts that one may have on the other two. This memo focuses on the East Tower detour as shown on the attached figures.

Description of Detour:

To accommodate construction activities, workers, and to provide safety for the general public, Wescott Street will be closed between Crescent Street and Ellsworth Street, a length of approximately 220 feet. Wescott Street provides two-way traffic, is a town way that experiences approximately 350-400 vehicles on an average day (according to MaineDOT map viewer), and presumably accommodates almost entirely hospital related traffic. Wescott Street provides access to the Emergency / Ambulance area as well as one of two accesses to the visitor / patient parking garage. The other access to the garage is off Congress Street.

The proposed detour will direct current users of Wescott Street to use nearby Crescent Street. Crescent Street is currently a one-way street traveling away from the hospital and is a town way that experiences approximately 250-300 vehicles on an average day (according to MaineDOT map viewer). There do not appear to be any businesses along this section of street. In order to accommodate the detour, this one-way street is proposed to be converted to two-way traffic. The street is approximately 25 feet in width so two-way traffic should be able to be accommodated; however, on-street parking will need to be restricted (see "Parking" below).

There is a potential "pinch point" in two-way traffic flow where Wescott Street intersects Crescent Street in the form of a bumpout that projects into the intersection. This is not initially planned to be removed, but will be monitored closely and if identified as a restriction, will be removed. The bumpout appears to be located within the right of way.

Emergency Vehicles:

During the Wescott Street closure, two-way traffic will still be available between Ellsworth Street and the Emergency Department Ambulatory access via use of Crescent Street. MMC and Turner construction are exploring ways to maintain existing access to the Emergency Department via a temporary drive near Wescott Street and Crescent Street or relocation of the construction fence at Wescott Street and Crescent Street. The Emergency Department has a secondary access near the Emergency Department access door that can also be used and is not effected by the closure. There will be select times when the access at the Wescott Street and Crescent Street corner may be closed for brief times.

In addition to using Crescent Street to access the Emergency Room Ambulatory entrance, ambulances can also use an access from Gilman Street. The access is available the majority of the time; however, it can occasionally be blocked by larger delivery vehicles. Ambulance drivers notify the hospital on their way in to the hospital, and will be notified which access may be more appropriate at that time.

Parking:

The only parking impacts anticipated as a result of the East Tower detour are along the southerly side of Crescent Street. Crescent Street currently does not allow parking on the northerly side of the street, and is restricted to 1 hour parking between 9 AM and 5 PM on the southerly side of the street. As identified above, in order to accommodate two-way traffic on Crescent Street, parking will need to be restricted. Portland does not stripe individual parking spaces, but based on the distance between driveways and field reviews, to restrict parking would remove approximately 7-8 parking spaces. There are 3 residential buildings directly along Crescent Street, with additional residential buildings on each of the corners of the Crescent Street / Ellsworth Street intersection. Of the three residential buildings directly on Crescent Street, they appear to accommodate approximately 12 units. Of these 12 units, there appears to be approximately 9 off street parking spaces available for use, leaving a need for approximately 3 on-street parking spaces. The need for two of the parking spaces are for the building nearest the MMC visitor / patient parking garage.

It was difficult to identify exactly how many units were associated with the two buildings on the corners of the Crescent Street / Ellsworth Street intersection. Of the two buildings, the one located on the southwest corner has two off-street parking spaces off Crescent and three on-street parking spaces directly in front of the building on Ellsworth Street. The building on the northwest corner of the intersection has two off-street parking spaces and two on-street parking spaces directly in front of the building on Ellsworth.

To supplement available driveways and help address loss of parking along Crescent Street, MMC is planning to meet with the residents to discuss the potential loss of parking, and will offer parking in the nearby visitor parking garage as an option.

It should be noted, that additional parking restrictions may be identified on other streets when delivery routes are reviewed in the field to ensure proper turning of larger delivery vehicles can be accommodated.

Parking for workers will be provided off-site at satellite parking areas, such as the MMC Scarborough Campus and shuttled to the work site. Any non-essential vehicles not critical to the work site will be restricted from the site. Any parking by workers in the immediate area reported to MMC or Turner Construction will be taken seriously and addressed by Turner Construction.

Capacity:

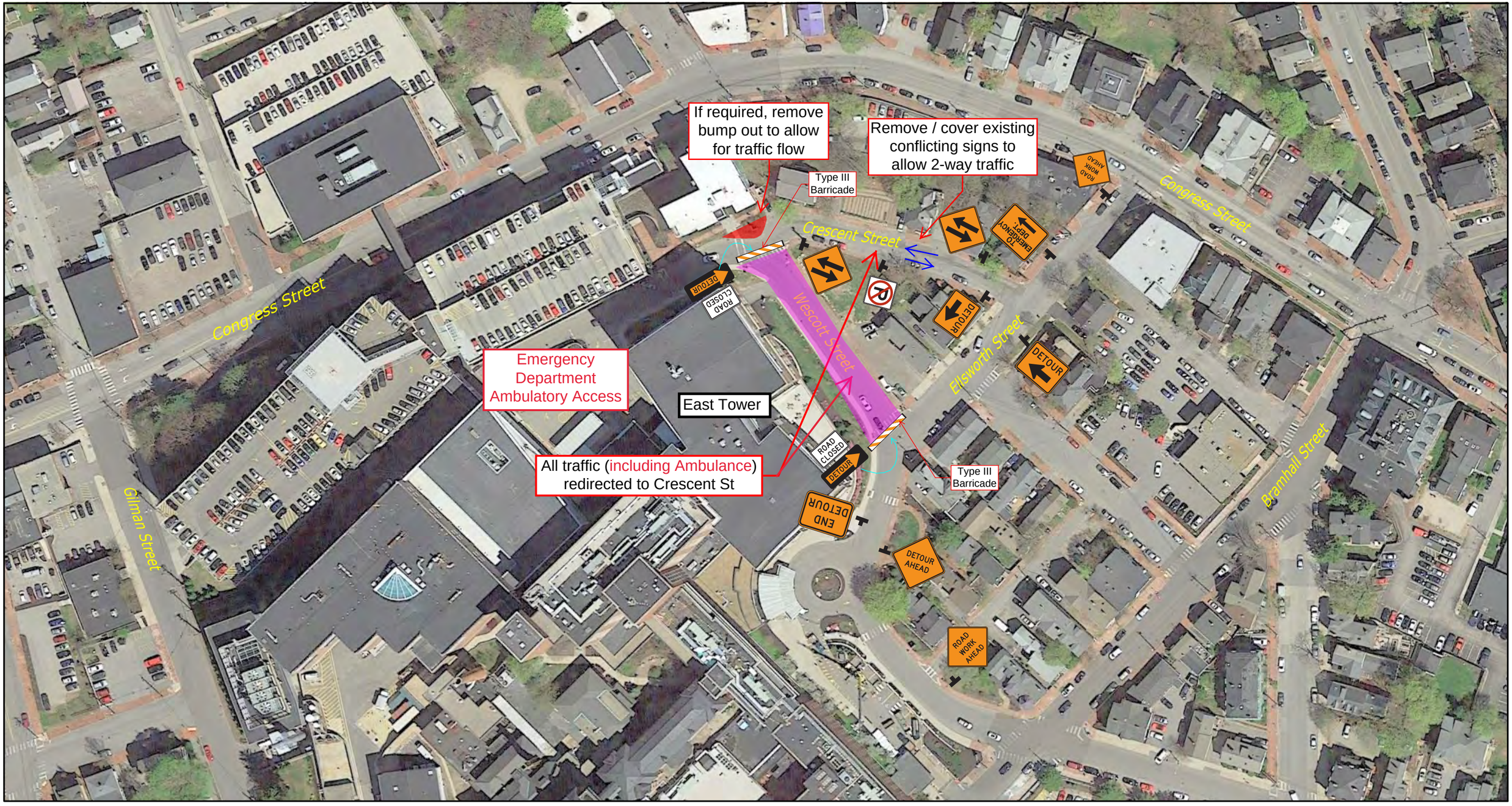
Given the neighborhood location, existing low traffic volumes, calm nature of the immediately surrounding area, and small area of impact of the detour, no capacity challenges are anticipated as a result of the East Tower detour.

Construction related Deliveries and Delivery Routes:

Turner Construction will be the responsible party for the actual construction and will be providing number, type (size), and routes for deliveries under separate cover. It should be noted that Ellsworth Street between Congress Street and Crescent Street (approximately 160 feet) which is currently one-way away from Congress Street, is proposed to be used for larger vehicle deliveries, both entering and exiting the site. Exiting the site will require the use of trained flaggers at the Crescent Street and Congress Street intersections. Given the short distance of this section of Ellsworth Street, line of site between the two intersections can be maintained.

East Tower Traffic Control Plan

Figure No. 1



Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: JAN 2018
File Name: 2866-01-TRAFF.dwg

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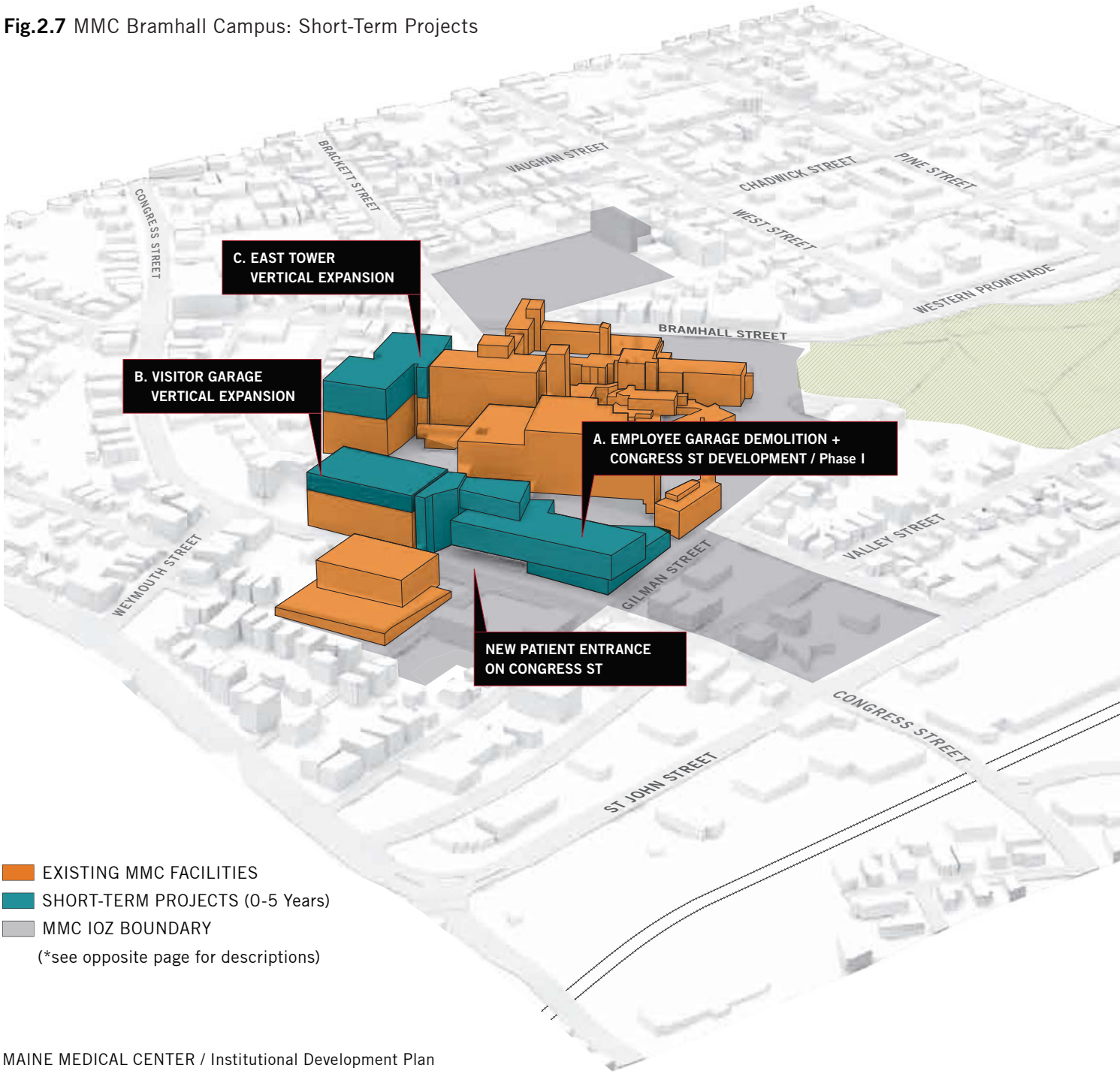
SHORT-TERM PROJECTS (0-5 YEARS)

A series of short-term projects are in the planning stages to meet MMC's current needs and to improve the efficiency of care delivery. These do not represent the only projects that could be proposed within this timeframe: due to the various factors impacting healthcare planning and their short time horizons (0-3 years), there may be other projects proposed within this timeframe.

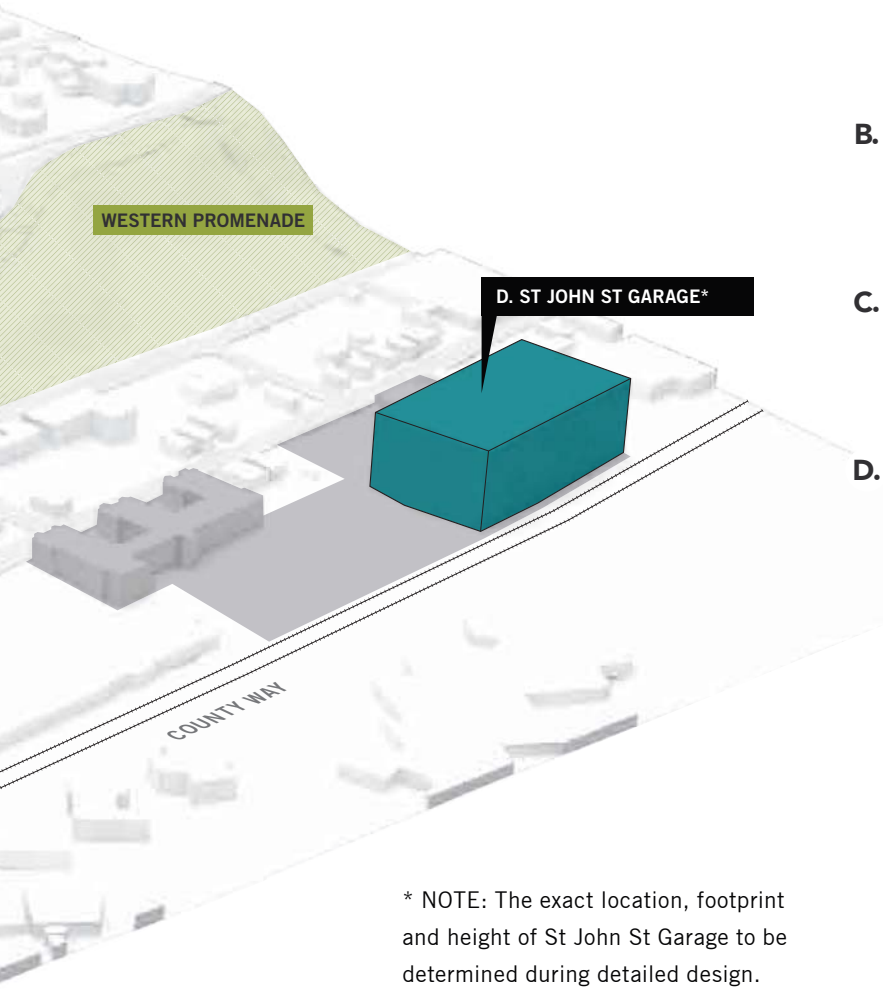
Fig.2.7 MMC Bramhall Campus: Short-Term Projects



Demolitions

A. Employee Garage Demolition

The 2015 building assessment does not recommend continued investment in this structure (see **Fig.2.5 on page 39**).



* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

Additions / New Construction

A. Congress St Development, Phase I (285,000 GSF)

New six-story building along Congress St on former site of the Employee Garage, plus two-story connector to the LL Bean Building. Building program includes: a new patient entrance, universal, private inpatient beds and new procedure rooms. The new entrance changes the campus's orientation to Congress St.

B. Visitor Garage Vertical Expansion

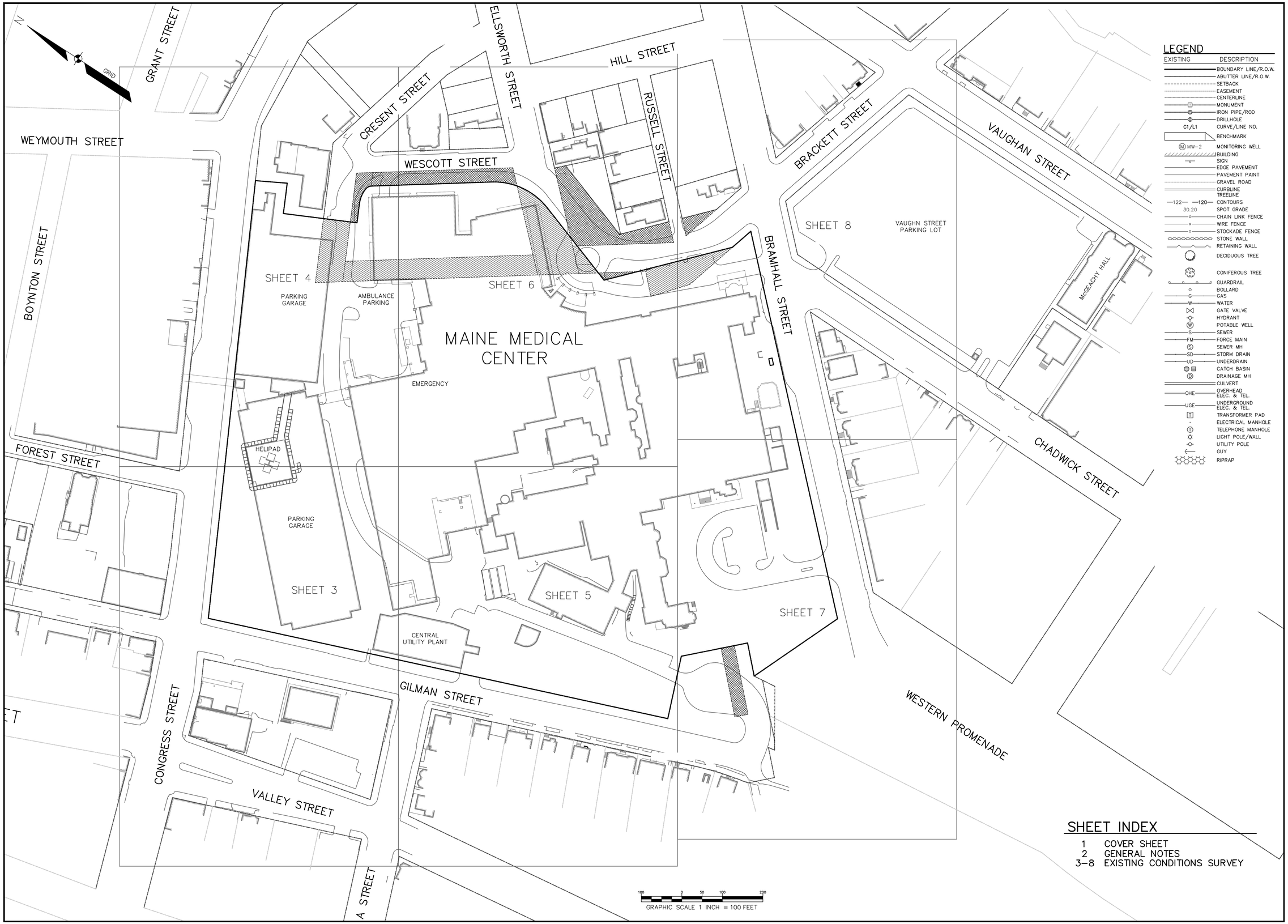
Addition of three floors at top to accommodate 225 new parking spaces.

C. East Tower Vertical Expansion (60,000 GSF)

Addition of two floors at top to accommodate 64 inpatient beds and relocated heliport.

D. St John St Garage

New 10-story, free-standing garage at 222 St John St to accommodate roughly 2,200 new parking spaces. The garage replaces spaces lost in the Employee Garage, in addition to consolidating parking from multiple surface lots owned or leased by MMC. (See **Chapter 3. Transportation Plan** for details).



LEGEND

EXISTING	DESCRIPTION
	BOUNDARY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	SETBACK
	EASEMENT
	CENTERLINE
	MONUMENT
	IRON PIPE/ROD
	DRILLHOLE
C1/L1	CURVE/LINE NO.
	BENCHMARK
Ⓜ MW-2	MONITORING WELL
	BUILDING
	SIGN
	EDGE PAVEMENT
	PAVEMENT PAINT
	GRAVEL ROAD
	CURBLINE
	TREELINE
122 120	CONTOURS
30.20	SPOT GRADE
	CHAIN LINK FENCE
	WIRE FENCE
	STOCKADE FENCE
	STONE WALL
	RETAINING WALL
	DECIDUOUS TREE
	CONIFEROUS TREE
	GUARDRAIL
	BOLLARD
G	GAS
W	WATER
	GATE VALVE
	HYDRANT
W	POTABLE WELL
S	SEWER
FM	FORCE MAIN
S	SEWER MH
SD	STORM DRAIN
UD	UNDERDRAIN
	CATCH BASIN
D	DRAINAGE MH
	CULVERT
OHE	OVERHEAD ELEC. & TEL.
UGE	UNDERGROUND ELEC. & TEL.
T	TRANSFORMER PAD
E	ELECTRICAL MANHOLE
T	TELEPHONE MANHOLE
	LIGHT POLE/WALL
	UTILITY POLE
	GUY
	RIPRAP

SHEET INDEX

1 COVER SHEET
2 GENERAL NOTES
3–8 EXISTING CONDITIONS SURVEY

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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Tel: 207-783-9958

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=60'

SHEET 1 OF 8

01046-EC-2017.dwg, TAB: EC01

GENERAL NOTES

1. THE RECORD OWNERS OF THE SURVEYED PROPERTIES ARE AS FOLLOWS:
   MAINE MEDICAL CENTER AND MMC REALTY CORPORATION AS DESCRIBED IN DEED BOOK/PAGES:

11613/153	1250/470	1282/323	1285/450	1289/192	1290/192	1296/351
1296/352	13504/86	14026/287	1575/227	16145/275	18032/68	19986/204
2127/269	2127/320	2127/443	2133/310	2133/311	2133/317	2143/330
2147/110	2149/190	22762/45	2301/21	2308/161	2349/229	2619/499
2685/369	2901/326	2951/927	2955/722	2988/139	3075/669	3095/34
3097/244	3108/396	3183/576	3187/234	3188/710	3278/209	3310/115
3310/116	377/296	377/297	378/6	381/260	382/450	384/37
388/92	3995/53	408/457	6177/319	8309/5	8855/81	9392/344
9722/45						

   * ALL RECORDED INFORMATION LISTED HEREON IS WITHIN THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD).

2. THE PROPERTIES ARE SHOWN ON THE CITY OF PORTLAND TAX MAPS AS FOLLOWS:
   MAP 53 BLOCK D, LOT 7,
   MAP 53 BLOCK E, LOT 13
   MAP 54 BLOCK H, LOT 1,
   MAP 64 BLOCK C, LOT 1,

3. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON ON GROUND SURVEY PERFORMED BY SEBAGO TECHNICS IN SUMMER AND FALL OF 2009 WITH RESEARCH UPDATES THROUGH FALL OF 2017.

4. THE BEARINGS SHOWN HEREON ARE BASED UPON THE MAINE STATE PLANE COORDINATE GRID, WEST ZONE 1802 ON NAD83 IN US FEET.

5. UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON FIELD LOCATION OF VISIBLE SURFACE FEATURES, INVERT INSPECTIONS, UTILITY MARKINGS BY DIGSMART OF MAINE, AND PLANS REFERENCED HEREON. THE INFORMATION SHOWN HEREON MAY NOT INCLUDE ALL UTILITIES. PRIOR TO ANY CONTRUCTION DIGSAFE AND APPROPRIATE UTILITY PROVIDERS MUST BE CONTACTED.

6. THE RIGHT OF WAY LINES ON THE STREETS ABUTTING THE LOCUS PROPERTIES SHOWN HEREON WERE ESTABLISHED UTILIZING CITY PUBLIC WORKS RECORDS AND FOUND MONUMENTATION AT THE CORNERS AND ANGLE POINTS OF THE STREETS.

EASEMENT, ENCUMBRANCE, AND AGREEMENT REFERENCES:

A. UNDERGROUND ANCHOR SYSTEM EASEMENT RESERVED BY MMC IN CONVEYANCE TO CRESCENT HEIGHTS LLC IN DEED BOOK 26288 PAGE 49.
B. UTILITY/DRAINAGE EASEMENT FOR A DRAIN/SEWER PIPE FROM THE PROPERTY NOW OF CRESCENT HEIGHTS, LLC. FORMERLY AS DESCRIBED IN DEED BOOK 1938 PAGE 248 AND 1946 PAGE 370.
C. UTILITY EASEMENT: TO NET&T NEAR THE NORTHERLY CORNER OF THE PARKING GARAGE ON CONGRESS ST. PER DEED BOOK 8573 PAGE 121.
D. CERTIFICATE OF VARIANCE APPROVAL GRANTING RELIEF FROM SECTION 14–137(7) MAXIMUM STRUCTURE HEIGHT OF 45 FEET, DATED JUNE 25, 1996, AND RECORDED IN DEED BOOK 12629 PAGE 295.
E. SITE LOCATION OF DEVELOPMENT DEPARTMENT ORDER BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR MAINE MEDICAL CENTER, PER DEED BOOK 13919 PAGE 114.
F. UTILITY EASEMENT: MMC TO NET&T 6' X 8' NEAR GILMAN AND CONGRESS PER DEED BOOK 13027 PAGE 207.
G. AMENDMENT TO CITY CODE SEC. 14–49 (ZONING MAP AMENDMENT) RE: CONDITIONAL REZONING FOR PROPERTY IN VICINITY OF WESTERN PROMENADE/MAINE MEDICAL CENTER. DATED MAY 24, 2005 AND RECORDED IN DEED BOOK 22671 PAGE 60.

PLAN REFERENCES

1. STATE OF MAINE DEPARTMENT OF TRANSPORTATION PLAN SHOWING VALLEY, CONGRESS, AND ST. JOHN STREETS, CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS FILE NO. 726 / 16.
2. STANDARD BOUNDARY SURVEY FOR MAINE MEDICAL CENTER BY STEVENS, MORTON, ROSE, & THOMPSON, INC. DATED OCTOBER 06, 1990 RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 188, PAGE16.
3. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS LAND SWAP WITH MAINE MEDICAL CENTER (GILMAN ST. & ARSENAL ST.) DATED JANUARY 23, 1974. DPW FILE NO. 547 / 20.
4. PLAN OF LAND OF J.M. WOOD ESQ. ELLSWORTH AND O STREETS DPW FILE NO. 361 / 3.
5. PLAN OF LAND SURVEYED FOR MOODY F. WALKER SEPTEMBER 23, 1863 BY HOWE & OSGOOD C.E. CCRD PLAN BOOK 21, PAGE 36.
6. SITE PLAN OF NEUROSCIENCE INSTITUTE CONGRESS AND GILMAN ST. PORTLAND MAINE BY GREGORY K. JOHNSON AIA DATED JULY 31, 1987 ON FILE WITH THE DPW.
7. PLAN OF PROPOSED WIDENING CONGRESS STREET AUGUST 1885, DPW FILE NO. 360 / 2.
8. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS, B ST. WIDENING DATED NOV.4, 1937 DPW FILE NO. 569 / 9.
9. PLAN OF CITY LANDS BETWEEN GILMAN STREET AND MAINE CENTRAL RAILROAD SOUTH OF CONGRESS STREET, DPW FILE NO. 18 / 4.
10. PLAN OF CITY LAND BETWEEN CONGRESS AND "A" STS DATED 1883 DPW FILE NO. 379 / 10.
11. CITY OF PORTLAND PLAN OF "B" VALLEY ST DATED FEB. 1926 DPW FILE. NO.179.
12. CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS ARSENAL STREET DISCONTINUANCE DATED APRIL 15, 1953 DPW FILE NO. 410 / 96.
13. MMC PARKING FACILITY PROPOSED GRADING PLAN DATED 29 MAY 1971 BY TAC, DPW FILE NO. 680 / 4.
14. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS WESTERN PROMENADE SLOPE, CITY BOUNDARY BETWEEN GILMAN AND "B" ST. DATED JAN. 4,1933 DPW FILE NO. 462 / 32 AND 462 / 32–A.
15. PLAN OF LAND WEST OF THE BRACKETT LINE CHADWICK AND VAUGHN STREETS, DATED 12 JUNE 1833 RECORDED IN CCRD PLAN BOOK 1, PAGE 1, DPW FILE NO. 462 / 4.
16. PLAN OF CITY LANDS BETWEEN GILMAN AND "B" STREETS DATED MAY 1883, DPW FILE NO. 69 / 4R, CCRD PLAN BOOK 4, PAGE 43.
17. WESTERN PROMENADE DATED JAN. 1926 CITY OF PORTLAND DPW SHEET NO. 7 FILE NO. 142.
18. CITY OF PORTLAND WORK SHEET CONGRESS, ARSENAL, AND BRACKETT STREETS DPW FILE NO. 363 / 11.
19. CITY OF PORTLAND, PLAN SHOWING PROPOSED GILMAN STREET, CONGRESS AND ASH STREETS, DPW FILE NO. 365 / 6.
20. CITY OF PORTLAND PLAN SHOWING GILMAN STREET, CONGRESS ST. AND WESTERN PROMENADE, DPW FILE NO. 365 / 7.
21. PLAN OF CITY LAND BETWEEN GILMAN & "B" STREETS DATED MAY 1883, CCRD PLAN BOOK 4, PAGE 43, DPW FILE NO. 379 / 25.
22. PORTLAND WATER DISTRICT, MAP NO. 7 SHOWING MAINE MEDICAL CENTER AREA.
23. CITY OF P D PLAN SHOWING CONGRESS STREET SHEET NO. 3 DPW FILE NO. 150.ORTLAN
24. CITY OF PORTLAND PLAN SHOWING GILMAN STREET DATED FEB 1926 DPW FILE NO. 178.
25. CITY OF PORTLAND PROPERTY PLAN BOOK NO. 274 SHOWNG PROPOSED TAKING FROM MAINE MEDICAL CENTER ON CHARLES STREET DATED NOVEMBER 29, 1973.
26. CITY OF PORTLAND PLAN OF BRAMHALL ST., VAUGHAN ST., AND BRACKETT ST. DATED OCT. 1925 DPW FILE NO. 90.
27. STANDARD BOUNDARY SURVEY AT 25–27 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS,INC.
28. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CHARLES ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 7.
29. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, WESCOTT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 6.
30. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
31. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
32. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ELLSWORTH ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 2.
33. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CRESCENT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 3.
34. STREET VACATION / ACCEPTANCE AND LAND TRANSFER PLAN OF MAINE MEDICAL CENTER BY SEBAGO TECHNICS, INC AS REVISED THROUGH JULY 5, 2005 DPW FILE NO. 992 / 3.
35. STANDARD BOUNDARY SURVEY ON CONGRESS AND ELLSWORTH STREETS, PORTLAND MAINE BY DESLAURIERS & ASSOCIATES DATED AUGUST 30, 1999.
36. STANDARD BOUNDARY SURVEY AT 26–28 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS, INC.
37. EXISTING CONDITIONS & STANDARD BOUNDARY SURVEY MAINE MEDICAL CENTER DATED MAY 1, 1996 BY TITCOMB ASSOCIATES.
38. PLAN OF CRESCENT STREET DATED OCT. 1886 BY PORTLAND CITY ENGINEER DPW FILE NO.10 / 02.
39. CITY OF PORTLAND PLAN OF BRAMHALL ST., ELLSWORTH ST., AND CHARLES ST. DATED OCT. 1926 DPW FILE NO. 158..
40. PLAN OF STREETS ON BRAMHALL'S HILL SEPTEMBER 1858 BY A.P. MARSHALL CITY ENGINEER DPW FILE NO. 359 / 22.
41. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.134 / 2.
42. PLAN NO. 5 SHOWING STREETS ON BRAMHALL'S HILL SURVEYED MAY 1862 BY C.R. GOODELL C.E. DPW FILE NO. / 15.
43. CITY OF PORTLAND PLAN SHOWING ARSENAL STREET DATED OCT 1925, DPW FILE NO. 95.
44. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.396 / 17..
45. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DPW FILE NO. 360 / 25.
46. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DATED OCTOBER 1854, DPW FILE NO. 360 / 27.
47. PLAN OF J.B. BROWN'S LAND WEST OF BRAMHALL'S HILL MADE BY WM. S. EDWARDS C.E. DATED 1871ON FILE IN THE DPW OFFICE.
48. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ARSENAL ST. DISCONTINUANCE PLAN DATED 12/2/41 ON FILE IN DPW OFFICE.
49. THIS PLAN OF A TOWN ON BRAMHALL'S HILL PORTLAND MAINE AT THE REQUEST OF WLLIAL VAUGHAN, THE PROPRIETOR COMPLETED IN 1813 BY PELEG WADSWORTH, SURVEYOR, DPW FILE NO. 404 / 130, CCRD PLAN BOOK 37, PAGE 12.
50. T.F. CHAPPELL C.E. PLAN OF ASH STREET, ARSENAL ST., CONGRESS ST.
51. PARKING AREA ON BRAMHALL RESERVOIR SITE CHADWICK, BRAMHALL AND VAUGHAN STS. DATED 1964 DPW FILE NO. 698 / 14.
52. MAINE MEDICAL CENTER PKG C– SITE UTILITIES EXISTING CONDITIONS PLAN DATED THROUGH 05/25/05 BY THE RICHIE ORGANIZATION.
53. MAINE MEDICAL CENTER, PORTLAND MAINE BEAN BUILDING SITE UTILITIES AT ER. BY SHEPLEY, BULFINCH, RICHARDSON, & ABBOTT, DATED THROUGH 3/28/97.
54. BOUNDARY SURVEY OF SPORTSMANS LOT FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 10/23/09.
55. EXISTING CONDITIONS PLAN OF EAGLES CLUB BLOCK FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 11/3/09.

STATE OF MAINE · MATTHEW W. EK · 2117 · PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD.	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST. CONGRESS ST. BRAMHALL ST. ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 2 OF 8

01046-EC-2017.dwg, TAB: EC02

CONGRESS STREET
(FKA MAINE STREET)
76 FEET WIDE

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

VALLEY STREET
(FORMERLY B STREET)

GILMAN STREET
60 FEET WIDE

A STREET

N/F
GLI REALTY CO.
7815/332

N/F
TPA ASSOCIATES
9335/26

N/F
TPA ASSOCIATES
9335/26

N/F
RBT.K JORDAN TRUSTEE
22902/156

EAST END CORP.
23397/308
1+ STORY BUILDING

EAST END HOLDINGS, LLC
PARCEL 1 OF
20289/341

EAST END HOLDINGS, LLC
PARCEL 2 OF
20289/341

EAST END HOLDINGS, LLC
PARCEL 3 OF
20289/341

EAST END HOLDINGS, LLC
PARCEL 4 OF
20289/341

2+ STORY RESTAURANT/HOUSE

FACE OF BUILDING ALONG CONGRESS STREET ENCROACHES INTO CONGRESS STREET RIGHT OF WAY UP TO APPROXIMATELY 0.26 FEET.

8" x 8" GRANITE MONUMENT IN HANDHOLE

8" x 8" GRANITE MONUMENT WITH BRASS PLUG #PLS2239

8" x 8" GRANITE MONUMENT WITH BRASS PLUG IN HANDHOLE

8" x 8" GRANITE MONUMENT WITH BRASS PLUG (HELD AS 3 FOOT OFFSET)

REMAINS OF CONC. WALL

BENCHMARK
BRASS PLUG IN 8" x 8" GRAN. MON.
ELEV=52.17'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=41.78'

BENCHMARK
EASTERLY EDGE OF SEWER MANHOLE
RIMELEV=1063.57'

SEE NOTE 8
1" IRON PIPE FLUSH

SEE NOTE 7

1/2" DRILL HOLE

5/8" REBAR 1" HIGH

5/8" REBAR FLUSH W/ WORN ALUMN. CAP

6" x 6" GRANITE MONUMENT FLUSH

S63°11'56"W 181.65'

66.00'

76.00'

MAINE MEDICAL CENTER

COMMUNICATION BOX ON CONC. PAD

GRANITE BENCH/RETAINING WALL

COLUMNS (TYPICAL) SECOND FLOOR THIRD FLOOR

WOOD GUARDRAIL

CONC. PAD

ELEVATOR

TRANSFORMER PAD

METAL BULKHEAD

A/C UNIT

OVERHANG

REMAINS OF OLD CONCRETE CENTER BLOCK WALL

CONC. ENTRANCE/EXIT TO PARKING GARAGE

PARKING GARAGE

HELIPAD

STAIRWAY

CRUSHED STONE

CONC. RETAINING WALL

MAINE MEDICAL CENTER

CENTRAL UTILITY PLANT

BOLLARD (TYPICAL)

GRAVEL AREA

GRAVEL DRIVE

GRAVEL PARKING

PAVED PARKING

MISC. LANDSCAPE

SHEET 3

SHEET 4

SHEET 5

SHEET 6

GRID

GRAPHIC SCALE 1 INCH = 20 FEET

NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW

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75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel: 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel: 207-783-9858

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 3 OF 8

01046-EC-2017.dwg, TAB:ECO3

SHEET 3 | SHEET 4

SHEET 5 | SHEET 6

SHEET 4

SHEET 4

SHEET 6

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

WEYMOUTH STREET

CRESENT STREET
40 FEET WIDE

GRID

BENCHMARK
BRASS PLUG IN 6" X 6" GRAN. MON.
ELEV=77.91'

BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIM ELEV=125.39'

GRAN. CURB

CONC. WALK

METAL WALK

PAVED ENTERANCE

PAVED DRIVE

PAVED APRON

MISC. LANDSCAPE

CONC. PAD

CONC. ISLAND

N63°07'37"E 470.05'

ENTRANCE/EXIT TO PARKING GARAGE

CONC. RETAINING WALL

BLOCK RETAINING WALL

HELIPAD

PARKING GARAGE

CRUSHED STONE

WALK

MAINE MEDICAL CENTER

COLUMNS (TYPICAL)

OVERHANG

2"G

VALET ATTENDANT BOOTH

AMBULANCE EXIT

AMBULANCE ENTRANCE

RIGHT OF WAY AREA TO BE RELEASED BY THE CITY (SEE PLAN REFERENCE 34)

LAND TO BE RELEASED BY MAINE MEDICAL CENTER TO BECOME CITY RIGHT OF WAY (SEE PLAN REFERENCE 34)

N/F
CRESENT HEIGHTS LLC
26288/049
MULTI UNIT BLUILDING UNDER CONSTRUCTION

N/F
MH REALTY LLC
21636/084

N/F
J FREMAN PORTER
9730/198

UNDER CONSTRUCTION

GRAVEL DRIVE

N41°41'04"E 45.27'

N25°51'32"W 59.85'

N25°50'19"W 50.00'

S64°12'29"W 28.42'

28.22'

68.00'

NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

GRAPHIC SCALE 1 INCH = 20 FEET

PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 4 OF 8

01046-EC-2017.dwg, TAB:EC04

SHEET 3 | SHEET 4
SHEET 5 | SHEET 6

A STREET
GILMAN STREET
60 FEET WIDE

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=66.99'

BENCHMARK
SOUTHERLY EDGE OF CATCH BASIN.
RIM ELEV=108.15'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=105.02'

N20°41'01"W 696.16'

S69°14'08"W 94.58'

CENTRAL UTILITY PLANT
MAINE MEDICAL CENTER

GRID

GRAPHIC SCALE 1 INCH = 20 FEET

NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

SHEET 5 | SHEET 7
SHEET 5 | SHEET 6

REV.	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

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Tel. 207-200-2100
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Lewiston, ME 04240
Tel. 207-783-9566

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 5 OF 8

01046-EC-2017.dwg, TAB:EC05

SHEET 3 | SHEET 4
SHEET 5 | SHEET 6

PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

OVERHANG
VALET ATTENDANT BOOTH
COLUMN (TYPICAL)
EMERGENCY ENTRANCE
CONC. WALK
MAIN ENTRANCE
RIGHT OF WAY AREA TO BE RELEASED BY THE CITY (SEE PLAN REFERENCE 34)
LAND TO BE RELEASED BY MAINE MEDICAL CENTER TO BECOME CITY RIGHT OF WAY (SEE PLAN REFERENCE 34)
S45°53'31"E 178.42'
GRAVEL DRIVE
CRESENT STREET
40 FEET WIDE
GRAN. CURB
WESCOTT STREET
50 FEET WIDE
GRID
GRAVEL PARKING LOT
BLOCK RETAINING WALL
PATIO AREA
MISC. LANDSCAPE
CONC. WALK
ELLSWORTH STREET
60 FEET WIDE
MAINE MEDICAL CENTER
BENCHMARK
NORTHERLY EDGE OF CATCH BASIN
RIMELEV=142.70'
TIMBER BORDER
PICNIC TABLE ON CONC. PAD WITH PATIO BLOCK BORDER (TYPICAL)
FIRE ESCAPE
BROKEN PAVEMENT
CONC. PAD
STAIRWAY
BLOCK PATIO WITH ROOF
CONC. FOUNDATION WALL AND FOOTING
BRICK DRAINAGE CHANNEL
BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=145.89'
BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=136.98'
S18°00'42"W 136.31'
1.45'
N47°21'29"W
LAND TO BE RELEASED BY MAINE MEDICAL CENTER TO BECOME CITY RIGHT OF WAY (SEE PLAN REFERENCE 34)
N/F JEFFERY L. FREILAND 14253/320
N/F PAULA WILHOITE 18004/025
N/F MICHAEL J. FREILAND 14591/320
N/F JUNE C. SOULE 3988/248
HILL STREET
60 FEET WIDE
RUSSELL STREET
20 FEET WIDE
METAL GRATE
N/F BEH REDEVELOPMENT LLC

SHEET 5 | SHEET 6 | SHEET 6
SHEET 7 | SHEET 7 | SHEET 8
SHEET 6 | SHEET 8

NOTES
1. SEE SHEET 2 FOR GENERAL NOTES.

GRAPHIC SCALE 1 INCH = 20 FEET (20 0 10 20 40)

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

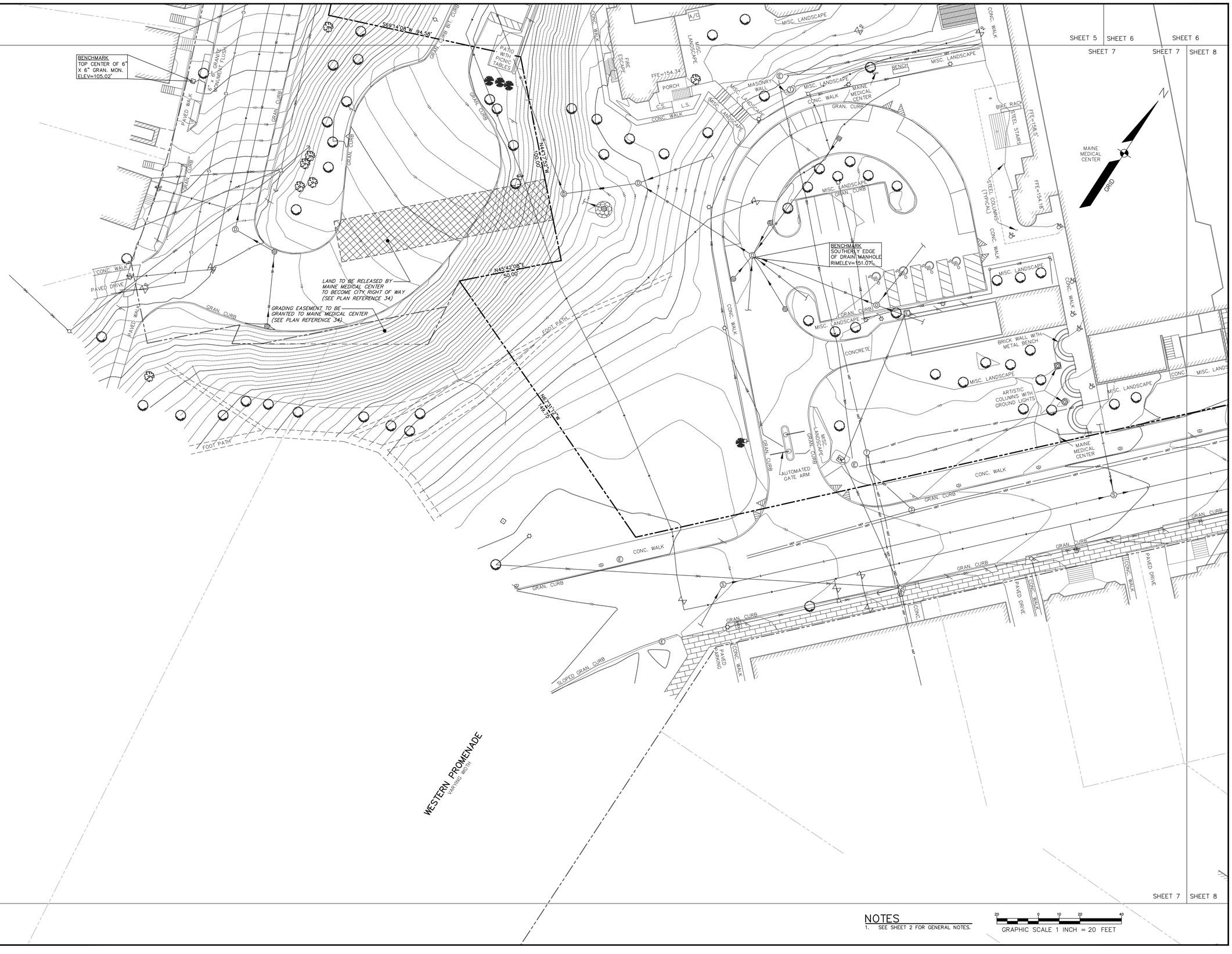
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 6 OF 8

01046-EC-2017.dwg, TAB:EC06



NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY

OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE

FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 7 OF 8

01046-EC-2017.dwg, TAB:EC07

SHEET 6

SHEET 7 | SHEET 8

SHEET 6

SHEET 8

RUSSELL STREET
20 FEET WIDE

N/F
BEH REDEVELOPMENT LLC
26288/055

N/F
BEH REDEVELOPMENT LLC
26288/052

LAND TO BE RELEASED BY
MAINE MEDICAL CENTER
TO BECOME CITY RIGHT OF WAY
(SEE PLAN REFERENCE 34)

LAND TO BE RELEASED BY
MAINE MEDICAL CENTER
TO BECOME CITY RIGHT OF WAY
(SEE PLAN REFERENCE 34)

MAINE
MEDICAL
CENTER

METAL GRATE

CONC. WALK

GRAN. CURB

MISC. LANDSCAPE

ENTRANCE

OVERHANG

CONC. WALL

CONDITIONING UNITS

BROKEN PAVEMENT/
TRENCH DRAIN

APPROXIMATE
LOCATION OF
UNDERGROUND LINEAR
ACCELERATOR ROOM

PATIO AREA

BRICK WALL

SHUTTLE
STOP

8" x 8" GRANITE
M MONUMENT WITH
DRILL HOLE

8" x 8" GRANITE
MONUMENT

8" x 8" GRANITE
MONUMENT 6" HIGH
WITH DRILL HOLE

BENCHMARK
TOP CENTER
OF "M" MON.
ELEV=140.52'

N44°23'02"E 587.81'

S74°03'24"E
36.15'

BRAMHALL STREET
60 FEET WIDE

BIT. CURB

SMOKING
AREA

BIKE RACK

CONC. ISLAND

AUTOMATED
GATE ARM

BOLLARDS
(TYPICAL)

CRUSHED STONE

PAVED DRIVE

PAVED WALK

BRACKETT STREET
(FKA JEFFERSON STREET)
577.5 FEET WIDE

8" x 72" GRANITE
MONUMENT WITH

VAUGHAN STREET
66 FEET WIDE

CHADWICK STREET
(FKA LITHGOW)
60 FEET WIDE

BENCHMARK
NORTHERLY EDGE OF
SEWER MANHOLE
RIM ELEV=148.29'

PARKING
PRIMARY
ENTRY

GRID

NOTES
1. SEE SHEET 2 FOR GENERAL NOTES.

20 0 10 20 40
GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 7 | SHEET 8

SHEET 8

STATE OF MAINE
MATTHEW W. EK
2117
REGISTERED
PROFESSIONAL
LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW
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PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

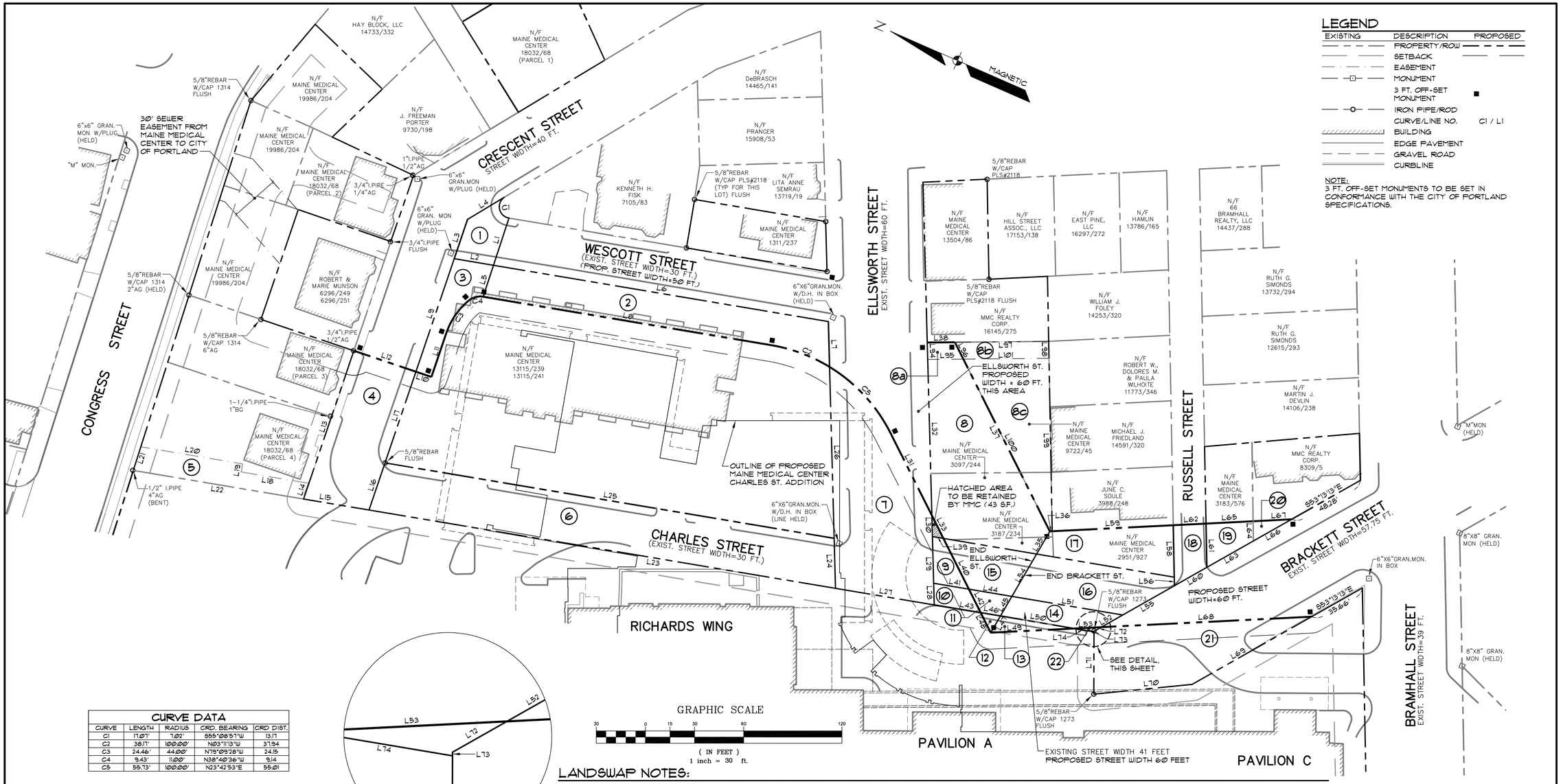
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 8 OF 8

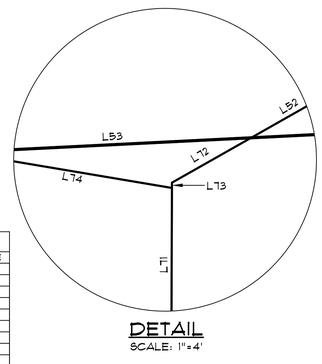
01046-EC-2017.dwg, TAB: EC08



LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	SETBACK	
	EASEMENT	
	MONUMENT	
	3 FT. OFF-SET MONUMENT	
	IRON PIPE/ROD	
	CURVE/LINE NO.	C1 / L1
	BUILDING	
	EDGE PAVEMENT	
	GRAVEL ROAD	
	CURBLINE	

NOTE:
3 FT. OFF-SET MONUMENTS TO BE SET IN CONFORMANCE WITH THE CITY OF PORTLAND SPECIFICATIONS.



DETAIL
SCALE: 1"=4'

CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	17.07'	7.00'	S55°08'57"W	13.17
C2	38.11'	100.00'	N03°11'13"W	37.94
C3	24.46'	44.00'	N73°29'28"W	24.15
C4	9.43'	11.00'	N38°40'36"W	9.14
C5	55.13'	100.00'	N23°42'53"E	55.01

LINE DATA

LINE	DIRECTION	DISTANCE
L1	N84°30'13"E	30.34'
L2	S14°01'22"E	24.30'
L3	S85°02'38"W	25.33'
L4	N54°46'28"W	26.56'
L5	S84°30'13"W	20.23'
L6	N14°01'22"W	207.31'
L7	N64°41'55"E	27.71'
L8	S14°01'22"E	178.42'
L9	S85°02'38"W	72.90'
L10	S25°00'10"E	10.00'
L11	N85°02'38"E	28.22'
L12	N25°00'10"W	40.00'
L13	S85°02'38"W	85.50'
L14	N85°02'38"E	10.13'
L15	S14°08'05"E	40.52'
L16	N85°02'38"E	30.39'
L17	N85°02'38"E	58.81'
L18	N14°08'05"W	41.88'
L19	N75°59'55"E	5.00'
L20	N14°08'05"W	63.00'
L21	S83°57'36"W	15.15'
L22	S14°08'05"E	105.39'
L23	S14°08'05"E	288.76'
L24	N64°41'55"E	30.51'
L25	N14°08'05"W	278.04'
L26	S64°41'55"W	104.73'
L27	S14°08'05"E	61.14'
L28	N64°41'55"E	13.25'
L29	N64°41'55"E	283.33
L30	N64°41'55"E	12.50'
L31	N39°40'51"E	56.18'
L32	S64°41'55"W	105.65'
L33	S39°40'51"W	15.71'
L34	N14°08'05"W	57.76'
L35	S83°13'14"E	16.03'
L36	N26°31'20"W	1.45'
L37	N39°40'51"E	129.25'
L38	N24°12'40"W	16.87'
L39	N14°08'05"W	6.79'
L40	N39°40'51"E	34.69'
L41	S14°08'05"E	21.80'
L42	N39°40'51"E	16.11'
L43	S14°08'05"E	28.77'
L44	N14°08'05"W	26.63'
L45	S83°25'14"E	13.30'
L46	N14°08'05"W	12.20'
L47	S83°25'14"E	11.76'
L48	S39°40'51"W	13.63'
L49	S26°31'20"E	51.26'
L50	N14°08'05"W	45.91'
L51	N14°08'05"W	68.62'
L52	S53°13'13"E	15.01'
L53	S26°31'20"E	16.30'
L54	S83°25'14"E	29.94'
L55	S53°13'13"E	36.25'
L56	N65°15'43"E	5.23'
L57	N14°08'05"W	85.21'
L58	N65°15'43"E	31.73'
L59	N26°31'20"W	74.60'
L60	S53°13'13"E	22.15'
L61	N65°15'43"E	26.73'
L62	N26°31'20"W	20.01'
L63	S53°13'13"E	32.76'
L64	N65°29'08"E	12.23'
L65	N26°31'20"W	28.80'
L66	S53°13'13"E	26.76'
L67	N26°31'20"W	23.49'
L68	N26°31'20"W	128.54'
L69	S53°13'13"E	83.82'
L70	S29°20'43"E	60.31'
L71	S66°31'42"W	38.16'
L72	N53°13'13"W	5.00'
L73	S66°31'42"W	0.29'
L74	S14°08'05"E	12.02'

EASEMENT LINE DATA

LINE	DIRECTION	DISTANCE
L36	N26°31'20"W	1.45'
L37	N39°40'51"E	129.25'
L38	N24°12'40"W	16.87'
L84	N64°41'55"E	10.36'
L85	N24°12'40"W	21.77'
L86	N39°40'51"E	11.54'
L87	S24°12'40"E	57.35'
L88	S65°45'11"W	10.36'
L89	S65°15'43"W	105.65'
L100	N39°40'51"E	111.71'
L101	N24°12'40"W	59.28'
L102	S14°11'19"W	20.27'
L103	S78°04'16"W	80.18'

LANDSWAP NOTES:

1. DISCONTINUE A PORTION OF WESCOTT STREET CONTAINING APPROXIMATELY 785 SF. TO BE ACCEPTED AS A PORTION OF CRESCENT STREET.

2. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 4293 SF. TO BE ACCEPTED AS A PORTION OF WESCOTT STREET.

3. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 1182 SF. TO BE ACCEPTED AS A PORTION OF CRESCENT STREET.

4. DISCONTINUE A PORTION OF CRESCENT STREET CONTAINING APPROXIMATELY 3697 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

5. DISCONTINUE AN EXISTING SEWER RIGHT-OF-WAY (CCRD 1149/348 PROCTOR TO CITY 10-04-23) CONTAINING APPROXIMATELY 1372 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

6. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 8502 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

7. DISCONTINUE A PORTION OF ELLSWORTH STREET CONTAINING APPROXIMATELY 6267 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

8. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 5673 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

8a. A PARCEL OF LAND ALONG ELLSWORTH STREET OWNED BY THE CITY CONTAINING APPROXIMATELY 200 SF. TO BE DESIGNATED AS AN ACCESS EASEMENT TO MMC REALTY CORP.

8b. A PARCEL OF LAND OWNED BY MAINE MEDICAL CENTER CONTAINING 568 SF. TO BE DESIGNATED AS AN ACCESS EASEMENT TO MMC REALTY CORP.

8c. A PARCEL OF LAND OWNED BY MAINE MEDICAL CENTER CONTAINING 2,840 SF. TO BE DESIGNATED AS AN EASEMENT TO ALLOW CONSTRUCTION OF POCKET PARK.

9. A PORTION OF LAND BEING USED AS CHARLES STREET CONTAINING APPROXIMATELY 400 SF. TO BE CONVEYED FROM THE CITY OF PORTLAND (OBTAINED IN A DEED RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3488, PAGE 191) TO MAINE MEDICAL CENTER.

10. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 329 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

11. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 252 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

12. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 671 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

13. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 252 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

14. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 800 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

15. A PORTION OF LAND (OBTAINED IN A DEED RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3488, PAGE 191) BEING USED AS CHARLES STREET CONTAINING APPROXIMATELY 1181 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

16. A PORTION OF LAND (OBTAINED IN A DEED RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3488, PAGE 191) BEING USED AS CHARLES STREET CONTAINING APPROXIMATELY 2231 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

17. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 1835 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

18. DISCONTINUE A PORTION OF RUSSELL STREET CONTAINING APPROXIMATELY 631 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

19. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 551 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

20. MAINE MEDICAL CENTER REALTY CORPORATION TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 141 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

21. DISCONTINUE A PORTION OF BRACKETT STREET CONTAINING APPROXIMATELY 3719 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

22. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 20 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

APPROVAL- CITY OF PORTLAND CITY COUNCIL

_____ DATE

_____ CHAIRPERSON

STATE OF MAINE

_____ COUNTY SS REGISTRY OF DEEDS

RECEIVED _____, 20____

AT ___h _____m _____M. AND RECORDED IN PLAN BOOK _____ PAGE _____

ATTEST _____ REGISTRAR

REV:	BY:	DATE:	STATUS:
G	WTC	7-15-05	ADD EASEMENT AREAS 8a, 8b AND 8c
F	WTC	5-27-05	FINAL SITE PLAN SUBMITTAL
E	MWE	12-10-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
D	MWE	11-24-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
C	MWE	7-12-04	REVISE PARCEL CONVEYANCES
B	DRL	4-15-04	REVISE RIGHT-OF-WAY PER CITY REVIEW
A	WTC	3-16-04	REVISE RIGHT-OF-WAY WIDTH PER CITY REQUEST

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Sebago Technics
Engineering Expertise You Can Build On
One Chabot Street
Westbrook, Maine 04092-1339
Tel (207) 856-0277

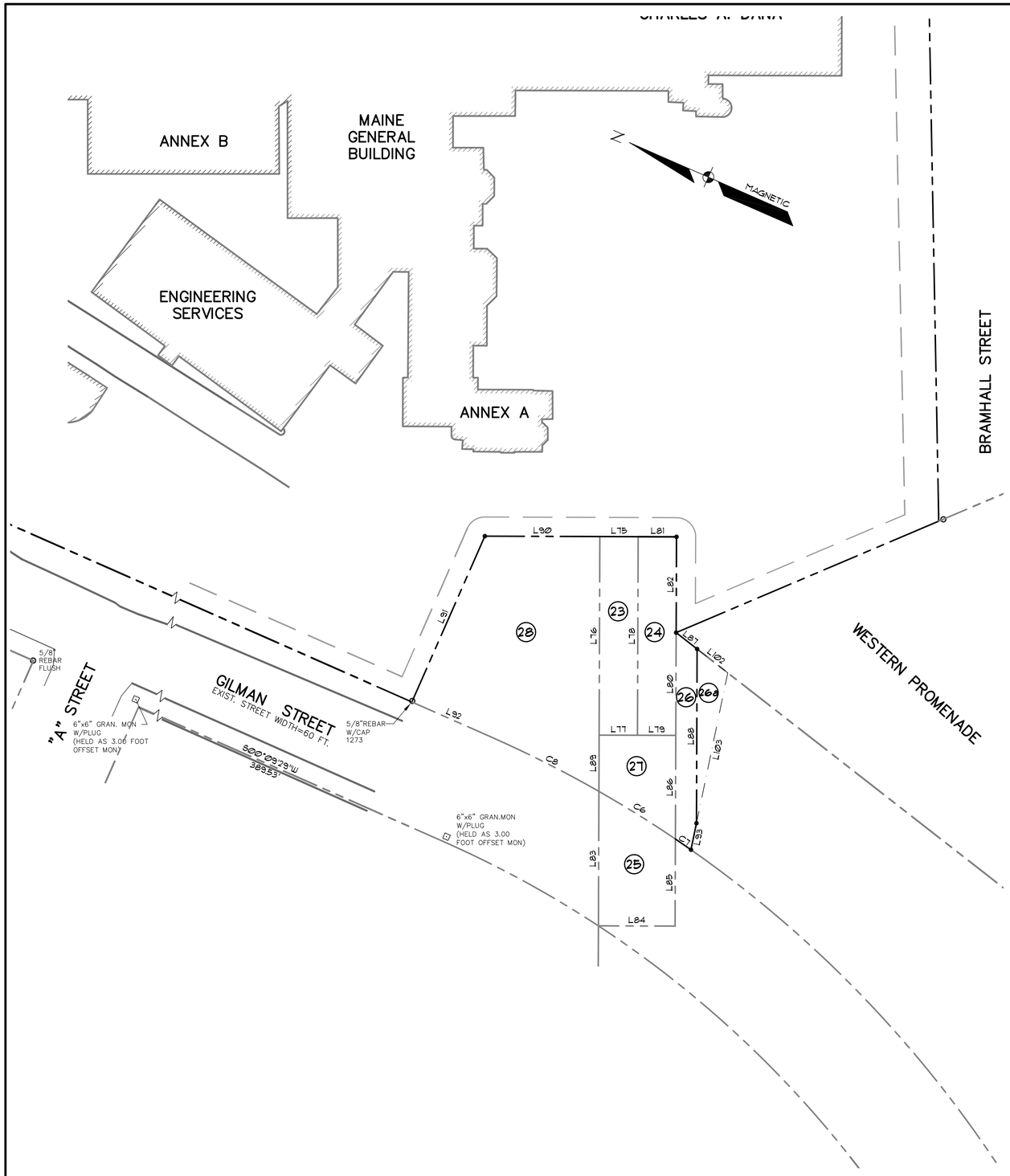
PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791	WTC	MWE	MAL

STREET VACATION/ACCEPTANCE AND LAND TRANSFER PLAN
OF
MAINE MEDICAL CENTER
BRAMHALL STREET
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04104

DATE	SCALE
11-19-03	1"=30'

SHEET 1 OF 2

01046SVLT



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

LINE DATA

LINE	DIRECTION	DISTANCE
L75	N23°27'43"W	20.00'
L76	S66°32'17"W	103.65'
L77	S23°27'43"E	20.00'
L78	N66°32'17"E	103.65'
L79	S23°27'43"E	20.00'
L80	N66°32'17"E	53.65'
L81	N23°27'43"W	20.00'
L82	N66°32'17"E	50.00'
L83	S66°32'17"W	70.19'
L84	S23°27'43"E	40.00'
L85	N66°32'17"E	45.47'
L86	S66°32'17"W	54.03'
L87	S14°17'19"W	13.87'
L88	N66°32'17"E	90.97'
L89	S66°32'17"W	29.37'
L90	N23°27'43"W	60.00'
L91	N89°55'43"W	94.58'
L92	S00°09'29"W	44.94'
L93	S78°04'10"W	14.13'

CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C6	47.03'	614.56'	N08°15'07"E	47.02
C7	9.86'	614.56'	N10°54'15"E	9.86
C8	63.30'	614.56'	N03°06'31"E	63.27

EASEMENT LINE DATA

LINE	DIRECTION	DISTANCE
L88	N66°32'17"E	90.97'
L102	S14°17'19"W	20.21'
L103	S78°04'10"W	80.18'

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	SETBACK	
	EASEMENT	
	MONUMENT	
	3 FT. OFF-SET MONUMENT	
	IRON PIPE/ROD	
	CURVE/LINE NO.	C1 / L1
	BUILDING	
	EDGE PAVEMENT	
	GRAVEL ROAD	
	CURBLINE	

NOTE:
3 FT. OFF-SET MONUMENTS TO BE SET IN CONFORMANCE WITH THE CITY OF PORTLAND SPECIFICATIONS.

LANDSWAP NOTES:

23. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 2073 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND. BY VIRTUE OF DISCONTINUANCE THIS STRIP REVERTED TO MMC OWNERSHIP.

24. A PARCEL OF LAND OWNED BY THE CITY CONTAINING APPROXIMATELY 2073 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND. BY VIRTUE OF DISCONTINUANCE THIS STRIP REVERTED TO CITY OWNERSHIP.

25. DISCONTINUE A PORTION OF ARSENAL STREET CONTAINING APPROXIMATELY 2327 S.F. TO BE ACCEPTED AS A PORTION OF GILMAN STREET.

26. A PARCEL OF PARK LAND OWNED BY THE CITY (DEED BOOK 274 PAGE 6) CONTAINING APPROXIMATELY 1,152 S.F. TO BE ACCEPTED AS A PORTION OF GILMAN STREET FOR A TURN AROUND AREA.

26a. A PARCEL OF PARK LAND OWNED BY THE CITY TO BE DESIGNATED AS A GRADING EASEMENT TO MAINE MEDICAL, CONTAINING APPROXIMATELY 729 S.F.

27. DISCONTINUE A PORTION OF ARSENAL STREET CONTAINING APPROXIMATELY 1655 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND.

28. A PARCEL OF LAND OWNED BY THE CITY CONTAINING APPROXIMATELY 8936 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND.

29. TOTAL AREA OF LAND TO BE TRANSFERRED FROM MAINE MEDICAL CENTER TO THE CITY OF PORTLAND = 16,728 S.F.

30. TOTAL AREA OF LAND TO BE TRANSFERRED FROM THE CITY OF PORTLAND TO MAINE MEDICAL CENTER = 22,205 S.F.

APPROVAL- CITY OF PORTLAND CITY COUNCIL

_____ DATE

_____ CHAIRPERSON

STATE OF MAINE

_____ COUNTY SS REGISTRY OF DEEDS
RECEIVED _____, 20____
AT ____h _____m _____M. AND RECORDED IN
PLAN BOOK _____ PAGE _____

ATTEST _____ REGISTRAR

REV:	BY:	DATE:	STATUS:
G	WTC	7-15-05	REVISE LAND SWAP AREA 26, ADD EASEMENT AREA 26a
F	WTC	5-27-05	FINAL SITE PLAN SUBMITTAL
E	MWE	12-10-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
D	MWE	11-24-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
C	MWE	7-12-04	REVISE PARCEL CONVEYANCES
B	DRL	4-15-04	REVISE RIGHT-OF-WAY PER CITY REVIEW
A	WTC	3-16-04	REVISE RIGHT-OF-WAY WIDTH PER CITY REQUEST

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One Chabot Street
Westbrook, Maine 04092-1339
Tel (207) 856-0277

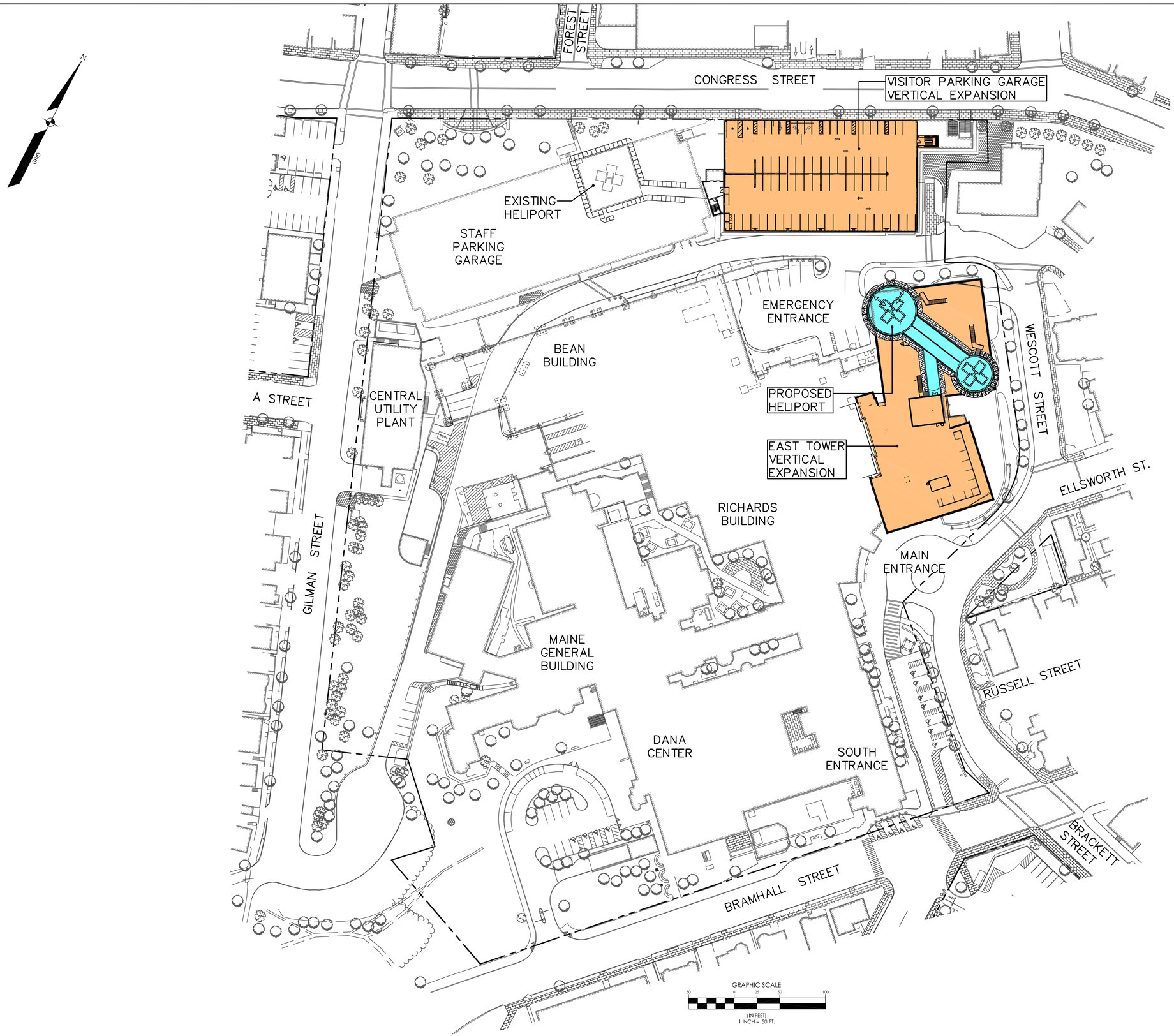
PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791	WTC	MWE	MAL

STREET VACATION/ACCEPTANCE AND LAND TRANSFER PLAN
OF
MAINE MEDICAL CENTER
BRAMHALL STREET
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04104

DATE	SCALE
7-12-04	1"=30'

SHEET 2 OF 2

01046SVLT



DESIGNED	CHECKED
WTC	WTC

REV.	BY:	DATE:	STATUS:
A	WTC	12-15-17	CITY SUBMITTAL NO. 1

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 1A
South Portland, ME 04106
Tel: 207-200-2100

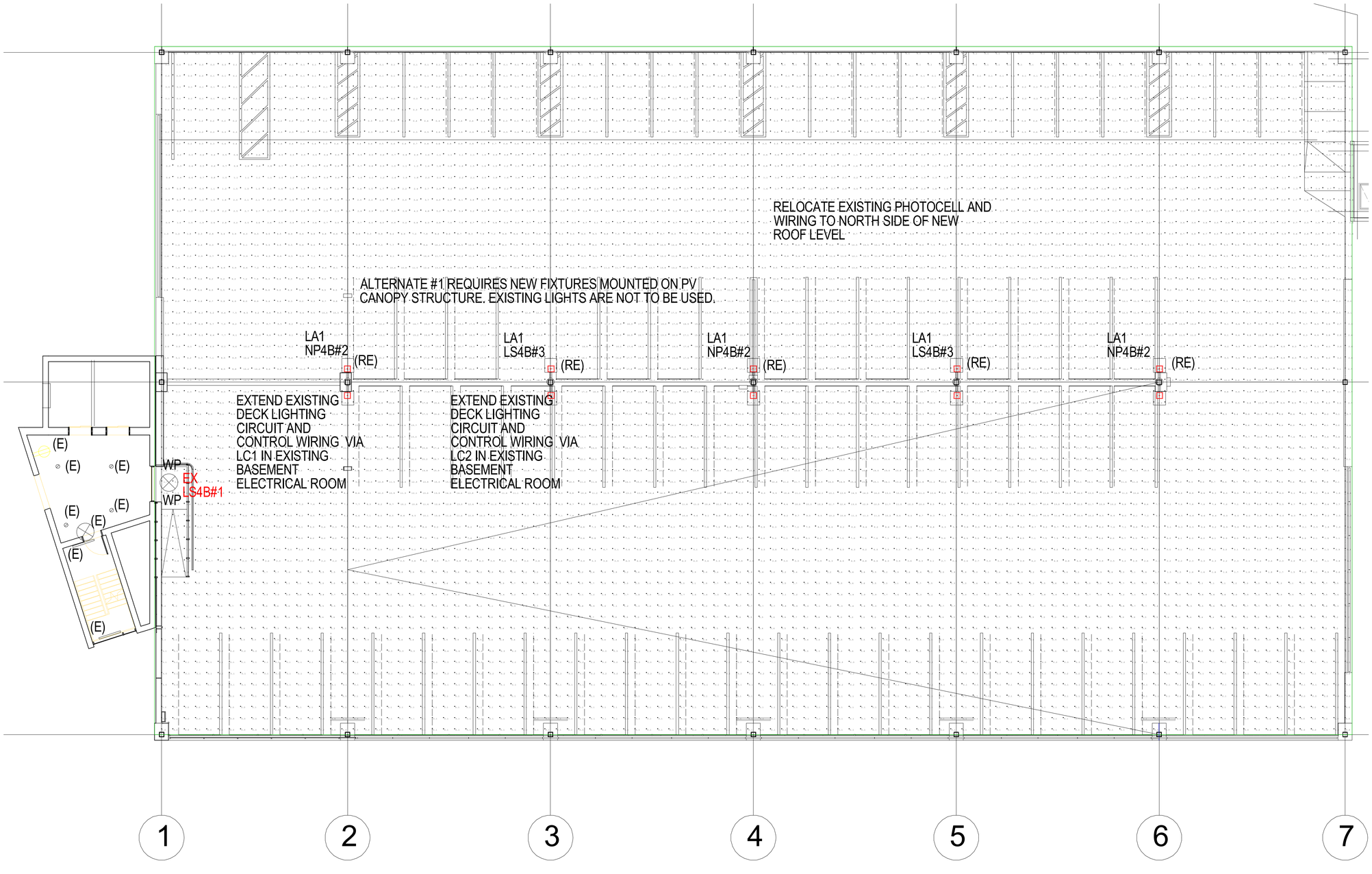
SITE PLAN
OF:
MAINE MEDICAL CENTER - EAST TOWER AND VISITOR GARAGE
22 BRAMHALL STREET
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04102

PROJECT NO.	SCALE
15466	1"=50'

SHEET 1 OF 1

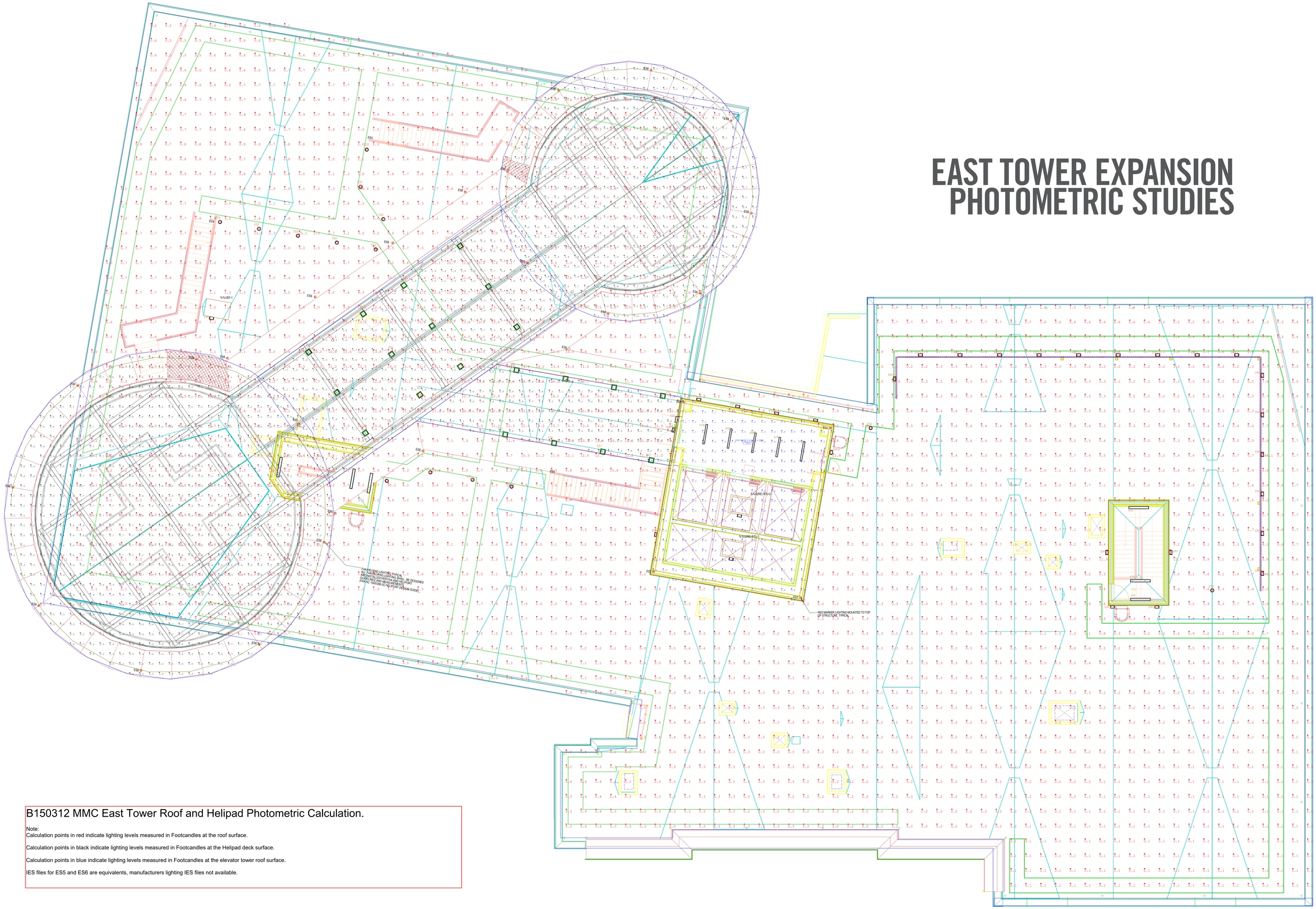
154688.dwg, TAB:SKETCH

VISITOR GARAGE EXPANSION
PHOTOMETRIC STUDIES



PERKINS+WILL

EAST TOWER EXPANSION
PHOTOMETRIC STUDIES



B150312 MMC East Tower Roof and Helipad Photometric Calculation.

Note:
Calculation points in red indicate lighting levels measured in Footcandles at the roof surface.

Calculation points in black indicate lighting levels measured in Footcandles at the Helipad deck surface.

Calculation points in blue indicate lighting levels measured in Footcandles at the elevator tower roof surface.

IES files for ES5 and ES6 are equivalents, manufacturers lighting IES files not available.

PERKINS+WILL

Maine Medical Center
MaineHealth

centered around you

Updated Signage Plan

Site Plan Application #1

East Tower Expansion, Visitor Garage Expansion, Central Utility Plant Upgrade

January 5, 2018

Attached is the updated signage plan for Maine Medical Center's Bramhall Campus. This plan reflects existing conditions. No changes are planned as part of MMC's Site Plan #1 for the East Tower Expansion, Visitor Garage Expansion, and Central Utility Plan upgrade.

Maine Medical Center

PORTLAND CAMPUS

Environmental Graphics & Wayfinding

Exterior Sign System

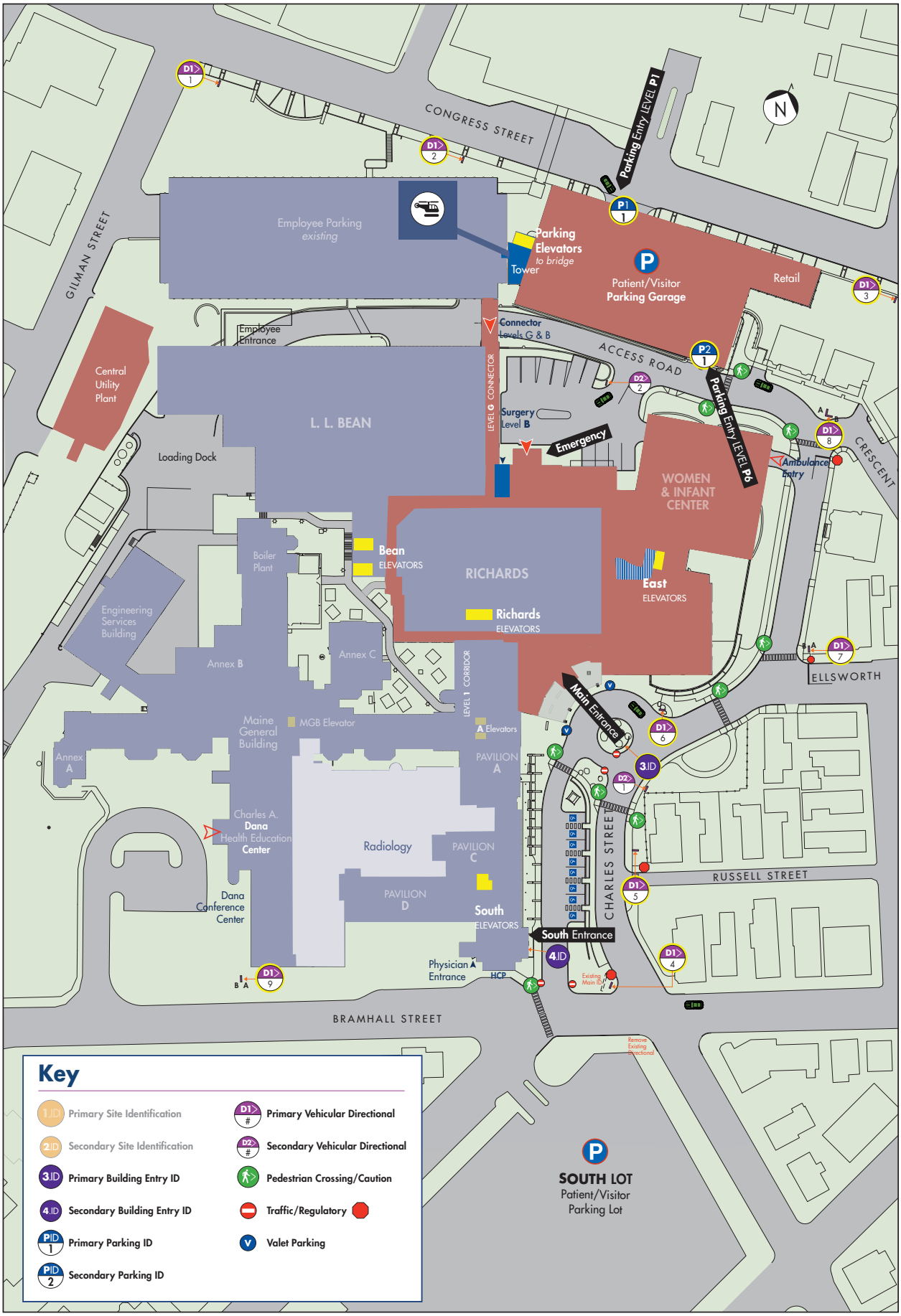
City of Portland Submittal

05 January 2018

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE/INTERIOR DESIGN
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

SITE/LANDSCAPE
Sebago Technics
1 Chabot Street
Westbrook ME 04092
✆ 207.856.0277



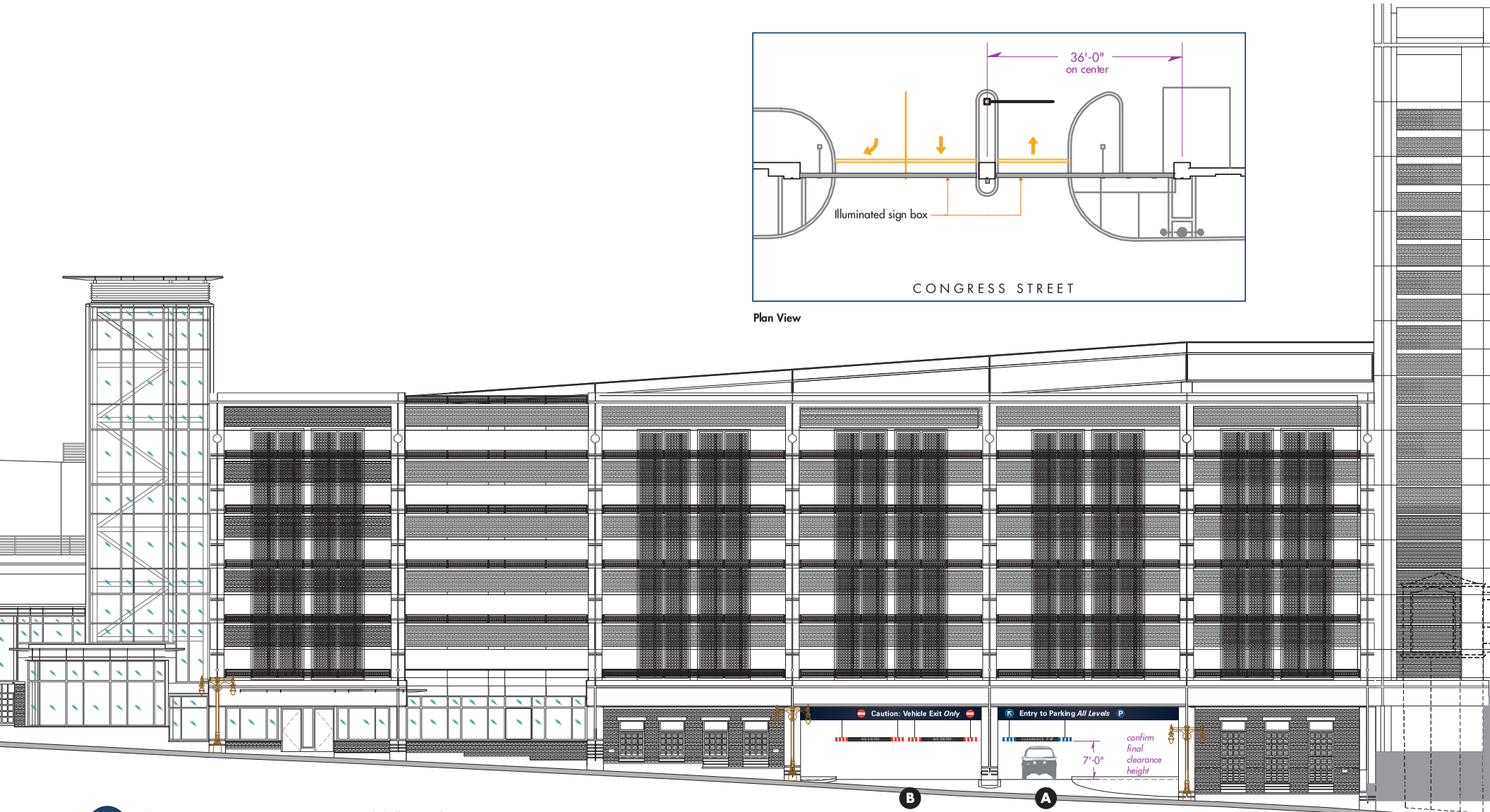
Maine Medical Center
PORTLAND CAMPUS
2008

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Exterior Sign Location Plan
Campus Wayfinding
Scale: as shown
22 April 2008

DRAWING N°
SLP. 1

Plan View



P1
A
Parking Garage Entry ID 1 Congress Street *suspended/illuminated*
Scale: 1/16" = 1'-0"

Maine Medical Center
MaineHealth
SIGN STANDARDS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign boxes/internally illuminated
Scale: as shown
29 October 2009

DRAWING N°
P1.1

Marquee Sign *projecting/double sided*
Grid armature fabricated from 4" square aluminum extrusion with horizontal 3" sq. steel structural supports; MPC paint color: "Satin Aluminum" to match new exterior signs; "PARK" letterforms are 1/4" clear "push-thru" graphics in colors shown captured by 5" deep satin aluminum disks; Disks internally illuminated by LED and mounted flush to grid structure. Price static sign box or changeable LED message boards as options.

1 **Parking Garage Entry ID** *view eastward up Congress Street*
Scale: relative to image

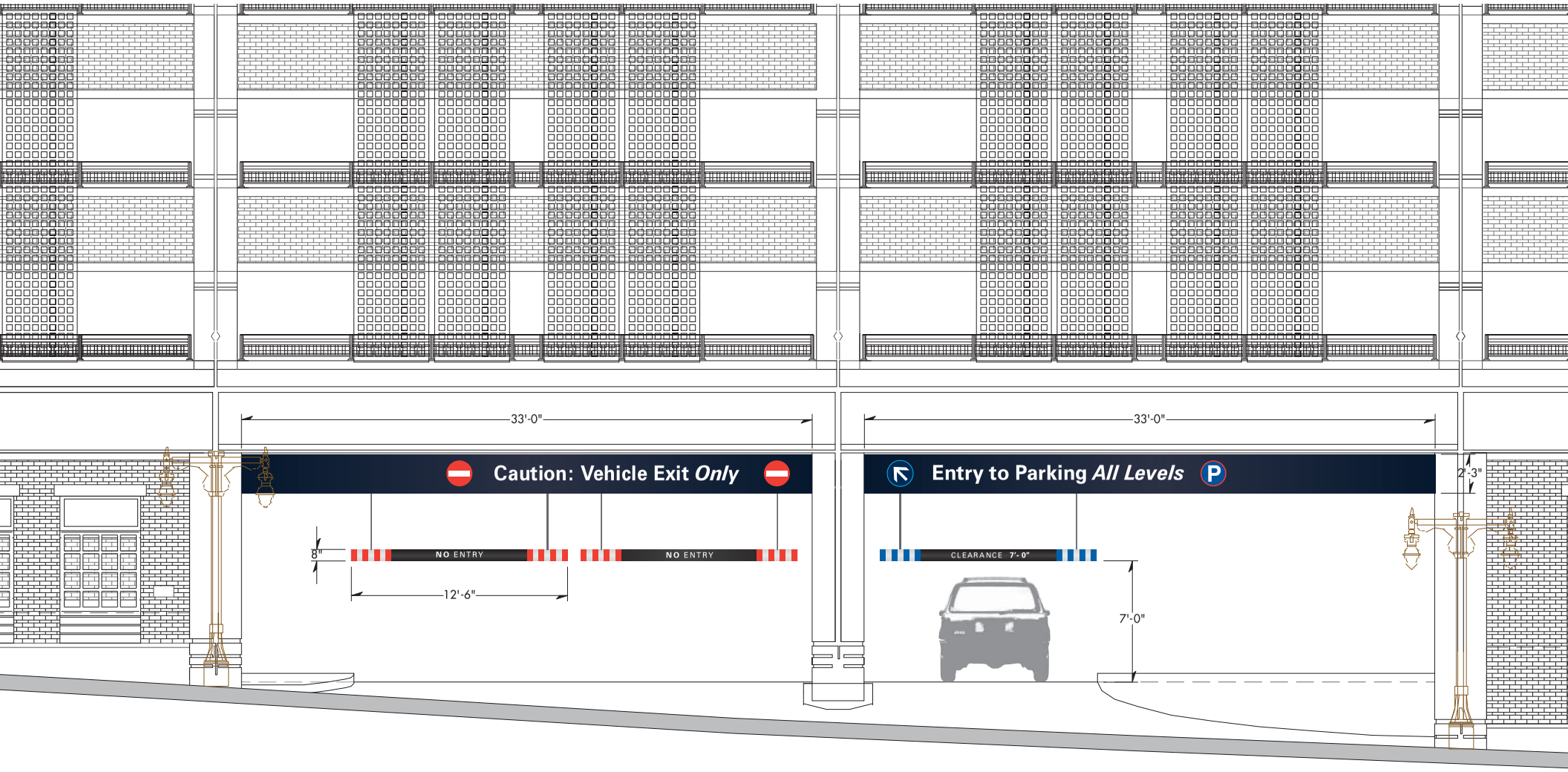
P1 B **Parking Garage Entry ID** *view across Congress Street*
Scale: relative to image

Maine Medical Center
MaineHealth
SIGN STANDARDS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Parking Garage Marquee *Congress Street*
Disks/signs on grid armature: LED illuminated
Scale: as shown
16 October 2008

DRAWING N°
P1.2



P1 C **Parking Garage Entry ID 1** Congress Street *dimensions/detail*
Scale: 3/16" = 1'-0"

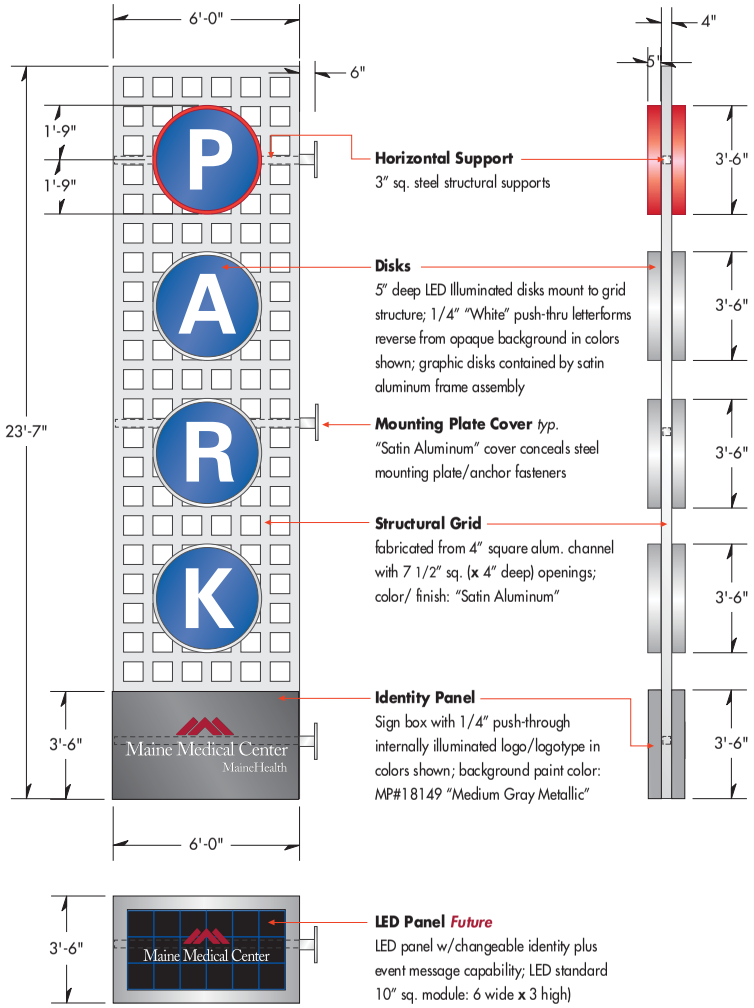
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

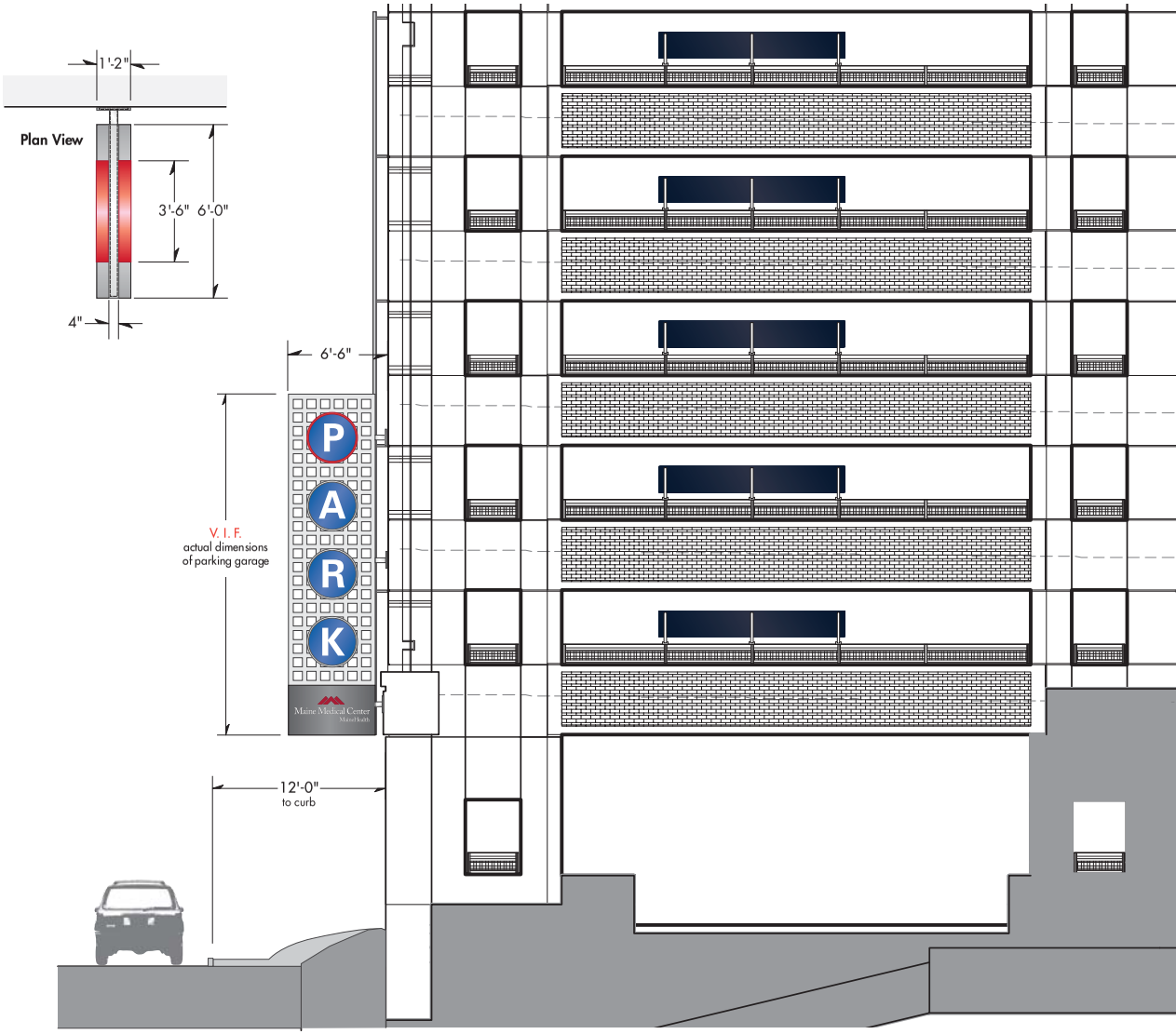
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign box/clearance bar dimensions
Scale: as shown
22 April 2008

DRAWING N°
P1.3



A **Projecting Parking Entry ID** Side/Front Elevation *Revised* **End View**
Scale: 1/4" = 1'-0"



PID 1A **Projecting Parking Entry ID** view up Congress Street *illuminated/dimensional*
Scale: 1/8" = 1'-0"

Maine Medical Center
MaineHealth
SIGN STANDARDS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Parking Entry ID *Final*
Projecting marquee: dimensional/illuminated
Scale: as shown
24 March 2009

DRAWING N°
PID.1

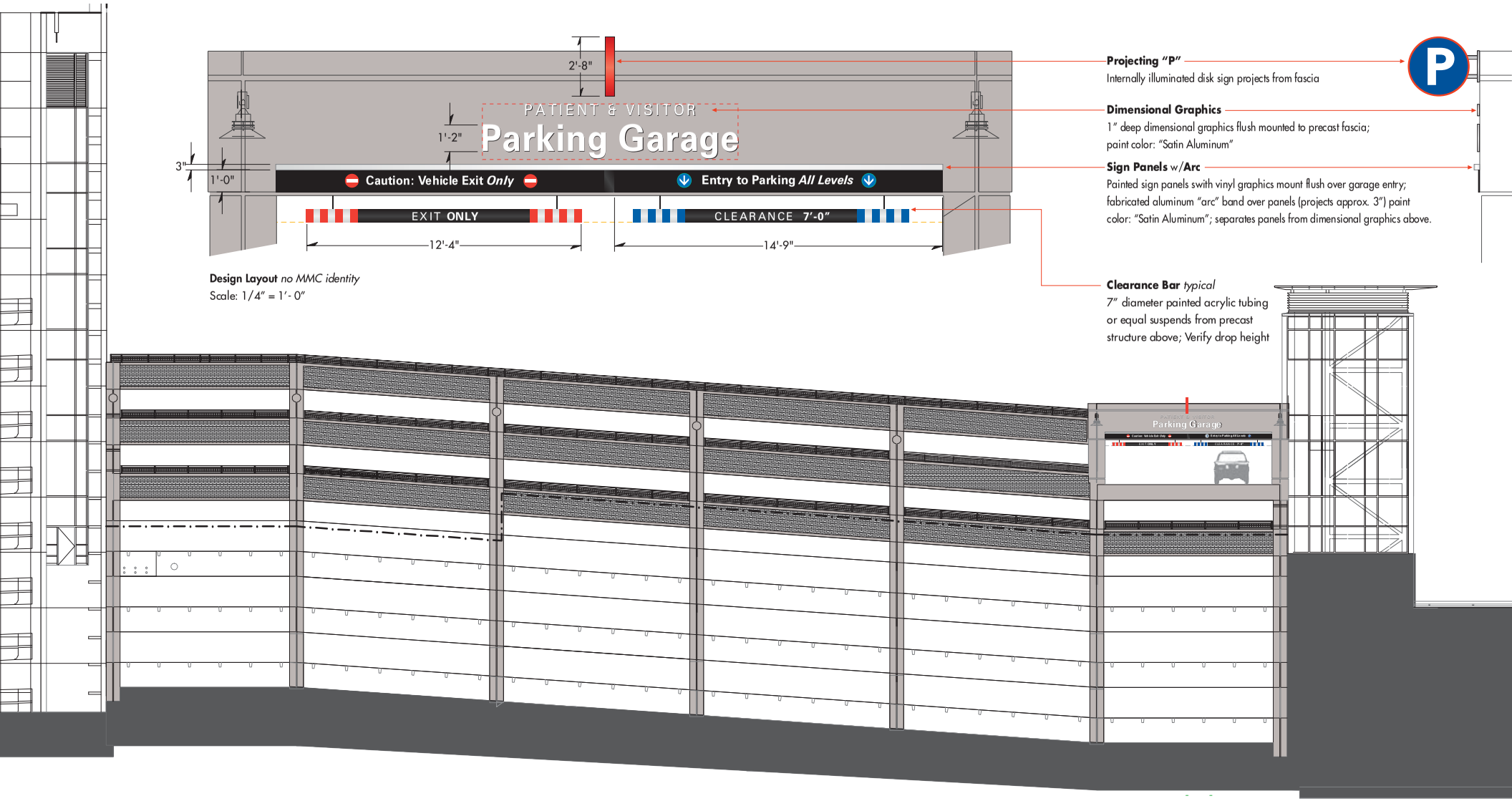
Design Layout *no MMC identity*
Scale: 1/4" = 1'- 0"

Projecting "P"
Internally illuminated disk sign projects from fascia

Dimensional Graphics
1" deep dimensional graphics flush mounted to precast fascia; paint color: "Satin Aluminum"

Sign Panels w/**Arc**
Painted sign panels swith vinyl graphics mount flush over garage entry; fabricated aluminum "arc" band over panels (projects approx. 3") paint color: "Satin Aluminum"; separates panels from dimensional graphics above.

Clearance Bar *typical*
7" diameter painted acrylic tubing or equal suspends from precast structure above; Verify drop height



P2
1
Parking Garage Secondary Entry ID South Elevation *dimensional graphics w/illuminated disk*
Scale: 1/16" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Secondary Parking ID/Entry *at Level P6*
Fascia mounted w/illuminated disk
Scale: as shown
22 April 2008

DRAWING N°
P2.1

Projecting Sign
Parking symbol disk projects from concrete column; internally-illuminated/double-sided

Dimensional Graphics
Non-illuminated dimensional graphics/panels flush mounted to concrete fascia.

Sign Panel
Sign panels with vinyl graphics mount flush over parking garage entry; 3" arc band above panels; color: "Satin Aluminum"

Clearance Bar *typical*
Painted plastic tube with vinyl graphics suspended from ceiling; graphic layout shown on dwg. #P2.1; clearance height TBD

Level ID
Painted sign panel with vinyl graphics

P2
1
Secondary Parking Garage Entry ID on internal Access Road *projecting/dimensional*
Scale: relative to image

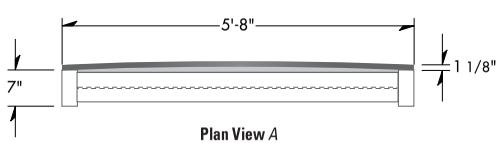
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

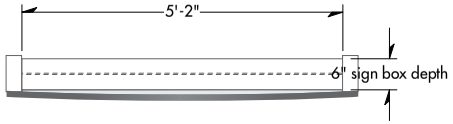
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Secondary Parking Entry ID *at Level P6*
Sign graphics mounted to fascia
Scale: as shown
31 March 2008

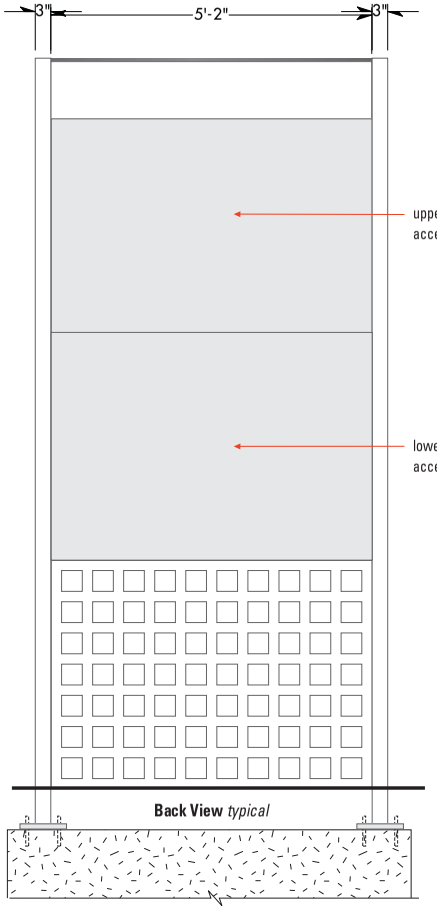
DRAWING N°
P2.2



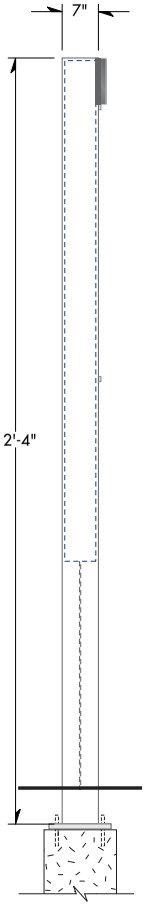
Plan View *A*



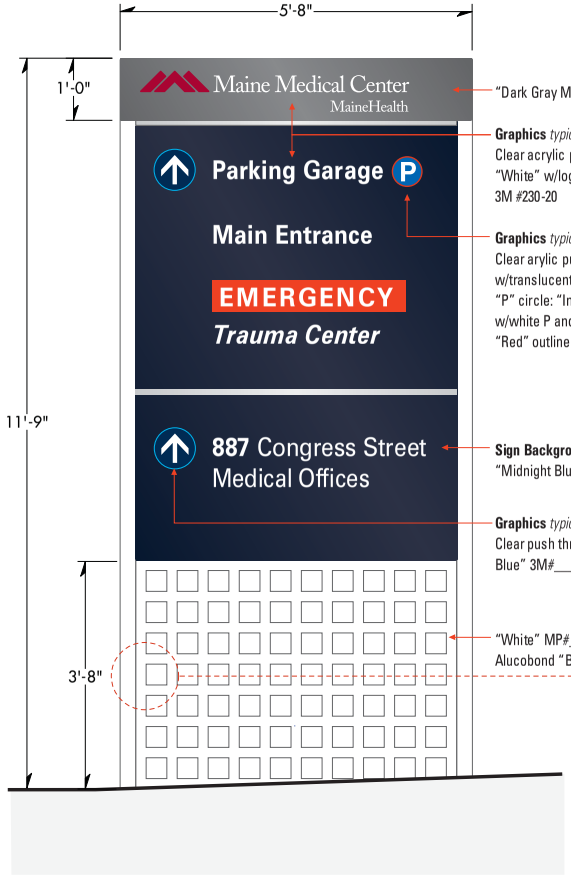
Plan View B



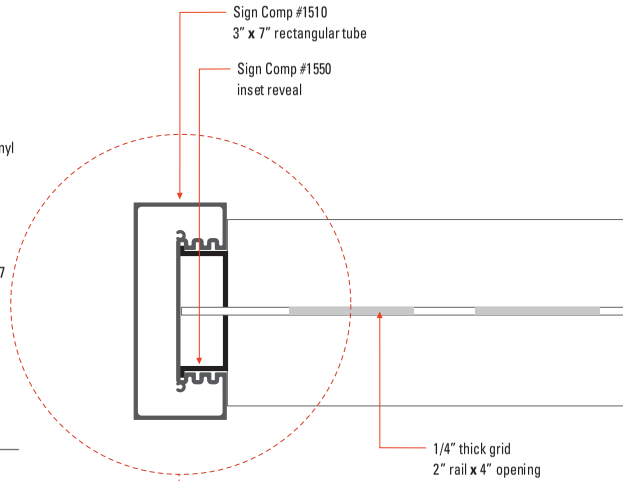
Back View *typical*



Side View



D1 / 1 **Primary Directional Sign 1**
Scale: 1/2" = 1'-0"



D1 / B **Sign Post/Grid** *Detail*
Scale: 3" = 1'- 0"

Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

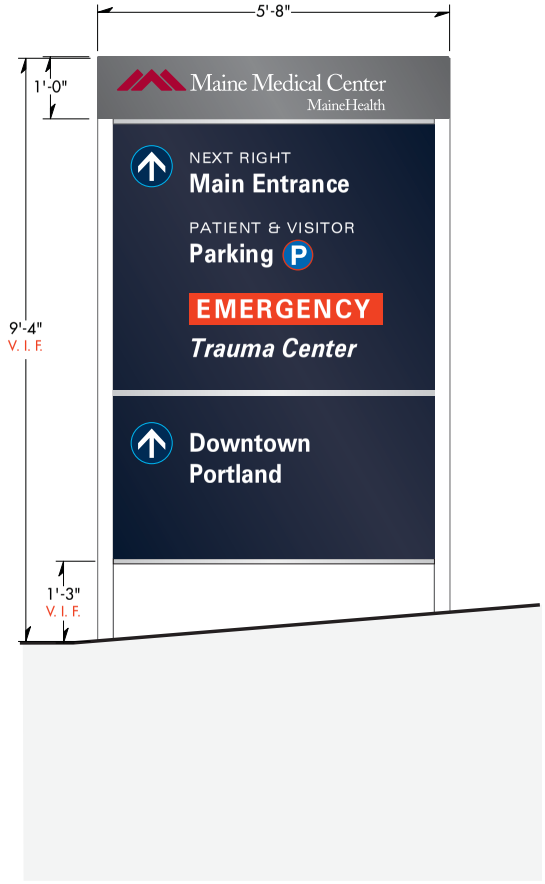
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional 1
Freestanding/illuminated
Scale: as shown
22 April 2008

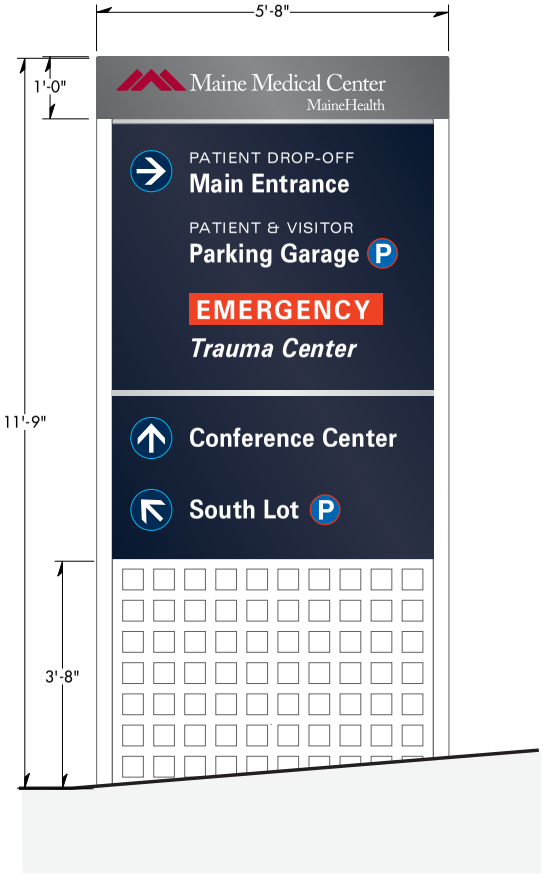
DRAWING N°
D1.1

Top View *typical*

D1 2 **Primary Directional Sign** *D1-2*
Scale: 1/2" = 1'-0"



D1 3 **Primary Directional Sign** *D1-3*
Scale: 1/2" = 1'-0"



D1 4 **Primary Directional Sign** *D1-4*
Scale: 1/2" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

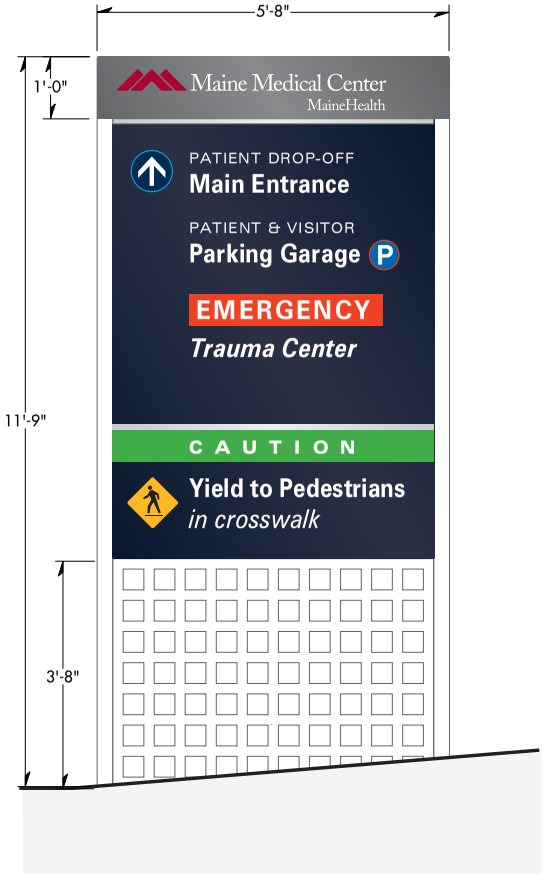
ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

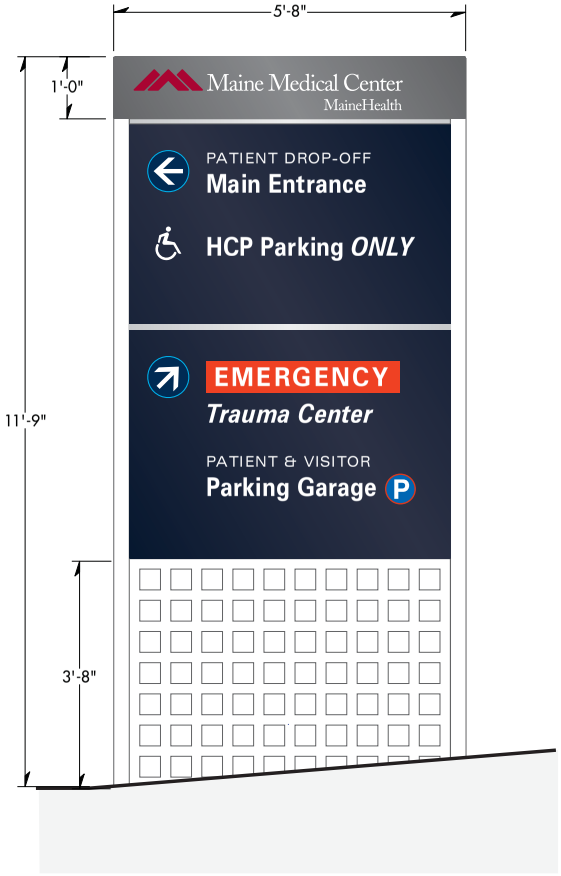
DRAWING TITLE
Primary Directional Sign + *Trauma Center*
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.2-4

Top View *typical*



D1 5 **Primary Directional Sign** *D1-5*
Scale: 1/2" = 1'-0"



D1 6 **Primary Directional Sign** *D1-6*
Scale: 1/2" = 1'-0"

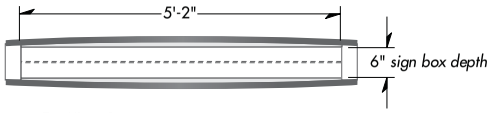
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

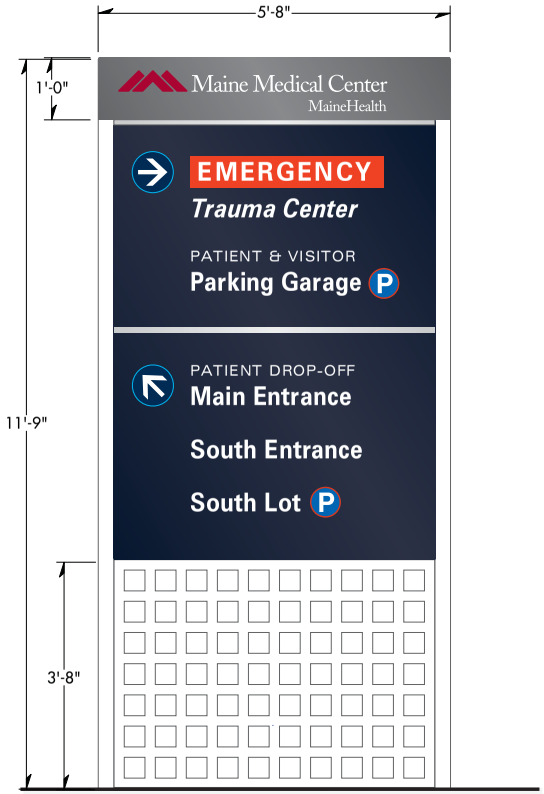
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.5-6

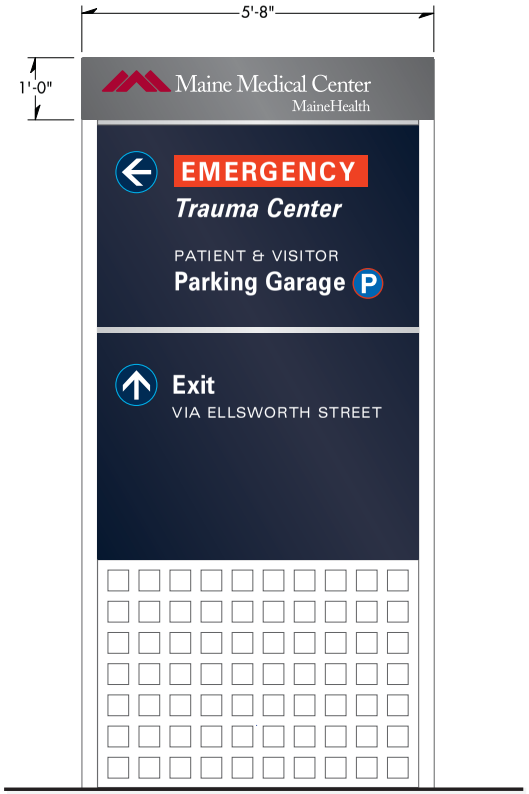


Top View *D1.7 double-sided*



Side A

D1 7 **Primary Directional Sign** Double-sided *D1-7 side A*
Scale: 1/2" = 1'-0"



Side B

Primary Directional Sign Double-sided *D1-7 side B*
Scale: 1/2" = 1'-0"

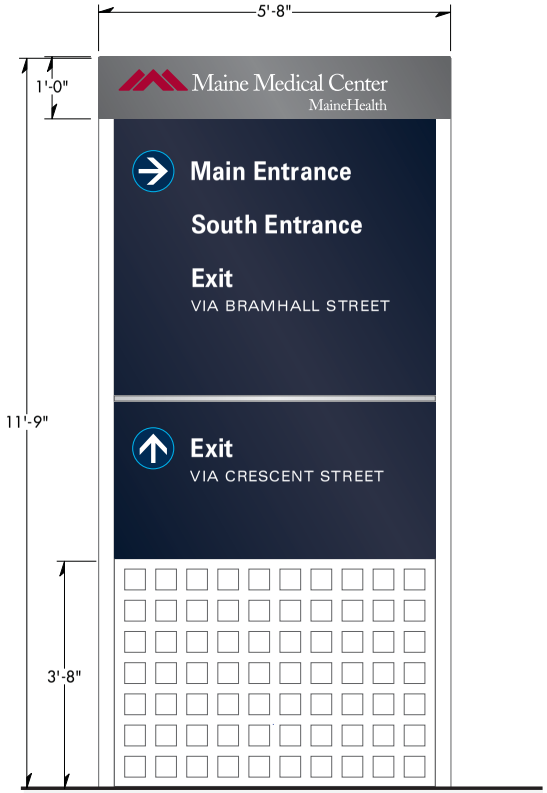
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

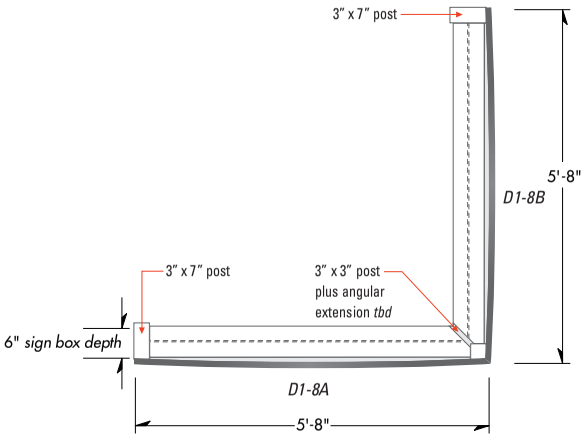
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign 7 *double-sided*
Freestanding/illuminated
Scale: as shown
22 April 2008

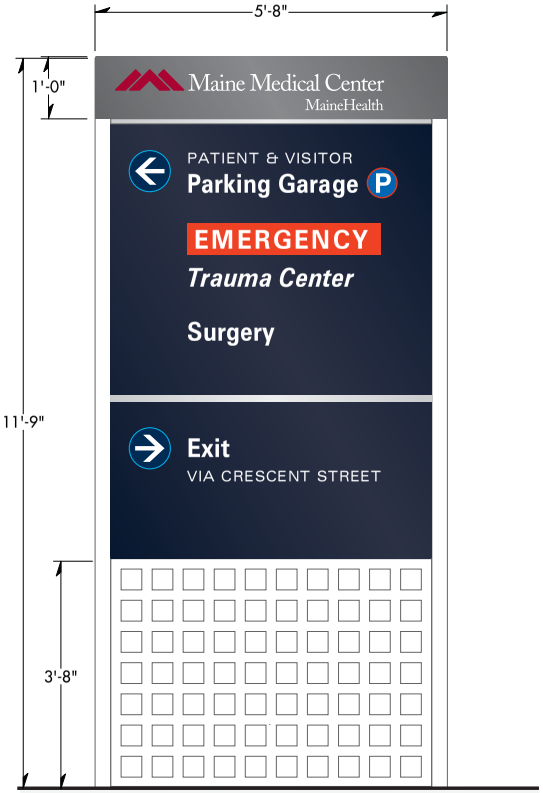
DRAWING N°
D1.7



Side A



Top View *sign location #8*



Side B

D1 8A **Primary Directional Sign** *D1-8A*
Scale: 1/2" = 1'- 0"

D1 8B **Primary Directional Sign** *D1-8B*
Scale: 1/2" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

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154 Maplewood Avenue
Portsmouth NH 03801
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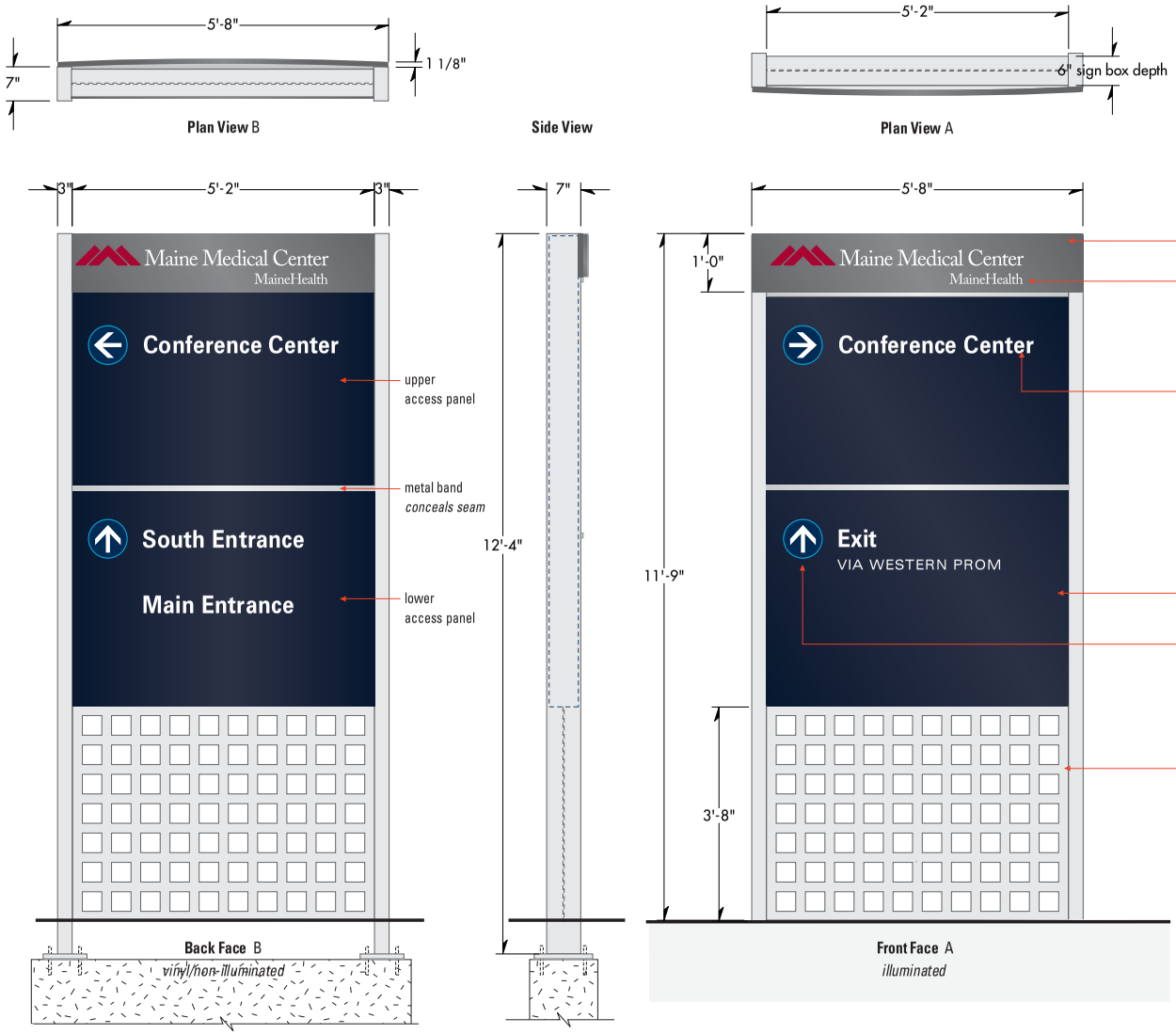
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign *"L" angle sign*
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.8



D1 / 9 **Primary Directional Sign** *Revised*
Scale: 1/2" = 1'-0"

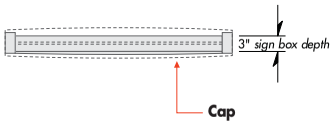
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

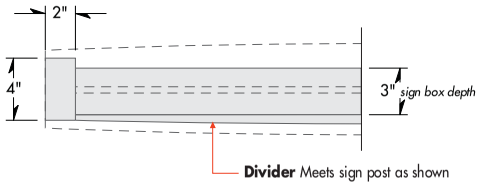
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign 9
Freestanding/illuminated
Scale: as shown
22 April 2008

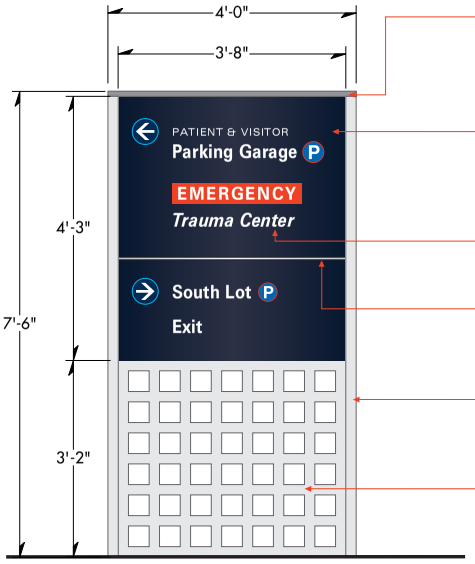
DRAWING N°
D1.9



Top View *typical*



Detail 1 1/2" = 1'-0"



Cap
"Medium Gray Metallic" cap with two curved and two flat edges; mounts at top of sign assembly; cap shown by dashed line above

Sign Cabinet
Painted "Midnight Blue Metallic" sign box with applied graphics; non-illuminated *(give price option for illumination)*

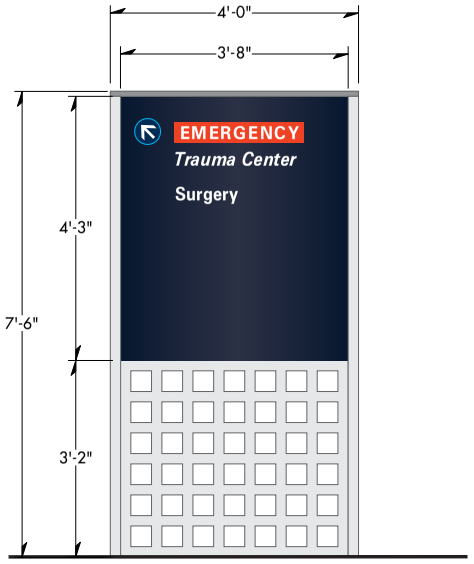
Graphics
Vinyl graphics in colors as shown

Divider
1" "Satin Aluminum" curved divider; placement is determined by sign message

Post
2" HT x 4" D "Satin Aluminum" posts; all conduit/electrical to be concealed within posts

Grid
1/4" panel with grid pattern as shown; 2" bands between 4" open squares; paint "Satin Aluminum"

D2 1 **Secondary Directional Sign**
Scale: 1/2" = 1'-0"



D2 2 **Secondary Directional Sign**
Scale: 1/2" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

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Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Secondary Directional Sign
Freestanding
Scale: as shown
4 April 2008

DRAWING N°
D2.1-2

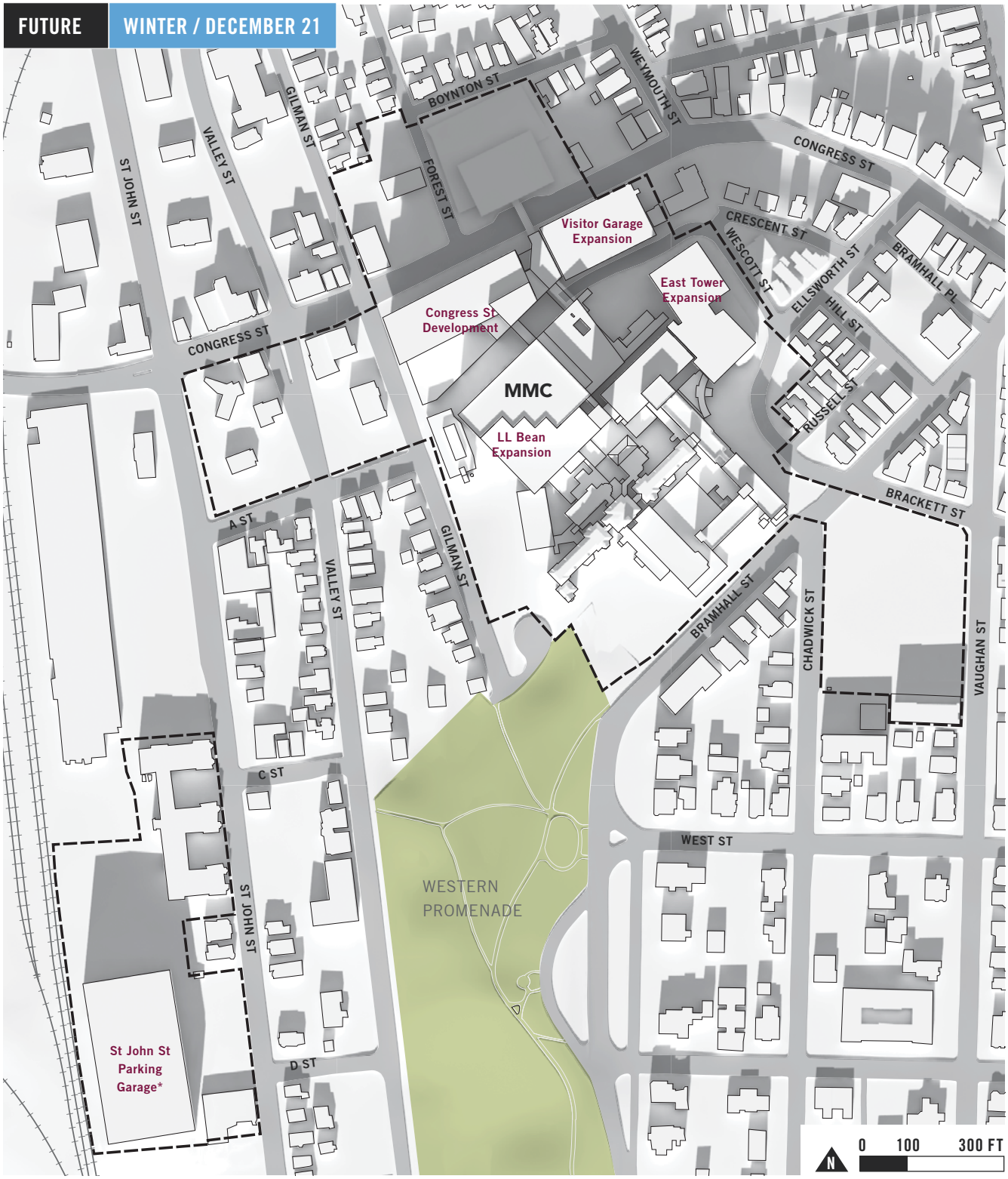
Fig.5.17 Computer-generated shadow study / Existing conditions on June 21, noon

Fig.5.18 Computer-generated shadow study / Proposed long-term projects on June 21, noon

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

Fig.5.19 Computer-generated shadow study / Existing conditions on December 21, noon

Fig.5.20 Computer-generated shadow study / Proposed long-term projects on December 21, noon



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

EAST TOWER EXPANSION
LEVEL 6 FLOOR PLAN

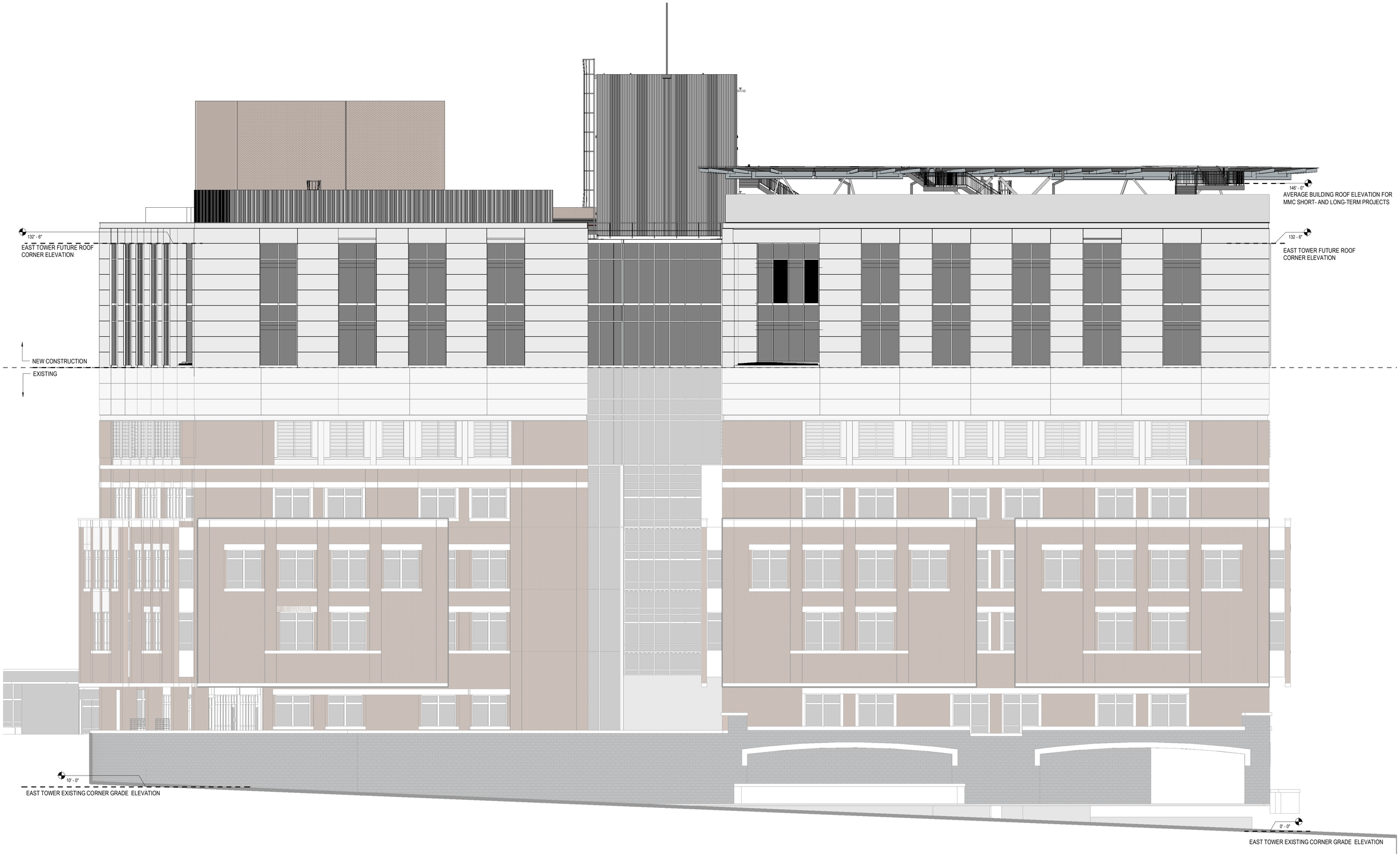
SCALE 1/8" = 1'-0"

PERKINS+WILL

EAST TOWER EXPANSION
LEVEL 7 FLOOR PLAN

SCALE 1/8" = 1'-0"

PERKINS+WILL



1/8" = 1'-0"

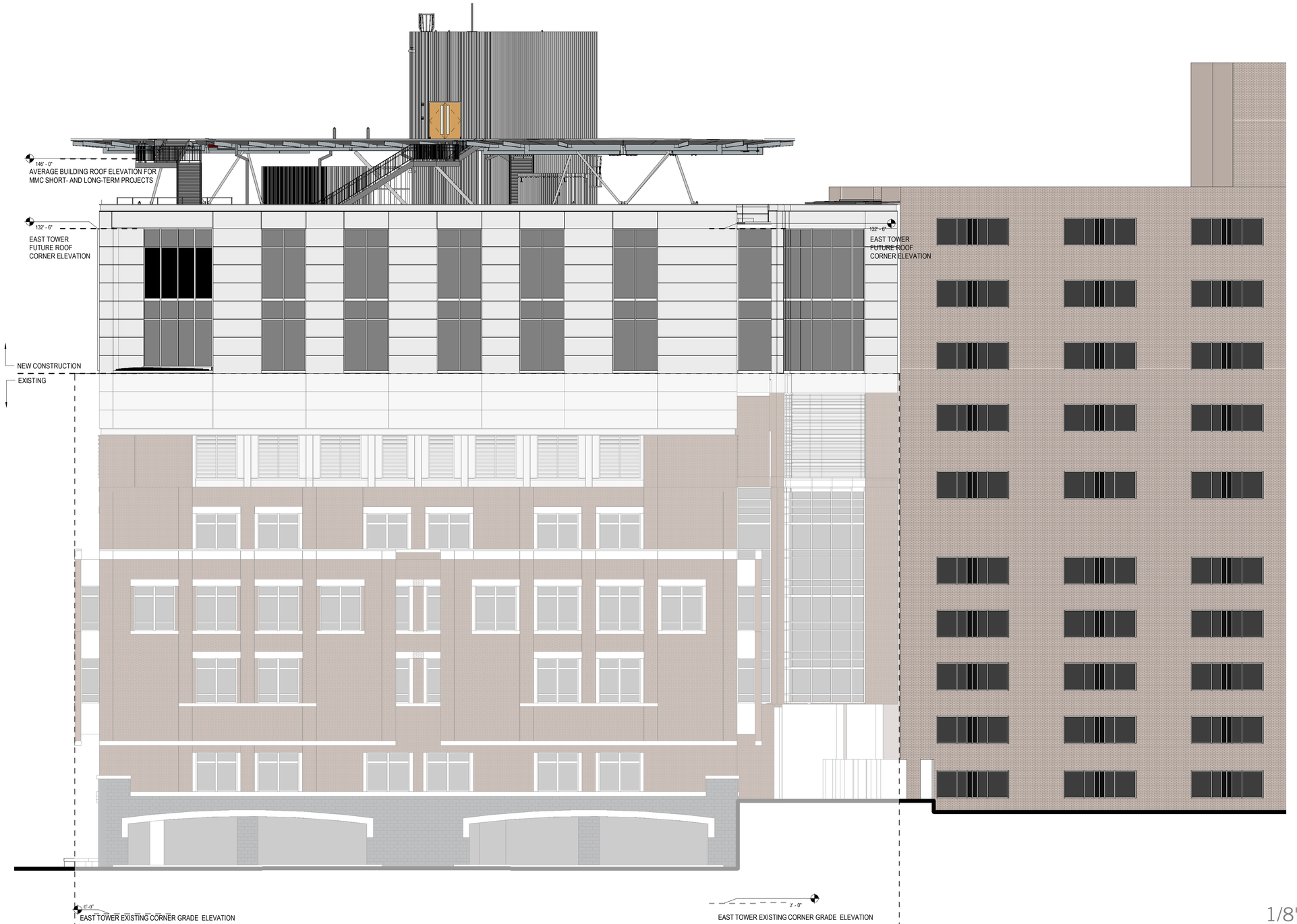
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

EAST ELEVATION

PERKINS+WILL

12/28/2017 11:14:55
AM



1/8" = 1'-0"

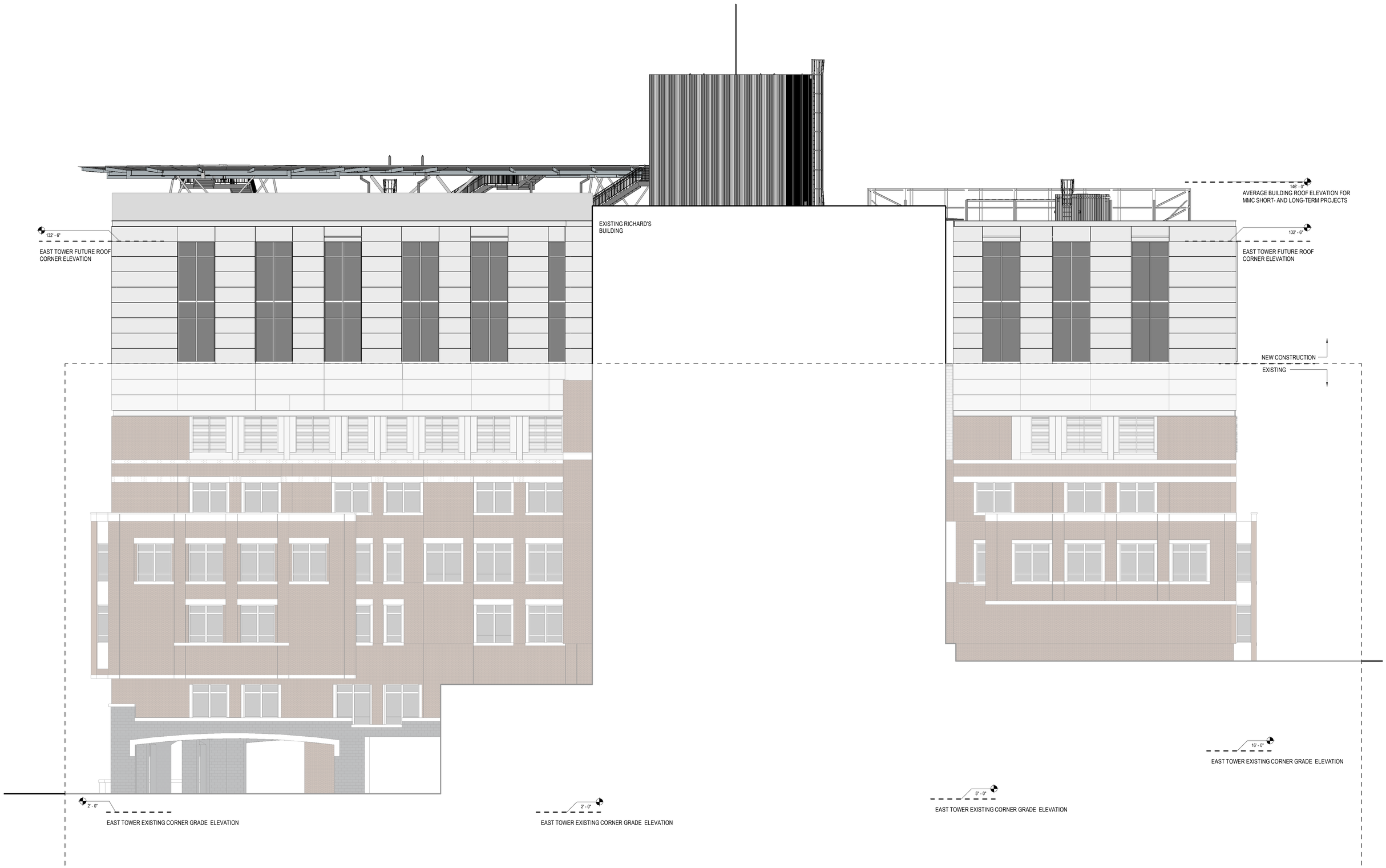
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

NORTH ELEVATION

PERKINS+WILL

12/28/2017 11:16:37
AM



1/8" = 1'-0"

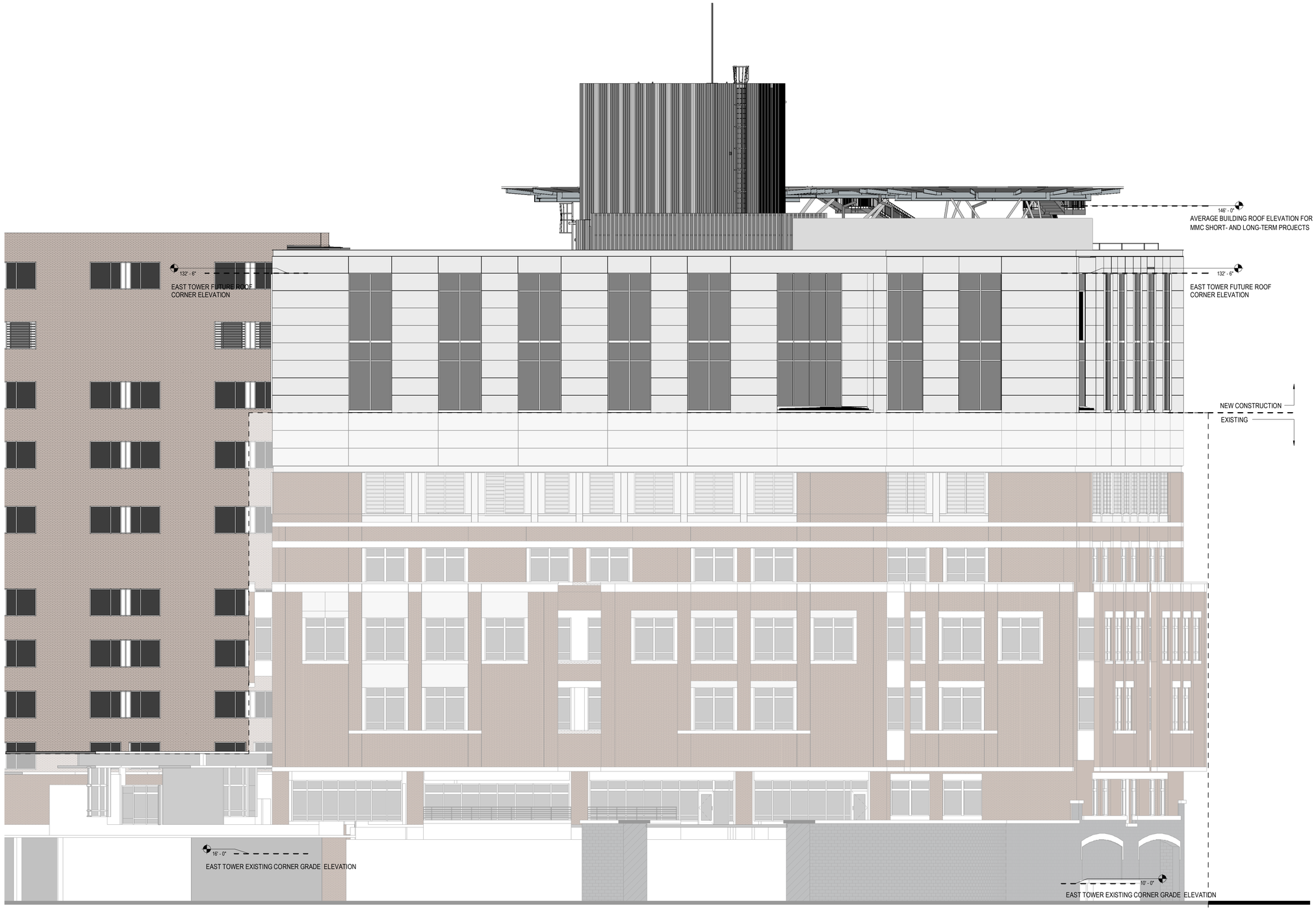
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

WEST ELEVATION

PERKINS+WILL

12/28/2017 11:15:25 AM



1/8" = 1'-0"

Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

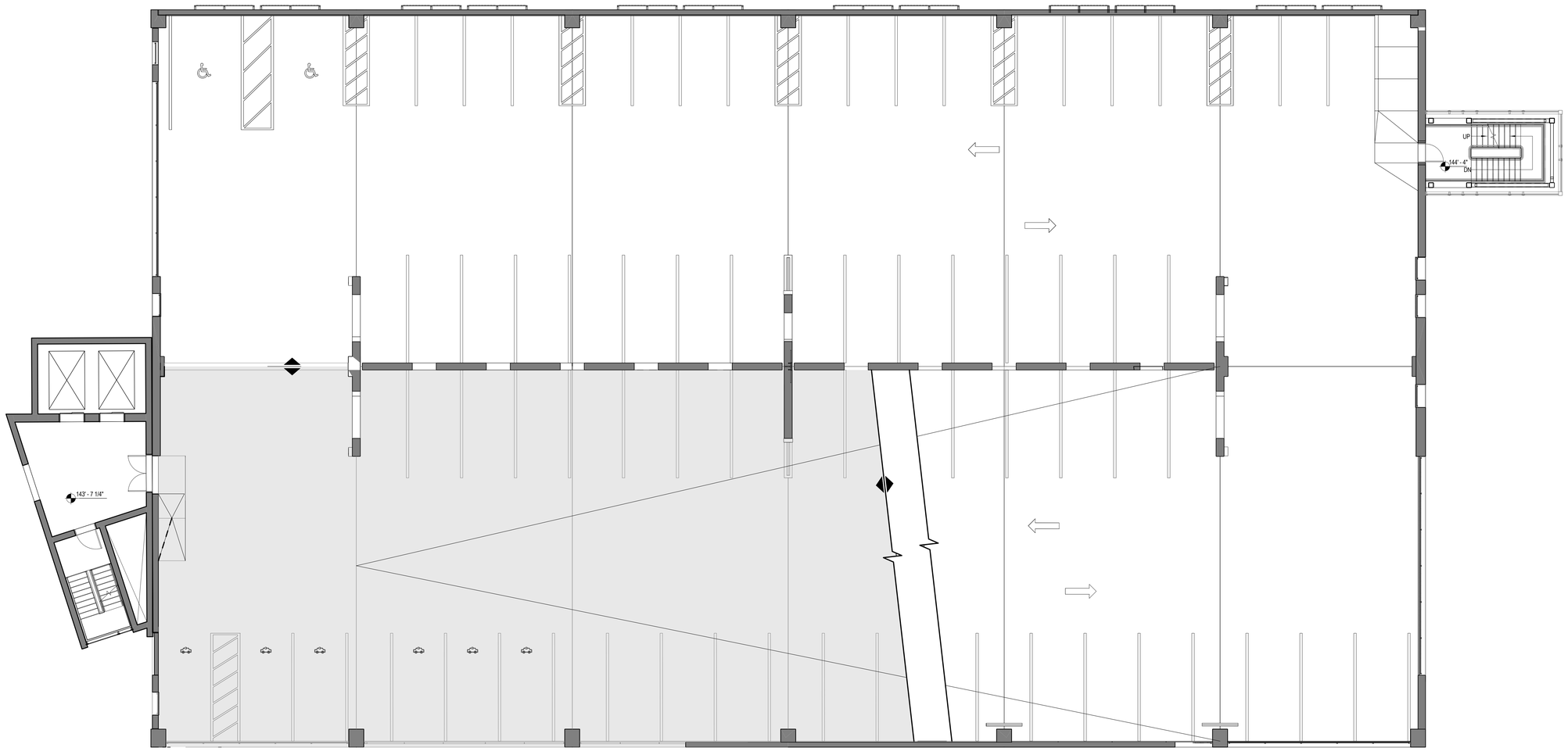
SOUTH ELEVATION

PERKINS+WILL

12/28/2017 11:15:58 AM

VISITOR GARAGE EXPANSION
LEVEL P8 FLOOR PLAN

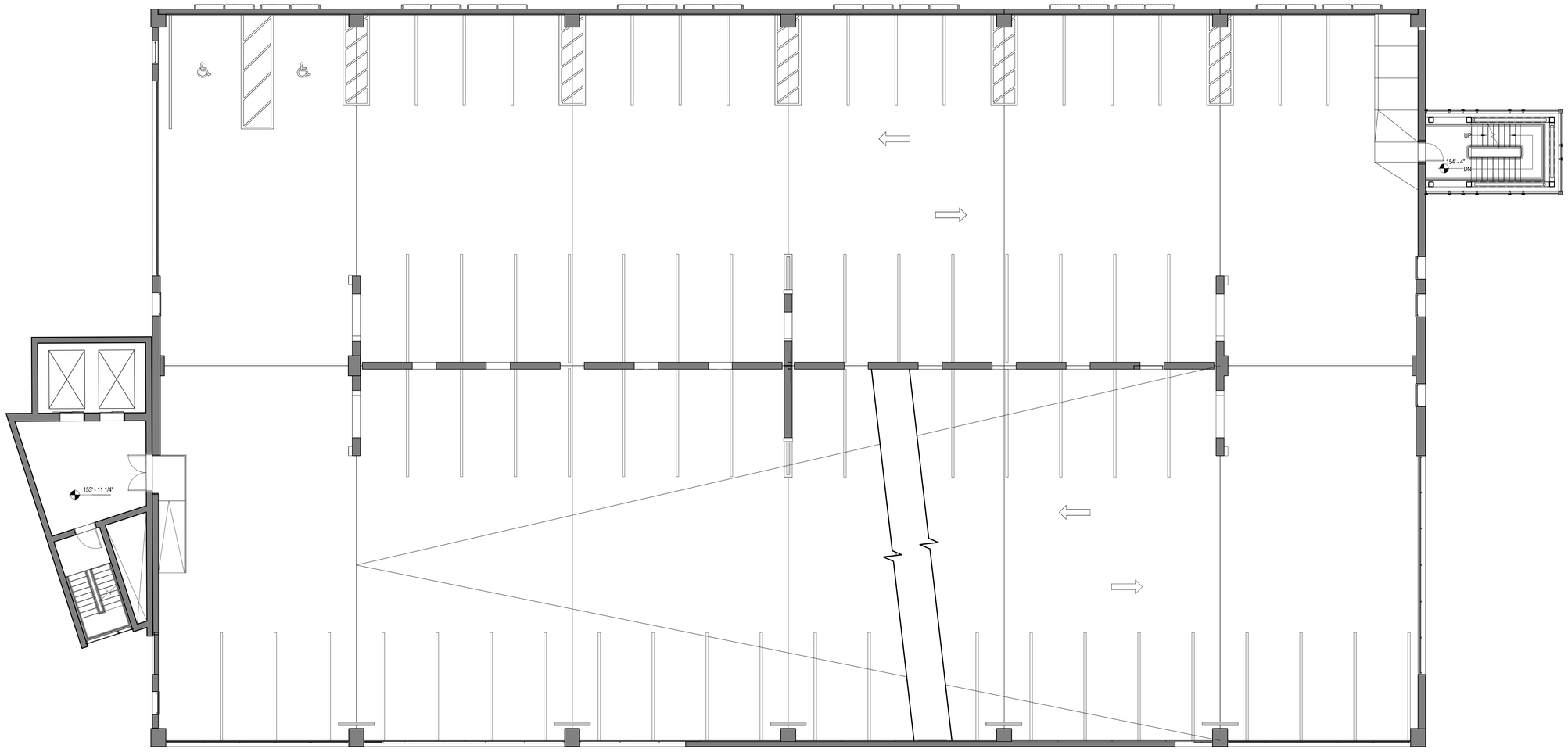
SCALE 1/8" = 1'-0"



PERKINS+WILL

VISITOR GARAGE EXPANSION
LEVEL P8 FLOOR PLAN

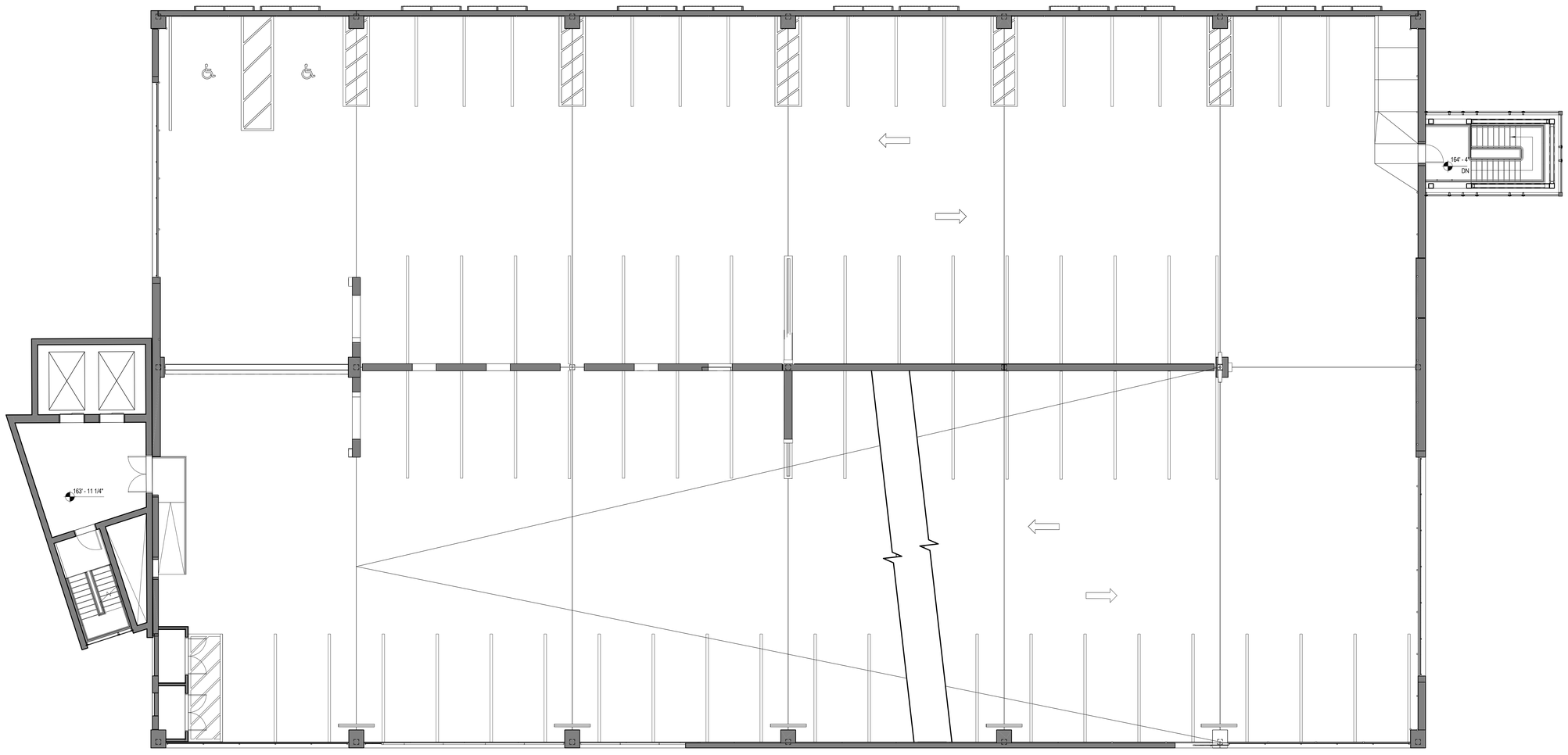
SCALE 1/8" = 1'-0"



PERKINS+WILL

VISITOR GARAGE EXPANSION
LEVEL P10 FLOOR PLAN

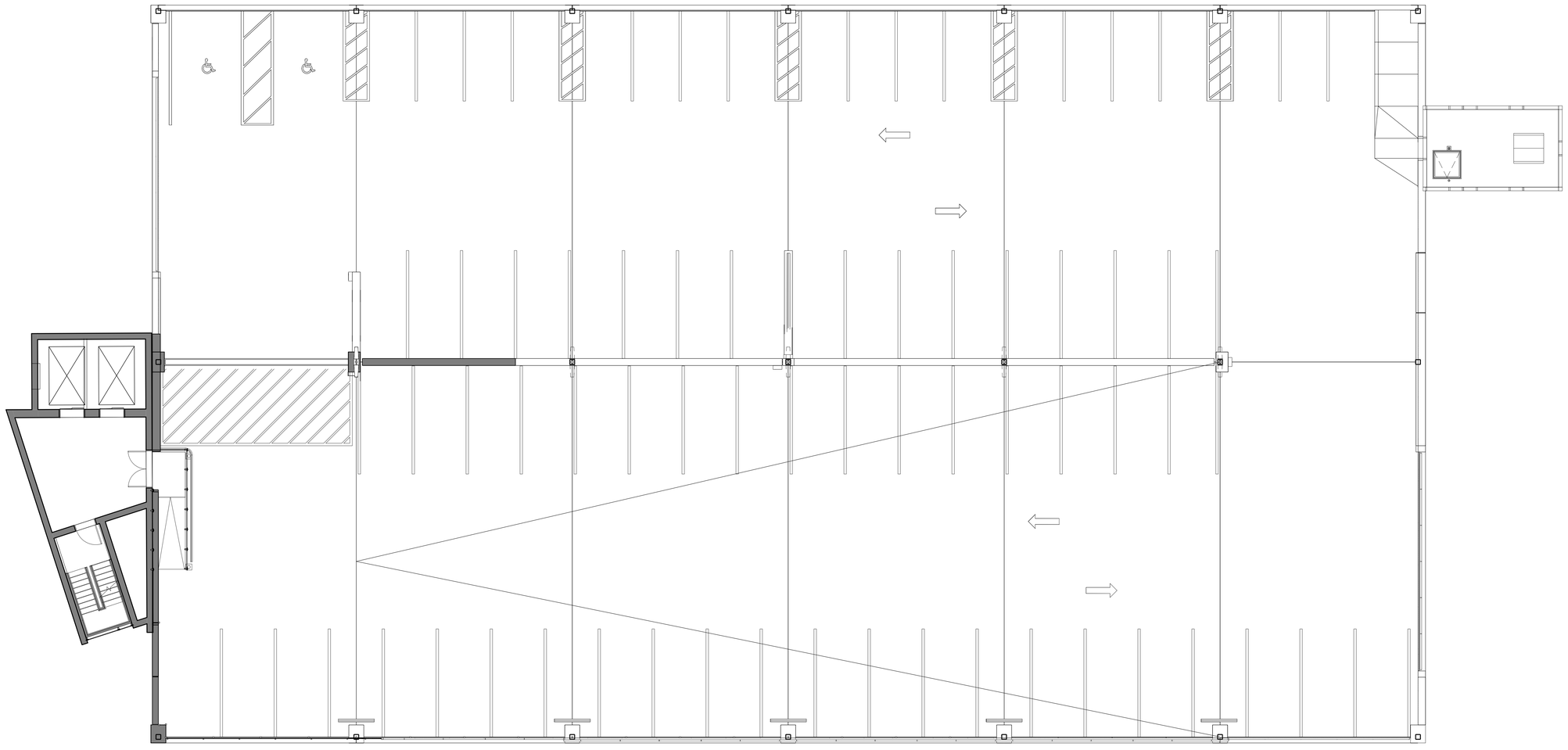
SCALE 1/8" = 1'-0"



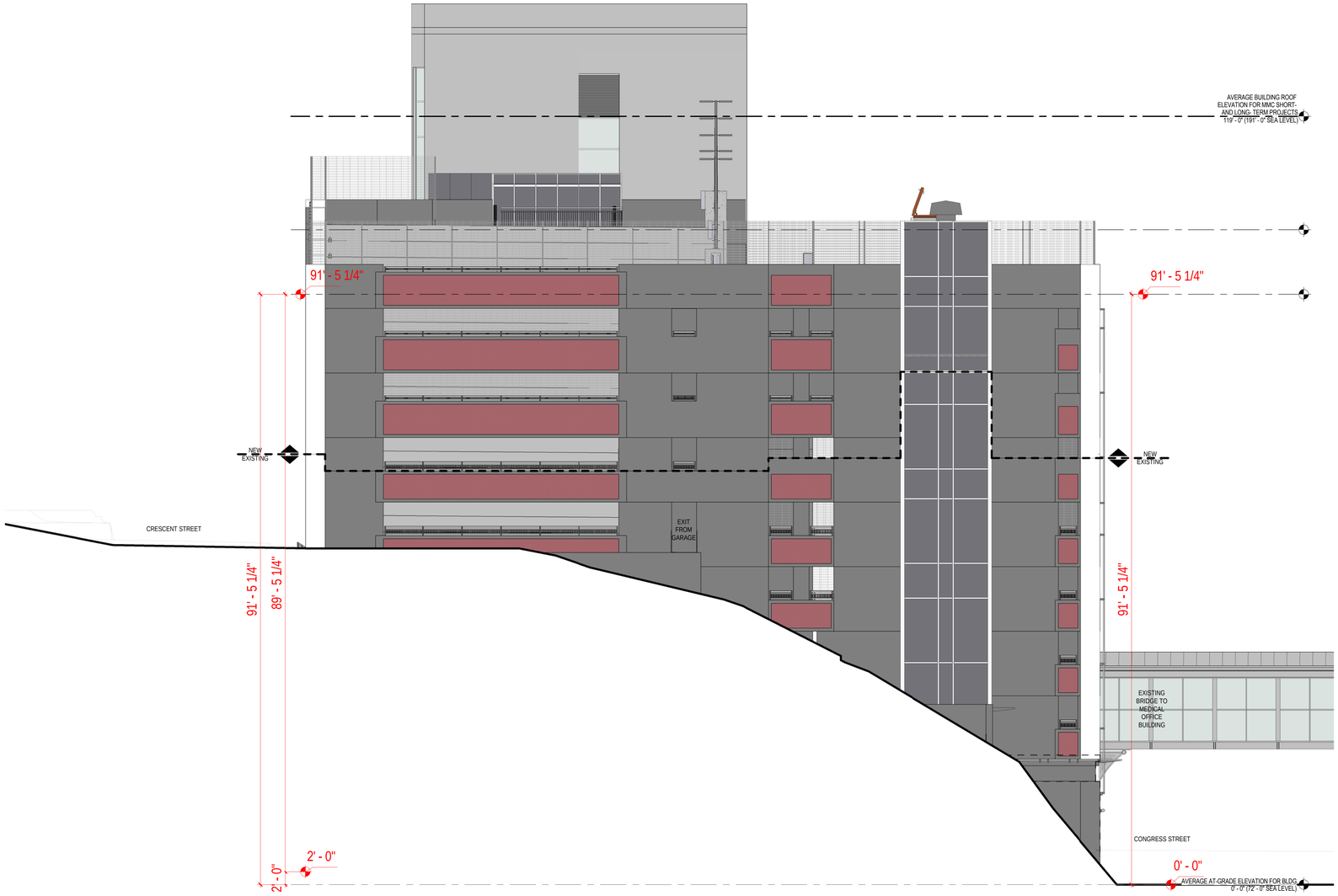
PERKINS+WILL

VISITOR GARAGE EXPANSION
LEVEL P11 FLOOR PLAN

SCALE 1/8” = 1’-0”



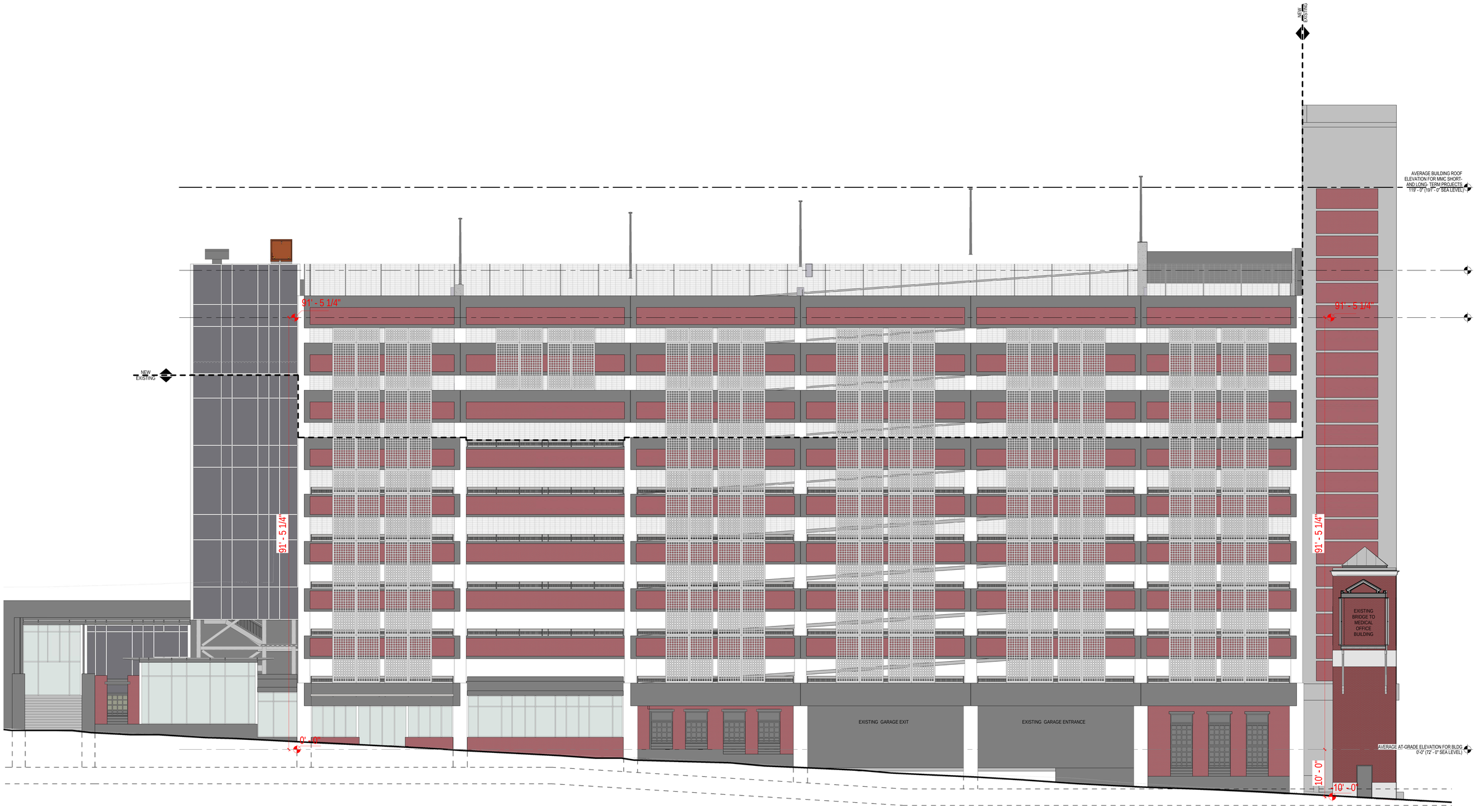
PERKINS+WILL



Visitor Garage Expansion

EAST ELEVATION

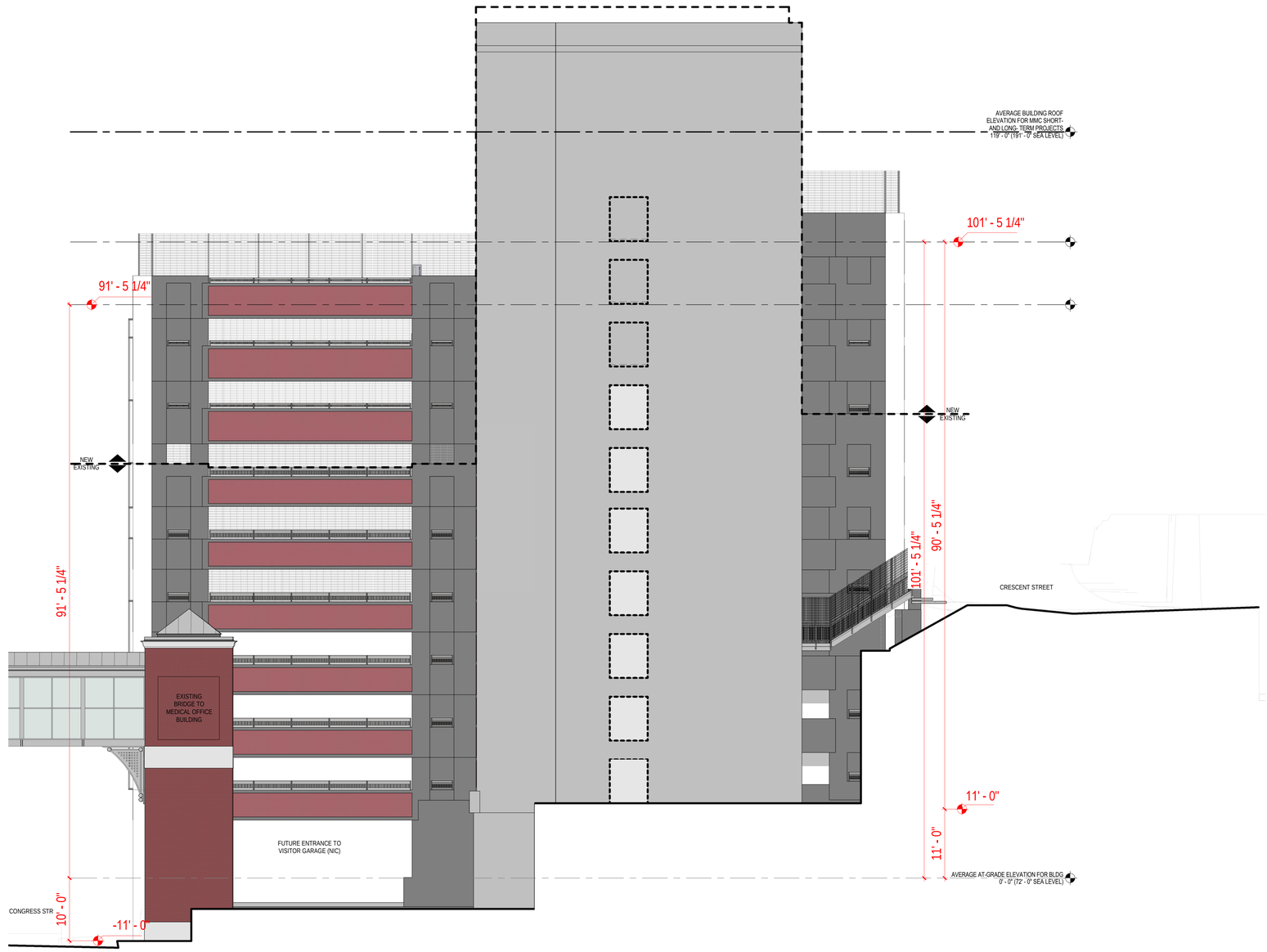
PERKINS+WILL
DOCUMENT SET



Visitor Garage Expansion

NORTH ELEVATION

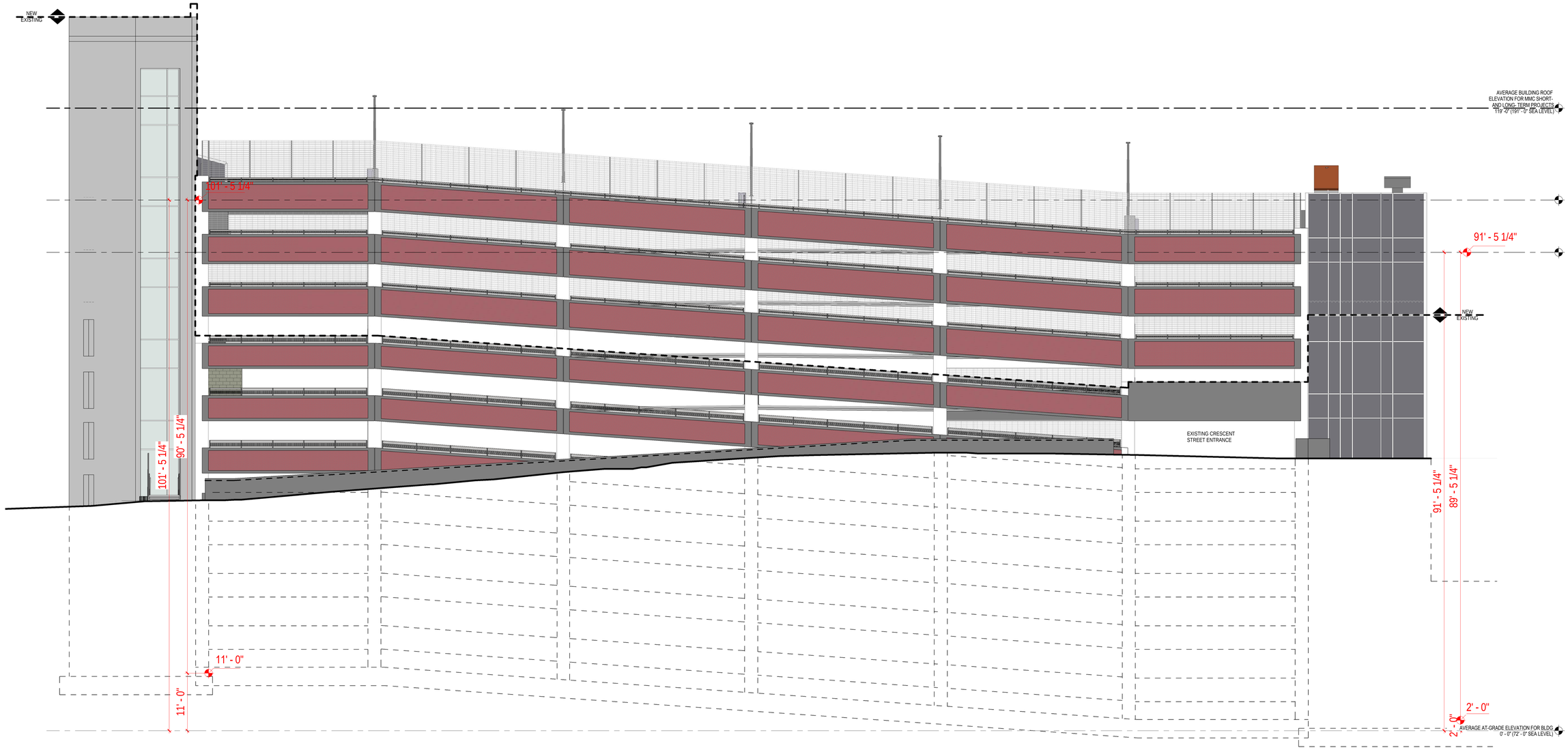
PERKINS+WILL
DOCUMENT SET



Visitor Garage Expansion

WEST ELEVATION

PERKINS+WILL
DOCUMENT SET



Visitor Garage Expansion

SOUTH ELEVATION

PERKINS+WILL
DOCUMENT SET

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	City of Portland Planning Department
From:	Jeffrey Keilman, Perkins+Will; Al Green, MMC
Date:	January 19, 2018
Subject:	**MMC East Tower Expansion – Phase 1 Design Narrative**
Attachments	
	Slides shared with City Staff on January 16, 2018

Campus Vision

The campus transformation of Maine Medical Center draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the hospital will reflect its location within Portland and the state of Maine. The goal is to preserve the historic character of the existing campus yet provide the opportunity for new design identities to develop that represent the modern delivery of healthcare and the future of Maine Medical Center.

Many key design drivers and interventions envisioned for Maine Medical Center's campus transformation balance the clinical needs of the hospital with the campus' place within the city of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with the city. This goal is balanced with the clinical needs of the patients served by MMC. Healthcare design has to start with the internal program and layout to ensure a successful and functional design. From there, the exterior design can begin to take shape and be informed by the internal concepts.

The ultimate success of the project will be to provide a positive patient and visitor experience. The creation of healing environments is an essential element to the design of the submitted projects. This is through the incorporation of nature, natural light, and the blending of interior and exterior. Access to views and light are proven to improve positive patient outcomes. Proper location and use of glass and transparency provides connections to the exterior to improve patient experience but also to further reinforce wayfinding.

The current projects submitted within this Site Plan application were developed as a continuation of existing conditions. The façade of the East Tower expansion will relate to the existing conditions and massing of the East Tower by utilizing metal panel and glass.

The internal planning strategies, critical for a clinically driven building, aimed to blend the exterior with the interior through strategic planning that enabled the interiors to be opened up to and expressed on the exterior through the large corner windows.

The East Tower Expansion is conceived as the next phase in the campus replacement and modernization that will continue to blend and blur the new and existing campus architecture. The

addition will continue to link the vision started with the Bean 2 surgical expansion and will culminate with the Congress St. addition.

Context

The East Tower and Visitor Garage expansions are extensions of existing conditions, and as such derive many of the material choices from the existing adjacent construction.

Through the design process, the team explored the impact of the structures from various viewpoints understanding the additions scale within the urban context. Multiple angles and views were analyzed by the design team in conjunction with Maine Medical Center, including long-views, which influenced the decisions of various fenestration patterns and scale. This is particularly important for the East Tower addition which is visible from many points in the city. The design responds to both the long views with the use of scale of fenestration, but also manages to respond to local context through the attention to details, and sensitivity to materials and palate from the campus and neighborhood.

Building Design

The current Site Plan submission outlines (2) projects that are expansions and extensions of existing conditions. Within this context the design process still aimed to express the internal program constraints and create a dialogue between the interior and exterior.

Design is always subjective but the process to reach the current solution was reviewed and vetted by many parties, including critical voices form Maine Medical Center but also internally to Perkins+Will with multiple peer design reviews. The Perkins+Will internal review includes international designers as well as those from across the United States. The proposed design was universally selected as the best option to meet with the campus vision and existing context.

The design team believes the response for the East Tower expansion is in line with the key elements of design outlined through the design guidelines established in MMC's Institutional Development Plan, including the attention to proportion, rhythm, and use of materials. Design iterations were studied and reviewed by multiple stakeholders, including Maine Medical Center. The proposed design was the first solution where all parties agreed that the strategy successfully unifies the existing structure with the new addition while meeting the stringent interior requirements for advanced patient care in a healthcare setting.

By maximizing and utilizing the opportunities provided by the massing and proportions, the design is unified with the existing structure, but also creates urban scale gestures recognizing the prominence within the city. In particular, the scale of multistory fenestration and use of rhythm provided by the interior program.

One key design approach was to limit the current idiosyncrasies that are on the existing East Tower building that are not represented by any of the adjacent structures on the Maine Medical campus. In particular, the pavilions, Richards, and Bean are buildings that have a minimalist approach to massing and detailing on their exterior facades. In essence, the proposed design is more compatible with the existing campus and future goals outlined within the previously approved IDP. This was achieved by

simplifying the palate of materials and utilizing the existing materials on the structure. Introduction of new materials or further reinforcing the banding would have the opposite effect of creating a larger impact of the massing within the city and the campus.

The Visitor Garage expansion will match the current rhythm and proportions of the existing garage. The street façade of the Visitor Garage is an existing condition however opportunities for activation are being considered currently.

Building Materials

The selected materials for each addition are derived from the existing materials on the building and are as follows:

- East Tower – White Aluminum Composite Panels and Glass Curtain Wall
- Visitor Garage – Precast Concrete Panels with imbedded brick

Design Constraints

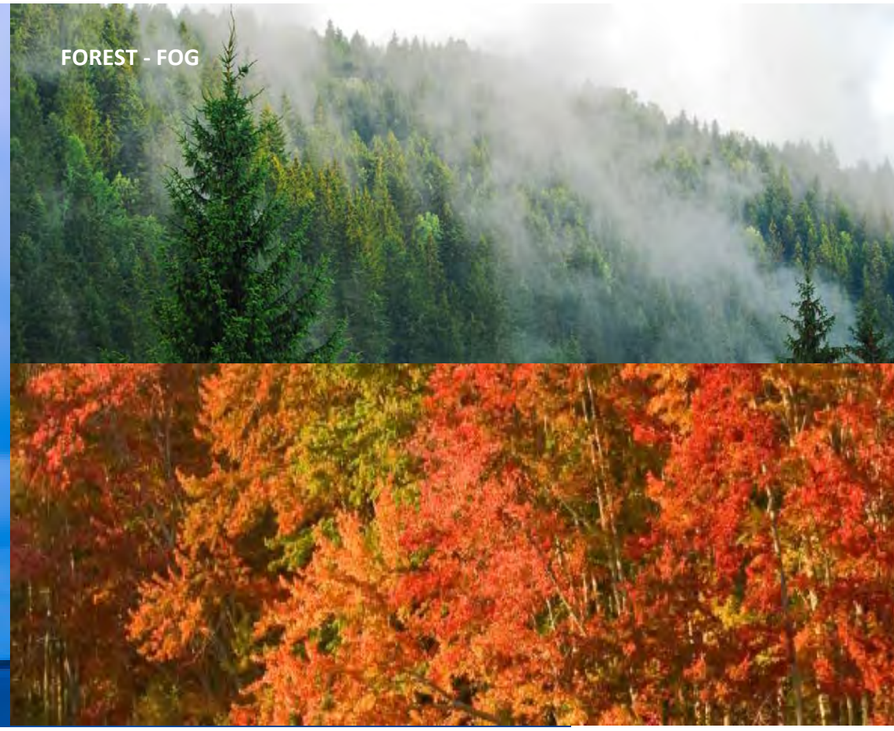
As with any building addition or expansion, existing conditions and real world constraints are critical in determining the final design solution. In particular, constructability for both the East Tower and Visitor Garage were important design drivers. Capacity within the existing structure, feasibility of installation of façade systems, and schedule were considered in selecting the final design solution.

hcc: Project File
Chuck Siconolfi – P+W
Romeo Moreira – P+W
Rashid Ashraf – P+W
Adam Troidl - Colliers
Mark Harris - MMC
Walter Pochebit – MMC
Al Green – MMC
Dennis Morelli - MMC

MMC SITE PLAN SUBMISSION

EAST TOWER & VISITOR GARAGE

CONCEPT DIAGRAMS



SOLID HEAVY

SOLID / LIGHT

ETHEREAL

INTEGRATION OF INSIDE AND OUTSIDE

Blurring the lines between the inside and the outside to bring the garden into the hospital.

CIRCULATION

MATERIALS INSPIRED BY MAINE

50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.

50 PALETTE

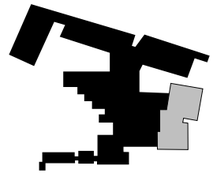
Sky

Sea

Land

COLOR OPTIONS

FLOOR PLAN



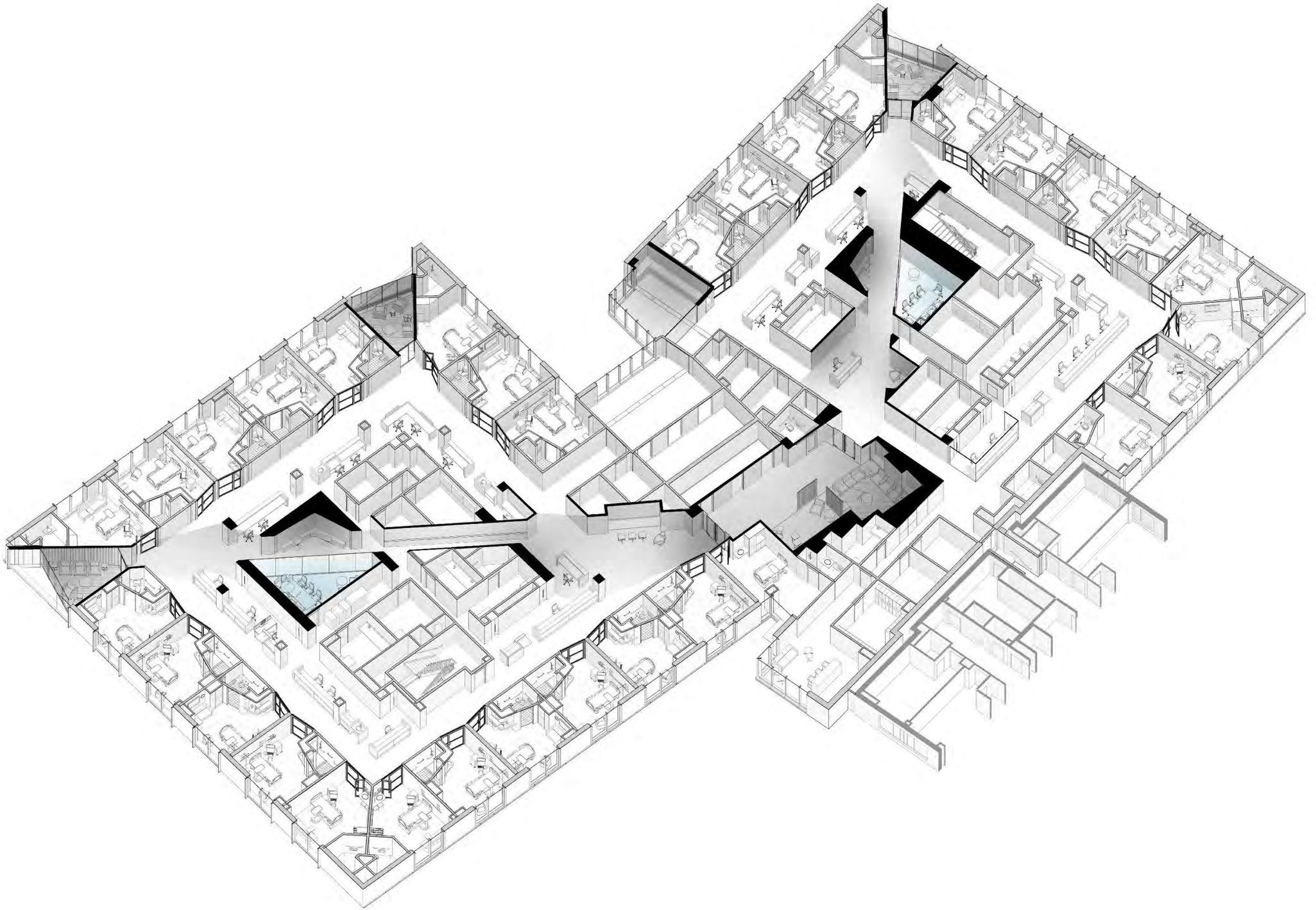
Views to White Mountains

Views to Casco Bay

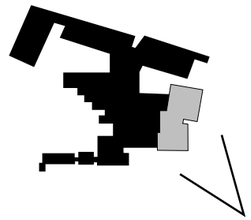
Views to Portland Water Front

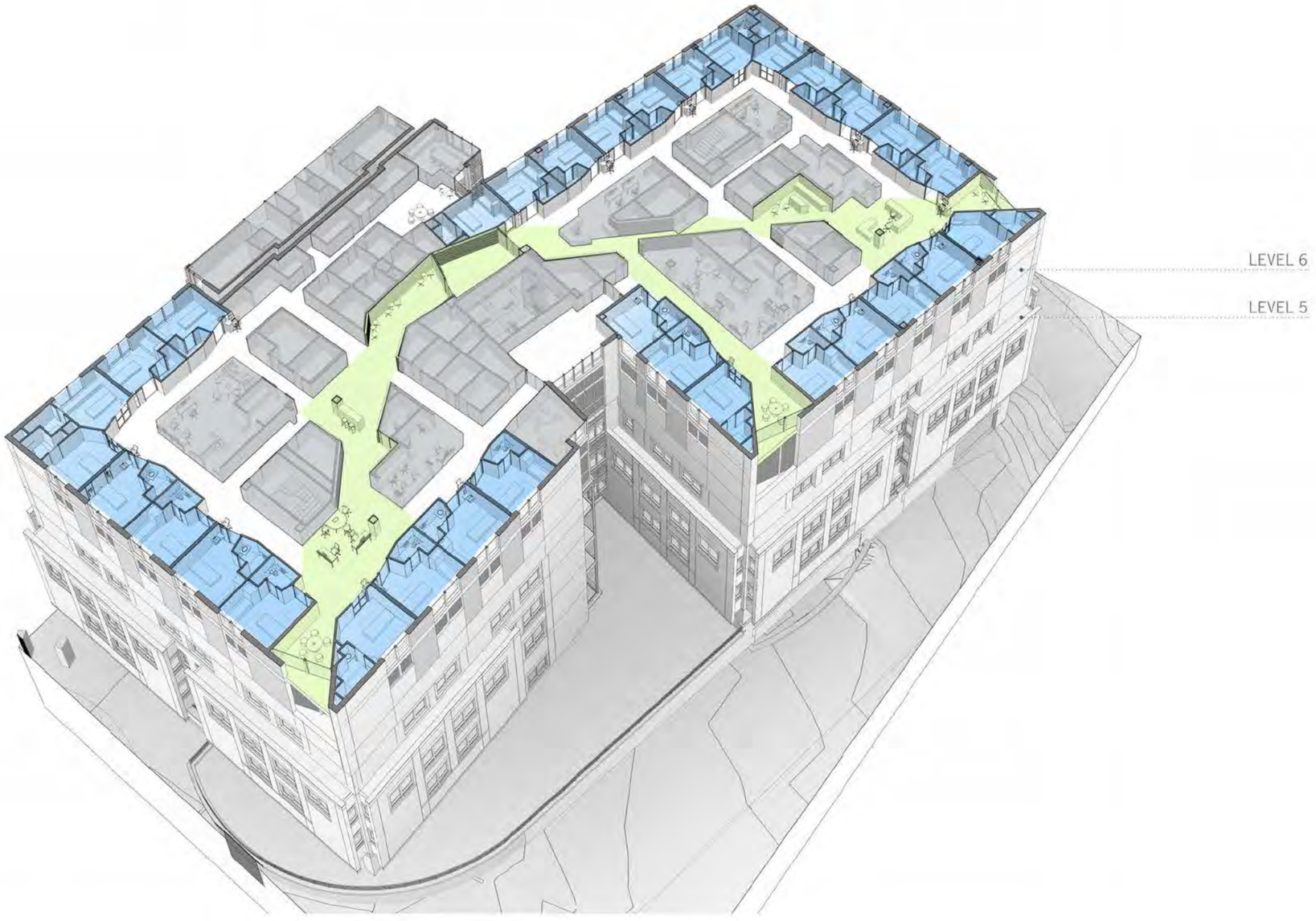
0 10 20 50

AXONOMETRIC

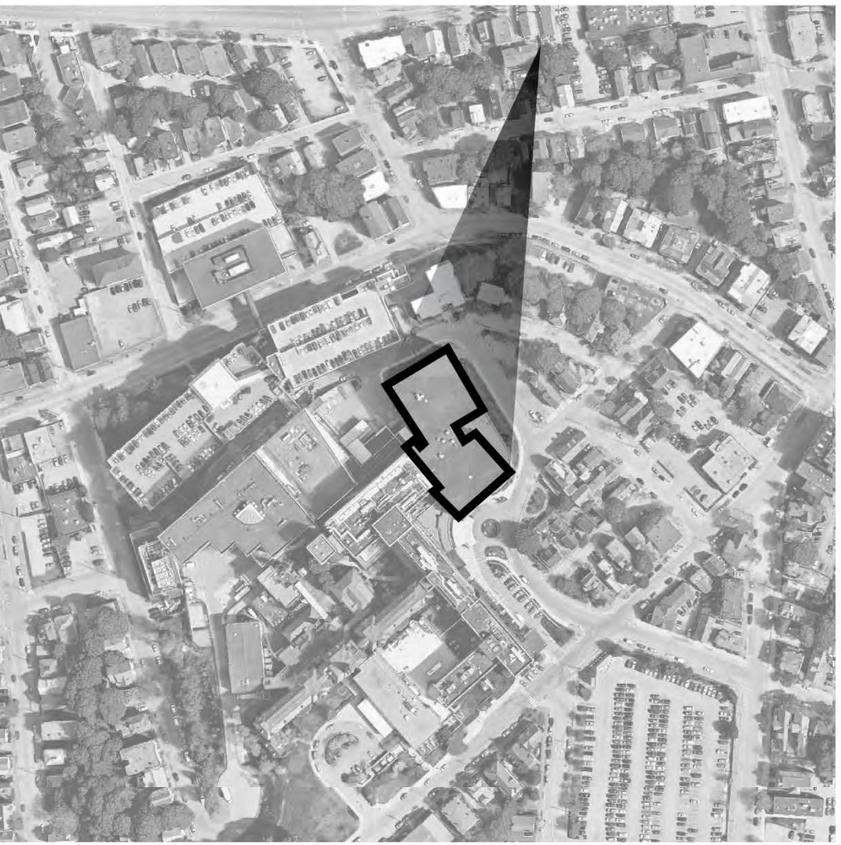


AXONOMETRIC



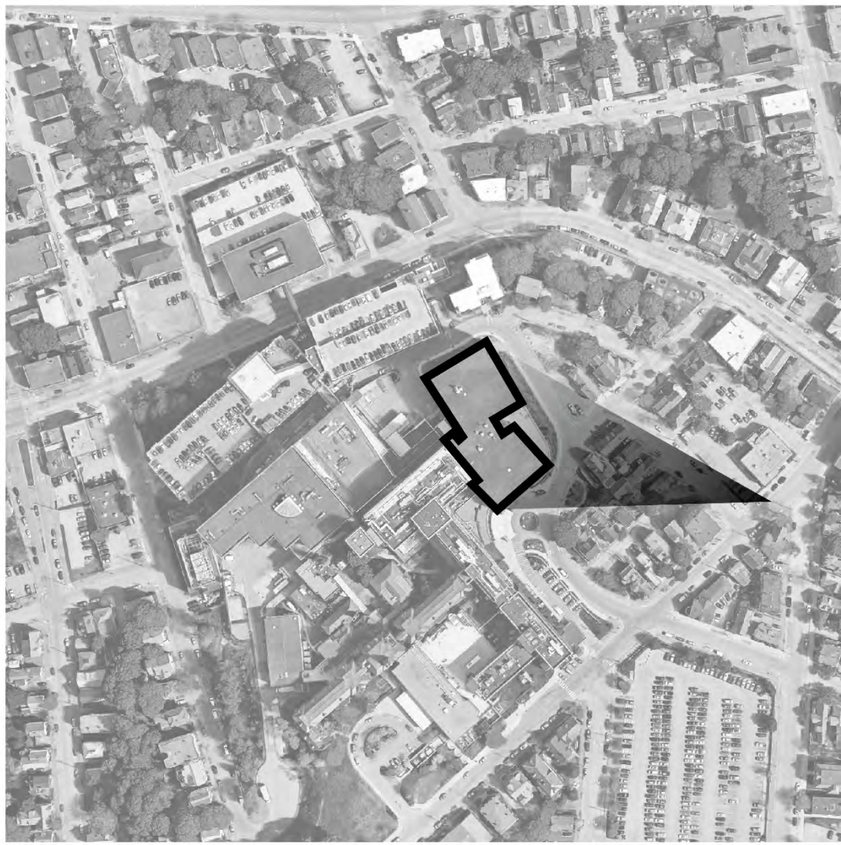


CAMPUS AERIAL



AERIAL VIEW

VIEW FROM BRAMHALL ST



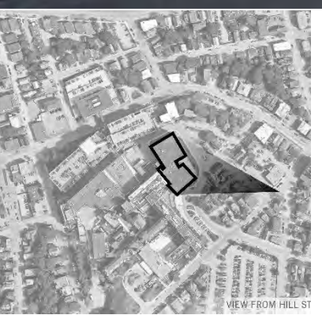
VIEW FROM HILL ST

AERIAL VIEW
South West

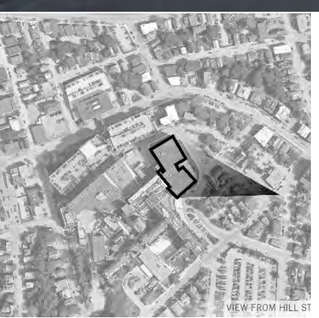
South West

Bramhall and Chadwick Street

Bramhall and Chadwick Street

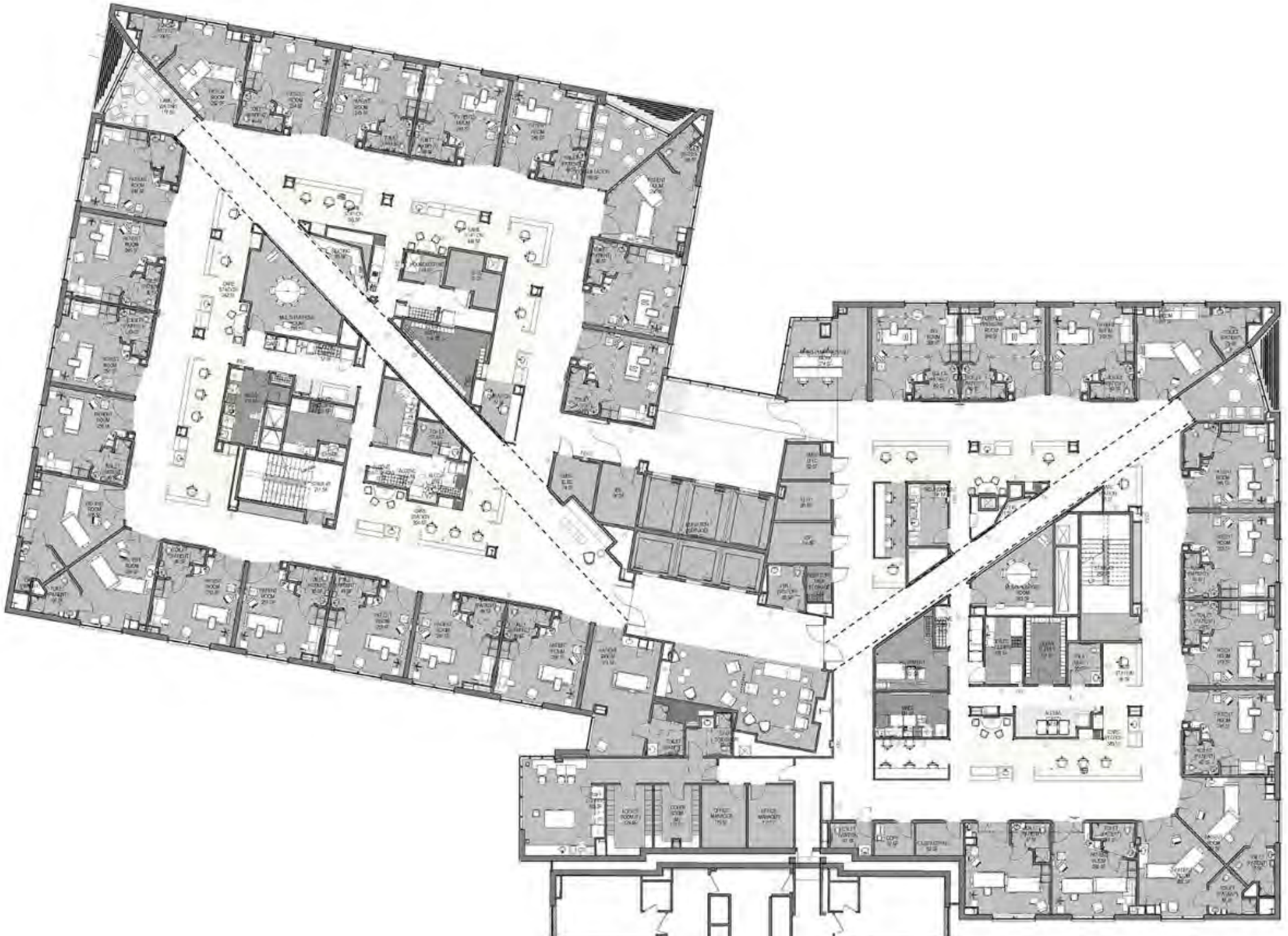


Bramhall and Hill Street



Bramhall and Hill Street

TYPICAL FLOOR PLAN



EAST ELEVATION

NORTH ELEVATION

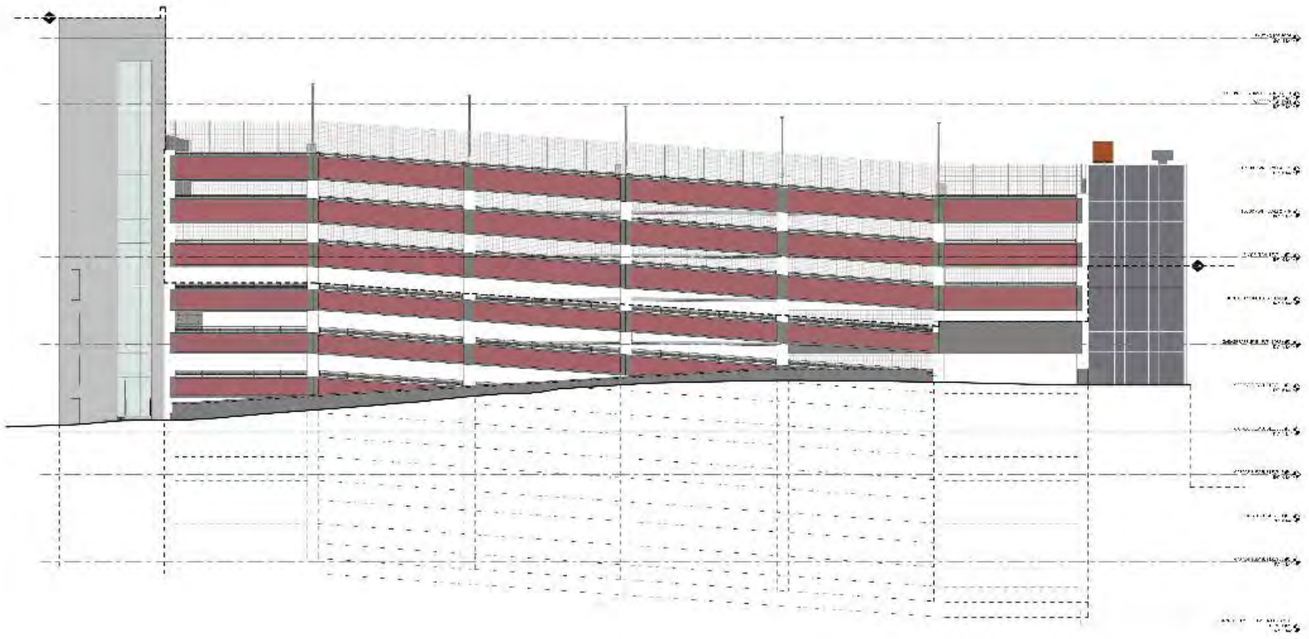
SOUTH ELEVATION

WEST ELEVATION

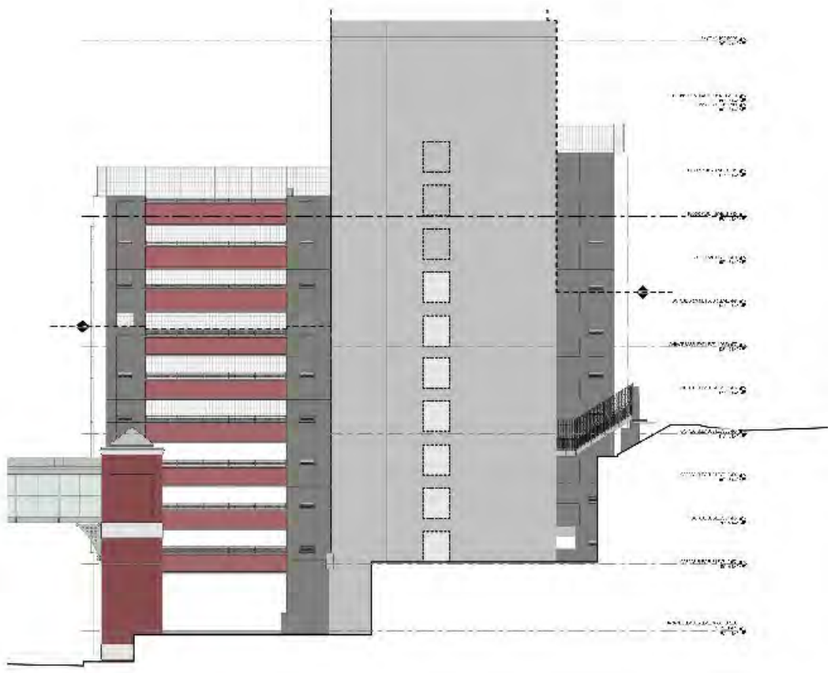
Visitor Garage Expansion

EXISTING

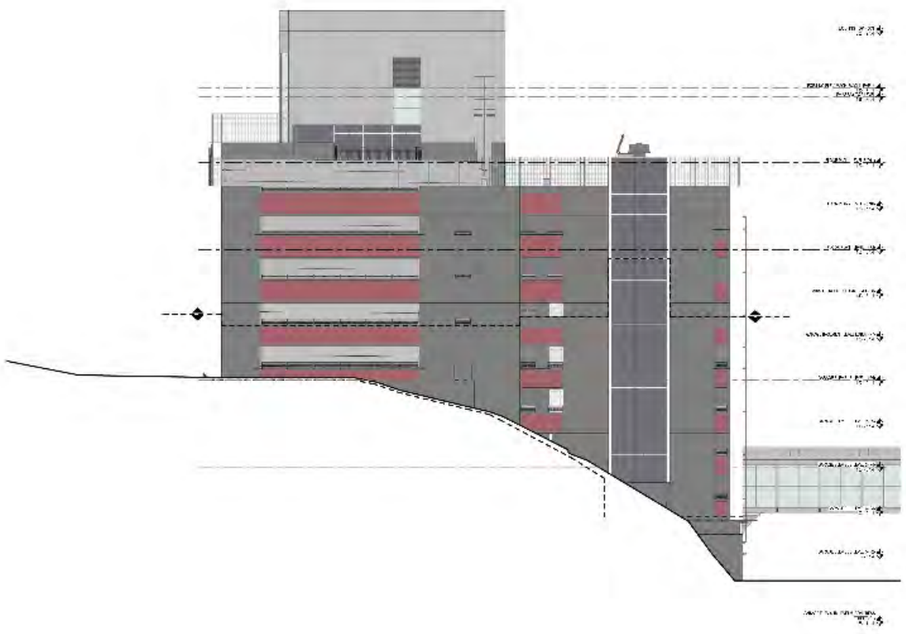
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION

APPENDIX

US-1
Hide imagery

GROVER C
EDITH C. RICHARDS
MEMORIAL
MAIN

WESCOTT ST
ELLSWORTH ST
STOP
NO PARKING ANY TIME
Maine Medical Center
EMERGENCY
Trauma Center
Parking Garage
Main Entrance
South Entrance
South Lot

Medical Center
Maine

Memorandum
Planning and Urban Development Department
Planning Division

To:	Sean Dundon, Chair, and Members of the Portland Planning Board
From:	Matthew Grooms, Planner
Date:	February 23, 2018
Re:	Division 4 Text Amendment – R-3 Residential Zone
Project #:	2017-246 **CBL:** 338-K-004
Meeting Date:	February 27, 2018

I. INTRODUCTION

Based upon existing conditional use language found within the R-5 Residential Zone, Developers Collaborative Redevelopment, LLC is proposing a text amendment to the R-3 Residential Zone in support of a multi-family housing project being considered for the historic Reed School property located at 19 Libby Street in the Riverton neighborhood. The proposed amendment would permit the alteration of structures existing and not in residential use as of January 1, 1984, to be adaptively reused for residential uses.

Figure 1: Project Site with Zoning Context

A legal ad for the Board workshop was posted on the city's web page and appeared in the Portland Press Herald on February 19, 2018 and February 20, 2018. Notices were also sent to 188 property owners within 500 feet of the site and to the interested citizen list. At this point in time, no public comments have been received regarding this proposed text amendment.

Applicant: Developers Collaborative Redevelopment, LLC
Consultants: Pinkham and Greer, Archetype Architects, Cito Selinger, Curtis Thaxter

II. BACKGROUND

The Reed School Re-Use Advisory Task Force was created in September of 2014 to make recommendations on process and future uses to insure a sensitive and contextual re-purposing of the property. The Task Force membership consisted of neighborhood representatives and members representing a diversity of professional and organizational perspectives, including District 5 Counselor David Brenerman and former District 5 Counselor John Coyne as co-chairs, representatives from the Planning Board, Portland Society for Architecture, GPCOG, Greater Portland Landmarks, Portland Trails, the Parks Commission, the State Representative for District #116, and a Workforce Housing specialist.

The Reed School property has been a distinct presence in the Riverton neighborhood since its inception in 1926,

Figure 2: 1926 building at right with 1950 portion connected at left

when it served as the area elementary school. In later years it served as the central kitchen and a warehouse for the Portland Public Schools. The property area is approximately 2.5 acres, a substantial portion of which is open space. The building consists of the original, 1926 structure (14,651 square feet), a 1950 addition (16,641 SF) that eventually came to house the commercial kitchen facilities, and a garage/loading area built in 1981 (2,400 SF). On June 24, 2014 the Portland Public Schools voted to authorize closing of the former Reed School and transfer of the school and grounds to the City of Portland, notifying the City Manager in a letter dated July 8, 2014. The building sits largely empty now, though there is serves as residual storage space, and as a space for periodic training space for the Fire Department, and the open space on the property remains a frequently used and valued amenity.

The Task Force met five times between November 2014 and June 2015 before submitting a final report (Attachment 1) to the Housing and Community Development Committee in July 2015. One of the key recommendations, as an outgrowth of the public input and Task Force deliberation, was to rezone the property from R-3 to R-5, as well as a text amendment to allow artist live/work space in the R-5 zone. This proposal went before the Planning Board in September of 2015 as a workshop item, and an RFQ was issued soliciting redevelopment proposals in line with the findings of the Advisory Committee's final report. Both responses to the RFQ included senior housing at the relatively higher densities of 40 or more units. Public comment was generally opposed to the increase in density being considered for this site, and as a result, the city sponsored text amendment did not move forward to a hearing.

Following the initial RFQ, an RFP was issued to solicit new proposals, out of which process Developers Collaborative was chosen. In June of 2017, Developers Collaborative Predevelopment, LLC entered into an agreement with the City to purchase the Reed School property and are proposing a two-phased project to redevelop the site as both a private school to be occupied by Children's Odyssey School, a special needs private school currently located at 110 Davis Farm Road, and multi-family housing with eight market rate apartments.

The first phase of this development, the Children's Odyssey School, was submitted as a Level I Site Alteration in October of 2017, and features redevelopment of the 1950 building addition to accommodate eight classrooms, administrative space, a kitchen, and internal play area. The 1981 addition is being demolished, and off-street parking for 75 vehicles is being provided. Other site improvements include site landscaping, development of an on-site stormwater management system, and construction of a playground. This project was approved administratively with conditions (tied largely to pedestrian improvements along Homestead Avenue) in January of 2018 (Attachment 2).

The proposed text amendment is in support of Phase II of this project, which features adaptive reuse of the 1926 building to house eight residential units. Parking for these units was accounted for with the Phase I project, and the

Figure 3: Project site with building additions identified by year constructed

Phase II project will include limited site work, confined to the property's frontage along Homestead Avenue. Under the R-3 Residential Zone, multi-family housing is only permitted as a Planned Residential Unit Development (PRUD), which is defined as horizontally attached dwelling units or a series of such dwelling units. As a result, the proposed text amendments are necessary to redevelop this site to include multi-family housing.

III. PROPOSED TEXT AMENDMENT

As described under Division 4, R-3 Residential Zone, the purpose of the R-3 residential zone is to provide for medium-density residential development characterized by single-family homes on individual lots and planned residential unit developments on substantially sized parcels. In other zoning districts, notably within the R-5 Residential district, there is a conditional use standard which enables existing structures previously used for non-residential purposes to be redeveloped to accommodate residential uses. Across the city, there are a variety of buildings that were initially developed to house commercial, industrial and institutional uses, that are no longer needed to serve those roles. These buildings already exist within Portland's built environment, and oftentimes feature supporting infrastructure capable of handling higher intensity uses than single-family residential dwellings. For example, these sites may contain substantial off-street parking, driveways built to city standards for two-way access, and existing in-place utility connections suited to larger-scale residential developments. As reflected in the public comment included within the Reed School Re-Use Advisory Task Force Final Report, these buildings are vital to the identity and character of Portland's neighborhoods and are worth saving through adaptive reuse.

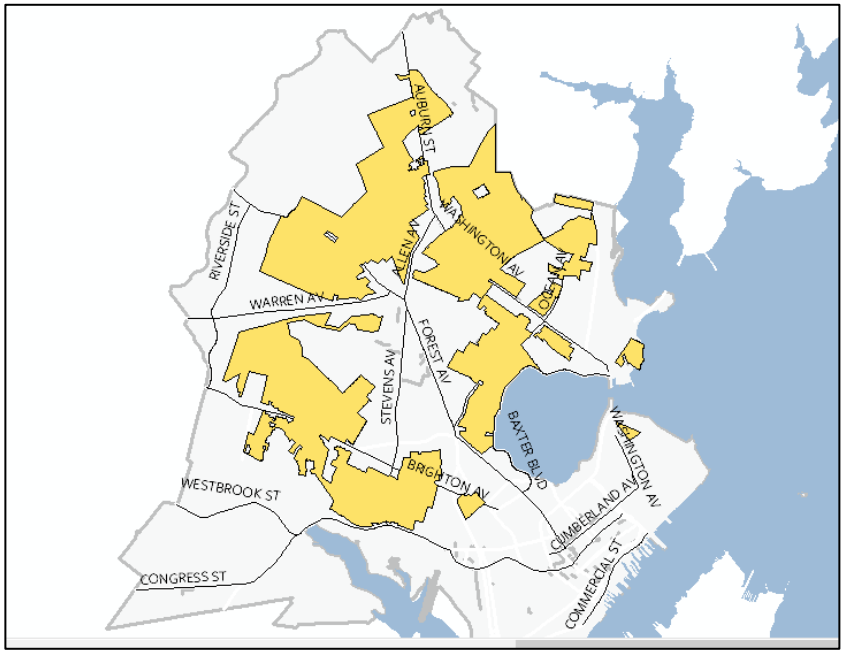


Figure 4: Location of R-3 Zones

The proposed amendment takes existing language from the R-5 Residential Zone, listed under Section 14-118(a).3. and adds this language to the conditional use section for the R-3 under Section 14-88. These standards limit redevelopment by setting a maximum unit density, delineating minimum unit sizes and unit locations (predominantly above grade), and restricting outward redevelopment of the building to the extent possible. The proposed amendment reads as follows:

> *3. Alteration of a structure existing and not in residential use as of January 1, 1984, to three (3) or more dwelling units, provided that:*
>
> a. *No dwelling unit shall have less than six hundred (600) square feet of floor area, exclusive of common hallways and storage in basement and attic;*
>
> b. *No open outside stairways or fire escapes above the ground floor shall be constructed or have been constructed in the immediately preceding five (5) years;*
>
> c. *A lower level dwelling unit shall have a minimum of one-half of its floor-to-ceiling height above the average adjoining ground level;*
>
> d. *Three thousand (3,000) square feet of land area per dwelling unit shall be required;*
>
> e. *On-site parking shall be required as specified in division 20 (off-street parking) of this article, for the combined uses of the site;*
>
> f. *The project shall be subject to article V (site plan) of this chapter for site plan review and approval and the following additional standards:*
>
> 1. *Any addition or exterior alterations such as facade materials, building form, and roof pitch shall be designed to be compatible with the architectural style of the structure;*
> 2. *The scale and surface area of parking, driveways, and paved areas shall be arranged and landscaped to be compatible in size and scale with neighboring properties in the area and to properly screen vehicles from adjacent properties and streets.*

IV. ZONING ANALYSIS

A. Conditional Use Discussion

The previous proposal that was brought before the Planning Board involved a map amendment to rezone the Reed School property to R-5 Residential, which would have expanded the list of allowable uses, reduced dimensional restrictions and permitted increased residential density. The approach taken by Developers Collaborative is to amend the R-3 text to allow for adaptive reuse of existing buildings not originally intended for residential use, a simpler more streamlined solution catered to such properties throughout the R-3 zone, which under current zoning, are limited in terms of redevelopment potential. For example, permitted uses within the R-3 consist of single-family residential, PRUD style multi-family residential developments, parks and municipal uses. Conditional uses meanwhile consist of group homes, schools, places of assembly, hospitals, and both long-term and intermediate care facilities.

Within the City of Portland, it is well-recognized that the demand for housing is increasing. The conditional use language being proposed offers an alternative option for redevelopment of vacant or underutilized properties within this zone and furthers the City's goal of increasing housing opportunities within appropriate locations. Perhaps most importantly, the amendment features greater oversight than would an amendment to permit multi-family housing explicitly.

The challenge inherent with the Reed School property and others like it is that it is entirely surrounded by relatively low-density single-family housing, and that the building itself was designed to accommodate more intense uses serving the neighborhood than permitted elsewhere within the vicinity. For example, Reed School is situated with frontage on two local streets of limited traffic volume. Along Homestead Avenue, sidewalks are in substandard condition and there are no public sidewalks along Libby Street. Institutional uses permitted within the R-3 are designated as conditional uses which are held to a variety of additional standards, listed as either zone specific standards which for the R-3 can be found under 14-88, or as general standards, listed under 14-474. A conditional use is reviewed as a separate application by either the Planning Board or the Zoning Board of Appeals.

The conditional use standards are varied depending upon the proposed use. For example, the proposed text amendment constitutes the zone specific conditional use standards for the alteration of a structure previously not in residential use for multi-family residential use. The general standards for all conditional uses (14-474), are intended to limit negative externalities and ensure contextuality with surrounding permitted uses. Those standards are as follows:

> *Standards. The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:*
>
> > *a. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and*
> >
> > *b. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and*
> >
> > *c. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.*

If adopted, these text changes would enable redevelopment of the Reed School site and other nonresidential sites for residential uses, however they would also provide considerable regulatory mechanisms for thorough review of the project proposal and ample opportunity for public input. Ultimately, property owners are offered increased flexibility in the reuse of their institutional, commercial or industrial sites located within this zone, but are required to undergo a more rigorous review process with greater oversight by staff and the designated review body so as to facilitate greater project integration within the surrounding community.

B. Proposed Standards Discussion

As mentioned previously, the proposed standard is taken directly from the R-5 Residential Zone Conditional Use section and is intended to permit redevelopment of existing buildings with very limited redevelopment of a building's exterior. Residential units are required to be of a sufficient size, and must be located predominantly above grade to ensure adequate lighting and minimum requirements for ingress and egress. Off-street parking is required in accordance with Division 20, and is subject to the proposed use.

The proposed text amendments apply a land area per dwelling unit requirement of 3,000 square feet, which is the same standard that applies to the R-5, a zone which permits relatively greater density when compared with the R-3. For example, the R-5 does permit low-density multi-family developments, with a lot area per dwelling unit requirement of 6,000 square feet and PRUDs at a lot area per dwelling unit requirement of 3,000 square feet, the same requirement as listed for the adaptive reuse standard. The R-3 meanwhile, only permits PRUD style multi-family projects, and only at a density of one unit per 6,500 square feet of lot area. The Board may want to consider whether the density should reflect the R-3 standards or support the proposal as written.

In evaluating this question about density, the Board should consider that existing structures appropriate for reuse, such as historic schools, share more common elements with other existing schools, regardless of the zoning district in which they are located. If a building is adequately sized and existing infrastructure is already in place (i.e. ample off-street parking, sufficient on-site circulation and appropriately scaled street connections) then those sites may be unfairly handicapped by an onerous limit on unit density. Reed School for example, would be permitted 16 units under a lot area per dwelling unit requirement of 6,500 square feet and 37 units under a 3,000 square foot requirement. The development site has sufficient parking to accommodate the higher density alternative, and the trip generation of a residential project of that scale is less than that of a school of comparable size. Hence, a 37-unit project may ultimately be contextually appropriate. In this particular instance, it is important to note that the size of the building itself is the limiting factor and that it could not accommodate 37 residential units without a major addition on to the existing building or reuse of the 1950 addition for residential uses. Another recent example of the use of these provisions is the reuse of the Sisters of Mercy Convent on Stevens Avenue. As the Board may recall, the applicant sought a map amendment to the R-5 for that site in order to convert the convent to housing and to further develop the site for new elderly housing. Rather than increasing the overall density, the Board may want to consider incorporating a new standard which limits the extent of new additions, so that a project may not significantly expand upon an existing structure for reuse.

The staff is not making a formal recommendation on this requirement at this time, and will be looking for feedback from the Planning Board and members of the public on this requirement at the February 27th workshop.

V. COMPREHENSIVE PLAN

Of principal concern with this text amendment is the potential for increased residential density, and particularly, whether or not density in those locations eligible for redevelopment is suitable. Density, as described in the City's Comprehensive Plan, is a numerical measure of the number of people or buildings per acre of land. Because it is so often used to illustrate levels of crowding, density has often acquired a negative connotation. However, this connotation fails to take into account the positive contribution that well-designed, dense developments can make to quality of life.

Eligible properties within the R-3 district are highly varied. For example, there are a variety of schools which could qualify, including the Fred P. Hall Elementary School, Harrison Lyseth Elementary and Lyman Moore Middle Schools, and Cheverus High School to name a few though not all. Additionally, there are churches, such as the First Baptist Church located on Canco Road and Brighton Medical Center located on Brighton Avenue. The R-3 zone, as illustrated in the map provided in this report, can be found in East Deering, North Deering, Back Cove, Riverton, Rosemont and Deering Center. These properties do not constitute a complete list of sites eligible for redevelopment under this amendment, but illustrate the variations that exist within eligible properties.

It is difficult to summarize properties eligible, given their extensive variations in character and location, and as such, it is difficult to find language explicitly supportive of this text amendment. For example, one of the local goals for development under the Housing Section of the Comprehensive Plan is to 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. The Reed School is centrally located within the

Riverton Neighborhood, accessible to public transit, local trails and a variety of services and amenities located along Forest Avenue. Similarly, a local goal under the Historic Resources section is to promote historic preservation as a key economic, sustainability and community development strategy. Again, with this particular project, the development of a multi-family housing project at the Reed School site enables preservation and renovation of a building identified as being eligible for the national register of historic places. Reuse of existing buildings is also more sustainable than new construction and promotes infill development within the existing built environment.

Other properties eligible for redevelopment under this text amendment however may not exhibit any or all of these same characteristics and be less well-suited for redevelopment under these identified goals. For this reason, the conditional use component is critical, as it provides additional standards by which staff and the reviewing body may ensure that a project is in fact contextually appropriate and preserving of historic character.

Figure 5: Brighton Medical Center

Figure 6: Harrison Lyseth Elementary School

Although it is difficult to summarize impacted properties, there are still a variety of goals identified within the Comprehensive Plan that appear to supportive of and supported by this text amendment.

Under Historic Resources, goals that are being met are as follows:

- Stabilize and enhance historic areas of the City by ensuring quality investment in existing structures and compatible infill development
- Ensure an appropriate balance of continuity and change as Portland grows and evolves

Under Housing, goals being met are as follows:

- Increase, preserve and modify the overall supply of housing City-wide to meet the needs, preferences and financial capabilities of all Portland households
- Pursue policies to enable people who work in Portland to have the option to live in Portland

VI. NEXT STEPS

1. Address Board Comments
2. Hold final Planning Board Hearing.

VII. ATTACHMENTS

1. Advisory task force final report
2. Reed school level I approval letter
3. Text amendment application
4. Proposed text amendment
5. Proposed site plan for reed school redevelopment

6. Proposed floor plans for residential units

Att. 1

Final Recommendations and Report of the Reed School Re-Use Advisory Task Force

Produced by the Planning & Urban Development Department, Planning Division
7/1/2015

Acknowledgements

Taskforce Members
Councilor David Brenerman, John Coyne, Co-Chairs
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Portland Planning Board Designee - Sean Dundon
Portland Trails Designee - Kara Wooldrik
Workforce Housing Designee - Jan McCormick
Portland Society for Architecture Designee - Leslie Burnham
Greater Portland Landmarks Designee - Hilary Bassett
GPCOG Designee - Rebeccah Schaffner
Denise Harlow, State Representative, District #116
Parks Commission Designee - Steve Morgenstein
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Hillary Krapf - Neighborhood Resident
Dyan Albano - Neighborhood Resident
Mark Johnson - Neighborhood Resident
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II. RECOMMENDATIONS ON USE, CRITERIA, AND PROCESS **page 6**

III. REED SCHOOL RE-USE NEXT STEPS **page 13**

IV. APPENDICES **page 14**

a. Meeting Flyers
b. Press Release
c. Public Meeting Results
d. R3/R5 Comparison Tables
e. Property Transfer Letter
f. MHPD Letter
g. Written Public Comment
h. Meeting Notice
i. Draft RFQ

I. EXECUTIVE SUMMARY

The Reed School property has been a distinct presence in the Riverton neighborhood since its inception in 1926, when it served as the area elementary school. In later years it served as the central kitchen and a warehouse for the Portland Public Schools. On June 24, 2014 the Portland Board of Public Education voted to authorize closing of the former Reed School and transfer of the school and grounds to the City of Portland, notifying the City on July 8, 2014. The building sits largely empty now, but it remains an integral part of the neighborhood's fabric and history, and in the case of the open space on the site, it remains a frequently used and valued amenity.

The Reed School Re-Use Advisory Task Force was created in September of 2014 with a diverse membership, consisting of neighborhood representatives and members representing a diversity of professional and organizational perspectives, including District 5 Counselor David Brenerman and former District 5 Counselor John Coyne as co-chairs, representatives from Portland Society for Architecture, Greater Portland Landmarks, Portland Trails, the Parks Commission, the State Representative for District #116, and a Workforce Housing specialist to make recommendations on process and future uses to insure a sensitive and contextual re-activation of the property. The Task Force met five times between November 2014 and June 2015, with an additional meeting by a drafting subcommittee to review drafts of the recommendations. The Task Force's charge was to provide recommendations on the future of the Reed School property, including the building and the grounds. Originally an elementary school, the Reed School served for many years as the central kitchen for the Portland Public Schools, until that function was transferred to Waldron Way in 2013. The property is not currently in active use, though it continues to be used for intermittent safety trainings and residual storage; the grounds, though unmaintained, serve as informal and important neighborhood open space. The Task Force held a site visit, 5 meetings, including a public forum, and a drafting subcommittee met to work with Planning staff on earlier iterations of this report. The Reed School Re-Use Advisory Task Force presents these recommendations on uses for the property, criteria for review of proposals, and the review process to the Housing and Community Development Committee for their consideration and fulfillment of their charge as assigned by the City Council.

Below is a summary of the Task Force's key recommendations:

- Rezone the property from R-3 to R-5, and include a text amendment to the R-5 zone allowing artist live/work space.
- Provide preference for proposals generally consistent with the R-5 zone.
- Require that all proposals substantially preserve the existing open space as a publically accessible neighborhood amenity.
- Designate the building as a Portland City Landmark.
- Conduct a two-tier solicitation process consisting of a Request for Qualifications followed by a detailed Request for Proposals from up to five top ranked development teams.
- Give preference to the uses that were identified by the Task Force, including residential uses, combined living/working spaces, educational uses, and wellness-related uses.

These recommendations support the following central themes that arose over the course of a thorough and deliberative planning process:

Historic Preservation. Retention of the original building received support from the Task Force, and in the Public Forum results. The Maine Historic Preservation Commission has found both the original, 1926 structure, and the 1950 addition to be eligible for nomination to the National Register of Historic Places. These were found eligible for their combined architectural significance, as examples of two distinct types of school styles built before and after WWII, and for the way in which the building speaks to the neighborhood's post-War development. Though the retention of the original structure received the most consistent support, both this and the 1950s addition are recommended for designation as a locally designated historic landmark. It was suggested, in feedback received at Task Force meetings, that there might be particular structural challenges with repurposing the 1950 addition; the Task Force is consequently prioritizing re-use of the original structure in their recommendation, and deferring to a determination on feasibility for the 1950 addition.

In addition to recognizing that the Reed School building is architecturally valuable to the community, historic preservation gained support to the extent it would insure a significant amount of design review by the Historic Preservation Board when the site is redeveloped. As a building that has long been part of the fabric and history of the neighborhood, but one that stands in contrast to the predominantly single family neighborhood immediately abutting it, the quality of the redevelopment of the existing building, and any potential modifications or additions, should be held to high design standards.

Open Space. The most consistent feedback received regarding the re-use of the site was the value of the existing open space is to the community, and how important it is to retain as much of this as practicable as a publically accessible amenity. Apart from nearby school grounds, there is no parkland within a ½ mile radius of the property, nothing that provides a comparable service. Even in its unimproved state, it is frequently utilized. A number of specific variations on the future of the open space were discussed, such as ball fields, gardens, playgrounds, passive recreation area, or a combination of one or more of these suggestions.

Neighborhood Compatibility. The Task Force recommendations recognize that the preservation of the building and the preservation of a significant amount of contiguous open space are interrelated goals that require allowing for a greater residential density, and a greater diversity of possible uses, than would have otherwise been supported. The recommendations assume that in order for the redevelopment of the structure to be viable, while also including preservation of open space, a certain amount of flexibility and additional development potential is required. There was discussion over the course of the planning process about allowing certain small scale commercial uses, such as cafes, on the site. However, out of deference to the residential character of the neighborhood, there was most support for the property being made part of the R-5 zone, a somewhat more permissive residential zone than the R-3. There was a great deal of support for allowing for the possibility of a redevelopment that would incorporate community space, artist space, or some creative interpretation of new housing, as well as support for day care, senior care, and varied educational uses. All of these articulations of support were framed by the desire for new activities on the site to be sensitive to the surrounding community in terms of incorporating

excellent design, and introducing improvements that do not unreasonably impact the character and vitality of the area.

II. RECOMMENDATIONS ON USE, CRITERIA, AND PROCESS

INTRODUCTION

The Reed School Re-Use Advisory Task Force was created by the City Council on September 15, 2014 to provide recommendations on the future of the Reed School property, including the building and the grounds, at 19 Libby Street. The Portland Public Schools transferred control of the property to the City in July 2014. Originally an elementary school, the Reed School served for many years as the central kitchen for the Portland Public Schools, until that function was transferred to Waldron Way in 2013. The property is not currently in active use, though it continues to be used for intermittent safety trainings and residual storage; the grounds, though unmaintained, continue to serve as informal and important neighborhood open space. The Task Force held a site visit, 5 meetings, including a public forum, and a drafting subcommittee met to work with Planning staff on draft versions of this report. The Reed School Re-Use Advisory Task Force presents these recommendations on uses for the property, criteria for review of proposals, and the review process to the Housing and Community Development Committee for their consideration and fulfillment of their charge as assigned by the City Council.

The document is structured according to the charge to the Task Force established by the City Council and is organized by:

A. Use
B. Criteria
C. Process

The language is largely framed as might be found in a request for proposals document to ensure that the Task Force's recommendations may be specifically utilized in the request and evaluation of proposals. In drafting an RFP document, the organization will likely require amendment.

RECOMMENDATIONS

A. USES

I. Generally

Re-use of the Reed School building and property is intended to support and enhance the integrity of the surrounding neighborhood. Proposals for re-use of the property will show consistency with this intent by sensitively preserving the building and introducing new uses, occupants, and improvements that do not unreasonably impact the character and vitality of the area.

II. Zoning

The Reed School property is located in the R-3 residential zone, which provides uses, residential density, and dimensional standards consistent with the predominant neighborhood character, but in contrast to the Reed School site. Due to the distinct nature of this property, the Task Force is recommending that this parcel be rezoned to the R-5

Residential Zone, as a zone that better fits the anticipated future redevelopment of this site in regard to permitted uses and dimensional standards. In addition to the zoning map change, in response to public input received, the Task Force is recommending a text amendment to allow for the following residential use: *Combined living/working spaces including, but not limited to, artist residences with studio space.*

Unlike the current R-3 zone, the R-5 allows for repurposing the existing building, including the 1926 original structure, and potentially the mid-century one story addition. As a character defining feature of the neighborhood, and of the City's and Riverton's history, enabling creative repurposing of the original structure, and possibly the 1950 addition, is a central component of these recommendations. Consideration of proposals that require additional zoning changes, or that alternately propose a contract zone for the property, will be reviewed in relation to their consistency with the prioritized uses and criteria below.

III. Uses Encouraged

The following uses are specifically encouraged to compatibly add value, vitality and interest to the Reed School property and surrounding neighborhood.

a. Publicly accessible, contiguous open space that incorporates community gardens, playground, or a compelling combination of active and passive recreation areas.
b. Residential uses, including multi-family residential and senior housing, particularly those that help preserve the economic and physical character of the neighborhood.
c. Combined living/working spaces, including but not limited to artist residences with studio space.
d. Educational uses such as arts education, early childhood education or care, research and continuing education.
e. Wellness-related uses such as adult day care or childcare.
f. Community spaces such as art studios or a community center.
g. Creative mix of uses that protect and enhance the character and vitality of the neighborhood, provided the mix is a low impact, low traffic combination.

IV. Uses Discouraged

The following uses are strongly discouraged:

a. High intensity commercial, industrial, and/or institutional uses or those that include a large amount of traffic, parking, and, external impacts;
b. Residential unit counts that are drastically higher density than allowed under the R-5 zone are discouraged.

B. CRITERIA

The City will accept and rate Developer Team proposals for re-use of the Reed School property using the following criteria:

I. Thresholds for Evaluating Developer Qualifications

Prior to requesting full proposals for re-use and development of the Reed School property, Development Teams shall submit qualifications to the City. This documentation shall include the following information in order to be considered:

a. ***Development Team***

Identify the principal members of the development team and their respective roles in the project.

b. ***Program and Redevelopment Description***

Provide a conceptual development and re-use narrative including goals, program, business plan and timeline for the development.

c. ***Development team experience and financial capacity***
The Qualifications shall include documentation demonstrating that the development team can complete and operate the concept development by supplying:

1. Letters of financial capability from credible financial institutions with experience working with principles of the development team; and,
2. Descriptions and examples of comparable projects or endeavors demonstrating adequate experience and expertise of the development team to successfully complete and operate the proposal.

II. Criteria for Evaluating Qualifications

The city will apply the following criteria to rate competing Developer Team qualifications for selection to submit full proposals.

a. ***Use***
The uses described in the conceptual development and re-use narrative are consistent with Section A., Uses, above;

b. ***Financial Strength and Experience of the Development Team***
The Development Team has the experience, financial capacity and a proven track record to confidently achieve the goals and program(s) described in the conceptual development and re-use narrative.

III. Requirements for Full Proposals

All proposals shall include information and documentation of the following in order to be considered:

a. ***Development Team***
The proposal shall identify the principal members of the development team and their respective roles in the project.

b. ***Restoration of Building***
The proposal shall describe commitments and measures to protect the short-term and long-term integrity of the building that at a minimum:

1. Address the stability and safety of the building by immediately protecting the structure from further deterioration.

2. Preserve the structural and architectural integrity of the building consistent with established historic preservation standards.

c. ***Publicly Accessible Open Space***

Publicly accessible open space shall be incorporated into all proposals.

Proposals that require the land area included in the open spaces and or play areas for residential density requirements under the R-5 zoning may propose public access easements or other methods to preserve the maximum residential density allowed. Residential projects proposing that the City retain fee ownership of open areas would either lose residential density potential, or would require a zone change to allow higher residential density on the residual project site, which would need to be evaluated for consistency with these recommendations.

d. ***Program and Redevelopment Description***

The proposal shall include a detailed description of the uses and development of the property including sufficient detail for the City to understand the intent of the proposal and a zoning assessment for consistency with the R-5 zone. At a minimum the proposal shall include:

1. A re-use narrative describing the development program for interior and exterior uses of the property;
2. Sketch level or conceptual drawings showing proposed improvements including floor plans, elevations, additions, new structures, publicly accessible areas, landscaping, parking, site lighting, fencing, and other site features; and,
3. A project business plan, market analysis, time line, and development pro forma demonstrating the long-term success and viability of the project.
4. A summary of where the proposal differs with what is permitted in the R-5 zone, if applicable.
5. Indication of intent to preserve solely the original structure or intent to preserve this and the 1950 addition, as well as indication whether there is intent to pursue nomination to the National Register of Historic Places for the same.

e. ***Purchase Offer, Estimated Project Value, and Property Tax Impact to the City***

The proposal shall include:

1. The purchase offer to the City;
2. Description & estimated cost of the proposed improvements;
3. Estimated post-development property value;
4. Estimated net and gross property tax impacts to the City;
5. Any financial support requested from the City for the project.

f. ***Financial and Technical Capability***

The proposal shall include documentation demonstrating that the development team can complete and operate the proposal as described in (b),(c)and (d) above by supplying:

1. Letters of financial capability from credible financial institutions with experience working with principles of the development team; and,
2. Descriptions and examples of comparable projects or endeavors demonstrating adequate experience and expertise of the development team to successfully complete and operate the proposal.

IV. Criteria for Prioritizing Full Proposals:

The city will apply the following criteria to rate competing proposals. Primary criteria are given greater than secondary, but all criteria represent important considerations when evaluating and selecting a preferred proposal. All proposals must demonstrate sufficient strength of financial and technical capability and the project business plan to successfully complete the project in a timely manner in order to be considered.

The Reed School Re-Use Advisory Task Force suggests the following weights be given in evaluation of the proposals to the criteria below:

a. ***Primary Criteria***

The Proposal:

1. Promotes a positive impact on the neighborhood as demonstrated by specific commitments within the proposal. The character, vitality and property value of the neighborhood will be protected and enhanced by the proposal. Any new construction shall respond to the physical qualities of a site and complement the scale, character and style of the surrounding neighborhood. **(25%)**

2. Provides a neighborhood amenity. Proposals including a greater extent and higher quality of publically accessible open space will be given a higher preference. Proposals that include a portion of community oriented space within the building will also be considered favorably. All open space proposals shall include a significant portion of contiguous open space on the Libby Street facing side of the property, retaining the historic site layout of the property to the greatest extent practicable. **(20%)**

3. Contains one or more of the encouraged uses listed in A.III, above in addition to the publically accessible open space indicated in A.III.a. **(25%)**

4. Contains a portion of workforce dwelling units (workforce here refers to housing units that a household earning 100% of the county's median income can afford, assuming they spend no more than 30% of their income for housing. This is currently approximately $75,000 for a family of four) in the event of a proposal for new housing. **(15%)**

Note: Mixed use proposals that are not consistent with the R-5 zone will be considered, but must demonstrate compatibility with the building, the neighborhood and the City's Comprehensive Plan.

b. ***Secondary Criteria:***

Note: When applying the secondary criteria below, the weight of any single or collective secondary criteria shall not outweigh any single primary criteria above.

1. Purchase price
2. Benefits to the City tax base

Secondary criteria 1 and 2 combine for 15% weight in the evaluation of the proposals.

C. RECOMMENDED PROCESS FOR REQUESTS FOR AND REVIEW OF PROPOSALS

The Reed School Re-Use Advisory Task Force recommends the following process steps to ensure the appropriate re-use and long-term stewardship of the property:

I. Historic Landmark Designation

The Task Force recommends that the original structure, as well as the 1950 addition if found to be practicable, be retained and that the City Council immediately begins the process of designating the building as an individually listed historic landmark. Landmark designation will manage change to the building and potential impacts to the surrounding neighborhood, as well as provide clear assurances that the character defining features of the structure will be preserved.

II. Rezoning of Reed School Property

The Task Force recommends that the City initiate a Zoning map amendment to the Reed School property, from R-3 to R-5, and a Zoning text amendment to allow for *Combined living/working spaces including, but not limited to, artist residences with studio space.*

III. Request for Qualifications

As soon as possible, the City should widely advertise and aggressively promote a request for qualifications (RFQ) from developers and institutions with interest in re-use of the Reed School property. The intent is to generate as much interest as possible from a wide and diverse cross-section of developer and institutional interests by providing a low threshold for entry to the process.

Interested parties would be asked to submit a concept development and re-use narrative, a conceptual business plan, development timeline, and development team qualifications and financial capabilities. The RFQ would not require detailed architectural drawings or development pro formas as the generation of such documents are expensive and may provide a barrier or disincentive for otherwise interested teams to submit.

In publicizing the RFQ, the City should utilize conventional and new media, as well as press releases and direct outreach to the development community. Sufficient time should be allowed between the issuance of the RFQ and the deadline for submittal to encourage diverse teams to collaborate and craft creative development concepts that meet the intent and specifics outlined in A and B above.

IV. Request for Proposals

From 5 or fewer top ranked development teams identified through the Request for Qualifications, the City should request full proposals for re-use of the Reed School property to be evaluated according to the specifics outlined in A and B above.

V. Review of Proposals

The Task Force recommends that a Proposal Review Committee be appointed to evaluate proposals against the criteria established herein. In addition to City staff members from Purchasing, Finance, and Planning, the Review Committee shall be comprised of community representatives including a neighborhood representative, a design professional, Greater Portland Landmarks, and a real estate professional. The Review Committee shall report their findings and recommendations back to HCDC at an advertised public hearing.

The HCDC's recommendation should be reported to the City Council for adoption and direction to the City Manager's Office to negotiate the final terms of sale of the property.

Public participation and testimony will be encouraged at both the HCDC's meetings the and City Council's public hearings through use of the City's website and use of the interested parties email addresses generated through the Reed School Re-Use Task Force process.

III. REED SCHOOL RE-USE NEXT STEPS AND TENTATIVE TIMELINE

July 8, 2015	HCDC Review of Task Force Recommendations
July 2015	Initiate Rezoning Process with Planning Board
	Initiate Historic Landmark Designation Process (Historic Preservation Board, Planning Board, City Council, 6 month min.)
	Submit Application for Municipal Brownfields Site Assessment Funding
	Draft Request for Qualifications (RFQ) and Request for Proposals and (RFP) Documents
	Issue RFQ
August 2015	Appointment of Proposal Review Committee
	RFQ Due
September 2015	Select Limited # of Development Teams to submit full proposals guided by RFP document
Nov./Dec. 2015	Full Proposals Due
January 2016	Review Committee evaluates proposals/interviews Development Teams
February 2016	Review Committee recommends lead proposal to HCDC
	HCDC votes to recommend lead proposal to City Council
March 2016	City Council reviews HCDC Recommendation and votes to direct the City
	Manager to negotiate sale of the Reed School property based on the conditions and specifications outlined in the selected proposal.
April 2016	Reed School property ownership transfers to the development team

IV. APPENDICES

The Reed School Re-Use Advisory Task Force will hold a site visit at the former Reed School, 28 Homestead Avenue, on Thursday, November 20th, at 4:00 PM. The site visit will be immediately followed by a meeting at 5:00 PM in the Riverton Elementary School Community Room, 1600 Forest Avenue.

The Reed School Re-Use Advisory Task Force was established to:

- Report potential uses of the property;
- Develop criteria for making final recommendations on the preferred uses of the property;
- Recommend a process to review proposals for re-use of the property; and
- Report findings to the City Council's Housing and Community Development Committee.

This is a first meeting of the Task Force. The meeting is open to the public. A future forum is planned specifically for public feedback on the future of the property, and invitations for that event will follow. A webpage on the project can be found at: http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project

For more information, please contact Christine Grimando at cdg@portlandmaine.gov or 207-874-8608.

The Reed School Re-Use Advisory Task Force

meeting will be held in the Large Learning Room, accessed through the school's front entrance.

What: **Reed School Re-Use Advisory Task Force**
When: **May 21st, 6:30 PM**
Where: **Riverton Elementary Large Learning Room**
1600 Forest Avenue

For More Information

Questions and comments regarding the re-use of the Reed School property can be forwarded to Christine Grimando, Senior Planner at (207) 874-8608 or emailed to cdg@portlandmaine.gov.
http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project#

****** NOTICE ******
of
Pubic Meeting
****

Reed School Re-Use:
A Public Meeting on the Future Use of the Building and Grounds

****

The City of Portland and the Reed School Re-Use Advisory Task Force invite the public to provide input on the future of the former Reed School, located between Libby Street and Homestead Avenue in the Riverton neighborhood.

The Reed School facility consists of a 33,692 structure on approximately 2.5 acres. Originally a utilized as a school, it was more recently the central kitchen and warehouse for the Portland Public Schools. In June of 2014 the property was transferred from the Portland Public Schools to the City of Portland. The Task Force was created in September to report on preferred uses of the property, and develop criteria for prioritizing future review proposals for redevelopment of the property.

The Task Force and City Planning staff seeks opinions and insights from the Riverton neighborhood, design professionals, real estate professionals, and anyone interested in the future of this important property. At the Public Meeting, City of Portland staff and Task Force members will present information on building and neighborhood context, and a range of ideas that have been discussed for the building to date. The Public will be invited to provide additional ideas, for incorporation into the eventual recommendations on prioritized uses made by the Task Force to the City Council for consideration.

Questions and comments regarding the re-use of the Reed School property can be forwarded to Christine Grimando, Senior Planner at (207) 874-8608 or emailed to cdg@portlandmaine.gov.

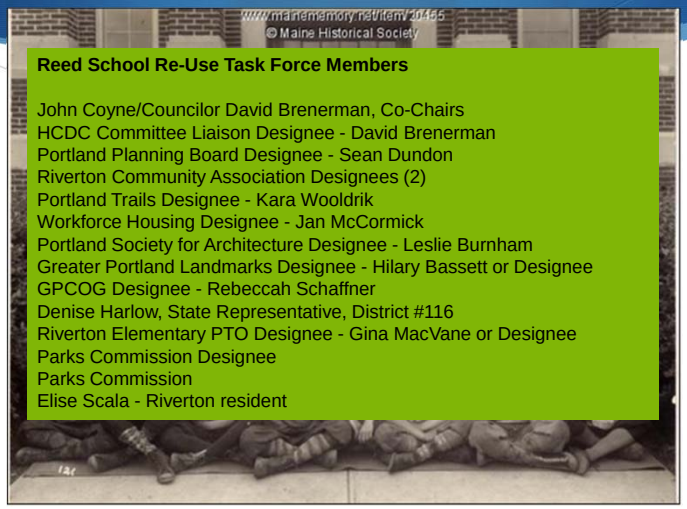
Background material for the process and meeting can be found at:

http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project

****
What: Reed School Re-Use Public Meeting
When: January 29th, 6:30 to 8:00 pm
Where: Riverton Elementary School Community Room**,** 1600 Forest Avenue

Reed School Public Meeting on Options for Re-Use

Welcome and Introductions



Reed School Re-Use Task Force Members

John Coyne/Councilor David Brenerman, Co-Chairs
HCDC Committee Liaison Designee - David Brenerman
Portland Planning Board Designee - Sean Dundon
Riverton Community Association Designees (2)
Portland Trails Designee - Kara Wooldrik
Workforce Housing Designee - Jan McCormick
Portland Society for Architecture Designee - Leslie Burnham
Greater Portland Landmarks Designee - Hilary Bassett or Designee
GPCOG Designee - Rebeccah Schaffner
Denise Harlow, State Representative, District #116
Riverton Elementary PTO Designee - Gina MacVane or Designee
Parks Commission Designee
Parks Commission
Elise Scala - Riverton resident

Reed School Students, ca. 1931.
Collections of Maine Historical Society.

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Agenda

Welcome and Introductions of the Task Force

Charge to the Task Force Review Agenda and Meeting Format

Reed School Context

Potential Re-Use Options for Building and Grounds

Break to distribute keypad voting clickers

Survey of Re-Use Options

Discussion on Re-Use Voting Results

Next Steps

Adjourn

http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project#

Meeting Goals and Task Force Charge

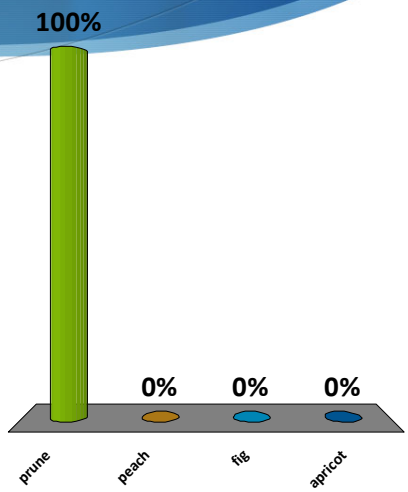
The Reed School Re-Use Advisory Task Force was established to:

- Report potential uses of the property;
- Develop criteria for making final recommendations on the preferred uses of the property;
- Recommend a process to review proposals for re-use of the property; and
- Report findings to the City Council's Housing and Community Development Committee within six months of Task Force inception.

4

grape : raisin :: plum :

A. prune
B. peach
C. fig
D. apricot



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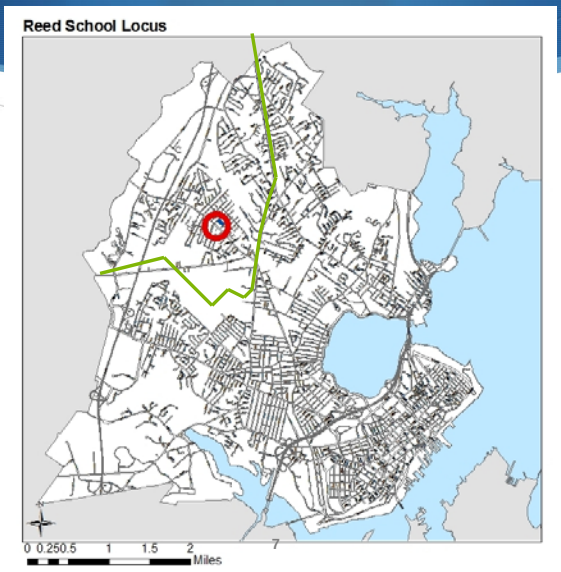
Recent Precedents

Nathan Clifford School
- Being converted to market rate 22 apartments.

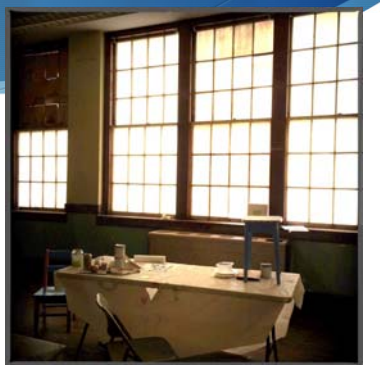
Adams School
- 16 workforce condominiums (8 2 bedroom/8 3 bedroom)

Context



Context

Existing Buildings



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Existing Buildings

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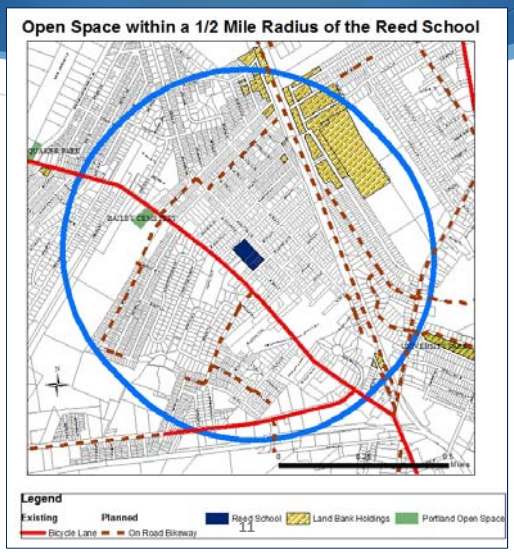
Open Space Context



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Open Space Context

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Zoning Context

R-3 Permitted and Conditional Uses	
The following uses are permitted in the R -3 residential zone:	
1	Single-family
2	Planned residential unit development (PRUD)
3	Handicapped family unit, for handicapped persons plus staff
2	Parks, and other active and passive noncommercial recreation spaces
3	Accessory uses
4	Home occupations
5	Municipal uses
6	Wind energy systems
The following conditional uses are permitted in the R -3 residential zone:	
Residential:	
1	Sheltered care group homes
2	Accessory Dwelling Units
Institutional:	
1	Elementary, middle, and secondary school
2	a. Long-term and extended care facilities
	b. Intermediate care facility for thirteen (13) or more persons
3	Places of assembly
4	Hospital

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Zoning Context

R-3 Zone Dimensional Standards	
Minimum Lot Size examples:	
Residential	6,500 sf
PRUD	3 acres
School	2 acres
Hospital	10 acres
Minimum Frontage	50 feet
Front Yard Setback	25 feet or avg. depth of adjacent properties
Rear Yard Setback	25 feet
Side Yard Setback	8-16, variable by height of structure
Rear and Side Yard Setbacks - Accessory Structures	5 feet
Maximum Lot Coverage	35%
Minimum Lot Width	65 feet
Maximum Structure Height	35 feet

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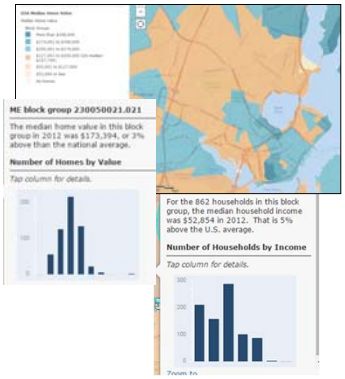
Riverton Demographics

- Total Residents 5,578 (8.4% of Portland Total)
- Total Households: 2,165
- Riverton Population 18 and under: 24.4%
  - (17.1% for Portland)
- Riverton Population 65 and over: 8.5%
- Median Age: 33
- Total % Owner-Occupied Units: 57.6 (42.7 Portland)
- Total % Renter-Occupied Units: 42.4 (57.3 Portland)
- Housing Units in Multi-Units: 29.4% (54% Portland)
- Average Household Size: 2.5
- Median Home Value: $173,394 (2012, Block Group)
- Homeowner and Rental Vacancy Rates less than 1% (Block Group)



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Potential Re-Uses

- **Educational**
- **Residential**
- **Wellness**
- **Community Space**
- **Mixed Use**

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Education

- Continuing Education
- Arts Education
- Private School
- Pre-K
- Research

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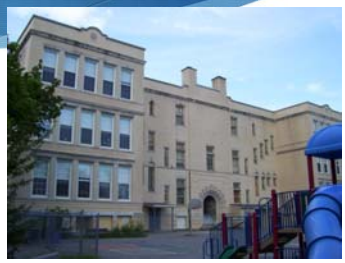
Residential

- Market Rate
  - Condominiums
  - Rental Apartments
- Affordable
- Workforce
- Inclusionary
- Senior housing
- Live/Work



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Wellness

- Health Care
- Adult Day Care
- Childcare
- Respite Care

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Community Space

- Community Center
- Artist Studios
- Coworking/Incubator Space
- Makerspace

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Mixed Use

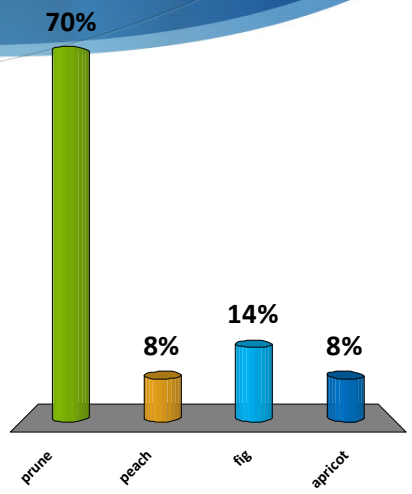
- Residential/Non-residential mix
- Artist Studio + Classes + Work for Sale
- Other combinations possible

Open Space

- Community Garden
- Athletic Fields
- Dog Park
- Passive Recreation
- Unimproved
- None

grape : raisin :: plum :

A. prune
B. peach
C. fig
D. apricot



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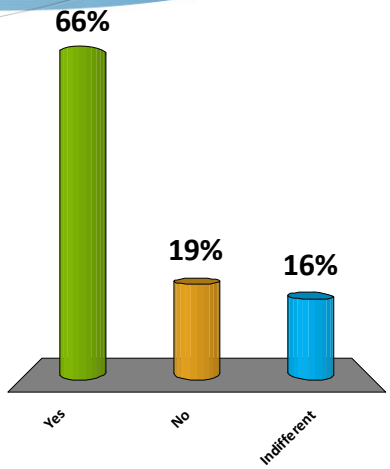
Do You Support Retention of the Existing Building(s)?

A. Yes
B. No
C. Indifferent



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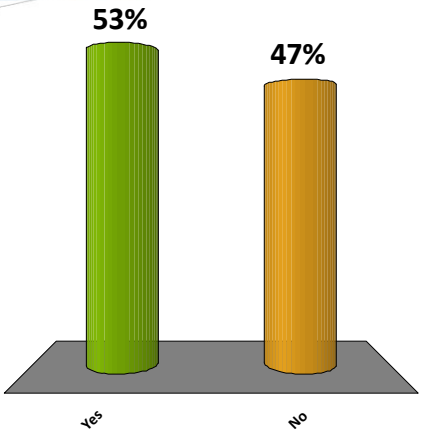
Do You Support Educational Re-Use of the Reed School

A. Yes
B. No



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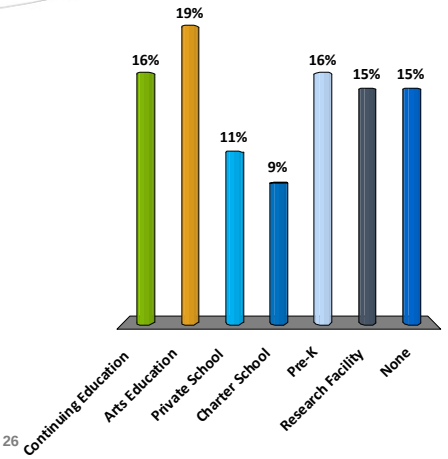
What types of Educational Uses Would You Support?

A. Continuing Education
B. Arts Education
C. Private School
D. Charter School
E. Pre-K
F. Research Facility
G. None



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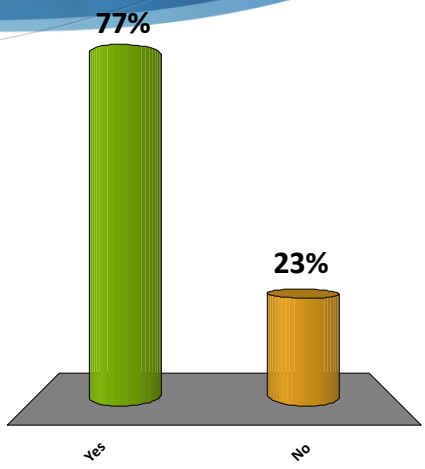
Do You Support Residential Re-Use of the Reed School

A. Yes
B. No



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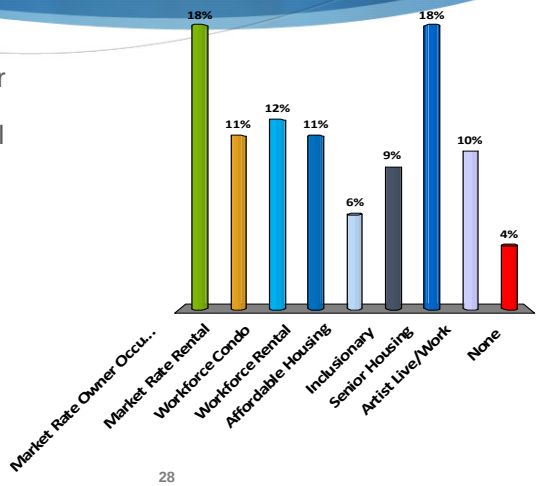
Which Residential Uses Do You Support?

A. Market Rate Owner Occupied
B. Market Rate Rental
C. Workforce Condo
D. Workforce Rental
E. Affordable Housing
F. Inclusionary
G. Senior Housing
H. Artist Live/Work
I. None



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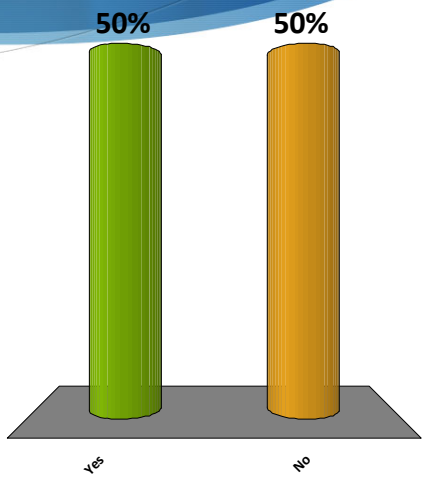
Do You Support a Wellness Re-Use of the Reed School?

A. Yes
B. No



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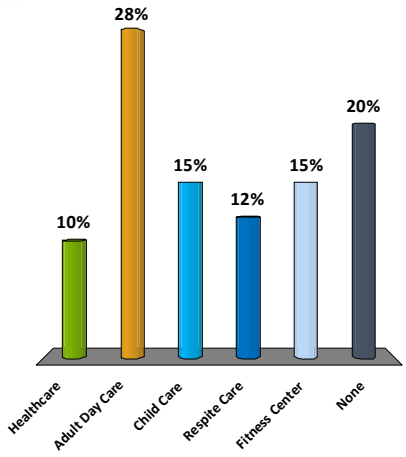
Which Wellness Uses Do You Support?

A. Healthcare
B. Adult Day Care
C. Child Care
D. Respite Care
E. Fitness Center
F. None



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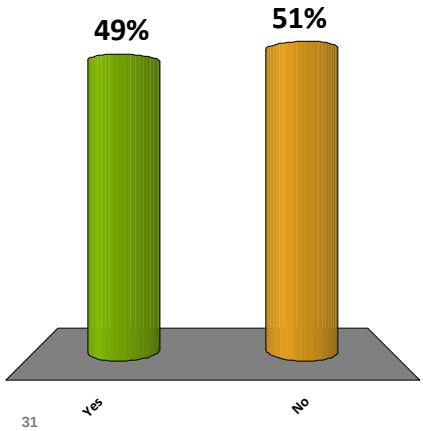
Do You Support a Community Space Re-Use of the Reed School?

A. Yes
B. No



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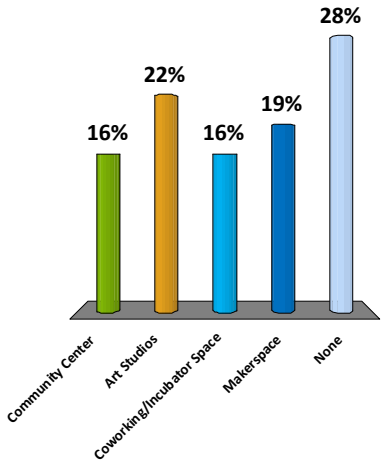
Which Community Space Uses Do You Support?

A. Community Center
B. Art Studios
C. Coworking/Incubator Space
D. Makerspace
E. None



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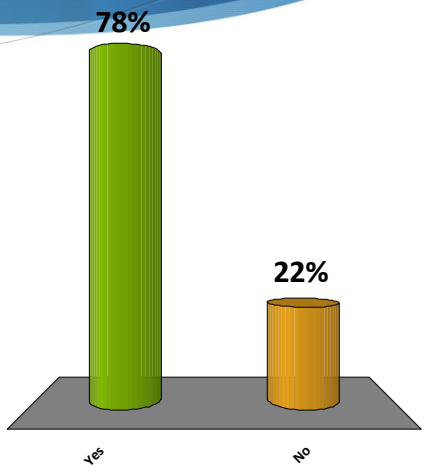
Do You Support Mixed Uses at the Reed School Site?

A. Yes
B. No



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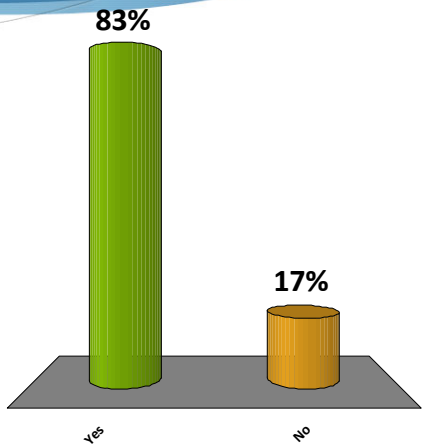
Do You Support Retention of Open Space at the Reed School Site?

A. Yes
B. No



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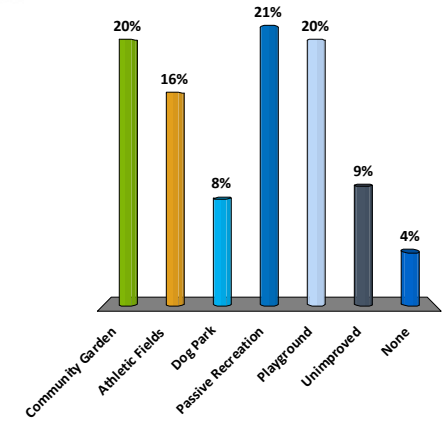
Which Types of Open Space do you Support?

A. Community Garden
B. Athletic Fields
C. Dog Park
D. Passive Recreation
E. Playground
F. Unimproved
G. None



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Discussion

Next Steps

- Task Force meets to assess input to date, follow-up on Historic Preservation, Comprehensive Plan Policies, etc.
- Drafting Subcommittee meets to produce 1st draft of recommendations.
- Task Force meetings to review draft and final report.

For more information contact: Christine Grimando, Senior Planner.
cdg@portlandmaine.gov or 207-874-8608

http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project#

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	R-3	R-5
Min. Lot Size	Residential: 6,500 SF Sing. Fam to 2-Fam: 10,000 SF Long-term, extended, intermediate care: 2 ac. School: 2 ac. Place of assembly: see code Municipal: 6,500 SF Hospital: 10 ac. PRUD: 3 ac. Other: 6,500 SF	Residential: 6,000 SF Long-term, extended, intermediate care: 2 ac. School: 30,000 SF Place of assembly: see code Municipal: 6,000 SF Hospital: 5ac. College, univ.: 2 ac. Multiplex: 9,000 SF PRUD: 2 ac. Lodging house: 9,000 SF Other: 6,000 SF
Min. Lot Area per D.U.	PRUD: 6,500 SF net land area Other: 6,500 SF	PRUD: 3,000 SF Special needs independent living units: , 3,600-4,800 SF Other: 3,000 SF, except as provided for multiplex
Min. Street Frontage	50 ft.	50 ft.
Min. Lot Width	65 ft.	60 ft.; 90 ft. for multiplex
Min. Front Yard	25 ft. (principal or accessory)	20 ft. (principal or accessory)
Min. Rear Yard	Principal or attached accessory > 100 SF: 25 ft. Accessory detached <144 SF: 5 ft.	Principal or attached accessory > 100 SF: 20 ft. Accessory detached <144 SF: 5 ft.
Min. Side Yard	1 story: 8 ft. 1 1/2 stories : 8 ft. 2 stories : 14 ft. 2 1/2 stories: 16 ft. Accessory detached <144 SF: 5 ft. Side yard on side street: 20 ft.	1 story: 8 ft. 1 1/2 stories : 8 ft. 2 stories : 12 ft. 2 1/2 stories: 14 ft. Accessory detached <144 SF: 5 ft. Side yard on side street: 15 ft.
Max. Structure Height	Principal or attached accessory: 35 ft. Accessory detached: 18 ft.	Principal or attached accessory: 35 ft. Accessory detached: 18 ft.
Max. Lot Coverage	35%	40%

			R-3	R-5
Permitted	Residential	Single-family and two-family dwellings	•	•
		Handicapped family units	•	•
		Single-family single- or multiple-component manufactured housing	•	•
		Combined living/working spaces		X
		PRUDs	•	•
		Multiplex development		•
		Governmental buildings and uses/municipal uses	•	•
	Other	Accessory uses	•	•
		Parks	•	•
		Home occupation	•	•
		Special needs independent living units		•
		Wind energy systems	•	•
Conditional	Residential	Sheltered care group homes	•	•
		Additional accessory dwelling units	•	•
		Alteration of non-residential structure to 3+ dwelling units		•
		Conversion of multi-family structure to lodging house		•
	Institutional	Schools	•	•
		Long-term and extended care facilities	•	•
		Intermediate care facility	•	•
		Places of assembly	•	•
		Hospitals	•	•
		Day care facilities	•	•
		College, university, trade schools		•
	Other	Utility substations	•	•
		Off-street parking	•	•
		Temporary wind anemometer towers	•	•
		Wind energy systems	•	•

Portland Public Schools
Learning to Succeed

Administration
Emmanuel Caulk, Superintendent
David Galin, Chief Academic Officer
Michael Wilson, Chief Financial Officer
Peter Eglinton, Chief Operations Officer

196 Allen Avenue, Portland, Maine 04103
(207) 874-8100

July 8, 2014

Mr. Mark Rees
City Manager
City Hall
389 Congress St
Portland, ME 04101

Dear Mark:

The Portland Board of Public Education voted unanimously on June 24, 2014, to authorize the Superintendent to take all steps necessary to implement the closing of the former Reed School and the transfer of control of the property to the city, including notifying the City Manager and City Council. The facility is a 33,692 square foot structure located on 2.5 acres accessed from Homestead Avenue, and was most recently used as a Central Kitchen and warehouse. Because the building does not currently operate as a school, state approval of the facility closure and transfer is not required.

Accordingly, Portland Public Schools can transfer control of the property to the City of Portland. Please let me know if additional steps are required to complete the transfer. Note that later this summer we plan to sell a few remaining pieces of kitchen equipment and relocate stored district materials to other suitable facilities. We would appreciate continued access to the building until our moves are complete. Otherwise, the city can take control of the property effective immediately.

Sincerely,

Emmanuel Caulk
Superintendent
Portland Public Schools

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

PAUL R. LEPAGE
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

19 March 2015

Deborah Andrews
Historic Preservation Program Manager
City of Portland
389 Congress Street
Portland, Maine 04101

Dear Ms. Andrews:

Thank you for submitting the National Register Eligibility Assessment form , photographs and other information pertaining to the Thomas B. Reed School in Portland, Maine. These have been carefully examined by our staff.

I am pleased to say that in our judgment, based on the information and photographs submitted to date, this property is eligible for nomination to the National Register of Historic Places. The school is eligible for its architectural significance as a good example of two distinct types of school buildings built before and after World War II. We are particularly impressed that the building retains its original windows and interior finishes. The building is also significant under Criterion A for the manner in which it illustrates the associated neighborhood's post War development.

I am writing and researching National Register nominations as my schedule allows, and it is possible that I will have the time in 2016 to write a the nomination for this property, should the City of Portland decide to pursue listing. However, should you wish to proceed immediately with the development of the nomination for this property please consider hiring an architectural historian to research and prepare the nomination documentation. A list of architectural historian known to work in the state is enclosed

All nominations, before being sent to Washington for final approval, must first be presented to our Commission for approval at one of their quarterly meetings. We will schedule this nomination for presentation once a final draft of the nomination has been received and approved by this office. Once you have identified who will prepare your nomination please have them contact me at (207) 287-2132 or christi.mitchell@maine.gov to discuss scheduling and submission requirements.

In the meantime, the property will be included in the Maine Historic Resources Inventory which will provide the same protection as if it were already listed in the National Register. Please do not hesitate to contact me if you have any questions.

Sincerely,

Christi A. Mitchell
Architectural Historian

Enc.

PHONE: (207) 287-2132

FAX: (207) 287-2335

From: Jonah Fertig <jonah.fertig@gmail.com>
To: "cdg@portlandmaine.gov" <cdg@portlandmaine.gov>
Date: 2/2/2015 12:53 PM
Subject: Reed Street School

Hello Christine,
I recently learned about the re-use process for the Reed Street School. I was unable make the meeting last week as I just learned about it today. I am the co-chair of the Urban Agriculture Sub-Committee of the Mayor's Initiative for a Healthy and Sustainable Food System and co-chair of the Machigonne Community Land Trust. In the first role I'm working to secure land for urban agriculture and in the second role Im working to secure land for affordable housing. So I'd love to provide some input into this process and be kept abreast of future meetings and opportunities for input.
Thanks,
Jonah Fertig

Sent from my iPhone

From: Ashley Bahlkow <bahlkow.a@gmail.com>
To: <cdg@portlandmaine.gov>
Date: 2/2/2015 11:40 AM
Subject: Make Reed School Portland's Urban Farm!

Hi Christine,

I'm a Portland resident and I wanted to express my desire to use the Reed School land as an urban farm to grow food for the city and/or a community garden. Burlington, VT's Intervale is a great example of city land use. The Intervale is huge, but an amazing community resource and tourist attraction. Check it out at http://www.intervale.org/what-we-do/mission-vision/. I realize Reed St. doesn't have enough land for a farm incubator program and all that the Intervale encompasses, however, I think similar could be achieved on a smaller scale and that expands Portland's food security.

Thank you for taking the time to read my response.
have a good day
Ashley Bahlkow
79 Congress St. Apt. L Portland

From: <jogero@myfairpoint.net>
To: <cdg@portlandmaine.gov>
Date: 2/2/2015 9:21 AM
Subject: Reed School

Hello Christine,

I live near Homestead Avenue and Libby Street. I drive by the former Reed School everyday and often think how this statuous building could be an asset to the city of Portland. I would like to pass on my thoughts. I feel the building would be bendficial as a secondary site for city offices, such as car registrations, voter registrations, one one floor. On a second floor, my thought would be to relocate the Maine Historical Society.

Best of Luck on this project,

Geri Rose

From: Judith Southworth <jsouthworth@CCMAINE.ORG>
To: "'cdg@portlandmaine.gov'" <cdg@portlandmaine.gov>
Date: 1/31/2015 12:30 PM
Subject: Please consider Portland's Urban Farm

Hello,
Please consider using the Reed School land to establish Portland's Urban Farm for growing food for residents.
Sincerely,
Judith Southworth

From: Hazel Onsrud <hazel.onsrud@gmail.com>
To: <cdg@portlandmaine.gov>
Date: 1/30/2015 3:41 PM
Subject: Reed School property

Dear Ms. Grimando,

I think it would be great if the Reed School property could connect with the local food movement, specifically the urban agriculture portion of the the Mayor's Initiative in order to facilitate more growing space which is desperately needed in our community.

Thanks!
Best wishes,
Hazel

--
Hazel Onsrud
hazel.onsrud@gmail.com
207.299.2657

From: Anna Sommo <annasommo@gmail.com>
To: <cdg@portlandmaine.gov>
Date: 1/30/2015 3:19 PM
Subject: Reed School Input

Hello!

I would like to put in my comment to encourage the city to turn the Reed School into an urban farm. Urban agriculture is a great way to accomplish many goals- growing food close to home, providing an outdoor classroom for students of all ages, preserving open space and many more. Agriculture brings together people from many backgrounds, and it is projects such as these that encourage people to move to places like Portland.

Here are some examples of incredible urban farms in New York: http://inhabitat.com/nyc/top-5-urban-farms-in-new-york-city/.

Many thanks for your time and consideration.

Sincerely,
Anna Sommo

MEETING NOTICE: The City Council's Housing and Community Development Committee will meet on Wednesday, July 8th at 5:30 pm in City Hall, Room 209 to review the *Final Recommendations and Report of the Reed School Re-Use Advisory Task Force* and a draft Request for Qualifications regarding the possible sale and development of city-owned property at 19 Libby Street (also fronting on Homestead Avenue). For more information contact Christine Grimando, Senior Planner, 874-8608 or cdg@portlandmaine.gov. Information regarding this item will be available after 4:00 pm on July 2nd on the city website, http://www.portlandmaine.gov/582/Housing-Community-Development-Committee, under Most Recent Agenda.

CITY of PORTLAND, MAINE
Request for Qualifications

Expression of Interest
Re-use and Re-Development of the Reed School property
19 Libby Street, Portland Maine

Portland Planning and Urban Development Department

Sealed responses to provide expression of interest and evidence of qualification to re-develop the Reed School property, situated between Homestead Avenue and Libby Street, will be received by the Purchasing Office, City Hall, Room 103, 389 Congress Street, Portland, Maine 04101 until **3:00 p.m. (DATE), 2015***, at which time they will be publicly opened.

Proposals shall be submitted in envelopes plainly marked on the outside with the RFQ's title and number. No late, faxed, or electronic proposals shall be accepted.

Proposals from proposers not registered with the Purchasing Office may be rejected; receipt of this document directly from the City of Portland indicates registration. Should an interested party receive this Request from a source other than the City, please contact 207-874-8654 to ensure that your firm is listed as a vendor for this RFP.

Respondents are required to have a representative at a pre-submission walk through of the property scheduled for (DATE/TIME).

QUESTIONS

All questions shall be made ***in writing*** only, can be hand delivered, mailed to the Purchasing Office, faxed to 207-874-8652 or e-mailed to mff@portlandmaine.gov , being received no later than **July X, 2015.** A written response, if provided, will be in the form of an Addendum. Corrections or changes to this document will be made only by written addendum; any oral explanation or interpretation shall not be binding.

GENERAL INFORMATION

The disposal of this real estate shall be on the basis of a negotiated proposal, with the City of Portland reserving the right to refuse any and all proposals. All proposers are advised that the property will be sold "as-is" and "where is," in its existing condition, with no warranties to be expressed or implied. The City disclaims any and all responsibility for injury to proposers, their agents or others while examining the property or at any other time. The property will be conveyed by quitclaim deed.

Any and all improvements made to said property must be done in accordance with existing City Codes and Ordinances.

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BACKGROUND

The City requests qualifications from developers and institutions with interest in re-use and re-development of the Reed School property. The City seeks a new owner for the property and re-development of the former central kitchen and school building.

The building is currently under consideration for listing as a locally designated historic landmark, and all potential developers should anticipated that alterations and repairs to the school and grounds will be reviewable under the City's Historic Preservation Ordinance.

Interested parties are asked to submit a concept development and re-use narrative, general project budget with projected funding sources, development timeline, and development team qualifications and financial capabilities. This RFQ does not require detailed architectural drawings or development pro formas.

Based on the relative strength of the development teams and the proposal narratives, the City will select top-tier, financially viable development teams to present full proposal packets through an invitation only Request for Proposals (RFP).

This request for qualifications results from the July 8, 2015 acceptance by the City Council's Housing and Community Development Committee of the recommendations of the Reed Re-Use Advisory Task Force. In preparing responses to this request, respondents are directed to the ***Final Recommendations and Report of the Reed School Re-Use Advisory Task Force*** and background material at:

http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project

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USES CONSIDERED

I. Generally

Re-use of the Reed School building and property is intended to support and enhance the integrity of the surrounding neighborhood. Proposals for re-use of the property will show consistency with this intent by sensitively preserving the building, maintaining publicly accessible open space, and introducing new uses, occupants, and improvements that do not unreasonably impact the character and vitality of the area.

II. Existing Zoning

Due to the distinct nature of this property, the City of Portland is pursuing rezoning of the property from R-3 to the R-5 residential zone, as one that better fits the anticipated future redevelopment of this site in regard to permitted uses and dimensional standards. The zoning map change will be accompanied by a text amendment to the R-5 zone to allow for the following residential use: *Combined living/working spaces including, but not limited to, artist residences with studio space.*

Consideration of proposals that require additional zoning changes, or that alternately propose a contract zone for the property, will be reviewed in relation to their consistency with the prioritized uses and criteria below.

Proposals that include residential unit counts that significantly exceed the current maximum R-5 allowances are discouraged.

III. Uses Encouraged

The following uses are specifically encouraged to compatibly add value, vitality and interest to the Reed School property and surrounding neighborhood.

a. Publicly accessible, contiguous open space that incorporates community gardens, playground, or a compelling combination of active and passive recreation areas.
b. Residential uses, including multi-family residential and senior housing, particularly those that help preserve the economic and physical character of the neighborhood.
c. Combined living/working spaces, including but not limited to artist residences with studio space.
d. Educational uses such as arts education, early childhood education or care, research and continuing education.
e. Wellness-related uses such as adult day care or childcare.
f. Community spaces such as art studios or a community center.
g. Creative mix of uses that protect and enhance the character and vitality of the neighborhood, provided the mix is a low impact, low traffic combination.

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IV. Uses Discouraged

The following uses are strongly discouraged:

a. High intensity commercial, industrial, and/or institutional uses or those that include a large amount of traffic, parking, and, external impacts;
b. Residential unit counts that are drastically higher density than allowed under the R-5 zone are discouraged.

GENERAL INFORMATION

Location: 19 Libby Street, Portland, Maine 04103

Current use: Uninhabited. Intermittent fire life safety trainings take place on sight on a temporary basis.

Condition of the property at the time of sale: The existing structure is currently unoccupied.

Environmental Conditions: The City of Portland does not have any specifics with regard to environmental conditions and makes no representations or guarantees with respect to the environmental condition of the site.

Note: All respondents should investigate legal and zoning requirements for proposed projects prior to submission of proposal. The City's Zoning Administrator can be contacted at (207) 874-8709. The City's Planning Office can be contacted at (207) 874-8719.

PROCESS OUTLINE

I. Submissions will be reviewed for completeness.

II. City Staff and a *Proposal Review Committee* will review the submissions and select a final list of qualified proposers.

III. Upon completion of the list, an RFP document outlining specific project details and submission requirements will be sent to the pre-qualified interested parties.

<u>Respondents are required to have a representative at a pre-submission walk through</u> of the property scheduled for <u>(DATE/TIME).</u> Development Team representatives will meet in the parking area at the rear/southerly side of the building. The tour, which will be attended by City Planning and Facilities staff, will begin promptly at X:X0 p.m. and take approximately 1 hour.

Please be advised that responding to this inquiry will not ensure that your firm is placed upon the final Proposers List. However failure to respond will eliminate you from the list. The selection of bidders on the final Proposers List will be based upon a detailed evaluation of these responses, and will be chosen in the best interests of the City of Portland, Maine according to the following criteria:

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CRITERIA

The city will apply the following criteria to rate competing Developer Team qualifications for selection to submit full proposals.

I. ***Use*** **50% Weight**

The uses described in the conceptual development and re-use narrative are consistent with the recommendations of the Reed School Re-Use Advisory Task Force, as summarized in the *Uses Considered* section above; and,

II. ***Financial Strength and Experience of the Development Team*** **50% Weight**

The Development Team has the experience, financial capacity and a proven track record to confidently achieve the goals and program(s) described in the *conceptual development and re-use narrative.*

SUBMISSION INFORMATION

I. Development Narrative – Provide a concept development and re-use narrative, general project budget with projected funding sources, and development timeline. The proposed uses, unit counts, and nature and extent of occupation of the Reed School building and site must be included. Sketch level drawings may be useful to augment this information but are not required. This RFQ does not require detailed architectural drawings or development pro formas.

II. A complete description of the structure of your team, including administration and project management team as well as major shareholders.

- **a.** Developer – Name, address, telephone, fax number of the proposed
- **b.** Owner/developer and the name(s) of an alternative contact person(s)

III. Developer Capacity – Identify the qualifications and experience of the development team for the project including a list of previously completed projects similar to the proposed project. This may include key staff of the developer, architect, general contractor and future property management. The submission should include indication of experience with similar development projects, and experience with Historic Preservation projects, where applicable.

IV. A list of current projects, with a brief description of type, and expected completion dates.

V. A list of projects of comparable size and complexity that you have developed in the past five years. Provide photos, demonstrative drawings and project particulars.

VI. A list of not less than four recent (within the past five years) client references for similar size or complexity of project, complete with names and contact information (phone and email ideally), and date of project completion.

VII. Evidence of financing capability sufficient to undertake a project of this scope, including a letter of reference from a Financial Institution.

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VIII. Eight (8) copies, with the original so marked, of each submittal along with a single digital copy.

Reservation of Rights

The City reserves the right to waive any informalities in proposals, to accept any proposal or portions thereof (Proposers are advised to note this and quote accordingly) and to reject any or all responses should it be deemed for the best interest of the City to do so. The City reserves the right to substantiate the Proposer's qualifications, capability to perform, availability, past performance record and to verify that the proposer is current in its obligations to the City, as follows: The successful bidder shall agree to defend, indemnify and save the City harmless from all losses, costs or damages caused by its acts or those of its agents, and, before signing the contract, will produce evidence satisfactory to the City's Corporation Counsel of coverage for General Public and Automobile Liability insurance in amounts not less than $400,000 per person, for bodily injury, death and property damage, protecting the contractor and the City, and naming the City as an additional insured from such claims, and shall also procure Workers' Compensation insurance.

All materials and equipment used as well as all methods of construction and/or demolition shall comply at a minimum with any and all Federal, OSHA, State and/or local codes, including applicable municipal ordinances and regulations.

Equal Employment Opportunities. Vendor shall comply fully with the Nondiscrimination and Equal Opportunity Provisions of the Workforce Investment Act of 1998, as amended (WIA, 29 CFR part 37); the Nontraditional Employment for Women Act of 1991; title VI of the Civil Rights Act of 1964, as amended; section 504 of the Rehabilitation Act of 1973, as amended; the Age Discrimination Act of 1975, as amended; title IX of the Education Amendments of 1972, as amended; and with all applicable requirements imposed by or pursuant to regulations implementing those laws, including but not limited to 29 CFR part 37.

Pursuant to City procurement policy and ordinance, the City is unable to contract with businesses or individuals who are delinquent in their financial obligations to the City. These obligations may include but are not limited to real estate and personal property taxes and sewer user fees. Proposers who are delinquent in their financial obligations to the City must do one of the following: bring the obligation current, negotiate a payment plan with the City's Treasury office, or agree to an offset which shall be established by the contract which shall be issued to the successful bidder.

It is the custom of the City of Portland, Maine to pay its bills 30 days following equipment delivery and acceptance, and following the receipt of correct invoices for all items covered by the purchase order. In submitting bids under these specifications, bidders should take into account all discounts; both trade and time allowed in accordance with this payment policy and quote a net price. The City is exempt from the State's sales and use tax as well as all Federal excise taxes.

June 25, 2015

Matthew F. Fitzgerald
Purchasing Manager

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Attachments: Go to: http://www.portlandmaine.gov/1348/Reed-School-Reuse-Project

DRAFT

PROPOSAL

NOTE: THESE PAGES ARE TO BE COMPLETED AND RETURNED

The UNDERSIGNED hereby declares that he/she or they are the only person(s), firm or corporation interested in this proposal as principal, which it is made without any connection with any other person(s), firm or corporation submitting a proposal for the same.

The UNDERSIGNED hereby declares that they have read and understand all conditions as outlined in the Request for Proposals, and that the proposal is made in accordance with same.

The UNDERSIGNED hereby declares that any person(s) employed by the City of Portland, Maine, who has direct or indirect personal or financial interest in this proposal or in any portion of the profits which may be derived therefrom has been identified and the interest disclosed by separate attachment. (Please include in your disclosure any interest which you know of. An example of a direct interest would be a City employee who would be paid to perform services under this proposal. An example of an indirect interest would be a City employee who is related to any officers, employees, principal or shareholders of your firm or to you. If in doubt as to status or interest, please disclose to the extent known).

The proposer acknowledges the receipt of Addenda numbered _____

COMPANY NAME: _____
(Individual, Partnership, Corporation, Joint Venture)

AUTHORIZED SIGNATURE: _____ DATE: _____
(Officer, Authorized Individual or Owner)

PRINT NAME & TITLE: _____

ADDRESS: _____

_____

E-MAIL ADDRESS: _____

TELEPHONE: _____ FAX: _____

FEDERAL TAX I.D. NUMBER: _____

STATE OF INCORPORATION _____

(If incorporated in another State, businesses must be authorized to do business in the State of Maine.)

DRAFT

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

Tuck O'Brien
City Planning Director, Planning Division

January 22, 2018

Michael Lyne
Developer's Collaborative
100 Commercial Street, Suite 414
Portland, ME 04101

Tom Greer, P.E.
Pinkham and Greer, Civil Engineers
28 Vannah Avenue
Portland ME, 04103

Project Name: Reed School Redevelopment
Address: 19 Libby Street
Applicant: Michael Lyne
Planner: Matthew Grooms

Project ID: 2017-234
CBL: 338-K-004

Dear Mr. Lyne and Mr. Greer:

On January 22, 2018, the Planning Authority approved a Level I Site Alteration application for redevelopment of the Reed School site, including expansion of the existing parking area, installation of a playground, installation of a new stormwater system, and site landscaping. The decision is based upon the application, documents and plans as submitted. The proposal was reviewed for conformance with the standards of Portland's Site Plan Ordinance.

Waivers

The Planning Authority waives the Site Plan Standard, Section 14-526(a)(2)(c)(i), which requires that all proposed developments provide a sidewalk along all frontages, to permit no public sidewalk along the property's Libby Street frontage.

Stormwater Management Permit

Based upon the City of Portland's Delegated Review Authority, the Planning Authority approves the Stormwater Management Permit application, as submitted, subject to the following condition(s):

1. Storm Water Management Condition of Approval
   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.

Site Plan Review

The Planning Authority finds that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following condition(s) of approval:

1. Applicant shall review entire site for ADA compliance and repair broken asphalt as needed to entire compliance. It is understood that the improvements along Homestead Avenue will be completed during the next phase of this project.
2. The ADA compliant entrance to this building will be the entrance by the parking lot, which serves as the main entrance generally. It is understood that subsequently mentioned conditions are to be completed during the next phase of this project. ADA compliant access to that entrance shall be provided by:
    a. Repairing the sidewalk on Homestead in front of the building as needed; and
    b. Providing a dedicated walkway from Homestead to the parking lot by either limiting vehicle access on the driveway to Homestead to emergency access only, or by providing a parallel walkway.
3. The applicant shall work with staff and METRO to resolve the best locations of bus stops along Forest Avenue to serve the site.
4. The applicant shall repair the fence along the property boundary as needed.
5. The City will look at the potential to complete the missing piece of sidewalk along Homestead Avenue just west of the site and asks for the applicant's support as necessary.

The approval is based on the submitted plans and the findings related to site plan review standards as contained in the Planning Report for application 2017-234 which is attached.

Standard Conditions of Approval

Please Note: The following standard conditions of approval and requirements apply to all approved site plans:

1. Develop Site According to Plan The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning

Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

2. Separate Building Permits Are Required This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

3. Site Plan Expiration The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

4. Performance Guarantee and Inspection Fees A performance guarantee covering the site improvements, inspection fee payment of 2.0% of the guarantee amount and seven (7) final sets of plans must be submitted to and approved by the Planning and Urban Development Department and Public Works Department prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.

5. Defect Guarantee A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

6. Preconstruction Meeting Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator, Public Works 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.

7. Construction Management Plans The applicant, contractor and subcontractors are required to conform to the approved Construction Management Plan, and all conditions contained within the project's approval, for the entire duration of the project. Any amendments to the approved Construction Management Plan shall be reviewed and approved by the Department of Public Works prior to the execution. The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan. The applicant shall coordinate the project's construction schedule with the timing of nearby construction activities to avoid cumulative impacts on a neighborhood and prevent unsafe vehicle and pedestrian movements. Accordingly, nearby construction activities could involve a delay in the commencement of construction.

8. Department of Public Works Permits If work or obstructions will occur within the public right-of-way, such as utilities, curb, sidewalk , driveway construction, site deliveries and equipment siting, a Street Opening and/or Occupancy Permit (s) is required for your site. Please contact the Department of Public Works Permit Clerk at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

9. As-Built Final Plans Final sets of as-built plans shall be submitted digitally to the Planning and Urban Development Department, on a CD or DVD, in AutoCAD format (*,dwg), release AutoCAD 2005 or greater.

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning and Urban Development Department at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Matthew Grooms at (207) 874-8725

Sincerely,

Stuart G. O'Brien
City Planning Director

Attachments:
1. Development Review Comments
2. Portland City Code: Chapter 32
3. Sample Stormwater Maintenance Agreement
4. Performance Guarantee Packet

Electronic Distribution:
cc: Jeff Levine, AICP, Director of Planning and Urban Development
Stuart G. O'Brien, City Planning Director, Planning and Urban Development
Barbara Barhydt, Development Review Services Manager, Planning and Urban Development
Matthew Grooms, Planner, Planning and Urban Development
Philip DiPierro, DRC, Planning and Urban Development
Mike Russell, Director of Permitting and Inspections
Ann Machado, Zoning Administrator, Permitting and Inspections
Jonathan Rioux, Deputy Director, Permitting and Inspections
Jeanie Bourke, Plan Reviewer/CEO, Permitting and Inspections
Chris Branch, Director of Public Works
Keith Gray, Senior Engineer, Public Works
Doug Roncarati, Stormwater Coordinator, Public Works
Jane Ward, Engineering, Public Works

Rhonda Zazzara, Construction Engineering Coordinator, Public Works
Jeff Tarling, City Arborist, Public Works
Jeremiah Bartlett, Transportation Systems Engineer, Public Works
William Scott, Chief Surveyor, Public Works
Mike Thompson, Fire
Danielle West-Chuhta, Corporation Counsel
Jennifer Thompson, Corporation Counsel
Victoria Volent, Housing Program Manager, Housing and Community Development
Thomas Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard and Curran
Christopher Huff, Assessor

in section 14-88 of this division.

6. Wind energy systems, as defined and allowed in Article X, Alternative Energy.

(Ord. No. 534-84, 5-7-84; Ord. No. 262-84, § 1, 12-17-84; Ord. No. 36-85, § 1, 7-15-85; Ord. No. 81-88, §§ 2, 3, 7-19-88; Ord. No. 86A-89, § 3, 8-21-89; Ord. No. 33-91, § 4, 1-23-91; Ord. No. 165-97, § 1, 12-1-97; Ord. No. 33-11/12, 1-18-12)

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*Editor's note--Ord. No. 81-88, §§ 2 and 3, adopted July 19, 1988, amended subsections 14-87(a)2 and (b)5 to read as herein set out. See also the editor's note to Art. III of this chapter for additional provisions relative to Ord. No. 81-88.

Sec. 14-88. Conditional uses.

The following uses shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses) and any special provisions, standards or requirements specified below:

(a) Residential:

1. Sheltered care group homes, as defined in section 14-47 of this article, for up to twelve (12) individuals, plus staff, and serving a primary population which is not handicapped persons, parolees, persons involved in correctional prerelease programs, or current illegal drug users, provided that:

a. A sheltered care group home shall not be located within five hundred (500) feet of another, as measured alone street lines to the respective property lines;

b. There shall be no open outside stairways or fire escapes above the ground floor;

c. The facility shall make provision for adequate on-site staffing in accordance with applicable state licensing requirements. If a facility is not licensed by the state, there shall be a minimum of one (1) staff person for every ten (10) residents or

fraction thereof.

The board of appeals may impose conditions upon a conditional use permit concerning the creation or operation of a sheltered care group home including but not limited to the following: site and building maintenance; lighting, fencing, and other appropriate security measures; screening and buffering of parking areas; compatibility of any additions or alterations with the existing residential structure; compatibility of new structures with the architectural character of the surrounding area; and limitation on the duration of a sheltered care group home permit.

2. Alteration or construction of a detached single-family dwelling to accommodate one (1) additional dwelling unit for the benefit of homeowners or tenants, provided that:

   a. The accessory unit shall be no more than thirty (30) percent of the gross floor area of principal building and shall have a minimum floor area four hundred (400) square feet; gross floor area shall exclude any floor area that has less than two-thirds of its floor-to-ceiling height above the average adjoining ground level; gross floor area may include attic space if such space shall be included as habitable space within either dwelling unit;

   b. There shall be no open outside stairways or fire escapes above the ground floor;

   c. Any building additions or exterior alterations such as facade materials, building form, or roof pitch shall be designed to be compatible with the architectural style and to maintain the single-family appearance of the dwelling;

   d. A minimum lot size of six thousand five hundred (6,500) square feet of land area shall be required;

g. No dwelling unit shall be reduced in size to less than one thousand (1,000) square feet of floor area, exclusive of common areas and storage in basement or attic;

h. Parking shall be provided as required by division 20 of this article;

i. The project shall be subject to article V (site plan) of this chapter for site plan review and approval and the following additional standards:

i. Any additions or exterior alterations such as facade materials, building form and roof pitch shall be designed to be compatible with the architectural style of the building;

ii. The scale and surface area of parking, driveways and paved areas shall be arranged and landscaped to properly screen vehicles from adjacent properties and streets.

j. Either the accessory unit or principal unit shall be occupied by the lot owner, except for bona fide temporary absences.

3. Alteration of a structure existing and not in residential use as of January 1, 1984, to three (3) or more dwelling units, provided that:

a. No dwelling unit shall have less than six hundred (600) square feet of floor area, exclusive of common hallways and storage in basement and attic;

b. No open outside stairways or fire escapes above the ground floor shall be constructed or have been constructed in the immediately preceding five (5) years;

c. A lower level dwelling unit shall have a minimum of one-half of its floor-to-ceiling height above the average adjoining ground level;

d. Three thousand (3,000) square feet of land

Laura 10/16/2017 3:56 PM
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area per dwelling unit shall be required;

e. On-site parking shall be required as specified in division 20 (off-street parking) of this article, for the combined uses of the site;

f. The project shall be subject to article V (site plan) of this chapter for site plan review and approval and the following additional standards:

1. Any additional or exterior alterations such as façade materials, building form, and roof pitch shall be designed to be compatible with the architectural style of the structure;

2. The scale and surface area of parking, driveways, and paved areas shall be arranged and landscaped to be compatible in size and scale with neighboring properties in the area and to properly screen vehicles from adjacent properties and streets.

(b) Commercial:

1. Reserved.

(c) Institutional: Any of the following conditional uses provided that, notwithstanding section 14-474(a) (conditional uses) of this article or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority:

1. Elementary, middle, and secondary school;

2. a. Long-term and extended care facilities;

b. Intermediate care facility for thirteen (13) or more persons;

Zoning Map, Text Amendment, Contract or Conditional Rezoning Application Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the review of requests for zoning map amendments, zoning text amendments and contract or conditional re-zoning. The Division also coordinates site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Zoning Map, Text Amendment or Contract/Conditional Rezonings.

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:	Reed School
Proposed Development Address:	19 Libby Street
Project Description:	Adaptive reuse of portion of historic elementary school as rental apartments
Chart/Block/Lot:	338 K004001
Right, Title or Interest (*Please identify the status of the applicant's right, title, or interest in the subject property – for example a deed, option or contract to purchase or lease the subject property)*	Signed Purchase and Sale Agreement
Existing Use (*Describe the existing use of the subject property)*	Vacant building
Current Zoning Designation:	R-3
Proposed Use of the Property (*Please describe the proposed use of the subject property. If construction or development is proposed, please describe any changes to the physical condition of the property)*	Adaptive reuse of the original 1910 building (not the 1950s addition) into eight rental residential units. The rehabilitation project will restore the exterior historic features. Historic wood windows will be replaced in kind and historic doors will be restored.
Vicinity Map (*Attach a map showing the subject parcel and abutting parcels, labeled as to ownership and/or current use)*	
Site Plan (*On a separate sheet, please provide a site plan of the property showing existing and proposed improvements, including such features as buildings, parking, driveways, walkways, landscape and property boundaries. This may be a professionally drawn plan, or a carefully drawn plan – to scale – by the applicant. (Scale to suit, range from 1' = 10' to 1' = 50'.) Contract and conditional rezoning applications may require additional site plans and written material that address physical development and operation of the property to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood)*	

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

APPLICANT

Name:	Kevin Bunker / Laura Reading
Business Name:	Developers Collaborative Predevelopment LLC
Address:	100 Commercial St, Ste 414
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 766-6696
Home #:	
Cell #:	
Fax #:	
E-mail:	reading.lauraj@gmail.com

OWNER

Name:	City of Portland
Address:	389 Congress St
City/State:	Portland, ME
Zip Code:	04101
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

AGENT/REPRESENTATIVE

Name:	n/a
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

BILLING (to whom invoices will be forwarded to)

Name:	Developers Collaborative Predevelopment LLC
Address:	100 Commercial St, Ste 414
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 766-6696
Home #:	
Cell #:	
Fax #:	
E-mail:	reading.lauraj@gmail.com

ENGINEER

Name:	Pinkham and Greer
Address:	28 Vannah Ave
City/State:	Portland, ME
Zip Code:	04103
Work #:	(207) 781-5242
Home #:	
Cell #:	
Fax #:	
E-mail:	

SURVEYOR

Name:	n/a
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ARCHITECT

Name:	Archetype Architects
Address:	48 Union Wharf
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 772-6022
Home #:	
Cell #:	
Fax #:	
E-mail:	

ATTORNEY

Name:	Cito Selinger, Curtis Thaxter
Address:	1 Canal Plaza, #1000
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 774-9000
Home #:	
Cell #:	
Fax #:	
E-mail:	cselinger@curtisthaxter.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Laura Reading
E-mail:	reading.lauraj@gmail.com
Name:	
E-mail:	
Name:	
E-mail:	

III. APPLICATION FEES (check applicable review)

☐	**Zoning Map Amendment** from ( ) zone to ( ) zone	$3,000.00
☑	**Zoning Text Amendment** to Section 14- (88) (For a zoning text amendment, attach on a separate sheet the exact language being proposed, including existing relevant text, in which language to be deleted is depicted as crossed out (~~example~~).	$3,000.00
☐	**Combination Zoning Text Amendment and Zoning Map Amendment**	$4,000.00
☐	**Conditional or Contract Zone** *(A conditional or contract rezoning may be requested by an applicant in cases where limitations, conditions, or special assurance related to the physical development and operation of the property are needed to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood. Please refer to Division 1.5, Section 14-60-62.)*	$5,000.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

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

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 Map Amendment, Text Amendment, Conditional or Contract Rezoning 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:	Laura Reading
Date:	10/17/2017

SURVEY PLAN REFERENCES

1) PLAN OF LAND FOR ALBERT ASALI DATED APRIL 21, 2003 PREPARED BY ROBERT GREENLAW RECORDED IN CCRD PB 203, PG 319.

2) SITE PLAN DRIVEWAY RECONSTRUCTION REED SCHOOL DATED AUGUST 1989 PREPARED BY PINKHAM & GREER ENGINEERS.

3) HOMESTEAD AVENUE SEWER PLAN DATED JULY 29, 1949 CITY OF PORTLAND PLAN #628/5.

4) PLAN OF HOMESTEAD VILLAGE DATED OCTOBER 1936 PREPARED BY H.I. JORDAN RECORDED IN CCRD P.B. 23, PG 31.

5) CITY OF PORTLAND ADDITION TO THOMAS REED SCHOOL HOUSE LOT DATED JUNE 2, 1931. PORTLAN PLAN #462/171

6) CITY OF PORTLAND HOMESTEAD AVE. SCHOOL HOUSE LOT DATED APRIL 30, 1925. PORTLAND PLAN #406/69

7) PLAN OF LAND MADE FOR BENJAMIN F. LIBBY DATED JUNE 30, 1924 PREPARED BY E.C. JORDAN & CO. RECORDED IN CCRD PB 16, PG 9.

8) PLAN OF CENTRAL PARK DATED OCTOBER 1901 PREPARED BY VARNEY & CHURCHILL RECORD IN CCRD PB 9, PG 129.

9) PLOT PLAN & DETAILS ADDITION TO THOMAS REED SCHOOL BY WADSWORTH & BOSTON ARCHITECTS.

10) CITY OF PORTLAND DEPT OF PUBLIC WORKS PLAN OF HOMESTEAD AVE. DATED SEPTEMBER 11, 1925. PORTLAND PLAN #241/01

11) CITY OF PORTLAND DEPT OF PUBLIC WORKS PLAN OF LIBBY STREET DATED JULY 28, 1931. PORTLAND PLAN #224/15

SURVEY GENERAL NOTES

1) ELEVATIONS ARE ADJUSTED TO CITY OF PORTLAND VERTICAL DATUM.

2) UDERGROUND UTILITIES WERE NOT LOCATED BUT WERE TAKEN FROM PLAN REFERENCES 2, 3, & 9.

3) DIGSAFE SHOULD BE CONTACTED BEFORE ANY EXCAVATION OR CONSTRUCTION.

4) COORDINATE SYSTEM IS MAINE WEST 1983 DERIVED FROM STATIC GPS OBSERVATION ON SITE.

5) AREA OF PARCEL EQUALS 109,471 SQUARE FEET OR 2.51 ACRES, MORE OR LESS.

6) BUILDING WAS LOCKED. FLOOR ELEVATIONS ARE APPROXIMATE AND TAKEN AT DOOR SILLS.

DRAWINGS LIST

C1.0	SITE PLAN
C1.1	EXISTING CONDITIONS AND DEMOLITION PLAN
C2.1	SITE DETAILS
C3.0	EROSION CONTROL NOTES
C3.1	EROSION CONTROL PLAN AND DETAILS
D1.0	DRAINAGE ANALYSIS
	SURVEY, PLAN OF LAND

CITY OF PORTLAND SITE PLAN NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES ARE OVERHEAD OR UNDERGROUND AS SHOWN ON THE PLAN. NO CHANGE TO THE SERVICE IS PLANNED.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS PUBLISHED BY THE BUREAU OF LAND AND QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORK'S REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.

GENERAL NOTES

1. OWNER: CITY OF PORTLAND, 389 CONGRESS STREET, PORTLAND MAINE. CUMBERLAND COUNTY REGISTRY OF DEEDS BK. 1202, PG 62 & BK. 1372, PG 351.
2. APPLICANT/DEVELOPER: DEVELOPER'S COLLABORATIVE, 100 COMMERCIAL ST., SUITE 414, PORTLAND, ME 04101
3. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVEUNE, PORTLAND, MAINE, 04103.
4. TOPOGRAPHIC AND BOUNDARY INFORMATION: MAINE SURVEY CONSULTANTS, INC., HARRISON, MAINE. COORDINATE SYSTEM IS MAINE WEST 1983 DERIVED FROM STATIC GPS OBSERVATION ON SITE. BENCHMARKS: AS SHOWN ON PLAN
5. SOILS MAPPING PROVIDED BY MARK HAMPTON ASSOCIATES, INC., PORTLAND, MAINE.
6. ZONE: R-3 RESIDENTIAL, PROPOSED USE: DAYCARE FACILITY
7. TAX MAP REFERENCE: MAP 338/LOTS A046-A050, A055 & K004.
8. TOTAL PARCEL = 2.51 acres±
9. WAIVERS: NONE REQUESTED AT THIS TIME.
10. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 811 OR 1-888-DIG-SAFE.
11. EXISTING BUILDING IS SERVICED BY PUBLIC WATER AND SEWER
12. POWER, TELEPHONE AND CABLE ARE EXISTING, NO CHANGE IS PLANNED.
13. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2016.

Att. 5

IMPERVIOUS AREAS

SURFACE	LAWN	BUILDING	PAVEMENT
EXISTING	58,895 S.F.	24,470 S.F.	26,106 S.F.
PROPOSED	51,466 S.F.	22,036 S.F.	37,285 S.F.
CHANGE:	- 7,429 S.F.	- 2,434 S.F.	+ 11,179 S.F.

NET IMPERVIOUS: 8,745 S.F. INCREASE

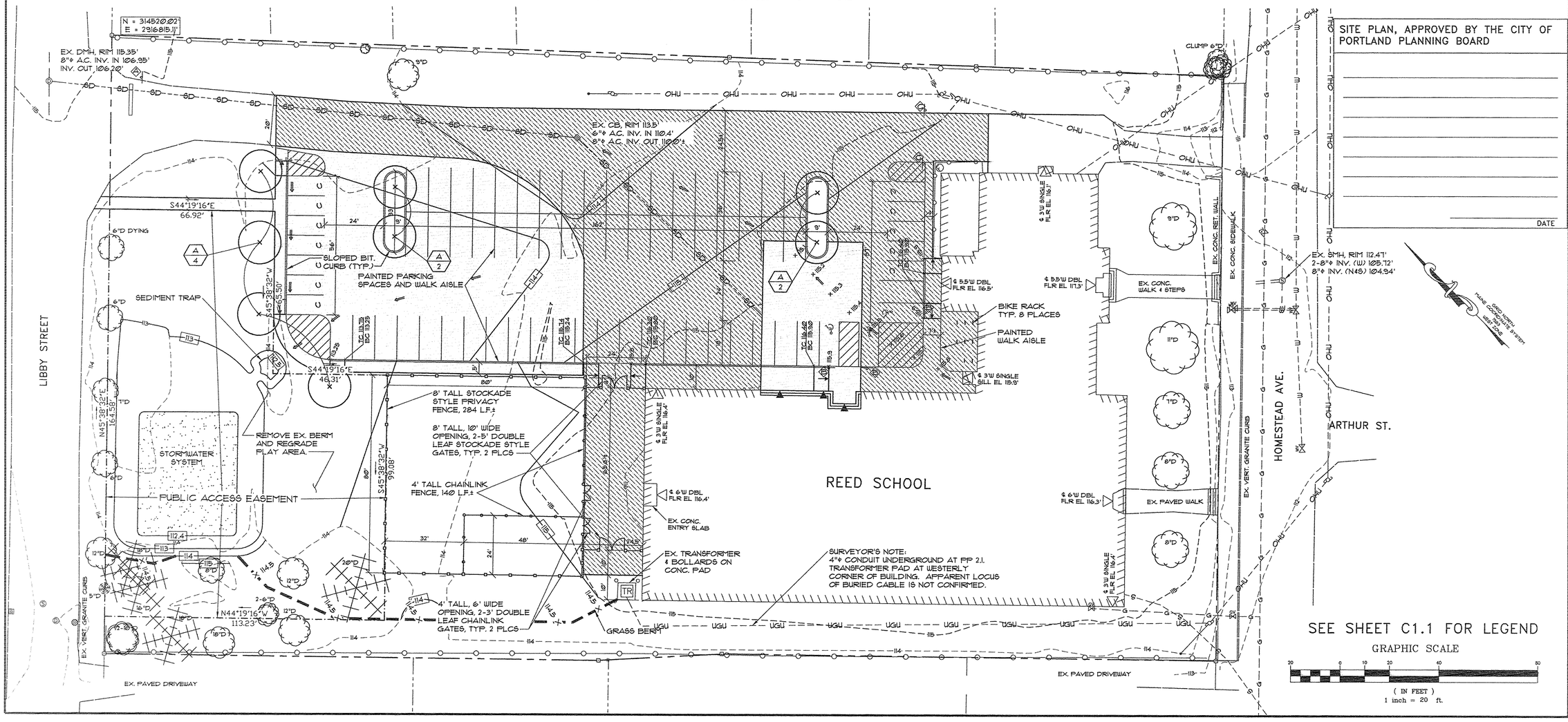
PARKING LAYOUT

ACCESSIBLE SPACES, 8'x18'	3 SPACES
COMPACT SPACES, 8'x15'	12 SPACES
STANDARD SPACES, 9'x18'	59 SPACE
TOTAL:	74 SPACES

PLANT LIST

(A / 12 = SYMBOL / QUANTITY)

SYMBOL	COMMON NAME/BOTANICAL NAME	SIZE	QUANTITY	ROOT
A	SILVER MAPLE / acer saccharinum	2 1/2" cal.	8	B&B



SITE PLAN, APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

DATE

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME 04103
TEL: 207.797.1242 FAX: 207.797.4142

STATE OF MAINE — THOMAS GREER No. 4206 — REGISTERED PROFESSIONAL ENGINEER — 10/15/17

REV.	DATE	DESCRIPTION
5	12/15/17	ADDED PUBLIC ACCESS EASEMENT.
4	12/12/17	ADDED BIKE RACKS (8) AND GRASS BERM.
3	12/1/17	REVISED PER STAFF COMMENTS.
2	10/2/17	REVISED TO SHOW GRADING & STORMWATER TREATMENT.
1	9/20/17	REVD FENCE & ADDED STORMWATER SYSTEM

APPLICANT / DEVELOPER:
DEVELOPER'S COLLABORATIVE
100 COMMERCIAL STREET, SUITE 414
PORTLAND, MAINE

SCALE: AS SHOWN | DRN BY: JDC
DATE: SEPTEMBER 5, 2017 | DESG BY: TSG
PROJECT: 15154 | CHK BY:

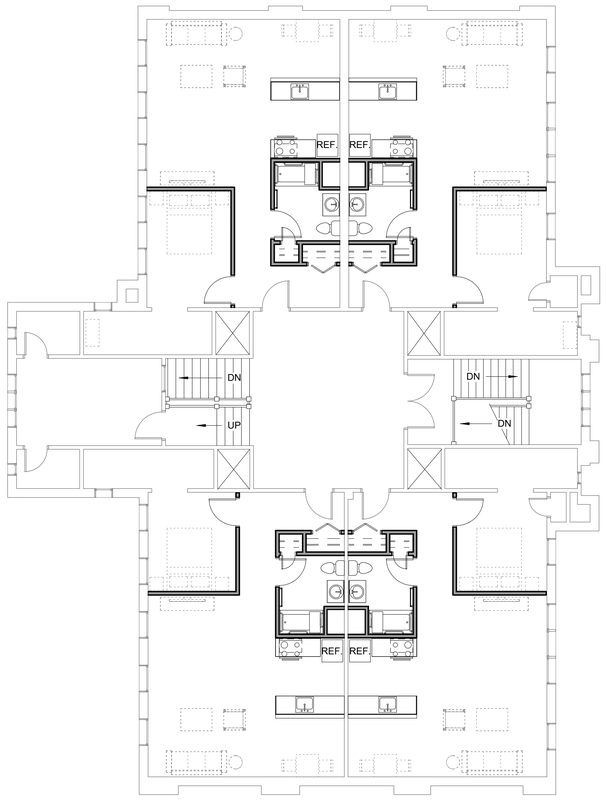
REED SCHOOL REDEVELOPMENT
19 LIBBY STREET, PORTLAND, MAINE

SITE PLAN

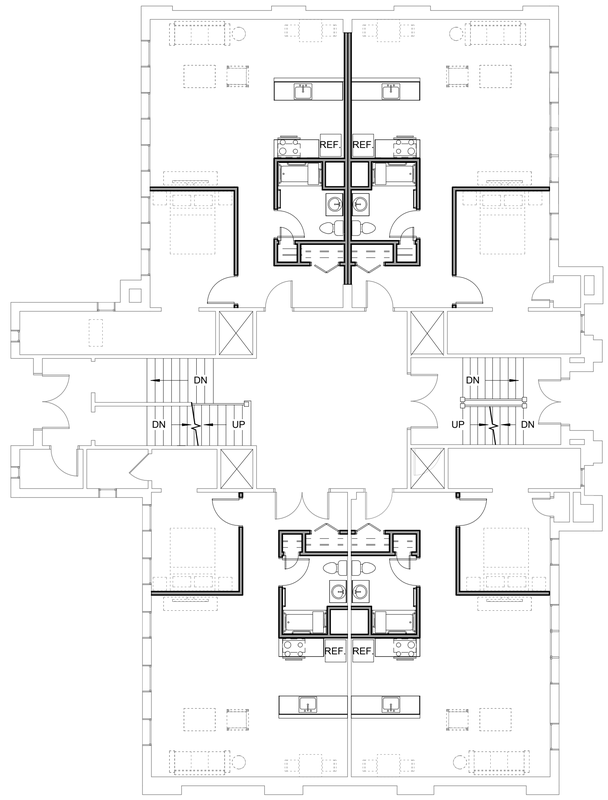
C1.0

MAP/LOT 338 / A046-A050, A055 & K004

Att. 6

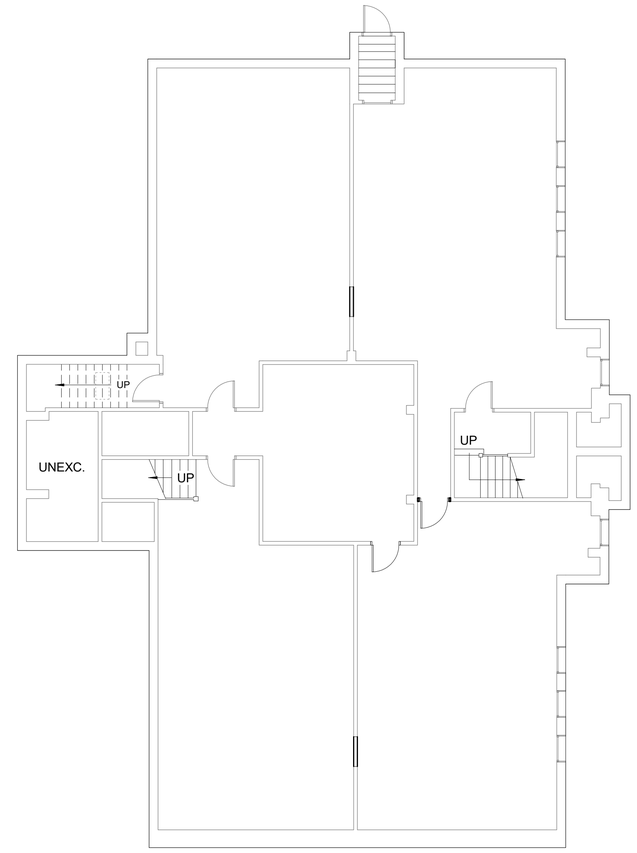


3 | 2ND FLOOR
1/8" = 1'-0"



APPROX. 4636 SQ FT.

2 | 1ST FLOOR
1/8" = 1'-0"



APPROX. 4636 SQ FT.

1 | BASEMENT
1/8" = 1'-0"

Prepared For: Owner

Consultant:

Architect: ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM

Project: REED SCHOOL
Address
City, State

Revisions:

Scale: 1/8" = 1'-0"

Date: DATE

FLOOR PLANS

A1.01

PLANNING BOARD REPORT
PORTLAND, MAINE

Change of Use from Grocery Store to Restaurant
255 Diamond Avenue
Administrative Authorization and Change of Use Applications
2018-022
Alexandra Wight, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: February 27, 2018	Prepared by: Shukria Wiar, Planner Date: February 22, 2018

I. INTRODUCTION

Alexandra Wight and Gail Landry has submitted an administration authorization and a change of use applications for their property at 255 Diamond Avenue on Great Diamond Island. The applicant wants to change the use of the building from a general store to a 35-seat restaurant and smaller-scaled general store. The building is part of the Diamond Cove Association site and is located in the Island Residential IR-3 zone. All change of use applications in this zone requires a Planning Board review and approval.

Figure 1 – Aerial of Proposed Site

A total of seventy-none (79) notices were sent to property owners within 500 feet of the site and interested party list. A legal ad ran on February 19th and 20st, 2018 of the Portland Press Herald. Public comments received by the Planning Office are compiled and included as Public Comment in the packet.

Applicant Name	Alexandra Wight and Gail Landry
Consultants	
Agent Representative	Steven Blais, Blais Civil Engineers
Engineer	Steven Blais, Blais Civil Engineers

II. PROJECT DATA

Existing Zoning	Island Residential IR-3
Existing Use	General Store
Proposed Use	General Store and Restaurant
Parcel Size	125 acres (Diamond Cove Association)
Building Size	1,580 SF
Number of Units to be Demolished	None
Building Footprint	1,580 SF
Building Floor Area	1,580 SF
Impervious Surface Area	1,580 SF
Estimated Cost of Project	$340,000

III. PROPOSED PROJECT DESCRIPTION

This structure has been used as a general store, spa, marina facilities, and apartment by past owners (the apartment never received permits for that use). The City's records for this property specify the current approved use as a general store (retail), and not a restaurant. The definition of retail in the zoning ordinance allows up to nine seats or fewer seats:

> *Retail establishment: Means (1) any food service establishment as defined by section 11-16 of this Code, with indoor seating capacity for nine (9) or fewer patrons; or (2) any shop or store offering goods or merchandise to the general public for direct consumption and not for resale, but does not include temporary freestanding stands in either case; however, retail establishments combined with gasoline, diesel or propane fuel sales shall be considered a single use for zoning purposes and shall constitute a major or minor auto service station.*

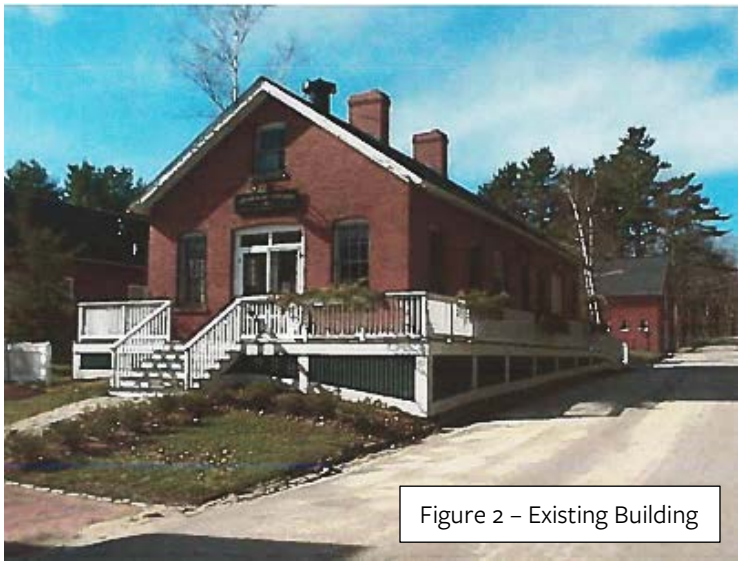


Figure 2 – Existing Building

The proposed renovation will host 35 seats thus creating a new restaurant use per the City's definition:

> *Restaurant: Any food service establishment, as defined by section 11-16 of this Code, with indoor seating capacity for ten (10) or more patrons.*

The site plan application includes interior rehabilitation modifications to the existing building without expanding the existing building footprint. The development will also change the use from a general store to a restaurant.

IV. DEVELOPMENT REVIEW

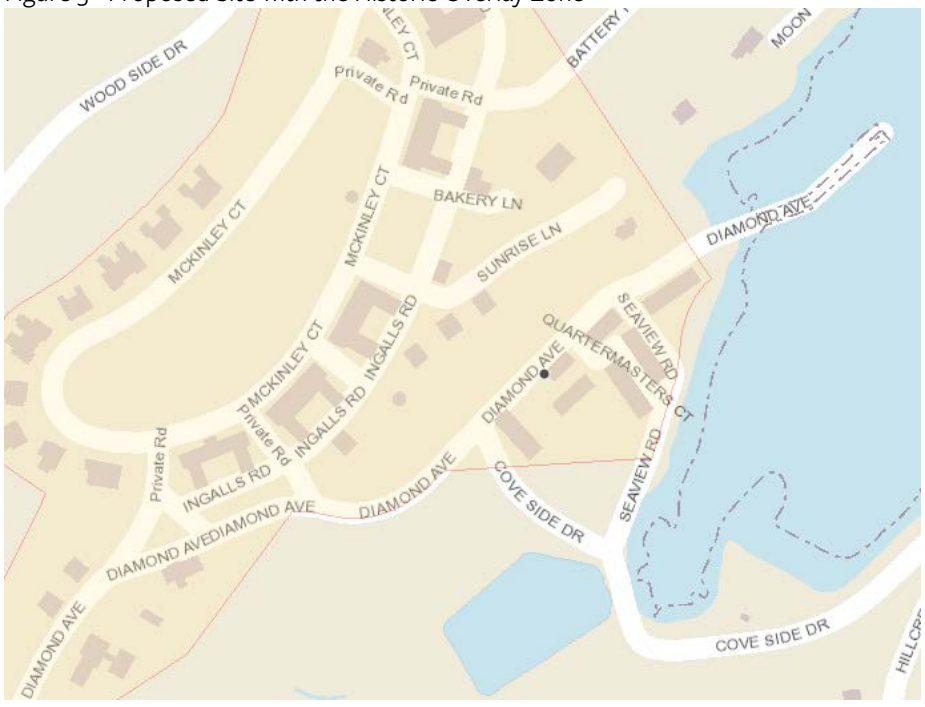
The proposed development has been reviewed by staff for conformance with the IR-3 zoning regulations and review standards of the site plan ordinance. Restaurants are listed as a permitted use in the IR-3 zone. All changes of use must meet the development review standards listed in the zone. The applicant's responses to the standards of the Section 14-145.16 is included as Attachment A.

A. ZONING

The project site is located in an Island Residential IR-3 zoning district. The site plan has been reviewed for compliance with Section 14-145.16. Development Review that states "*In addition to other applicable requirements, no development shall occur nor shall any new use be established unless the Planning Board finds that the final development plan for the site is in compliance with the following development standards*":

(a) *Transportation: The development shall be designed primarily with a pedestrian orientation to minimize the use of and dependency on private motor vehicles. Appropriate areas on the site shall be designated, as necessary, for parking of common service vehicles, golf carts or bicycles to serve the transportation needs of residents and visitors. The internal circulation plan shall also be coordinated with the existing island street network to ensure adequate access for emergency and service vehicles. A project construction plan shall be developed indicating the anticipated number and types of vehicles such as construction equipment, supply-delivery and service vehicles needed for undertaking the construction of the project. Documentation shall be provided as to the proposed transportation route such as roads, piers, beaches, sand bars and the impact of construction related activities on the routes. The development shall not have a substantial adverse impact on the capacity of existing island docking facilities. The developer shall demonstrate that an adequate water transportation system, including docking facilities, exists or will be provided.*

Figure 3 - Proposed Site with the Historic Overlay Zone



Staff Comment: The building is situated within the Fort McKinley complex, which is a designated Historic District. The building is located on Diamond Avenue (existing roadway) and is part of the Diamond Cove Association. Pedestrian and vehicle access is over Diamond Avenue and over the existing roads and pathways within the development. According to the applicant's cover letter, it states "traditionally, customers have traveled to the Site by foot either from the Casco Bay Ferry Line or around the island. The small increase of use will not have a significant impact on vehicular or pedestrian circulation".

Food and beverage deliveries will continue to come in via Casco Bay Ferry Lines' freight 2-3 times per week.

According to the applicant' cover letter regarding project construction plan, it states "[t]here will be no substantial impact on the existing island transportation or docking facilities as deliveries (as was with

the past general store) will be delivered via the existing Casco Bay Ferry service. Any additional temporary dock space needed for either customers or deliveries will be arranged with the Diamond Cove Marina per their standard operating procedures". A detailed outline of the construction plan is Attachment Plan 6.

Currently there are no parking spaces or bicycle parking spaces on site. The Planning staff is recommending a condition of approval requiring the applicant to install bicycle racks.

(b) *Solid waste: Adequate provision for off-island solid waste disposal shall be demonstrated such that the impact on municipal solid waste disposal is minimized. A development shall incorporate methods such as the following to reduce the amount of solid waste generated by the project: compaction and reduction in waste volume, recycling, incineration or baler system, and private collection and transfer to an off-island location. It shall be demonstrated that there will be no significant environmental impacts from the solid waste disposal system.*

Staff Comment: The restaurant will only be utilizing disposable tableware at the restaurant. According to the owner, there will use an intense recycling program at the restaurant. Tableware will be up to 95% compostable and composting will be available either through the ferry service, private service, or a composting site on the island. It is estimated that the general store and restaurant will generate about 28 to 32 large trash bags per week, which is an increase of approximately 33% per week based on the past general store use. The applicant has submitted a letter (Attachment I) from the island's transfer station confirming that there is adequate capacity for the additional increase.

(c) *Sanitary waste: All sanitary waste from the development shall be disposed of by a public sewer, private community sewer system providing at least secondary treatment, or subsurface sewerage system, in compliance with federal, state and local regulations. The developer shall demonstrate that the project will comply with all applicable federal, state and local water quality and groundwater standards.*

Staff Comment: According to Wastewater Discharge Licensing of Department of Environmental Protection, the site has a license for a general store, deli, three employees and fourteen seats. The applicant has submitted an email (Attachment D and E) from Irene Samur stating that if the design flows are under 370 GPD, then there is no need for a license modification to the overboard discharge license. The email states ten employees will be working during the day but this has been reduced to eight employees since this email was written.

The applicant is proposing a total of 35 seats for the restaurant, with a maximum of 8 employees at any one time. Seats will only be located inside. The sanitary waste design flows are as follows:

8 employees at 12 gpd = 96 gpd
35 guest seats at 7 gpd = 245 gpd
Total: 341 gpd

The Department of Public Works confirmed since the applicant is not connecting to a city sewer system, so this is not part of Portland's Fats Oils and Grease (FOG) program. The applicant submitted e-mail correspondence (Att M, Applicant's submittal) regarding the existing grease trap and committing to a new grease trap in order to comply with regulations. Ben Pearson, Water Resources Division of DPW, recommends that a plumber should measure out and prepare the calculations to determine the appropriate size for a grease interceptor. This is included as a condition of approval.

(d) Water: The proposed development shall have sufficient water for the reasonably foreseeable needs of the development and shall not cause an unreasonable burden on existing water supply nor adversely affect groundwater resources. Unless the development is to be served entirely by public water and secondary treatment sewer systems, the determination of compliance with this provision shall be based upon one (1) or more comprehensive groundwater analyses and reports prepared by qualified professionals and including assessment of current groundwater aquifer conditions, the impact of the proposed development on the groundwater aquifer, and recommendations for mitigation of potential impacts caused by the development.

Staff Comment: The applicant has submitted a letter from Portland Water District (Attachment K) confirming that they can serve the proposed project with conditions of service:

- The District can confirm that the supply of domestic water to the Diamond Cove Association, at the point which the Diamond Cove Association is connected to the public system, will be adequate to support the additional use from the proposed restaurant. The District does not have the authority to approve the connection to privately owned infrastructure. Since this will be a private connection, an application and deposit will not be required. However, the development team must contact PWD during construction so that we can verify that proper cross connection containment measures have been taken.

- The existing meter for the Diamond Cove Association is a 6-inch fire service meter with a maximum peak flow of 3,100 gallons per minute. It is the responsibility of the developer to determine that the existing meter has the capacity to support the additional use from the proposed restaurant. Please let us know if a meter upgrade is required to accommodate the additional flow. Since there is one master meter for the entire association, individual billing from the District is not available.

(e) Shoreland areas: The development shall preserve the natural features of the shoreland area by minimizing the disturbance of existing vegetation and slopes, avoiding development in areas subject to erosion and sedimentation, and conserving scenic views and vistas to and from the site.

Staff Comment: The change of use is all internal to the existing historic structure and no shoreland areas will be disturbed as part of this project.

(f) Environmentally sensitive areas: The development plan shall preserve significant resources of the site by integrating open space into the development plan and by conserving such features as scenic vistas, historic man-made or natural features, existing vegetation, wetland areas, shoreland areas, ground water, natural wildlife habitat, and recommended or registered State of Maine Critical Land Areas, as well as other environmentally sensitive areas.

Staff Comment: The change of use is all internal to an existing historic structure and no environmentally sensitive areas will be disturbed as part of this project.

(g) Recreation and open space: All open spaces on the site shall be functionally integrated into the development plan by virtue of such features as passive and active recreational opportunities, accessibility to residents, preservation of natural site amenities and resources, orientation to achieve energy conservation

or solar access, use as a buffer between housing clusters and to screen the development from surrounding areas.

Staff Comment: Since the change of use is all internal to an existing historic structure, no changes will be made to any existing recreation or open space.

(h) *Financial and technical capability: The applicant shall demonstrate sufficient financial and technical capability for undertaking the proposed project. Financial capability shall include a cost estimate of the proposed improvements, proposed construction and permanent financing, and terms of sale or lease of dwellings and commercial space. Technical capacity shall include the experience and expertise of the developer in implementing projects of similar scope.*

Staff Comment: The applicant has submitted a letter from Atlantic Trust, dated January 24,2018, as demonstration of their financial capacity to complete the proposed development. Attachments G and H outlined the owners and their consultant qualification and meets the technical capacity standard.

(i) *Environmental impact analysis: The applicant shall develop an environmental impact analysis including an inventory of existing environmental conditions at the project site and in the surrounding area with an assessment of the development's probable impact upon the environment. The inventory shall include such resources as air, water quality, water supply, surface water and shoreline, geology, soils, topography, wildlife, botanical and aquatic, including rare and endangered species, historic, archeological and aesthetic. The analysis shall include the direct and cumulative adverse impacts of the project on these resources. The analysis shall also include what steps the applicant proposes to take to identify and minimize adverse environmental impacts during construction, management and use of the property and whether there are alternatives for the project which would decrease the impact of the development.*

Staff Comment: The project will disturb a small amount of land to replace the sanitary sewer connection at the main. This project will have no significant impact on the environment.

(j) *Development phasing: If the project is to be completed in phases, the applicant shall indicate the schedule for completing and implementing infrastructure improvements as well as other improvements, agreements or services required for compliance with the development standards of this section, planned unit development standards, and site plan and subdivision review requirements.*

Staff Comment: Not Applicable

(k) *Emergency services: The development shall not place an unreasonable burden on the ability of the city to provide police, fire and other emergency services.*

Staff Comment: The proposed change of use will not place any unreasonable burden on the ability of the City to provide police, fire and other emergency services.

B. SITE PLAN

The proposed site plan has been reviewed by staff for conformance with the applicable review criteria under Section 14-523 (c) Standards, which states:

Administrative Authorization. Administrative Authorization means the Planning Authority may grant

administrative authorization to exempt a development proposal from complete or partial site plan review that meets the standards below, as demonstrated by the applicant.

Below are the site plan criteria for an administrative authorization and the assessment of compliance with the criteria:

CRITERIA FOR AN ADMINISTRATIVE AUTHORIZATION		Applicant's Assessment		
		Y (yes)	N (no)	N/A
a)	Is the proposal within the existing structure?	x		
b)	Are there any new buildings, additions, or demolitions?		x	
c)	Is the footprint increase less than 500 sq. ft.?			x
d)	Are there any new curb cuts, driveways or parking areas?		x	
e)	Are the curbs and sidewalks in sound condition?	x		
f)	Do the curbs and sidewalks comply with ADA?			x
g)	Is there any additional parking?		x	
h)	Is there an increase in traffic?		x	
i)	Are there any known stormwater problems?		x	
j)	Does sufficient property screening exist?			x
k)	Are there adequate utilities?	x[1]		
l)	Are there any zoning violations?	x[2]		
m)	Is an emergency generator located to minimize noise?			x
n)	Are there any noise, vibration, glare, fumes or other impacts?		x	

[1] Refer to Paragraph IV (A) a, b, c above for DEP, PWD and solid waste.

[2] The residential unit was never permitted by previous owner and the proposed plan eliminates the unit.

V. STAFF RECOMMENDATIONS

The Planning Division recommends approval of site plans with the recommended conditions of approval listed under the proposed Planning Board motion.

VI. PLANNING BOARD MOTIONS

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 application 2018-022 relevant to the site plan regulations; and the testimony presented at the planning board hearing, the Planning Board finds that the plan [is or 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 comply with the Maine DEP overboard discharge license as presented in the applicant.

2. The applicant shall comply with the proposed composting measures, as outlined in Steve Blais's email dated 02.16.2018, in order be consistent with the solid waste development review criteria.

3. The applicant shall install two bicycle racks at the main entrances of the building prior to the issuance of a certificate of occupancy.

4. The applicant shall comply with all conditions of the Portland Water District review and evidence of compliance shall be submitted prior to the issuance of a certificate of occupancy.

5. The applicant shall submit for review by the Department of Public Works (DPW), documentation from a plumber that measures and prepares the calculations to determine the appropriate size for a grease interceptor. The appropriately sized grease trap shall be installed prior to the issuance of a certificate of occupancy.

VII. ATTACHMENTS

PUBLIC COMMENTS

PC1 - Donna Schwartz 2-16-18
PC2 - Karina Kelley 2-21-18
PC3 - Lex Mathews 2-21-18
PC4 - Oliver Pennington 2-21-18
PC5 - Beth Mackay 2-21-18
PC6 - The Barn on Walnut Hill
PC7 - Flanagan Farm
PC8 - Donna Schwartz 2-22-18
PC9 - Ken Wood 2-21-18
PC10 - Bruce Robinson 2-22-18
PC11 - Paul Woody 2-22-18
PC12 - Dion Johnson and Kim Diffendal 2-22-18
PC13 - Kevin and Tricia Cooper 2-22-18
PC14 - Stephen and Beth Sanders 2-23-18
PC15 - Kathy Willing 2-23-18
PC16 - Ron Ward 2-23-18
PC17 - Brian Willing 2-23-18
PC18 - Richard Molyneux 2-23-18
PC19 - Downey Shea 2-23-18
PC20 – Bobby spark 2-23-18

APPLICANT'S SUBMITTAL

A. 180130-Cover Letter
B. Administrative Authorization App
C. Property Deed
D. MDEP Email- No Amendment
E. MDEP Email- Sewer Design Flows
F. Financial Capacity Letter
G. Alex- Qualifications
H. Steve Blais- Qualifications
I. Island Association- Solid Waste
J. Emails from PWD
K. PWD Ability to Serve
L. Email from Steve Blais, dated 02.16.2018
M. Email from A. Wight, Grease Trap dated 02.22.2018
N. Email from A. Wight, Communication dated 02.23.2018
O. Email from A. Wight – kitchen Plans reviewed by Eric Cobb, Health Inspector

PLANS

Plan 1	Existing Floor Plan - EX1.0
Plan 2	Demo Plan
Plan 3	Proposed floor plan A1.1
Plan 4	Proposed floor plan - G1.1
Plan 5	Proposed elevations - I1.1
Plan 6	Construction Schedule
Plan 7	Site Photograph
Plan 8	1989 Original Plan
Plan 9	1999 2nd Revision

PC1

Google Groups

notice below

Donna Schwartz <dlshrs@maine.rr.com> Feb 16, 2018 12:38 PM
Posted in group: **Planning Board**

Dear Shukria & Planning Board Members,

Please know that I just learned of this via an email sent to someone other then myself -
I, as a homeowner and taxpayer of Diamond Cove never rec'd formal (written/mailed) and/or informal notification via email, etc of this scheduled meeting?!

As a mostly "seasonal" community it is really interesting that these types of issues that can greatly impact a community - negatively or positively -
always seem to come in front of the planning board off-season when most members of the community are absent and it is difficult for their voices to be heard.
Can you have these types of hearings w/o the people who cld be negatively impacted by this go unnotified?

I can further tell you that alot of us homeowners thought that this was a "dead in the water" - issue because it was our understanding that the DEP / EPA wld not permit this over usage
because of the restrictions - and, rightly so - on the wastewater usage / discharge, etc -
My understanding is that - regardless of a permit - they would actually be usurping the usage of another property or properties and by doing so wld be compromising their usage,
hence, devaluating others property for the benefit of themselves!

Please know that both the seller and the buyer of this commercial property are realtors - "full disclosure" & "buyer beware" shld have come into play in this instance!
The buyer bought one property and wants to now change it into something other then what it was at the compromise / cost & expense to others!

This once was a "The General Store" that served food but was not a "sit down" per se' venue.
It was more or less coffee & muffins in the morning along w/pizza and deli type foods for lunch & later.
I believe that they were licensed to accomodate 13 or 14 which is not 35!

Oh and in case you do not already know this - we already have two restaurants on this very small parcel of island turf!
Diamonds Edge which is a long standing, well-established, restaurant practically nxt dr to what once was "The General Store" and the small restaurant at "The Inn @DC" which services it's clientele.

Sincerely,
Donna Schwartz / Diamond Cove

255 DIAMOND AVENUE - GREAT DIAMOND ISLAND

To Residents and Property Owners: The Portland Planning Board will hold a public hearing to consider a change of use from a general store to a 35-seat restaurant on Great Diamond Island. The applicant will also keep a portion of the general store at the rear of the building. Public comments will be taken at this

meeting and written comments should be submitted
to planningboard@portlandmaine.gov
The PUBLIC HEARING will be held:

Tuesday, 2/27/2018
7:00 p.m. (meeting start time - this item is the 1st item on the agenda)
City Hall, Council Chambers, 2nd Floor

Plans are available for viewing in the Planning Division, 4th Floor, City Hall by referencing Application ID# 2017-117 or CBL # 448 A004001. Memos and reports are posted on http://www.portlandmaine.gov/211/Planning-Board by the end of business day on the Friday before Planning Board meeting. If you have any questions regarding the proposal, please contact Shukria Wiar, Planner, Planning Division, City Hall, 4th Floor, 389 Congress Street, Portland, ME 04101; contact by phone at (207) 756-8083 or e-mail at shukriaw@portlandmaine.gov

February 21, 2018

Portland Maine Planning Board
389 Congress St
4th Floor
Portland, ME 04101

RE: Conditional Use; 255 Diamond Avenue – Great Diamond Island; The General Store at Diamond Cove

Dear Planning Board Members:

We are writing with enthusiastic support that the conditional use be granted for the Diamond Cove General Store. We have been homeowners within Diamond Cove for five years and my husband has been coming to Great Diamond Island since he was an infant (even before Diamond Cove was restored). We have witnessed the transformation of this beautiful community and feel that the new restaurant concept will be a huge asset to both homeowners and visitors, and not too dissimilar to how the "general store" was being operated, which was really more of a restaurant anyway.

We have reviewed the proposed restaurant and researched the new owners extensively and feel that they have a track-record of developing high quality establishments that will not only fit with the island vernacular but will add a breath of fresh air to the Island and our community.

Thank you for your time and we hope you will take this letter under consideration while making your decision.

Karina and Ben Kelley

88 Ingalls Road, Diamond Cove, Maine

PC3

Google Groups

Re: Building number 32 in Diamond Cove, Great Diamond Island

me <jmy@portlandmaine.gov> Feb 21, 2018 10:49 AM
Posted in group: **Planning Board**

Hello,

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

If you have any further questions, please contact me.

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

On Wednesday, February 21, 2018 at 9:28:48 AM UTC-5, Lex Mathews wrote:

> I regret that I cannot attend the planning board meeting in which the topic of the general store, building number 32, will be addressed.
>
> I have owned a home on the island for five years. I love the island and the city of Portland in general. What a nice place!
>
> I am completely opposed to the proposal to add a restaurant to the general store.
>
> There are already two other restaurants on the island, neither of which has customers on a consistent basis.
>
> More importantly, the ownership and management of the general store has been extremely problematic since the very beginning.
>
> The general store, which used to be a welcoming focal point for island residents, became a relatively hostile and unhelpful place in an incredibly short amount of time starting in the spring of 2017 with the new ownership in place.
>
> In addition to being aloof and somewhat rude each day, the management also would routinely close the store prior to the end of the stated hours. As you probably know, it is important, especially on an island, to be consistent and keep your word because there are a few other options to get the item that you were seeking.
>
> Most incredible what is the complete disrespect that the ownership and management showed for the young people on the island. They promised numerous teenagers jobs for the summer. When the teenagers arrived, management simply told him there were no opportunities for employment. They told some other teenagers that they would give them two or three hours a day. This occurred with at least three teenagers that I know. For people earning money for college or simply trying to be productive each day, this misrepresentation was particularly damaging to them. In addition, if the management and ownership misrepresented summer jobs, I I am quite confident that they will also misrepresent their proposal to your city Council.
>
> As you can see, I've experienced a number of examples that I have seen as a resident in which the ownership has not acted truthfully. Even if their negative demeanor were not a problem, this is not a group to home we should be giving expanded property rights or the ability to grow their business.
>
> Feel free to contact me with any questions or concerns. Thank you very much for your time.
>
> From Alexander Mathews

Sent from my iPh

Google Groups

Re: Diamond Cove general store change of use support letter

me <jmy@portlandmaine.gov> Feb 21, 2018 10:49 AM
Posted in group: **Planning Board**

Hello,

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

If you have any further questions, please contact me.

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

On Wednesday, February 21, 2018 at 6:07:36 AM UTC-5, Oliver@beoboston.com wrote:

> Hello
>
> Regading hearing scheduled on the 27th of feb for change of use of general store.
>
> As a homeowner on island at 233 woodside we would like to express our support to the change of use of the space to a restaurant/general store. The owners have shown great experience and expertise in creating unique dining experiences for which we very much look forward to and support.
>
> While unclear to me the route cause as to why some appose I can't help but feel that there is a business competition agenda that could be creating bias. Further as a small business owner myself I feel that any person willing to invest and work within guidelines of law be allowed to work within their vision. Any undue constraints limitations or delays without merit can easily create a environment where that real cost imposed on a small business will cause it not to move forward at all which for the island is a much much more grim proposition by far!!
>
> Kind Regards
>
> Oliver
>
> Oliver Pennington
>
> Bang & Olufsen
> 141 Newbury St
> Boston MA 02116
> 617-262-4949
>
> www.Bang-Olufsen.com

Google Groups

Re: Diamond Cove General Store property

me <jmy@portlandmaine.gov> Feb 21, 2018 10:49 AM
Posted in group: **Planning Board**

Hello,

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

If you have any further questions, please contact me.

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

On Wednesday, February 21, 2018 at 3:36:26 AM UTC-5, Beth Mackey wrote:

> To Whom It May Concern
>
> My husband and I recently purchased a house in Diamond Cove, just around the corner from the General Store site. While we were very disappointed in the store this year, we read with dismay that another restaurant is being proposed for the site. The size of the space and the fact of two current restaurants on the island make this proposal a losing proposition.
>
> What the island really needs is a viable general store. The market would support that if done well. Last year's effort fell short in many ways. Please reject this proposal.
>
> Beth Mackey
> 10 Quartermaster
> DC
> --
> Beth Mackey

TOWN OF NORTH YARMOUTH

The Town Where Others Began.

Board of Selectmen
Jean Chadbourne
Steve Morrison
Jen Speirs
Peter Lacy
Anne Graham

Town of North Yarmouth
10 Village Square Road
North Yarmouth Maine
04096

Town Manager
Rosemary Roy

The Barn at Walnut Hill

September 27, 2017

To whom it may concern,

I am writing in regards to a property Located at, 655 Walnut Hill Road in North Yarmouth. The property was approved in June of 2010 as an event center through the North Yarmouth Planning Board to which the property has been operating as ever since. During the approval process Gail was up against immediate opposition from abutters. Throughout the process she was able to compromise and provide enough reassurance to the neighbors to gain their trust and proceed with her venue plans. She has held true to her word and has been operating successfully since getting approval without losing sight of the agreed upon terms with the neighbors or the Town. The business has brought nothing but good feedback from the Town and Clients from away. If there has been any disturbance at all I as the Code Enforcement Officer have not been aware of it and have great confidence that she can and will be an asset to any community in her next venture. I am pleased to be writing this letter of recommendation to whoever might find it useful, thank you for your time. Any further questions feel free to contact the Town of North Yarmouth at (207)829-3705

Sincerely,

Ryan Keith
Code Enforcement Officer

Town of Buxton

Office of Code Enforcement

September 26, 2017

To: Great Diamond Island Planning Board

REF: Flanagan Farm, Buxton Maine

Dear Members of the Board,

I have been Code Officer in Buxton for two years. In that time I have not received a complaint from Buxton residents in regards to the operations at this business.

Before coming to Buxton my predecessor had told me the same and also conveyed the owners did a very nice job developing the property.

I have not had a single noise complaint and the property is immaculate, even so on Mondays after large weekend wedding venues. The business seems to be a source of pride for many in town who have expressed positive comments to me.

Feel free to contact me if you have any questions.

Sincerely,

Peter Gordon
Code Enforcement Officer

185 Portland Road
Telephone 207-929-3046 *Buxton, Maine 04093* *Fax 207-929-8271*

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Re: notice below

Barbara Barhydt <bab@portlandmaine.gov> Thu, Feb 22, 2018 at 12:10 PM
To: Donna Schwartz <dlshrs@maine.rr.com>
Cc: Jennifer Munson <jmy@portlandmaine.gov>

Hello Donna:

I have confirmed with our legal office that the noticing provisions for a Planning Board meeting require mailed notices to be sent to property owners within 500 feet. It does not require noticing of every property owner within a subdivision. I cannot explain why the noticing was sent more broadly during the review of the Inn at Diamond Cove.

We will include your e-mails and concerns in the packet for the Planning Board review.

Thank you.

Barbara

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

On Thu, Feb 22, 2018 at 9:23 AM, Donna Schwartz <dlshrs@maine.rr.com> wrote:

> Dear Jennifer & Barbara,
>
> Again, please know that Diamond cove is considered a SUD-DIVISION and that ALL homeowners shld have been notified.
>
> If not, then wld you please inform me as to why was it that when The Inn @Diamond Cove was being proposed ALL homeowners had to be informed?
>
> Thank you.
>
> Donna
>
> On Feb 21, 2018, at 2:52 PM, Jennifer Munson <jmy@portlandmaine.gov> wrote:
>
> Donna,
>
> Attached is the list of recipients of notices for the Planning Board public hearing. The noticing requirement for Planning Board meetings is to send to property owners within 500 feet of the site. We use the City of Portland geographic information system based on the City's assessor tax records in preparing this list. In looking at the map, it appears that your property is just outside of the 500 foot range.
>
> I hope this answers your questions.
>
> Jennifer Munson, Office Manager
> Planning and Urban Development
> City of Portland
> 389 Congress St., 4th Floor

Portland ME 04101
jmy@portlandmaine.gov
(207) 874-8719
(207) 756-8258 (fax)

On Wed, Feb 21, 2018 at 10:59 AM, Donna Schwartz <dlshrs@maine.rr.com> wrote:

Dear Jennifer,

Please know that i own “The Schoolhouse@DC” @ 7 McKinley Ct across for the administration / office bldg up on the parade ground which is part of the historic district

Please also know that I had an email exchange w/Barbara - a part of which i have included below:

"Dear Barbara,

Thank you for your response only
please know that both a property and a quartermaster resident who are both neighbors to the property in question did not receive any notice but is well within the 500 feet.
So am not sure who the 54 homeowners are within the 500 feet area that supposedly received notification?

Please also know that it has come to my attention that DCHA is a subdivision and as a result believe that ALL homeowners should have received notification of the application.

Thank you.

Donna”

On Feb 21, 2018, at 10:41 AM, jmy <jmy@portlandmaine.gov> wrote:

Donna,

I am looking into the noticing inquiry that you had. Can you tell me your address on the island?

Jennifer Munson, Office Manager

Department of Planning and Urban Development

City Hall, 4th Floor, 389 Congress Street, Portland ME 04101

(207) 874-8719

planning@portlandmaine.gov

www.portlandmaine.gov

Office Hours are Monday - Friday 8:00 a.m. - 4:30 p.m.

On Friday, February 16, 2018 at 12:38:49 PM UTC-5, Donna Schwartz wrote:

Dear Shukria & Planning Board Members,

Please know that I just learned of this via an email sent to someone other then myself -
I, as a homeowner and taxpayer of Diamond Cove never rec'd formal (written/mailed) and/or informal notification via email, etc of this scheduled meeting?!

As a mostly "seasonal" community it is really interesting that these types of issues that can greatly impact a community - negatively or positively -
always seem to come in front of the planning board off-season when most members of the community are absent and it is difficult for their voices to be heard.
Can you have these types of hearings w/o the people who cld be negatively impacted by this go unnotified?

I can further tell you that alot of us homeowners thought that this was a "dead in the water" - issue because it was our understanding that the DEP / EPA wld not permit this over usage
because of the restrictions - and, rightly so - on the wastewater usage / discharge, etc -
My understanding is that - regardless of a permit - they would actually be usurping the usage of another property or properties and by doing so wld be compromising their usage,
hence, devaluating others property for the benefit of themselves!

Please know that both the seller and the buyer of this commercial property are realtors - "full disclosure" & "buyer beware" shld have come into play in this instance!
The buyer bought one property and wants to now change it into something other then what it was at the compromise / cost & expense to others!

This once was a "The General Store" that served food but was not a "sit down" per se' venue.
It was more or less coffee & muffins in the morning along w/pizza and deli type foods for lunch & later.
I believe that they were licensed to accomodate 13 or 14 which is not 35!

Oh and in case you do not already know this - we already have two restaurants on this very small parcel of island turf!
Diamonds Edge which is a long standing, well-established, restaurant practically nxt dr to what once was "The General Store" and the small restaurant at "The Inn @DC" which services it's clientele.

Sincerely,
Donna Schwartz / Diamond Cove

255 DIAMOND AVENUE - GREAT DIAMOND ISLAND

To Residents and Property Owners: The Portland Planning Board will hold a public hearing to consider a change of use from a general store to a 35-seat restaurant on Great Diamond Island. The applicant will also keep a portion of the general store at the rear of the building. Public comments will be taken at this meeting and written comments should be submitted to planningboard@portlandmaine.gov

The PUBLIC HEARING will be held:
Tuesday, 2/27/2018
7:00 p.m. (meeting start time - this item is the 1st item on the agenda)
City Hall, Council Chambers, 2nd Floor

Plans are available for viewing in the Planning Division, 4th Floor, City Hall by referencing Application ID# 2017-117 or CBL # 448 A004001. Memos and reports are posted on http://www.portlandmaine.gov/211/Planning-Board by the end of business day on the Friday before Planning Board meeting. If you have any questions regarding the proposal, please contact Shukria Wiar, Planner, Planning Division, City Hall, 4th Floor, 389 Congress Street, Portland, ME 04101; contact by phone at (207) 756-8083 or e-mail at shukriaw@portlandmaine.gov

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.<500 foot Property Owners.pdf>

Google Groups

Diamond Cove General Store

Ken Wood <Ken@attarengineering.com> Feb 21, 2018 10:47 AM
Posted in group: **Planning Board**

Dear Board Members – Unfortunately I will not be able to attend the Public Hearing on the General Store conversion to a restaurant; hopefully you will consider the following in your deliberations;

1) Diamond Cove has an approved wastewater discharge license (MDEP W006931-41-A-N, originally issued on December 10, 1986). Wastewater disposal is achieved through the association's sewage collection system and treated in sand filter beds prior to being discharged overboard. The system is key to the Diamond Cove Community; the effects of the additional waste generated by the new restaurant should be analyzed in relation to the existing system. Even though overall flows may be equal to or less that the approved flows the change in use (and change in the type of wastewater) should be addressed. This should include the design and installation of adequately sized grease traps and also an analysis of the "Hydraulic Loading Factor" of 1.8 required by Table 4C, Note 2 of the *State of Maine, Chapter 241, Subsurface Wastewater Disposal Rules*. This factor is used in sizing the disposal fields; it requires that "Eating Place" flows use the multiplication factor in sizing the receiving disposal field. In this case even though the proposed restaurant flows are equal or less than the approved flows, the proposed flows may require more wastewater disposal field area than is available.

2) Has adequate provision been made for the disposal of all "paper service" items.

3) Does the design comply with all MUBEC, NFPA 101 and DHS requirements for transition to a restaurant.

4) Will the restaurant provide adequate supervision and security for their patrons; currently the public has an approved access along Diamond Avenue from the Diamond Cove Pier to the Diamond Avenue gate. The restaurant will most likely draw an increased number of visitors to the Island and it's in close proximity to the Ice Pond, Tent Site and Diamond Cove Beach – these areas are not available for public use and the restaurant should provide a measure of security (as does Diamond's Edge and the Inn at Diamond Cove) to ensure that their patrons only access the restaurant and Diamond Avenue.

5) Of course, the restaurant will change our current island community. I have been a resident of Diamond Cove since 1994 and was involved in the original Great Diamond Island General Store. In 2003 the building was under Contract and was under the threat of being converted into a single-family residence. The community formed a General Store Committee, which I chaired, and ultimately through an agreement with a resident of Diamond Cove and the prospective buyer, the store remained, was improved and served the Diamond Cove Community as "The Hub of The Island" until its recent purchase and interior demolition. The results of several community surveys over the years has consistently shown that the Diamond Cove and Great Diamond residents have continually supported the General Store. It's a loss to the entire Island to be losing this amenity.

Thank you for the consideration on this important item

Respectfully;

Ken Wood – Diamond Cove 17H

Kenneth A. Wood, P.E.

President

ATTAR

ENGINEERING, INC.

CIVIL ◆ STRUCTURAL ◆ MARINE

1284 State Road

Eliot, ME 03903

Phone: (207) 439-6023

Fax: (207) 439-2128

www.attarengineering.com

Google Groups

Planning Board / Great Diamond Island

Bruce Robinson <barbandbruce@verizon.net> Feb 22, 2018 10:34 AM

Posted in group: **Planning Board**

My wife and I have spent four months as members of the Diamond Cove community for 17 summers. During that time, three grandchildren have grown up there very happily and healthily, so we have a right to claim an accurate understanding of the needs of the community. Let me state unambiguously that those needs do not include another restaurant, but they do include the survival of a vibrant general store. Relegating the general store to an enclosed space at the back of the property for the sake of a 35-seat restaurant space does not give me confidence that the needs of the community will be served. It seems clear that the new owner's ambition is to recreate her former enterprise called Flanagan's Table with 5-course dinners. That ambition does not serve the needs of the Diamond Cove community in my opinion.

F. Bruce Robinson, Diamond Cove, 13-C

Google Groups

CHANGE OF USE--GENERAL STORE (BUILDING 32) ON DIAMOND COVE

Paul Woody <PWoody@woodycpas.com> Feb 22, 2018 1:32 PM
Posted in group: **Planning Board**

I am writing to you about the proposed change of use for Building 32 on Diamond Cove, Great Diamond Island and also known as the Diamond Cove General Store.

My wife Linda and I bought a small home on Diamond Cove in 2012 and loved the island so much because of its uniqueness, friendliness as well as being a private island. I bought a larger home one year later in 2013. At the time I first bought the initial home, there was the General Store and the Diamond Edge Restaurant.

Later, the Inn of Diamond Cove was opened which added yet another full service restaurant so we have two restaurants plus the General Store.

The island needs a General Store. Yes, I understand the plan would be to have a small section of this 35 person restaurant be devoted to a “smaller general store” but essentially what we know today as the General Store would be ending. So, here are my comments in no particular order of importance:

1. We bought this place initially to have a summer place and for me to start a partial retirement. It is a great place to live and is a full service island complete with a restaurant, Inn and General Store.
2. The General Store is close to my heart because it’s a spot I go to everyday to either pick up a newspaper, a soft drink or perhaps something I forgot to get while over in Portland.
3. One of the incredible attributes of Diamond Cove is privacy. I love that we don’t allow people to come on our island to “wander around”. This is not always the case as some will ignore the signs. Some come over and have dinner at the Diamond Edge and then walk around the island. And, although there are certain spots that you can walk on the island, sometimes these people will navigate into where the private owners live.
4. Now, fast forward to what happens if your Board allows this change. We already have the Inn at Diamond Cove and Diamond Edge. You accelerate the number of people on the island who now are at three different venues and are curious about the island. The policing of these people will take more security personnel which will drive up our monthly costs of living on Diamond Cove. Further, it will take away some of the ambience that brought many of us to Diamond Cove and in my opinion drive down the value of our property. The City of Portland does not provide security on our island but clearly if your Board approves this 35 seat restaurant, your Board will need to allocate funds for increased security at Diamond Cove by the City of Portland.

This island DOES NOT need another full service restaurant. We have two now and that is plenty for our size island. I’m sure the owners of the General Store want to promote this restaurant to the City of Portland in the hopes that more and more people will come to our island. As a resident for the past 6 years and a person who has served on the Diamond Cove Board for three years, I feel I have become accustomed to the dynamics of Diamond Cove and what we need on this island is an operating General Store. Last year I served as President of the Board and was able to talk with many of our island residents about matters on Diamond Cove. The one thing that resonated with me is that everyone seemed to really appreciate the privacy on Diamond Cove. That privacy will end if you approve this 35 person restaurant.

Accordingly, please deny the change from a General Store to a restaurant accommodating 35 people. I thank you for reviewing this request. I wish I could be there to share as this is a big issue. I know it had been requested to move the hearing which I understand your Board has denied. Please keep in mind that 75%-85% of the island residents are not there in the winter and will not be able to attend your hearing. Plus, many may not be able to reply by your Friday deadline. But, I feel confident that many of our islanders agree with me that we do not need another restaurant that certainly will violate our privacy. Thank you.

Paul

W. Paul Woody, CPA, CVA, EA, MSA

Woody & Associates, CPAs, PLLC

3205 N.W. 63rd

Oklahoma City, OK 73116

405-840-8000

PC12

Google Groups

REF: Change of Use for the General Store (Building 32) diamond Cove /Great Diamond Island

Kim Diffendal <keepahappythought@hotmail.com> Feb 22, 2018 9:30 PM
Posted in group: **Planning Board**

Planning Board,
We are, Father & Daughter homeowners on Diamond Cove (78 Ingalles Rd). We have owned this home for 23 years and have
concerns about the "Change of Use" for the General Store Bldg 32.

First,
We are very concerned that this change of use will financially harm the other **established, sit-down restaurants on Diamond Cove**. These existing restaurants are valued by our community.
Please add our voices of concern to this "Change of Use" request.

Second,
Please allow for a postponement of the hearing so that we can better understand the pros and cons of this request for "Change of Use". We are most concerned about the negative impact to the existing and well established, sit-down restaurants, that we love, on Diamond Cove.

Dion Johnson
Kim Diffendal

Google Groups

Diamond Cove Building 32

Kevin Cooper <kevinlanecooper@gmail.com> Feb 22, 2018 10:50 PM
Posted in group: **Planning Board**

Dear Board,

Please use this letter as support for the General Store to proceed with the proposed changes. It is my belief that as long as DCHA by laws, DEP and Portland laws are not violated that the general store should be granted permission to make the slated changes.

Our family has owned on Diamond Cove for the past six years. The general store has been a critical component for the Island and our family. Our kids frequent the establishment and cherish it's atmosphere. I encourage the change as our three children are from 7 to 15. The general store is a business that needs to prosper in order to exist. Let the slated changes occur and let Great Diamond Island and visitors determine if the changes are acceptable through a free market opportunity. If the changes are successful then the store shall exist for our children to experience for years to come. We have grown in our community through a wonderful Inn, restaurant Diamonds Edge and first class marina. This change will be a welcomed growth compliment to the community.

Thank you for your consideration.

Kevin and Tricia Cooper
44 McKinley Court 13d
Diamond Cove

Google Groups

Change of Use for the General Store (Building 32), Diamond Cove

Elizabeth Sanders <sandersbeth9@gmail.com> Feb 23, 2018 7:50 AM

Posted in group: **Planning Board**

We are residents of the Quartermaster neighborhood of Diamond Cove, immediate neighbors of the General Store. Access to our unit is the public (DCHA shared) brick pathway in front of the store. We are pleased to see the restoration being carried out on the exterior of the General Store. The General Store has been a major resource for the community, a gathering point, a spot for a quick meal or an ice cream, employment for our youth and even friendly culinary competition with our guest chefs. We are concerned, though, about the change of use for the following reasons:

1) we would like assurance that the 250% increase in seating capacity does not negatively impact the wastewater overboard discharge for our area. The Diamond's Edge and seven other units are included in the area as well as the Museum and Art Gallery function space. In the height of the summer of 2017 (4th of July), there was a backup of wastewater in the sewer system running through the cellars of the Quartermaster buildings.

2) one proposed solution seems questionable: the use of paper plates and plastic utensils in an upscale restaurant. We wonder if diners seeking a refined dining experience would be satisfied, especially drinking fine wine from plastic cups. This proposal to mitigate the water use impacts the environment negatively as well.

3) we would also like assurance that the area surrounding the General Store remains a non-smoking area.

4) we are concerned that the proposed, significantly smaller, General Store portion will not adequately serve the needs of our community.

We are unable to attend the hearing and would like this letter to be presented instead.

Best regards,
Stephen and Beth Sanders
4 Quartermaster Court
Diamond Cove

Google Groups

RE: Change of Use Application for 255 Diamond Avenue (Building 32), Diamond Cove

Kathy Willing <KWilling@divcom.com> Feb 23, 2018 8:49 AM
Posted in group: **Planning Board**

Please find attached comments (and supporting documentation) in response to the application for change of use of 255 Diamond Avenue (building 32), Diamond Cove for the February 27, 2018 planning board meeting.

Thank you,

Kathy Willing

Kathy Willing
2 Misty Way
Falmouth, ME 04105

February 23, 2018

Sean Dundon, Chair
Planning Board, City of Portland
389 Congress Street
Portland, ME 04101

RE: Change of Use Application for 255 Diamond Avenue (Building 32), Diamond Cove

Dear City of Portland Planning Board:

As a homeowner on Diamond Cove and the Treasurer of the Diamond Cove Homeowners Association, I have a number of financial concerns about the change of use application for 255 Diamond Avenue otherwise known as Building 32. It is my personal opinion (I am not speaking for the Board) that the change of use of the General Store to a 35 seat restaurant has far reaching financial impacts on the Association's fixed assets and resources that need to be addressed before the application can be approved.

Use of Association Assets and Resources

The financial health of the Diamond Cove Homeowners Association is heavily reliant upon the success of the commercial entities operating on Diamond Cove. The three commercial enterprises (Diamond's Edge Restaurant including Lot 44, also known as the Tent Site, Diamond Cove Inn, and the General Store) represent nearly 20% of the annual operating budget for the Association. Yet the actual contributions of these businesses to the Association are skewed heavily toward the Diamond Cove Inn and Diamond's Edge Restaurant. The General Store currently contributes less than 1% of the annual operating budget and is treated the same as a residential homeowner. The reason for this imbalance is because the inherent service features of the Diamond's Edge Restaurant and Diamond Cove Inn are geared toward non Association members whereas the focus of the General Store has been to service the needs of Association members along with occasional island visitors.

In addition to homeowner dues, Diamond's Edge Restaurant/Tent Site have an agreement [Restaurant Facilities Use and Services Agreement *attached*] with the Association that outlines fees to the Association for use of items such as the dock, transfer station, extra water usage, etc… It also clearly defines the areas of the private island that the Restaurant/Tent Site visitors can traverse and when and by whom additional security services will be employed. There is a similar agreement with the Diamond Cove Inn [IDC Facilities Agreement *attached*].

If the General Store wishes to move forward with a change of use to a 35 seat restaurant it needs to negotiate and have in place similar agreements with the Association before it can open its doors. The change of use to a 35 seat restaurant will significantly increase off island visitor traffic, put greater wear and tear on fixed assets such as the dock, generate additional security staffing requirements, use greater amounts of city water, and likely impact many other resources yet to be contemplated.

Additionally, the General Store's property ownership stops at its exterior porch. I would like to request that prior to approval of a change of use to a 35 seat restaurant the store be required to negotiate and execute a mutual agreement with the Homeowners Association that clearly outlines the process and fees related to possible future requests to use Association property such as (but not limited to) the brick patio in front of the General Store and the art gallery.

Legal Liability

With the General Store's change of use to a 35 seat restaurant the Association increases its exposure to legal risk. For instance, over the past 24 months the Association has incurred significant legal fees related to one particular homeowner's displeasure with sound levels at the Tent Site despite an existing DEP permit regulating the hours and decibels allowed. Replacing a General Store with a 35 seat restaurant in a building that is within several feet of residential homes is fraught with possible legal risks unless all possible areas of risk are discussed and contractually regulated prior to the change.

The increase of non island visitor traffic on the island also increases the odds of property casualty risks as it increases the likelihood of individuals exploring private areas of the island and causing personal injury or property damage.

Existing Waste Water Discharge License

The change of use of the General Store to a 35 seat eating establishment using paper products poses a concern to the Association about its ability stay within its allotted waste water discharge. The Association is the holder of the DEP permit for waste water discharge, not the individual homeowners or commercial entities. If for any reason the 35 seat eating establishment exceeds its allocated flow the Association is the body at risk. If for any reason the DEP were to revoke the permit held by the Association, it would be at tremendous financial cost to the Association. The cost of monitoring and ensuring the 35 seat eating establishment stays within its allocated flow needs to be clearly designated as the commercial entity's responsibility with a well-defined reporting structure into the Association.

Can the Island Support 3 Restaurants?

Underlying all of the above I strongly question whether Diamond Cove can support three restaurants. As stated earlier, Diamond's Edge Restaurant/Tent Site and the Diamond Cove Inn are material contributors to the income and operating budget of Diamond Cove. If either of these entities suffer financially as a result of increased competition from a third restaurant the financial health of the whole island suffers.

Thank you for your consideration,
Kathy Willing

RESTAURANT FACILITIES USE AND SERVICES AGREEMENT

RESTAURANT FACILITIES USE AND SERVICES AGREEMENT, dated as of November 21, 2016 and effective as of the Effective Date (as defined in Section 1.2) (this "Agreement"), by and between the DIAMOND COVE HOMEOWNERS ASSOCIATION, a Maine nonprofit corporation with an address c/o Foreside Real Estate Management, Inc., 202 U.S. 1 #206, Falmouth, ME 04105 ("DCHA"), and Diamond's Edge LLC, a Maine limited liability company (formerly known as DCL, LLC) with an address c/o Bateman Partners, LLC, 470 Fore Street, Portland, Maine 04101 ("DCL"). DCHA and DCL are sometimes referred to herein individually as a "Party" and collectively as the "Parties".

RECITALS

A. DCHA and its members (including DCL) are bound and governed by certain covenants and other provisions contained in that certain Amended and Restated General Declaration of Covenants and Restrictions dated December 23, 1993, as amended (the "DCHA Declaration").

B. DCL is entering into this Agreement in its capacity as owner of Diamond's Edge Restaurant (Lot 29) at Diamond Cove ("Diamond's Edge Restaurant") and owner of the so-called Tent Site (Lot 44) at Diamond Cove (the "Tent Site") and all references herein to "DCL" shall mean DCL solely in such capacity.

C. DCHA and DCL are entering into this Agreement for their mutual benefit and subject to the DCHA Declaration, the DCHA By-Laws and any and all rules and regulations promulgated by the DCHA Board of Directors (the "DCHA Board") pursuant thereto (the DCHA Declaration and such By-Laws and rules and regulations, collectively the "DCHA Governing Documents").

In consideration of the foregoing and other good and valid consideration (including the consideration specifically referenced herein), DCHA and DCL hereby agree as follows:

SECTION 1. DCHA FISCAL YEAR AND EFFECTIVE DATE AND TERM OF THIS AGREEMENT.

1.1 Fiscal Year. The fiscal year of DCHA runs from July 1 of a year (e.g., July 1, 2016) through June 30 of the following year (e.g., June 30, 2017).

1.2 Effective Date. The effective date of this Agreement shall be July 1, 2016.

1.3 Term. The term of this Agreement shall begin on July 1, 2016 and end on June 30, 2017, and shall be automatically renewed for one-year terms thereafter unless either

party gives written notice of termination at least thirty (30) days prior to the expiration of the then-existing term (the "Term").

SECTION 2. USE OF DCHA FACILITIES.

2.1 DCHA Restroom Facilities. DCL owns the Tent Site and, as such, is permitted to use it for such events and uses such as weddings, private parties, theater and otherwise as prescribed by the DCHA Declaration, subject to the strict compliance by (a) DCL, (b) the personnel of DCL, whether employees or independent contractors (collectively, "DCL Personnel"), and (c) the persons and entities that hold events at the Tent Site (collectively, the "DCL Tent Site Parties") and the guests and contractors of the DCL Tent Site Parties (collectively with the DCL Tent Site Parties, the "DCL Tent Site Persons") with the restrictions described in Section 2.6 and elsewhere in this Agreement. In connection with such permitted uses of the Tent Site, DCL shall have the non-exclusive use of the restroom facilities owned by DCHA and located near the pond at Diamond Cove on a road to the Tent Site (the "DCHA Tent Site RR"). DCL shall keep the DCHA Tent Site RR clean at all times during the current so-called Events Season (i.e., Memorial Day through October 15), which Season may be extended or modified upon written notice by DCL to DCHA (the "Events Season").

2.2 DCHA Art Gallery. DCL will be entitled to non-exclusive use of the DCHA Art Gallery for up to fifteen (15) wedding receptions, dinners and other events customarily held at the DCHA Art Gallery during the Term without any fee, in addition to those specified in Section 4, payable by DCL therefor. DCL may have additional use of the DCHA Art Gallery for such events with the payment of an additional fee of Three Hundred Fifty Dollars ($350) per day of such events. The foregoing usage rights will be subject to (a) any prior reservation of the DCHA Art Gallery by another member of DCHA or any other person or entity authorized by the DCHA Board to use the DCHA Art Gallery and (b) DCL providing to, and the receipt by, a member of the DCHA Board who does not have a conflict of interest of fifteen (15) days prior written notice describing the event and the approval of such member or another designee of the DCHA Board and (c) the strict compliance by the persons and entities that hold events at the Art Gallery (the "DCL Art Gallery Parties") and the guests and contractors of the DCL Art Gallery Parties (collectively with the DCL Art Gallery Parties, the "DCL Art Gallery Persons") with the restrictions described in Section 2.6 and elsewhere in this Agreement. DCL shall keep the DCHA Art Gallery clean, when in use for and promptly after the use by any DCL Art Gallery Persons, during the Events Season.

2.3 DCHA Pier and Dock House. DCL shall have, without allocation of additional cost or assessment due to increased "use and benefit" pursuant to DCHA Declaration Section 8.1.3, the non-exclusive use of (a) the DCHA Pier for (i) the transport of personnel and customers to and from Diamond Cove, and (ii) the transport to Diamond Cove of alcoholic beverages, food, and other items and the transport from Diamond Cove of other items regularly used in the operation of a restaurant such as Diamond's Edge Restaurant and (b) the DCHA Dock House incidental to the foregoing and for management of the Diamond Cove Marina. DCL shall perform all necessary exterior maintenance on the Electric Service Shed on the DCHA Pier and, during the customary annual boating season, shall maintain and keep clean the DCHA Dock

House. DCHA shall have non-exclusive use of the DCHA Dock House to enable its members to wait for ferries in a sheltered environment and otherwise on an as-needed basis during such boating season.

2.4 DCHA Transfer Station. DCL shall be entitled to have transported (pursuant to a separate agreement with DCHA) the waste generated in the customary operation of Diamond's Edge Restaurant and the Tent Site to the Transfer Station (the "Transfer Station") operated at Diamond Cove by the City of Portland (the "City"). DCL's use of the Transfer Station will be subject to the strict compliance by DCL with any and all applicable governmental laws and rules and regulations (including those promulgated by the City) and the DCHA Governing Documents, including the provisions therein regarding the operations at the Transfer Station, including the obligation of DCL to keep its waste covered and keep the applicable area clean vis-à-vis its waste at all times.

2.5 Diamond Cove Fireboat Dock. DCL shall permit DCHA and its members (and their families and overnight guests and day visitors of such members and their families) and renters (and their families and overnight guests and day visitors of renters and their families) to use the Diamond Cove Fireboat Dock to drop off and pick up such persons. DCL shall not permit any boats to be docked at the Diamond Cove Fireboat Dock beyond a reasonable drop off and pick up period without the boat captain remaining on board so that the boat can be moved. If a boat is so tied up, DCL will make another dock location available to the foregoing persons. DCHA and DCL shall be jointly responsible to pay for the maintenance of the Diamond Cove Fireboat Dock.

2.6 Certain Restrictions. The use by DCL of the Tent Site, the DCHA Art Gallery, and the other facilities at Diamond Cove that DCL is permitted to use in connection with this Agreement, including the use by the DCL Personnel, DCL Tent Site Persons and DCL Art Gallery Persons and persons and entities that hold events at, or otherwise frequent, Diamond's Edge Restaurant ("DCL Diamond's Edge Restaurant Parties") and the guests and contractors of DCL Diamond's Edge Restaurant Parties (DCL Diamond's Edge Restaurant Parties and such guests and contractors, collectively, "DCL Diamond's Edge Restaurant Persons"), is subject to the strict compliance by DCL, the DCL Personnel and the DCL Tent Site Persons, the DCL Art Gallery Persons and the DCL Diamond's Edge Restaurant Persons (collectively, "DCL Event Persons") with the DCHA Governing Documents, including the provisions therein containing noise restrictions and limitations.

SECTION 3. DCHA-PROVIDED SERVICES.

3.1 Painting of Diamond's Edge Restaurant, the Mule Barn and Tent Site Restroom Facilities. DCHA will paint the exterior of Diamond's Edge Restaurant, the so-called Mule Barn and the DCHA Tent Site RR with the same periodicity as it paints the other historic buildings on the Parade Ground at Diamond Cove.

3.2 Maintenance and Mowing by DCHA. DCHA shall maintain (exclusive of any non-ordinary maintenance items caused by DCL Personnel and/or DCL Event Persons) the

grounds at the Tent Site, and mow the lawn areas adjacent to the Tent Site and Diamond's Edge Restaurant as necessary to keep them looking attractive, subject to the provisions of Section 6 of the September 1, 2002 Ground Lease for Lot #29 between DCHA and DCL.

3.3 Extra Water and Sewer. DCL acknowledges and agrees that the operation of Diamond's Edge Restaurant and the restroom facilities at the Tent Site require the use of extra water and sewer services and cause DCHA to incur additional costs therefor. The Parties acknowledge and agree that the fees payable by DCL hereunder are, in part, to pay for such additional costs.

3.4 Diamond's Edge Restaurant Grease Traps. DCHA will have the grease traps used by Diamond's Edge Restaurant pumped out at the end of July and September during the Term. DCHA will bill DCL for this service at cost, as evidenced by the invoice received by DCHA from its contractor. This will be payable within thirty (30) days of receipt.

SECTION 4. FEES AND PAYMENT OF FEES.

4.1 Fees and Payment of Fees. The (a) fees payable by DCL to DCHA for (i) the rights granted by DCHA to DCL to use facilities and (ii) the provision by DCHA to DCL of services, in each case as described herein, and (b) the schedule of payments shall be as follows:

July 1, 2016:	$3,000.00
August 1, 2016:	$3,000.00
September 1, 2016:	$3,000.00

In the event the Term is extended beyond June 30, 2017 pursuant to Section 1.3 above, DCL shall continue to make payments on July 1, August 1, and September 1 during the Term, in amounts equal to 102% of those payable during the immediately preceding year. By way of example, if this Agreement is extended through June 30, 2019, then payments of $3,121.20 shall be payable by DCL on July 1, August 1, and September 1, 2018.

DCHA and DCL acknowledge and agree that from time-to-time DCL subsidizes certain additional ferry operations, pays monthly assessments and provides certain other benefits to DCHA and that the foregoing fees have been determined taking all of the foregoing into account.

4.2 Timely Payment. The rules that govern the failure to pay or timely pay any such fees and other amounts payable hereunder shall be identical to the rules applicable to the failure of any member of DCHA with respect to the payment of assessments, as set forth in the DCHA Declaration and By-Laws and the policies, rules and regulations adopted from time-to-time by the DCHA Board and provided to members of DCHA, including the provision requiring the payment of interest at the rate of eighteen percent (18%) per annum when a payment is not made within thirty (30) days after its due date.

SECTION 5. CERTAIN OBLIGATIONS OF, AND RESTRICTIONS ON, DCL.

5.1 Access to Areas of DCHA (Other Than Lots 29, 31, 32, 34 and 44). The DCL Event Persons shall not be permitted to have access to any areas at Diamond Cove other than Lot 29 (Diamond's Edge Restaurant), Lot 31 (Art Gallery), Lot 32 (General Store), Lot 34 (Mule Barn) and Lot 44 (Tent Site) and other areas at Diamond Cove that may be made available to the general public at the time(s) so made available. Without limiting the foregoing, no DCL Event Person shall be permitted access to the courtyard near the DCHA Art Gallery and the so-called Quartermasters Buildings.

5.2 Transportation of Persons and Materials Outside of Diamond Cove. None of the DCL Event Persons, or any of the respective freight or other materials of such Persons, shall be transported beyond the boundaries of DCHA.

SECTION 6. COMPLIANCE BY DCL AND OTHER DCL EVENT PERSONS; AND RESPONSIBILITY AND LIABILITY OF DCL FOR SUCH PERSONS.

6.1 Provision of DCHA Governing Documents. DCL covenants and agrees to provide to all of the DCL Event Persons with a written summary of (i) the usage and other restrictions, and (ii) any other important obligations, rules and regulations, contained in the DCHA Governing Documents and this Agreement that pertain to DCL Event Persons while at Diamond Cove, such summary to be in form and substance reasonably satisfactory to DCHA. In addition, DCL shall inform the DCL Event Persons that they should provide such summary to the other DCL Event Persons. Without limiting the foregoing, DCL shall comply, and shall cause all other DCL Event Persons to comply, strictly with the noise limitations contained in the DCHA Governing Documents, DCL shall keep the vicinity of Diamond's Edge Restaurant clean and free of debris, and DCL shall cause all DCL Personnel and other DCL Event Persons to comply strictly with all non-smoking limitations prescribed by the DCHA Board, including in and around the DCHA Art Gallery and the courtyard near the DCHA Art Gallery and the Quartermasters Buildings.

6.2 Responsibility and Liability of DCL for DCL Event Persons. DCL shall be responsible and liable for any and all violations of the DCHA Governing Documents, and any and all other acts and/or omissions of any and all DCL Event Persons at Diamond Cove, and DCHA shall be entitled to seek recourse against DCL simultaneously with, or in lieu of, seeking recourse against any such other Persons.

SECTION 7. INSURANCE AND INDEMNIFICATION.

7.1 Insurance. DCL shall maintain at all times during the Term commercial general liability insurance, workers' compensation insurance and employer liability insurance), with such policy(s) to be written on an occurrence basis and to contain the written agreement of the insurer to give DCHA thirty (30) days prior written notice of cancellation, nonrenewal, modification or expiration, and to name DCHA as an additional insured. Each policy shall be endorsed to provide that such coverage shall be primary, and that any coverage maintained by DCHA shall

be excess insurance only. DCL shall provide DCHA with proof of such insurance prior to the Effective Date.

7.2 Indemnity. DCL shall indemnify and hold harmless DCHA from and against any and all demands, claims, actions, suits, and other proceedings, and damages, costs, expenses, penalties, debts, liabilities, obligations or judgments arising out of, occasioned by, or related to: any and all (a) violations of (i) applicable governmental laws, rules and regulations and (ii) the DCHA Governing Documents and (b) other acts and/or omissions, in each case by any and all DCL Event Persons and (c) physical injury to any and all DCL Event Persons (except to the extent caused by the willful misconduct or negligence of DCHA). If a demand or claim against DCHA is made and/or DCHA shall be made a party to any action, suit or other proceeding, arising out of or in connection with any circumstance under which DCHA is entitled to be indemnified against hereunder, DCL shall pay all costs, expenses and reasonable attorneys' fees incurred and/or sustained by DCHA in connection with such demand, claim, action, suit or other proceeding, as well as all sums which DCHA may be called upon to pay by reason of the entry of any judgment against DCHA in such action, suit or proceeding, except to the extent of any of the foregoing that is attributable to the willful misconduct or negligence of DCHA. The obligations contained in this Section 7.2 shall survive the expiration or earlier termination of this Agreement.

SECTION 8. DEFAULT.

(a) In the event (i) of DCL's failure to pay any fee or other amount due hereunder within ten (10) days after receipt by DCL in writing of DCHA's notice of default; (ii) DCL's failure to secure insurance or to provide evidence of insurance as set forth in Section 7.1, where such failure shall continue for a period of ten (10) days after receipt by DCL in writing of DCHA's notice of default; or (iii) DCL shall assign this Agreement without complying with all the provisions of Section 11.8; or (iv) of DCL's failure to perform any of the other covenants, conditions and agreements herein contained to be kept or performed by DCL and the continuance of such failure without the curing of same for a period of thirty (30) calendar days after receipt by DCL of a notice in writing from DCHA specifying the nature of such failure, and provided DCL shall not cure said failure as provided in this Section; then in any such event, DCHA may, at its option, give to DCL a notice of election to terminate this Agreement upon a date specified in such notice, which date shall be not less than five (5) business days (Saturdays, Sundays, and legal holidays excluded) after the date of receipt by DCL of such notice from DCHA. Upon the date specified in such notice, this Agreement shall be terminated and rendered null and void, but any such termination shall be without prejudice to any rights or remedies of the DCHA, whether pursuant to this Agreement and/or at law and/or in equity, in respect of arrears of fees and other amounts payable by DCL to DCHA hereunder and/or any and all previous breaches of this Agreement by DCL, and any and all of the provisions of this Agreement that provide rights and/or remedies with respect to such fees and other amounts and breaches shall survive such termination.

(b) If DCL fails to pay any fee and/or other amount when due under this Agreement and DCHA has sent DCL written notice of default as set forth in Subsection 8(a)(i) above, then upon demand, in addition to the interest charge provided in Section 4.2, DCL shall pay DCHA,

as an additional charge, all costs and expenses (including reasonable attorneys' fees) reasonably incurred by DCHA in collecting any overdue fee and/or other amount or in enforcing any of the other provisions of this Agreement of which DCL shall be in default beyond any period provided to DCL for curing the default.

(c) In the event that DCHA gives notice of a non-monetary default described in Subsection 8(a)(iv) above of such a nature that it cannot be cured within such thirty (30) day period then such default shall not be deemed to continue so long as DCL, after receiving such notice, proceeds and continues in good faith to cure the default as soon as reasonably possible and continues to take all steps reasonably necessary to complete the same within a period of time which, under all prevailing circumstances, shall be reasonable, but in no event shall such period of time exceed ninety (90) days.

(d) In addition to the foregoing remedies, in the event DCL fails to keep (i) the DCHA Tent Site RR, (ii) the DCHA Art Gallery, and (iii) the Electric Service Shed on the DCHA Pier and the DCHA Dock House (collectively, the "DCHA Specified Locations") clean at all times during the Events Season in accordance with Section 2.1, Section 2.2 and Section 2.3 above, as reasonably determined by DCHA, and such failure shall continue for a period of two (2) days after receipt by DCL in writing (including by use of electronic messaging or "e-mail") of DCHA's notice of such default, DCHA may, at its option, without waiving any other remedy hereunder, at any time thereafter cure such default for the account of DCL, and DCL shall reimburse DCHA for any reasonable amount so paid to clean the applicable DCHA Specified Locations to a reasonable standard, and any amounts due from DCL shall be deemed an additional charge due and payable hereunder.

SECTION 9. INDEPENDENT CONTRACTOR. DCL is obtaining the rights, and is undertaking the obligations, set forth herein as an independent contractor. Neither DCHA nor DCL is an agent, employee or other representative of the other and will not hold itself out to third parties as any of such. This Agreement shall in no way be deemed to create a partnership, joint venture, or principal/agent or any fiduciary relationship between DCHA and DCL, and neither DCHA nor DCL will hold itself out to third parties as any of such.

SECTION 10. DCHA GOVERNING DOCUMENTS CONTROL. Notwithstanding any provision of this Agreement or any other agreement between the Parties, in the event of the conflict of any provision of this Agreement with any provision of the DCHA Governing Documents, the provisions of the DCHA Governing Documents shall control.

SECTION 11. MISCELLANEOUS.

11.1. No Representations. Each Party acknowledges that neither the other Party, nor any agent or attorney of the other Party, has made any promise, representation or warranty whatsoever, expressed or implied, not expressly contained in this Agreement concerning the subject matter of this Agreement, to induce such Party to execute and deliver this Agreement and acknowledges that such Party has not executed or delivered this Agreement in reliance upon any promise, representation or warranty not contained herein, including by DCHA with respect to

any aspect (including the physical condition or operability) of its infrastructure or other portion of its properties.

11.2 Entire Agreement. This Agreement constitutes the entire agreement between the Parties relating to the subject matter of this Agreement. This Agreement supersedes all prior agreements between DCHA and DCL with respect to its subject matter. For the purposes of clarity, the Parties acknowledge and agree that the two (2) preceding sentences are not applicable to the DCHA Declaration and the other DCHA Governing Documents, all of which will continue to be applicable to the relationship between the Parties.

11.3 Amendment or Modification. This Agreement may be varied or amended or otherwise modified or only by the written agreement of the Parties, as evidenced by the signature of (a) the President of DCHA (or any other member of the DCHA Board designated in writing by the DCHA Board) and (b) the President of DCL (or any other duly designated executive officer of DCL).

11.4 No Third Party Beneficiaries. Notwithstanding the reference in this Agreement to various third parties, including other DCL Event Persons, this Agreement is solely between and for the benefit of the Parties, and nothing herein shall be construed to provide to any third parties any rights under this Agreement, including any right to claim the benefit of, or to enforce, any provision herein.

11.5 Validity, Legality and Enforceability. If any provision of this Agreement (or any portion thereof) or the application of any such provision (or portion) to any person or entity or circumstance shall be held invalid, illegal or unenforceable in any respect by a court of competent jurisdiction, such invalidity, illegality or unenforceability shall not affect any other provision hereof (or the remaining portion thereof) or the application of such provision to any other persons or circumstances.

11.6 Headings. The headings of the Sections in this Agreement form no part of this Agreement and may not be used to construe the provisions of this Agreement.

11.7 Meaning of Certain Terms. As used in this Agreement, unless otherwise required: (a) words of any gender include all genders; (b) words using the singular or plural number also include the plural or singular number, respectively; and (c) the word "including" shall mean "including, but not limited to."

11.8 Assignment. Neither this Agreement nor any of the rights or obligations hereunder may be assigned or otherwise transferred by DCHA or DCL without the prior written consent of the other (which consent, in the case of a requested assignment to a successor to owner of Diamond's Edge Restaurant, may not be unreasonably withheld by DCHA), provided that DCL may collaterally assign its rights in this Agreement in customary commercial formats to its financing sources as collateral for loans made in the ordinary course relating to the premises described in this Agreement. Any act which is inconsistent with the terms of this Section shall be null and void *ab initio*.

11.9 Binding Effect. This Agreement shall (a) inure to the benefit of each of the Parties and (b) be binding on each of the Parties.

11.10 Disputes. In the event of any controversy, or claim, action, suit or other proceeding (whether based on contract, law or any other basis) ("Dispute") between the Parties arising out of, in connection with, or relating to this Agreement (including with respect to the interpretation, validity, performance or breach of any provision(s) herein), the following provisions shall govern:

(a) Each Party hereby waives, to the fullest extent permitted by applicable law, any right it may have to a trial by jury in respect to any Dispute directly or indirectly arising out of, under, or in connection with, this Agreement or any other matter contemplated hereby. Each Party (a) certifies that no representative, agent or attorney of the other Party has represented, expressly or otherwise, that such other Party would not, in the event of a Dispute, seek to enforce the foregoing waiver and (b) acknowledges that it and the other Party hereto have been induced to enter into this Agreement by, among other things, the mutual waivers and certifications in this Subsection.

(b) In the event of any Dispute between the Parties, the prevailing Party shall be entitled to recover costs and reasonable attorneys' fees incurred in connection with the conduct of such Dispute. Any costs and reasonable attorneys' fees payable by a Party under this Subsection shall be as determined by the applicable court.

11.11 Notices. All notices required under this Agreement shall be personally delivered or sent by first class mail, postage prepaid to the addresses set forth below, or to such other addresses as DCHA and DCL may specify from time to time in writing.

If to DCHA, to:

Diamond Cove Homeowners Association
c/o Foreside Real Estate Management, Inc.
202 U.S. 1 #206
Falmouth, ME 04105
Attn: Jeff Martin, President

and

Verrill Dana LLP
One Portland Square
Portland, ME 04112-0586
Attn: Anthony M. Calcagni, Partner

If to DCL, to:

Diamond's Edge LLC
c/o Bateman Partners, LLC
470 Fore Street
Portland, ME 04101

11.12 Governing Law. This Agreement shall be governed by and construed in accordance with the internal laws of the State of Maine applicable to agreements made and to be performed entirely within such State, without regard to the conflicts of law principles of such State.

11.13 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together constitute one and the same agreement, and signatures may be delivered by facsimile.

[Signature Pages to Follow]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

WITNESS:

DIAMOND COVE HOMEOWNERS ASSOCIATION

By: W. Paul Woodley
Its: President

WITNESS:

DIAMOND'S EDGE LLC

By:
Its: Manager

FACILITIES AGREEMENT

THIS AGREEMENT is made this 20th day of June, 2013 by and between the **DIAMOND COVE HOMEOWNERS ASSOCIATION**, a Maine nonprofit corporation with an address c/o Phoenix Management Co., 40 Water Street, Saco, Maine 04072 ("DCHA"), and **THE INN AT DIAMOND COVE, LLC**, a Maine limited liability company with an address c/o Bateman Partners, LLC, 470 Fore Street, Portland, Maine 04101 (the "Inn"). DCHA and the Inn are sometimes referred to herein individually as a "Party" and collectively as the "Parties".

WITNESSETH:

WHEREAS, the Inn has entered into a Purchase and Sale Agreement with the City of Portland (the "City") to acquire certain property on Great Diamond Island in the City, County of Cumberland and State of Maine, being the building at Diamond Cove designated as Building 46 ("Building 46"), including all of the individual lots comprising Building 46 (collectively, the "Double Barracks Lots"), as shown on Third Amended Sheet 3 of a plan set entitled "Diamond Cove, Great Diamond Island, Portland, Maine, Plan of Diamond Cove" dated September 27, 1989 and recorded at the Cumberland County Registry of Deeds (the "Registry") in Plan Book 181, Page 36, as amended by plan dated February 21, 1994 and recorded at the Registry in Plan Book 194, Page 58, and as further amended by plan dated March 8, 1994 and recorded at the Registry in Plan Book 194, Page 67, and as further amended by plan dated June 10, 1998 and recorded at the Registry in Plan Book 198, Page 188, and as further amended by plan dated July 1, 1999 and recorded at the Registry in Plan Book 199, Page 340, and as further amended by plan dated February 5, 2001 and recorded at the Registry in Plan Book 201, Page 36, and as further amended by plans recorded at the Registry on August 22, 2002 in Plan Book 202, Pages 526-28;

WHEREAS, Building 46 and the surrounding common properties of Diamond Cove are subject to the covenants, conditions, restrictions, rights, easements, charges, liens and other matters set forth or referred to in a certain Amended and Restated General Declaration of Covenants and Restrictions dated December 17, 1993 and recorded at the Registry in Book 11277, Page 322; as modified by First Supplement dated February 25, 1994 and recorded at the Registry in Book 11307, Page 200, Amended and Corrected Second Supplement dated August 27, 1999 and recorded at the Registry in Book 15011, Page 87, Third Supplement dated February 5, 2001 and recorded at the Registry in Book 16009, Page 317, Fourth Supplement dated July 26, 2002 and recorded at the Registry in Book 17985, Page 251, and Fifth Supplement of near or even date herewith, to be recorded at said Registry; and as amended by Amendment recorded at the Registry on July 30, 2002 in Book 17897, Page 347, and Restated Second Amendment (the "Second Amendment") recorded at the Registry on August 1, 2011 in Book 28857, Page 122 (collectively, the "DCHA Declaration");

WHEREAS, DCHA has approved the Inn as an "Approved Developer" (as defined in the Second Amendment);

WHEREAS, the Inn contemplates developing Building 46, including the Double Barracks Lots, into a hotel condominium (the "Project") in accordance with the DCHA Declaration and all Rules and Regulations adopted in accordance with the DCHA Declaration (collectively, the "DCHA Governing Documents"), and all of the agreements, permits, approvals and other instruments and documents that govern the development and operation of Building 46, including but not limited to the Portland City Council Amendment to Conditional Zone dated Sept. 15, 2008, as amended Feb. 22, 2012, the City of Portland Planning Board Site Plan and Subdivision Approval of March 2012, as modified and revised, the Maine Department of Environmental Protection MPDES Permit and Waste Discharge License Transfer and Renewal dated Sept. 15, 2009, as revised Oct. 21, 2011 and Sept. 14, 2012, and the Maine Department of Environmental Protection Site Location Minor Amendment dated Sept. 23, 2009, as revised Oct. 12, 2011, Mar. 8, 2012, and Sept. 26, 2012 (collectively, the "Inn Governing Documents"), and this Agreement;

WHEREAS, pursuant to the Second Amendment, the Inn is increasing the number of Double Barracks Lots to twenty-two (22), and the Inn initially will be the owner of all of the Double Barracks Lots;

WHEREAS, the Inn has formed a Maine nonprofit corporation, named The Inn at Diamond Cove Condominium Association, to act as a condominium association for the Double Barracks Lots (the "Inn Association");

WHEREAS, the Inn contemplates engaging a management company to manage and conduct the day-to-day business and affairs of the Project (the "Inn Management Company");

WHEREAS, DCHA and the Inn desire to document certain agreements related to (a) the conduct of the business and affairs of the Inn, and (b) certain rights and obligations related thereto of DCHA and the Inn, Inn Association, and the Inn Management Company, respectively;

NOW, THEREFORE, DCHA and the Inn hereby agree as follows:

SECTION 1. USE OF DCHA ADMINISTRATION BUILDING. The Inn acknowledges and agrees that DCHA uses the so-called Administration Building at Diamond Cove to provide office space for certain personnel of the management company engaged by DCHA to provide operational and other services to DCHA and its members (the "DCHA Management Company"), to provide recreational facilities for the members of DCHA, to hold meetings of DCHA and groups of members of DCHA and for other events, functions and activities of DCHA or one or more members of DCHA. DCHA will, however, permit the Inn to use the two rooms on the second floor (on the right) of the Administration Building (the "DCHA AB Space") to conduct events or functions for registered guests at the Double Barracks Lots; provided that (i) the Inn provides DCHA with at least fourteen (14) days' prior written notice of its desire to use the DCHA AB Space (which notice shall contain the name of such guest(s) for or by which such Space will be used and a description of the event or other function to be held, including the scheduled starting and ending times), and (ii) neither DCHA nor any member or group of members has reserved such Space prior to the receipt by DCHA of such notice. In

consideration of the right of the Inn to use the DCHA AB Space, the Inn shall pay to DCHA an amount equal to Three Hundred Fifty Dollars ($350.00) for each day (or partial day) of such use, subject to adjustment as set forth in Section 5.

SECTION 2. USE OF CERTAIN OTHER DCHA FACILITIES. The Inn acknowledges and agrees that DCHA has certain facilities that members of DCHA and renters at Diamond Cove, and guests of such members, are permitted to use, including the Gymnasium, the Bowling Alley, the Art Gallery and the Fitness Facility. The Inn further acknowledges and agrees that DCHA has an agreement with Diamond's Edge LLC ("DE") that grants DE the right to use the Art Gallery and that DCHA reserves the right to lease or license any and all of its facilities to other parties for their use in connection with such events, functions or other activities as may be determined by DCHA.

2.1 Use of the Gymnasium, the Bowling Alley, and the Art Galley. DCHA will license the Gymnasium, the Bowling Alley and the Art Gallery to the Inn on an exclusive basis during the term of such license to enable the Inn to conduct events or functions for registered guests at the Double Barracks Lots; provided that (i) the Inn provides to DCHA at least fourteen (14) days prior written notice of its desire to use the applicable facility(ies) (which notice shall contain the name(s) of such guests for or by which the applicable facility(ies) will be used and a description of the event or other function to be held, including the scheduled starting and ending times) and (ii) neither DCHA nor any member or group of members of DCHA has, or, in the case of the Art Gallery, DE has not, reserved the applicable facility(ies) prior to the receipt by DCHA of such notice. The exclusive use fees for each of these facilities is set forth below:

(a) Gymnasium: Four Hundred Fifty Dollars($450.00) per day (or part thereof).

(b) Bowling Alley: Four Hundred Fifty Dollars($450.00) per day (or part thereof).

(c) Art Gallery: Three Hundred Fifty Dollars ($350.00) per one-half day (or part thereof).

2.2 Use of the Fitness Facility. During the part of year that the Project is open for business, the Inn will pay to DCHA a base fee of One Thousand Dollars ($1,000.00) per month for the non-exclusive use of the Fitness Facility by registered guests at the Double Barracks Lots, which monthly fee amount shall be subject to adjustment as set forth in Section 5. Prior to any use by any such guests, the Inn shall, at its own cost and expense, install an electronic card reader system to track usage by such guests. The Inn shall provide to DCHA a description and other details of such card reader, as well as the installation plan, for approval by the DCHA Board of Directors at least thirty (30) days prior to the scheduled start date for its installation. The Inn also shall provide to DCHA, on a monthly basis, an electronic or hard copy of all usage information that the Inn collects via the use of such system and otherwise.

2.3 Use of Other Common Recreation Areas. DCHA acknowledges and agrees that registered guests at the Double Barracks Lots may use all facilities and common recreation areas at Diamond Cove that renters at Diamond Cove are permitted to use free of charge, except for (a)

the Fitness Facility (as to which (i) use by such guests will be subject to the compliance by the Inn with Subsection 2.2 and (ii) such guests will be charged a fee directly by the Inn), and (b) the swimming pool and related facilities located on the so-called Parade Ground.

SECTION 3. SOLID WASTE REMOVAL. The Inn acknowledges and agrees that it has the obligation, at its own cost and expense, to store all solid waste generated at Building 46 in a lower level of Building 46. DCHA agrees to have personnel of the DCHA Management Company pick up such waste once per week, on the same date that such personnel perform such services for other members of DCHA, and will dispose of it at a private or public disposal facility on the mainland. In the event that any of the Inn Governing Documents shall include a condition or requirement pertaining to solid waste removal that results in additional costs being incurred by the DCHA in connection with its disposal of such solid waste (e.g., a requirement that such solid waste be disposed of at EcoMaine, as opposed to any other waste disposal facility used by the DCHA), such additional costs incurred by the DCHA shall be reimbursed by the Inn on the next date that monthly assessments are to be paid by members of DCHA.

DCHA acknowledges and agrees that it intends to continue to hold discussions with the City with respect to a project that it hopes would reduce the cost of removing solid waste from Diamond Cove and will otherwise attempt to develop a plan that would reduce the cost of such removal. The Inn acknowledges and agrees that DCHA is not in complete control of the foregoing efforts and that there can be no assurance of reducing the costs of solid waste removal from Diamond Cove. The Inn further acknowledges that such efforts do not, and will not, involve efforts specific to the Inn, as opposed to all members of DCHA generally.

SECTION 4. WAIVER OF RENTAL PROGRAM FEE. The Inn acknowledges and agrees that DCHA permits its members to rent their homes to the general public and charges any and all of its members that do so a rental fee (the " Rental Fee"). DCHA acknowledges and agrees that the Inn, in the ordinary course of its business, will be renting the Double Barracks Lots to the general public and, therefore, DCHA agrees that the Inn will not be obligated to pay the Rental Fee with respect any Double Barracks Lots that it leases or licenses in the ordinary course of its business. The foregoing waiver of the Rental Fee shall apply to a Double Barracks Lot only so long such Double Barracks Lot is used as part of an "inn" under common management with all other Double Barracks Lots and such inn is open to the general public.

SECTION 5. PAYMENT OF FEES; REVIEW AND POSSIBLE ADJUSTMENT OF CERTAIN FEES PAYABLE BY THE INN.

5.1 Payment of Fees. Except as otherwise expressly provided herein, all fees and other amounts payable by the Inn to DCHA hereunder shall be payable on the date that monthly assessments are to be paid by members of DCHA following the date on which the relevant facilities were provided by DCHA for use for or by the registered guests at the Double Barracks Lots. The rules that govern the failure to pay or timely pay any such fees and other amounts shall be identical to the rules applicable to the failure of any member of DCHA with respect to the payment of assessments, as set forth in the DCHA Declaration and By-Laws and the policies, rules and regulations adopted from time-to-time by the DCHA Board of Directors and provided

to members of DCHA, including the provision requiring the payment of interest at the rate of eighteen percent (18%) per annum when a payment is not made within thirty (30) days after its due date.

5.2 Review and Possible Adjustment of Certain Fees Payable by the Inn.

(a) Fees for the Exclusive Use of the DCHA AB Space, Gymnasium, the Bowling Alley and the Art Gallery.

(i) The Parties shall meet, at least thirty (30) days before the end of each fiscal year of DCHA, beginning with the end of the third fiscal year in which the Project has been in operation, to discuss changes in the rates being charged pursuant to Subsection 2.1. In considering such changes the Parties shall take into account changes in operating expenses (including, without limitation, with respect to insurance and maintenance) and, in addition, in the case of the Art Gallery, the fee being paid by DE.

(b) Fee for the Use of the Fitness Facility. The Parties acknowledge and agree that the One Thousand Dollar ($1,000.00) base fee set forth in Subsection 2.2 was premised on the number of registered guests estimated by the Inn to use the Fitness Facility during each fiscal year of operation of the Project determined at the notional rate of Three Dollars ($3.00)/guest per day of use. Within thirty (30) days after the end of first fiscal year of DCHA that includes the operation of the Project, the Parties will use the data collected pursuant to Subsection 2.2 to determine what the actual usage fee would have been using such notional Three Dollar ($3.00) rate and, if the actual aggregate usage fee is different by ten percent (10%) or more than the base fee, the Parties shall make a true-up calculation and either DCHA shall pay to the Inn the shortfall in achieving the One Thousand ($1,000.00) base fee or the Inn shall pay to DCHA the amount by which the actual aggregate usage fee exceeds such base fee, with any such payment to be made within thirty (30) days after such true-up. In addition, at least thirty (30) days before the end of each fiscal year of DCHA beginning with the end of third fiscal year in which the Project has been in operation, the Parties shall meet to discuss changes in such notional rate.

SECTION 6. COMPLIANCE BY THE INN, INN ASSOCIATION, INN MANAGEMENT COMPANY, AND INN GUESTS.

6.1 The Inn, Inn Association, and Inn Management Company. The Inn acknowledges it has received complete copies of the DCHA Governing Documents, including the Declaration (as modified and amended) and the Rules and Regulations (including Design Review Process and Design Guidelines, Contractor Guidelines and Barge Landing Rules, Pets, Rentals, and Lien and Collection Policy). The Inn covenants and agrees to provide (a) the Inn Association (upon its formation), (b) the Inn Management Company (upon its engagement by the Inn) and (c) any other parties that perform any services for the Inn (collectively, the "Inn Parties"), copies of the DCHA Governing Documents and the Inn Governing Documents and any provisions of this Agreement that are relevant to the work or services to be provided by them. The Inn further covenants and agrees to cause each of the Inn Parties to execute and deliver to DCHA a letter agreement for its benefit and in form and substance reasonable satisfactory to it that

acknowledges the receipt of such Documents and states, among other things, their commitment and obligation to comply with all of the provisions therein (collectively, the "Inn Parties Letter Agreement") .

6.2 Inn Guests. The Inn covenants and agrees to provide to all registered guests at the Double Barracks Lots a written description of the usage rights and restrictions applicable to such guests with respect to their stay at Diamond Cove and (b) a written summary of the any important rules governing such stay, including any relevant conditions and restrictions in the DCHA Governing Documents, such description and summary to be in form and substance reasonably satisfactory to DCHA.

SECTION 7. INSURANCE AND INDEMNIFICATION.

7.1 Insurance. The Inn shall maintain at all times with respect to the Project, commercial general liability insurance as required by Section 3(g) of the Second Amendment, property insurance for the Double Barracks Lots as required by Section 9.7 of the DCHA Declaration, and such other insurance as may be reasonably required by DCHA (including, without limitation, comprehensive automobile liability insurance, workers' compensation insurance and employer liability insurance). Certificates of such insurance shall be delivered to DCHA at or prior to the commencement of construction of the development of Building 46, and thereafter upon request and within twenty (20) days prior to the expiration of such policies. The policies providing such insurance shall include a provision that such insurance shall not be terminated or substantially changed by the insurer without twenty (20) days' prior written notice to DCHA. Each liability policy shall be endorsed to provide that such coverage shall be primary, and that any coverage maintained by DCHA shall be excess insurance only.

7.2 Indemnity. The Inn shall indemnify and save harmless DCHA from and against any and all suits, claims, demands, damages, costs, expenses, penalties, debts, liabilities, obligations or judgments arising out of, occasioned by, or related to (a) damage to any property at Diamond Cove and (b) death or injury to any registered guest or other person sustained at (i) the Project and (ii) facilities and common recreation areas at Diamond Cove, except, in the case of the immediately preceding clause (a) and clause (b)(ii), to the extent caused by the negligence or willful misconduct of DCHA. If DCHA shall be made the subject of any claim or demand, or a party to any action, arising out of or in connection with any circumstance for which DCHA is entitled to be indemnified against hereunder, the Inn shall pay all costs, expenses and reasonable attorneys' fees incurred or paid by DCHA in connection with such claim, demand or action as well as all sums which DCHA may be called upon to pay by reason of the entry of any judgment against DCHA in such action, except to the extent of any of the foregoing that is attributable to the negligence or willful misconduct of DCHA. The obligations contained in this Section shall survive the expiration or earlier termination of this Agreement.

SECTION 8. EFFECTIVE DATE; TERM AND EXTENSION OF AGREEMENT; TERMINATION AND SURVIVAL.

8.1 Effective Date. This Agreement shall become effective on the date on which the last of the following shall have occurred (the "Effective Date"): (a) the City of Portland has conveyed all Double Barracks Lots to the Inn; and (b) a certificate of occupancy for each of the twenty-two (22) Double Barracks Lots is issued by the City of Portland. In the event that Effective Date shall not occur by December 31, 2014, then this Agreement shall be terminated and rendered null and void.

8.2 Term and Extension.

(a) This Agreement shall have an initial term five (5) years from the Effective Date, unless sooner terminated by a Party pursuant to Section 9 below or by mutual written agreement of the Inn and DCHA.

(b) This Agreement is entered into for the mutual benefit of the Inn and DCHA and serves as a material inducement to the Inn to proceed with the construction of the Project. In the event this Agreement is not sooner terminated pursuant to Section 9 or by mutual written agreement of the Inn and DCHA, this Agreement shall be considered automatically extended for five (5) year terms, without notice, through the expiration or earlier termination of the Ground Lease Agreement between the Inn and DCHA.

SECTION 9. DEFAULTS:

9.1 In the event (i) of the Inn's failure to pay any fee or other amount due hereunder within ten (10) days after receipt by the Inn in writing of DCHA's notice of default; (ii) of the Inn's failure to secure insurance or to provide evidence of insurance as set forth in Section 7.1, where such failure shall continue for a period of ten (10) days after receipt by the Inn in writing of DCHA's notice of default; or (iii) the Inn shall assign this Agreement without complying with all the provisions of Section 11.8; or (iv) of the Inn's failure to keep or perform any of the other covenants and agreements, or meet any of the conditions, herein contained on the Inn's part to be kept or performed or met, respectively, and the continuance of such failure without the curing of same for a period of thirty (30) calendar days after receipt by the Inn of a notice in writing from DCHA specifying the nature of such failure, and provided the Inn shall not cure said failure as provided in this Section; then in any such event, DCHA may, at its option, give to the Inn a notice of election to terminate the term of this Agreement upon a date specified in such notice, which date shall be not less than five (5) business days (Saturdays, Sundays, and legal holidays excluded) after the date of receipt by the Inn of such notice from DCHA. Upon the date specified in such notice, this Agreement shall be terminated and rendered null and void, but any such termination shall be without prejudice to any rights or remedies of the DCHA, whether pursuant to this Agreement and/or at law and/or in equity, in respect of arrearages of fees and other amounts payable by the Inn to DCHA hereunder and/or any and all previous breaches of this Agreement by the Inn, and any and all of the provisions of this Agreement that provide

rights and/or remedies with respect to such fees and other amounts and breaches shall survive such termination.

9.2 If the Inn fails to pay any fee and/or other amount when due under this Agreement and DCHA has sent the Inn written notice of default as set forth in Subsection 9.1(i) above, then upon demand, in addition to the interest charge provided in Section 5.1, the Inn shall pay DCHA, as an additional charge, all costs and expenses (including reasonable attorneys' fees) reasonably incurred by DCHA in collecting any overdue fee and/or other amount or in enforcing any of the other provisions of this Agreement of which the Inn shall be in default beyond any period provided to the Inn for curing the default.

9.3 In the event that DCHA gives notice of a non-monetary default described in Subsection 9.1(iv) above of such a nature that it cannot be cured within the thirty (30) day period specified in such Subsection, then such default shall not be deemed to continue so long as the Inn, after receiving such notice, proceeds and continues in good faith to cure the default as soon as reasonably possible and continues to take all steps reasonably necessary to complete the same within a period of time which, under all prevailing circumstances, shall be reasonable, but in no event shall such period of time exceed ninety (90) days after the notice provided in such Subsection.

SECTION 10. INDEPENDENT CONTRACTOR. The Inn is undertaking the obligations set forth herein as an independent contractor. The Inn is not an agent, employee or other representative of DCHA and will not hold itself out to third parties as any of such. This Agreement shall in no way be deemed to create a partnership, joint venture, or principal/agent or any fiduciary relationship between DCHA and the Inn, and the Inn will not hold itself out to third parties as any of such.

SECTION 11. MISCELLANEOUS.

11.1. No Representations. Each Party acknowledges that neither the other Party, nor any agent or attorney of the other Party, has made any promise, representation or warranty whatsoever, expressed or implied, not expressly contained in this Agreement concerning the subject matter of this Agreement, to induce such Party to execute and deliver this Agreement and acknowledges that such Party has not executed or delivered this Agreement in reliance upon any promise, representation or warranty not contained herein, including by DCHA with respect to any aspect (including the physical condition or operability) of its infrastructure or other portion of its properties.

11.2 Entire Agreement. This Agreement constitutes the entire agreement between the Parties relating to the subject matter of this Agreement. This Agreement supersedes all prior agreements between DCHA and the Inn with respect to its subject matter. For the purposes of clarity, the Parties acknowledge and agree that the two (2) preceding sentences are not applicable to the DCHA Declaration and the other DCHA Governing Documents, all of which will continue to be applicable to the relationship between the Parties.

11.3 Amendment or Modification. This Agreement may be varied or amended or otherwise modified or only by the written agreement of the Parties, as evidenced by the signature of (a) the President (or any other director of DCHA designated in writing by the DCHA Board of Directors) of DCHA and (b) the President (or any other duly designated executive officer) of the Inn.

11.4 No Third Party Beneficiaries. Notwithstanding the reference in this Agreement to various third parties, including the City, the Inn Management Company, and the Inn Association, this Agreement is solely between and for the benefit of the Parties, and nothing herein shall be construed to provide to any third parties any rights under this Agreement, including any right to claim the benefit of, or to enforce, any provision herein.

11.5 Validity, Legality and Enforceability. If any provision of this Agreement (or any portion thereof) or the application of any such provision (or portion) to any person or entity or circumstance shall be held invalid, illegal or unenforceable in any respect by a court of competent jurisdiction, such invalidity, illegality or unenforceability shall not affect any other provision hereof (or the remaining portion thereof) or the application of such provision to any other persons or circumstances.

11.6 Headings. The headings of the Sections and Subsections in this Agreement form no part of this Agreement and may not be used to construe the provisions of this Agreement.

11.7 Meaning of Certain Terms. As used in this Agreement, unless otherwise required: (a) words of any gender include all genders; (b) words using the singular or plural number also include the plural or singular number, respectively; and (c) the word **"including"** shall mean "including, but not limited to."

11.8 Assignment. Neither this Agreement nor any of the rights or obligations hereunder may be assigned or otherwise transferred by the Inn without the DCHA's prior written consent, which consent may be withheld by DCHA in its sole and absolute discretion, provided this Agreement may be assigned by the Inn as collateral for any financings which the Inn may desire to undertake with respect to the Project.

11.9 Binding Effect. This Agreement shall (a) inure to the benefit of each of the Parties and (b) be binding on each of the Parties.

11.10 Disputes. In the event of any controversy, or claim, action, suit or other proceeding (whether based on contract, law or any other basis) ("Dispute") between the Parties arising out of, in connection with, or relating to this Agreement (including with respect to the interpretation, validity, performance or breach of any provision(s) herein), the following provisions shall govern:

(a) Each Party hereby waives, to the fullest extent permitted by applicable law, any right it may have to a trial by jury in respect to any Dispute directly or indirectly arising out of, under, or in connection with, this Agreement or any other matter contemplated hereby. Each Party (a) certifies that no representative, agent or attorney of the other Party has represented, expressly or

otherwise, that such other Party would not, in the event of a Dispute, seek to enforce the foregoing waiver and (b) acknowledges that it and the other Party hereto have been induced to enter into this Agreement by, among other things, the mutual waivers and certifications in this Subsection.

(b) In the event of any Dispute between the Parties, the prevailing Party shall be entitled to recover costs and reasonable attorneys' fees incurred in connection with the conduct of such Dispute. Any costs and reasonable attorneys' fees payable by a Party under this Subsection shall be as determined by the applicable court.

11.11 Notices. All notices required under this Agreement shall be personally delivered or sent by first class mail, postage prepaid to the addresses set forth below, or to such other addresses as DCHA and the Inn may specify from time to time in writing.

If to DCHA, to:

Diamond Cove Homeowners Association
c/o Phoenix Management Company
P.O. Box 759
Saco, ME 04072
Attn: President

and

Verrill Dana LLP
One Portland Square
Portland, ME 04112-0586
Attn: Anthony M. Calcagni, Partner

If to the Inn, to:

The Inn at Diamond Cove, LLC
c/o Bateman Partner, LLC
470 Fore Street
Portland, ME 04101

11.12 Governing Law. This Agreement shall be governed by and construed in accordance with the internal laws of the State of Maine applicable to agreements made and to be performed entirely within such State, without regard to the conflicts of law principles of such State.

11.13 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together constitute one and the same agreement, and signatures may be delivered by facsimile.

[Signature Pages to Follow]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

WITNESS:

DIAMOND COVE HOMEOWNERS ASSOCIATION

By:_____
Its: President

WITNESS:

_____

THE INN AT DIAMOND COVE, LLC

By:_____
David P. Hart
Its: Manager

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

WITNESS:

DIAMOND COVE HOMEOWNERS ASSOCIATION

By: _____
Its: President

WITNESS:

THE INN AT DIAMOND COVE, LLC

By: _____
David P. Hart
Its: Manager

DrummondWoodsum
ATTORNEYS AT LAW

Ronald N. Ward
Admitted in ME

207.253.0503
mward@dwmlaw.com

84 Marginal Way, Suite 600
Portland, Maine 04101-2480
207.772.1941 Main
207.772.3627 Fax

February 23, 2018

Via Hand Delivery

Barbara Barhydt
Development Manager
Portland Planning Board
389 Congress Street
Portland, Maine

RE: Site Plan Application- The General Store At Diamond Cove

Dear Ms. Barhydt and Board Members:

This office generally represents The Inn At Diamond Cove ("IDC"). It has recently become aware of this public hearing and is now pulling together with other Members of the Association to be heard at the Planning Board hearing on Tuesday. This letter has been preceded by the email from Ken Wood, Engineer, who is also a long- standing Member of the Homeowner's Association. Our apologies for the lateness of the hour, but the general awareness of this hearing has been unusually slow to develop, preceded by very little, if any, discussions with the Developer concerning her intentions.

The concern of IDC lies with impacts upon the common overboard discharge system which is federally-licensed facility, monitored and enforced by the Maine Department of Environmental Protection. That system is very close to its licensed capacity and any excess discharge would have serious consequences for all Members of the Association, and particularly so for IDC. Millions of dollars have been invested in restoring the Inn and any suspension of access to the system for violations of capacity would be an economic blow of dramatic consequence. IDC needs all future impacts to be carefully reviewed and conditioned to protect its investment.

We've seen the Developer's Application to the City. Both the design of the facility and the "calculations" of flow resulting from "paper- based" operations leave us unconvinced that the current Application does enough to assure all Association members that the apparent design has accurately addressed the potential flows and grease trap design. IDC has retained Gorrill- Palmer, consulting engineers, to review these issues for us. Gorrill- Palmer will share its conclusions with the Board on Tuesday, and be prepared to answer any questions the Board may have. In order to be even- handed on this issue, the Board referring these issues out for an independent peer review would be something IDC would support.

We look forward to detailing our concerns for the Board on Tuesday.

Sincerely,

Ronald N. Ward

Cc: Manager, The Inn At Diamond Cove

Google Groups

Change of Use Application for 255 Diamond Avenue (Building 32), Diamond Cove

Brian Willing <brian.d.willing@gmail.com> Feb 23, 2018 9:32 AM

Posted in group: **Planning Board**

Please find attached letter in opposition to the application for change of use of 255 Diamond Avenue (building 32), Diamond Cove for the February 27, 2018 planning board meeting.

Brian Willing

BRIAN WILLING

2 Misty Way

Falmouth, ME 04105

February 22, 2018

Sean Dundon, Chair
Planning Board, City of Portland
389 Congress Street
Portland, ME 04101

RE: Change of Use Application for 255 Diamond Avenue (Building 32), Diamond Cove

Dear Mr. Dundon:

I own property located at 170 Diamond Avenue, Diamond Cove, just up the road from the General Store property at 255 Diamond Avenue (Building 32), and I write to express my strong opposition to the change of use application submitted by Alex Wright and Gail Landry (the "Applicants") relating to the General Store property at 255 Diamond Avenue, Diamond Cove.

Diamond Cove needs a general store as the hub of the island community. It does not need another restaurant. The applicants purchased the property at 255 Diamond Avenue as a general store, not a restaurant. Although they "operated" it as a store for one summer (2017), they did not make any effort to operate it successfully – at least by all outward appearances. It was consistently under stocked, frequently closed for hours at a time (even on holiday weekends) and the applicants themselves were never on site. (I am a regular customer at the general store and have never even laid eyes on either of the applicants.)

The applicants and the store managers that they employed to run the general store last summer made no effort to ingratiate themselves with the island community. They initially promised store jobs to several teenagers with families who reside at Diamond Cove and then informed the teens after summer had already started that there were no jobs after all (after the families and teens had already made their summer plans with the expected jobs in mind). In late July of 2017, after many in the island community had become concerned that the applicants planned to change the general store into a restaurant, the applicants sent a representative to the annual Association meeting and reassured the Association that the

rumors were wrong and they did not plan to change the store into a restaurant. They then began moving ahead with their planned change in use just a few weeks later. (I'm not sure that any of the above was the best way for the applicants to win over the island customer base unless they do not see the island community as their customer base at all.)

The applicants have clearly intended to change the general store into a restaurant from the beginning and to market the restaurant primarily to off islanders, whereas the general store has always been operated primarily for the benefit of island residents. Of course, an increase in off islanders to the island to go to this new restaurant will likely mean increased island foot traffic, property maintenance cost increases, added security concerns, increased water and sewer usage, added garbage disposal costs, noise increases, etc….

How do the applicants plan to reimburse the Association and the City of Portland for the increased costs associated with their proposed change in use. They currently pay the same Association dues as regular homeowners do, but their increased usage of the island's amenities, and the costs associated therewith, will be 10x, 20x or more than that of an average Diamond Cove homeowner paying the same Association dues. Do Diamond Cove homeowners, and the City, have to bear this increased financial and liability burden, or do the applicants plan to reimburse the Association and the City? If so, how much?

The applicants have not reached any agreement with the Association about any of these issues. Shouldn't the Association's prior approval be a necessary precursor to any application for a change in use, especially considering the increased costs and liability that the Association would necessarily incur as a result of the proposed change in use.

The applicants have apparently told the DEP that they will use paper plates, etc… at their restaurant in hopes of addressing any issues with increased waste water disposal. Who is going to check to make sure they are keeping this promise next summer? Five years from now? 10 years from now? What happens if they fail to use paper plates, etc…? How will enforcement work if they do not comply? Regardless, paper plates, etc… do not even address any of the other potential cost and liability increases.

I understand and respect that the applicants have their own dreams for the property. On the other hand, they need to understand and respect that they purchased property that is part of an Association and island community. To date, the applicants have not shown any

inclination in working with the Association or their neighbors in the island community concerning their proposed change in use.

I would suggest – in good faith – that the applicants withdraw their pending change of use application and instead start fresh this coming summer. Operate the general store property as a store for one more summer and spend significant time on the island, make an attempt to meet and get to know their island neighbors so that they can better assess what makes the most sense for the general store property in the future. Maybe the applicants will decide to continue operating a new and improved general store, maybe they will decide that they still want to change it to a restaurant and resubmit their change in use application, or maybe they will come up with an even better idea that the Association and island community will support. If they will not withdraw the application, however, I would request that it be denied.

Thank you for attention to this matter.

Sincerely,

Brian Willing

Cc: DCHA Board

Google Groups

Change of Use of the General Store

Richard A. Molyneux <ramolyneux@gmail.com> Feb 23, 2018 9:57 AM

Posted in group: **Planning Board**

Portland Planning Board,

Ladies and gentlemen. I understand that the Portland Planning Board is scheduled to review the Change of Use of the General Store at Diamond Cove, Great Diamond Island. I have been a Diamond Cove homeowner for 14 years, and served on the Board of Directors for 8 years.

I have recently been hearing voices, both in favor and opposition to the "change" of the store, a refrain many of us recall all too well from the 3 year legal battle over the renovation of the former military Double Barracks building into the Inn that exists today. While a number of people at that time were opposed to it being developed on the belief that it would ruin the character and tranquility of the island, the Inn has, in fact, turned out to be a great addition to the Diamond Cove community, something no objective person today could deny. Having spent 45 years in business, this also reinforced my belief that no material improvement takes place in our communities unless people are willing to risk the investment of time and money, as was the case with the Inn, and will be with the store today.

The fact is that the "change" in the general store, from a store to a store/restaurant, really is not a change at all. Much of the store's revenue has always come from prepared food service, not groceries. One could conclude that this application simply formalizes past practices going forward.

The general store has always been a very significant part of the Diamond Cove culture, often referred to as the "hub of the island". It would be devastating to lose it as an operating entity.

In summary, while everyone has the right to express their personal opinions, as I have, as long as the proposed operation does not violate DEP regulations, Portland codes, and Diamond Cove by-laws, it is ultimately a business proposition and a principal our country was built upon, called free enterprise.

Sincerely,

Richard Molyneux

Google Groups

Hearing - Change of Use for General Store Diamond Cove

Rowley Ready Mix, Inc <rrm2544@gmail.com> Feb 23, 2018 9:50 AM
Posted in group: **Planning Board**

Attached please find a letter I would like as part of the packet for the Diamond Cove General Store Hearing on February 27th.

Downey Shea

Downey Shea

48 Ingalls Road Building 15c

Diamond Cove, ME

February 23, 2018

Submitted to: City of Portland

Planning Board

RE: Change of Use for General Store Building 32 at Diamond Cove Hearing

In the above reference, I, as a resident of Diamond Cove, am requesting that there should not be a change in the use of the General Store. Building 32 was restored as a General Store and should remain as its original intent.

Downey Shea

Downey Shea

PC20

Google Groups

General Store (Building 32) at Diamond Cove/Change of Use Hearing Feb 27 PLEASE VERIFY RECEIPT

Bobby Spark <bspark@me.com> Feb 23, 2018 11:56 AM
Posted in group: **Planning Board**

Dear City of Portland Planning Board Members,

We have been property owners at Diamond Cove (17 Hussey Lane, aka Lot 66) for 20 years.
The **change of use** application for the General Store, building 32, to a 35 seat restaurant concerns us deeply.

This building and its use exists in a **private homeowners association**. We pay not only taxes to the City of Portland, but HOA fees to ensure a certain quality of environment and privacy.
With that every property owner in this association should have been notified of this application AND be a part of this decision.

The City of Portland may be able to "absorb "another restaurant without much impact, but Diamond Cove is not the same

The General Store as the HOA has always known it, is **low impact** and used and/or useful to every homeowner already here at DC
A 35 seat restaurant is an **expansion of use** that does not really benefit the community at large
At the top of our concerns, is that it brings more transient people to the area while taxing our **security system**, that being **already severely over taxed** during the summer.

The use of paper and plastic products (solely) in order to skirt the issue of our limited waste water system is perplexing, especially in our increasingly "Green" society

Though this change of use application in only now happening, it was apparent to us that demolition on the interior of this building had already begun back in 2017 and certainly the published construction schedule matches that.
On top of that, there seems to be a question of whether a permit even exists for this work? **The integrity of this application and project is certainly compromised.**

In closing, we are opposed to the Change of Use for Building 32, the General Store at Diamond Cove as it is currently presented.

Thank you for your time and consideration

John and Bobby Spark
Lot 66
Diamond Cove

Google Groups

Fwd: Restaurant at Diamond Cove

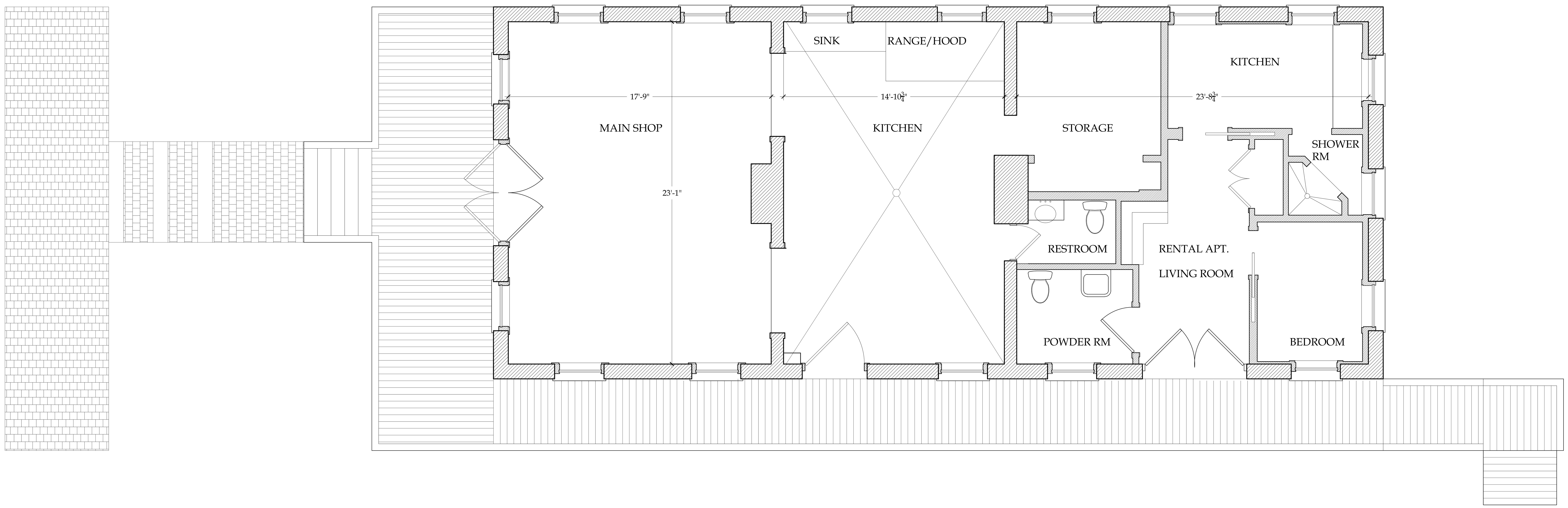
Shukria Wiar <shukriaw@portlandmaine.gov> Feb 23, 2018 1:09 PM
Posted in group: **Planning Board**

---------- Forwarded message ----------
From: "Edward Maas" <etmaas@myfairpoint.net>
Date: Feb 23, 2018 1:06 PM
Subject: Restaurant at Diamond Cove
To: <shukriaw@portlandmaine.gov>
Cc:

As a year round resident of Diamond Cove and a registered voter in Portland, Maine, I offer some concerns regarding the proposed restaurant in what was the “general store” building at Diamond Cove. These concerns are: 1) ALL of Diamond Cove is private property with only some of the roads being open to the public for specifically for access to the Inn, Diamond’s Edge Restaurant and the original general store. Assuming the proposed restaurant hopes to attract off-island customers, what provision will the proprietors of this proposed business take to keep off-islanders from trespassing and wandering about private property?
2) As a sit down restaurant, and a pricey one at that considering the prices at the “General Store” at Diamond Cove that the same proprietors operated in 2017, what clientele would be willing to pay to eat off of paper plates using plastic disposable utensils? 3)The waste water production is a problem which must be thoroughly considered and rigidly enforced.

Thank you for considering these points.

Edward T. Maas
59 Moon Garden Way
Diamond Cove, Maine



PLAN: EXISTING CONDITIONS

1
EX-1.0

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

WALL KEY:

EXISTING PARTITION WALLS

86 PONDFIELD ROAD WEST, BRONXVILLE, NEW YORK 10708

The information contained in these documents is general in nature and, as such, may not describe all components or conditions necessary for the completed project. The Contractor, by using these documents as part of any effort to establish a Guaranteed Maximum Price (GMP) for construction, acknowledges the incomplete nature of the information contained herein, and will therefore incorporate reasonable amounts in their estimate necessary to provide a complete project that is consistent with the design intent of the these documents. The contractor is responsible for all mechanical, electrical and plumbing features indicated in the documents provided as complete and working systems. Any feature indicated in one discipline is assumed to be included and coordinated in all. Should the contractor note any conflicting or contradictory information in these documents, he is instructed to notify the designer and client as soon as possible or identify as a separate "line item" and price the more costly of the differing conditions.

REVISIONS

DATE	REMARKS

PRINTED

DATE	REMARKS

EXISTING PLAN SECTION

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NASTASI VAIL DESIGN, LLC

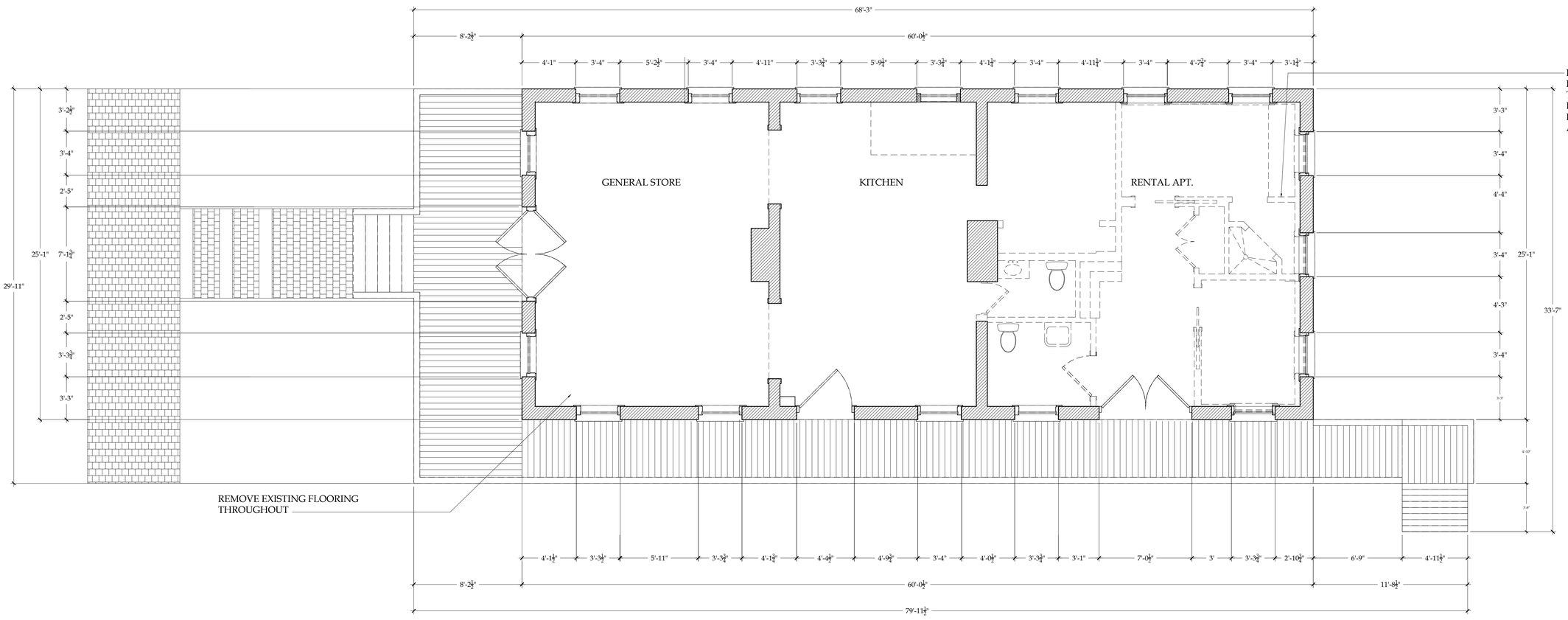
MRS. ALEXANDRA WIGHT

GENERAL STORE, GREAT DIAMOND ISLAND
PORTLAND, MAINE 1231

DATE 8/8/17

SCALE AS NOTED

SHEET NO. EX-1.0



WALL KEY:

EXISTING PARTITION WALLS

DEMO WALLS

1 DEMO — DEMO PLAN VIEW

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

NASTASI VAIL DESIGN, LLC

86 PONDFIELD ROAD WEST, BRONXVILLE, NEW YORK 10708

The information contained in these documents is proposed in nature and, as such, may not describe all components or conditions necessary for the completed project. The Contractor is responsible for reviewing these documents prior to the submission of the Maximum Price (GMP) for construction, acknowledging the incomplete nature of the documents and including all components necessary for the proper execution and completion of the intent of the project. The Contractor is responsible for all means, methods, techniques, sequences and procedures. The Contractor is responsible for the proper execution of all construction and for initiating, maintaining and supervising all safety precautions and programs in connection with the project. The Contractor is responsible for all temporary facilities and controls, including temporary utilities, as required for the complete and orderly construction of the project. The Contractor is responsible for complying with any and all applicable laws, codes, rules and regulations. The Contractor is responsible for providing any and all bracing, shoring, underpinning and any other measures required to protect the existing structure during all phases of demolition and construction. The Contractor is responsible for the coordination of the work of all trades. The Contractor is responsible for performing construction in a manner that will not interfere or cause any conflict with other construction being performed adjacent to the site. In the event that the Contractor encounters any material or substance which he believes may be hazardous to the environment, he shall immediately bring the situation to the attention of the Owner in writing. The Contractor shall not be required to perform any work relating to asbestos or polychlorinated biphenyl (PCB) unless it is specifically called for in the Contract Documents. The Contractor shall obtain all permits, licenses and certificates of inspection necessary for the proper execution and completion of the work, and shall deliver certificates of inspection to the Owner upon completion of the work. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted by appropriate modification. If the Contractor performs any work that he knows or should know is contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall bear all costs arising therefrom. However, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. If the Contractor believes that additional work is required because of defects in the Contract Documents, he shall give the Owner written notice thereof within a reasonable time after discovery of the condition but before proceeding with the work affected thereby. The Contractor shall not be liable to the Owner or Architect for failure to report conditions unless the Contractor knows or should reasonably have known thereof. If the Owner determines that implementation of the required changes will affect the time or cost required for the performance of the Contractor's work, the Contractor may submit a claim therefor as provided in the Contract Documents. The Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time if the Contractor knew of the necessity for the change but failed to give prompt notice to the Owner and Architect.

REVISIONS

DATE	REMARKS

PRINTED

DATE	REMARKS

DIAMOND COVE GENERAL STORE
EXISTING PLAN VIEW
SHOWING DEMOLITION AREAS

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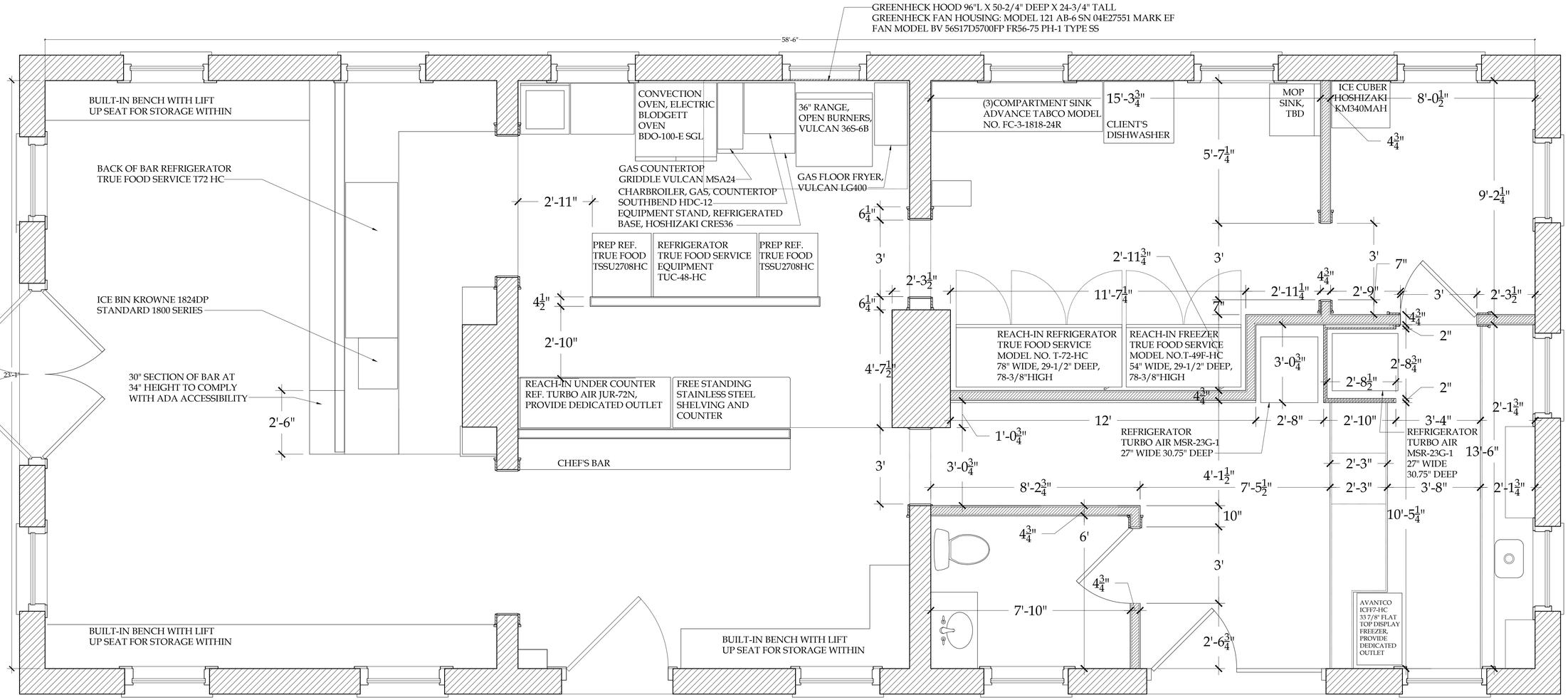
MRS. ALEXANDRA WIGHT

GENERAL STORE, GREAT DIAMOND ISLAND
PORTLAND, MAINE 1231

DATE: 9/8/17

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

SHEET NO: DEMO



1 A1.1 PLAN SECTION

Scale: 1/2"=1'-0"

ALL CABINETRY FACES & CABINET DOORS MIN. 1" THICK
ALL CABINETRY BACKS MIN. $\frac{3}{4}$", (THICKER IF STRUCTURE REQUIRES)
ALL OPEN SHELVING TO HAVE $\frac{3}{4}$" BEADED BOARD BACKS
ALL CABINETRY PAINT GRADE, BRUSH PAINTED ON SITE IN OIL
ALL OPEN CABINETRY PAINTED INSIDE, BRUSH PAINTED ON SITE IN OIL

INTERIOR OF CLOSED CABINETS CAN BE PREFINISHED MAPLE OR SIMILAR, WITH $\frac{3}{4}$" PREFINISHED SHELVING (PLEASURE ENSURE $\frac{3}{4}$" THICKNESS WILL NOT BEND FROM WEIGHT OR LENGTH OF SHELF)

PAINT ALL EXPOSED BRICK

SEE FULL SCALE STEPPED PANEL MOULDING FOR DOOR PANELS, WALL PANELS, & RECESSED PANELS,

ALL OPEN SHELVING SURROUNDS HAVE A BEAD DETAIL AT OPENING, SEE FULL SCALE PROFILE

DOUBLE SIDED COUNTER TO HAVE 1-1/4" WALNUT TOP (OR SIMILAR HARDWOOD) STAINED AND FINISHED IN OIL BAED SATIN FINISH POLYURETHANE, 2 COATS MINIMUM

COUNTER, UNDER WINDOWS, HONED AND SEALED CARRARA MARBLE 1-1/4" SLAB

ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION

NASTASI VAIL DESIGN, LLC

86 PONDFIELD ROAD WEST, BRONXVILLE, NEW YORK 10708

In connection contained in these documents is prepared to comply with, or with respect to the requirements of, the 2015 International Energy Conservation Code and the Maximum Price (CMP) for construction, acknowledges the incomplete nature of the documents and agrees that the Contractor is responsible for all dimensions and conditions at the site, and for all quantities and measurements. The Contractor shall not rely on any dimensions or drawings in these documents for any purpose whatsoever. The Contractor shall verify and be responsible for all dimensions and conditions at the site. Any discrepancy between the documents and the site conditions shall be reported immediately to the Architect. The Contractor is responsible for the means, methods, techniques, sequences and procedures of construction, and for the safety precautions and programs in connection with the Work. The Contractor shall not rely on any review of the documents by the Architect for any of the foregoing information. The Contractor shall keep full and detailed records and data regarding the Work and the cost thereof, and shall permit access to such records and data by the Architect upon request. The Contractor shall preserve all such records and data for a period of three years after final payment, or for such longer period as may be required by law. Nothing contained in these documents is intended to create any contractual relationship between the Architect and any person or entity other than the Owner. The Architect's services do not include review or evaluation of the Contractor's performance or any other aspect of the Contractor's business or operations. The Architect's visits to the site and observations of the Contractor's Work shall not relieve the Contractor of its obligations to perform the Work in accordance with the documents. The Architect shall not have control over or charge of, and shall not be responsible for, acts or omissions of the Contractor or any other persons or entities performing portions of the Work.

REVISIONS	
DATE	REMARKS

REGISTERED ARCHITECT
GLENN LORING HARMON, JR.
No. 3057
STATE OF MAINE

DIAMOND COVE GENERAL STORE
PLAN SECTION

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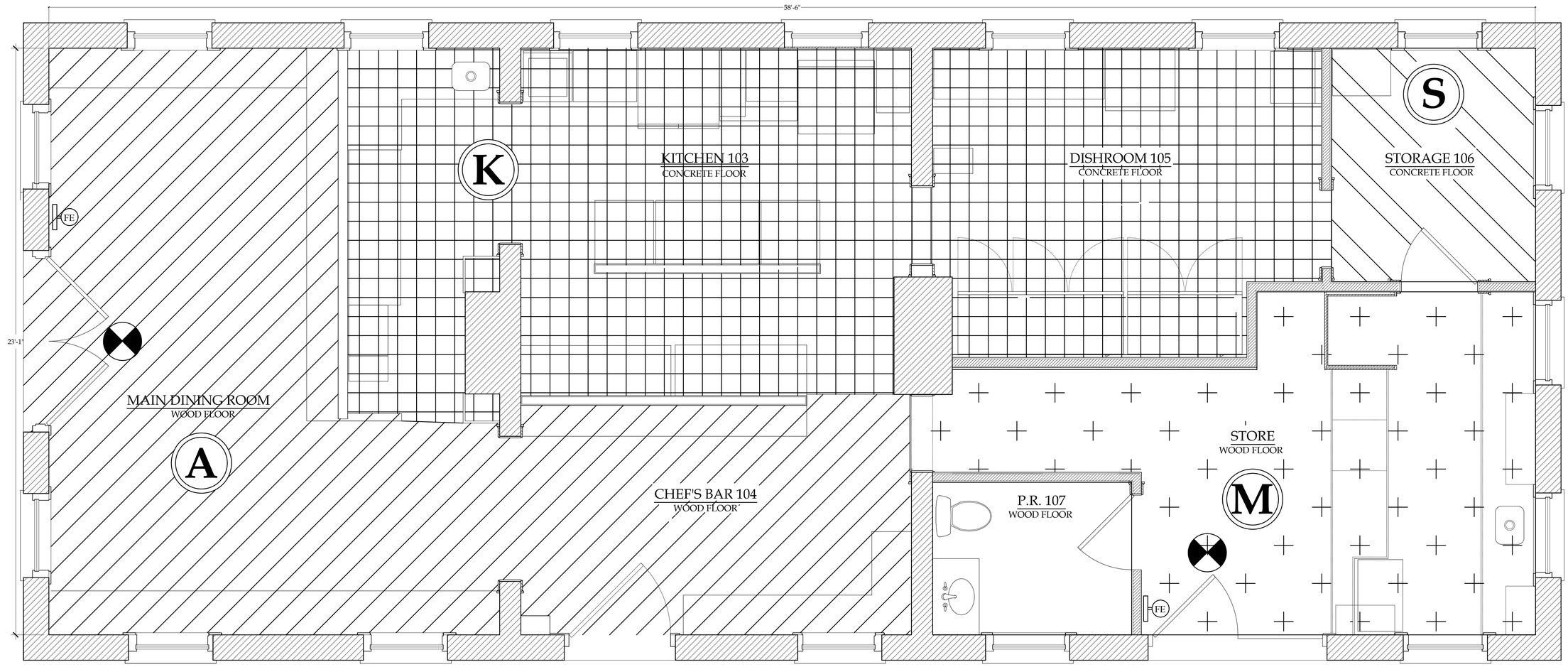
MRS. ALEXANDRA WIGHT
GENERAL STORE, GREAT DIAMOND ISLAND
PORTLAND, MAINE 04109

DATE 1/24/18

SCALE 1/2"=1'-0"

SHEET NO A1.1



OCCUPANCY CALCULATION:

ASSEMBLY		A: 450 SF /15 = 31 OCCUPANTS
KITCHEN		K: 455 SF / 200 = 3 OCCUPANTS
MERCANTILE		M: 155 SF / 60 = 3 OCCUPANTS
STORAGE		S: 74 SF / 300 = 1 OCCUPANT
		TOTAL: 38 OCCUPANTS

EXIT SIGN

FE FIRE EXTINGUISHER

GREAT DIAMOND ISLAND GENERAL STORE:

Code Summary 22 January 2018
Project Description: Change of Occupancy Classification from mixed Residential/Mercantile to Business/Mercantile. Proposed Use: Restaurant & General Store. Restaurant use classified as Business not Assembly (under 50 occupants).
Codes referenced: MUBEC/IBC 2009, NFPA 101 2009, City of Portland Chapter 10
Occupancy: Mixed B/M Business & Mercantile IBC 303.1 exception 1
Construction Type: IIIB IBC Table 503, 601, unprotected/not sprinklered
Height and Area limits: 3 stories 19,000 SF allowable IBC Table 503 (1 story 1,250 SF actual)
No separation requirements, IBC Table 508.4
Alterations Level: III, IEBC Chapter 9, change of use R/M to B/M
Corridor rating not required IBC 1010.1 exception 4
Number of exits required: 1 IBC 1015.1, <49 occupants and <75' travel (2 provided)
Mercantile Class: C, NFPA 101 36.1.4.2.1
Single means of egress allowed: NFPA 101 36.2.4.4 (2 provided)
Detection, alarm, & communication: None required, NFPA 101 38.3.4
Fire Extinguishers: Required NFPA 101 38.3.5 (Type A/B/C, 1 at each exit)

1 / G1.1 CODE: PLAN
Scale: 1/2"=1'-0"

86 PONDFIELD ROAD WEST, BRONXVILLE, NEW YORK 10708

NASTASI VAIL DESIGN, LLC

No alteration or removal to these documents is permitted in whole or in part, nor can it describe all components or conditions necessary for the completed project. The Contractor is responsible for all dimensions and conditions on the job and must report to the Architect any discrepancies before proceeding with the work. Contractor is responsible for Minimum Price (C&P) for construction, acknowledges the incomplete nature of the documents and agrees to provide all labor and materials necessary for the proper execution and completion of the work. The plans and specifications are complementary and what is called for by one shall be as binding as if called for by both. Contractor shall verify and be responsible for all dimensions and conditions. Discrepancies must be reported to the Architect before any work is performed. The Contractor shall supervise and direct the work and be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract, unless the contract documents give other specific instructions concerning these matters. The Contractor shall be responsible for the acts and omissions of his employees and all subcontractors, their agents and employees, and all other persons performing any of the work under a contract with the Contractor. The Contractor shall keep himself fully informed of all laws, rules and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and all orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. If any discrepancy or inconsistency is discovered in the drawings, or in the work being done by others affecting the work covered by this contract, Contractor shall promptly notify the Architect in writing. Failure by Contractor to notify the Architect shall not relieve Contractor from responsibility for correcting any work which does not conform to the drawings, specifications and other documents. Contractor shall not be entitled to any additional compensation or extension of time on account of defective work or delay in correcting such work. Contractor shall not be entitled to any additional compensation or extension of time on account of any delay in providing any information or shop drawings, for it is understood to rest in the discretion of the Architect to determine the reasonable time for the submission of shop drawings and the reasonable promptness with which any such drawings are to be reviewed. Review of any shop drawings by the Architect is only for the limited purpose of checking for conformance with the design concept of the project and with the information given in the Contract Documents. Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Architect's review of shop drawings unless Contractor has specifically informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation. Contractor shall not be relieved of responsibility for errors or omissions in the shop drawings by the Architect's review of shop drawings. Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Architect on previous submissions. Contractor is responsible for dimensions to be confirmed and correlated at the job site. Fabrication processes and techniques of construction are the responsibility of the Contractor. Contractor shall coordinate his work with that of all other trades and perform his work in a manner that will not interfere or cause any other trade to incur extra expense. Contractor is responsible for all temporary connections necessary to provide site utilities. Existing utility lines that are to remain in use shall be maintained during construction. Contractor shall verify that existing utility lines are adequate for the proposed construction. Contractor shall coordinate all new utility services with the utility companies. Any interruption of existing utilities must be approved by the owner in advance. Contractor shall provide adequate temporary utilities as required. Contractor shall clean and remove all debris resulting from his work as required or directed. At the completion of the work, Contractor shall remove all waste materials, rubbish, tools, construction equipment, machinery and surplus materials from and about the project. Contractor shall provide all equipment, fixtures, and services indicated on the drawings and specified herein, and all that is reasonably inferred as belonging to such systems. Any fixtures indicated on one drawing but omitted from another shall be furnished and installed as though shown on both. Contractor shall provide all required certificates of inspection for all portions of the work and shall deliver them to the Architect before final payment is made. Contractor shall secure and pay for all permits, fees and licenses necessary for the proper execution and completion of the work. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. If Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Architect in writing, and any necessary changes shall be adjusted by appropriate modification. If Contractor performs any work that he knows or should know is contrary to such laws, ordinances, rules and regulations, and without such notice to the Architect, he shall bear all costs arising therefrom. Contractor shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time based on his failure to perform work in accordance with and modify all applicable laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. It is not the responsibility of the Contractor or any subcontractor to make sure that the Drawings and Specifications are in accordance with applicable laws, statutes, building codes, and regulations. However, if the Contractor or a subcontractor recognizes that portions of the Contract Documents are at variance therewith, he shall promptly notify the Architect and Owner in writing. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect and Owner, the Contractor shall assume responsibility for such performance and shall bear the attributable costs for correction.

REVISIONS

DATE	REMARKS

REGISTERED ARCHITECT
GLENN LORING HARMON, JR.
No. 3057
STATE OF MAINE

DIAMOND COVE GENERAL STORE
CODE PLAN, ROOM AREA

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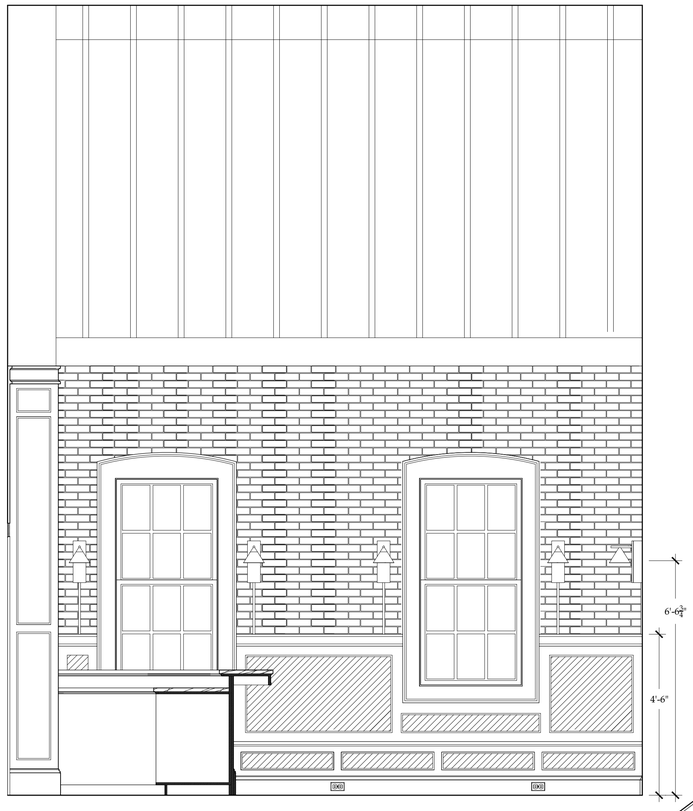
MRS. ALEXANDRA WIGHT
GENERAL STORE, GREAT DIAMOND ISLAND
PORTLAND, MAINE 04109

DATE 1/24/18
SCALE 1/2"=1'-0"
SHEET NO G1.1



1 I-1.1 MAIN DINING ROOM: EAST ELEVATION

Scale: 1/2"=1'-0"

2 I-1.1 MAIN DINING ROOM: WEST ELEVATION

Scale: 1/2"=1'-0"

3 I-1.1 MAIN DINING ROOM: NORTH ELEVATION

Scale: 1/2"=1'-0"

4 I-1.1 MAIN DINING ROOM: SOUTH ELEVATION

Scale: 1/2"=1'-0"

86 PONDFIELD ROAD WEST, BRONXVILLE, NEW YORK 10708

No dimensions contained in these documents is granted to contractors as such, nor can it describe all components or conditions necessary for the completed project. The Contractor is responsible for verifying all dimensions and conditions and shall notify the Architect of any discrepancies before proceeding with the work. The Contractor shall assume full responsibility for the means, methods, techniques, sequences and procedures necessary for the coordination and completion of the work in accordance with the Contract Documents and all applicable laws, codes, rules and regulations. The Contractor is responsible for the safety of persons and property in the performance of the work. These requirements shall apply continuously and not be limited to normal working hours. Any failure by the Contractor to comply with the requirements of this paragraph shall be the Contractor's full responsibility. The Contractor shall defend, indemnify and hold the Architect harmless from any and all liability, real or alleged, in connection with the performance of work on this project, even if the Architect is negligent, except for the Architect's professional negligence. The Contractor shall also name the Architect as an additional insured on all of the Contractor's insurance policies. The Contractor shall not be relieved of the above responsibilities by the subletting of any portion of the work. The Contractor shall carry Worker's Compensation Insurance, Public Liability Insurance and Property Damage Insurance in amounts sufficient to protect himself and the Architect from claims which may arise out of or result from the Contractor's operations under the Contract Documents, whether such operations be by himself or by any Subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The Contractor shall provide certificates of insurance to the Architect which evidence compliance with these requirements. The certificates shall provide that the Architect be given thirty days written notice before any policy is changed or cancelled. The Contractor shall immediately provide written notice to the Architect should the Contractor receive any notice of any violation of the requirements of this paragraph. The Contractor shall comply with any directive of the Architect to remedy any violation of the requirements of this paragraph. The Contractor's failure to comply with the requirements of this paragraph shall be a material breach of the Contract Documents. The Contractor shall not be entitled to any additional time or compensation for any delay or cost incurred by the Contractor or any Subcontractor as a result of any stop work order issued by the Architect under this paragraph, unless the Architect issued the stop work order solely and exclusively because of the Architect's professional negligence. The Contractor shall not be entitled to rely on any partial review by the Architect of any shop drawing, submittal or sample. The Contractor alone shall be responsible for the review and approval of all shop drawings, submittals and samples before submitting them to the Architect. The Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of shop drawings, submittals or samples unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in shop drawings, submittals or samples by the Architect's approval thereof.

REVISIONS	
DATE	REMARKS

REGISTERED ARCHITECT
GLENN LORING HARMON, JR.
No. 3057
STATE OF MAINE

DIAMOND COVE GENERAL STORE
INTERIOR ELEVATIONS
MAIN DINING ROOM

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CLIENT
MRS. ALEXANDRA WIGHT

PROJECT
GENERAL STORE, GREAT DIAMOND ISLAND
PORTLAND, MAINE 04109

DATE
1/24/18

SCALE
1/2"=1'-0"

SHEET NO
I1.1

NASTASI VAIL DESIGN, LLC

DIAMOND COVE GENERAL STORE CONSTRUCTION TIMELINE

Client - Alex Wight

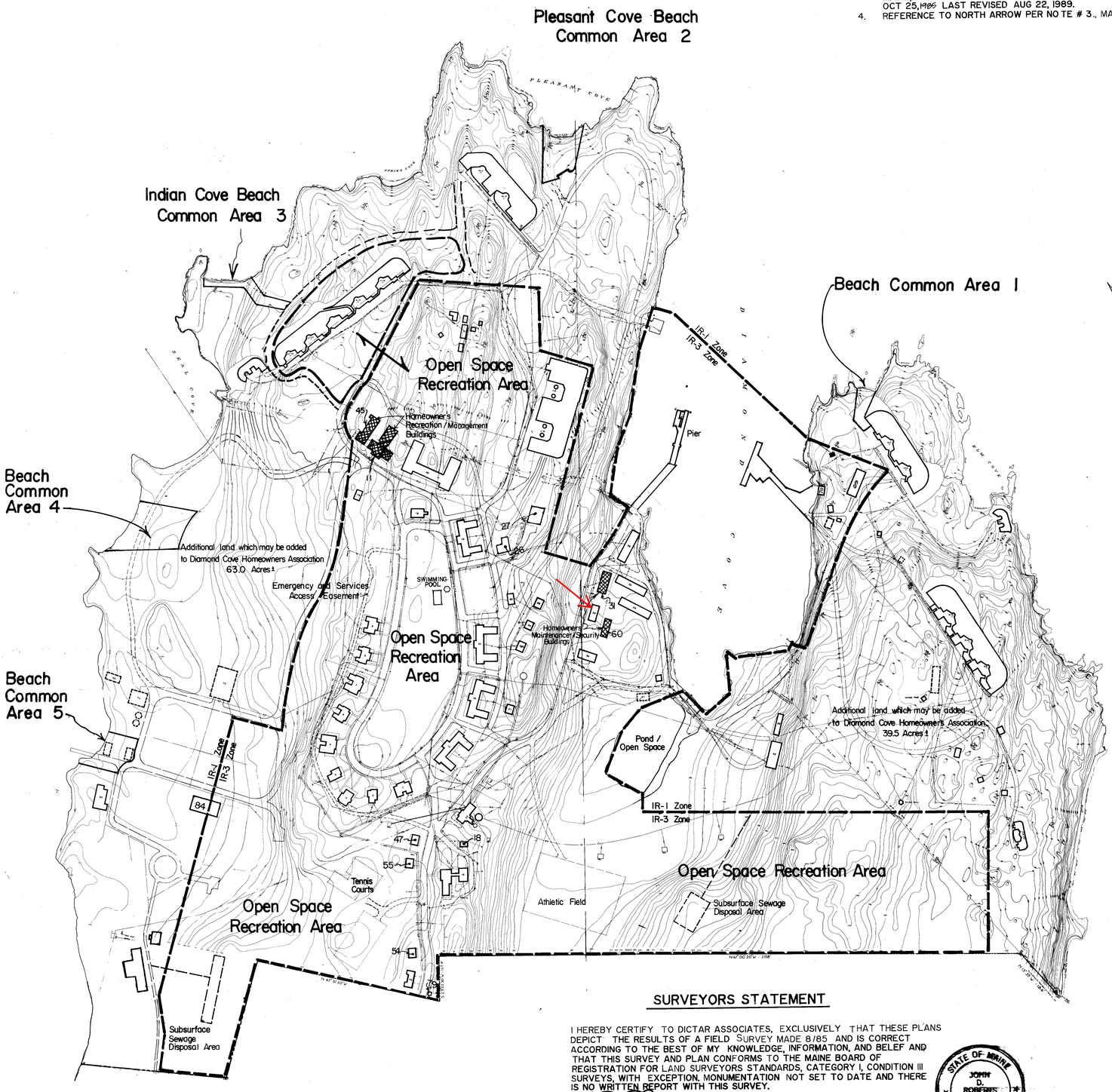
Task Name	Start	End	Duration (days)
Start date	9/1/2017	5/28/2018	269
Obtain Initial Demo Permit for interior and approved exterior repairs	8/1/2017	11/6/2017	97
Demo Prep	11/2/2017	11/6/2017	4
Demolition	11/6/2017	11/22/2017	16
Interior Brick Pointing and Exterior Brick Grinding	11/22/2017	1/26/2018	65
Floor Framing	1/21/2018	2/5/2018	15
Wall Framing	2/5/2018	2/12/2018	7
Plumbing	2/12/2018	2/26/2018	14
HVAC	2/12/2018	2/26/2018	14
Electrical	2/12/2018	2/26/2018	14
Insulation	2/26/2018	2/28/2018	2
Drywall	2/28/2018	3/7/2018	7
Flooring(Wood)	3/8/2018	3/15/2018	7
Flooring(Cement)	3/12/2018	3/15/2018	3
Cabinets and Millwork	2/12/2018	3/22/2018	38
Interior painting	3/22/2018	3/29/2018	7
Stone Counters	4/1/2018	4/1/2018	0
Schedule Buffer	4/1/2018	4/15/2018	14
Decks and Railing	4/15/2018	5/1/2018	16
Exterior Brick	4/15/2018	5/26/2018	41
Appliances	5/1/2018	5/3/2018	2
Plumbing	5/3/2018	5/5/2018	2
Electrical	5/5/2018	5/11/2018	6
FINAL Inspections	5/12/2018	5/12/2018	0
Wrap up	5/12/2018	5/29/2018	17
Site Cleaning	5/29/2015	6/10/2015	12
Complete	5/28/2018	5/28/2018	0

LEGEND

■ 6"× 6" GRANITE MONUMENT TO BE SET
● # 5 STEEL REBAR TO BE SET

SURVEYORS NOTES

1. LOCUS DEED REFERENCE - DIAMOND COVE ASSOCIATES C.C.R.D. BOOK 6429, PG. 2777
2. PROPERTY IS LOCATED IN R-3 ZONE.
3. PLAN REFERENCE - "DIAMOND COVE, GREAT DIAMOND ISLAND, PORTLAND, MAINE, PHASE I DEVELOPMENT ", BY LAND USE CONSULTANTS, DATED OCT 25, 1985 LAST REVISED AUG 22, 1989.
4. REFERENCE TO NORTH ARROW PER NOTE # 3., MAGNETIC SEPT, 1985.



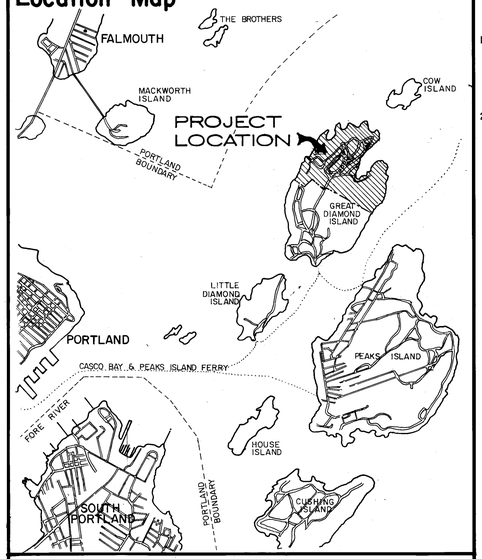
SURVEYORS STATEMENT

I HEREBY CERTIFY TO DICTAR ASSOCIATES, EXCLUSIVELY THAT THESE PLANS DEPICT THE RESULTS OF A FIELD SURVEY MADE 8/85 AND IS CORRECT ACCORDING TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELEF AND THAT THIS SURVEY AND PLAN CONFORMS TO THE MAINE BOARD OF REGISTRATION FOR LAND SURVEYORS STANDARDS, CATEGORY I, CONDITION III SURVEYS, WITH EXCEPTION. MONUMENTATION NOT SET TO DATE AND THERE IS NO WRITTEN REPORT WITH THIS SURVEY.

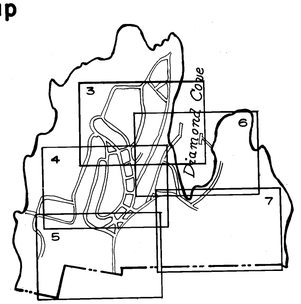
STATE OF MAINE JOHN D. ROBERTS 1155 REGISTERED LAND SURVEYOR

JOHN D. ROBERTS
Me. R.L.S. # 1155
LAND USE CONSULTANTS
PORTLAND, MAINE

Location Map



Key Map



Building / Lot Tabulation

RESIDENTIAL

	Building No.	Lots	Building No.	Lots
RESIDENTIAL	1	1A-1F	20	20A
	2	2A	21	21A-21B
	3	3A-3B	22	22A
	4	4A	23	23A-23B
	5	5A-5B	24	24A-24B
	6	6A-6B	25	25A-25B
	7	7A-7B	26	26A
	8	8A-8B	27	27A-27B
	9	9A-9B	30	30A-30F
	12	12A-12B	46	46A-46N
	13	13A-13H	47	47A-47B
			48	48A-48B
	15	15A-15H	54	54A-54B
	16	16A-16H	55	55A-55B
	17	17A-17H	56	56A-56F
	18	18		
	19	19A-19E	78	78A
COMMERCIAL	29	Commercial Lot 29		
	32	Commercial Lot 32		
	34	Commercial Lot 34		
	69	Commercial Lot 69		
	70	Commercial Lot 70		

NOTE: Lot Count per Building may change subject to Architectural Plans and rights of Declarant reserved in the Declaration.

COMMON

11	Recreation / Management
31	Maintenance
45	Recreation
60	Maintenance / Security

NOTE: Common Buildings are not Lots.

State of Maine, Cumberland ss.
Register of Deeds
Received September 29, 1989
at 1:11 P.M. and recorded in
Plan Book 181 Page 34
Attest: [illegible] Register

1 of 7

General Notes

1. REFERENCE IS MADE TO A RECORDING PLAT OF DIAMOND COVE, GREAT DIAMOND ISLAND, PORTLAND, MAINE, RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 160, PAGE 54, FEBRUARY 4, 1987 AND ANY AMENDMENTS THERETO.
2. INITIAL AREA SUBJECT TO THE GENERAL DECLARATION OF COVENANTS AND RESTRICTIONS (THE "DECLARATION") INCLUDES THE AREA WITHIN THE IR-3 ZONE BOUNDARY (EXCEPT THAT PORTION OF THE IR-3 ZONE BELOW MEAN LOW WATER AND ALL PIERS, WHARFS AND OTHER IMPROVEMENTS AND APPURTENANCES THERETO LOCATED WITHIN DIAMOND COVE), THE BEACH COMMON AREAS AND CERTAIN UTILITY EASEMENTS AND ACCESS RIGHTS ACROSS REMAINING LAND OF DIAMOND COVE ASSOCIATES, ALL AS MORE PARTICULARLY DESCRIBED IN THE DECLARATION.
3. SHEET 1 OF THIS PLAN IS A GENERAL SCHEMATIC LAYOUT OF THE PROJECT AND THE BUILDINGS AND IMPROVEMENTS THEREON. REFERENCE IS MADE TO SHEET 2 FOR PARTICULAR DESCRIPTIONS OF THE BEACH COMMON AREAS AND TO SHEETS 3-6 FOR THE LOCATION OF INDIVIDUAL LOTS. INDIVIDUAL LOTS ARE INDICATED ONLY FOR RESIDENTIAL BUILDINGS 1-9, 12, 19-27, 30, 46-48, 54-56 AND 78. THE DECLARANT MAY CREATE A MAXIMUM OF 134 RESIDENTIAL LOTS AND 5 COMMERCIAL LOTS WITHIN THE AREA INITIALLY SUBJECT TO THE DECLARATION. COMMON BUILDINGS 11, 31, 45 AND 60 ARE NOT LOTS.
4. DASHED LINES SHOWN WITHIN BUILDING OUTLINES ARE EXISTING PARTY WALLS AND ARE LOT BOUNDARIES AS PROVIDED IN SECTION 9.6 OF THE DECLARATION EXCEPT THAT NO PARTY WALLS EXIST ALONG THE DASHED LINES SEPARATING THE FRONT PORCH AREAS OF LOTS 13D AND 13E, 15D AND 15E, 16D AND 16E AND 17D AND 17E. (SEE LEGEND).
5. DASHED LINES SHOWN OUTSIDE OF BUILDINGS INDICATE FRONT, SIDE AND REAR YARD BOUNDARIES AS PROVIDED IN SECTION 10.3 OF THE DECLARATION (SEE LEGEND).
6. REFERENCE IS MADE TO ARTICLES 9&10 OF THE DECLARATION FOR A MORE PARTICULAR DESCRIPTION OF LOT BOUNDARIES AND CERTAIN RESTRICTIVE ZONES AND AREAS APPURTENANT TO LOTS.

Legend

- LOT BOUNDARY / EXTERIOR BUILDING WALL
- INTERNAL LOT BOUNDARY / PARTY WALL BETWEEN DWELLING
- FRONT, SIDE, AND REAR YARD BOUNDARIES
- PORTION OF FRONT PORCH, PART OF LOTS 13D & 13E, 15D & 15E, 16D & 16E, & 17D & 17E, PORTION OF BACK PORCH AND STAIRS RESERVED FOR USE BY LOTS 13B 15B, 16B AND 17B, SUBJECT TO ACCESS EASEMENT IN FAVOR OF LOTS 13D, 15D, 16D, AND 17D.
- PATIO
- COURTYARD

DATE:	REVISIONS:

DIAMOND COVE

Great Diamond Island
Portland, Maine

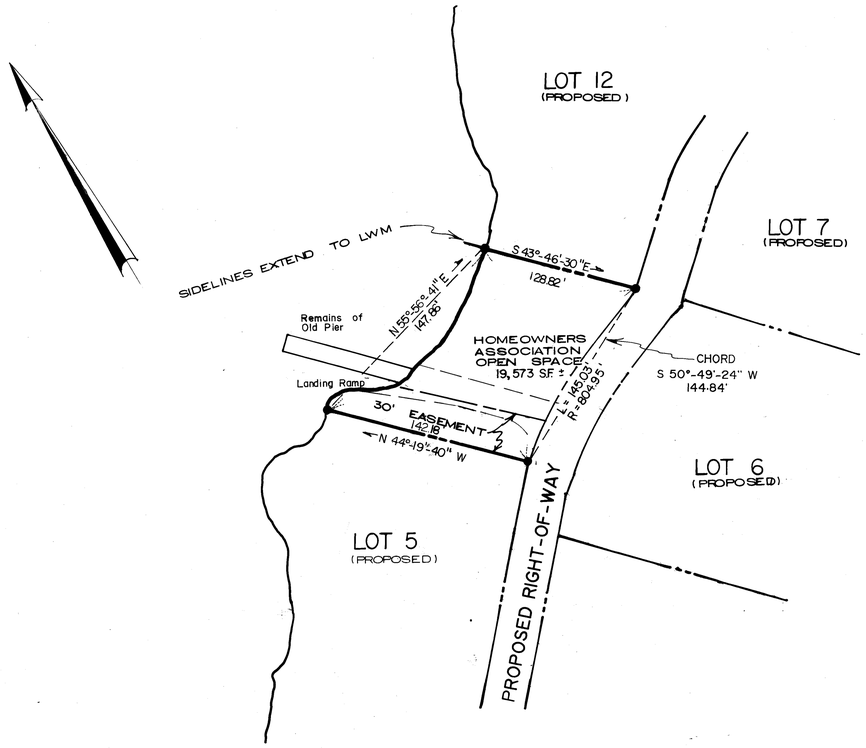
Plan of Diamond Cove

DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine

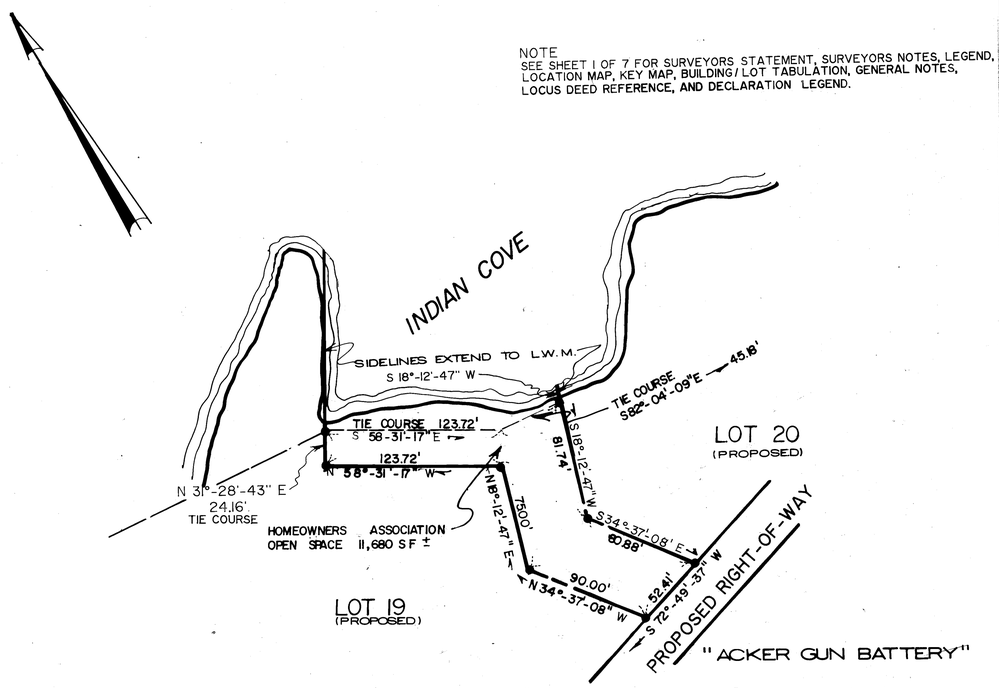
DATE: SEPT 27, 1989		JOB NO: 1420
DRN: C.W.F.	CHK: JR	FIELD BK: 140, 165
SCALE: 1" = 200'		SHEET 1 OF 7

FEET
0 200 400 600
0 100 200
METERS

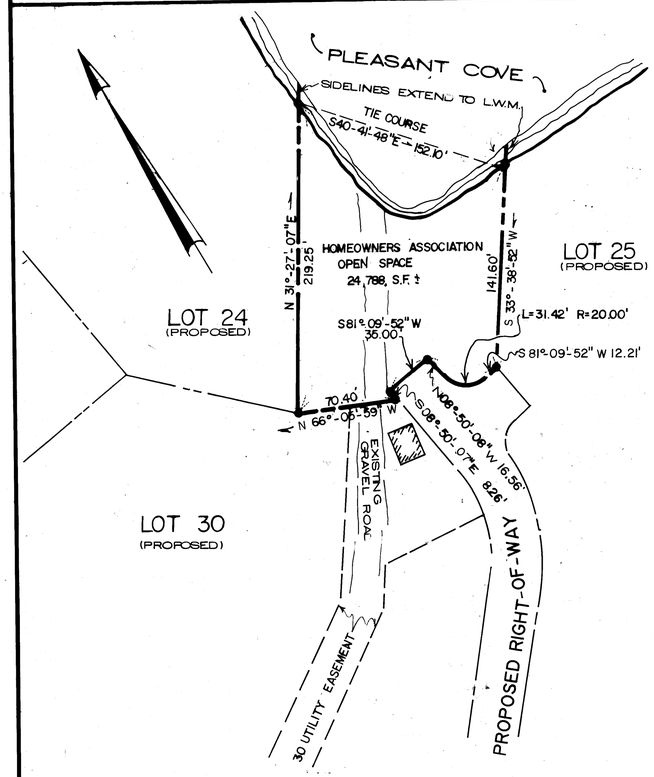
LAND USE CONSULTANTS
Land Planners · Engineers · Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392



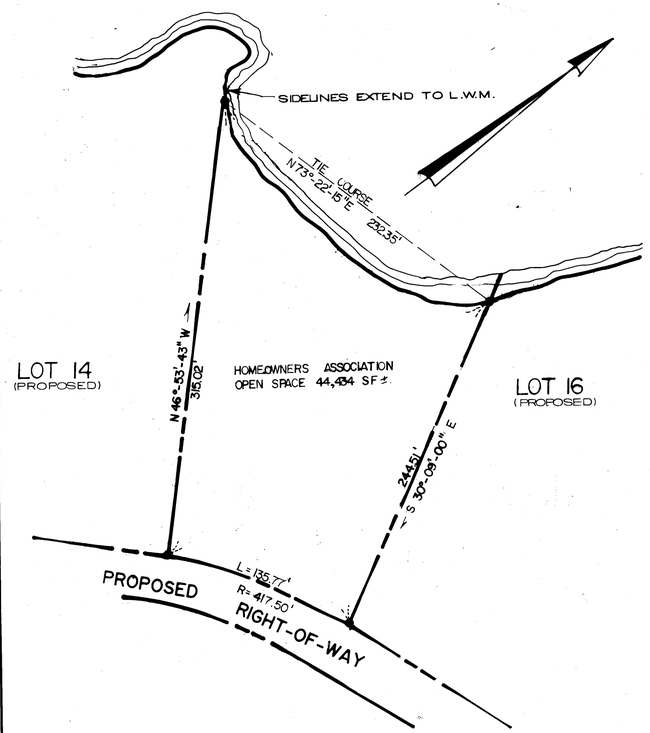
Beach Common Area 5 SCALE 1"= 50'



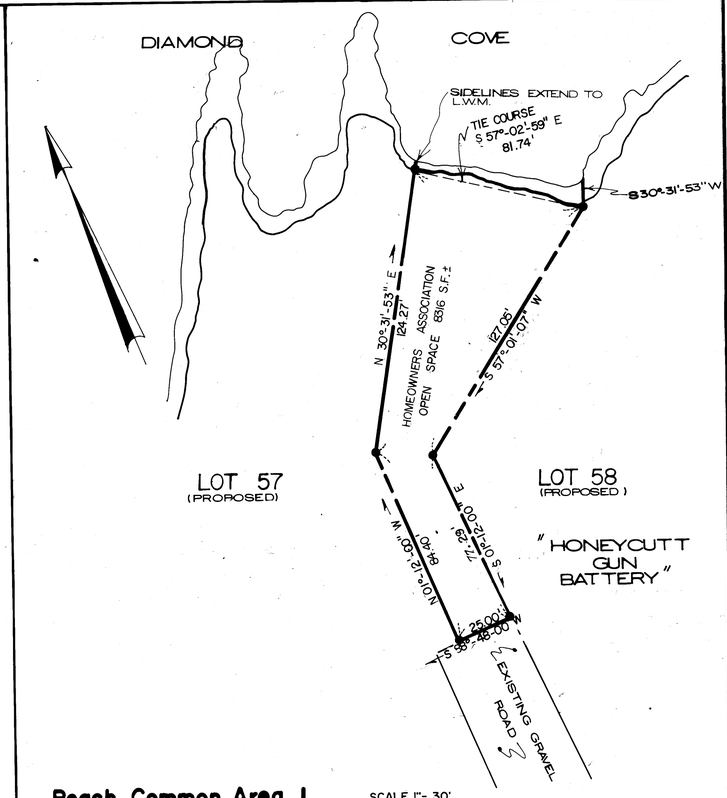
Indian Cove Beach Common Area 3 SCALE 1" =50'



Pleasant Cove Beach Common Area 2 SCALE 1"= 50'



Beach Common Area 4 SCALE 1"= 50'



Beach Common Area 1 SCALE 1"= 30'

State of Maine, Cumberland ss.
Registry of Deeds
Received September 29, 1989
at 4 h 17 m. PM and recorded in
Plan Book 181 Page 36
Attest: _____ Register

297

DATE:	REVISIONS:

DIAMOND COVE

Great Diamond Island
Portland, Maine

Plan of Diamond Cove

DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine

DATE: SEPT 27, 1989		JOB NO: 1420
DRN: C.W.F.	CHK: JZ	FIELD BK: 140, 16
SCALE: AS NOTED		SHEET 2 OF 7

FEET
0 50 100 150
0 10 20 40
METERS

LAND USE CONSULTANTS
Land Planners • Engineers • Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392

181
297

NOTE
SEE SHEET 1 OF 7 FOR SURVEYORS STATEMENT, SURVEYORS NOTES, LEGEND, LOCATION MAP, KEY MAP, BUILDING/ LOT TABULATION, GENERAL NOTES, LOCUS DEED REFERENCE, AND DECLARATION LEGEND.

N/F DIAMOND COVE ASSOCIATES

N/F DIAMOND COVE ASSOCIATES

ARC = 65.49'
R = 49.00'

N 54°-04'-02" W
395.65'

231.73'
N 30°-56'-03" E

N 43°-03'-57" W
200.00'

N 41°-59'-32" W
75.00'

SEE SHEET 6 OF 7 FOR COURSE AND DISTANCE OF LINE

S 49°-00'-28" W
279.91'

SEE SHEET 6 OF 7 FOR CONTINUATION OF LINE

IR-1 Zone
IR-3 Zone

S 19°-21'-28" W
305.12'

ARC = 76.98'
R = 76.00'

N 72°-36'-10" W
52.12'

ARC = 201.52'
R = 114.00'

S 56°-43'-49" W
176.35'

64.64'

R=65.00'
L=88.89'

N 38°-05'-18" W
148.82'

N 19°-49'-17" W
119.95'

R=165.00'
L=121.74'

114.82'

109.11'

N 44°-20'-04" W
61.09'

N 22°-55'-38" W
122.52'

113.07'

104.06'

N 37°-06'-21" W
289.22'

164.23'

N 31°-06'-22" E
22.83'

ARC = 200.93'
R = 500.00'

SEE SHEET 4 OF 7 FOR CONTINUATION OF LINE

MATCHLINE
SEE SHEET 4 of 7

MATCHLINE
SEE SHEET 6 of 7

S 34°-17'-08" W
139.02'

S 54°-31'-10" W
146.99'

S 45°-14'-20" W
171.35'

S 21°-41'-47" E
67.60'

S 33°-25'-37" E
25.63'

S 64°-46'-40" W
254.79'

N 43°-01'-15" W
180.40'

720.00'
N 46°-56'-03" E

DIAMOND COVE

DIAMOND AVENUE

McKINLEY COURT

N 27°-48'-01" E
214.26'

N 22°-49'-50" E
391.01'

113.90'

315.48'

166.76'
N 37°-40'-00" E
169.25'

171.74'

Flag Pole

Pier

Key Map

State of Maine, Cumberland ss.
Registry of Deeds
Received September 29, 1989
at 4 h. 17 m. P.M. and recorded in
Plan Book 181 Page 36
Attest: Register

377

DATE: | REVISIONS:

DIAMOND COVE
Great Diamond Island
Portland, Maine

Plan of Diamond Cove

DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine

DATE: SEPT. 27, 1989	JOB NO: 1420
DRN: C.W.F. CHK:	FIELD BK: 140, 165
SCALE: 1" = 50'	SHEET 3 OF 7

FEET
0 50 100 150
0 10 20 40
METERS

LAND USE CONSULTANTS
Land Planners • Engineers • Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392

181
397

SEE SHEET 3 OF 7 FOR CONTINUATION OF LINE.
SEE SHEET 3 OF 7 FOR COURSE AND DISTANCE OF LINE
MATCHLINE SEE SHEET 3 of 7
N/F DIAMOND COVE ASSOCIATES
McKINLEY COURT
Open Space Recreation Area
SWIMMING POOL
Flagpole
Water Tank
AVENUE
DIAMOND
IR-1 Zone
IR-3 Zone
MATCHLINE SEE SHEET 6 of 7
MATCHLINE SEE SHEET 7 of 7
SEE SHEET 5 OF 7 FOR CONTINUATION OF LINE
MATCHLINE SEE SHEET 5 of 7
S 60°-07'-49" W 220.57'
S 42°-59'-19" W 259.08'
N 41°-09'-21" W 179.30'
S 48°-50'-39" W 1059.19'
ARC = 152.12'
R = 500.00'
S 51°-24'-53" W 151.53'
Courtyard 13
Courtyard 15
Courtyard 16
Courtyard 17
Front Porch
Back Porch
Key Map
Diamond Cove
State of Maine, Cumberland ss.
Registry of Deeds
Received September 29 19 89
at 4 h 17 m P M and recorded in
Plan Book 181 Page 36
Attest Register
487
DATE: REVISIONS:
DIAMOND COVE
Great Diamond Island
Portland, Maine
Plan of Diamond Cove
DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine
DATE: SEPT 27, 1989
JOB NO: 1420
DRN: C.W.F.
CHK:
FIELD BK: 140, 165
SCALE: 1" = 50'
SHEET 4 OF 7
FEET
0 50 100 150
0 10 20 40
METERS
LAND USE CONSULTANTS
Land Planners · Engineers · Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392

181 36
4 of 7

MATCH LINE
SEE SHEET 4 of 7

SEE SHEET 4 OF 7 FOR
CONTINUATON OF LINE

SEE SHEET 4 OF 7 FOR
COURSE AND DISTANCE OF LINE

IR-1 Zone
IR-3 Zone

84

3

2

1

47

55

54

48

22

18

19

Tennis
Courts

ABANDONED
CEMETERY

Open Space Recreation Area

SUBSURFACE SEWAGE
DISPOSAL AREA FOR
SINGLE FAMILY LOTS

N/F PATTON
BK. 3049, PG.263

N/F DIAMOND
ISLAND
ASSOCIATES

N/F CROSS HALL
BK. 2853, PG. 50

N/F CITY OF
PORTLAND
BK. 1045, PG. 485

N/F LAUGHLIN
BK. 2991, PG. 729

N/F DIAMOND ISLAND
ASSOCIATES

N/F GLICKMAN

SUNSET AVENUE

SUMMIT AVENUE

PARK AVENUE

DIAMOND AVENUE

ELWELL AVENUE

AVENUE

DIAMOND

433.78'
N 49°-02'-28"E

732.26'
S 44°-04'-32" E

233.88'
S51°-44'-32"E

S 25°-21'-54" W
120.44'

S 37°-15'-39" W
160.11'

N 32°-49'-18" E
166.81'

N 13°-14'-35"E
269.50'

N4 3°-13'-3"E
156.53'

N38°-41'-31"E
103.07'

N 28°-32'-02"E
102.56'

N 73°-25'-11"E
153.55'

N 37°-23'-20"E
184.50'

N 32°-36'-46"E
176.90'

266.43'

144.49'

101.62'

97.55'

80.46'

83.93'

231.33'

35'

EQ

FOUND 6"x6"
GRANITE
MONUMENT

FOUND CONCRETE
MONUMENT WITH
DRILLHOLE

FOUND 4"x4" GRANITE
MONUMENT WITH
DRILLHOLE

FOUND 8"x8" CONCRETE
MONUMENT WITH
DRILLHOLE

IR-3 Zone
IR-1 Zone
204.00'
S 57°-15'-08" E

SEE SHEET 7 OF 7
FOR CONTINUATION
OF LINE

WILLIS STREET

Diamond Cove

5

Key Map

NOTE
SEE SHEET 1 OF 7 FOR SURVEYORS STATEMENT, SURVEYORS NOTES, LEGEND, LOCATION MAP KEY MAP, BUILDING/LOT TABULATION, GENERAL NOTES, LOCUS DEED REFERENCE, AND DECLARATION LEGEND.

State of Maine, Cumberland ss.
Registry of Deeds
Received September 29 1989
at 4 h 17 m PM and recorded in
Plan Book 181 Page 36
Attest Register

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DATE:	REVISIONS:

DIAMOND COVE

Great Diamond Island
Portland, Maine

Plan of Diamond Cove

DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine

DATE : SEPT 27, 1989	JOB NO: 1420
DRN: C.W.F. CHK: JP	FIELD BK: 140, 165
SCALE: 1" = 50'	SHEET 5 OF 7

FEET
0 50 100 150
0 10 20 40
METERS

LAND USE CONSULTANTS
Land Planners · Engineers · Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392

SEE SHEET

SEE SHEET 3 OF 7 FOR CONTINUATION OF LINE

MATCH LINE SEE SHEET 3 of 7

IR-1 Zone
IR-3 Zone

SEE SHEET 3 OF 7 FOR COURSE AND DISTANCE OF LINES

Pier

SEE SHEET 3 OF 7 FOR COURSE AND DISTANCE OF LINES

IR-3 Zone
IR-1 Zone

27

29

31

30

56

32

60

34

20

25A

24A

23A

25'

EQ

Water Tank

MATCH LINE SEE SHEET 4 of 7

DIAMOND AVENUE

N 49°-01'-44"E 142.47'
141.44'

N 46°-22'-05"E 209.78'
140.38'

N 42°-24'-05"E 259.79'
254.42'

N 30°-22'-10"E 171.69'

N 43°-24'-05"E 204.00'

S 86°-24'-05"E 138.32'
132.91'

115.11'

N 53°-24'-05"W 152.10'

S 53°-03'-10" E 147.85'

232.67'

S 09°-31'-56"E 30.09'
34.08'

S 02°-29'-18" E 42.44'

N 61°-18'-15" E 39.13'

190.46'
S 65°-10'-16" E

S 39°-12'-47" E 66.00'

SEE SHEET 7 OF 7 FOR CONTINUATION OF LINE

SEE SHEET 7 OF 7 FOR CONTINUATION OF LINE

MATCH LINE
SEE SHEET 7 of 7

DIAMOND COVE

SEE SHEET 3 OF 7 FOR CONTINUATION OF LINE

IR-1 Zone
IR-3 Zone

N 12°-56'-08" W
681.34'

N 34°-36'-05" W
289.12'

N 32°-20'-00" W
32.00'

69

70

91.18'
N 57°-39'-59" E

L = 57.11'
R = 300.00'

ARC = 63.54'
R = 316.00'

N 57°-39'-59" E 97.53'

N 69°-11'-15" E 94.15'

L = 165.71'
R = 520.00'

ARC = 155.44'
R = 484.00'

N 50°-47'-13" E 309.50'

N 50°-47'-13" E

DIAMOND

NOTE
SEE SHEET 1 OF 7 FOR SURVEYORS STATEMENT, SURVEYORS NOTES, LEGEND, LOCATION MAP, BUILDING/LOT TABULATION, GENERAL NOTES, LOCUS DEED REFERENCE, AND DECLARATION LEGEND.

Diamond Cove
6

Key Map

N/F
DIAMOND COVE ASSOCIATES

State of Maine, Cumberland ss.
Registry of Deeds
Received September 29, 1989
at 4 h/m PM and recorded in
Plan Book 181 Page 36
Attest
Register

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DATE:	REVISIONS:

DIAMOND COVE
Great Diamond Island
Portland, Maine

Plan of Diamond Cove

DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine

DATE: SEPT 27, 1989	JOB NO: 1420
DRN: CWF CHK: KF	FIELD BK: 140, 165
SCALE: 1" = 50'	SHEET 6 OF 7

FEET
0 50 100 150
0 10 20 40
METERS

LAND USE CONSULTANTS
Land Planners · Engineers · Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392

SEE SHEET 6 OF 7 FOR CONTINUATION OF LINE

MATCH LINE
SEE SHEET 6 of 7

NOTE

SEE SHEET 1 OF 7 FOR SURVEYORS STATEMENT, SURVEYORS NOTES, LEGEND, LOCATION MAP, KEY MAP, BUILDING/LOT TABULATION, GENERAL NOTES, LOCUS DEED REFERENCE, AND DECLARATION LEGEND.

249.45'
S63° 03'-10" E
247.85'
236.67'
S09°31'-56" E
30.21'
169.95'
N 36°-21'-07" E
145.56'
S 79°-24'-56" E
113.71'
S 10°-20'-32" E
110.97'
N 86°-19'-35" E
122.74'
N 77°-44'-06" E
131.34'
N 55°-03'-47" E
N 14°-19'-05" E - 24.15'
N 27°-27'-31" W -24.22'
N 27°-23'- 59" W -45.22'
N 28°-12'-21" W - 76.90'
72.64'
N 32°-44'-40" E

MATCH LINE
SEE SHEET 4 of 7

POND

N/F DIAMOND COVE ASSOCIATES

N 57°-15'-08" W
1282.29'

IR-1 Zone
IR-3 Zone

Open Space Recreation Area

SUBSURFACE SEWAGE DISPOSAL AREA
SINGLE FAMILY LOTS

529.36'
N 32°-43'-40" E

MATCH LINE
SEE SHEET 5 of 7

SEE SHEET 5 OF 7 FOR CONTINUATION OF LINE

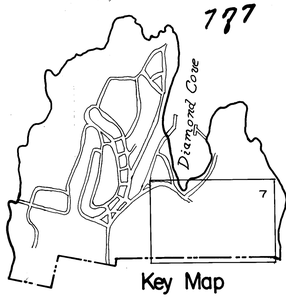
SEE SHEET 5 OF 7 FOR COURSE AND DISTANCE OF LINE

IR-3 Zone
IR-1 Zone

N/F GLICKMAN

State of Maine, Cumberland ss.
Registry of Deeds
Received Sept 29 1989
at 4h17m P.M. and recorded in
Plan Book 181 Page 36
Attest _____ Register

797



Key Map

DATE:	REVISIONS:

DIAMOND COVE
Great Diamond Island
Portland, Maine

Plan of Diamond Cove

DIAMOND COVE ASSOCIATES
P.O. Box 3572
Portland, Maine

DATE: SEPT 27, 1989		JOB NO: 1420
DRN: CWF	CHK: JR	FIELD BK: 140, 165
SCALE: 1" = 50'		SHEET 7 OF 7

FEET
0 50 100 150
METERS
0 10 20 40

LAND USE CONSULTANTS
Land Planners • Engineers • Surveyors
17 Commercial Street, Portland, Maine 04101
207-772-8392

SURVEYORS STATEMENT

I HEREBY STATE TO DIAMOND COVE ASSOCIATES, EXCLUSIVELY, THAT THE ALTERATIONS OF SHEET 4 OF "PLAN OF DIAMOND COVE," NOW KNOWN AS SHEET 4A, CONFORM TO THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CATEGORY I, CONDITION III STANDARDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

SEPTEMBER 19, 1990

JOHN D. ROBERTS
MAINE PROFESSIONAL LAND SURVEYOR #1155
LAND USE CONSULTANTS
PORTLAND, MAINE

STATE OF MAINE — JOHN D. ROBERTS 1155 — REGISTERED LAND SURVEYOR

N/F DIAMOND COVE ASSOCIATES

SURVEYOR'S CERTIFICATION

I HEREBY STATE TO McKINLEY PARTNERS LIMITED PARTNERSHIP, EXCLUSIVELY, THAT:

INFORMATION SHOWN HEREON FOR THE CREATION OF THIS AMENDED PLAN, IS FROM A SKETCH AND A DESCRIPTION PREPARED BY LAND USE CONSULTANTS, INC. AND DATED JUNE 20, 1996. THE UNDERSIGNED SURVEYOR DID NOT SUPERV SUPERVISE ANY WORK PERFORMED FOR THE CREATION OF SAID SKETCH AND DESCRIPTION, AND DID NOT PERFORM A COMPREHENSIV COMPREHENSIVE REVIEW OF SAID DOCUMENTS. THE EXCLUSIVE USE EASEMENT AS SHOWN ON THIS PLAN TO THE BEST OF MY KNOWLEDGE IS CORRECT.

10-30-99

TIMOTHY A. PATCH
MAINE PROFESSIONAL LAND SURVEYOR #2294

STATE OF MAINE — TIMOTHY A. PATCH 2294 — PROFESSIONAL LAND SURVEYOR

State of Maine, Cumberland ss.
Registry of Deeds
Received Jan 2 19 99
at 3 h 35 m P M and recorded in
Plan Book 199 Page 340
Attest: Register

John B. O'Brien

SEE SHEET 3 OF 7 FOR CONTINUATION OF LINE.

SEE SHEET 3 OF 7 FOR COURSE AND DISTANCE OF LINE

MATCHLINE SEE SHEET 3 of 7

S 60°-07'-49" W 220.31'

ARC = 152.12'
R = 500.00'
S 51°-24'-53" W 151.53'

S 42°-59'-19" W 259.08'

N 41°-09'-21" W 179.30'

S 48°-50'-39" W 1059.19'

IR-1 Zone
IR-3 Zone

SEE SHEET 5 OF 7 FOR CONTINUATION OF LINE

MATCHLINE SEE SHEET 5 of 7

Flagpole

SWIMMING POOL

Open Space Recreation Area

McKINLEY COURT

N 53°-58'-31" E 103.96'

N 60°-15'-40" E 208.24'

N 49°-27'-38" E 129.98'

S 80°-09'-41" E 19.41'

N 44°-36'-57" E 103.29'

N 77°-01'-54" E 98.46'

N 44°-35'-01" E 78.06'

N 16°-42'-05" E 209.45'

S 52°-39'-41" E 60.91'

S 39°-32'-31" E 134.87'

S 54°-26'-05" E

S 84°-08'-27" E 142.92'

N 29°-25'-12" E 77.80'

N 15°-25'-55" E 103.53'

N 73°-25'-55" E 23.33'

N 16°-34'-05" W 101.46'

N 73°-25'-55" E 101.46'

N 16°-34'-05" W 101.46'

S 71°-30'-55" E 53.58'

N 71°-41'-05" E 70.82'

N 65°-31'-12" E 63.96'

S 12°-42'-41" E 132.41'

S 53°-03'-05" E 232.67'

S 86°-24'-05" E 115.11'

N 16°-20'-05" E 146.38'

S 12°-42'-41" E 108.75'

S 53°-03'-05" E 249.45'

N 16°-42'-05" E 209.45'

N 16°-42'-05" E 302.47'

N 73°-25'-55" E 101.46'

N 16°-34'-05" W 101.46'

N 73°-25'-55" E 23.33'

S 16°-34'-05" E 101.46'

S 73°-25'-55" W 101.46'

S 16°-34'-05" E 101.46'

S 73°-25'-55" W 23.33'

N 16°-34'-05" W 101.46'

N 73°-25'-55" E 101.46'

N 16°-34'-05" W

Blais
civil engineers

Att. A

January 30, 2018
BCE File: 17145

Barbara Barhydt, Development Review Manager
City of Portland
389 Congress St.
Portland, ME 04101

Re: Site Plan Application for The General Store at Diamond Cove
Portland, Maine

Dear Barbara:

On behalf of Alex C. Wight and Gail P. Landry, we are pleased to submit the enclosed Administrative Authorization Application for the above-referenced project. Alex and Gail own the property and structure located on Lot 32, Diamond Cove, Great Diamond Island, Portland, Maine. This structure has been used as a general store, spa, marina facilities, and apartment by past owners.

Alex Wight, previously owned and operated Flanagan's Table, a communal dining series on a 66 acre property in Buxton that served 50 guests monthly via rotating guest chefs from Maine. She donated a percentage of the proceeds from each dinner to both Maine Farmland Trust and Maine Organic Farmers & Gardeners Association, in addition to supporting Full Plates Full Potential and The Barbara Bush Children's Hospital.

With The General Store at Diamond Cove, Alex hopes to reopen the existing general store as a casual sit down restaurant—the menu showcasing as much Maine product as is possible—with the day spa renovated to accommodate a new general store that will continue to sell ice cream, penny candy, beer and wine, breakfast pastries, newspapers, coffee, sandwiches and fundamental provisions. Through this updated endeavor, she will continue to strive to be the hub of the island — a place where the island's tight-knit community feels comfortable congregating and connecting.

As discussed at the January 17, 2018 City lunch, we are applying for administrative authorization, and Planning Board approval. Sec. 14 145.16 – Development review states that in addition to other applicable requirements, no development shall occur nor shall any new use be established unless the Planning Board finds that the final development plan for the site is in compliance with the following development standards.

The City's regulatory permitting records for this property indicate the current approved use as a general store (retail), and not a restaurant. Retail is limited by ordinance to 9 or fewer seats.

27 Gorham Road, Suite 207
Scarborough, Maine 04074
207-730-7200 · blaisce.com

The proposed renovation will host 35 seats thus creating a new restaurant use per the City's definition.

The following are narratives explaining how this project meets the afore-mentioned standards:

Sec. 14 145.16 – Development Review Standards

(a) Transportation:

Vehicular and Pedestrian Circulation
Traditionally, customers have traveled to the Site by foot either from the Casco Bay Ferry Line or around the island. The small increase of use will not have a significant impact on vehicular or pedestrian circulation.

Food and beverage deliveries will continue to come in via Casco Bay Ferry Lines' freight 2-3 times per week as they have in years past.

Project Construction Plan
Please see the enclosed anticipated construction schedule. There will be no substantial impact on the existing island transportation or docking facilities as deliveries (as was with the past general store) will be delivered via the existing Casco Bay Ferry service. Any additional temporary dock space needed for either customers or deliveries will be arranged with the Diamond Cove Marina per their standard operating procedures.

Impact on Existing Island Docking
See above.

(b) Solid Waste:

We conservatively estimate that the general store and restaurant will generate about 28 to 32 large trash bags per week. We estimate this to be an increase of approximately 33% per week based on the past general store use, which also used paper and plastic tableware and cutlery. Please refer to the attached email from the island's transfer station confirming they have adequate capacity for this increase.

(c) Sanitary Waste:

Enclosed is an email from Irene Samur stating that if the design flows are under 370 GPD then there is no need for a license modification. Please note that this email states 10 employees will be working during the day. This has been reduced to 8 employees since this email was written.

The applicant proposes a total of 35 seats for the "paper service" restaurant, with a maximum of 8 employees at any one time. Seats will be located inside only.

The sanitary waste design flows are as follows:

8 employees at 12 gpd =	96 gpd
35 guest seats at 7 gpd =	245 gpd
Total:	**341 gpd**

Enclosed is an email from the State Division of Environmental and Community Health Drinking Water/Subsurface Wastewater Unit regarding the above flows.

(d) Water:

Attached is an email from the Portland Water District suggesting that the change of ability to serve letter from the Portland Water District.

(e) Shoreland Areas – Preserving Natural Features

No shoreland areas will be disturbed as part of this project.

(f) Environmentally Sensitive Areas – Preserving Natural Features

No environmentally sensitive areas will be disturbed as part of this project.

(g) Recreation and Open Space – Preserving Natural Features

Not applicable.

(h) Financial and Technical Capacity

Enclosed is a letter from Atlantic Trust showing financial capacity to construct the project. Project cost are expected to be well below the dollar amount specified in this letter.

Alex Wight owned the Flanagan's Table restaurant and previously worked in several other restaurants. Further information on Alex's restaurant background can be read in her attached resume.

Blais Civil Engineers is representing The General Store at Diamond Cove. Information regarding Blais Civil Engineers is enclosed.

Adam Ginsberg from Mast Construction Corporation helped the team coordinate the project needs and is the general contractor for the proposed restaurant. Mast Construction Corporation is a full-service restoration, masonry and renovation business serving all areas of Maine.

Glenn Harmon and Nastasi Vail Design worked together to design the floor plan of this proposed restaurant. Glen Harmon is a registered architect with 30 years of experience in all facets of design across a wide range of project types including residential, commercial, institutional, governmental and educational. An engaged

emphasis is placed on sustainable practices, which along with a passion for historic preservation, are interwoven throughout his design process.

(i) Environmental impact analysis

This project will disturb a very small amount of land to replace the sanitary sewer connection at the main, which is within a few feet from the sewer main. This project will have no significant impact on the environment.

(j) Development Phasing

Not applicable.

(k) Emergency Services

This 1,520 square foot structure will not will not place any unreasonable burden on the ability of the City to provide police, fire and other emergency services.

We trust that this application satisfies the Administrative Authorization Application requirements, and we respectfully request to be placed on the next available Planning Board meeting agenda. Please contact me if you have any questions or require further information.

Sincerely,
BLAIS CIVIL ENGINEERS

Steve G. Blais, PE

Enclosures:

1. Administrative authorization application
2. Copy of property deed
3. MDEP email regarding no amendment needed to overboard discharge license
4. Email from MDEP regarding sanitary sewer design flows
5. Financial capacity letter
6. Resumes/qualifications showing technical capacity
7. Construction schedule
8. Site photograph
9. Email from Island Association - solid waste capacity.
10. Email from PWD - ability to serve status
11. Existing conditions floor plan
12. Demolition plan
13. Proposed conditions floor plan - A1.1
14. Proposed conditions floor plan - G1.1
15. Proposed conditions elevations – I1.1

Administrative Authorization Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Administrative Authorization - Sec. 14-523(b). Applicability

No person shall undertake any development identified in Section 14-523 without obtaining a site plan improvement permit under this article.

(c) Administrative Authorization. Administrative Authorization means the Planning Authority may grant administrative authorization to exempt a development proposal from complete or partial site plan review that meets the standards below, as demonstrated by the applicant.

a/b. The proposed development will be located within existing structures, and there will be no new buildings, demolitions, or building additions other than those permitted by subsection b of this section;
c. Any building addition shall have a new building footprint expansion of less than five hundred (500) square feet;
d. The proposed site plan does not add any new curb cuts, driveways, or parking areas; the existing site has no more than one (1) curb cut and will not disrupt the circulation flows and parking on-site; and there will be no drive-through services provided;
e/f. The curbs and sidewalks adjacent to the lot are complete and in sound condition, as determined by the public works authority, with granite curb with at least four (4) inch reveal, and sidewalks are in good repair with uniform material and level surface and meet accessibility requirements of the Americans with Disabilities Act;
g/h. The use does not require additional or reduce existing parking, either on or off the site, and the project does not significantly increase traffic generation;
i. There are no known stormwater impacts from the proposed use or any existing deficient conditions of stormwater management on the site;
j. There are no evident deficiencies in existing screening from adjoining properties; and
k. Existing utility connections are adequate to serve the proposed development and there will be no disturbance to or improvements within the public right-of-way.
l. There are no current zoning violations;
m. Any emergency generators are to be located to minimize noise impacts to adjoining properties and documentation that routine testing of the generators occur on weekdays between the hours of 9 a.m. to 5 p.m. Documentation pertaining to the noise impacts of the emergency generator shall be submitted; and
n. There is no anticipated noise, vibration, glare, fumes or other foreseeable impacts associated with the project.

Upon receipt of such a complete application, the Planning Authority will process it and render a written decision of approval, approval with conditions or denial, with all associated findings. If a full administrative authorization is granted, the application shall be approved without further review under this article, and no performance guarantee shall be required. In the event that the Planning Authority determines that standards a and b of Section 14-523 (b) (1) and at least four (4) of the remaining standards have been met, the Planning Authority shall review the site plan according to all applicable review standards of Section 14-526 that are affected by the standards in this subsection that have not been met. If an exemption or partial exemption from site plan review is not granted, the applicant must submit a site plan application that will undergo a full review by the Planning Board or Planning Authority according to the standards of Section 14-526.

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:	Diamond Cove General Store
Proposed Development Address:	255 Diamond Ave. Great Diamond Island, Portlnd, ME
Project Description: (Please attach a sketch/plan of the proposal/development)	The applicant is proposing a change of use of the existing Diamond Cove General Store to allow for a restaurant within the existing building.
Chart/Block/Lot:	083F/A/32

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

APPLICANT

Name:	Alexandra Wight
Business Name:	The General Store at Diamond Cove
Address:	296 Hicks Street
City/State:	Brooklyn, NY
Zip Code:	11201
Work #:	
Home #:	
Cell #:	207-232-3044
Fax #:	
E-mail:	alexandra.collins@gmail.com

OWNER

Name:	Alec C. Wight and Gail P. Landry
Address:	113 Newbury Street, Unit 103
City/State:	Portland, ME
Zip Code:	04101
Work #:	
Home #:	
Cell #:	207-232-3044
Fax #:	
E-mail:	alexandra.collins@gmail.com

AGENT/REPRESENTATIVE

Name:	Blais Civil Engineers
Address:	27 Gorham Rd, Ste. 207
City/State:	Scarborough, ME
Zip Code:	04074
Work #:	207-730-7200
Home #:	
Cell #:	
Fax #:	
E-mail:	sblais@blaisce.com

BILLING (to whom invoices will be forwarded to)

Name:	Alexandra Wight
Address:	296 Hicks Street
City/State:	Brooklyn, NY
Zip Code:	11201
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	alexandra.collins@gmail.com

ENGINEER

Name:	Blais Civil Engineers
Address:	27 Gorham Road, Ste. 207
City/State:	Scarborough, ME
Zip Code:	04074
Work #:	207-730-7200
Home #:	
Cell #:	
Fax #:	
E-mail:	sblais@blaisce.com

SURVEYOR

Name:	
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ARCHITECT

Name:	Glenn Harmon
Address:	35 Mabel Street
City/State:	Portland, ME
Zip Code:	04103
Work #:	207-838-4025
Home #:	
Cell #:	
Fax #:	
E-mail:	glennlharmon@gmail.com

ATTORNEY

Name:	Robert E. Danielson
Address:	65 W. Commercial Street P.O. Box 545
City/State:	Portland, ME
Zip Code:	04112-0545
Work #:	207-879-1337
Home #:	
Cell #:	
Fax #:	
E-mail:	RDanielson@optlaw.net

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Jordan Young
E-mail:	jyoung@blaisce.com
Name:	
E-mail:	
Name:	
E-mail:	

III. APPLICATION FEES

ADMINISTRATIVE AUTHORIZATION

☑	Administrative Authorization	$50.00

IV. CRITERIA FOR AN ADMINISTRATIVE AUTHORIZATION (see Section 14-523(4) on the first page)

	CRITERIA FOR AN ADMINISTRATIVE AUTHORIZATION	Applicant's Assessment		
		Y (yes)	N (no)	N/A
a)	Is the proposal within the existing structure?	☑	☐	☐
b)	Are there any new buildings, additions, or demolitions?	☐	☑	☐
c)	Is the footprint increase less than 500 sq. ft.?	☐	☐	☑
d)	Are there any new curb cuts, driveways or parking areas?	☐	☑	☐
e)	Are the curbs and sidewalks in sound condition?	☑	☐	☐
f)	Do the curbs and sidewalks comply with ADA?	☐	☐	☑
g)	Is there any additional parking?	☐	☑	☐
h)	Is there an increase in traffic?	☐	☑	☐
i)	Are there any known stormwater problems?	☐	☑	☐
j)	Does sufficient property screening exist?	☐	☐	☑
k)	Are there adequate utilities?	☑	☐	☐
l)	Are there any zoning violations?	☐	☑	☐
m)	Is an emergency generator located to minimize noise?	☐	☐	☑
n)	Are there any noise, vibration, glare, fumes or other impacts?	☐	☑	☐

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.

The granting of an Administrative Authorization, to exempt a development from site plan review, <u>does not exempt</u> this proposal from other required approvals or permits. 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:	Alexandra C. Wight
Date:	1/26/18

Att. C

Doc#: 17253 Bk:33948 Pg: 96

MAINE REAL ESTATE TAX PAID

WARRANTY DEED

Limited Liability Company Grantor

KNOW ALL BY THESE PRESENTS, That, **Fort McKinley LLC**, a limited liability company organized and existing under the laws of the State of Maine, and having a place of business at 255 Diamond Avenue, Great Diamond Island, ME 04109, for consideration paid, grants to:

Gail P. Landry and Alexandra C. Wight

whose mailing address is: 113 Newbury Street, Unit 301, Portland, Maine 04101, with **warranty covenants**, as joint tenants the land in Portland, County of Cumberland, and State of Maine, described as follows:

> A certain lot or parcel of land, together with any buildings and improvements thereon, situated in the City of Portland, County of Cumberland, and State of Maine as set forth in Exhibit A attached hereto and made a part hereof.

In Witness Whereof, the said **Fort McKinley LLC** has caused this instrument to be executed by Amy P. Farrell, its sole member thereunto duly authorized this 14th day of April, 2017.

Signed, Sealed and Delivered
in the presence of

Fort McKinley LLC

BY: _____
Amy P. Farrell, Sole Member

State of Maine
County of Cumberland

April 14, 2017

Then personally appeared the above named Amy P. Farrell, Member of said Fort McKinley LLC and acknowledged the foregoing instrument to be her free act and deed in her said capacity, and the free act and deed of said Fort McKinley LLC.

Before me,

_____
Attorney at Law/Notary Public
Printed Name:

DONNELLY S. DOUGLAS
Maine Attorney at Law
Maine Bar No. 147

EXHIBIT A

A certain lot or parcel of land, together with the buildings and improvements thereon, situated on Great Diamond Island in the City of Portland, County of Cumberland and State of Maine, and being Lot No. 32 as shown on Sheet 6 (and later Amended Sheet 6) of a plan entitled "Diamond Cove, Great Diamond Island, Portland, Maine, Plan of Diamond Cove," dated September 27, 1989 and recorded in the Cumberland County Registry of Deeds in Plan Book 181, Page 36, as amended by Plan dated August 30, 1990, and recorded in said Registry of Deeds in Plan Book 187, Page 37, and as further amended by plans dated February 21, 1994 and recorded in said Registry of Deeds in Plan. Book 194, Pages 58 and 59, and as further amended by plans dated December 5, 1994 and recorded in said Registry of Deeds in Plan Book 194, Page 437, and as further amended by plans dated June 10, 1998 and recorded in said Registry of Deeds in Plan Book 198, Page 188, and as further amended by plans dated June 1, 1999 and recorded in said Registry of Deeds in. Plan Book 199, Page 341, and as further amended by plan dated July 1, 1999 and recorded in said Registry of Deeds in Plan .Book 199, Page 340 (the "Plan"), to which Plan and the record thereof reference can be made for a more particular description of the within conveyed premises.

Except as may be provided hereinafter, the above described premises are conveyed together with and subject to the covenants, conditions, restrictions, rights, easements, charges, liens and other matters set forth or referred to in an Amended and Restated General Declaration of Covenants and Restrictions dated December 17, 1993, and recorded in said Registry of Deeds in Book 11277, Page 322, including Exhibit A thereto, as amended by First Supplement to Amended and Restated General Declaration of Covenants and Restrictions by McKinley Partners Limited Partnership, dated February 25, 1994 and recorded in said Registry of Deeds in Book 11307, Page 200, and as amended by the Amended and Corrected Second Supplement to Amended and Restated General Declaration of Covenants and Restrictions dated August 27, 1999, and recorded in the Cumberland County Registry of Deeds at Book 15011, Page 87 (the "Declaration"). Particular reference is made to Articles 9 and 10 of the Declaration regarding lot boundaries and certain restrictive zones and areas appurtenant to Phase I Lots.

Also hereby granting as appurtenant to Lot 32, subject to the provisions of the Declaration, an easement for access by the Grantee, its employees, vendors, and invitees, in common with others, over the Pier and, as reasonably necessary to access directly the buildings on each Lot, over the Common Property at Diamond Cove. So long as Lot 32 is being used for commercial purposes, the employees (other than required in the normal course of their employment), vendors and invitees of the Grantee of such lot being used for commercial purposes shall have no rights to use the Common Property other than those rights expressly set forth herein.

Also hereby granting as appurtenant to Lot 32, subject to the provisions of the Declaration, an easement to install, access, maintain and repair customary utility lines and pipes on, over and

under the roads and Common Properties of Diamond Cove as reasonably necessary (or as presently installed) to service the Lots.

Being the premises conveyed to the Grantor by warranty deed from Great Diamond LLC dated March 29, 2010 and recorded in the Cumberland County Registry of Deeds in Book 27676, Page 348.

Received
Recorded Register of Deeds
Apr 18,2017 09:34:50A
Cumberland County
Nancy A. Lane

Steve Blais

From: Alexandra C. Wight <alexandra.collins@gmail.com>
Sent: Wednesday, January 24, 2018 1:48 PM
To: Steve Blais
Subject: Fwd: FW: General Store at Diamond Cove (meeting with Gail Landry, today 11/1)

Steve,

Please find DEP confirmation below.

Thank you,

Alex

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

---------- Forwarded message ----------
From: **Saumur, Irene** <Irene.Saumur@maine.gov>
Date: Thu, Nov 2, 2017 at 9:48 AM
Subject: FW: General Store at Diamond Cove (meeting with Gail Landry, today 11/1)
To: "alexandra.collins@gmail.com" <alexandra.collins@gmail.com>

Alex,

I wasn't here when your mother came, sorry to have missed her, but she was in good hands with Gregg. And Glenn too. Glenn worked here for close to twenty years before moving to DHHS.

Our records do not include a 'day spa', just the General Store, Deli, 3 Employees and 14 seats. Paper service greatly reduces the flow volume requirements so as long as you keep the flow under 370 GPD there is no need for a license modification or change of use, etc… I was not aware that paper service was an option for you, I thought you were requesting formal dining service (china service).

Just be aware that you could be inspected without notice by any one of three State or Local agencies, not to mention the general public who may call one of the agencies to complain. I am sorry to say, public complaints have increased enormously in the last couple years.

Respectfully,

Irene Saumur

Wastewater Discharge Licensing

Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333
Cell: 207-485-2404 Fax: 207-287-3435
email: irene.saumur@maine.gov

DEP Web: www.maine.gov/dep

From: Alexandra C. Wight [mailto:alexandra.collins@gmail.com]

Sent: Wednesday, November 01, 2017 3:23 PM
To: Wood, Gregg <Gregg.Wood@maine.gov>
Subject: General Store at Diamond Cove (meeting with Gail Landry, today 11/1)

Dear Mr. Wood:

I want to thank you for taking the time to meet with my mother, Gail Landry, earlier this morning. I am certain that you maintain an incredibly busy schedule and we are enormously appreciative of your willingness to walk through the issues we have been presented with on Great Diamond Island.

You directed my mother to Glenn Angell, who was wonderfully helpful. Thank you, again. He suggested using all paper products (including plastic cutlery and cups) to bring our gallonage down. If we were to do so, we arrive at:

2 meals per day

7 gpd per guest

12 gpd per employee

We are more than happy to follow this route. Could you kindly tell me if we stay within/under our allotted gallonage whether or not a change of use must be filed with the DEP? The most recent approved use according to the city is as a general store and day spa. Given that we'd like to increase the number of customer seats to over 10, does the DEP also require a change of use, or no? (We are aware that we must file a change of use with the city.)

Many, many thanks for your time once again. We are grateful for both your insight and assistance.

Alex Wight

FLANAGAN'S TABLE

668 Narragansett Trail

Buxton, ME 04093

flanaganstable@gmail.com

flanaganstable.com

Steve Blais

From: Alexandra C. Wight <alexandra.collins@gmail.com>
Sent: Thursday, January 18, 2018 4:07 PM
To: Steve Blais; Adam Ginsberg
Subject: GPD for paper products/seats breakdown

Seat breakdown direct from DHHS/DEP in the email below. Refer to eating place, paper service for GPD calculations. We are allotted 370 GPD.

We would like to request 35 seats with an all paper service figuring the following:

10 employees at 12 gpd = 120

35 guest seats at 7 gpd = 245

Which brings us to a total of 365 gallons per day; less than our allotment. Additionally, we eliminated one bathroom (went from two bathrooms to one). We also eliminated the kitchen and shower located in the 'day spa' as it was registered with the city.

The bathroom will have this water saving faucet: https://www.houzz.com/product/59096705-fontana-gold-tone-plated-platinum-thermostatic-sensor-tap-contemporary-bathroom-sink-faucets

We are also installing a low-flow toilet.

Let me know if you need anything additional.

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

---------- Forwarded message ----------
From: **Angell, Glenn B** <Glenn.B.Angell@maine.gov>
Date: Fri, Nov 3, 2017 at 4:22 PM
Subject: RE: GPD for paper products!
To: "Alexandra C. Wight" <alexandra.collins@gmail.com>
Cc: "Wood, Gregg" <Gregg.Wood@maine.gov>

First off I want to reiterate that you should definitely install a water meter in the building. While it won't help you for next summer, it will give you data for future expansion options. I would advise you to take the readings weekly and to keep track of the number of customers you have on a weekly basis. While daily would be better, I'm not sure it's worth the extra work for you. This step is CRUCIAL for future plans you might have.

Second, I refer often below to accounting for your employees. In all options this must be based upon 8-hour days worked. You must figure 12 gallons per day of wastewater per employee. Make this calulation on the highest number of employees on your busiest days. Also, make this calculation first and subtract it from your 370 gallons per day maximum discharge. Then you will know what you have left to work with for number of seats or customers.

Below is an excerpt from a portion of Table 4-C from the Subsurface Wastewater Disposal Rules. This is the table I used to outline for you the options you had for your eating establishment. The relevant area is in gray titled **Eating Places**.

The initial proposal you mentioned was for 2 meals a day. I've highlighted that in red. It basically calls for 20 gallons per day per seat. This would likely give you no more than about 15 seats plus your employees.

The second thing we talked about was a takeout establishment. This is highlighted in blue. This would require 100 gallons per day or 1 gallon per day per meal. I think the first option would be sufficient for you. Again, you need to account for employees. This does NOT allow you to have any inside seats but there could be picnic tables outside.

The third option we talked about was paper service only. I've highlighted this in green. This again requires you to account for employees. This option does not speak to the number of meals per day, simply the number of seats. The value you work with is 7 gallons per day per seat. If you were to have 25 seats, this would come out to 175 gallons per day plus what you need for employees. Note that you still need to deal with trash disposal but this option would give you something to work on in terms of establishing inside sit-down dining.

Type of facility	Design flow per user or unit
Airports	5 gpd per passenger plus 12 gpd per employee [1]
Assembly areas (Meeting hall, no seats)	2 gpd per person
Auditoriums/Stadiums:	5 gpd per seat
Bakery	100 gpd per bakery plus 12 gpd per employee [1, 2]
Bar/Tavern/Cocktail lounge	add 12 gpd per employee to each
w/ limited food	15 gpd per seat or13 gpd per patron
w/o food	10 gpd per seat or 7 gpd per patron
Barber shop	50 gpd per chair
Beauty salon	100 gpd per chair
Bed and breakfast	90 gpd per bedroom per operator's quarters and 75 gpd per rental room
Boarding houses with meals	180 gpd per house plus 40 gpd per boarder
Bottle club	10 gpd per seat plus 12 gpd per employee
Bunkhouses (no plumbing)	20 gpd per bed
Bus service areas	5 gpd per passenger plus 12 gpd per employee [1]
Butcher shop or department	100 gpd per shop plus 12 gpd per employee [1,2]

Cafeteria, open general public	30 gpd per seat plus 12 gpd per employee [1,2]
Cafeteria, private	15 gpd per seat plus 12 gpd/employee [1,2]
Campground sites served by central toilets	60 gpd per site
Campground sites served by individual water and sewer hookups	75 gpd per site
Campground/Transient dump station	50 gpd per user not served by individual water and sewer hookups
Campground park model trailer sites	125 gpd per site
Children's camps, day use only	15 gpd per camper plus 12 gpd per staff person
Children's camps, day and night	20 gpd per camper plus 20 gpd per staff person
Churches	4 gpd per seat for general seating and 8 gpd per seat for seats in a dining area
Dance hall	5 gpd per attendee plus 12 gpd per employee [1]
Day care facilities serving meals	15 gpd per child plus 12 gpd per adult
Day care facilities not serving meals	10 gpd per child plus 12 gpd per adult
Dining hall (separate from any other facility)	5 gpd per meal per seat [2]
Dog kennel (boarding and grooming)	15 gpd per dog or per run, cage, kennel or stall, whichever is greater; add 7 gpd per dog bath given; add 12 gpd per employee [5]
Eating Places	add 12 gpd per employee for each [2, 4]
Banquet /Dining hall	5 gpd per seat per meal
Cafeteria	5 gpd per customer
Catering	50 gal/ 100 sq. ft. floor space
Delicatessen, food prepared and no seats	100 gpd per deli or 1 gpd per meal served plus ~~15~~ 12 gpd per employee [1, 2] (whichever is larger)
Delicatessen, no food prepared and no seats	50 gpd per deli plus 12 gpd per employee [1]
Drive-in, no full meals and no china service	30 gpd per car space plus 12 gpd/ employee [1, 2]
Eating place, takeout	100 gpd or 1 gpd per meal served plus 12 gpd per employee [1, 2] (whichever is larger)
Eating place, paper service	7 gpd per seat plus 12 gpd/ employee [1, 2]
Ice Cream Stands, ice cream only with no seats	150 gpd per stand plus 12 gpd per employee. [1, 2]
Eating Place 1meal/day	10 gpd per seat plus 12 gpd per employee [1, 2]
Eating Place, 2 meals/day	20 gpd per seat plus 12 gpd per employee (1,2)
Eating Place, 3 meals/day	30 gpd per seat plus 12 gpd/employee [1, 2]
Specialty food stand or kiosk	50 gpd per 100 sq. ft.
Employees at place of employment with no showers	12 gpd per employee [1]
Employees at place of employment with showers	20 gpd per employee [1]
Fairgrounds/Flea market	3 gpd per attendee based on average daily attendance
Gyms, not associated with schools	10 gpd per participant plus 3 gpd per spectator plus 12 gpd per employee [1]

Good luck on your new-to-you business!

Glenn B. Angell, LSE #137

State Site Evaluator

Division of Environmental and Community Health

Drinking Water Program/Subsurface Wastewater Unit

Tel: (207) 592-2084

From: Alexandra C. Wight [mailto:alexandra.collins@gmail.com]
Sent: Friday, November 03, 2017 12:38 PM
To: Angell, Glenn B <Glenn.B.Angell@maine.gov>
Subject: Re: GPD for paper products!

Hi Glenn,

I'm so sorry to trouble you. If you could confirm that a paper products service brings us to the following, I would appreciate it enormously!

2 meals per day

12 gpd per employee

7 gpd per guest

Have a great weekend!

Alex Wight

FLANAGAN'S TABLE

668 Narragansett Trail

Buxton, ME 04093

flanaganstable@gmail.com

flanaganstable.com

On Wed, Nov 1, 2017 at 3:08 PM, Alexandra C. Wight <alexandra.collins@gmail.com> wrote:

> Hi Glenn,
>
> Again, thank you so much for taking the time to speak with me just now. Additionally, it was so kind of you to offer your assistance to my mother. We are grateful for your time and suggestions!
>
> If you could, would you mind breaking down the gallonage per day if we were to use paper products entirely? To be clear, we would use paper plates and napkins and plastic cups and cutlery.
>
> Many, many thanks,
>
> Alex Wight

FLANAGAN'S TABLE

668 Narragansett Trail

Buxton, ME 04093

flanaganstable@gmail.com

flanaganstable.com

Att. F

ATLANTIC TRUST
PRIVATE WEALTH MANAGEMENT

100 Federal Street, 37th Floor
Boston, MA 02110
Tel 617 357 9600
Fax 617 357 9602
cibcatlantictrust.com

January 24, 2018

Atlantic Trust Company
100 Federal Street
37th Floor
Boston, MA 02110

Re: Oliver & Alex Wight

To whom it may concern:

Please accept this letter as confirmation that Oliver and Alex Wight maintain an account at Atlantic Trust Company. Atlantic Trust Company serves as the investment manager of the assets. The account has been opened for several years.

As of December 31, 2017, the account had a market value in excess of $350,000. The investments can be liquidated at any time and the proceeds can be wired upon their request without any restrictions.

If you have any questions, or need any additional information, please do not hesitate to contact me at 617-531-6986.

Sincerely,

Brian St. Germain
Vice President

Att. G

Alexandra Collins Wight

296 Hicks Street, Brooklyn, NY 11201 • 207-232-3044 • alexandra.collins@gmail.com

EXPERIENCE

Flanagan's Table, Buxton, ME, January 2012-December 2016
Creator and Owner

- Coordinated and oversaw all logistics of executing monthly, five to ten course, communal barn dinners for 50 guests from which a percentage of the proceeds was donated to Maine Organic Farmers and Gardeners Association
- Managed a staff of nine individuals. Acted as liaison between kitchen and front of house staffs.
- Researched, scouted and hired chef talent
- Determined beverage pairings for each dinner
- Developed social media content
- Featured in *Edible Brooklyn*, *Down East Magazine, The New York Times*, *USA TODAY*, and *Portland Press Herald*

Recipe tester, developer and food stylist, New York, NY, October 2010-January 2011, April-June 2011, December 2011-July 2012

- Martha Stewart Living Omnimedia: *Martha Stewart Living*, *Whole Living*, *Everyday Food*, marthastewart.com
- Food Network Production Kitchen
- Assisted food stylists Christine Albano, Adrienne Anderson, Victoria Granof and Liza Jernow

Degustation, New York, NY, June 2011-January 2012
Sous Chef

- Collaborated with executive chef to develop new dishes for the à la carte and 10-course tasting menus
- Responsible for ordering and purchasing all produce, proteins, breads and cheeses and monitoring food costs
- Tasked with weekly Greenmarket shopping to scout unique ingredients and establish relationships with new vendors
- Created and managed weekly schedule. Coordinated all aspects of new hire process.

Martín Berasategui, Lasarte-Oria, Spain, January 2011-April 2011
Stagiaire

- Prepped and plated all primeras and carnes dishes
- One of six stagiaires chosen to work with Chef Martín Berasategui at "La Cena de las 14 Estrallas" in Vitoria, featuring René Redzepi, Joan Roca, Pedro Subijana, Quique Dacosta and Patxi Eceiza
- Invited to and assisted Martín Berasategui and Juan Mari Arzak at New York City Basque event, October 2011
- Chronicled experience on basqueofhouse.blogspot.com

db Bistro Moderne, The Dinex Group, New York, NY, October 2009-October 2010
Line Cook

- Prepped and executed db's signature burger and vegetable garnishes as burger and entremetier line cook
- Sole breakfast cook Monday-Friday
- Assisted executive chef at private functions and events
- Began as garde manger cook, prepping and executing all hot and cold appetizers, soups and VIP canapés

Saveur, Bonnier Corporation, New York, NY, October 2008-April 2009
Test Kitchen Assistant and Editorial Intern

- Shopped for and tested recipes and assisted at in-house photo shoots
- Researched, pitched, wrote and fact-checked articles for print and online

ELLE DECOR, Hachette Filipacchi Media U.S., Inc., New York, NY, June 2007-September 2008
Assistant to the Editor in Chief

- Tested recipes, fact-checked, edited and wrote captions for Daniel Boulud's "Daniel's Dish"
- Researched, pitched and compiled images for "What's Hot! News"
- Performed administrative duties for Editor in Chief to ensure seamless day-to-day operation
- Managed and coordinated writer contracts and payments

EDUCATION

Institute of Culinary Education, Culinary Arts Diploma, New York, NY, June 2009

Colgate University, Hamilton, NY, B.A., Magna Cum Laude, May 2004

Institute for American Universities, Aix-en-Provence, France, Spring 2003

Experience

- 21 years

Licenses & Certifications

- Licensed Professional Engineer in: ME, NH, MA, and VA
- US Green Building Council LEED® Accredited Professional

Education

Villanova University

- BS, Civil Engineering, 1996, Business Minor
- Member of Chi Epsilon National Engineering Honors Society

Affiliations

- Associate member of the American Society of Civil Engineers
- Member of Maine Aggregates Association Board of Directors

Recognition

- 2013 MEREDA Public Policy Award Recipient

STEVE G. BLAIS, P.E.
President

Steve's experience in civil engineering includes site design, permitting, planning and construction administration. He has engineered and managed large and small projects for residential, commercial and institutional clients. Steve is familiar with many local, state, and federal permitting processes.

Prior to starting Blais Civil Engineers, PA (formerly Land Consulting Engineers) based in South Portland, Maine in 2005, Steve gained diverse experience by working in both small and large consulting companies in Virginia, Massachusetts, and Maine.

Representative projects Steve has been involved with include:

4 Mildred Street
South Portland, Maine

Helped the client explore development options for a two unit rental as part of a due diligence phase. Services include review of existing conditions, floodplain consulting, review of municipal ordinances and GIS information, preparation of estimates for a topography and boundary survey, and meeting with municipal officials to determine the required process.

38 Stevens Avenue - Due Diligence
Portland, Maine

Helping the client establish whether this particular lot is buildable as part of a due diligence phase. Services include review of existing conditions and development documents, review of municipal ordinances, preparation of a summary letter for development feasibility, and submittal of recommendations for further actions to consider.

55 Spring Street
Scarborough, Maine

Helped the client increase parking at the front of an existing building as part of a due diligence phase. Services included review of municipal ordinances, research of previous permits and designs, meeting with municipal officials to determine the required process, and review of existing stormwater treatment. Reconfigured a stormwater pond and designed parking lot reconfiguration and expansion to gain (22)additional spaces by converting drop off area for prior gymnastics center into more efficient parking. These improvements added value to the property and made possible a larger medical office tenant lease.

56 Hammond Street
Portland, Maine
Provided civil and site engineering services including design, permitting and review, construction documents and administration for replacing a single family structure and detached garage with (2) new three-unit residential structures with accessory parking, stormwater controls and landscaping.

Beachmont Subdivision
Old Orchard Beach, Maine
Provided project management, permitting and associated design and construction services through municipal/state approvals for a 44 lot clustered subdivision for 1,700 sf. single family ranch and cape style detached homes with a minimum 20,000 sf. lot size and an 8.7 acre open space parcel on this 35 +/- acre lot.

Brickhill Heights - Long Creek Redevelopment Project
South Portland, Maine
Designed and inspected stormwater system and erosion & sedimentation control for a 30 unit affordable housing apartment complex. This project was part of the Long Creek Redevelopment Project.
Disturbed area: 2.2 acres.

Casco Bay Practice Ice
Falmouth, Maine
Reviewed Existing MaineDEP Permits, prepared letter addressing VC-1 standards and designed preliminary site and landscape plans for a covered pavilion and seasonal, refrigerated ice rink at the site of the current Twombly outdoor rink at Village Park in Falmouth. Revised the zoning map, conducted meetings to determine Town and MaineDEP permitting requirements and researched the town zoning ordinance and site plan approval process.

Colby Green at Colby College
Waterville, Maine
Designed drainage and utility systems for a campus expansion to host four new buildings and a green area. The project was required to meet Maine DEP site location of development and LEED standards.

Damariscotta Shore & Harbor Project
Damariscotta, Maine
Assisted others in providing conceptual low impact development engineering design alternatives for Town to consider in the redevelopment of the Main Street waterfront public parking facility. Stormwater quality treatment and flooding potential were among the many design

attributes taken into consideration.

East Point Christian Church Site Search
Portland, Maine
This congregation has outgrown its current location and is seeking to relocate to an 82,000 sf building which would house a 19,000 sf auditorium, a café, offices, a food pantry, and educational and recreational uses. Provided support services for a zoning determination request that would have potentially allowed the re-use of a particular significant industrial space. Our relationships with the city allowed us to quickly determine that this site would not work for the intended use, thereby saving the client costs of further exploration.

Family Wellness Center
Scarborough, Maine
Provided research, municipal/state permitting and associated civil/site design services for a newly constructed 4,000 sf building project on 1.5 acres while reusing the majority of an existing parking surface.

Friends School of Portland
Cumberland, Maine
Provided civil/site design, construction documentation, construction administration and local/state regulatory permitting for the construction of a new school building for up to 125 Pre-K through 8th grade students with two parking areas, sidewalks, basketball court and multiple play fields.

F.R. Carroll Plant
Limerick, Maine
To remain compliant with MDEP regulations, we updated the client's Stormwater Pollution Prevention Plan(SWPPP) and assisted the client with preparation of their Spill Prevention Control and Countermeasures (SPCC) Plan. We also assisted with permitting of a quarry/ gravel pit expansion.

Green Acres Subdivision
Scarborough, Maine
Provided civil/site design, permitting and associated services for this 5.85 acre, 7 custom home conservation subdivision project. 4 acres of this site have been preserved for use as open space.

International Marine Terminal
Portland, Maine
Provided civil & site engineering plans, stormwater management, regulatory permitting, cost estimating, and construction services for the transformation of a small-scale ferry terminal to a containerized freight processing facility and enhance the facility's ability to handle heavy-lift components for alternative renewable energies.

Islesboro Central School
Islesboro Island, Maine
Provided design development, construction documentation, bid administration, construction administration and local/state regulatory permitting for an addition and renovation to an existing building. Careful planning and design was key to continuing school activities throughout construction.

J.C. Stone - Ludwig Dimension Stone Quarry
Washington, Maine
Provided recommendations for best management practices for erosion control, designed stormwater management plans and devices and prepared drawings for the SWPPP and Hydrogeological Report to allow for the client's expansion of this quarry.

Kents Hill School Alfond Athletic Fields
Kents Hill, Maine
Designed infrastructure to support approximately five acres of artificial turf fields. The design included an extensive subsurface drainage system, grading, and erosion & sedimentation controls.

Kents Hill School Stormwater Analysis
Kents Hill, Maine
Performed overall campus stormwater analysis for the Kents Hill School Campus using the current DEP phosphorus standard resulting in surplus capacity in the school's existing wet pond and bark filter basin. Also worked with Maine DOT in creating a maintenance agreement for these devices. 254 acres of land were studied in this analysis.

Leon Gorman Park by L.L. Bean
Freeport, Maine
Designed a stormwater system to mitigate the quantity and quality of stormwater. Site uses included walking paths, driveways, parking, a picnic pavilion, an information kiosk, and bathroom facilities.

Long Creek Redevelopment Project
South Portland, Maine
Revised stormwater design for Maine DEP the site location of development permit for the Long Creek Redevelopment Master Plan. The master plan included several units of affordable housing, market-rate housing, and office space. This project currently hosts the Long Creek Youth Center.

Maine Yacht Center
Portland, Maine
Worked with client's attorney to rezone a portion of the Maine Yacht Center property to allow additional storage of boats. Provided permitting, design, construction documentation, and construction administration services. Stormwater was treated using a under-drained, grassed, soil filter before it was discharged into Casco Bay.

Massachusetts Golf Association Headquarters and Museum
Norton, MA
Provided site design and permitting for 16,000 SF building on the TPC Boston Golf Course.

Merrill's Wharf Cumberland Cold Storage/Pierce Atwood
Portland, Maine
Designed a stormwater management system to treat stormwater consistent with the City and Maine DEP standards. This project re-developed 100,000 square feet of office/retail space as well as 38,000 square feet of parking lot on the Portland waterfront. Treatment measures included a tree filter inlet, and a bio-filtration swale. Provided design, permitting, and construction documentation services. Construction administration services will follow.

North Haven Community School
North Haven, Maine
Designed and inspected site utilities including a stormwater mitigation system. Soil filters were used to reach Maine DEP stormwater standards and attain a stormwater permit. Efforts also included Maine DEP wetlands permitting and participating in planning board meetings.

Old Orchard Beach Campground Shore Stabilization
Saco, Maine
Designed stream bank stabilization together with another firm to stabilize a section of Goosefare Brook in Saco, Maine.

Pike Industries Quarry Expansion
Poland, Maine
Prepared variance applications to DEP and Town with related permitting documents and design drawings for expansion of this facility to allow the owner to excavate deeper and pump stormwater up to already designed and approved treatment areas.

Poitras Funeral Services
Buxton, Maine
Designed site reconfiguration to convert an existing 4.65 acre residential property into a funeral services business. Deliverables included a grading and drainage plan, erosion control notes and details, and submitting a site plan application for final approval. The drive entrance was relocated and property improvements consisted of approximately 14,000 sf of new gravel and paved parking areas.

Polycor
North Jay, Maine
Provided research and project management, site design and drawing development including construction plans for constructing a new entrance road, an approximately 16,000 sf office/operations building with associated parking, storage areas and holding pond for an existing 132 acre quarry operations and curbing plant. Also provided regulatory permitting assistance and best management practices for control of erosion and sedimentation.

Porous Pavement Evaluation
Cape Elizabeth, Maine
Evaluated the permeability of various porous pavement surface treatments to determine their adequacy for use within the shoreland zone. Porous pavement systems included porous asphalt, granite pavers with aggregate joints, granite pavers with vegetated joints, reinforced turf, and open graded aggregate. This evaluation was performed for others for a private residence.

Portland Museum of Art - Spring Street Parking and Gardens
Portland, Maine
Designed a stormwater system including an underground conduit system and bioretention cell to mitigate stormwater flows and pollution. This facility replaced the former YWCA building.

Riverside Drainage Study at Sugarloaf
Carrabassett Valley, Maine
Analyzed an existing problem-prone stormwater system for the Riverside Homeowners Association. The study encompassed approximately 170 acres and several single family and townhouse units. Recommended improvements to mitigate the steep slopes, erodible soils, and large quantities of concentrated stormwater flows. These improvements were ranked in order of importance and will be carried out in the association's long term plan.

Rockcraft Lodge
Sebago, Maine
Provided a grading and drainage design plan to convey stormwater away from the front of the property surrounding the lodge and relocated carriage house. Designed the layout and grading of parking spaces and adjacent courtyard.

Sebasco Harbor Resort
Phippsburg, Maine
Designed a stormwater mitigation system on the 593 acre resort to offset environmental impacts associated with the subdivision of 5 residential lots on Harbor Island. The design included soil filtering systems up against the waterfront.

SMCC Lighthouse Art Studio
South Portland, Maine
Provided construction site plan with drainage details to direct stormwater away from the renovated building.

The Ridges Apartments
Hallowell, Maine
Designed and inspected a stormwater system and erosion & sedimentation controls for a 45-unit, 3 building apartment complex. This 56 acre property is situated on fairly steep slopes. An underdrained soil filter, a dry detention basin, and stormwater buffers were used to mitigate stormwater. Disturbed area: 6.3 acres.

Third Party Inspections - Lattice Tower
Waterford, Maine
Provided third party inspection services meeting Maine DEP certified inspector requirements for stormwater permit #L-24344-NB-A-N as part of an effort to build a wireless communications tower with a 2,065 linear-foot gravel access road.

Third Party Inspections - Merrill's Wharf Cumberland Cold Storage
Portland, Maine
Prepared a report on degradation observed and provided recommendations for continued maintenance compliance for their stormwater management facilities.

Third Party Inspections - York Residence Inspection
Biddeford, Maine
Identified travelway base structure deficiencies and prepared a letter of findings and proposed rehabilitation plan to resolve issues as part of a wetland mitigation project.

Tidewater Landing
Wells, Maine
Provided research, permitting and associated design services to develop a 21-lot subdivision on a 15 acre parcel of land to include 1 existing and 16 new single family residential lots and 4 additional open space lots. Advanced this project through municipal & state agency approvals.

Town Farm Property Feasibility Study
Standish, Maine
Performed a feasibility study and provided conceptual plans for possible development scenarios considering resource protection, stormwater design requirements, town zoning & potential land values for the development of a 59 acre site.

Veranda Street
Portland, Maine
Reviewed site constraints to determine an alternate layout from original plans submitted, prepared a rough sketch of revisions, determined regulatory feasibility with City staff, and prepared revised drawings and drainage report as necessary to divide one residential property lot into three.

Waterhouse Field
Biddeford, Maine
Providing preliminary civil engineering services throughout the due diligence phase of the project. This includes review of existing conditions, local GIS information & applicable zoning and site plan ordinances, community meeting attendance to determine potential project concerns, research of utilities and of planning/engineering department files for historical information, identification of potential local & state permitting triggers as the project evolves, and creation of design alternatives and conceptual sketches of the site layout.

West End Place
Portland, Maine
Provided civil and site engineering plans, regulatory permitting, a stormwater management report and a construction management plan for a new 4-story project providing 39 modern energy-efficient residential apartments, 2 ground level retail spaces and covered parking.

Wood Chip & Biomass Fuel Reload Facility
Jackman, Maine
Provided permitting support and designed a stormwater system to attenuate and treat stormwater leaving the site. Included SLOD Permit Application, a stormwater management report, site layout plan, wet pond plan and details, grading erosion & sedimentation control plan, pre and post development drainage plans and a stormwater pollution prevention plan.

Steve Blais

From: Alexandra C. Wight <alexandra.collins@gmail.com>
Sent: Wednesday, January 24, 2018 1:38 PM
To: Steve Blais
Subject: Fwd: Trash

Steve,

Please find Chris' confirmation below that the island can handle the estimated trash output per week. Chris is the Property Manager, Diamond Cove.

Thank you,

Alex

On Thu, Jan 18, 2018 at 08:18 Christopher Carman <christopher@foresidemanagement.com> wrote:

> Haha, of course it does!
>
> Yes, it can handle that.
>
> Get Outlook for Android
>
> From: Alexandra C. Wight
> Sent: Wednesday, January 17, 8:40 PM
> Subject: Trash
> To: Christopher Carman
>
> Hi Chris!
>
> Hope you're staying warm. Came up for 2.5 days with the baby and of course it snows!
>
> Trash question - Rocky estimates 28-32 large trash bags per week. He believes this is a major overestimation, but wants to be conservative. I'm confirming with you that the island's transfer station can handle that volume.
>
> Thanks!
>
> Alex
>
> --

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

--

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

Jordan Young

From: Robert Bartels <rbartels@pwd.org>
Sent: Tuesday, January 30, 2018 12:21 PM
To: Jordan Young
Subject: RE: Great Diamond Island, Diamond Cove General Store

Yes, I received the fixture count. It is really low. I can't imagine the difference between this restaurant use and the previous general store use are all that different. We will be sending out the Ability to Serve Determination shortly.

Thanks,

Robert Bartels
Senior Project Engineer
Portland Water District
Phone:
E-mail: rbartels@pwd.org
http://www.pwd.org

From: Jordan Young [mailto:jyoung@blaisce.com]
Sent: Tuesday, January 30, 2018 11:26 AM
To: Robert Bartels <rbartels@pwd.org>
Subject: RE: Great Diamond Island, Diamond Cove General Store

CAUTION:This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Robert,

I am just confirming that you have received the fixture count for the subject property that I sent you around 2:30 yesterday.

Thanks,
Jordan

Jordan D. Young
Blais civil engineers
Blais Civil Engineers
27 Gorham Road, Suite 207
Scarborough, ME 04074
207-730-7200 | BCE Web Site | BCE LinkedIn
Engineering | Regulatory Permitting | Construction Services

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From: Jordan Young
Sent: Monday, January 29, 2018 2:36 PM
To: rbartels@pwd.org
Subject: Great Diamond Island, Diamond Cove General Store

Hi Robert,

Per our conversation on the phone, here are the fixtures counts for the change of use to a restaurant.
I also attached the estimated construction timeline, just in case it helps out at all.

Thanks,
Jordan

Jordan D. Young
Blais civil engineers
Blais Civil Engineers
27 Gorham Road, Suite 207
Scarborough, ME 04074
207-730-7200 | BCE Web Site | BCE LinkedIn
Engineering | Regulatory Permitting | Construction Services

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Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

January 31, 2018

Jordan D. Young
Blais Civil Engineers
27 Gorham Road, Suite 207
Scarborough, ME 04074

Re: 255 Diamond Avenue, GDI
Ability to Serve with PWD Water

Dear Mr. Young:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on January 26, 2018. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter.

Conditions of Service

The following conditions of service apply:

- The District can confirm that the supply of domestic water to the Diamond Cove Association, at the point which the Diamond Cove Association is connected to the public system, will be adequate to support the additional use from the proposed restaurant. The District does not have the authority to approve the connection to privately owned infrastructure. Since this will be a private connection, an application and deposit will not be required. However, the development team must contact PWD during construction so that we can verify that proper cross connection containment measures have been taken.
- The existing meter for the Diamond Cove Association is a 6-inch fire service meter with a maximum peak flow of 3,100 gallons per minute. It is the responsibility of the developer to determine that the existing meter has the capacity to support the additional use from the proposed restraurant. Please let us know if a meter upgrade is required to accommodate the additional flow. Since there is one master meter for the entire association, individual billing from the District is not available.

Existing Site Service

According to District records, the Diamond Cove Association is served through a private water service from the District's water main in Bay Avenue ROW. A 6-inch diameter water service line provides water service to the Diamond Cove Association. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main within Bay Avenue Right-of-Way and a public fire hydrant located 730 from the Diamond Cove Association connection.

Public Fire Protection

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

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of the proposed restaurant at the point which the Diamond Cove Association is connected to the public system. The District cannot confirm the adequacy of the private piping owned by the Diamond Cove Association. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will not require water service to provide private fire protection to the site.

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

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

Sincerely,
Portland Water District

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

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

255 Diamond Ave

Steve Blais <sblais@blaisce.com> Fri, Feb 16, 2018 at 6:23 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>
Cc: "Alexandra C. Wight" <alexandra.collins@gmail.com>, Peter Heil <pheil@blaisce.com>

Hi Shukria,

Below are answers to your questions:

1. Tableware will be up to 95% compostable. With the composting movement finally getting traction, we are confident that, in the near future, composting will be available either through the ferry service, private service, or a composting site on the island. We understand the island has constructed a slab for a composting site. They need someone to go through the certification process to officially begin composting. The applicant is working in conjunction with the gentleman who ha spearheaded this effort to help facilitate the process. Alex has also been in talks with Fortland (glamping site going up on House Island) to dispose of compost there. In the meantime, tableware will decompose quickly compared to other garbage that makes up the landfill.
2. There are no existing parking spaces.
3. Estimated construction cost (mostly building interior-related): $340k

I will be also taking days off next week, but I will be checking email and voicemails.

- Steve

Steve G. Blais, P.E.

Blais civil engineers

Blais Civil Engineers
27 Gorham Road, Suite 207

Scarborough, ME 04074

207-730-7200 | BCE Web Site | BCE LinkedIn

Engineering | Regulatory Permitting | Construction Services

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From: Shukria Wiar [mailto:shukriaw@portlandmaine.gov]
Sent: Thursday, February 15, 2018 12:32 PM

To: Steve Blais <sblais@blaisce.com>
Subject: 255 Diamond Ave

[Quoted text hidden]

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

Att. M

Portland Maine Yes. Google's good here.

Barbara Barhydt <bab@portlandmaine.gov>

Fwd: Grease Trap Info

1 message

Shukria Wiar <shukriaw@portlandmaine.gov> Fri, Feb 23, 2018 at 9:52 AM
To: Barbara Barhydt <bab@portlandmaine.gov>

Regarding the grease trap.

---------- Forwarded message ----------
From: **Alexandra C. Wight** <alexandra.collins@gmail.com>
Date: Thu, Feb 22, 2018 at 5:46 PM
Subject: Grease Trap Info
To: Shukria Wiar <shukriaw@portlandmaine.gov>
Cc: Steve Blais <sblais@blaisce.com>

Hi Shukria,

With regard to the grease trap, we had it inspected/assessed by Rachel Smith, Senior Water Resources Technician, City of Portland, before we opened the store last season. I've forwarded our conversation below. She passed her sign off to Eric Cobb, Health Inspector, City of Portland. Eric inspected the store both before we opened and during our operation. We passed both times.

The grease trap was regularly cleaned and maintained. In addition, we used these eco pucks two times per month for all of the months we were open to ensure that the trap stayed clean.

http://www.ecoglobalproducts.com/index.php/products/grease-trap-tablets

Additionally, I spoke with Rachel at the end of the season regarding our intentions to turn the space into a restaurant. I wanted to know if the current trap we have/had was adequate for the restaurant's purposes. She said it may** be/have been, but we decided to commit to installing a brand new grease trap to be certain we are complying with all codes and regulations.

Please let me know if I can provide any additional information.

Many thanks,

Alex

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

---------- Forwarded message ---------
From: Rachel Smith <rms@portlandmaine.gov>
Date: Mon, May 15, 2017 at 14:13
Subject: Re: grease trap
To: Alexandra Wight <info@thegeneralstoreatdiamondcove.com>

Nope. You don't have to do anything. I have already taken care of it and I have sent Eric an email just letting him know.

Thanks!
Rachel

On Mon, May 15, 2017 at 2:09 PM, Alexandra Wight <info@thegeneralstoreatdiamondcove.com> wrote:

> Great! Thanks so much. Should I forward this email to a Eric Cobb or is their a formal document I need to wait for?
>
> On Mon, May 15, 2017 at 12:36 PM Rachel Smith <rms@portlandmaine.gov> wrote:
>
> > Hi Alex,
> >
> > Thank you so much for sending over the photos. That trap looks to be in pretty good condition. I would just make sure you are cleaning it regularly during the open season and always before wrapping up for the year.
> >
> > Thanks!
> > --
> > Rachel Smith
> > Senior Water Resources Technician
> > City of Portland
> > rms@portlandmaine.gov
> > 874-8833
> >
> > Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

--
Rachel Smith
Senior Water Resources Technician
City of Portland
rms@portlandmaine.gov
874-8833

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

Att. N

Portland Maine Yes. Google's good here.

Barbara Barhydt <bab@portlandmaine.gov>

Fwd: initial island communication

1 message

Shukria Wiar <shukriaw@portlandmaine.gov> Fri, Feb 23, 2018 at 1:17 PM
To: Jennifer Munson <jmy@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

---------- Forwarded message ----------
From: "Alexandra C. Wight" <alexandra.collins@gmail.com>
Date: Feb 23, 2018 1:13 PM
Subject: initial island communication
To: "Shukria Wiar" <shukriaw@portlandmaine.gov>
Cc: "Marilyn Mistretta" <mmistretta@optlaw.net>, "Gail Landry" <gailplandry@gmail.com>, "Steve Blais" <sblais@blaisce.com>

Dear Shukria:

Thank you for having taking the time to forward the public comments. After having read through them all, I wanted to address the issue of communication. I believe we have been very transparent with both the board and community regarding our intentions for The General Store at Diamond Cove. This past August, I sent a letter to the Diamond Cove Homeowners Association Board, which was then sent out to all Diamond Cove residents via email. This letter introduced my family and detailed our intentions for the space.

The board also sent communication to the island's residents regarding our project through the fall and winter via email.

Please find confirmation below that the board did in fact receive my letter. The letter is also attached.

Many thanks,

Alex Wight

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

---------- Forwarded message ----------
From: **Jim Doyle** <jim@jimdoyle.com>
Date: Fri, Aug 18, 2017 at 3:28 PM
Subject: Re: Following up
To: "Alexandra C. Wight" <alexandra.collins@gmail.com>
Cc: Bill Sommers <billsommers@yahoo.com>, "maryellenfitz@gmail.com" <maryellenfitz@gmail.com>

Got it and was able to open . Looks good. I will make sure we get it out asap.

Here's hoping there's a baby real soon!!!!!

Jim

Sent from my iPhone

On Aug 18, 2017, at 3:25 PM, Alexandra C. Wight <alexandra.collins@gmail.com> wrote:

> Hi Jim,
>
> Still waiting!
>
> Thanks so much for taking the time to speak with me this past Tuesday. I feel grateful knowing I have you and Mary Ellen to reach out to moving forward.
>
> I've attached a letter to this email. Please let me know if you have any trouble opening.
>
> Have a great weekend!
>
> Best and many thanks,
>
> Alex
>
> On Fri, Aug 18, 2017 at 1:53 PM Jim Doyle <jim@jimdoyle.com> wrote:
>> Dear Alex,
>>
>> Hopefully you won't see this email for a few days because of a new baby girl in your home!!! Excited for you.
>>
>> We are grateful for the time you spent with us by phone on Tuesday to share your plans. You indicated you'd be preparing an email to the community. We all think that would be really helpful as we continue to get questions about your plans.
>>
>> I know you have other priorities for sure, especially now. But if you can give us some sense of when that might be ready to go out we'd appreciate it. We should be able to get it out quite quickly.
>>
>> As you go forward please know that Mary Ellen and I are the DCHA's board liaison to the commercial entities. Please contact us if you have any questions or concerns.
>>
>> Again our thanks for your time Tuesday .
>>
>> Jim
>>
>> Get Outlook for iOS
>
> <DCHOA August 2017.docx>

DCHOA August 2017.docx
17K

August 18, 2017

Dear Residents of Diamond Cove:

My name is Alex Wight and this past April, I had the lucky fortune of purchasing The General Store at Diamond Cove. My husband, Oliver, and myself have two boys, ages 5 and 2 and one daughter, who is due to arrive any day now. Currently, we reside in Brooklyn, New York.

Oliver and I have a deep appreciation for and sincere love of Maine. In 1996, my family relocated from Connecticut to Portland, where my sisters and I attended Waynflete. My mother, Gail Landry, still lives in Portland and is the owner of The Wedding Barns of Maine, namely, The Barn on Walnut Hill in North Yarmouth and The Barn at Flanagan Farm in Buxton. In 2013, I launched Flanagan's Table, a communal dining series on our 66 acre property in Buxton that served 50 guests monthly via a rotating guest Maine chef. We donated a percentage of the proceeds to both Maine Farmland Trust and Maine Organic Farmers and Gardeners Association, in addition to supporting Full Plates Full Potential and The Barbara Bush Children's Hospital. Throughout its four year run, we were grateful to receive national recognition from publications such as The New York Times, USA Today, Edible Brooklyn, Slow Living and statewide publications such as Portland Press Herald and Down East. This past December, we wound the series down in order to make way for a new venture.

Oliver and I have committed to spending summers in Maine and have done so, successfully, for five years now. The ways in which it has benefited us personally, professionally and as a family are innumerable and intangible. We felt incredibly lucky to have learned about The General Store having come up for sale and even more fortunate to have been able to purchase it. Great Diamond Island, and more specifically, Diamond Cove, is a unique place in Maine, steeped in history and natural beauty and graced with a tight-knit community — all of which we respect enormously.

We are excited about what we have planned for the future and would like to share our intentions for the space going forward. In May of next year, we plan to reopen the existing general store as a casual sit down restaurant with the back apartment renovated to accommodate a new general store that will continue to sell (but will not be limited to) ice cream, penny candy, beer and wine, breakfast pastries, newspapers, coffee, sandwiches and fundamental provisions. Through this updated endeavor, we will continue to strive to be the hub of the island — a place where people feel comfortable congregating and connecting.

Thank you for welcoming us into your community. We very much look forward to all that lies ahead.

Sincerely and many thanks,

Alex Wight

Portland Maine Yes. Google's good here.

Barbara Barhydt <bab@portlandmaine.gov>

Fwd: Diamond Cove General Stove kitchen plans as reviewed by Eric Cobb, Health Inspector

1 message

Shukria Wiar <shukriaw@portlandmaine.gov> Fri, Feb 23, 2018 at 1:37 PM
To: Jennifer Munson <jmy@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

---------- Forwarded message ----------
From: "Alexandra C. Wight" <alexandra.collins@gmail.com>
Date: Feb 23, 2018 1:19 PM
Subject: Diamond Cove General Stove kitchen plans as reviewed by Eric Cobb, Health Inspector
To: "Shukria Wiar" <shukriaw@portlandmaine.gov>
Cc: "Steve Blais" <sblais@blaisce.com>, "Gail Landry" <gailplandry@gmail.com>, "Marilyn Mistretta" <mmistretta@optlaw.net>

Dear Shukria:

I also wanted to address a resident's concern that our kitchen might not be up to code/meet DHHS approval. A few weeks ago, I sent Eric Cobb, the city's health inspector, a copy of our proposed kitchen plans to be certain we would be in compliance with code and had everything we needed. The original set of plans included a detailed equipment list, in addition. His positive review can be found below.

Thank you,

Alex

FLANAGAN'S TABLE
668 Narragansett Trail
Buxton, ME 04093
flanaganstable@gmail.com

flanaganstable.com

---------- Forwarded message ---------
From: Eric Cobb <ecobb@portlandmaine.gov>
Date: Wed, Feb 14, 2018 at 07:55
Subject: Re: The General Store at Diamond Cove
To: Alexandra Wight <info@thegeneralstoreatdiamondcove.com>

Alex,

This picture is perfect, I wish all plans were like this. It looks like you have everything needed as far as plumbing and equipment.

Eric Cobb
Health Inspector

Permitting and Inspections Department
389 Congress St.
Portland Me. 04101
(207) 756-8016 phone
(207) 874-8913 fax

Click the link below for Food Service information:

http://www.portlandmaine.gov/food

On Tue, Feb 13, 2018 at 10:13 AM, Alexandra Wight <info@thegeneralstoreatdiamondcove.com> wrote:

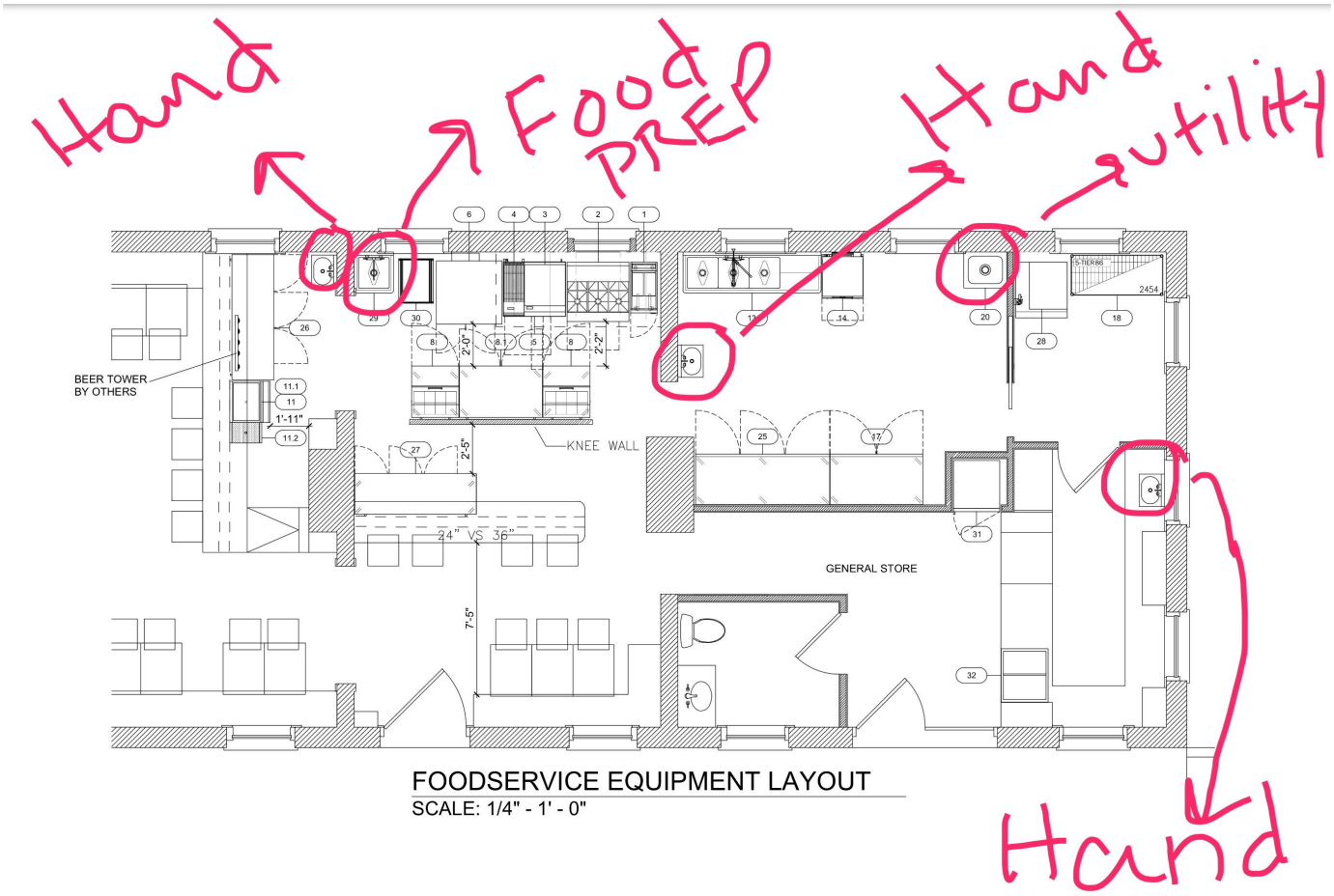
Hi Eric,

Thanks so much for taking the time to look over and provide comments. I've attached a screenshot with labeled sinks to make it more clear. Apologies for the horrid iPad handwriting.

Please let me know if there is anything glaring or anything additional we need.

Thank you!

Alex



EQUIPMENT UTILITY SCHEDULE

		ELECTRICAL							PLUMBING					
MFR	MODEL	VOLTS	PH	AMPS	KW	HP	CONN.	NEMA	CW (IN)	HW (IN)	IW	DW	GAS SIZE	MBTU

On Mon, Feb 12, 2018 at 8:46 AM Eric Cobb <ecobb@portlandmaine.gov> wrote:

Alex,

> This plan looks nice, just a couple of questions. It looks like the plan shows two hand wash sinks in the kitchen/ prep. areas, is this correct? Also, is there a designated prep. sink with an air gap in the plans?
>
> *Eric Cobb*
> Health Inspector
> Permitting and Inspections Department
> 389 Congress St.
> Portland Me. 04101
> (207) 756-8016 phone
> (207) 874-8913 fax
>
> Click the link below for Food Service information:
>
> http://www.portlandmaine.gov/food
>
> On Tue, Feb 6, 2018 at 10:36 AM, Alexandra Wight <info@thegeneralstoreatdiamondcove.com> wrote:
>> Hi Eric,
>>
>> I hope this finds you healthy and well! This winter has been brutal! One of the five of us always seems to be sick. It's non-stop.
>>
>> I want to thank you again for having explored ways to navigate the issues The General Store was presented with on account of the overboard discharge system the property is subject to. I know your time is limited and I appreciate your willingness to assist us. We ended up meeting with Glenn Angell (State Site Evaluator, Division of Environmental and Community Health, Drinking Water Program/Subsurface Wastewater Unit), who informed us that so long as we go to an all paper service, we will be operating well within our allotted gallons per day. Accordingly, we are moving forward with our plan to turn the building from a mixed residential/mercantile space to a classification of restaurant/mercantile. Unfortunately, we are still waiting for administrative approval for change of use to come through from the city. I understand the city is slammed and can only imagine what that means for you, too.
>>
>> In an effort to keep things moving, I am sending the kitchen plan as laid out by Trimark for your review. I would be enormously grateful if you might be willing to take a look to see if the layout meets and complies with all rules, regs, codes, etc. If you simply do not have the time at this moment, I fully understand. If there is someone else you believe I should be reaching out to, please let me know!
>>
>> Thank you in advance for your consideration,
>>
>> Alex Wight
>
> Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

PC22

Google Groups

Change of use of the general store at diamond cove on great diamond island

doug.sosnik@gmail.com <doug.sosnik@gmail.com> Feb 23, 2018 3:37 PM

Posted in group: **Planning Board**

I have rented a house on great diamond island for several years and have owned a lot on the island for the past 4 years.

We are at the final stages of building a house on the island and expect to take occupancy this June.

While I am relatively new to the island, I do know from my time there how essential it is to have an operating food option throughout the day.

While I am sure that there are plenty of opinions as to the best way achieve this option, as a homeowner on the island I would be in full support of the current owners plan to convert the space into a restaurant as long as it is in full compliance with all of the applicable rules and regulations.of the city.

Doug Sosnik

PC23

James H. Doyle

7711 Holiday Drive

Sarasota, FL 34231

Sean Dundon, Chair

Planning Board, City of Portland

389 Congress Street

Portland, ME 04101

RE: Change of Use Application for 255 Diamond Avenue, Diamond Cove

Dear Mr. Dundon,

I own property on Diamond Cove at 158 West Shore Drive. I also serve as a member of the Board of Directors of the Diamond Cove Home Owners Association (DCHA). As others have hopefully pointed out to you, our DCHA Board has taken no opinion on this application other than to request that the city incorporate the DEP discharge guidelines into any permit it would grant. So I write only as a resident.

I support the application for the conversion of the general store to restaurant with a smaller store. I believe this would be a welcome addition to our community.

The general store is a very emotional issue for many of us who live at Diamond Cove. Prior to the 2017 summer we had a store most of us loved. But it wasn't a particularly profitable business for the owner. It's very difficult to make that operation profitable in a short Maine summer season.

I, like many others on our island, would love to see the general store we had last forever. But I am hopeful that this proposed change of use will allow us to keep a more modest store while providing an opportunity for that to be sustained over the long-term. Plus we'll get another restaurant option that sounds very exciting.

As others have likely noted, the DCHA may need to negotiate a facilities agreement with the restaurant/store owners. However I do not believe that is an issue which should concern the planning board.

I urge you to support this change of use.

Sincerely,

James H Doyle
Owner
158 West Shore Drive
Diamond Cove

PC24

David Witting
14 Epping Road
Exeter, NH 03833

February 23, 2018

Sean Dundon, Chair
Planning Board, City of Portland
389 Congress Street
Portland, ME 04101

Dear Mr. Dundon:

I own a home located at 176 McKinley Court in Diamond Cove and sit on the Diamond Cove Homeowners Association Board. This is my personal opinion and does not reflect the views of the DCHA.

I am writing to express my opposition to the change of use application submitted by Alex Wight and Gail Landry relating to the general store property at 255 Diamond Avenue, Diamond Cove.

My primary concern is the financial impact on the Diamond Cove community. Both the direct costs required to monitor compliance with our waste discharge license and the indirect costs associated with our island infrastructure, staffing and trash management.

Ms. Wight and Ms. Landry have said they plan to work within the general store's existing water and sewer allocations. Who will be paying to monitor outflow usage? What is the penalty for exceeding? Who is bearing the legal costs if limits are not maintained? To my knowledge, no approved, detailed plan is in place between all parties that outlines how compliance will be measured and maintained.

It is important to note that the existing general store has reduced association fees compared to the other two restaurants on the island. These reduced general store fees do not match the proposed change to a 35 person sit down restaurant. This change of use will certainly increase island foot traffic, infrastructure wear and tear, trash removal costs and greater security staffing that the community and City will have to bear. I do not believe any agreement is in place to address these increased costs to the community.

In closing, I would like to suggest that the Planning Board deny the pending change of use application until the owners have come to an agreement with all interested parties on how they will work within the existing wastewater allocation limits and contribute additional association fees to match this desired change of use.

Thank you for your consideration.

Regards,

David Witting

David Witting

PLANNING BOARD REPORT
PORTLAND, MAINE

16-Unit Single-Family Subdivision – Brandy Lane
22 Hope Lane
Level III Subdivision and Conditional Use Application

Submitted to: Portland Planning Board Date: February 23, 2018 Public Hearing Date: February 27, 2018	Prepared by: Matthew Grooms, Planner Project #: 2017-117

I. INTRODUCTION

LBW, LLC is proposing a sixteen-lot single-family subdivision on a 6.46 acre parcel of land in the North Deering Neighborhood. The site is currently undeveloped woodland and features an existing trail within the Presumpscot River Preserve and parking area for approximately five vehicles. As part of the development, a street will be constructed, with a 50' right-of-way (ROW), to the City standards including the installation of underground utility services, granite curbs, lighting, sidewalks and street trees. The Planning Board is being requested to review the application under Portland's Subdivision Ordinance and for compliance with Division 30 of the City's Land Use Code to ensure adequate affordable housing per the city's inclusionary zoning requirements. The entire development is located within the C-40 Contract Zone.

Figure 1: Proposed Development Site

A total of 78 notices were sent out to neighbors and interested parties within Portland, and the public notice appeared in the February 19th and 20th, 2018 editions of the *Portland Press-Herald*.

Applicant: Lloyd B. Wolf, LBW, LLC
Consultants: Doug Reynolds, Gorrill Palmer

II. REQUIRED REVIEWS

Waiver Requests	*Applicable Standards*
Sidewalk Waiver to allow for development of sidewalks along westerly side of Brandy Lane and only a portion of the easterly side due to wetland constraints.	*Section14-498 8a* requires that sidewalks be constructed on each side of each street in accordance with article III of Chapter 25.

Staff Recommendation: The City is supportive of this waiver request, citing wetland impacts arising from a paved sidewalk.	
Preservation of Significant Natural Features waiver to allow for the filling of on-site wetland features Staff Recommendation: No waiver is required as the applicant is seeking to minimize impacts to the greatest extent possible and the filling falls within the purview of the MDEP, which required a Tier II NRPA permit. A copy of this permit shall be provided to the city.	*Section 14-526(b)* requires that significant natural features be preserved and protected by incorporating them into site design.
Review	***Applicable Standards***
Subdivision (creation of 3 or lots)	*Section 14-497*

III. PROJECT DATA

Existing Zoning	C-40 Contract Zone		
Existing Use	Undeveloped Woodlands		
Proposed Use	Sixteen single-family lots		
Parcel Size	6.46 acres		
	Existing	*Proposed*	*Net Change*
Impervious Surface Area	0 SF	70.051 SF	70.051 SF
Building Footprint	0 SF	0 SF (Buildings are not proposed at this time)	0 SF
Number of Residential Units	0	16 New Lots	16 Lots
Proposed Bedroom Mix	Homes are to be constructed by separate developer and are likely to be three and four-bedroom structures.		

IV. EXISTING CONDITIONS

This 6.46-acre tract of undeveloped woodlands is located off of Hope Lane in the North Deering Neighborhood and is abutted by single-family residential uses to the south and west, the Falmouth Spur roadway to the north and a Central Maine Power Company Easement and undeveloped woodlands including a portion of the Presumpscot River Preserve to the east of this site. A Presumpscot River Preserve parking area with space for six vehicles is located off of the property's frontage on Hope Lane, providing access to one of the Preserve's trail heads, which traverses the southeast corner of the property. The property contains several areas of existing wetlands and exhibits a predominantly gentle slope, with the exception of two steeper inclines located at the north and south ends of the site. Residential land uses in the vicinity are predominantly zoned R-2 Residential with the exception of eight parcels to the southeast of this site which fall within the

Figure 2: View of Site from Hope Lane with Existing Trail Parking

C-40 Contract Zone. The area of land encompassed by the CMP easement is zoned RPZ Resource Protection Zone.

V. PROPOSED DEVELOPMENT

This subdivision would consist of sixteen lots measuring between 6,054 sf and 17,006 sf, compliant with the standards of the C-40 Contract Zone which requires lots to be a minimum of 6,000 sf. The applicant intends to construct a new public street with a 50-foot right-of-way, measuring 950 feet in length to be named Brandy Lane. This street would access all sixteen lots and connect with Hope Lane at the existing curb cut where the trailhead parking area is currently located. This parking area would subsequently be relocated approximately 250 feet further north within the site, with the trailhead similarly being relocated.

Along the entire west side of Brandy Lane, a sidewalk and esplanade feature, measuring 5 feet and 6 feet respectively, is proposed and is continued along the east side of the street across the frontage of proposed lots 13 through 16, with a sidewalk waiver being sought for the remaining portion due to wetland disturbance. Crosswalks will be constructed at two locations; between proposed lots 7 and 16, and at the Brandy Lane and Hope Lane intersection. A total of nine Town and Country street lamps, spaced approximately 115-feet apart are proposed along the west side of Brandy Lane within the proposed esplanade and two street trees are being provided per lot.

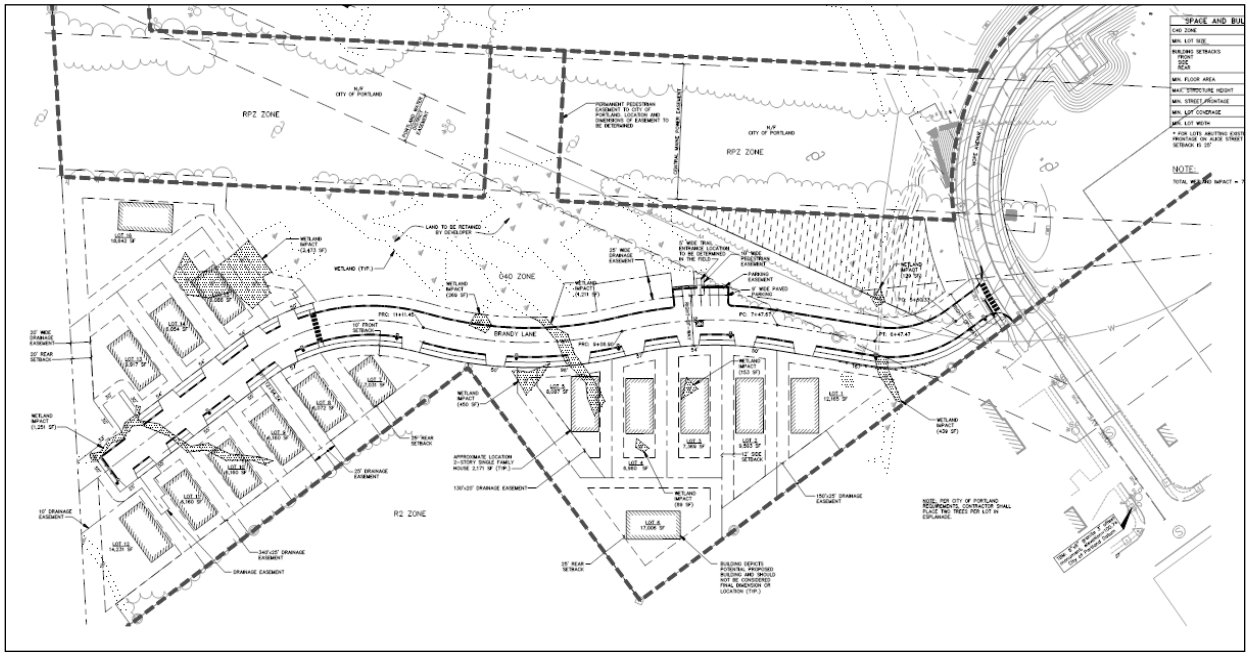


Figure 3: Proposed Subdivision Plan

Prior to development of the street, underground electric, telephone and cable lines are to be installed beneath proposed esplanades, with a new water main and sanitary sewer line being constructed beneath Brandy Lane itself. In regards to stormwater management control, the development will utilize 4 filterras, 3 systems of StormTech chambers, 5 Grassed underdrained soil filters, and 16 roof dripline filters to provide water quality treatment and storage. Certain features of this system have been proposed within the public right-of-way, and the Department of Public Works has coordinated with the applicant to assume responsibility for approximately half of this infrastructure. This agreement shall be finalized in the applicant's stormwater maintenance agreement, which has been drafted as a condition of approval.

This site contains a number of wetland areas which are predominantly clustered along the easterly property boundary. The applicant intends to fill 7,920 sf of wetland in order to complete this subdivision. The

applicant has completed previous work in the vicinity of this project, and prior to this application, a total of 27,159 square feet of wetland impacts had been approved by Maine DEP. These projects combined create a new wetland impact of 35,079 square feet and for this reason, the applicant is seeking a Tier II NRPA permit from Maine DEP, which is required for impacts of between 15,000 square feet and 43,560 square feet.

VI. PUBLIC COMMENT

The Planning Division received three written public comments for this project (*Attachment 11*). These comments discuss utilizing the development parcel for recreational purposes, concerns regarding traffic in the vicinity of the development and requests for additional information regarding relocation of the trail parking area.

The City's consulting traffic engineer, Tom Errico, in reviewing the applicant's traffic evaluation report, determined that the existing street network has sufficient capacity to accommodate trips associated with this development and further that the development will not result in safety deficiencies.

The proposed single-family development is an allowable use under the C-40 Contract Zone and the property is not owned by the city and as such, the applicant is not obliged to alter their proposal.

A. Planning Board Workshop

The Planning Board held a workshop to discuss this proposed subdivision on October 10, 2017. At that meeting members of the Board were primarily interested in further reducing wetland impacts arising from site development and determining ownership and maintenance responsibilities of the parking area and trail on the applicant's site. At this meeting, two members of the public spoke, who discussed the opportunity of reducing the right-of-way width of Brandy Lane and requested additional information regarding the Tier I NRPA permit. In response to these comments, the staff and the applicant clarified that site conditions required the proposed configuration and that the impact of wetlands had been carefully considered in the design of this subdivision. Language regarding the off-street parking easement has been provided which designates the City as the easement holder in accordance with the C40 contract zone. Corporation Counsel is currently reviewing this documentation, and acceptance of this easement shall be made a condition of approval. Lastly, in regards to the DEP NRPA permit, the applicant has supplied a Tier II NRPA permit application to the city, due to there being greater than 15,000 square feet of freshwater wetlands on-site. Approval of this application is also being made a condition of approval.

B. Neighborhood Meeting

The applicant held a neighborhood meeting on Tuesday November 28th at the Lyman Moore Middle School. This meeting was attended by 10 members of the public who asked questions regarding review process, wetland impacts, stormwater treatment systems, relocation of the existing trail parking, tree clearances and design of the new street (*Attachment U*).

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

a. The owner of the property is Lloyd B. Wolf of LBW, LLC. The applicant has provided a copy of a quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 23889 Page 327), which demonstrates their right, title and interest in the property (*Attachment J*).

b. The applicant has submitted a letter from Gorham Savings Bank, dated January 5, 2017, as demonstration of their financial and technical capacity to complete the proposed development (*Attachment K*).

SPACE AND BULK STANDARDS	
C40 ZONE	REQUIRED
MIN. LOT SIZE	6,000 S.F.
BUILDING SETBACKS FRONT SIDE REAR	 10' 12' 20'*
MIN. FLOOR AREA	1,000 S.F.
MAX. STRUCTURE HEIGHT	35 FT.
MIN. STREET FRONTAGE	50 FT.
MIN. LOT COVERAGE	40%
MIN. LOT WIDTH	50 FT.

* FOR LOTS ABUTTING EXISTING RESIDENTIAL LOTS WITH FRONTAGE ON ALICE STREET AND ALICE COURT, REAR SETBACK IS 25'

Figure 4: Zoning Compliance Table

VIII. ZONING ANALYSIS

The proposed subdivision is within the C-40 Contract Zone. This is considered a sixteen-lot subdivision, all lots intended for development of single-family residential structures. The lots as proposed meet the minimum lot size, minimum street frontage, and lot width. Each lot has the potential to meet all of the other setback requirements, parking requirements, lot coverage requirements, and building height. When a building permit comes in for the construction on the individual lots, it must meet all the zone requirements.

Initially, the C-40 Contract Zone contained an age restriction clause, which stipulated that at least 80% of the total occupied units be reserved for owner-occupied individuals of at least fifty-five years of age. In 2012, this requirement was removed with the first amendment to the C-40 Contract Zone. All other subdivision requirements of the zone are being met.

The C-40 contract zone also contains a clause which requires the construction of off-street trail parking for six vehicles to be constructed within a period of two years following recording of the subdivision plat. Specifically, it states, "The public parking lot shall be designed and constructed by APPLICANT to accommodate up to six (6) vehicles. The public lot shall consist of a graded gravel surface, and bordered by a wooden split-rail fence and APPLICANT shall have no obligation to pave or otherwise improve the public parking lot to comply with CITY standards for streets." Based upon this requirement, the staff is recommending a condition of approval which would slightly modify design of the trail parking to be entirely situated on the applicant's property, and to be a gravel surface.

IX. SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)

The final plat will need to be revised to reflect any waivers and conditions of approval that relate to the subdivision plan. Any waivers granted must be recorded at the Registry of Deeds within 90 days of a Planning Board decision.

X. SUBDIVISION REVIEW (14-497(a). Review Criteria; 14-198. Technical and Design Standards; & 14-499. Required Improvements)

1. *Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)*
   The site is currently undeveloped and contains no impervious surface area. In regards to stormwater management control, the development will utilize 4 filterras, 3 systems of StormTech chambers, 5 grassed underdrained soil filters, and 16 roof dripline filters to provide water quality treatment and storage. No undue air pollution or soil erosion is anticipated as a result of this development. The applicant intends to fill 7,764 sf of wetlands, which requires a Tier II NRPA permit from MDEP.

2. *Sufficient Water Available (Section 14-497 (a) 2 and 3)*
   The applicant has not provided a letter from the Portland Water District confirming the district's ability to serve the proposed project. This has been incorporated as a condition of approval.

3. *Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)*
The proposal includes a proposed street that starts at a new intersection with Hope Lane and dead ends with a turnaround near the boundary to the north. The Fire Department has reviewed the layout of the turnaround and states "[t]he proposed turnaround appears to be able to accommodate a Fire Dept. ladder truck. The access drive has been designed to meet City of Portland standards with a paved travel way of 28 feet in width. The Fire Department has indicated that 28 feet is needed for emergency access.

The applicant submitted a Traffic Generation Assessment (*Attachment L*) which projects 152 weekday and 159 Saturday vehicle trips, 12 AM peak hour trips, and 16 PM peak hour trips from the proposed subdivision. The City's Traffic Engineering Reviewer Tom Errico has commented (*Attachment 2*):

1. *I have reviewed the Traffic Evaluation prepared by the applicant. I find the contents and conclusions to be acceptable. The project does not require a Traffic Movement permit and is not expected to cause unreasonable traffic congestion or safety deficiencies.*

Sidewalk Requirement
The applicant is proposing a sidewalk and esplanade feature as required per the city's subdivision ordinance along the west side of Brandy Lane and along a portion of the east side of the street in front of proposed lots 13 through 16. Section 14-498(b)(8) of the Subdivision Ordinance requires that a sidewalk be constructed on each side of newly proposed streets. Tom Errico, in reviewing the applicant's plans provided the following comment (*Attachment 2*):

1. *Given wetland impacts from the paved sidewalk, I support a waiver from the City's Technical Standards for providing a sidewalk on both sides of Brandy Lane. I find the plans to be acceptable.*

4. *Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)*
The applicant has submitted a wastewater capacity application to the Department of Public Works requesting confirmation of adequate sewer capacity. A letter from DPW confirming sewer capacity has been included as a condition of approval. Since the road will be built to City standards and accepted by the City Council, solid waste and snow removal will then be handled by the City.

Under 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 MDEP Chapter 500 rules describe stormwater management requirements for new development projects. The City's Peer Engineering Review (*Attachment 6*) notes:

1. *The Applicant has noted that a MDEP NRPA Tier II wetland permit and approval from the ACOE are required, copies of all permit approvals should be forwarded to the City upon receipt. Applicant has acknowledged, and will be providing the permits when available.*

2. *In accordance with Section 5 of the City of Portland Technical Manual, a Subdivision is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:*
    a. *Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good*

housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.

b. *General Standard: The project will result in an increase in impervious area of approximately 70,000 square feet. As such, the project is required to include stormwater management features for stormwater quality control. Please see below for additional stormwater management comments.*
c. *Flooding Standard: The project will result in an increase in impervious area of approximately 70,000 square feet. As such, the project is required to include specific stormwater management features to control the rate or quantity of stormwater runoff from the site. The Applicant has indicated that there will be minor increases in flow in the 2-year storm, 10-year storm and 25-year storm. We are in agreement that the increases will be insignificant. The underdrain soil filters have not been modeled in HydroCAD, and these may provide a small amount of flow attenuation as well. Please see below for additional stormwater management comments.*

3. *We have the following comments on the proposed stormwater management system for the site:*
    a. *Maintenance of the stormwater management features has been described in the Erosion & Sedimentation Control Report. A stormwater maintenance agreement will be required from the Applicant. Additional information should be provided on the ownership and maintenance of the stormwater treatment systems throughout the subdivision, i.e., will a homeowners association be put into place to pay for and manage the maintenance throughout the site. The Applicant has included a Post-Construction Stormwater Management Plan document as their Maintenance Agreement. The Applicant should note that a recorded agreement with the City is required in accordance with Chapter 32.*

The proposed stormwater management system involves extensive infrastructure located within the public right-of-way. As the Board may recall, a similar infrastructure design was proposed for the Stroudwater Reserve subdivision, recently approved, and was approved under the condition that DPW would assume responsibility for approximately half of the stormwater BMPs and that the applicant would be responsible for the remaining portion. This same structure of maintenance is being proposed by DPW for this subdivision as well. Keith Gray, City Engineer has reviewed the applicant's plans and has provided the following comments (*Attachment 1*):

1. *The Department of Public Works will take ownership of the BMP's proposed for treatment of the ROW. The plans indicate that Focalpoint 1 provides treatment for only the ROW and the remaining three (3) Focalpoints provide treatment to both the ROW and the individual lots. We suggest the tributary to Focalpoint 2 be revised to include only the front lawn areas of Lots 1 through 5. If the area to Focalpoint 2 is revised, DPW will take ownership of Focalpoint 1 and 2, with the remaining treatment BMP's being the responsibility of the applicant to own and maintain. The storage chambers shall be moved back in the ROW for Focalpoint 1 and 2.*

2. *Focalpoint 4 storage chambers should be relocated further away from the proposed structure.*

3. *Utility manholes shall be located outside of the vehicle tire tracking to the extent possible (locate near middle of travel lane).*

4. *Current maintenance procedures suggest that high flow filtration BMP's require less maintenance if they are located away from the curb line. The Focalpoints should be placed at*

the edge of the ROW. Where needed, curb inlets can be extended utilizing the Rain Guardian Foxhole structure.

5. *The low-pressure sewer forcemain shall be located in the esplanade or sidewalk area*

5. *Scenic Beauty, Natural, Historic, Habitat and other Resources (Section 14-497 (a) 8)*
At present, the proposed development site is undeveloped consisting of woodland and borders portions of the Presumpscot River Preserve, a 48-acre public nature preserve that includes 2.5 miles of trails and is host to a variety of activities including mountain biking, snowshoeing, hiking, cross country-skiing and birding. This subdivision is located outside of the preserve, and is not protected. Vehicular and pedestrian access to the trail network are being relocated within the development to allow for the construction of Brandy Lane.

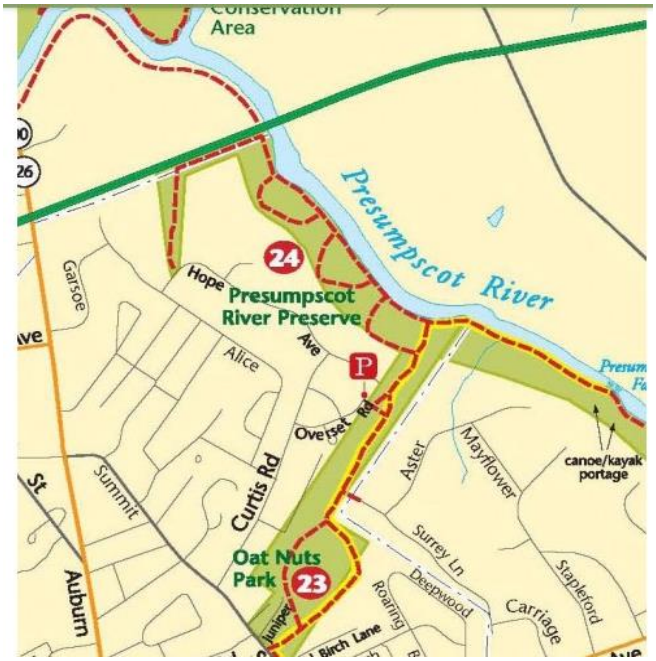


Figure 5: Map of Presumpscot River Preserve

This property includes sizeable wetland areas as previously described, and shall be partially filled so as to develop the road and buildable lots. In support of this proposal, the applicant supplied a wetlands report from TRC Environmental Corporation, which indicate that no existing wetland features are considered to be "Significant Vernal Pools" as defined by the Maine Natural Resources Protection Act and are not subject to protection. Vernal pools and isolated vernal pools may be filled if a Tier II NRPA permit is obtained from MDEP. The applicant has also supplied letters from the Maine Department of Agriculture, Conservation and Forestry as well as the Maine Ecological Services Field Office of the US Department of the Interior, Fish and Wildlife Service, which state that this site is not known to contain rare or unique botanical features or endangered wildlife habitat.

This site is not known to be a site of historic or archaeological significance. The applicant requested a determination from the State Historic Preservation Officer regarding the presence of historic or archaeological features. No response was included as part of this submission.

The ordinance requires submission to include a preliminary landscape plan, and staff have advised the applicant that tree saves are generally sought for subdivisions. A more detailed landscape and tree save plan will need to be prepared for the final submission. The applicant is proposing 32 street trees. Tree save proposals should address the need for buffering between the subdivision and the surrounding existing homes.

6. *Comprehensive Plan (Section 14-497 (a) 9)*
The staff has identified goals and policies which are relevant to the proposed housing development and finds the proposal in conformance with the adapted Comprehensive Plan.

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

Local Goals:

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

Goals from Future Strategies:

9. Adopt Affordable Housing

- Pursue new opportunities for increased energy efficiency, increased densities, mixed incomes, and greater connectivity to surrounding neighborhoods.

7. *Financial Capability (Section 14-497 (a) 10)*
   As noted above, the applicant has submitted a letter from Gorham Savings Bank indicating the intent to finance the project.

8. *Wetland and Groundwater Impacts, Flood-Prone Area*
   This development will include filling of 7,920 sf of wetlands which shall require a Tier II NRPA permit. The applicant has submitted a waiver request asking that the Planning Board waive Section 14-526.b for the preservation of significant natural features contingent upon issuance of the Tier II NRPA permit from MDEP. This approval will be required with the final plan submittal.

XI. INCLUSIONARY ZONING CONDITIONAL USE

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Division 30, Section 14-487, Ensuring Workforce Housing, requires at least ten percent (10%) of the dwelling units in the development shall meet the definition of Workforce Housing units for sale or for rent. The ordinance under Section 14-487 e 3 also requires the number of bedrooms in the Workforce units shall be at least 10% of the total number of bedrooms made available as part of the development.

The development located at 22 Hope Avenue proposes the creation of 16 dwelling units of owner occupied housing consisting of sixteen (16) four-bedroom units. As dwelling units for sale, the designated Workforce Unit will be restricted to households earning up to 120% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of one (1) workforce unit with four (4) bedrooms. The Applicant has elected to provide one (1) Workforce Unit, on-site, consisting of four (4) bedrooms to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

To ensure the creation of the Workforce Unit, staff recommends the applicant add the following notes to the approved plat:

1. A total of one (1) housing lot/unit consisting of four bedrooms shall be reserved as workforce housing. Lot 7 is proposed as the workforce housing lot/unit.

2. The workforce housing lot/unit shall be constructed and completed at least concurrently with the remainder of the project. In development where the applicant or its agents, or its successors or

assign shall construct at least fifty percent (50%) of the units, the approved workforce housing unit shall be constructed in proportion to the market rate units. Proportionality shall be determined by multiplying the total number of units in the development by fifty percent (50%). No additional building permits shall be issued for a market rate unit in excess of the proportion of housing units for which a permit has been issued until the workforce unit is built and a certificate of occupancy for that unit is issued. An additional eight (8) building permits may then be issued.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the City enter into an agreed upon Affordable Housing Agreement (AHA) before any Building Permits may be issued. The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the Workforce Unit and will be filed as covenant to the property's deed with the Cumberland County Registry of Deeds (*Attachment 4*).

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, planning division staff recommends that the planning board approve the proposed development.

XII. PROPOSED MOTIONS

A. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on February 27, 2018 for application 2017-117 relevant to portland's technical and design standards and other regulations; and the testimony presented at the planning board hearing:

1. Sidewalks
   The planning board finds that two of the following criteria do/do not apply, (namely 1 and 6, as per applicant's request) and therefore waives/does not waive the requirement for a sidewalk along the north side of the new street between Hope Lane and Lot 16 of the subdivision

B. CONDITIONAL USE – INCLUSIONARY ZONING

1. 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 February 27, 2018 for application 2017-117 relevant to the conditional use as authorized by division 30, section 14-487 ensuring workforce housing; and the testimony presented at the planning board hearing, the planning board finds the proposed conditional use for workforce housing [does or does not] meet the standards of section 14-484 with the following conditions:

   A. The recording plat shall be updated to include the following notes:
      I. A total of one (1) housing lot/unit consisting of four bedrooms shall be reserved as workforce housing. Lot 7 is proposed as the workforce housing lot/unit; and

      II. The workforce housing lot/unit shall be constructed and completed at least concurrently with the remainder of the project. In development where the applicant or its agents, or its successors as assigned shall construct at least fifty percent (50%) of the units, the approved workforce housing unit shall be constructed in proportion to the market rate units. Proportionality shall be determined by multiplying the total number of units in the development by fifty percent (50%). No additional building permits shall be issued for a market rate unit in excess of the proportion of housing units for which a permit has been

issued until the workforce unit is built and a certificate of occupancy for that unit is issued. An additional eight (8) building permits may then be issued.

B. The applicant shall enter into an Affordable Housing Agreement (AHA) with the City. This agreement shall outline the details of the affordability restrictions placed on Workforce Units and will be filed as covenant to the property's deed with the Cumberland Country Registry of Deeds before a Certificate of Occupancy shall be issued.

C. SUBDIVISION

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on February 27, 2018 for application 2017-117 relevant to the subdivision regulations; and the testimony presented at the planning board hearing, the planning board finds that the plan [is/is not] in conformance with the subdivision standards of the land use code, subject to the following conditions of approval, which must be met prior to the signing of the plat:

1. The applicant shall submit homeowner association documents for review and approval by corporation counsel that address:

    A. The deed for lot 13, which shall include provisions that the public turn-around will not be used for parking or as a driveway for lot 13 and the turn-around will remain open for public and emergency vehicle use at all times; AND
    B. Maintenance of those stormwater BMPs which the Department of Public Works is not claiming responsibility for.

2. The applicant shall submit a stormwater maintenance agreement for review and approval by the Department of Public Works and Corporation Counsel.

3. The applicant shall address review comments of the City Engineer dated February 23, 2018 (Attachment 1), pertaining to the maintenance of stormwater BMP's within the public right-of-way, location of utility connections, stormwater systems design and erosion control measures on the applicant's site.

4. The applicant shall submit a revised landscape plan showing the location of required street trees and tree save protection measures to be reviewed and approved by the City Arborist.

5. A copy of the trail parking easement and subdivision drainage easements with associated exhibits identifying locations shall be provided for review and approval by Corporation Counsel and the Planning Authority, prior to being recorded.

6. The applicant shall provide an updated subdivision plan showing off-street trail parking designed in accordance with Standard 8 under the Subdivision Requirements section of the C-40 contract zone document.

7. The subdivision plat shall be finalized to the satisfaction of the planning authority, department of public works and corporation counsel and to include references to stormwater management and the emergency turnaround on lot 13.

8. Prior to the issuance of any building permits, the applicant shall submit a copy of the Tier II NRPA permit for wetland impacts from Maine DEP.

9. Confirmation of ability to serve water and sewer from pwd and dpw shall be submitted to the planning division prior to the issuance of any building permits.

ATTACHMENTS:

Attachments to Memorandum

1. DPW Final Review Comments
2. Traffic Engineering Final Review Comments
3. City Arborist Final Review Comments
4. Housing Program Manager Final Review Comments
5. Planning and Fire Final Review Comments
6. Peer Engineering Review Comments
7. DPW Preliminary Review Comments
8. Housing Program Manager Preliminary Review Comments
9. Peer Engineering Preliminary Review Comments
10. Traffic Engineering Preliminary Review Comments
11. Public Comment
    - PC1 – Julie Armstrong (07.29.2017)
    - PC2 – Steven Smalley (09.09.2017)
    - PC3 – Jaime Parker (10.02.2017)

Applicant's Submittal

A. Conditional Use Cover Letter
B. Cover Letter
C. Conditional Use IZ Application
D. Table of Contents
E. Workforce Housing Standards
F. Cover Letter
G. Agent Authorization
H. Subdivision Application Form
I. Project Narrative
J. Right, Title and Interest
K. Financial Capacity
L. Traffic Evaluation
M. Wetland Report
N. Erosion and Sedimentation Control Report
O. Stormwater Management Report
P. Ability to Serve Letter Requests
Q. Resource Letters
R. Stormwater Maintenance Agreement
S. Stormwater Management Plan
T. Stormwater Package
U. Neighborhood Meeting Minutes
V. Applicant Response Letter I
W. Applicant Response Letter II
X. C-40 Contract Zone Amendment
Y. C-40 Contract Zone

Plans

1. Cover Page
2. Subdivision Plat
3. Overall Subdivision Plan
4. Layout and Utility Plan and Profile
5. Existing Water Main Plan and Profile
6. Layout and Utility Plan and Profile
7. Overall Grading, Drainage and Erosion Control Plan
8. Grading and Drainage Plan and Profile
9. Grading and Drainage Plan and Profile
10. Site Details
11. Site, Utility and Erosion Control Details
12. Drainage and Utility Details
13. Sewer and Water Details
14. Drainage Details
15. Soil Filter Plan and Details
16. Filterra Details
17. Erosion Control notes
18. Water Quality Plan
19. Pre-Development Watershed Map
20. Post-Development Watershed Map
21. Construction Management Plan Map
22. Construction Management Plan Document

Att. 1

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

Brandy Lane Subdivision

Keith Gray <kgray@portlandmaine.gov> Fri, Feb 23, 2018 at 12:31 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>

Hello Matt,

Please find the following comments in reference to the Brandy Lane Subdivision Application.

- The Department of Public Works will take ownership of the BMP's proposed for treatment of the ROW. The plans indicate that Focalpoint 1 provides treatment for only the ROW and the remaining three (3) Focalpoints provide treatment to both the ROW and the individual lots. We suggest the tributary to Focalpoint 2 be revised to include only the front lawn areas of Lots 1 through 5. If the area to Focalpoint 2 is revised, DPW will take ownership of Focalpoint 1 and 2, with the remaining treatment BMP's being the responsibility of the applicant to own and maintain. The storage chambers shall be moved back in the ROW for Focalpoint 1 and 2.
- Focalpoint 4 storage chambers should be relocated further away from the proposed structure.
- Utility manholes shall be located outside of the vehicle tire tracking to the extent possible (locate near middle of travel lane).
- Current maintenance procedures suggest that high flow filtration BMP's require less maintenance if they are located away from the curb line. The Focalpoints should be placed at the edge of the ROW. Where needed, curb inlets can be extended utilizing the Rain Guardian Foxhole structure.
- The low pressure sewer forcemain shall be located in the esplanade or sidewalk area.
- The plans show riprap slope embankment stabilization around station 6+50, we recommend utilizing erosion control blanket for stabilization in place of the riprap.

Thank you,
Keith

--
Keith D. Gray, PE
City Engineer
Engineering Services Manager
Dept. of Public Works
City of Portland Maine

207.874.8834
kgray@portlandmaine.gov

Att. 2

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

Brandy Lane - Final Traffic Comments

Tom Errico <thomas.errico@tylin.com> Thu, Feb 22, 2018 at 4:33 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Matt – the following summarizes Final traffic comments (as a status update of prior comments) following a review of updated application materials.

- I have reviewed the Traffic Evaluation prepared by the applicant. I find the contents and conclusions to be acceptable. The project does not require a Traffic Movement Permit and is not expected to cause unreasonable traffic congestion or safety deficiencies.

Status: I have no further comment.

Final Comment: I have no further comment.

- A sidewalk shall be constructed on both sides of Brandy Lane per City standards. The applicant can request a waiver for sidewalks with supporting documentation per City waiver requirements.

Status: The applicant has noted that construction of a sidewalk on both sides of Brandy Lane will have wetland impacts and thus requests a waiver for the eastern side of the street. The applicant should consider providing a sidewalk on the eastern side of the street, without a grass esplanade, in areas of wetland impact. Additionally, the applicant should specifically note the area of wetland impact and how this impact would alter permitting requirements.

Final Comment: Given wetland impacts from the paved sidewalk, I support a waiver from the City's Technical Standards for providing a sidewalk on both sides of Brandy Lane. I find the plans to be acceptable.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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Falmouth, ME 04105

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Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

Att. 3

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

Brandy Lane Subdivision Update

Jeff Tarling <jst@portlandmaine.gov> Fri, Feb 23, 2018 at 8:27 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>

Hi Matt -

Typically residential subdivision projects include a tree and landscape plan for projects of this size. The Landscape Plan would consist of showing required street-trees, tree saves, including any significant trees impacted as noted in the standards. The buffer requirements could be shown as the building envelops and required setbacks. (The recent Stroudwater Landing subdivision on Westbrook Street is a recent example)

A condition of approval for Brandy Lane would be to have either a separate tree and landscape plan or to have the tree and landscape requirements shown on the Site Plan. This is an important feature to have so when the individual lots come in for approval they have a consistent approach.

The geographic area around the proposed Brandy Lane subdivision consists mostly of native vegetation, we would recommend the use of native trees in this area to the extent possible.

Thanks,

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
212 Canco Road
Portland, ME. 04103
(207) 808-5446
jst@portlandmaine.gov
[Quoted text hidden]

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

To: Matthew Grooms Planner, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: February 23, 2018

Subject: 22 Hope Avenue/Brandy Lane Subdivision Project– Inclusionary Zoning Conditional Use

---

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Division 30, Section 14-487, Ensuring Workforce Housing, requires at least ten percent (10%) of the dwelling units in the development shall meet the definition of Workforce Housing units for sale or for rent. The ordinance under Section 14-487 e 3 also requires the number of bedrooms in the Workforce units shall be at least 10% of the total number of bedrooms made available as part of the development.

The development located at 22 Hope Avenue proposes the creation of 16 dwelling units of owner occupied housing consisting of sixteen (16) four-bedroom units. As dwelling units for sale, the designated Workforce Unit will be restricted to households earning up to 120% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of one (1) workforce unit with four (4) bedrooms. The Applicant has elected to provide one (1) Workforce Unit, on-site, consisting of four (4) bedrooms to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

To ensure the creation of the Workforce Unit, staff recommends the applicant add the following notes to the approved plat:

1) A total of one (1) housing lot/unit consisting of four bedrooms shall be reserved as workforce housing. Lot 7 is proposed as the workforce housing lot/unit.
2) The workforce housing lot/unit shall be constructed and completed at least concurrently with the remainder of the project. In development where the applicant or its agents, or its successors or assign shall construct at least fifty percent (50%) of the units, the approved workforce housing unit shall be constructed in proportion to the market rate units. Proportionality shall be determined by multiplying the total number of units in the development by fifty percent (50%). No additional building permits shall be issued for a market rate unit in excess of the proportion of housing units for which a permit has been issued until the workforce unit is built and a certificate of occupancy for that unit is issued. An additional eight (8) building permits may then be issued.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the City enter into an agreed upon Affordable Housing Agreement (AHA) before any Building Permits may be issued. The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the

Workforce Unit and will be filed as covenant to the property's deed with the Cumberland County Registry of Deeds.

Sincerely,

Victoria Volent
Housing Program Manager

Planning and Urban Development Department
Planning Division

September 14, 2017

Lloyd Wolf
LBW, LLC
PO Box 1382
Portland, ME 04104

Doug Reynolds
Gorrill Palmer
707 Sable Oaks Drive, Suite 30
South Portland, ME 04106

RE: Staff Review Comments for Brandy Lane Subdivision (2017-117) – Planning Board Review

Project Name:	Brandy Lane Subdivsion	Project ID:	(2017-117)
Project Address:	22 Hope Avenue	CBL:	448 A004
Applicant:	Lloyd Wolf		
Planner:	Matthew Grooms		

Dear Mr. Wolf and Mr. Reynolds,

Thank you for submitting a Level III Preliminary Plan application for a sixteen-unit single-family subdivision located on a 6.46 acre parcel located in the C-40 Conditional Zone. This proposal is being reviewed as a preliminary plan for Planning Board review subject to the following applicable Land Use Code provisions:

- Chapter 14, Article IV. Subdivision Ordinance
- Standards of the C-40 Conditional Zone
- Neighborhood Meeting Regulations, Section 14-32

Preliminary Plan for Planning Board Review: Staff Review Comments

I. Public Infrastructure and Community Safety Standards

A. Fire Department Comments (Keith Gautreau)

1. The Hammerhead turn-around configuration at the end looks sufficient for a Ladder truck with 30’ of width and 30’ of depth.
2. The proposed fire hydrant approximately halfway down Brandy Lane appears sufficient.
3. The proposed width of the street will meet City and Fire Standards.

II. Site Design Standards

A. Subdivision Review Comments (Matthew Grooms)

1. The applicant shall provide a revised sidewalk detail which demonstrates an acceptable 2% cross-slope across proposed driveway aprons as required under Section 1.8.3 of the City's Technical Manual.
2. A tree plan, showing groups of existing, sizeable trees which the subdivider intends to preserve should be provide. Please note, this plan can be submitted as a separate plan.
3. As required in under Section 14-499(f), a minimum of two street trees shall be provided per lot, and shown on applicable plan sheets.
4. Please note, it is understood that the submission of a construction management plan shall be recommended to the Planning Board as a condition for approval with the understanding that this document be provide and approved by DPW and Planning prior to the issuance of any building permits.
5. Please note, it is understood that utility capacity letters shall be recommended as a condition for approval with the understanding that those documents be received prior to the issuance of any building permits.
6. At present, parking for the Presumpscott Preserve Trail head is shown to be partially located within easements 2 and 4. The applicant shall provide evidence that parking is permitted in this location.
7. Would the applicant consider placing some kind of guard-rail or barrier between the proposed parking for the trail head and the start of the trail.
8. From the submitted documents, it is not clear who will be maintaining the temporary pedestrian easement located on this property. Can the applicant provide all applicable easement documentation as referenced on the recording plat.
9. On the recording plat, the location of all easements should be clearly called out, specifically referencing the 25' drainage easement which runs along the westerly property lines of lots 1 and 2, and the northerly property line of lot 13.
10. Provide the location and dimensions of all proposed exterior and rooftop mechanical equipment as well as associated details.

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 as a workshop item on September 26, 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 subdivision 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

Electronic Distribution:

Tuck O'Brien, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Victoria Morales, Associate Corporation Counsel
Anne Machado, Zoning Administrator
Captain Keith Gautreau, Fire
Jeff Tarling, City Arborist
Tom Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard & Curran

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DRIVE RESULTS

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MEMORANDUM

TO: Matt Grooms, Planner
FROM: Lauren Swett, PE & Craig Sweet, EIT
DATE: October 6, 2017
RE: Brandy Lane, Subdivision Application

Woodard & Curran has reviewed the Subdivision Application for the proposed Brandy Lane Subdivision located at 22 Hope Avenue in Portland, Maine. The project involves The creation of 16 lot subdivision with associated roadway and utilities.

Documents Reviewed by Woodard & Curran

- Response to Comments and Attachements, dated September 28, 2017, prepared by Gorrill Palmer, on behalf of LBW, LLC.
- Engineering Plans, Sheets 1-20, REV. dated September 28, 2017, prepared by Gorrill Palmer, on behalf of LBW, LLC.

Comments *(comments in italics from previous memorandum)*

1) *The Applicant has noted that a MDEP NRPA Tier I wetland permit and approval from the ACOE are required, copies of all permit approvals should be forwarded to the City upon receipt.* Applicant has acknowledged, and will be providing the permits when available.
2) *The Applicant has included letters to utilities in their application. Ability to serve confirmation should be provided when available.* Applicant has acknowledged, and will be providing the information when available.
3) *In accordance with Section 5 of the City of Portland Technical Manual, a Subdivision is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:*
   a) *Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.*
   b) *General Standard: The project will result in an increase in impervious area of approximately 70,000 square feet. As such, the project is required to include stormwater management features for stormwater quality control. Please see below for additional stormwater management comments.*
   c) *Flooding Standard: The project will result in an increase in impervious area of approximately 70,000 square feet. As such, the project is required to include specific stormwater management features to control the rate or quantity of stormwater runoff from the site. The Applicant has indicated that there will be minor increases in flow in the 2-year storm, 10-year storm and 25-year storm. We are in agreement that the increases will be insignificant. The underdrain soil filters have not been modeled in HydroCAD, and these may provide a small amount of flow attenuation as well. Please see below for additional stormwater management comments.*
4) We have the following comments on the proposed stormwater management system for the site:
   a) *The Applicant is maintaining drainage that passes beneath the proposed roadway at the southern end of the site. A 36-inch pipe currently exists at this location. The upstream, western end of this pipe will be replaced, but the eastern, outlet end of the existing pipe will be maintained. The Applicant should provide information on any existing condition and any known capacity issues that exist. While overall flow at the study point at this location is not increasing, concentrated flow from the development is being added to this pipe. The adequacy of this pipe should be addressed.* The Applicant has provided capacity calculations. Additional information verifying the existing condition or the pipe should be provided (photos, etc.). If cleaning or repair of the existing pipe is required, this should be noted on the plans.

b) *Maintenance of the stormwater management features has been described in the Erosion & Sedimentation Control Report. A stormwater maintenance agreement will be required from the Applicant. Additional information should be provided on the ownership and maintenance of the stormwater treatment systems throughout the subdivision, i.e., will a homeowners association be put into place to pay for and manage the maintenance throughout the site.* The Applicant has included a Post-Construction Stormwater Management Plan document as their Maintenance Agreement. The Applicant should note that a recorded agreement with the City is required in accordance with Chapter 32.

c) It is our understanding that no stormwater treatment infrastructure is allowed within the Right-of-Way. The Applicant's Plans show the Filterra units within the Right-of-Way. The Applicant should confirm with the Department of Public Works that this layout will be acceptable.

City of Portland Maine
Dept. of Public Works
Engineering Division

Memo

To: Mathew Grooms - Planner

From: Keith Gray, PE – Senior Engineer, DPW

Date: September 14, 2017

Re: 22 Hope Ave. - Brandy Lane Subdivision (2017-117) – Subdivision Application

---

The following comments/concerns are in regards to the Subdivision Application prepared by Gorrill Palmer, on behalf of the applicant, Investment LBW, LLC. with last plan revision submitted on May 24, 2017. Please feel free to contact me with questions.

Sheet C101 & C102:

- The Department of Public Works (DPW) does not accept ownership of low pressure force-mains within the right-of-way. The "association" is required to retain ownership and maintenance the forcemain.
- Refer to the *Utility Locations in Streets* detail in Section 1 of the Technical Manual for proposed utility locations within the City ROW. Proposed utilities should be revised to more align with the above detail to the extent possible.
- Sanitary sewer and water mains should maintain ten (10) feet in separation (per PWD standards).
- Sanitary sewer slope shall be no less than .4 percent (.4%) when existing conditions govern, however a greater slope is recommended. Please review the proposed gravity sewer main to see if the slope could be increased from the minimum.
- Where practical, manhole structures should be located in center of the travel lane or in a location outside of axle tracking.
- Proposed utilities should cross perpendicular (to the extent possible) to the existing 20-inch water main.
- Profile(s) should include all utilities (proposed and existing) to identify potential crossing conflicts.
- Revise note on proposed curb to include type (vertical granite curb).

Sheet C103, C104 & C105:

- DPW does not permit stormwater treatment structures (structural BMP's) within the City right-of-way for proposed subdivisions.
- Provide detail on DMH1. Does the existing 36" RCP connect/terminate at DMH1? Label existing 36" in profile.
- What are the flows to CB5 and CB6? Are the grates modeled? What storm event do they pass prior to overflowing towards the down gradient lots?

General Comments:

- Provide/clarify grading at intersection.
- Provide riprap sizing and thickness at all proposed locations.
- The applicant should consider proposing screening from the Falmouth Spur.
- The enclosed "Draft" Construction Management Plan Template depicts the overall detail that the City is requesting for the planning, coordination, and control of the construction site. Please note that the Construction Management Plan includes: 1) a construction management site plan, 2) a construction schedule (time frame); and 3) a written narrative addressing the categories identified within the enclosed CMP Template.
- Details should be in accordance with the City's Technical Manual.

Subdivision Plat Review Comments (Mr. Bill Scott):

1. The plan is very "busy" in places and that makes it hard to read. Lightening the contours or removing them altogether would help a lot. Also, it appears that some of the CAD point blocks were left "on" which is causing some double symbols and double descriptions for a lot of the monumentation. Freezing this layer would also help de-clutter the plan.
2. A portion of Hope Avenue appears to show design layers for the roadway, curbing, grading contours, etc. I believe this road has already been constructed so the line work should match that of the existing road and structure locations.
3. Please add "See Note 2" to the North Arrow to call attention to this important note.
4. Please label the easement type that crosses Lots 1 & 2.
5. The proposed street line figure has a misclosure of 0.086' based on how it is currently labeled. Adding chord bearings and distances or deflection angles might help to minimize this misclosure.

Rest of the Plan Set (Mr. Bill Scott):

1. Add a note to the Cover Sheet to verify that the elevations for this project are on the City's datum. They should also say which City benchmark was used as the basis for the survey.
2. All TBM's used to control construction on this site should be labeled as to location, description and elevation. These should be labeled on all of the sheets showing proposed manhole and catch basin structures with elevations.
3. Please show the center line PC's, PT's and PRC's and label the stationing of each on the Overall Subdivision Plan sheet and on the plan and profile sheets.

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

Brandy Lane Subdivision Application

Victoria Volent <vvolent@portlandmaine.gov> Mon, Sep 18, 2017 at 12:54 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>

Matthew,

The Conditional Use for Ensuring Workforce Housing Inclusionary Zoning Application, submitted by Brandy Lane Subdivision, indicates the applicant is proposing the creation of 16 single-family dwelling units of owner occupied housing of three and four bedrooms.

The applicant is electing to provide one single-family unit with three bedrooms.

The applicant has satisfied the 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.

The applicant has satisfied the requirement that at least ten percent of the dwelling units in the development are designated as Workforce Units.

Based on materials submitted (the Inclusionary Zoning- Workforce Housing Standards and Marketing Strategy prepared by Gorrill Palmer), it is unclear if the applicant has met the requirement that the number of bedrooms in the Workforce unit is at least 10% of the total number of bedrooms made available as part of the development.

The Applicant should provide a breakdown of the number of bedrooms, by unit, within the proposed development to confirm the 10% requirement.

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

COMMITMENT & INTEGRITY
DRIVE RESULTS

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

T 800.426.4262
T 207.774.2112
F 207.774.6635

MEMORANDUM

TO: Matt Grooms, Planner
FROM: Lauren Swett, PE & Craig Sweet, EIT
DATE: September 14, 2017
RE: Brandy Lane, Subdivision Application

Woodard & Curran has reviewed the Subdivision Application for the proposed Brandy Lane Subdivision located at 22 Hope Avenue in Portland, Maine. The project involves The creation of 16 lot subdivision with associated roadway and utilities.

Documents Reviewed by Woodard & Curran

- Subdivision Application and attachments, dated May 24, 2017, prepared by Gorrill Palmer, on behalf of LBW, LLC.
- Engineering Plans, Sheets 1-20, dated May 24, 2017, prepared by Gorrill Palmer, on behalf of LBW, LLC.

Comments

1) The Applicant has noted that a MDEP NRPA Tier I wetland permit and approval from the ACOE are required, copies of all permit approvals should be forwarded to the City upon receipt.
2) The Applicant has included letters to utilities in their application. Ability to serve confirmation should be provided when available.
3) In accordance with Section 5 of the City of Portland Technical Manual, a Subdivision is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:
   a) Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
      - Additional silt fence should be installed in some areas along the western property line adjacent to proposed grading activities.
   b) General Standard: The project will result in an increase in impervious area of approximately 70,000 square feet. As such, the project is required to include stormwater management features for stormwater quality control. The Applicant has provided a detailed stormwater treatment system, but it is our understanding that the Department of Public Works is not allowing stormwater treatment systems to be installed within the Right-of-Way. Please see below for additional stormwater management comments.
   c) Flooding Standard: The project will result in an increase in impervious area of approximately 70,000 square feet. As such, the project is required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site. The Applicant has indicated that there will be minor increases in flow in the 2-year storm and in the 10-year storm at one location. We are in agreement that the increases will be insignificant. The underdrain soil filters have not been modeled in HydroCAD, and these may provide a small amount of flow attenuation as well. Please see below for additional stormwater management comments.
4) We have the following comments on the proposed stormwater management system for the site:
   a) The HydroCAD model for the Post-Development system includes six subcatchments that are not connected to the stormdrainage system. We understand that the Applicant is not connecting the roof drain filters to the model, and we are in agreement that this is appropriate, but it appears based on the impervious surface designations on the disconnected subcatchments that more than just the roofs are included. Additional clarification is required.

b) The Applicant has noted in their stormwater narrative that roadway sideslopes are anticipated to be mowed more than twice per year and have not been included in the developed area. Please clarify this statement, and how the sideslope areas have been accounted for in the stormwater calculations.
c) It is noted that the Maine DEP now allows for the installation of Filterra Tree Box filters without the use of an isolator row. It is understood that this may be providing some flow attenuation, but the Applicant may consider eliminating the isolator row if it helps with fitting stormwater treatment on the site, but outside of the right-of-way as is now required by the City.
d) The HydroCAD model has modeled all proposed stormdrain pipes as 18 inches in diameter. The drawings show 12-inch pipe. The Applicant should verify pipe size and that it has been adequately designed to accommodate flow.
e) The Applicant is maintaining drainage that passes beneath the proposed roadway at the southern end of the site. A 36-inch pipe currently exists at this location. The upstream, western end of this pipe will be replaced, but the eastern, outlet end of the existing pipe will be maintained. The Applicant should provide information on any existing condition and any known capacity issues that exist. While overall flow at the study point at this location is not increasing, concentrated flow from the development is being added to this pipe. The adequacy of this pipe should be addressed.
f) The Applicant should consider a drop manhole structure for DMH 1. The pipe from the roadway has an invert that is almost 8 feet higher than the existing 36-inch pipe that is being tied into the structure.
g) The Applicant should note the sizes of the proposed foundation stubs. Are these stubs also intended to connect to the roof drip strip piping? Additional clarification on the use of the stubs to the stormwater system from each lot should be provided.
h) Catch Basin 6 is located within Lot 16 in a drainage easement. Based on grading, it is unclear what area this will be collecting. If it is collecting a large, offsite area, the adequacy of the catch basin grate and proposed pipe size to manage flow should be considered.
i) The underdrain soil filters are not shown on the drainage plan and profile sheets. We recommend showing these for clarity of grading.
j) Details should be provided for the rip rap outlets with rip rap sizing and thickness as appropriate for the pipe sizes and anticipated flow.
k) Maintenance of the stormwater management features has been described in the Erosion & Sedimentation Control Report. A stormwater maintenance agreement will be required from the Applicant. Additional information should be provided on the ownership and maintenance of the stormwater treatment systems throughout the subdivision, i.e., will a homeowners association be put into place to pay for and manage the maintenance throughout the site.

Att. 10

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

Brandy Lane Subdivision -- Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com> Tue, Sep 12, 2017 at 11:04 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>, "Swett, Lauren" <lswett@woodardcurran.com>

Hi Matt – the following summarizes our preliminary traffic comments following a review of application materials.

- I have reviewed the Traffic Evaluation prepared by the applicant. I find the contents and conclusions to be acceptable. The project does not require a Traffic Movement Permit and is not expected to cause unreasonable traffic congestion or safety deficiencies.

- A sidewalk shall be constructed on both sides of Brandy Lane per City standards. The applicant can request a waiver for sidewalks with supporting documentation per City waiver requirements.

If you have any questions, please contact me.

Best regards,

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

"One Vision, One Company"

Att. A

GORRILL PALMER

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

July 5, 2017

Barbara Barhydt
Planning and Urban Development Department
City of Portland
Fourth Floor, City Hall
389 Congress Street
Portland, Maine 04101

Subject: Brandy Lane Subdivision Application
LBW LLC
Conditional Use Application for Ensuring Workforce Housing

Dear Barbara,

On behalf of LBW, LLC. we are pleased to submit the enclosed Conditional Use Application to provide workforce housing within the proposed16-lot single-family subdivision at 22 Hope Avenue in Portland. The site is shown on Assessor's Map 448 A004, is approximately 6.46 acres in size and is located in a Contract Zone. A Preliminary Subdivision application has been submitted to your office and this submission is supplementary to demonstrate the project's planned compliance with the City's inclusionary zoning requirements for residential projects with ten (10) or more dwelling units.

Enclosed please find a Conditional Use Application and an explanation on compliance with the inclusionary zoning requirements. We appreciate the Planning Authority's consideration of our proposal and look forward to meeting with City staff, as necessary, and with the Planning Board to present the proposal and address any questions. If you require any additional information, please don't hesitate to contact our office.

Sincerely,
Gorrill Palmer

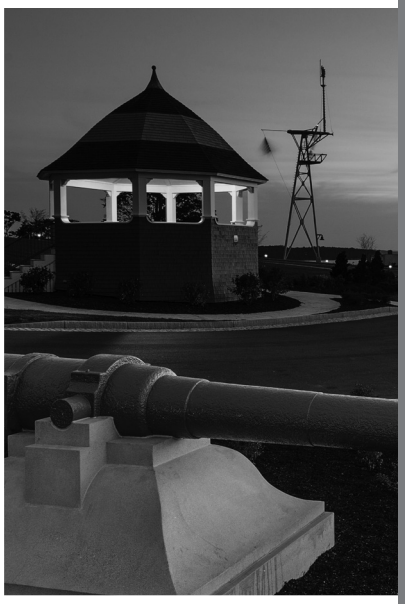
Douglas E. Reynolds, P.E.
Project Manager

Enclosures: Conditional Use – Inclusionary Zoning
Application & Workforce Housing
Submission Requirements

cc: Burt Wolf

Att. B

Relationships.
Responsiveness.
Results.



Subdivision Application for Brandy Lane Subdivision at 22 Hope Avenue Portland, Maine

PREPARED FOR:
LBW, LLC
Portland, Maine

May 2017

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

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:
Brandy Lane

PROPOSED DEVELOPMENT ADDRESS:
22 Hope Avenue

CHART/BLOCK/LOT (s): 448 A004 **Applicable Zone**: C40

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Lloyd B. Wolf Business Name, if applicable: LBW, LLC Address: PO Box 1382 City/State : Portland, ME Zip Code: 04104	**Applicant Contact Information** Work # Home# Cell # 207-776-0742 Fax# e-mail: lwolf1@maine.rr.com
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Billing Information Name: LBW, LLC Address: PO Box 1382 City/State : Portland, ME Zip Code: 04104	**Billing Information** Work # Cell # Fax# e-mail: lwolf1@maine.rr.com
Designated person/person(s) for uploading to e-Plan: Name: Doug Reynolds, Gorrill Palmer e-mail: dreynolds@gorrillpalmer.com Name: Dan Bacon e-mail: dbacon@gorrillpalmer.com Name: e-mail:	

RIGHT, TITLE OR INTEREST:

Lloyd B. Wolf is the current owner of the property. Deed is attached to the preliminary 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.

The project site is currently undeveloped with a landcover of brush and woods.

PROJECT DESCRIPTION:

Proposed 16 lot subdivision and 970 ft roadway off Hope Avenue

INCLUSIONARY ZONING:	
# IZ Units	1
On-Site IZ Units	1
Off-Site IZ Units	
# IZ Homeownership Units	1
# IZ Rental Units	
# IZ Efficiencies	
# IZ 1-Beds	
# IZ 2-Beds	
# IZ 3-Beds	1
IZ Fee In-Lieu	

APPLICATION FEES:

_x_ 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.

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 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
NA		1	An accompanying site plan application, as applicable.
NA		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
NA		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:** **7/5/17**

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GORRILL PALMER

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

Inclusionary Zoning – Workforce Housing Standards and Marketing Strategy

Workforce Housing Standards – Section 14-484

Standard1. 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.

Response – This project will not be segmented or phased. It is proposed as a 16-lot single-family subdivision which is proposing to provide one (1) lot/dwelling unit that will comply with the workforce housing standards and will be included on-site within the project.

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.

Response – The one dwelling unit and lot will be designed to not be distinguishable in lot size, access, and home design than the other dwellings in the subdivision.

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.

Response – It is anticipated that the single-family homes within the subdivision will be designed with three and four bedrooms and that the workforce housing unit will be comparable in square footage and bedroom count.

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.

Response – The applicant is proposing to meet the workforce housing requirement on-site.

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.
Response – Understood.

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.

Response – At this time, the applicant plans to meet the 10% as workforce housing standard.

Workforce Marketing Strategy

The applicant has reviewed the City's Workforce Housing Requirements and Guidelines, including the Marketing / Selection Process. In accordance with these requirements, the applicant intends to notify the City in advance of marketing the sale of the workforce dwelling within the project. As part of this notice to the City, the applicant or its real estate agent, will provide a draft of the marketing advertisement to the City for review and approval. Following City review, the advertisement will be listed in one or more acceptable newspapers. Interested parties will be given sufficient time to request and return a preliminary application. In addition, the applicant or agent will contact local groups and non-profits connected to interested eligible households.

Upon receiving interest from eligible households, the applicant will inform the City. From the beginning of the marketing process the City will also have the opportunity to list the property on its website for a minimum of 30 days to solicit interest from potential Eligible Households. The City will forward any inquiries to the applicant or their designated representative. As part of the marketing process the applicant will acknowledge in writing the household income limits and max sale price restrictions on the unit to any potential buyers interested in the property prior to finalizing a Purchase and Sale Agreement. At a minimum, this shall include providing prospective buyers with the associated household income limits of 120% AMI in any listing and providing written documentation at any open house or showing stating that this unit carries with it income, maximum sale price and other restrictions.

In addition, as the subdivision plan progresses through the permitting process, the applicant will further refine the marketing strategy for the workforce housing unit in coordination with the City.

GORRILL PALMER

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

May 24, 2017

Barbara Barhydt
Planning and Urban Development Department
City of Portland
Fourth Floor, City Hall
389 Congress Street
Portland, Maine 04101

Subject: Brandy Lane Subdivision
Applicant: LBW LLC
Subdivision Application

Dear Barbara,

On behalf of LBW, LLC. we are pleased to submit the enclosed Subdivision Application for the proposed construction of a 16-lot single-family residential subdivision at 22 Hope Avenue in Portland. The site is shown on Assessor's Map 448 A004, is approximately 6.46 acres in size and is located in the Conditional Zone (C-40). The project site is currently undeveloped with a land cover of woodlands. Topography in the area of the proposed construction varies from flat slopes of approximately ½% to steep slopes of approximately 40%. Steeper slopes are associated with drainage ways at the front and rear of the site.

Enclosed you will find a Preliminary Subdivision Application package and set of plans illustrating the proposal. You will recall that we had a Pre-Application with City staff in June 2016 and that there were comments on the lot configuration, roadway layout and relocation of the gravel parking area for trail users. The enclosed plan set incorporates these comments from staff. We appreciate the Planning Authority's consideration of our proposal and look forward to meeting with City staff, as necessary, and with the Planning Board to present the proposal and address any questions. If you require any additional information, please don't hesitate to contact our office.

Sincerely,
Gorrill Palmer

Douglas E. Reynolds, P.E.
Project Manager

Enclosures: Subdivision Application and Narratives
Subdivision Plans

cc: Burt Wolf

DER/bmg/U:\98089.08 - Design and Permitting 'Long' Road\P Applications\Local\Site Plan Review\Cover Letter 5-24-2017.doc

Att. G

LBW, LLC.
P.O. Box 1382
Portland, ME 04104
Cell: (207)-776-0742

19 May 2017

Re: Brandy Lane (22 Hope Avenue)
Portland, Maine

To Whom It May Concern:

L. Burt Wolf authorizes Gorrill Palmer to execute land development permit applications on my behalf for the referenced project.

If you have any questions or if I can be of any further assistance, please contact me.

Very truly yours,

L. Burt Wolf

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) 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
p.m. (207) 874-8719
planning@portlandmaine.gov

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

PROJECT NAME:

Brandy Lane

PROPOSED DEVELOPMENT ADDRESS:

22 Hope Avenue

PROJECT DESCRIPTION:

Proposed 16 lot subdivision and 970 feet of roadway off Hope Avenue

CHART/BLOCK/LOT: 448 A004

PRELIMINARY PLAN 5/24/2017 (date)

FINAL PLAN _____ (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Lloyd B. Wolf Business Name, if applicable: LBW, LLC Address: PO Box 1382 City/State : Portland, ME Zip Code: 04104	**Applicant Contact Information** Work #: Home #: Cell #: 207-776-0742 Fax#: e-mail: lwolf1@maine.rr.com
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: Doug Reynolds, Gorrill Palmer Address: 707 Sable Oaks Drive - Suite 30 City/State : South Portland, ME Zip Code: 04106	**Agent/Representative Contact information** Work #: 207-772-2515 Home #: Cell #: 207-329-5584 Fax#: 207-772-2520 e-mail: dreynolds@gorrillpalmer.com
Billing Information Name: LBW, LLC Address: PO Box 1382 City/State : Portland, ME Zip Code: 04104	**Billing Contact Information** Work #: Home #: Cell #: Fax#: e-mail: lwolf1@maine.rr.com

Engineer	**Engineer Contact Information**
Name: Doug Reynolds Address: 707 Sable Oaks Drive - Suite 30 City/State : South Portland, ME Zip Code: 04106	Work #: 207-772-2515 Home #: Cell #: 207-329-5584 Fax#: 207-772-2520 e-mail: dreynolds@gorrillpalmer.com
Surveyor	**Surveyor Contact Information**
Name: Titcomb Associates Address: 133 Gray Road City/State : Falmouth, ME Zip Code: 04105	Home #: Work #: 207-797-9199 Cell #: Fax#: e-mail: rcroteay@titcombsurvey.com
Architect	**Architect Contact Information**
Name: Address: City/State : Zip Code:	Work #: Home #: Cell #: Fax#: e-mail:
Attorney	**Attorney Contact Information**
Name: Terry Snow Address: 294 Main St City/State : Cumberland, ME Zip Code: 04021	Work #: 207-829-6363 Home #: Cell #: Fax#: 207-829-4481 e-mail: tsnowlaw@maine.rr.com

Designated person/person(s) for uploading to e-Plan:

Name: Benjamin Grondin
e-mail: bgrondin@gorrillpalmer.com

Name: Lawrence Bastian
e-mail: lbastian@gorrillpalmer.com

Name: Doug Reynolds
e-mail: dreynolds@gorrillpalmer.com

APPLICATION FEES:

Level III Development (check applicable reviews)	**Other Reviews (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.	___Traffic Movement ($1,500) __X__Stormwater Quality ($250) __X__Subdivisions ($500 + $25/lot) # of Lots__16__ x $25/lot = __$900__ ___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:**
	5/24/2017

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	281,398 sq. ft.
Proposed Total Disturbed Area of the Site	196,896 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)	0 sq. ft.
Impervious Area (Total Proposed)	70,051 sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	0 sq. ft.
Building Footprint (Total Proposed)	sq. ft.
Building Floor Area (Total Existing)	0 sq. ft.
Building Floor Area (Total Proposed)	sq. ft.
Zoning	
Existing	C40
Proposed, if applicable	N/A
Land Use	
Existing	
Proposed	
Residential, If applicable	
# of Residential Units (Total Existing)	0
# of Residential Units (Total Proposed)	16 Single Family Houses
# of Lots (Total Proposed)	16 Individual Lots
# of Affordable Housing Units (Total Proposed)	0
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	N/A
# of One-Bedroom Units (Total Proposed)	N/A
# of Two-Bedroom Units (Total Proposed)	N/A
# of Three-Bedroom Units (Total Proposed)	N/A
Parking Spaces	
# of Parking Spaces (Total Existing)	6 for existing trial access
# of Parking Spaces (Total Proposed)	6 to preserve existing trial access
# of Handicapped Spaces (Total Proposed)	N/A
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	N/A
# of Bicycle Spaces (Total Proposed)	N/A
Estimated Cost of Project	Developers General Contractor will Provide Cost

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
		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;	
N/A		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);	
Waiver		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;	
N/A		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
		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
		1	Written summary of project's consistency with related city master plans
		1	Evidence of utility capacity to serve
		1	Written summary of solid waste generation and proposed management of solid waste
		1	A code summary referencing NFPA 1 and all Fire Department technical standards
		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
N/A		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;	
N/A		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
N/A		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
		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;	
Waiver		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;	
N/A		Proposed buffers and preservation measures for wetlands;	
		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;	
N/A		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
N/A		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
N/A		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
N/A		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
N/A		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
		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;
N/A		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;
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.

PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST

A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
2.
3. Name address, telephone number of architect

4. Proposed uses of any structures [NFPA and IBC classification]
5.
6. Square footage of all structures [total and per story]

7. Elevation of all structures

8. Proposed fire protection of all structures
   - ***As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)***

9. Hydrant locations

10. Water main[s] size and location

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

12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

Some structures may require Fire flows using annex H of NFPA 1

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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

Bradley Roland, P.E.
Water Resources Division

Date: 5/24/2017

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

Site Address: 22 Hope Avenue

Chart Block Lot Number: 448 A004

Proposed Use: Residential
Previous Use: Vacant
Existing Sanitary Flows: 0 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
Existing 8" sanitary sewer stub near existing gravel parking for trails

Site Category		
	Commercial *(see part 4 below)*	
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)*	

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

2. Please, Submit Contact Information.

City Planner's Name: Barbara Barhydt Phone: 207-874-8699
Owner/Developer Name: LBW, LLC
Owner/Developer Address: PO Box 1382, Portland, ME 04104
Phone: Fax: E-mail: lwolf1@maine.rr.com
Engineering Consultant Name: Gorrill Palmer
Engineering Consultant Address: 707 Sable Oaks Drive, Suite 30, South Portland, ME 04106
Phone: 207-772-2515 Fax: 207-772-2520 E-mail: dreynolds@gorrillpalmer.com

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 5,760 Peak, 3,200 Average GPD
Peaking Factor/ Peak Times: 180%
Specify the source of design guidelines: *(i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)* Maine Subsurface Wastewater Disposal Rules

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: _____

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

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

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

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

Peaking Factor/Peak Process Times: _____

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

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

GORRILL PALMER

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

Project Narrative
Brandy Lane Subdivision
May 2017

The following narrative presents the information required for the Preliminary Subdivision Application.

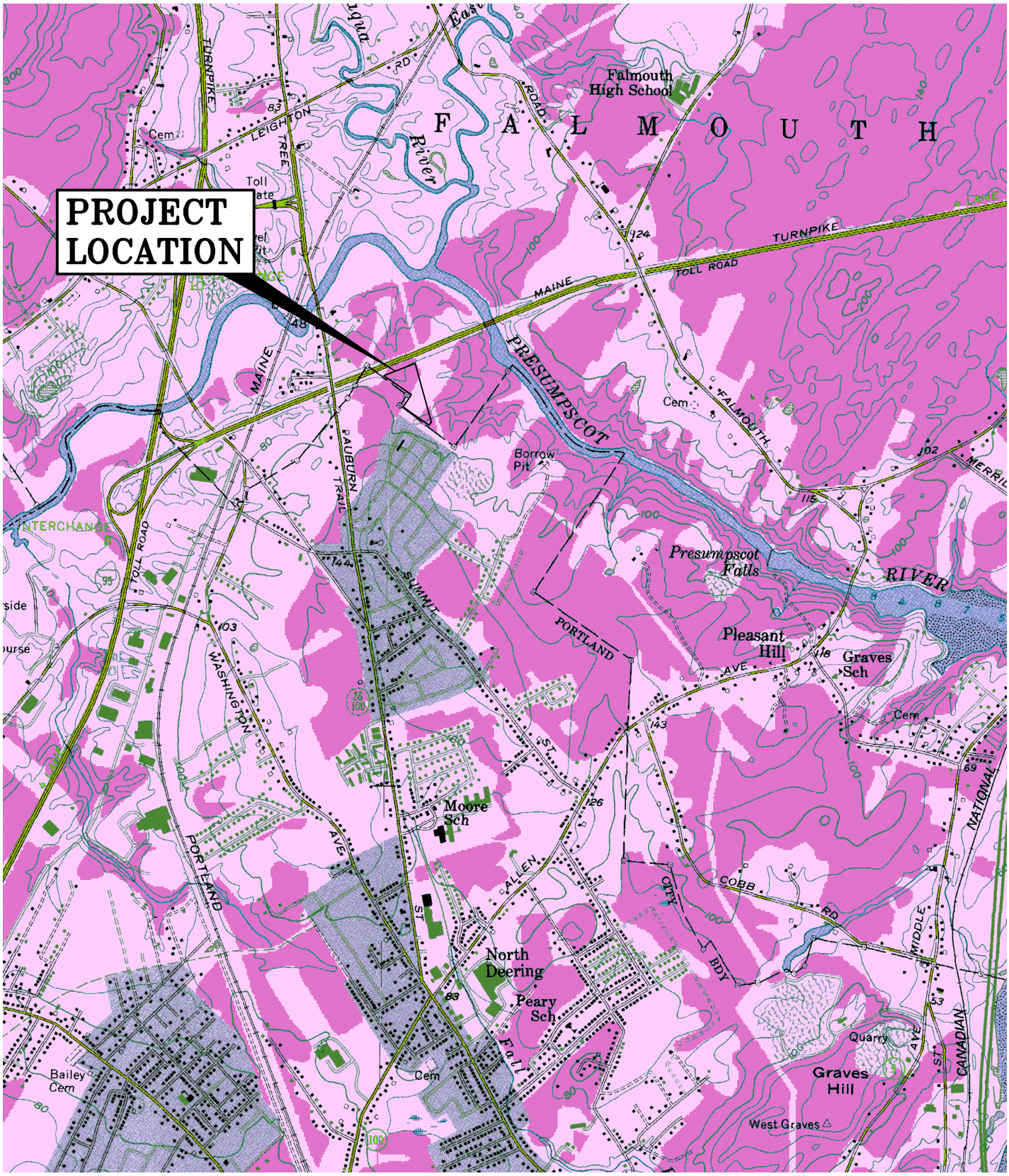
Project Description:
The project is located at 22 Hope Avenue in Portland. The existing site is currently undeveloped. Figure 1 following this page shows the Project Location. The site is vacant with a land cover of woodlands. There is a 2,200 sq. ft. gravel parking lot for trail access to the Presumpscot River Preserve. Existing wetlands on the site are predominantly in the westerly portion of the parcel. An application to the MDEP for a Tier 1 NRPA permit will be submitted to the State and copied to the U.S. Army Corps of Engineers for the proposed wetland fills.

The project is a proposed residential subdivision with sixteen lots and public water and sewer. A roadway approximately 960 feet in length is proposed for access to the development. The project will provide the six parking spaces for trail-users to be relocated on the parcel. The project is required to be in conformance with the Maine DEP Chapter 500 Stormwater Management Law and shall be reviewed under the City's Delegated Review Authority.

Right, Title and Interest:
Lloyd B. Wolf is the current owner of the property. Attachment 1 contains a deed for the subject parcel.

State and Federal Permits:
As noted above, the City of Portland will review this project for conformance with the Maine DEP Stormwater Law. An NRPA Tier 1 permit application will be filed with the state for the proposed wetland fill prior to the final review. The U.S. Army Corps of Engineers will be copied on the NRPA application.

Zoning Assessment:
The project is located in the C40 Conditional Zone. Section 14-60 of the Chapter 14 Land Use Code states "Pursuant to 30-A M.R.S.A. Section 4503(9), conditional or contract zoning is hereby authorized for rezoning of property where, for reasons such as the unusual nature or unique location of the development proposed, the city council finds it necessary or appropriate to impose, by agreement with the property owner or otherwise, certain conditions or restrictions in order to ensure that the rezoning is consistent with the city's comprehensive plan." The abutting areas to the parcel are located in the R2 Residential Zone. The property owner is proposing to develop the parcel consisting of single family dwellings, thereby being consistent with the abutting zone. The property owner also proposes the six parking spaces for trail users to be relocated on the parcel. The proposed spaces are shown on the plan.



U.S.G.S. Location Map

Brandy Lane Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: MAY 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1-LOCMAP1.dwg	

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207.657.6910

Figure 1

Easements or Other Burdens:

1. Property is subject to a Temporary Easement granted to the City of Portland by Lloyd B. Wolf recorded in Book 26744, Page 103.
2. Property is subject to a Temporary Pedestrian Easement granted to the City of Portland by Lloyd B. Wolf recorded in Book 23889, Page 346.
3. Property is subject to a Pedestrian Easement granted to the City of Portland by Lloyd B. Wolf recorded in Book 23889, Page 349.
4. Property is subject to an easement conveyed to Portland Water District recorded in Book 2267, Page 257.
5. Property is subject to an easement conveyed to Central Maine Power Company by Philip E. Hamlin and Elizabeth G Hamlin recorded in Book 2167, Page 435.

Locations of the above easements are shown on the Subdivision Plat.

Proposed Waivers:

The following waivers are requested:

- A waiver is requested for the requirement in Section 14-526.b for the preservation of significant natural features. The proposed wetland impact could not be avoided in the development of the site, though the design has avoided wetland impacts to the extent feasible. The applicant has demonstrated compliance with applicable State and Federal regulations by applying for an MDEP NRPA Tier 1 permit for the wetland impact

Evidence of Financial and Technical Capacity:

LBW, LLC. has experience with development in Portland such as developing Hope Avenue and has hired Professional Engineers to prepare permitting and construction plans for this project. Given this, the Applicant possesses sufficient technical capacity. Attachment 2 contains evidence of the financial capacity for this project.

Construction Management Plan:

A construction management plan will be prepared by the General Contractor prior to the start of work at the site as noted on the site plan contained within the plan set. The management plan will address the anticipated start and end date of the project, discuss the construction sequence, and provide a pedestrian circulation plan. The management plan will be submitted to the City Planning Division prior to commencement of site work.

Traffic:

A Traffic Evaluation for this project is include in Attachment 3.

Significant Natural Features:

As noted in the wetland report for the site prepared TRC Maine dated July 2016 there are no Significant Vernal Pools on the site. However, there are wetlands scattered throughout the site. The majority of wetlands are located at the center of the site near an existing Central Maine Power easement. The design of the subdivision favors the westerly property line to avoid wetland impacts to the extent feasible. Given the size of the site, some wetland impacts could not be avoided. An

application for a MDEP NRPA Tier 1 wetland permit has been submitted to the state and copied to the City and the U.S. Army Corps of Engineers. The wetland report is included in Attachment 4.

Stormwater:

Section 14-526.b.3.b of the Land Use Ordinance states that all development other than Level I residential shall comply with Section 5 of the Technical Manual including Basic, General, and Flooding standards as applicable to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

Section 5.II.c of the Technical Manual states that subdivisions shall be required to submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including Basic, General and Flooding standards.

The Basic Standard is met by the Erosion and Sedimentation Control Report submitted with this application in Attachment 5.

The General and Flooding Standards are addressed in the Stormwater Management Report for the project which is included in Attachment 6.

Master Plan:

The applicant is obtaining the necessary permits and has followed the applicable zoning ordinances. For these reasons, it is assumed the subdivision meets the City of Portland's Master Plan.

Utility Capacity:

Attachment 7 contains letters sent to the Portland Water District, Portland Public Services and Central Maine Power requesting confirmation of their ability to serve the project. The ability to serve responses will be forwarded to the City upon receipt.

Solid Waste Management:

Lot owners will be responsible for their own solid waste disposal until the City of Portland accepts Brandy Lane as a public roadway. Upon acceptance, it will be the responsibility of the City to provide solid waste disposal services to the residents of Brandy Lane.

NFPA:

Two fire hydrants are proposed in the sixteen lot subdivision at the proper separation along the public way. The NFPA Life Safety Code will be complied with through the building permit and construction process.

Design Standards:

The development is in conformance with the design standards of Section 14-526 of the City Land Use Code as noted below. Waiver requests from the standards are also noted below.

14-526 a Transportation Standards – Off street parking will be provided by driveways on the individual lots.

14-526 b Environmental Quality Standards – As noted in the wetland report for the site contained in Attachment 4, the site contains significant natural features in the parcel. Impacts to the wetlands were minimized, but could not be avoided by development of the site. A waiver to the requirement to preserve the wetland is requested. An application for the wetland fill has been submitted to the MDEP and copied to the U.S. Army Corps of Engineers. Each house will require two (2) street trees as part of the Building Permit Process. Stormwater management is discussed above.

14-526 c Public Infrastructure and Community Safety Standards – Two fire hydrants are shown on the proposed roadway for the sixteen lot subdivision. The proposed electric service is underground and the applicant has contacted the Portland Water District, Department of Public Services and Central Maine Power to obtain ability to serve letters for water, wastewater and electrical services. The proposed utility connections are shown on the Utility plan in the plan set.

14-526 d Site Design Standards – The proposed buildings are a maximum of 2-story residential dwellings which will not have a detrimental impact on adjoining properties. There are no known historic resources on the project site. HVAC units shall comply with applicable state and federal emission requirements. No signage other than traffic signs is proposed for the project. The building designs will be compatible with surrounding development.

Boundary Survey

Boundary Survey information is included on the Subdivision Plat within the plan set.

Plan Set

A plan set containing the required information is included with this application.

The project proposes developing the parcel into 16 single-family lots, which meets the subdivision definition stated in Chapter 14 Land Use Ordinance. The following narrative discusses the subdivision requirements of the City of Portland Land Use Ordinance.

Section 14-496 Plat Requirements

1. The Plat is at an appropriate scale and contains the required information.
2. Two foot contours are shown. The site is undeveloped with no existing structures.
3. Brandy Lane Subdivision proposes a 50-foot right of way width. A typical pavement section is included on the detail sheets for the project.
4. The proposed right-of-way is shown on the Subdivision Plat. Drainage easements and pedestrian trail easements are shown and labeled.
5. A baseline with curve information and the appropriate street information is provided on the plan and profile drawings.
6. Existing utilities are shown on the plans.
7. The parcel boundary and the proposed lot lines are shown on the Plat.
8. Abutting parcel owners are shown on the Plat.

9. The project is not located within a flood zone.
10. There are no existing historic sites or structures on the parcel.
11. Proposed utilities are shown on the Utility Plan.
12. Proposed sanitary sewer service and stormdrains are shown on the plans with inverts, slopes, rim elevations and structure locations.
13. Street lights are shown on the Utility Plans.
14. No trees are proposed for preservation, many will remain in undeveloped areas of the site.
15. Grading and drainage is shown on the Grading, Drainage, and Erosion Control plan within the plan set (Sheets C103-C105).
16. Existing zoning is shown on Sheet C100 (Overall Subdivision Plan).
17. No future phases are proposed.
18. Six (6) parking spaces are proposed to be relocated within the subdivision for public trail access.
19. The plans contain the required contact information.
20. The application submittal contains written information.
21. Required monuments are shown on the Plat.
22. The vicinity sketch is included in the plan set.
23. The site data is included on Sheet C100 (Overall Subdivision Plan).
24. Additional submission items are included in the Subdivision Application.

Section 14-497 General Requirements

1. The project is a residential subdivision which is not anticipated to result in air pollution. The project will utilize the public sewer system and will not result in water pollution. The site is not within a flood plain and has a proposed stormwater management plan.
2. An ability to serve letter from the Portland Water District is included in Attachment 6. The response of the ability to serve will be forwarded to the City upon receipt. The stormwater management report demonstrates adequate stormwater disposal.
3. The project will not cause a burden on an existing water supply.
4. An erosion and sedimentation control report is included in Attachment 5.
5. A Traffic Evaluation is included in Attachment 3.
6. An ability to serve letter to Public Services Department is included in Attachment 7. The response of the ability to serve will be forwarded to the City upon receipt.
7. The residents will be responsible for their solid waste disposal, until such time that Brandy Lane is accepted as a City street.
8. The project will not have an undue adverse effect on historical sites and will not have an undue impact to scenic or natural beauty beyond any typical development of vacant land.
9. The project is in conformance with the land development plan based on compliance with zoning district standards.
10. The developer's financial capacity is addressed by Attachment 2. The developer has experience with development in Portland such as the Hope Avenue Development and has hired

Professional Engineers to prepare permitting and construction plans for this project, therefore the Applicant possesses sufficient technical capacity.

11. The project is not within the watershed of a pond or lake, or within 250' of a wetland defined in Title 38.
12. The connection to the municipal sewer, and the stormwater management plan for the project will ensure that the project does not adversely affect groundwater.
13. The site is not within a flood prone area.
14. Wetlands are shown on the plans.
15. The proposed Brandy Lane crosses an apparent intermittent stream at +/- station 6+50, where an existing 36" reinforced concrete pipe culvert will be extended for construction of the roadway.

Doc#: 24483 Bk:23889 Pg: 327

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that I, ROBERT L. ADAM, of Westbrook, Maine (hereinafter collectively referred to as "Grantor"), for valuable consideration, grant to LLOYD B. WOLF, with a mailing address of 9 Loveitt's Field Road, South Portland, Maine (hereinafter referred to as "Grantee"), with warranty covenants, Grantor's one-half undivided interest as tenant in common in the land, and any improvements thereon, situated in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit A

WITNESS my hand and seal this 5 day of April, 2006

Witness

Robert L. Adam

STATE OF MAINE
CUMBERLAND, ss.

April 5, 2006

Then personally appeared before me the above-named ROBERT L. ADAM and acknowledged the foregoing instrument to be his free act and deed.

~~Notary Public~~/Attorney at Law
Printed Name: Jeffrey N. Sabol

Exhibit A

PARCEL ONE

A certain lot or parcel of land located on the northerly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a 6"x6" granite monument found on the southerly side of land of the Maine Turnpike Authority and at the northeasterly corner of Lot 17 as depicted on a plan of the Auburn Pines Subdivision recorded in the Cumberland County Registry of Deeds in Plan Book 199, Page 393. Thence:

1) N 64°31'06' E by said land of the Maine Turnpike Authority a distance of Four Hundred Seventy-Eight and 86/100 (478.86) feet to a point and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276.

2) S 19°30'58"' E by said land of City of Portland a distance of Four Hundred Thirty and 11/100 (430.11) feet to a point.

3) N 70° 29' 02" E by said land of City of Portland a distance of One Hundred Fifty and 00/100 (150.00) feet to a point and land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

4) S 19° 30' 58" E by said land of Wolf and Adam a distance of Seventy-Five and 00/100 (75.00) to a point and said land of the City of Portland.

5) S 70°29'02" W by said land of the City of Portland a distance of One Hundred Fifty and 00/100 (150.00) feet to a point.

6) S 19°30'58" E by said land of the City of Portland a distance of Four Hundred Four and 18/100 (404.18) feet to the northerly sideline of Hope Avenue as depicted on the plan of Presumpscot River Place III recorded in said Registry in Plan Book 202, Page 650, said point being herein designated as Point A.

7) Southwesterly by said Hope Avenue following a non tangent curve to the left having a radius of Two Hundred Twenty-Five and 00/100 (225.00) feet an arc distance of One Hundred Five and 51/100 (105.51) feet to a point, said point lying S 45°27'10" W a distance of One Hundred Four and 54/100 (104.54) fee from previously described Point A.

8) S 32°01'10" W by said Hope Avenue a distance of Fifteen and 45/100 (15.45) feet to a point on the former Town Line between the City of Portland and the Town of Falmouth.

9) N 58°27'09' W by said former Town Line a distance of Four Hundred Fifty-Seven and 24/100 (457.24) feet to the apparent center of an irregularly shape stone monument marked "F" -"W" and the southeasterly side of Lot 13 as depicted on the said plan of Auburn Pines Subdivision.

10) N 30°55'13" E by said Lot 13 a distance of Two Hundred Ninety and 78/100 (290.78) feet to the apparent center of an irregularly shape stone monument marked "F" -"W" and the northeasterly corner of said Lot 13.

11) N 58°56'30" W by said Lot 13, and Lots 15-17 as depicted on the said plan of Auburn Pines Subdivision a distance of Four Hundred Eighty-Two and 24/100 (482.24) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 6.46 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

Parcel One described above is conveyed subject to a certain pedestrian easement described in an Easement Deed from Grantor and Grantee herein to the City of Portland, of even or recent date herewith, to be recorded at the Cumberland County Registry of Deeds.

Parcel One described above is conveyed subject to a certain Portland Water District Easement, recorded in the Cumberland County Registry of Deeds in Book 2267, Page 257, as well as a certain Central Maine Power Easement, recorded in said registry in Book 17463, Page 276.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

PARCEL TWO

A certain lot or parcel of land located on the southwesterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the southwesterly sideline of Hope Avenue and the northerly corner of Lot 30 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) S 31°28'15" W by said Lot 30 a distance of One Hundred Thirteen and 81/100 (113.81) feet to a point and the easterly corner of land now or formerly of James G. Somma and Constance Somma as described in a deed recorded in said Registry in Book 6230, Page 51.

2) N 57°48'44" W by said land of Somma, other land now or formerly of said Somma, land now or formerly of Stephen M. Colucci and Janet L. Colucci, and land now or formerly of James Elowitch as described in deeds recorded in said Registry in Book 4299, Page 46; Book 9460, Page 133; and Book 9388, Page 282 respectively, a distance of Four Hundred Forty-Two and 61/100 (442.61) feet to a point and the northerly corner of said land of Elowitch

3) S 32°01'40" W by said land of Elowitch a distance of Sixty-Three and 50/100 (63.50) feet to a point and the easterly corner of land now or formerly of Gloria J. LaBrecque and Mary T. Beyer as described in a deed recorded in said Registry in Book 16128, Page 262.

4) N 58°27'09" W by said land of LaBrecque & Beyer a distance of Ninety-Seven and 85/100 (97.85) feet to a point on the southeasterly sideline of said Hope Avenue.

5) N 32°01'10" E by said Hope Avenue a distance of Fifteen and 04/100 (15.04) feet to a point of curvature.

6) Northeasterly and easterly by said Hope Avenue following a curve to the right having a radius of One Hundred Seventy-Five and 00/100 (175.00) feet an arc length of Two Hundred Forty-Two and 65/ 100 (242.65) feet to a point.

7) S 30°40'13" W by said Hope Avenue a distance of Thirty-Four and 36/100 (34.36) feet to a point.

8) S 59° 19'47" E by said Hope Avenue a distance of Fifty and 00/100 (50.00) feet to a point.

9) N 30°40'13" E by said Hope Avenue a distance of Thirty-Five and 61/100 (35.61) feet to a point.

10) S 55°52'57" E by said Hope Avenue a distance of Three Hundred Forty-Six and 71/100 (346.71) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 1.46 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a certain culvert easement, benefiting the City of Portland, located on the southeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on a plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, and more particularly bounded and described as follows:

Beginning at a point on the southeasterly sideline of Hope Avenue said point lying N 40°32'44" E a distance of Seventy-Eight and 77/100 (78.77) feet from the northerly corner of land now or formerly of Gloria J. LaBrecque and Mary T. Beyer as described in a deed recorded the Cumberland County Registry of Deeds in Book 16128, Page 262. Thence:

1) Easterly following a non-tangent curve to the right having a radius of One Hundred Seventy-Five and 00/100 (175.00) feet an arc length of Thirty-One and 05/100 (31.05) feet to a point, said point lying N 58°09'09' E a distance of Thirty-One and 01/100 (31.01) feet from the last described point of beginning.

2) S 17°11'02" E a distance of Thirty-Five and 83/100 (35.83) feet to a point.

3) S 72°37'44' W a distance of Thirty and 00/100 (30.00) feet to a point.

4) N 17°11'02' W a distance of Twenty-Eight and 07/100 (28.07) feet to the point of beginning.

Bearings are based on true north.

The above described culvert easement contains 973 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees

growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain culvert/drainage easement, benefiting the City of Portland, located on the southwesterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on a plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, and more particularly bounded and described as follows:

Beginning at a point on the southwesterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixteen and 48/100 (216.48) feet from the northerly corner of Lot 30 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) S 06°46'58" E a distance of Forty-Seven and 80/100 (47.80) feet to a point.

2) S 83°13'02" W a distance of Thirty and 00/100 (30.00) feet to a point.

3) N 06°46'58" W a distance of Seventy-Three and 79/100 (73.79) feet to said Hope Avenue.

4) S 55°52'57" E by said Hope Avenue a distance of Thirty-Nine and 69/100 (39.69) feet to the point of beginning.

Bearings are based on true north.

The above described culvert easement contains 1,824 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain drainage easement, benefiting the City of Portland, adjoining the above referenced culvert/drainage easement, shown as "City of Portland Drainage Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated

October 25, 2005, being thirty and 00/100 (30.00) feet in width, beginning near the southwesterly corner of the above described culvert/drainage easement and continuing southwesterly across the above described Lot 17. The center of said drainage easement follows the center of the naturally occurring drainage course, which course may vary from time to time. The easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

PARCEL THREE

A certain lot or parcel of land located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue and the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet to a point.

2) N 31°28'15" E a distance of Ninety-Nine and 50/100 (99.50) feet to a point.

3) N 58°31'45" W a distance of Twenty and 00/100 (20.00) feet to a point.

4) N 39°42'09" E a distance of One Hundred Seventeen and 91/100 (117.91) feet to a point.

5) N 75°51'37" E a distance of One Hundred Sixty-Four and 63/100 (164.63) feet to a point.

6) S 58°31'45" E a distance of One Hundred Fifty-Two and 96/100 (152.96) feet to a point and the northwesterly side of said Lot 1.

7) S 31°28'15' W by said Lot 1 a distance of Three Hundred Forty-Six and 08/100 (346.08) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 1.95 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a portion of a certain culvert easement located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet from the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) N 31°28'15" E a distance of Seventeen and 51/100 (17.51) feet to a point.

2) S 06°46'58" E a distance of Twenty-Three and 15/100 (23.15) feet to a point on the northeasterly side of said Hope Avenue.

3) N 55°52'57" W by said Hope Avenue a distance of Fourteen and 35/100 (14.35) feet to the point of beginning.

The above described portion of the culvert easement contains 126 square feet.

Received
Recorded Register of Deeds
Apr 26,2006 12:16:21P
Cumberland County
John B OBrien

Att. K

Gorham
SAVINGS BANK

January 5, 2017

Portland Planning Board
389 Congress Street,
Portland, Maine 04101

RE: 16-17 Lot Subdivision

To Whom It May Concern,

Lloyd B. Wolf dba LBW, LLC has an established paid as agreed relationship with Gorham Savings Bank. Mr. Wolf has the financial and technical ability to complete the project this residential subdivision project in Portland, Maine. Should have you have any additional questions I can assist with, I can be reached at 222-1499.

Sincerely,

Kimberly A. Donnelly

Kimberly A. Donnelly
Senior Vice President
Gorham Savings Bank

GORRILL PALMER

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

Traffic Evaluation
Brandy Lane – Portland, Maine

Date: May 19, 2017
Subject: Brandy Lane – 16 Lot Residential Subdivision
To: File
From: Randy Dunton, Gorrill Palmer (JN 98089.08)

Project Understanding:

The project includes the construction of 16 single family residential homes on currently undeveloped property. The site is located off Hope Avenue in Portland, Maine and will be serviced via a single access (Brandy Lane) onto Hope Avenue. The access will provide a single ingress lane and single egress lane. Brandy Lane will be STOP controlled with Hope Avenue free flowing.

Trip Generation:

Trip generation (measured in Trip Ends – One vehicle in plus one vehicle out is equal to two trips ends) for the proposed 16 lot residential subdivision is based on the Institute of Transportation Engineers (ITE) – Trip Generation Manual, 9th Edition, Land Use Code – 210 (Single-Family Detached Housing). Calculations attached. Based on that source, trip generation is forecast as follows:

Weekday:	152 Trip Ends
AM Peak Hour of Generator:	12 Trip Ends
PM Peak Hour of Generator:	16 Trip Ends
AM Peak Hour Adjacent St.:	12 Trip Ends
PM Peak Hour Adjacent St.:	16 Trip Ends
Saturday:	159 Trip Ends
Sat. Peak Hour of Generator:	15 Trip Ends

Because the proposed subdivision will generate less than 100 passenger car equivalents during any peak hour of any day, the project will not require a MaineDOT Traffic Movement Permit.

Sight Distance:

The posted speed limit on Hope Avenue is 25 mph. Based on a speed limit of 25, the City of Portland requires an available sight distance of 200 feet. GP completed a site review to measure available sight distances looking left and right for a vehicle exiting Brandy Lane onto Hope Avenue.

Based on the field measurements, the available sight distance is 275 feet looking left for a vehicle exiting Bandy Lane and all the way to Alice Street (approximately 275 feet) looking right.

Safety:

Gorrill Palmer requested the latest MaineDOT three year crash history (2014-2016) for Hope Avenue, inclusive of the intersection with Alice Street. According to MaineDOT, Hope Avenue is not in their system; however, the intersection of Hope Avenue / Alice Street is in their system and had no reportable crashes for the most recent three year period.

Anticipated Impacts:

Because the proposed project is forecast to generate approximately 16 vehicles (total in plus out) in a peak hour, impacts on the adjacent roadway network are expected to be insignificant.

Att. N

EROSION AND SEDIMENTATION CONTROL
BASIC STANDARDS

1.1 Overview

This Exhibit demonstrates the developer has made adequate provision for controlling erosion and sedimentation.

1.2 Introduction

LBW, LLC. has retained Gorrill Palmer to prepare an Erosion and Sedimentation Control Report for the construction of a proposed 16 lot single family residential subdivision, 960 linear foot roadway, and infrastructure off Hope Avenue in Portland, Maine. The site is shown on Assessor's Map 448 Lot A004, is approximately 6.46 acres in size and is located in the Conditional Zone. Figure 1 is a map showing the project location. The developer will construct the roadway, driveway aprons, utility services 5 feet beyond the right-of-way, and stormwater appurtenances. Lot development will also be by the developer of the subdivision. The developer is currently seeking a Subdivision Permit from the City of Portland which entails conformance with City of Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management. Gorrill Palmer has prepared an Erosion and Sedimentation Control Plan for the proposed development. This narrative contains the general erosion and sedimentation control measures, which are appropriate for the construction of the project.

1.3 Narrative

1.3.1 Existing Conditions and Soil Types

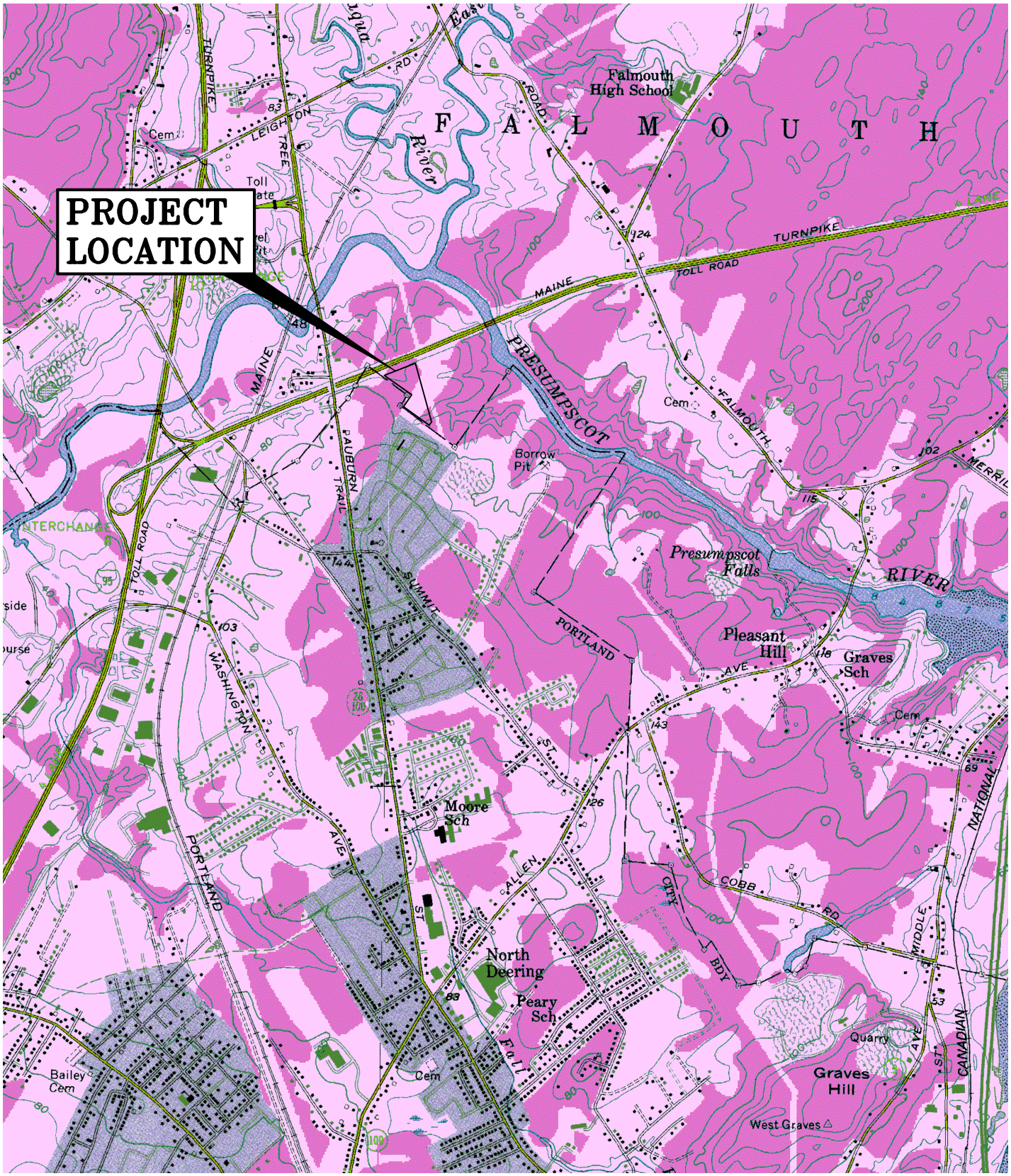
The project site is currently undeveloped with a landcover of brush and woods.

Abutting land uses include:

- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. The Presumpscot Rover is a property boundary to the north.

The Medium Intensity Soil Survey for Cumberland County as prepared by the Natural Resources Conservation Service was utilized in identifying the on-site soils. The soil report for this vicinity follows this page. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. The higher values are indicative of the more erodible soils. The following table lists the soils found on site and their K values:



U.S.G.S. Location Map

Riverwalk Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: JAN 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1–LOCMAP1.dwg	

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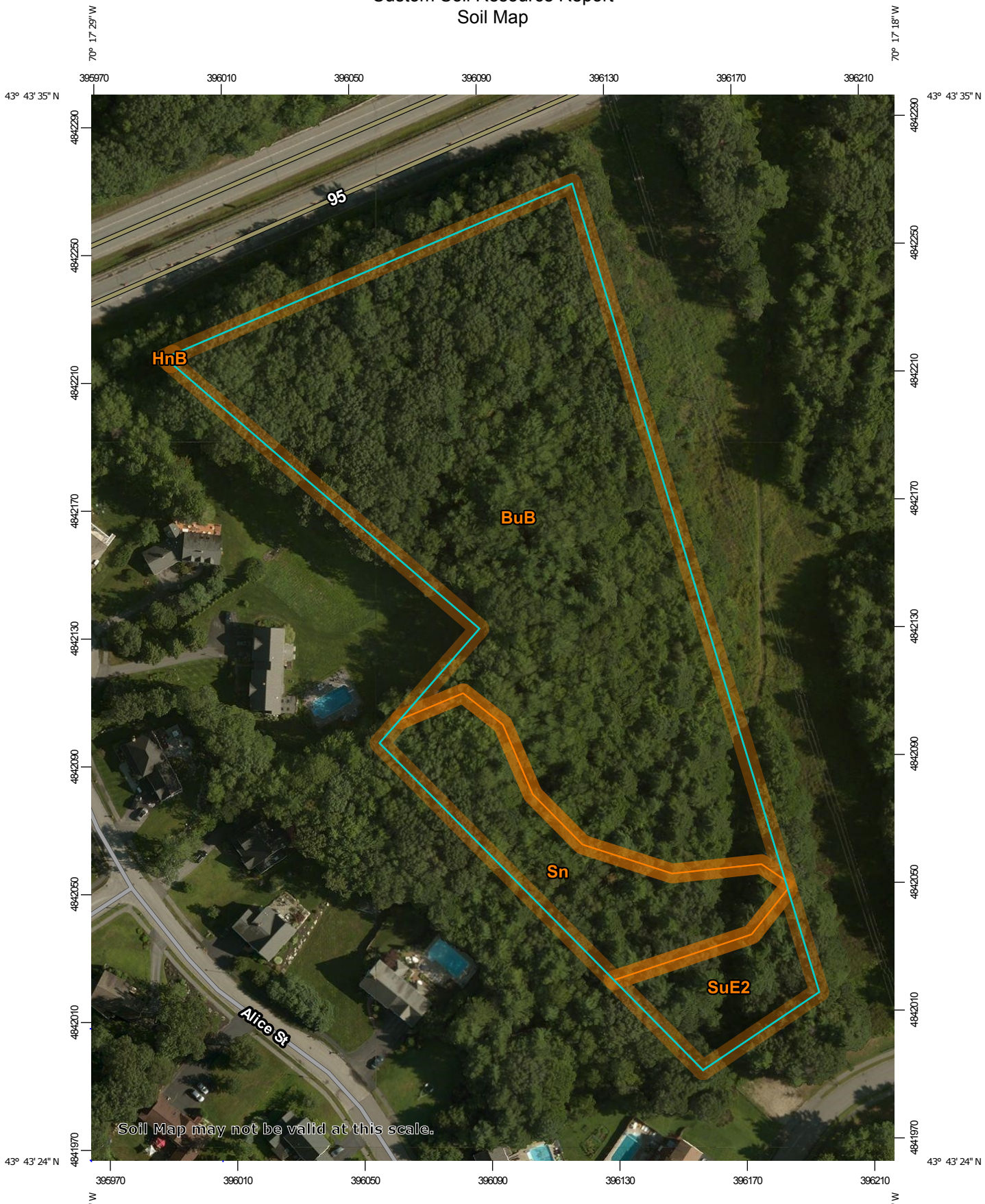
207.657.6910

Figure 1

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,620 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 12, Sep 15, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2013—Aug 11, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend

Cumberland County and Part of Oxford County, Maine (ME005)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BuB	Lamoine silt loam, 3 to 8 percent slopes	4.6	77.6%
HnB	Hinckley-Suffield complex, 3 to 8 percent slopes	0.0	0.0%
Sn	Scantic silt loam, 0 to 3 percent slopes	0.9	15.5%
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded	0.4	6.9%
Totals for Area of Interest		**6.0**	**100.0%**

Map Unit Descriptions

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

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

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

K VALUE		
Type	**Subsurface**	**Substratum**
Lamoine	0.32	0.49
Scantic	0.49	0.49
Suffield	0.49	0.49

Based on a review of the K Values, the on-site soils have moderate susceptibility to erosion.

1.3.2 Existing Erosion Problems

Gorrill-Palmer is not aware of any existing erosion problems on site.

1.3.3 Critical Areas

Critical areas that would require special attention during construction would be side slopes adjacent to any wetlands.

1.3.4 Protected Natural Resources

Wetlands on-site have been delineated by TRC Consultants of Scarborough, Maine, and located by GPS and are shown on project plans. The total area of wetlands located within the development footprint is approximately 119,750 +/- s.f. (2.74 acres). It is anticipated that approximately 7,464 s.f. of wetlands will be impacted during development of the site.

1.3.5 Erosion Control Measures and Site Stabilization

The primary emphasis of the erosion/sedimentation control plan, which will be implemented for this project, is as follows:

- Development of a careful construction sequence.
- Rapid revegetation of denuded areas to minimize the period of soil exposure.
- Rapid stabilization of drainage paths to avoid rill and gully erosion.
- The use of on-site measures to capture sediment (hay bales/ stone check dams/silt fence, 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 latest edition of the Maine Erosion and Sediment Control Practices Field Guide for Contractors.

A. Dewatering

Water from construction trench dewatering or pond construction 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 50 feet of a protected natural resource.

B. 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 90% of areas vegetated with vigorous growth.

C. Temporary Erosion Control Measures

The following measures are planned as temporary erosion/sedimentation control measures during construction:

1. Crushed stone-stabilized construction entrance shall be placed at the entrance off Hope Avenue.

2. Siltation fence or wood waste compost berms shall be installed downstream of any disturbed areas to trap runoff- borne sediments until grass areas are revegetated. The silt fence and/or wood waste compost berms shall be installed per the details provided in this package and inspected at least once a week and before and immediately after a storm event of 0.5 inches or greater, and at least daily during prolonged rainfall. 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 the fence or berm, the barrier shall be replaced with a stone check dam. Wood waste compost berms are not to be used adjacent to wetland areas that are not to be disturbed.

3. Straw or hay mulch including hydroseeding is intended to provide cover for denuded or seeded areas until revegetation is established. 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 a fabric netting and anchored with staples in accordance with manufacturer's recommendation. Fabric netting and staples shall be used on disturbed areas within 50' of lakes, streams, and wetlands regardless of the upstream slope. Mulch placed between October 15th and April 15th on slopes equal to or steeper than 8 percent shall be covered with a fabric netting and anchored with staples in accordance with the manufacturer's recommendations. Slopes steeper than 3:1 and equal to or flatter than 2:1, which are to be revegetated, shall receive curlex blankets by American Excelsior or equal. Slopes steeper than 2:1 shall receive riprap as noted on the plans. The mulch application rate for both temporary and permanent seeding is 75 lbs per 1000 sf as identified in Attachment A of this section. Mulch shall not be placed over snow.

4. Temporary stockpiles of stumps, grubbings, or common excavation will be protected as follows:

a) Temporary stockpiles shall not be located within 100 feet of any wetlands which will not be disturbed and shall be located away from drainage swales.

b) Stockpiles shall be stabilized within 7 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 hay, straw, or erosion control mix.

c) Stockpiles shall be surrounded by sedimentation barrier at the time of formation.

5. All denuded areas that are within 100 feet of an undisturbed wetland, which have been rough graded and are not located within the roadway subbase area, shall receive mulch or erosion control mesh fabric within 48 hours of initial disturbance of soil. All areas within 100 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.

6. For work, which is conducted between October 15th and April 15th of any calendar year, all denuded areas, shall be covered with hay mulch or erosion control mix, applied at twice the normal application rate and anchored with a fabric netting. The time period for applying mulch shall be limited to 2 days for all areas.

7. Hope Avenue 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.

8. During grubbing operations stone check dams shall be installed at any evident concentrated flow discharge points and as directed on the Erosion Control Plans.

9. Silt fencing with a minimum stake spacing of 6 feet shall be used, unless the fence is supported by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence shall be anchored.

10. Wood waste compost/bark berms may be used in lieu of siltation fencing. Berms shall be removed and spread in a layer not to exceed 3" thick once upstream areas are completed and a 90% catch of vegetation is attained.

11. Water and/or calcium chloride shall be furnished and applied in accordance with MDOT specifications – Section 637 – Dust Control.

12. Loam and seed is intended to serve, as the primary permanent revegetative measure for all denuded areas not provided with other erosion control measures, such as riprap. Application rates are provided in Attachment A of this section. Seeding shall not occur over snow.

D. Permanent Erosion Control Measures

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

1. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas as noted in **Temporary Erosion Control Measures** paragraph 3 of this report. All areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window. Native topsoil shall be stockpiled and reused for final restoration when it is of sufficient quality.

2. All storm drain pipe outlets shall have riprap aprons at their outlet to protect the outlet and receiving channel from scour and deterioration. Installation details are provided in the plan set. The aprons shall be installed and stabilized to the extent practicable prior to directing runoff to the tributary pipe or culvert.

1.4 Implementation Schedule

The following construction sequence shall be required to insure the effectiveness of the erosion and sedimentation control measures are optimized:

It is anticipated that construction of the subdivision and related infrastructure will commence in Spring of 2018 and be completed by Winter of 2018. Surface course paving shall be completed after the base course pavement has gone through one complete winter season as required by the City of Portland.

Note: For all grading activities, the contractor shall exercise extreme caution not to overexpose the site, this shall be accomplished by limiting the disturbed area.

1. Install stabilized construction entrance at the intersection of the access drive and Hope Avenue.
2. Install perimeter silt fence and/or wood waste berms prior to grubbing respective areas.
3. Clear and grub for roadway construction. Install stone check dams at any evident concentrated flow discharge points.
4. Commence earthwork and grading to subgrade.
5. Commence installation of drainage appurtenances.
6. Commence grassed underdrained soil filter construction.
7. Commence installation of water and sewer lines.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Complete installation of underground utilities to 5' beyond right-of-way.
10. Install sub-base and base gravel within roadway and driveway aprons.
11. Install base course paving for roadway and driveway aprons.
12. Loam, lime, fertilize, seed and mulch disturbed areas.

13. Once the site is stabilized and a 90% catch of vegetation has been obtained, remove all temporary erosion control measures.

14. Touch up loam and seed.

15. Install surface course paving after the base course paving has gone through one complete winter season.

16. Touch up loam and seed.

Note: All denuded areas not subject to final paving, riprap, or gravel shall be revegetated.

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 following criteria:

1. The above construction sequence should generally be completed 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 silt fence and construction entrances in place before large areas of land are denuded.

2. The work shall be conducted in sections which shall:

   a) Limit the amount of exposed area to those areas in which work is expected to be undertaken during the proceeding 30 days.

   b) Revegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event; or temporarily stabilized within 48 hours of initial disturbance of soil for areas within 100 feet of an undisturbed wetland and 7 days for all other areas. Areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window.

   c) Incorporate planned inlets and drainage system as early as possible into the construction phase. The ditches shall be immediately lined or revegetated as soon as their installation is complete.

1.5 Erosion, Sedimentation and Stabilization Control Plan

The Erosion Control Plan is included in the plan set.

1.6 Details and Specifications

The Erosion Control details and specifications are included in the plan set.

1.7 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 15

then the site needs to be protected with over-winter stabilization. An area considered open is any area not stabilized with pavement; vegetation, mulching, erosion control mats, riprap or gravel base on a road.

Winter excavation and earthwork shall be completed such that any area left exposed can be controlled by the contractor. Limit the exposed area to those areas in which work is expected to be under taken during the proceeding 15 days and that can be mulched in one day prior to any snow event.

All areas shall be considered to be denuded until the subbase gravel is installed in roadway/parking areas or the areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150 lbs./1,000 s.f. (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 s.f. (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.

2. Natural Resource Protection

Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats. During winter construction, a double line of sediment barriers (i.e. silt fence backed with hay bales or erosion control mix) shall be placed between any natural resource and the disturbed area. Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.

3. 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.

4. Mulching

An area shall be considered denuded 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 s.f. 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 1 and April 15, all mulch shall be anchored by peg line, mulch netting, asphalt emulsion chemical, 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.

5. 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 that 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.

6. Seeding

Between the dates of October 15 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 3 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/1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

Standards for Timely Stabilization of Construction Sites During Winter

1. Standard for the timely stabilization of ditches and channels -- The applicant shall construct and stabilize all stone-lined ditches and channels on the site by November 15. The applicant shall construct and stabilize all grass-lined ditches and channels on the site by September 1. If the applicant fails to stabilize a ditch or channel to be grass-lined by September 1, then the applicant will take one of the following actions to stabilize the ditch for late fall and winter.

Install a sod lining in the ditch -- The applicant shall line the ditch with properly installed sod by October 1. Proper installation includes the applicant pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, watering the sod to promote root growth into the disturbed soil, and anchoring the sod with jute or plastic mesh to prevent the sod strips from sloughing during flow conditions.

Install a stone lining in the ditch --The applicant shall line the ditch with stone riprap by November 15. The applicant shall hire a registered professional engineer to determine the stone size and lining

thickness needed to withstand the anticipated flow velocities and flow depths within the ditch. If necessary, the applicant shall regrade the ditch prior to placing the stone lining so to prevent the stone lining from reducing the ditch's cross-sectional area.

2. Standard for the timely stabilization of disturbed slopes -- The applicant shall construct and stabilize stone-covered slopes by November 15. The applicant shall seed and mulch all slopes to be vegetated by September 1. The department shall consider any area having a grade greater than 15% to be a slope. If the applicant fails to stabilize any slope to be vegetated by September 1, then the applicant shall take one of the following actions to stabilize the slope for late fall and winter.

Stabilize the soil with temporary vegetation and erosion control mats -- By September 1 the applicant shall seed the disturbed slope with winter rye at a seeding rate of 3 pounds per 1,000 square feet and apply erosion control mats over the mulched slope. The 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 slope by November 1, then the applicant shall cover the slope with a layer of woodwaste compost as described in item iii of this standard or with stone riprap as described in item iv of this standard.

Stabilize the slope with sod -- The applicant shall stabilize the disturbed slope with properly installed sod by September 1. Proper installation includes the applicant pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The applicant shall not use late-season sod installation to stabilize slopes having a grade greater than 33% (3H:1V).

Stabilize the slope with woodwaste compost -- The applicant shall place a six-inch layer of woodwaste compost on the slope by November 15. Prior to placing the woodwaste compost, the applicant shall remove any snow accumulation on the disturbed slope. The applicant shall not use woodwaste compost to stabilize slopes having grades greater than 50% (2H:1V) or having groundwater seeps on the slope face.

Stabilize the slope with stone riprap -- The applicant shall place a layer of stone riprap on the slope by November 15. The applicant shall hire a registered professional engineer to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

3. Standard for the timely stabilization of disturbed soils -- By September 15 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 September 1 the applicant shall seed the disturbed soil with winter rye at a seeding rate of 3 pounds per 1000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per 1000 square feet, and anchor the mulch with plastic netting. The applicant 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 1, then the applicant shall mulch the area for over-winter protection as described below.

Stabilize the soil with sod -- The applicant shall stabilize the disturbed soil with properly installed sod by September 15. Proper installation includes the applicant pinning the sod onto the soil with wire

pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

Stabilize the soil with mulch -- By November 15 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.

1.8 Maintenance of facilities

The stormwater facilities will be maintained by the Applicant, LBW, LLC. or their assigned heirs. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation/maintenance recommended for the stormwater facilities is presented below.

The responsible party may contract with such professionals, as may be necessary in order to comply with this provision and may rely on the advice of such professionals in carrying out its duty hereunder, provided, that the following operation and maintenance procedures are hereby established as a minimum for compliance with this section. A maintenance log of the inspections shall be kept by the responsible party.

A typical maintenance log for the Subdivision is included in Attachment C.

Inspection and Maintenance Frequency and Corrective Measures:
The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

Culverts:
Inspect culverts 2 times per year (preferably in Spring and Fall) to ensure that the culverts are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit and repair any erosion damage at the culvert's inlet and outlet.

Stormdrain Outlets:
Inspect outlets 2 times per year (preferably in Spring and Fall) to ensure that the outlets are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the outlet and within the conduit Repair any erosion damage at the stormdrain outlet.

Catch Basins:
Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris at the time of the inspection.

Inlet/Outlet Control Structures:
Inspect structures and piping 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris within the structure.

Soil Filter – Grassed Underdrained Soil Filter:
Inspect all upstream pre-treatment measures 2 times per year (preferably in Spring and Fall) for sediment and floatables accumulation. Remove and dispose of any sediments or debris.

Surface (Underdrain Pond, Swale or Bio-Filter):
The soil filter will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year (preferably in Spring and Fall) to ensure that the filter is draining within 24 to 48 hours of a rain event equivalent to 1" or more. Adjustments will be made to the outlet valve to ensure that the Grassed Underdrained Soil Filter drains within 24 to 48 hours. Failure to drain in 72 hours will require part or all of the soil filter media to be removed and replaced with new material meeting the soil filter gradation. The facilities will be inspected after major storms and any identified deficiencies will be corrected. Harvesting and weeding of excessive growth shall be performed as needed. Inspect for unwanted or invasive plants and remove as necessary.

Subsurface detention chambers:
Inspect chambers per manufacturer's recommendation. At a minimum inspect chambers 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove sediment from Isolator row when depth of sediment reaches 3 inches.

Roofline Drip Strip:
The drip strip will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year (preferably in Spring and Fall) to ensure that the filter is draining within 24 to 48 hours of a rain event equivalent to 1" or more. Adjustments will be made to the outlet valve to ensure that the drip strip drains within 24 to 48 hours. Failure to drain in 72 hours will require part or all of the soil filter media to be removed and replaced with new material meeting the soil filter gradation. The facilities will be inspected after major storms and any identified deficiencies will be corrected. Inspect for unwanted or invasive plants and remove as necessary. Remove debris from the surface. Since the Roofline Drip edge is a part of the approved stormwater management plan, it cannot be paved over or altered in any way. Gutters shall not be installed along the roofline.

Vegetated Areas:
Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Ditches, Swales and other Open Stormwater Channels:
Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities shall be inspected after major storms and any identified deficiencies shall be corrected.

Roadways: Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Repair potholes and other roadway obstructions and hazards. Plowing and sanding of paved areas shall be performed as necessary to maintain vehicular traffic safety.

Filterra Units:
The first year of maintenance shall be performed by the Supplier or a supplier approved contractor. Subsequent maintenance shall be performed at least 2 times per year (preferably in Spring and Fall). At a minimum, the maintenance shall consist of the following:

1. Filterra Unit Inspection
2. Foreign debris, silt, mulch &trash removal
3. Filter media evaluation and recharge as necessary
4. Plant health evaluation and pruning or replacement as necessary
5. Replacement of mulch
6. Disposal of all maintenance refuse items

Post-Construction Stormwater Management Plan

As part of the Stormwater Permit, the applicant is required to meet the standards in Section 5 of the City of Portland Technical Manual for Stormwater Management. The General Standard in item IV. Submission Requirements states that a project must submit a Post-Construction Stormwater Inspection & Maintenance Plan per Maine DEP Chapter 500 Appendix B with reporting requirements per Chapter 32 of City of Portland Code of Ordinances, and a Stormwater Maintenance Agreement. The management plan shall comply to Chapter 32 of City of Portland Code of Ordinances as follows:

(a) 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 pones, 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) 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 record of the deficiency and corrective action(s) to the department of public works ("DPW") in the annual report

(c) 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 DPW in a form provided by DPW, 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) Any persons required to file an annual certification under this section shall include with the annual certification a filing fee established by DPW to pay the administrative and technical costs of review of the annual certification.
(e) In order to determine compliance with this article and with the post-construction stormwater management plan, DPW may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs

Housekeeping

As part of the Stormwater Permit, the applicant is required to meet the standards in Appendix C of the Chapter 500 Rules. The following procedures are hereby established as a minimum for compliance with this section. For further information on the procedures listed below, refer to Chapter 500 rules – Appendix C.

Spill Prevention:
Appropriate spill prevention, containment, and response planning/implementation shall be used to prevent pollutants from being discharged from materials on site.

Groundwater Protection:
During construction, hazardous materials with the potential to contaminate groundwater shall not be stored or handled in areas of the site which drain to an infiltration area.

Fugitive Sediment and Dust:
Appropriate measures shall be taken to ensure that activities do not result in noticeable erosion of the soils and water and/or calcium chloride shall be used to ensure that activities do not result in fugitive dust emissions during or after construction.

Debris and Other Materials:
Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

Trench or Foundation De-watering:
Water collected through the process of trenching and/or de-watering must be removed from the ponded area, and must be spread through natural wooded buffers or other areas that are specifically designed to collect the maximum amount of sediment possible.

Non-stormwater Discharges:
Identify and prevent contamination by non-stormwater discharges.

Conclusion

The Applicant has provided temporary and permanent erosion control measures as well as specifying a sequence of construction as measures to minimize erosion and sedimentation.

Attachments

Attachment A - Seeding Plan

Attachment B - Inspection Report

Attachment C - Subdivision Maintenance Log

ATTACHMENT A
Seeding Plan

SEEDING PLAN

Project: Brandy Lane

Site Location: Hope Avenue, Portland, ME

☐ Permanent Seeding ☒ Temporary Seeding

1. Instruction on preparation of soil: Prepare a good seed bed for planting method used.
2. Apply lime as follows: _____# / acres, OR 138 # /M Sq. Ft.
3. Fertilize with _____ pounds of _____ N-P-K/ac. OR 13.8 pounds of 10-10-10 N-P-K/M Sq. Ft.
4. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
5. Seed with the following mixture:

   50% Winter Rye

   50% Annual Rye

6. Mulching instructions: Apply at the rate of _____per acre, OR 75 pounds per M. Sq. Ft.

	Amount	Unit # Tons. Etc.
7. TOTAL LIME	138	#/1000 sq. ft.
8. TOTAL FERTILIZER	13.8	#/1000 sq. ft.
9. TOTAL SEED	1.03	#/1000 sq. ft.
10. TOTAL MULCH	75	#/1000 sq. ft.
11. TOTAL other materials, seeds, etc.		
12. REMARKS		

Spring seeding is recommended; however, late summer (prior to September 1) seeding can be made. Permanent seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

SEEDING PLAN

Project: Brandy Lane

Site Location: Hope Avenue, Portland, ME

☒ Permanent Seeding ☐ Temporary Seeding

1. Instruction on preparation of soil: Prepare a good seed bed for planting method used.
2. Apply lime as follows: _____# / acres, OR 138 # /M Sq. Ft.
3. Fertilize with _____ pounds of _____ N-P-K/ac. OR 18.4 pounds of 10-20-20 N-P-K/M Sq. Ft.
4. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
5. Seed with the following mixture:

   40% Creeping Red Fescue

   30% Charger II Perennial Ryegrass

   20% KenBlue Kentucky Bluegrass

   10% Tiffany Chewings Fescue
6. Mulching instructions: Apply at the rate of _____per acre, OR 75 pounds per M. Sq. Ft.

	Amount	Unit # Tons. Etc.
7. TOTAL LIME	138	#/1000 sq. ft.
8. TOTAL FERTILIZER	18.4	#/1000 sq. ft.
9. TOTAL SEED	1.03	#/1000 sq. ft.
10. TOTAL MULCH	75	#/1000 sq. ft.
11. TOTAL other materials, seeds, etc.		
12. REMARKS		

Spring seeding is recommended, however, late summer (prior to September 1) seeding can be made. Permanent seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

ATTACHMENT B
Inspection Report

STORMWATER POLLUTION PREVENTION PLAN

INSPECTION REPORT

PROJECT INFORMATION

Project Name: Brandy Lane

Address: 22 Hope Avenue
Portland, Maine

CONTRACTOR/SUBCONTRACTOR INFORMATION

Inspector Name: _____

Firm: _____

Title: _____

Qualifications: _____

INSPECTION SUMMARY

Date of Inspection: _____

Major Observations: _____

_____

_____

_____

THE FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN WITH THE FOLLOWING EXCEPTIONS:

_____

_____

_____

_____

_____

ACTIONS NECESSARY TO BRING FACILITY INTO COMPLIANCE:

_____

_____

REQUIRED MODIFICATIONS TO STORMWATER POLLUTION PREVENTION PLAN
(MUST BE IMPLEMENTED WITHIN 7 DAYS OF INSPECTION):

_____

_____

_____

_____

CERTIFICATION STATEMENT:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____
Signature

_____
Typed Name

_____
Title

_____
Date

ATTACHMENT C
Subdivision Maintenance Log

STORMWATER INSPECTION LOG
BRANDY LANE HOMEOWNERS ASSOCIATION

Inspection and Maintenance Frequency and Corrective Measures:
The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris. A maintenance log shall be kept for all inspections.

Culverts:
Inspect culverts 2 times per year (preferably in Spring and Fall) to ensure that the culverts are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit and repair any erosion damage at the culvert's inlet and outlet.

Stormdrain Outlets:
Inspect outlets 2 times per year (preferably in Spring and Fall) to ensure that the outlets are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the outlet and within the conduit Repair any erosion damage at the stormdrain outlet.

Catch Basins:
Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris at the time of the inspection.

Inlet/Outlet Control Structures:
Inspect structures and piping 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris within the structure.

Soil Filter – Grassed Underdrained Soil Filter:
Inspect all upstream pre-treatment measures 2 times per year (preferably in Spring and Fall) for sediment and floatables accumulation. Remove and dispose of any sediments or debris.

Surface (Underdrain Pond, Swale or Bio-Filter):
The soil filter will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year (preferably in Spring and Fall) to ensure that the filter is draining within 24 to 48 hours of a rain event equivalent to 1" or more. Adjustments will be made to the outlet valve to ensure that the Grassed Underdrained Soil Filter drains within 24 to 48 hours. Failure to drain in 72 hours will require part or all of the soil filter media to be removed and replaced with new material meeting the soil filter gradation. The facilities will be inspected after major storms and any identified deficiencies will be corrected. Harvesting and weeding of excessive growth shall be performed as needed. Inspect for unwanted or invasive plants and remove as necessary.

Subsurface detention chambers:
Inspect chambers per manufacturer's recommendation. At a minimum inspect chambers 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion

and that they are free of debris. Remove sediment from Isolator row when depth of sediment reaches 3 inches.

Roofline Drip Strip:
The drip strip will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year (preferably in Spring and Fall) to ensure that the filter is draining within 24 to 48 hours of a rain event equivalent to 1" or more. Adjustments will be made to the outlet valve to ensure that the drip strip drains within 24 to 48 hours. Failure to drain in 72 hours will require part or all of the soil filter media to be removed and replaced with new material meeting the soil filter gradation. The facilities will be inspected after major storms and any identified deficiencies will be corrected. Inspect for unwanted or invasive plants and remove as necessary. Remove debris from the surface. Since the Roofline Drip edge is a part of the approved stormwater management plan, it cannot be paved over or altered in any way. Gutters shall not be installed along the roofline.

Vegetated Areas:
Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Ditches, Swales and other Open Stormwater Channels:
Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities shall be inspected after major storms and any identified deficiencies shall be corrected.

Roadways: Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Repair potholes and other roadway obstructions and hazards. Plowing and sanding of paved areas shall be performed as necessary to maintain vehicular traffic safety.

Filterra Units:
The first year of maintenance shall be performed by the Supplier or a supplier approved contractor. Subsequent maintenance shall be performed at least 2 times per year (preferably in Spring and Fall). At a minimum, the maintenance shall consist of the following:

1. Filterra Unit Inspection
2. Foreign debris, silt, mulch &trash removal
3. Filter media evaluation and recharge as necessary
4. Plant health evaluation and pruning or replacement as necessary
5. Replacement of mulch

.

6. Disposal of all maintenance refuse items

Post-Construction Stormwater Management Plan

As part of the Stormwater Permit, the applicant is required to meet the standards in Section 5 of the City of Portland Technical Manual for Stormwater Management. The General Standard in item IV. Submission Requirements states that a project must submit a Post-Construction Stormwater Inspection & Maintenance Plan per Maine DEP Chapter 500 Appendix B with reporting requirements per Chapter 32 of City of Portland Code of Ordinances, and a Stormwater Maintenance Agreement. The management plan shall comply to Chapter 32 of City of Portland Code of Ordinances as follows:

(a) 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 pones, 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) 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 record of the deficiency and corrective action(s) to the department of public works ("DPW") in the annual report
(c) 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 DPW in a form provided by DPW, 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) Any persons required to file an annual certification under this section shall include with the annual certification a filing fee established by DPW to pay the administrative and technical costs of review of the annual certification.
(e) In order to determine compliance with this article and with the post-construction stormwater management plan, DPW may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs

.

Brandy Lane
Maintenance Log

Personnel:				
Date:				
Structure	**Condition**	**Depth of Sediment**	**Inspection Comments**	**Maintenance Required**
CULVERT 6+45				
CB 1				
CB 2				
CB 3				
CB 4				
DMH 1				
DMH 2				
DMH 3				
DMH 4				
DMH 5				
DMH 6				
DMH 7				
DMH 8				
DMH 9				
DMH 10				
OCS 1				
OCS 2				
OCS 3				

Brandy Lane
Maintenance Log

Personnel:				
Date:				
Structure	**Condition**	**Depth of Sediment**	**Inspection Comments**	**Maintenance Required**
SWALES				
VEGETATED AREAS				
ROADWAYS				
Filterra 7+37 RT		**Condition**	**Inspection Comments**	**Maintenance Required**
Stormtech 7+37 RT				
Filterra 7+37 LT		**Condition**	**Inspection Comments**	**Maintenance Required**
Filterra 14+10 RT		**Condition**	**Inspection Comments**	**Maintenance Required**
Stormtech 14+10 RT				
Filterra 14+05 LT		**Condition**	**Inspection Comments**	**Maintenance Required**
Stormtech 14+05 LT				
Roof Dripline Filter Lot 1				

Brandy Lane
Maintenance Log

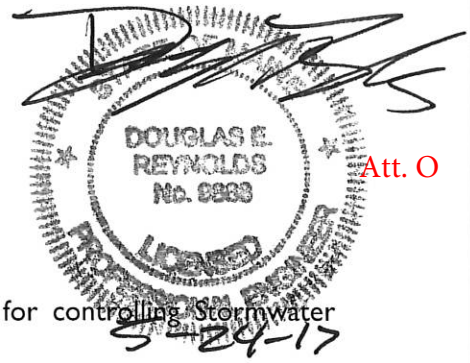
Personnel:				
Date:				
Structure	**Condition**	**Depth of Sediment**	**Inspection Comments**	**Maintenance Required**
Roof Dripline Filter Lot 5				
Roof Dripline Filter Lot 6				
Roof Dripline Filter Lot 11				
Roof Dripline Filter Lot 12				
Grassed Underdrained Soil Filter 1		**Condition**	**Inspection Comments**	**Maintenance Required**
Berm Slopes				
Vegetation				
Sediment				
Pond Inlet				
Storm Drain Outlet				
Overflow				
Grassed Underdrained Soil Filter 2		**Condition**	**Inspection Comments**	**Maintenance Required**
Berm Slopes				

Brandy Lane
Maintenance Log

Personnel:				
Date:				
Structure	**Condition**	**Depth of Sediment**	**Inspection Comments**	**Maintenance Required**
Vegetation				
Sediment				
Pond Inlet				
Storm Drain Outlet				
Overflow				
Grassed Underdrained Soil Filter 3		**Condition**	**Inspection Comments**	**Maintenance Required**
Berm Slopes				
Vegetation				
Sediment				
Pond Inlet				
Storm Drain Outlet				
Overflow				
Grassed Underdrained Soil Filter 4		**Condition**	**Inspection Comments**	**Maintenance Required**
Berm Slopes				
Vegetation				
Sediment				
Pond Inlet				
Storm Drain Outlet				

Brandy Lane
Maintenance Log

Personnel:				
Date:				
Structure	**Condition**	**Depth of Sediment**	**Inspection Comments**	**Maintenance Required**
Overflow				
Grassed Underdrained Soil Filter 5		**Condition**	**Inspection Comments**	**Maintenance Required**
Berm Slopes				
Vegetation				
Sediment				
Pond Inlet				
Storm Drain Outlet				
Overflow				



Att. O

STORMWATER MANAGEMENT

12.1 Overview

This Exhibit demonstrates the developer has made adequate provision for controlling Stormwater Runoff.

12.2 Introduction

LBW, LLC has retained Gorrill Palmer to prepare plans and permit applications for a proposed residential subdivision off Hope Avenue. The site is shown on Assessor's Map 448 Lot A004, is approximately 6.46 acres in size and is located in the Conditional Zone. Figure 1 is a map showing the project location. The developer will construct the roadway, driveway aprons, utility services 5 feet beyond the right-of-way, and stormwater appurtenances. Lot development will also be by the developer of the subdivision. This stormwater permit application includes an allowance for developed area on each lot. The developer is currently seeking a subdivision permit from the City of Portland and a Stormwater Permit reviewed by the City of Portland under their delegated authority. The plans prepared by Gorrill Palmer include the infrastructure necessary to serve the project. This narrative contains the Stormwater Management measures which are appropriate for the site.

12.3 Development Description

The project is a residential subdivision consisting of 16 single family residential lots, a 950 linear foot roadway, and associated infrastructure off 22 Hope Avenue in Portland, Maine.

The project site is currently undeveloped with a landcover of brush and woods. Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site.
Abutting land uses include:

- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

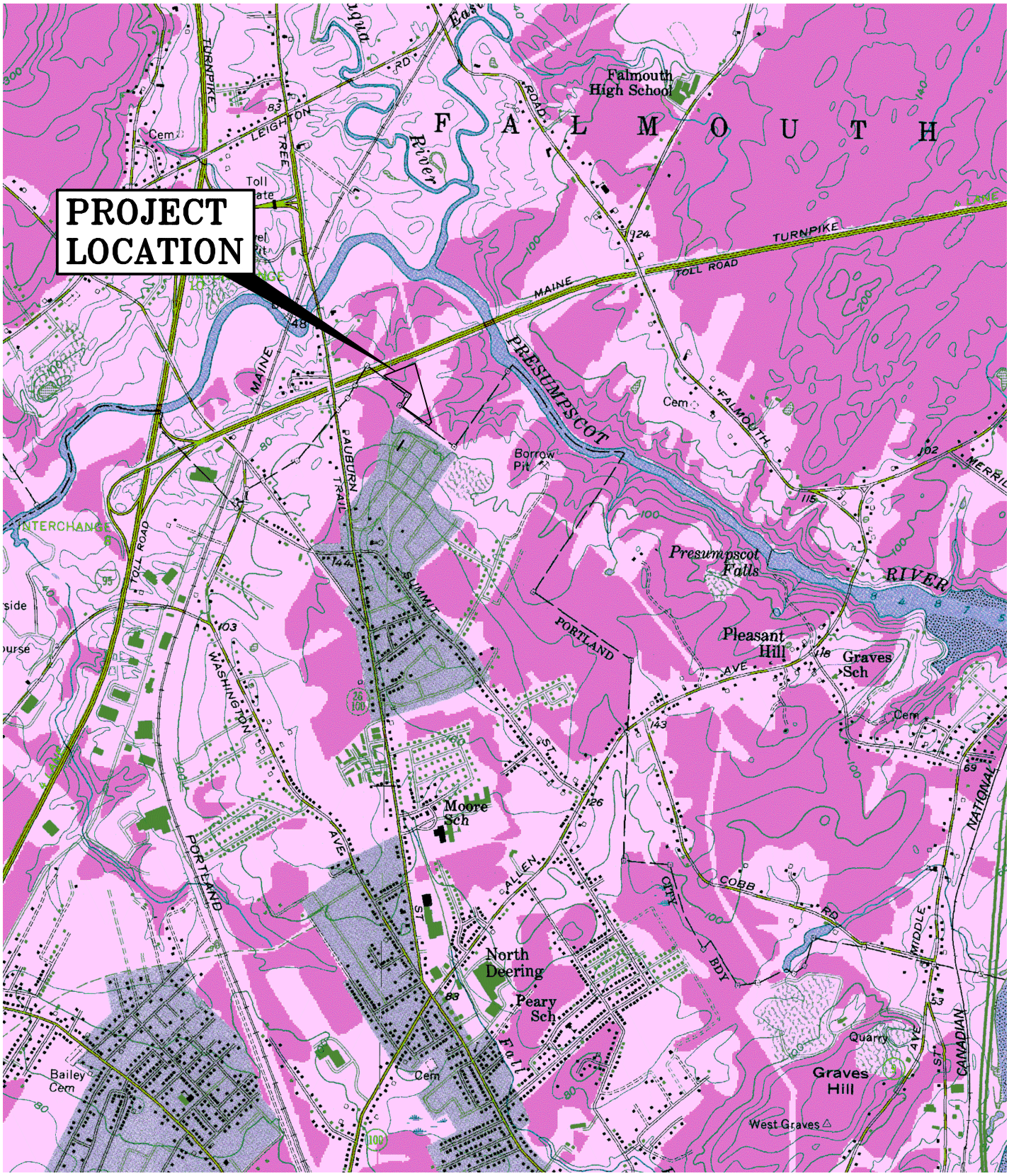
The development of the site will create approximately 1.6 acres of impervious area with a total disturbed area of approximately 4.1 acres.

12.4 Surface Water

There are no lakes located on, adjacent to or downstream of the project site. The site contains several drainage ways which outlet to the Presumpscot River, which is north and east of the site.

12.5 General Topography

Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. Elevations on site range from 90' at Hope Avenue to 74' at the southwesterly property line.



U.S.G.S. Location Map

Brandy Lane Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: MAY 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1-LOCMAP1.dwg	

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207.657.6910

Figure 1

12.6 Flooding

Based upon the FEMA maps, the site is located within a Zone C floodplain. Zone C is defined as "areas of minimal flooding".

Section 5.III of the Technical Manual States,

"Developments as specified under Section II Applicability in Portland must comply with the most recent version of the Maine Department of Environmental Protection (Maine DEP) Chapter 500 Rules for Stormwater Management, including but not limited to the standards for Urban Impaired Stream, Basic, General, and Flooding Standards for the suitability, design, installation, and maintenance of systems to comply with the General and Flooding Standards are provided in Volume III of the Maine Stormwater Best Management Practices Manual."

12.7 Natural Drainage Ways

The project as currently proposed includes alteration of a natural drainage way in the northern portion of the site. The drainage way is located in an area of proposed house lots. Therefore, the drainage way is to be filled to provide a level area for development. Piping systems and stormwater BMPs are designed to re-route water draining to the area.

12.8 Alterations to Land Cover

Changes in land cover will include removal of wooded areas of the project site and the addition of paved surfaces, buildings, and lawns.

12.9 Stormwater Management Control

Section 14-526.b.3.b of the Land Use Ordinance states that all development other than Level I residential shall comply with Section 5 of the Technical Manual including Basic, General, and Flooding standards as applicable to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

Section 5.II.b and Section 5.11.c of the Technical Manual states that Level II and III site plans shall be required to submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including Basic, General and Flooding standards.

The Basic Standard is presented in the Erosion and Sedimentation Control report included with this permit application. The General Standard and Flooding Standard are presented as follows:

The development will utilize 4 Filterras, 3 systems of StormTech chambers, 5 Grassed Underdrained Soil Filters, and 16 Roof Dripline Filters to provide water quality treatment and storage.

The Maine Department of Environmental Protection rules and regulations regarding stormwater concentrate on four stormwater management objectives:

- Effective Pollutant Removal
- Cooling
- Channel Protection
- Flood Control

These objectives may be met either directly by providing BMP's that manage and treat the runoff after it has been created, or indirectly by incorporating low impact development site planning concepts to minimize production and contamination of runoff by maximizing infiltration and evapotranspiration.

12.9.1 Current Treatment Methods

Under the General Standard, the project is required to meet the BMP Standards as the development site is not tributary to a lake watershed. The BMP Standard requires no less than 95% of the impervious area and no less than 80% of the developed area associated with a project to be controlled. The house lot development will be treated to the required 95% and 80% levels. The proposed roadway will be treated as a linear project and the project will provide treatment for runoff according to the requirements for a linear project. For a linear portion of a project the BMP Standard requires no less than 75% of the impervious area and no less than 50% of the developed area associated with a project to be controlled. The four treatment measures listed in Chapter 500 and described in Volume III of the Stormwater BMP Manual are:

- Wetponds
- Filters
- Infiltration
- Buffers

Below is a brief description of each treatment method.

<u>Wetpond with detention above the permanent pool:</u>

Wet ponds are stormwater detention impoundments that have a permanent pool of water and have the capacity to temporarily store storm water runoff while it is released at a controlled rate. They can be designed to provide flood control as well as water quality treatment. Properly sized and maintained, wet ponds can achieve high rates of removal for a number of urban pollutants, including sediment and the pollutants associated with sediment, such as trace metals, hydrocarbons, BOD, nutrients, and pesticides. The addition of an underdrained gravel trench in the bench area around the permanent pool allows for slow, extended release of stormwater without risk of blockage and effective cooling to avoid thermal impacts. This BMP treatment method is generally used to treat runoff from large drainage areas.

<u>Filters</u>

Filtration BMPs have shown to be very effective at removing a wide range of pollutants from stormwater runoff, particularly organic soil filter medias. They can be constructed in combination with infiltration practices, or with an underdrain filter, where infiltration is not feasible. Soil filters can be designed and constructed using common materials. Underdrained soil filters control stormwater quality by capturing and retaining runoff and passing it through a

filter bed comprised of a specific soil media. Various filter medias may be used, the most common including sand filters and organic filters. Once through the soil media, the runoff is collected in a perforated underdrain pipe and discharged to the receiving water. The filter and underdrain provides for slow release of smaller storm events, minimizing stream channel erosion, as well as cooling the discharge. Vegetated underdrain soil filters can also be designed to provide detention above the channel protection volume.

Infiltration

Infiltration measures control stormwater quantity and quality, by retaining all or part of runoff on-site and discharging it into the ground. Infiltration is designed to occur at the surface (as in infiltration basins and to a degree vegetated swales and buffers), or in subsurface systems (e.g., infiltration trenches and infiltrators). The basic function of an infiltration system is to remove a portion of runoff from the total runoff volume of the site and treatment comes about through absorption, straining, microbial decomposition in the soil and trapping of particulate matter within pretreatment areas. Pretreatment to remove sediments, grease and oils is required prior to discharge to the infiltration measure. Possible pretreatment measures include filter strips, swales with check dams, sand filters, sediment traps, grease and oil traps, and sediment basins.

Buffers

Buffer strips are natural, undisturbed strips of natural vegetation or planted strips of close growing vegetation adjacent to and downslope of developed areas. As stormwater runoff travels over the buffer area, vegetation slows the runoff and traps particulate pollutants. They are also effective for phosphorus removal when designed in accordance with the volume III BMP technical design manual. The buffers are preceded by a level lip spreader which allows for thermal cooling of the runoff and a distribution of the flow to a sheet flow rather than direct discharge. The effectiveness of buffers for pollutant removal depends on the flow path length and slope, the buffer berm length, the soil permeability, the size of drainage area, and the type and density of vegetation. Buffers are used to treat runoff from relatively small amounts of impervious area, as typically found in residential developments and small commercial and industrial sites. This type of BMP requires minimal maintenance and provides an aesthetically pleasing area.

12.9.2 Approach and Analysis for Quality

The proposed development will be required to meet the BMP Standard under the General Standard. Based upon review of the four recommended and approved methods for mitigating the increased frequency and duration of channel erosive flows, as required by the BMP Standards, the developer is proposing to use sixteen Roof Dripline Filters, five grassed underdrained soil filters and four filterras coupled with Stormtech systems to provide cooling, and storage to provide water quality control.

The sixteen Roof Dripline Filters, five grassed underdrained soil filters and four filterras coupled with Stormtech systems are proposed for treatment of runoff from the roadway and developed area of 16 residential house lots. The impervious roof area of house lots are proposed to be treated with Roof Dripline Filters due to their lot locations and limitations presented by existing topography. In addition to the limitations presented by existing topography and narrow development area, in order to provide adequate treatment for the house lots, five grassed underdrained soil filters would be required. Test pits should be conducted prior to construction to confirm the seasonal high groundwater elevation. Until test

pits have been conducted, it is assumed filters would need to be lined with an impermeable membrane since the project site consists of Type D soils. In order to meet the Land Use Ordinance and adhere to the City of Portland's Technical Manual Low Impact Design technologies were investigated. Filterra systems are a subsurface bioretention system with an inlet set at the curb line of the roadway. Due to the small footprint of Filterra systems, they were chosen to treat the linear portion of the site as well as some of the lot area. Stormtech chambers sized to contain the water quality volume are connected to the Filterra systems in accordance with the MDEP BMP Standards.

12.9.3 Water Quality Sizing Requirements

Under BMP standards the development is required to treat the runoff from 95% of the project's impervious area and from 80% of the project's developed area for the house lot development, and for the linear portion, treatment is required for 75% of the impervious area and 50% of the developed area.

Roof Dripline Filter

Roof Dripline Filtration will be utilized for the residential units on lots. The dripline provides treatment for the tributary roof area. The reservoir layer is designed to provide storage for the 25-Year rainfall of 5.8 inches in order to meet the Flooding Standard in accordance with MDEP BMP 7.5. A 40% void ratio was used to calculate the storage. The Drip Strip Detail for the assumed house footprint is included in the detail sheets.

The individual lot treatment is shown in the following table. The house lots are assumed to contain 1,540 square feet of roof area, except for lot 7 which is assumed to contain 1,237 square feet of roof area. Due to the limited development footprint, a lawn and driveway area was calculated for each lot.

TABLE 1				
PROPOSED LOT TREATMENT				
LOT NUMBER	FRONT ROOF	REAR ROOF	DRIVEWAY	LAWN
1	Dripline Filter	Dripline Filter	450 sf /Filterra 2	461 sf /Filterra 2 1,264 sf /Soil Filter 1
2	Dripline Filter	Dripline Filter	558 sf /Filterra 2	2,460 sf /Filterra 2 4,000 sf /Soil Filter 1
3	Dripline Filter	Dripline Filter	558 sf /Filterra 2	4,044 sf /Filterra 2 480 sf /Soil Filter 1
4	Dripline Filter	Dripline Filter	432 sf /Filterra 2	4,350 sf /Filterra 2 3,824 sf /Soil Filter 2
5	Dripline Filter	Dripline Filter	198 sf /Filterra 2	1,605 sf /Filterra 2
6	Dripline Filter	Dripline Filter	2,464 sf /Soil Filter 2	2,127 sf /Filterra 2 2,832 sf /Soil Filter 1 2,256 sf /Soil Filter 2
7	Dripline Filter	Dripline Filter	176 sf /Filterra 4 400 sf /Soil Filter 3	1,492 sf /Filterra 4 3,344 sf /Soil Filter 3
8	Dripline Filter	Dripline Filter	360 sf /Filterra 4	1,477 sf /Filterra 4 1,952 sf/Soil Filter 3
9	Dripline Filter	Dripline Filter	414 sf /Filterra 4	1,503 sf /Filterra 4 1,928 sf /Soil Filter 4
10	Dripline Filter	Dripline Filter	414 sf /Filterra	800 sf /Filterra 4 2,560 sf /Soil Filter 4
11	Dripline Filter	Dripline Filter	None	2,496 sf /Soil Filter 4
12	Dripline Filter	Dripline Filter	None	2,608 sf /Soil Filter 4
13	Dripline Filter	Dripline Filter	360 sf /Filterra 3	629 sf /Filterra 3 4,368 sf /Soil Filter 5
14	Dripline Filter	Dripline Filter	360 sf /Filterra 3	2,354 sf /Filterra 3 832 sf /Soil Filter 5
15	Dripline Filter	Dripline Filter	360 sf /Filterra 3	3,058 sf /Filterra 3 265 sf /Soil Filter 5
16	Dripline Filter	Dripline Filter	1,200 sf /Filterra 3 400 sf /Soil Filter 5	1,568 sf /Filterra 3 8,835 sf /Soil Filter 5

Filterra

The proposed Filterras will treat the stormwater runoff from a portion of the roadway as shown on the Post Development Watershed Plan enclosed in Attachment A of this report. The driveway aprons, trail parking area, and turnaround are included in the linear portion of the project. It has been assumed that the roadway sideslopes will be mowed no more than twice a year, therefore they were not considered as developed area.

The Filterra systems have been design in accordance with the MDEP approval letter dated February 2, 2017. The sizing is in accordance with the manufacturers standard New England Testing Results. Based upon discussion with Contech representatives, the Filterra unit was sized based upon the tributary impervious area and an equivalent impervious area for the tributary vegetated area. The equivalent area is calculated by multiplying the vegetated area by

0.4 to account for the MDEP treatment requirement of 0.4" of runoff from vegetated areas. The Filterra outflow and bypass have been directed to a Stormtech chamber system designed to retain the water quality volume, based upon 1" of runoff from impervious areas and 0.4" of runoff from vegetated area. An Isolator Row has been included to allow for maintenance of the system. Outlet control structures with the weir set at the water quality elevation will detain the water quality volume. The water quality volume will be conveyed from the chambers by the underdrain outlet. Flow from larger storms will overtop the weir and be conveyed to the discharge point through the stormdrain system.

The following table presents the filterras performance.

TABLE 2		
Filterra 1		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		7,834 sq. ft.
House lot		0 sq. ft.
Vegetated Developed Area		
Roadway		0 sq. ft.
House Lot		0 sq. ft.
Filterra Size	4 X 8	4 X 8
Water Quality Volume	653 cu. ft.	
SC-740 Stormtech	9	9

TABLE 3		
Filterra 2		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		9,727 sq. ft.
House lot		2,196 sq. ft.
Vegetated Developed Area		
Roadway		2,238 sq. ft.
House Lot		15,047 sq. ft.
Filterra Size	7 X 13	7 X 13
Water Quality Volume	1570 cu. ft.	
SC-740 Stormtech	21	21

TABLE 4		
Filterra 3		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		5,110 sq. ft.
House lot		2,280 sq. ft.
Vegetated Developed Area		
Roadway		720 sq. ft.
House Lot		7,609 sq. ft.
Filterra Size	6 X 10	6 X 10
Water Quality Volume	894 cu. ft.	
SC-740 Stormtech	12	12

TABLE 5		
Filterra 4		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		5,090 sq. ft.
House lot		1,364 sq. ft.
Vegetated Developed Area		
Roadway		1,020 sq. ft.
House Lot		5,272 sq. ft.
Filterra Size	6 X 8	6 X 8
Water Quality Volume	748	
SC-740 Stormtech	10	10

Grassed Underdrained Soil Filter

Due to the project site's topography and layout, in order to provide the required 95% treatment of impervious area and 80% treatment of the developed area, Grassed Underdrained Soil Filters are proposed to reach the required treatment levels. The Grassed Underdrained Soil Filters are currently oversized for the treatment area to be conservative for the sites unique layout.

Grassed Underdrained Soil Filters are defined in Volume III, Section 7 of the Stormwater Management Best Management Practices Manual published by the Maine Department of Environmental Protection. The development will be required to provide the treatment volume for 1.0 inch times the subcatchments impervious area plus 0.4 inch times the subcatchments landscaped developed area. The surface area of the filters are required to be no less than the sum of 5% of the impervious area and 2% of the landscaped area draining to the filters. The channel protection volume is allowed to pond up to 18" deep within the filters. Runoff from larger storms will be conveyed from the filters by spillways with its crest set at the channel protection elevation. A valve will be placed on the filters underdrain to regulate the outflow through the soil media. The valve will be field adjusted to maintain the outflow time between 24 and 48 hours for the channel protection volume. Yearly maintenance of the filters will include monitoring the outflow after a rainfall event to ensure the outflow time is within the required parameters. The filter media will be a layered system consisting of 12" of sand and 6" of loamy topsoil with a transition layer of 2" of the topsoil rototilled into the sand layer. The

attached Watershed Map was utilized to determine the water surface elevation for larger storms.

The following tables present the Grassed Underdrained Soil Filter information:

TABLE 6		
GRASSED UNDERDRAINED SOIL FILTER 1		
	REQUIRED	**PROVIDED**
Impervious Area		0 sq. ft.
Developed Area (non-impervious)		8,576 sq. ft.
Treatment Volume	286 cu. ft.	305 cu. ft.
Filter Surface Area	172 sq. ft.	305 sq. ft.
Cell Base Elevation		86 ft.
Overflow Outlet Elevation		87.5 ft.

TABLE 7		
GRASSED UNDERDRAINED SOIL FILTER 2		
	REQUIRED	**PROVIDED**
Impervious Area		2,464 sq. ft.
Developed Area (non-impervious)		6,080 sq. ft.
Treatment Volume	408 cu. ft.	442 cu. ft.
Filter Surface Area	245 sq. ft.	442 sq. ft.
Cell Base Elevation		88 ft.
Overflow Outlet Elevation		89.5 ft.

TABLE 8		
GRASSED UNDERDRAINED SOIL FILTER 3		
	REQUIRED	**PROVIDED**
Impervious Area		400 sq. ft.
Developed Area (non-impervious)		5296 sq. ft.
Treatment Volume	210 cu. ft.	354 cu. ft.
Filter Surface Area	126 sq. ft.	354 sq. ft.
Cell Base Elevation		82 ft.
Overflow Outlet Elevation		83.5 ft.

TABLE 9		
GRASSED UNDERDRAINED SOIL FILTER 4		
	REQUIRED	**PROVIDED**
Impervious Area		0 sq. ft.
Developed Area (non-impervious)		9,592 sq. ft.
Treatment Volume	320 cu. ft.	440 cu. ft.
Filter Surface Area	191 sq. ft.	440 sq. ft.
Cell Base Elevation		79 ft.
Overflow Outlet Elevation		80.5 ft.

TABLE 10		
GRASSED UNDERDRAINED SOIL FILTER 5		
	REQUIRED	**PROVIDED**
Impervious Area		400 sq. ft.
Developed Area (non-impervious)		14,035 sq. ft.
Treatment Volume	502 cu. ft.	677 cu. ft.
Filter Surface Area	301 sq. ft.	677 sq. ft.
Cell Base Elevation		80 ft.
Overflow Outlet Elevation		81.5 ft.

12.9.4 Conclusion – Overall Treatment

The following table summarizes the proposed treatment for the linear portion of the project. The roadway, sidewalk, turnaround, trail parking, and driveway aprons are the impervious areas associated with the linear portion of the project. The esplanade is the landscaped area associated with the linear portion of the project.

TABLE 11 – LINEAR PORTION		
	IMPERVIOUS	**DEVELOPED** (Impervious + Landscaped)
Area treated by Filterras (sf)	27,761	31,739
Area treated by Grassed Underdrained Soil Filters (sf)	0	0
Total Area Treated (sf)	27,761	31,739
Area Untreated (sf)	8,189	8,855
Total Area of Project (sf)	35,950	40,594
Percent Treated	77.2%	78.2%
Percent Required	75%	50%

The following table summarizes the proposed treatment for the house lot portion of the project. The house lots are assumed to contain 1,540 square feet of roof area except for lot 7 which is assumed to contain 1,237 square feet of roof area. Due to the limited development footprint, a lawn and driveway area was calculated for each lot.

TABLE 12 – HOUSE LOTS		
	IMPERVIOUS	**DEVELOPED** (Impervious + Landscaped)
Area treated by Filterras (sf)	5,840	33,768
Area treated by Grassed Underdrained Soil Filters (sf)	3,264	47,108
Roof Dripline Filters (sf)	24,337	36,657
Total Area Treated (sf)	33,441	117,533
Area Untreated (sf)	660	21,331
Total Area of Project (sf)	34,101	138,864
Percent Treated	98%	85%
Percent Required	95%	80%

The proposed development of the residential subdivision will utilize four Filterras, five Grassed Underdrained Soil Filters and twelve Roof Dripline Filters to mitigate the development as required by the BMP Standards. The development is required to control runoff from no less than 95% of the impervious area and no less than 80% of the developed area and, for the linear portion of the project, the development is required to control runoff from no less than 75% of the impervious area and no less than 50% of the developed area. As proposed, the development is controlling approximately 95% of the created impervious area, and approximately 82% of the developed area for the house lots, and is controlling approximately 75.2% of the created impervious area, and approximately 76.4% of the developed area for the linear portion, which meets or exceeds the required control.

A Water Quality Map is included in attachment A.

12.9.5 Water Quantity Sizing Requirements

The stormwater management study provides an analysis of predevelopment and post development stormwater runoff rates.

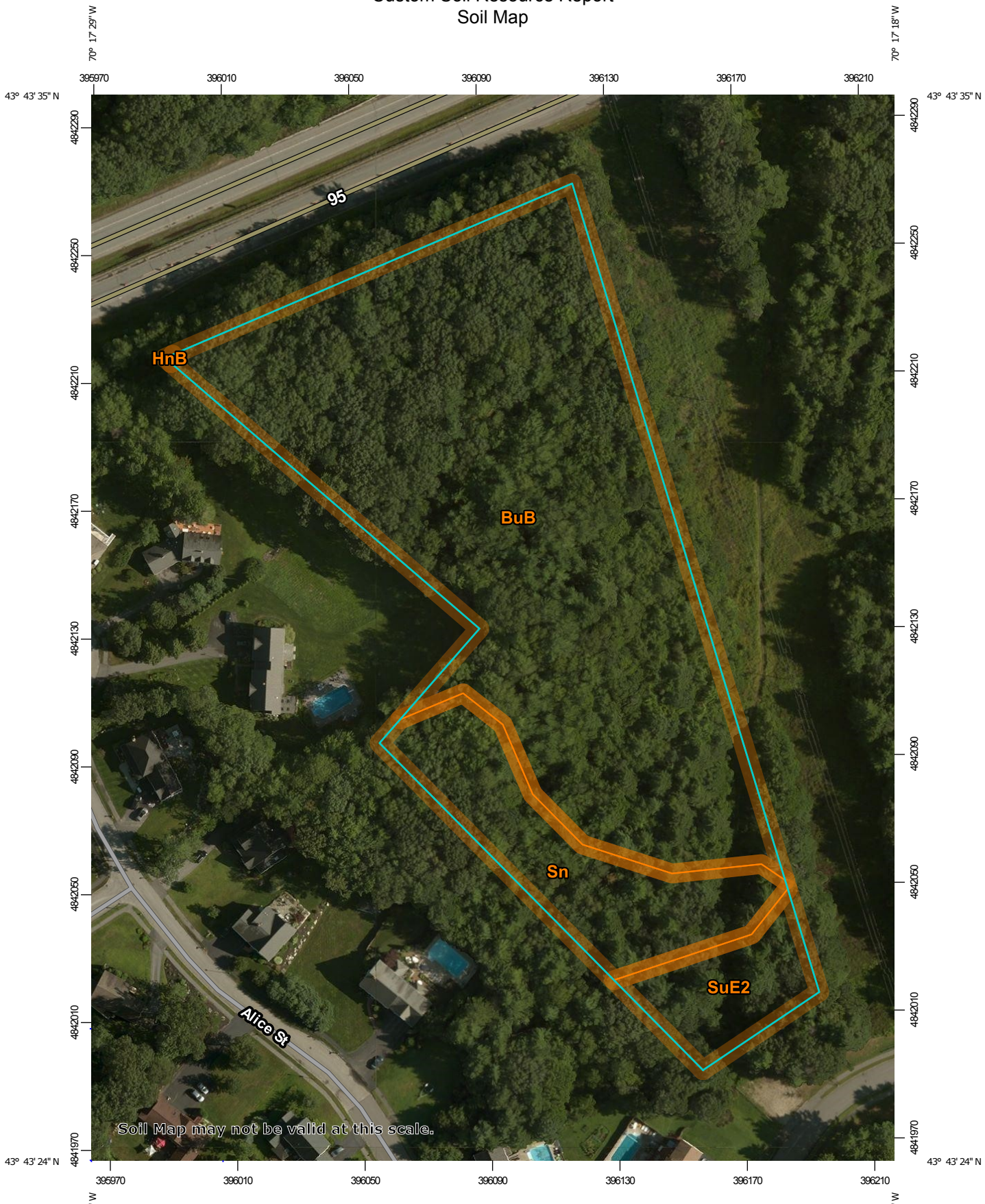
The Natural Resource Conservation Service Medium Intensity Soil Survey was used to identify onsite and offsite soils. The project site is comprised of hydrologic soil types B, C, and D. An excerpt from the Medium Intensity Soil Survey follows this page.

The SCS TR-20 methodology, using the HydroCad program, was employed by Gorrill Palmer to analyze predevelopment and post-development conditions. A 24-hour, SCS Type III storm distribution for the two, ten and twenty five year storm frequencies was used. The corresponding rainfall amounts for these storms are 3.1", 4.6" and 5.8" respectively.

Land use cover, delineations of watershed hydraulic flow paths, and hydrologic soils data were obtained using the following data:

1. Portland 7.5 Minute Quadrangle Maps prepared by the U.S.G.S.
2. On-site topographic survey with 2' contour intervals from an existing conditions plan of the site.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,620 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 12, Sep 15, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2013—Aug 11, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend

Cumberland County and Part of Oxford County, Maine (ME005)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BuB	Lamoine silt loam, 3 to 8 percent slopes	4.6	77.6%
HnB	Hinckley-Suffield complex, 3 to 8 percent slopes	0.0	0.0%
Sn	Scantic silt loam, 0 to 3 percent slopes	0.9	15.5%
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded	0.4	6.9%
Totals for Area of Interest		**6.0**	**100.0%**

Map Unit Descriptions

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

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

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

3. Aerial Photography of the project site, obtained from the Maine Office of GIS.
4. Natural Resource Conservation Service Medium Intensity Soil Survey
5. Field Reconnaissance.

Predevelopment Conditions

The drainage study analyzes the watershed in the predevelopment condition as depicted on the Predevelopment Watershed Map.

The predevelopment was analyzed as two subcatchments and two points of interest (POI) were analyzed. POI 1 is the location in a swale at the lot's eastern boundary and the POI 2 is the location in a swale at the lots northern boundary.

Subcatchment 1S consists of the drainage area to POI 1. Most of Subcatchment 1S is off site.

Subcatchment 2S consists of the drainage area to POI 2.

A watershed map for the predevelopment conditions is attached to this section as drawing number W1. The predevelopment conditions were analyzed using HydroCAD modeling. Table 13 presents the peak flow rates at the point of interest in the predevelopment condition.

Table 13 - Predevelopment Peak Flow Rates (cfs)			
Point of Interest	Peak Flow (cfs)		
	2 YR	10 YR	25 YR
	Pre	Pre	Pre
POI # 1	18.6	42.9	64.4
POI # 2	9.1	19.8	29.2

Copies of the calculations for the predevelopment conditions are included in Attachment B.

Post Development Conditions

Analysis for the post development condition consists of determining post development peak flows and limiting the post development flows to predevelopment levels. The Post Development was analyzed as six subcatchments and two points of interest (POI) were analyzed. POI 1 is the location in a swale at the lot's eastern boundary and the POI 2 is the location in a swale at the lot's northern boundary.

Subcatchment 1S is composed of offsite and onsite area draining to the culvert shown on the plan set.

Subcatchment 7S is the area tributary to the Stormtech Subsurface Chamber Systems.

Subcatchment 9S is the onsite area tributary to POI 1.

These subcatchments are routed to the existing culvert and swale, POI 1.

Subcatchment 2S is composed of offsite and onsite area tributary to proposed stormdrain system.

Subcatchment 6S is the onsite area tributary to POI 2.

Subcatchment 11S is the area tributary to the Stormtech Subsurface Chamber Systems.

These subcatchments are routed to the proposed stormdrain system and swale, POI 2.

The runoff from the roof areas of twelve lot's is stored within the drip strips in accordance with MDEP BMP 7.5. Since the Flooding Standard has been met by storing the 25-Year Rainfall, the twelve roof areas have been removed from the post development HydroCAD model, due to the many assumptions required to route twelve small areas through the drip strip storage and outlets. The post development watershed area is less than the predevelopment area due to the removal of the roofs.

A watershed map for the post development conditions is attached to this section as drawing number W2. Attachment B includes the TR-20 calculations.

The runoff from subcatchments 7S and 11S was routed through the Stormtech chambers which are part of the Filterra water quality system. The chambers provide some attenuation of the tributary runoff.

A comparison of Pre and Post Development peak flows is presented in the following table:

Table 15 - Post Development Peak Flow Rates with Detention (cfs)

Point of Interest	Peak Flow (cfs)					
	2 YR		10 YR		25 YR	
	Pre	Post	Pre	Post	Pre	Post
POI # 1	18.6	19.3	42.9	43.1	64.4	63.8
POI # 2	9.1	9.2	19.8	18.9	29.2	27.2

As shown in the table above, the Post Development peak flow for the 25-Year storm is less than the peak flow from the Pre Development storm for both POI 1 and POI 2.

The Post Development peak flow for the 10-Year storm at POI 2 is less than the Pre Development peak flow.

The Post Development peak flow increases slightly from Pre Development levels for the 10-Year storm at POI 1 and the 2-Year storm at POI 1 and 2. The following table presents the increase:

Table 16 – Post Development Peak Flow Increases

Point of Interest	Peak Flow (cfs)			
	2-Year Storm		10-Year Storm	
	Increase	% of Pre Development	Increase	% of Pre Development
POI # 1	0.7	3.8	0.1	0.2
POI # 2	0.1	1.1	-	-

Due to the proximity of the Presumpscot River to the project, these slight increases are considered to be insignificant.

12.9.6 Conclusion – Overall Water Quantity

As a result of attenuation within the proposed Stormtech chambers, and the storage of the 25-Year Rainfall within drip strips at 12 house lot's, the peak Post Development runoff has been reduced to be at or below Pre Development levels for the 25-Year storm at POI 1 and 2 and for the 10-Year storm at POI 2. The slight increase in peak flow for the 10-Year storm at POI 1 and for the 2-Year storm at POI 1 and 2 is considered insignificant due to the location of the parcel just upstream from the Presumpscot River.

12.10 Construction BMPs

Additional water quality treatment will be provided during construction by best management practices (BMP). Standard BMPs to be employed include siltation fencing around the downslope construction perimeter, riprap, stabilized construction entrances, and erosion control fabrics applied to slopes prior to revegetation.

12.11 Maintenance of Facilities

See the Erosion and Sedimentation Control report for this project.

12.12 Conclusion

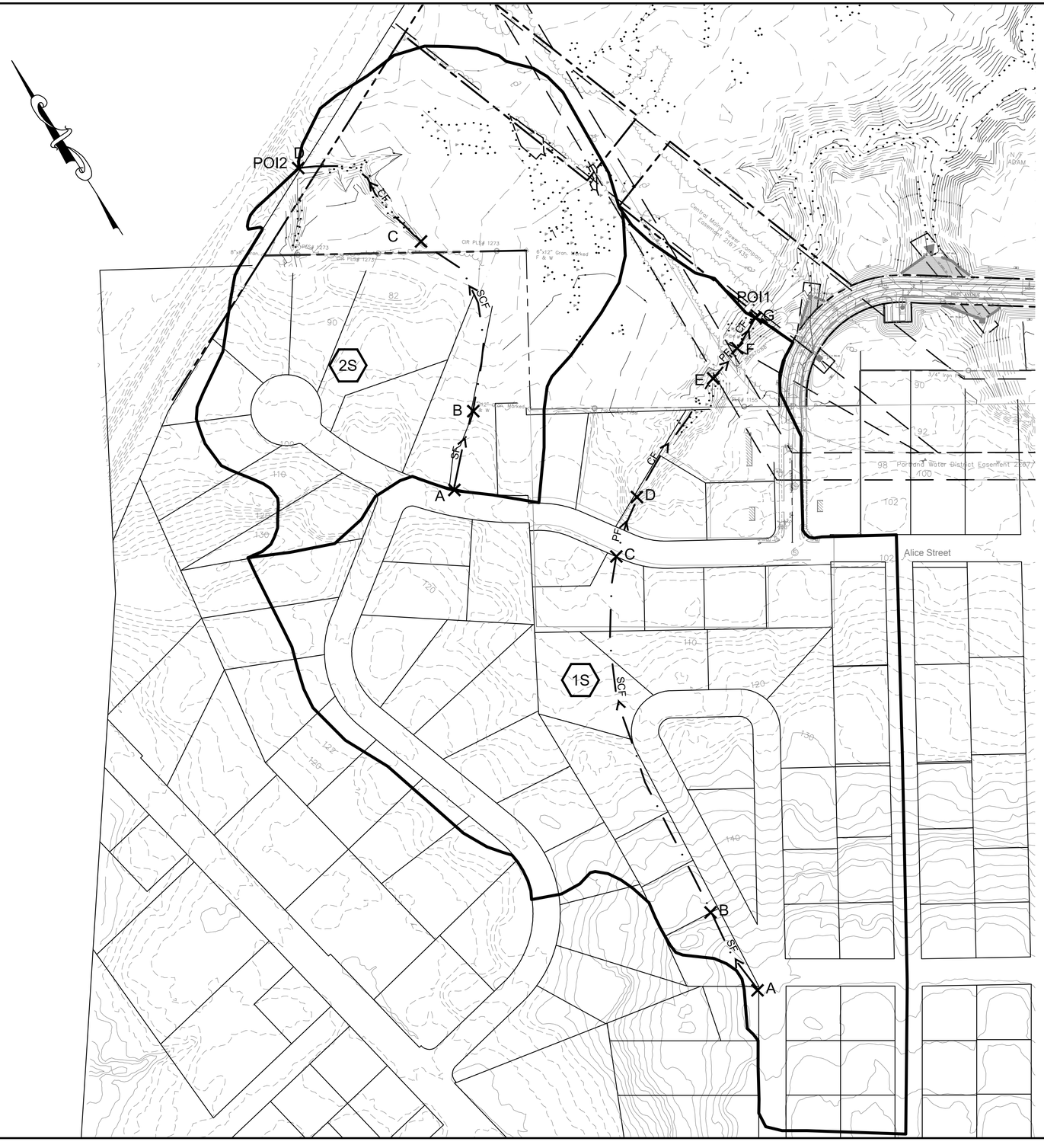
Gorrill Palmer has been retained by LBW, LLC. to prepare plans and permit applications for a proposed residential subdivision, located off Hope Avenue in Portland, Maine. The proposed development will include 16 residential lots, an approximately 950 linear foot of roadway and associated infrastructure. As a result, the proposed development will create more than 1 acre of impervious area but less than 3 acres of impervious area, and thereby require a Stormwater Law Permit Application. Based upon the attached calculations, the proposed development meets or exceeds the requirement of the BMP Standard through the use of Filterras, Drip Strips, and Grassed Underdrained Soil Filters. The project also meets the flooding standard due to attenuation of runoff within the BMP treatment facilities.

12.13 Attachments

Attached to this section are the following items:

Attachment A – Watershed Map, Water Quality Map
Attachment B – TR-20 Calculations
Attachment C – Filterra and Grassed Underdrained Soil Filter sizing calculations
Attachment D – Correspondence of manufacturers review and approval of proposed Filterra design

ATTACHMENT A
Watershed Map and Water Quality Map



LEGEND

1	SUBCATCHMENT AREA
A	TIME OF CONCENTRATION FLOW PATH
	WATERSHED BOUNDARY
	WETLAND BOUNDARY
SF	SHEET FLOW
PF	PIPE FLOW
SCF	SHALLOW CONCENTRATED FLOW
CF	CHANNEL FLOW
POI	POINT OF INTEREST
1	REACH

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

100 0 50 100 200

1 inch = 100 ft.

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Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
SUBDIVISION APPLICATION	5/24/17	DER
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: MAY 2017
Checked: AMP	Scale: 1"=100'	Job No.: 98089.08
File Name: 98089-08-WS-PRE.dwg		

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207.772.2515

Drawing Name: **Pre Development Watershed Map**

Project: **Brandy Lane Subdivision**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. *W1*

LEGEND

1	SUBCATCHMENT AREA
A	TIME OF CONCENTRATION FLOW PATH
	WATERSHED BOUNDARY
	WETLAND BOUNDARY
SF	SHEET FLOW
PF	PIPE FLOW
SCF	SHALLOW CONCENTRATED FLOW
CF	CHANNEL FLOW
POI	POINT OF INTEREST
1	REACH

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

100 0 50 100 200

1 inch = 100 ft.

Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

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SUBDIVISION APPLICATION	5/24/17	DER
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: MAY 2017
Checked: AMP | Scale: 1"=40' | Job No.: 98089.08
File Name: 98089-08-WS-POST.dwg

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Drawing Name: Post Development Watershe Map

Project: **Brandy Lane Subdivision**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. W2

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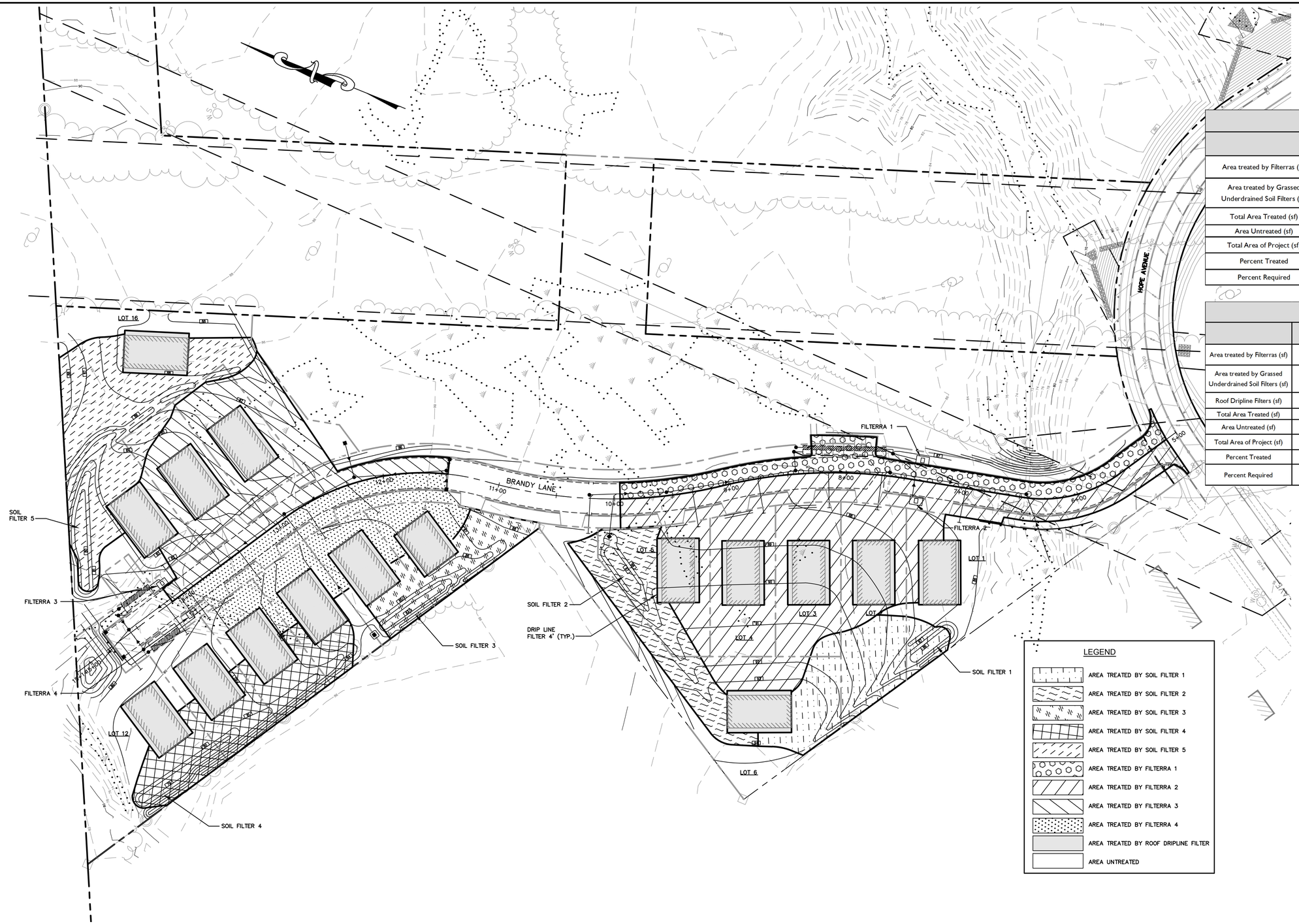

TABLE 11 – LINEAR PORTION

	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by Filterras (sf)	27,761	31,739
Area treated by Grassed Underdrained Soil Filters (sf)	0	0
Total Area Treated (sf)	27,761	31,739
Area Untreated (sf)	8,189	8,855
Total Area of Project (sf)	35,950	40,594
Percent Treated	77.20%	78.20%
Percent Required	75%	50%

TABLE 12 – HOUSE LOTS

	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by Filterras (sf)	5,840	33,768
Area treated by Grassed Underdrained Soil Filters (sf)	3,264	47,108
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Area Untreated (sf)	660	21,331
Total Area of Project (sf)	34,101	138,864
Percent Treated	98%	85%
Percent Required	95%	80%

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

40 0 20 40 80
1 inch = 40 ft.

Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
SUBDIVISION APPLICATION	5/24/17	DER
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: MAY 2017
Checked: AMP | Scale: 1"=40' | Job No.: 98089.08
File Name: 98089-08-WQ.dwg

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Drawing Name: **Water Quality Plan**
Project: **Brandy Lane Subdivision**, Portland, Maine
Client: **LBW, LLC**, PO Box 1382, Portland, Maine 04104

Drawing No. WQ

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ATTACHMENT B
TR-20 Calculations

PREDEVELOPMENT

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>0.83"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=18.61 cfs 1.603 af

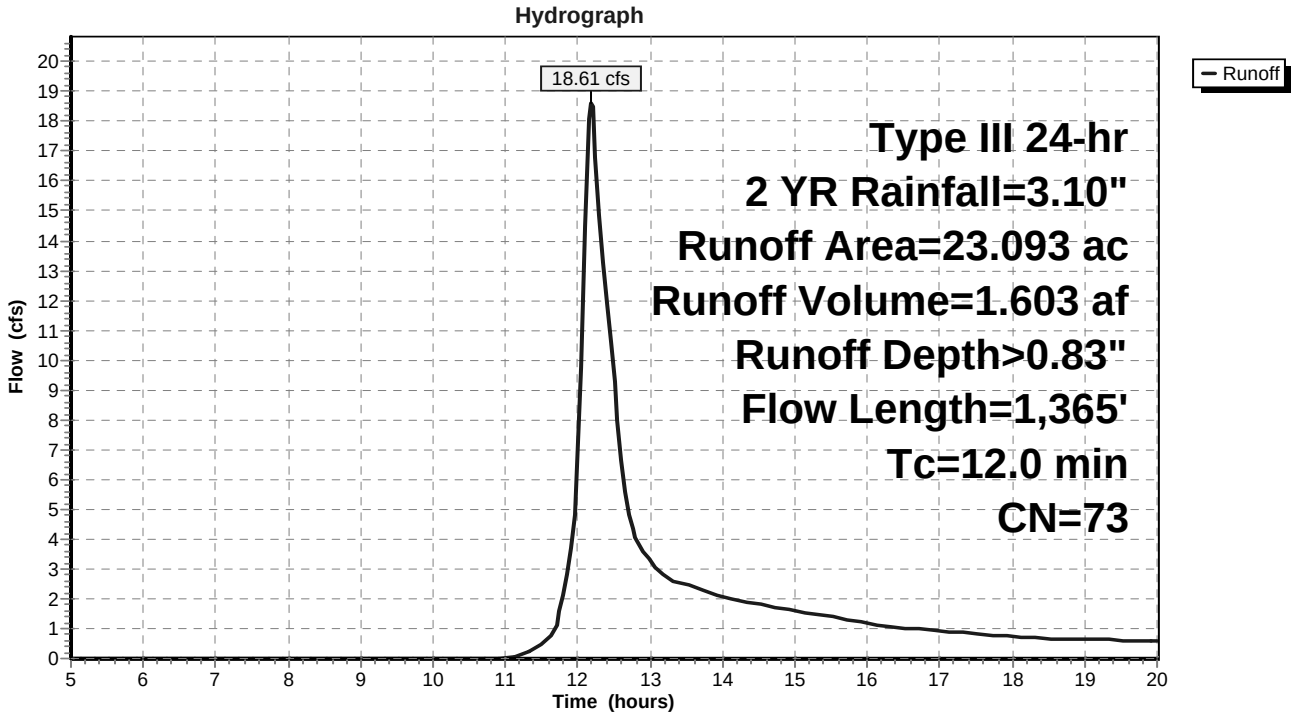
Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>0.93"
Flow Length=800' Tc=15.6 min CN=75 Runoff=9.05 cfs 0.838 af

Reach 4R: POI 1 Inflow=18.61 cfs 1.603 af
Outflow=18.61 cfs 1.603 af

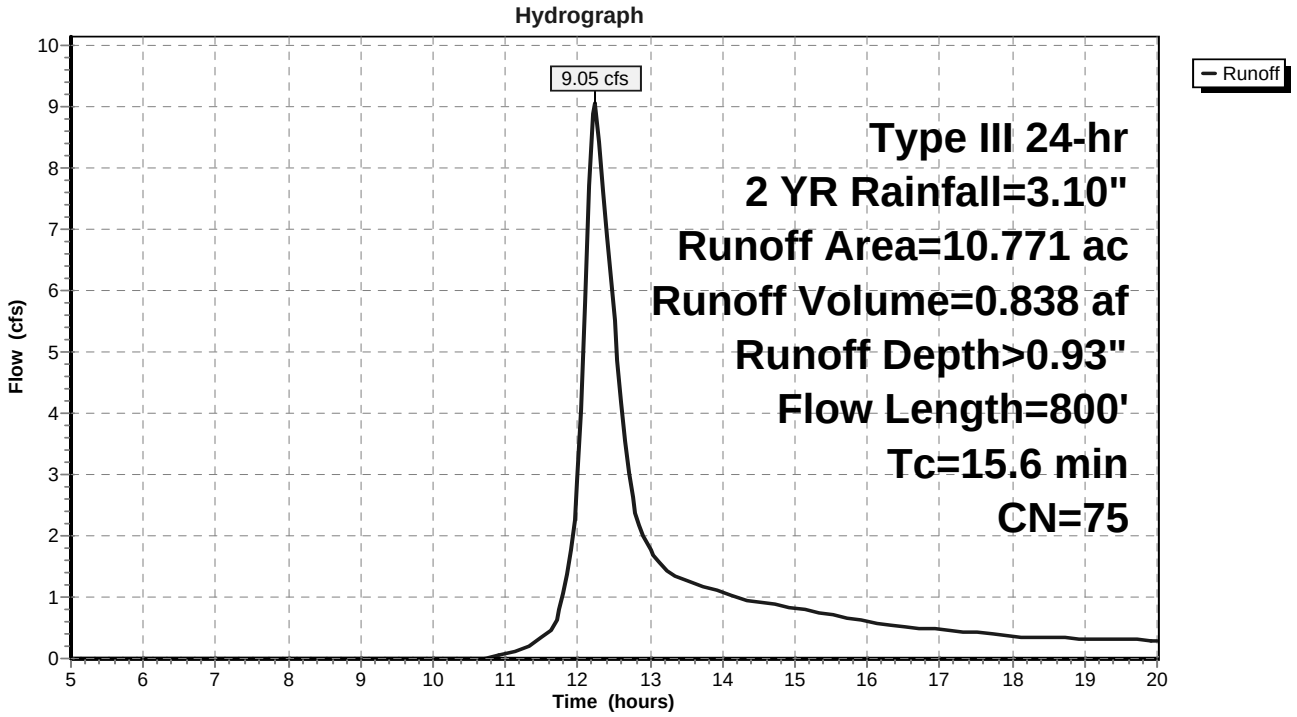
Reach 5R: POI 2 Inflow=9.05 cfs 0.838 af
Outflow=9.05 cfs 0.838 af

Total Runoff Area = 33.864 ac Runoff Volume = 2.441 af Average Runoff Depth = 0.86"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

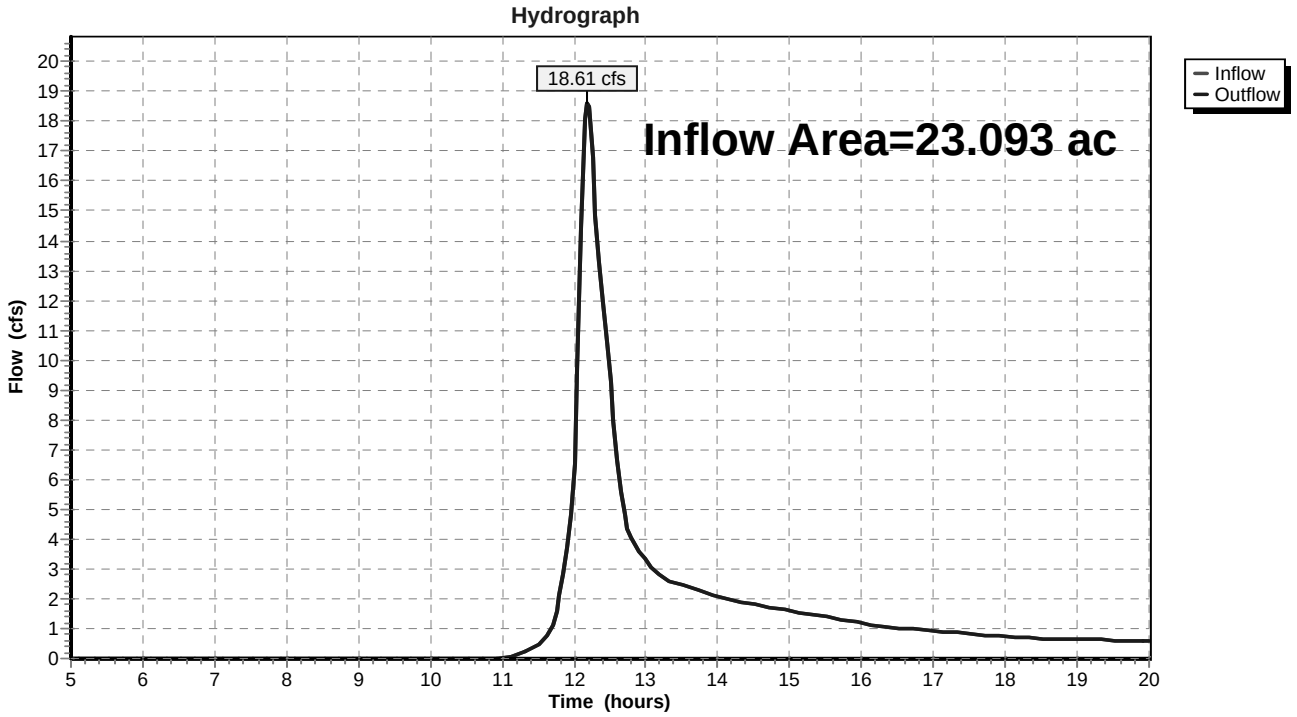
Subcatchment 1S: Subcatchment 1



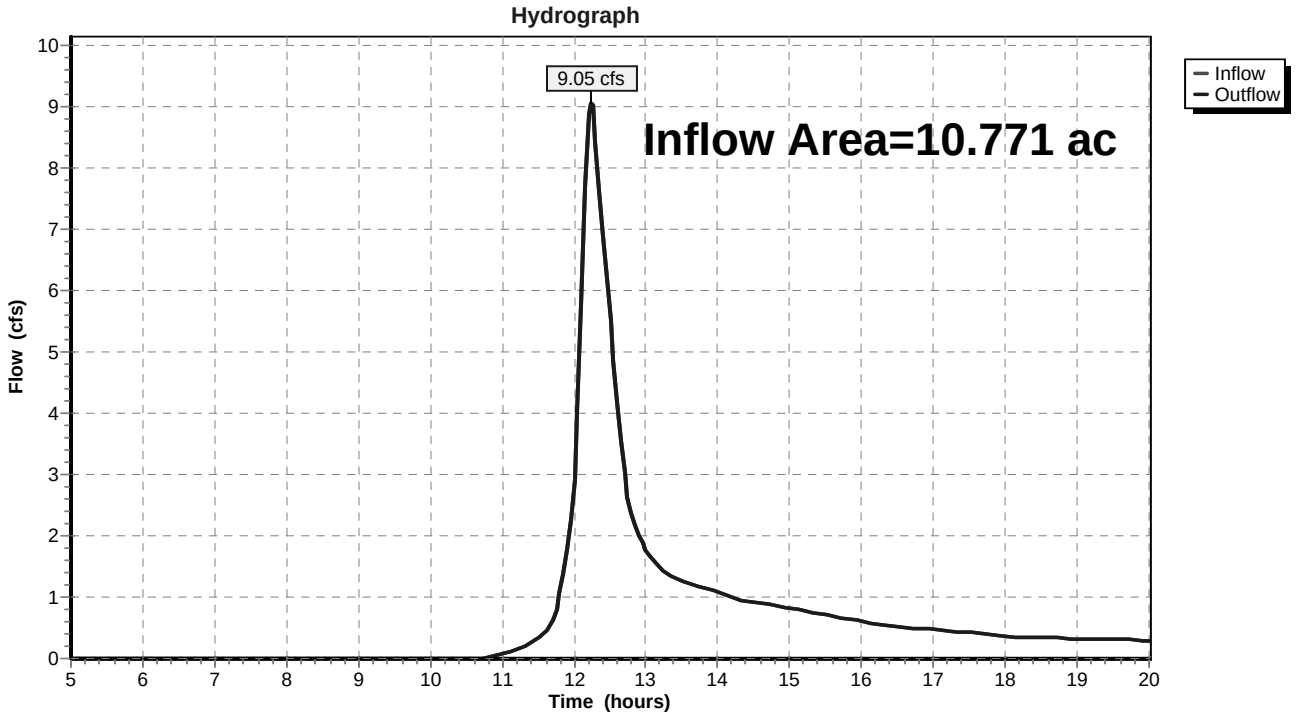
Subcatchment 2S: Subcatchment 2



Reach 4R: POI 1



Reach 5R: POI 2



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>1.81"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=42.89 cfs 3.493 af

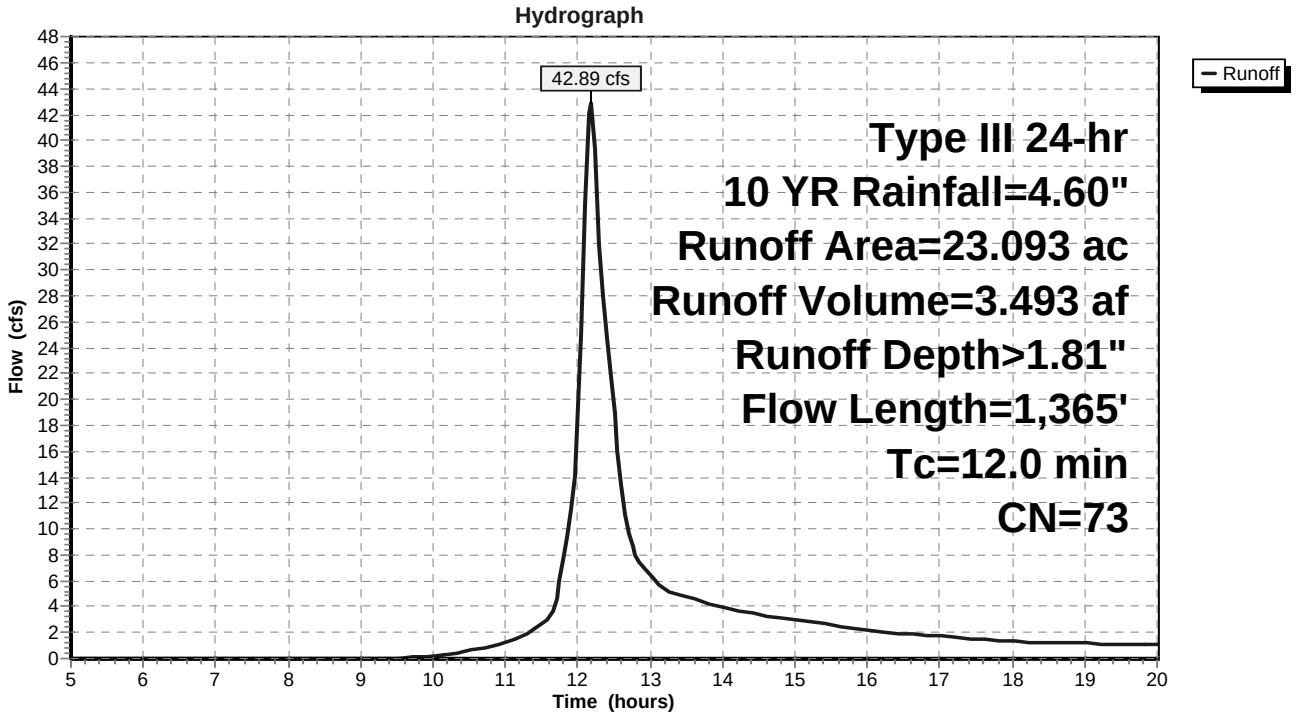
Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>1.96"
Flow Length=800' Tc=15.6 min CN=75 Runoff=19.79 cfs 1.763 af

Reach 4R: POI 1 Inflow=42.89 cfs 3.493 af
Outflow=42.89 cfs 3.493 af

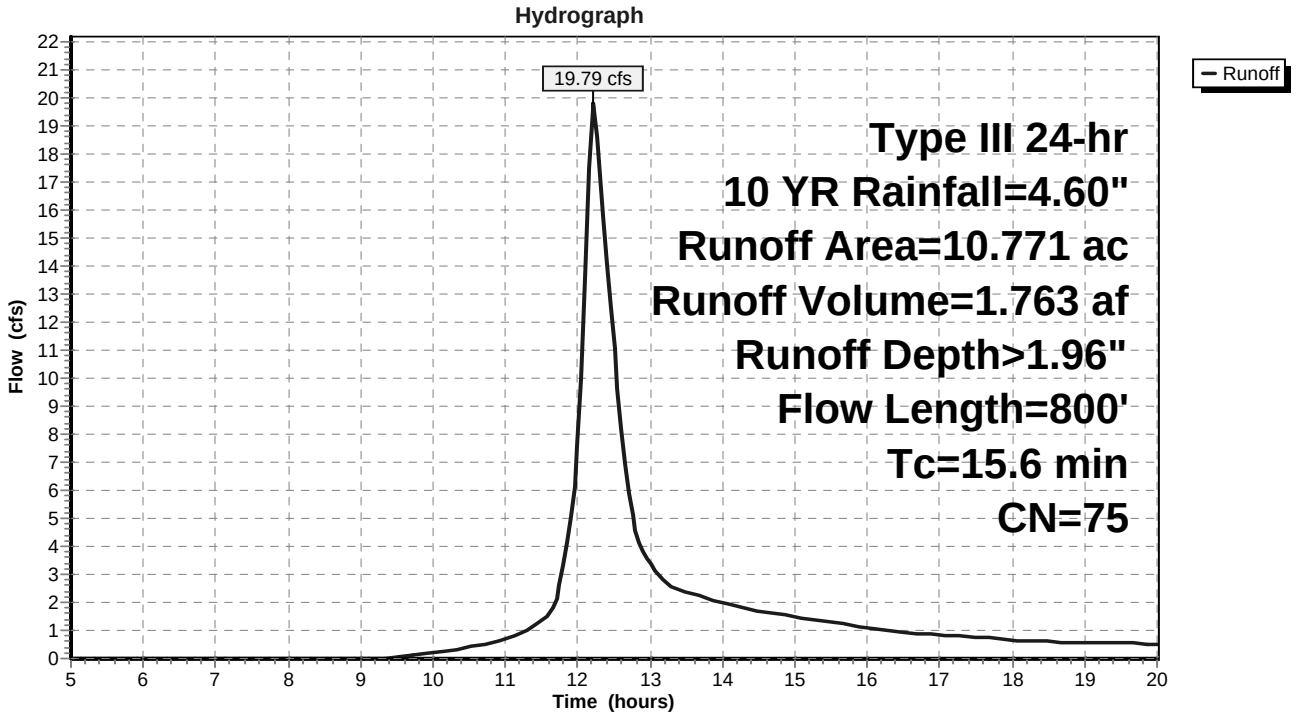
Reach 5R: POI 2 Inflow=19.79 cfs 1.763 af
Outflow=19.79 cfs 1.763 af

Total Runoff Area = 33.864 ac Runoff Volume = 5.255 af Average Runoff Depth = 1.86"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Subcatchment 1S: Subcatchment 1



Subcatchment 2S: Subcatchment 2



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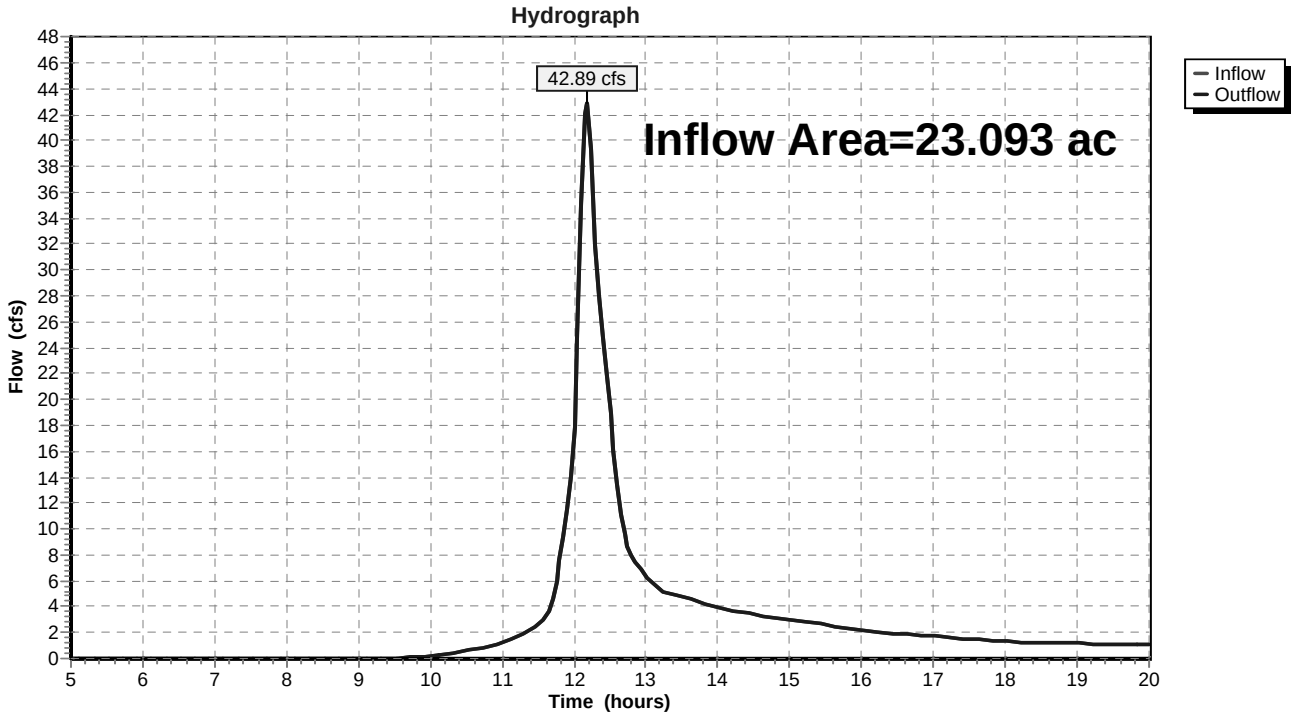
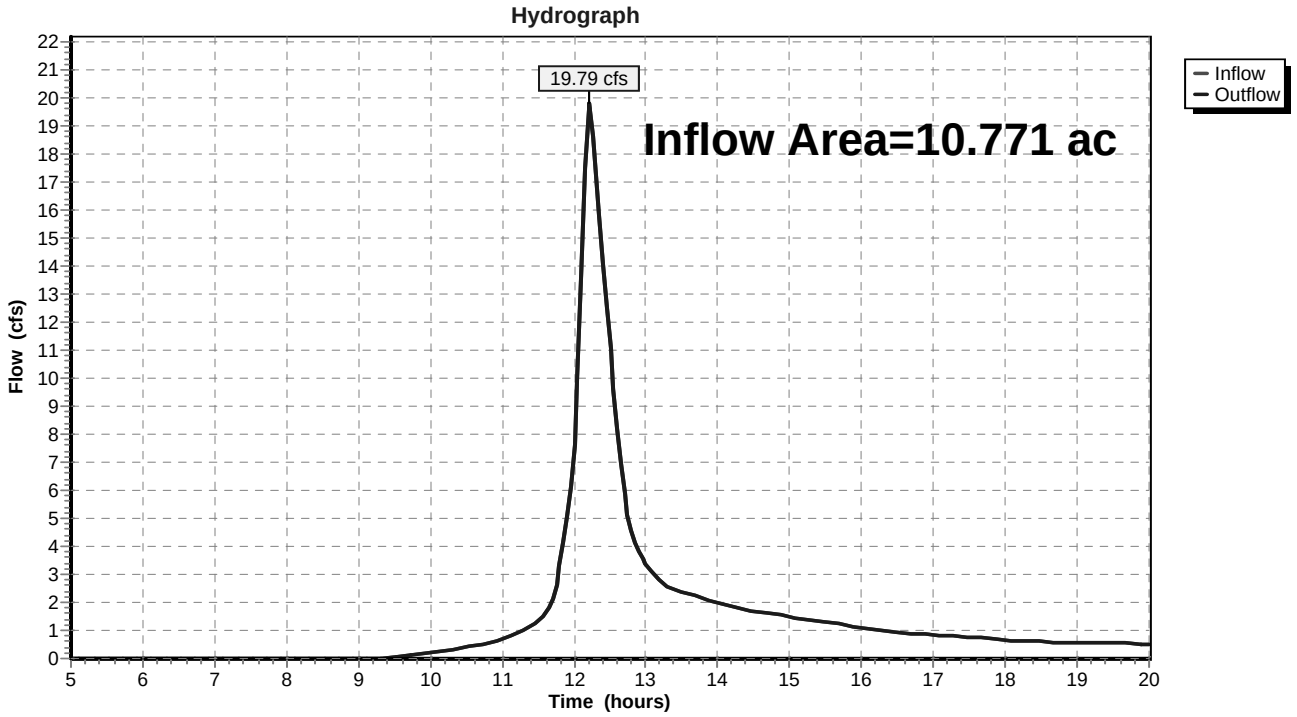
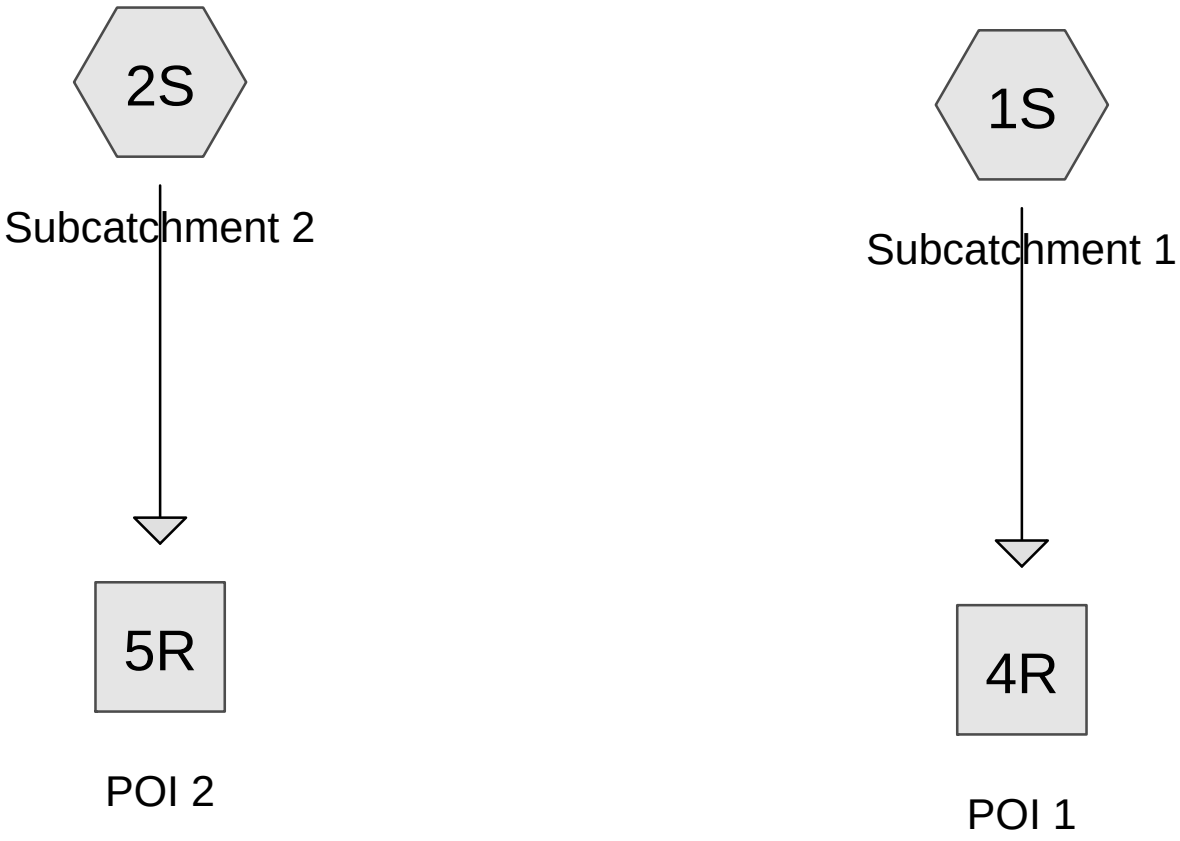


Reach 5R: POI 2





Subcat Reach Pond Link

Routing Diagram for Pre Development
Prepared by Gorrill Palmer, Printed 5/19/2017
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>2.71"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=64.44 cfs 5.215 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>2.89"
Flow Length=800' Tc=15.6 min CN=75 Runoff=29.18 cfs 2.593 af

Reach 4R: POI 1 Inflow=64.44 cfs 5.215 af
Outflow=64.44 cfs 5.215 af

Reach 5R: POI 2 Inflow=29.18 cfs 2.593 af
Outflow=29.18 cfs 2.593 af

Total Runoff Area = 33.864 ac Runoff Volume = 7.808 af Average Runoff Depth = 2.77"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Summary for Subcatchment 1S: Subcatchment 1

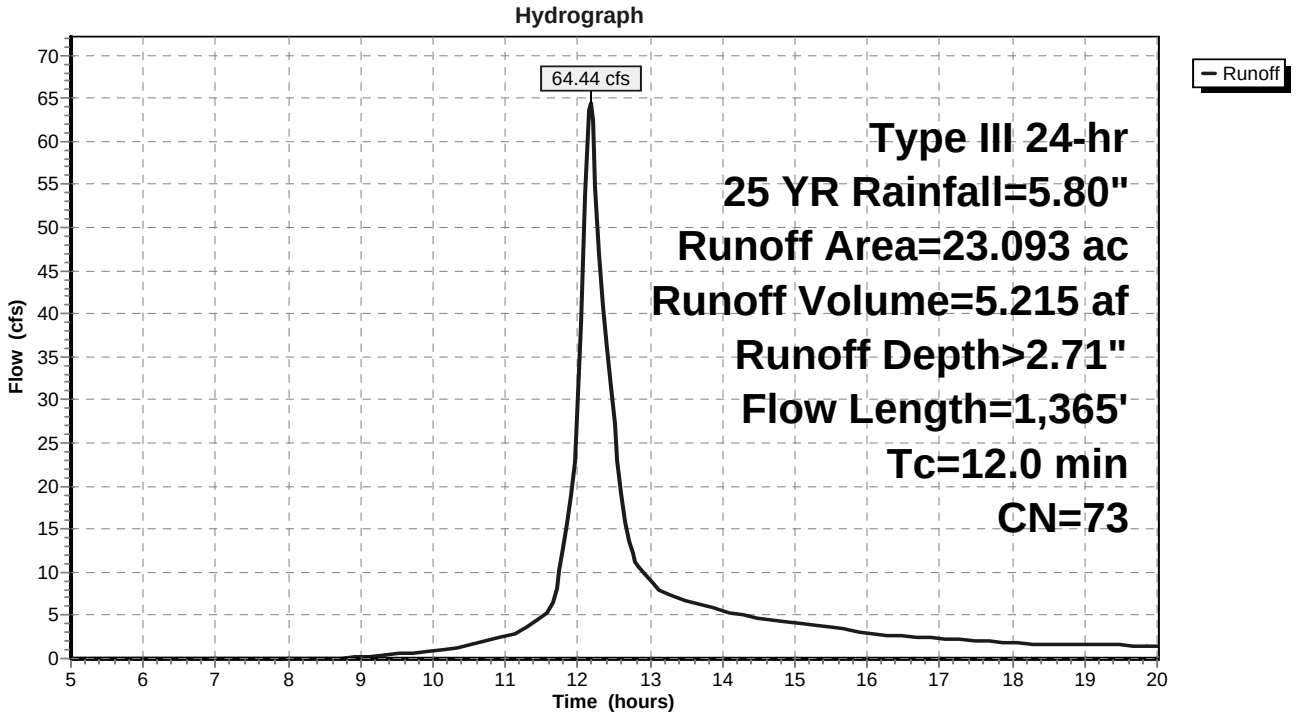
Runoff = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
10.530	61	1/4 acre lots, 38% imp, HSG A
0.979	81	1/3 acre lots, 30% imp, HSG C
9.244	86	1/3 acre lots, 30% imp, HSG D
0.718	70	Woods, Good, HSG C
1.277	77	Woods, Good, HSG D
0.345	72	1/3 acre lots, 30% imp, HSG B
23.093	73	Weighted Average
15.921		68.94% Pervious Area
7.172		31.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	150	0.0800	0.32		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
3.0	700	0.0680	3.91		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.3	100	0.0050	5.91	29.00	**Pipe Channel, C-D** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.013 Corrugated PE, smooth interior
0.3	280	0.0570	16.89	101.31	**Channel Flow, D-E** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
0.3	55	0.0010	2.86	14.05	**Pipe Channel, E-F** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.012 Concrete pipe, finished
0.2	80	0.0100	7.07	42.43	**Channel Flow, F-G** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
12.0	1,365	Total			

Subcatchment 1S: Subcatchment 1



Summary for Subcatchment 2S: Subcatchment 2

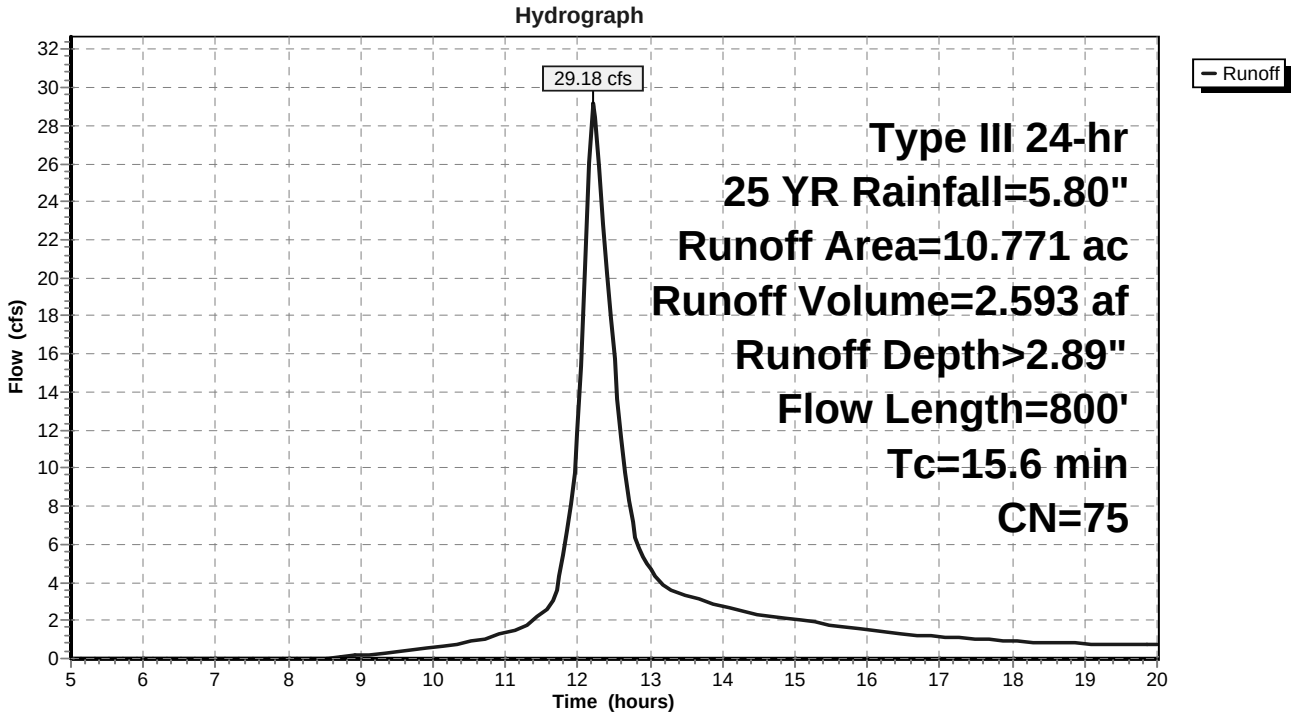
Runoff = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
3.212	61	1/4 acre lots, 38% imp, HSG A
0.192	80	1/2 acre lots, 25% imp, HSG C
2.607	87	1/4 acre lots, 38% imp, HSG D
0.157	70	Woods, Good, HSG C
4.603	77	Woods, Good, HSG D
10.771	75	Weighted Average
8.512		79.02% Pervious Area
2.259		20.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	150	0.0600	0.28		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
6.4	370	0.0375	0.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	280	0.0400	14.14	84.87	**Channel Flow, C-D** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
15.6	800	Total			

Subcatchment 2S: Subcatchment 2

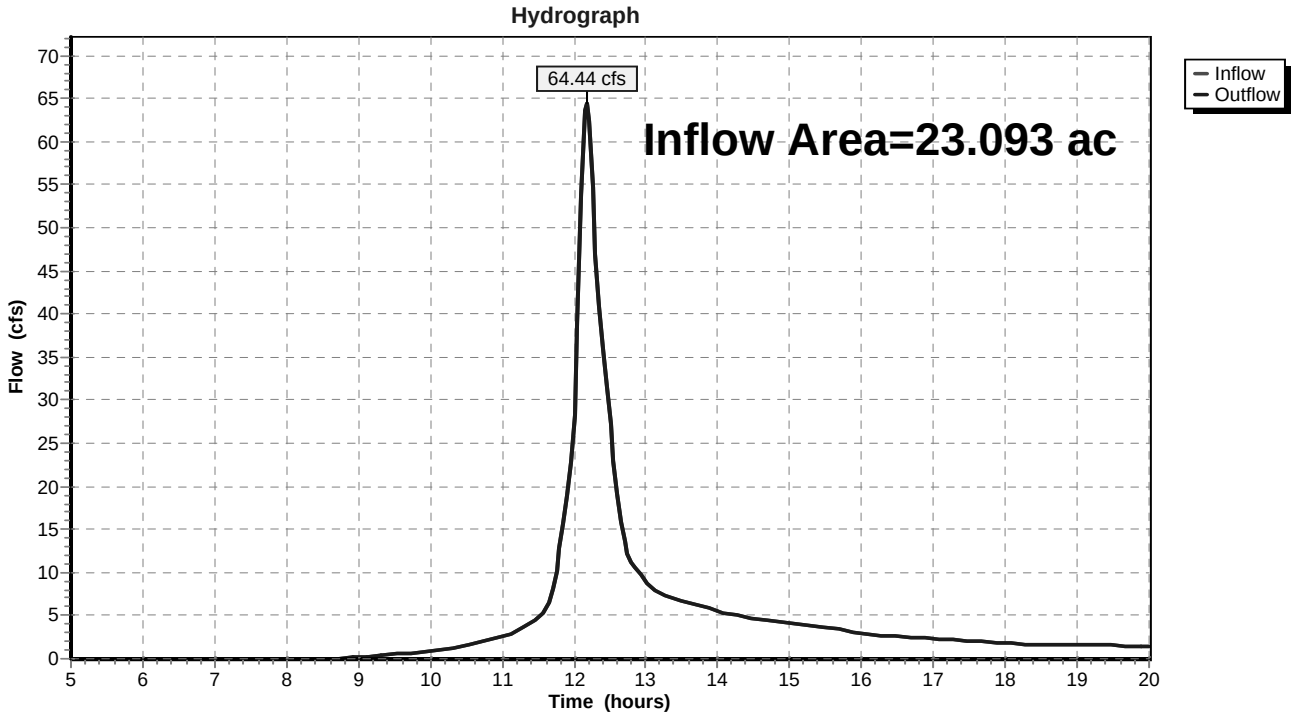


Summary for Reach 4R: POI 1

Inflow Area = 23.093 ac, 31.06% Impervious, Inflow Depth > 2.71" for 25 YR event
Inflow = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af
Outflow = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POI 1

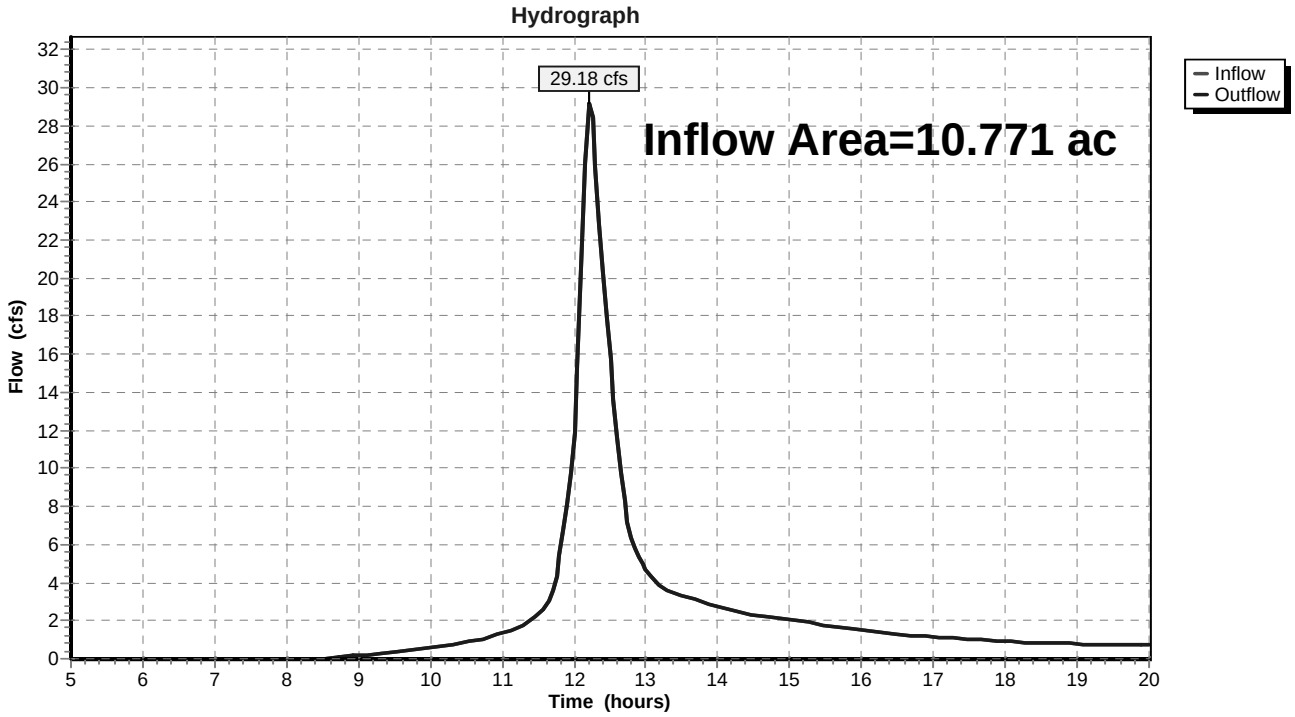


Summary for Reach 5R: POI 2

Inflow Area = 10.771 ac, 20.98% Impervious, Inflow Depth > 2.89" for 25 YR event
Inflow = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af
Outflow = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POI 2



POST DEVELOPMENT

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>0.83"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=17.33 cfs 1.486 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>0.93"
Flow Length=855' Tc=15.9 min CN=75 Runoff=5.99 cfs 0.558 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>1.21"
Flow Length=610' Tc=25.6 min CN=80 Runoff=2.53 cfs 0.277 af

Subcatchment 7S: Subcatchment 6 Runoff Area=1.067 ac 65.62% Impervious Runoff Depth>2.12"
Flow Length=365' Tc=12.8 min CN=92 Runoff=2.21 cfs 0.189 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>0.78"
Flow Length=240' Tc=30.9 min CN=72 Runoff=0.29 cfs 0.037 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.865 ac 68.20% Impervious Runoff Depth>2.21"
Flow Length=250' Tc=21.5 min CN=93 Runoff=1.52 cfs 0.159 af

Subcatchment 15S: Subcatchment 5 Runoff Area=0.865 ac 68.20% Impervious Runoff Depth>2.21"
Flow Length=250' Tc=21.5 min CN=93 Runoff=1.52 cfs 0.159 af

Subcatchment 16S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>1.21"
Flow Length=610' Tc=25.6 min CN=80 Runoff=2.53 cfs 0.277 af

Subcatchment 17S: Subcatchment 6 Runoff Area=1.067 ac 65.62% Impervious Runoff Depth>2.12"
Tc=11.8 min CN=92 Runoff=2.27 cfs 0.189 af

Subcatchment 18S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>0.78"
Tc=11.8 min CN=72 Runoff=0.43 cfs 0.037 af

Subcatchment 19S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>2.12"
Flow Length=250' Tc=21.5 min CN=92 Runoff=1.20 cfs 0.125 af

Subcatchment 20S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>1.95"
Flow Length=365' Tc=12.8 min CN=90 Runoff=1.87 cfs 0.157 af

Reach 4R: POI 1 Inflow=19.30 cfs 1.680 af
Outflow=19.30 cfs 1.680 af

Reach 5R: POI 2 Inflow=9.19 cfs 0.956 af
Outflow=9.19 cfs 0.956 af

Reach 15R: SD System Avg. Flow Depth=0.25' Max Vel=5.72 fps Inflow=1.13 cfs 0.121 af
18.0" Round Pipe n=0.013 L=50.0' S=0.0300 '/' Capacity=18.19 cfs Outflow=1.13 cfs 0.121 af

Reach 16R: SD System Avg. Flow Depth=0.30' Max Vel=7.52 fps Inflow=1.86 cfs 0.157 af
18.0" Round Pipe n=0.013 L=235.0' S=0.0431 '/' Capacity=21.80 cfs Outflow=1.84 cfs 0.157 af

Pond 11P: Stormtech Chambers 2 Peak Elev=74.23' Storage=0.014 af Inflow=1.20 cfs 0.125 af
Primary=0.03 cfs 0.030 af Secondary=1.10 cfs 0.092 af Outflow=1.13 cfs 0.121 af

Pond 14P: Stormtech Chambers 1 Peak Elev=81.54' Storage=0.001 af Inflow=1.87 cfs 0.157 af
Primary=0.02 cfs 0.002 af Secondary=1.84 cfs 0.155 af Outflow=1.86 cfs 0.157 af

Total Runoff Area = 40.726 ac Runoff Volume = 3.649 af Average Runoff Depth = 1.08"
65.69% Pervious = 26.752 ac 34.31% Impervious = 13.974 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>1.82"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=40.00 cfs 3.238 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>1.96"
Flow Length=855' Tc=15.9 min CN=75 Runoff=13.07 cfs 1.173 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>2.36"
Flow Length=610' Tc=25.6 min CN=80 Runoff=4.95 cfs 0.538 af

Subcatchment 7S: Subcatchment 6 Runoff Area=1.067 ac 65.62% Impervious Runoff Depth>3.49"
Flow Length=365' Tc=12.8 min CN=92 Runoff=3.54 cfs 0.310 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>1.73"
Flow Length=240' Tc=30.9 min CN=72 Runoff=0.69 cfs 0.082 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.865 ac 68.20% Impervious Runoff Depth>3.58"
Flow Length=250' Tc=21.5 min CN=93 Runoff=2.40 cfs 0.258 af

Subcatchment 15S: Subcatchment 5 Runoff Area=0.865 ac 68.20% Impervious Runoff Depth>3.58"
Flow Length=250' Tc=21.5 min CN=93 Runoff=2.40 cfs 0.258 af

Subcatchment 16S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>2.36"
Flow Length=610' Tc=25.6 min CN=80 Runoff=4.95 cfs 0.538 af

Subcatchment 17S: Subcatchment 6 Runoff Area=1.067 ac 65.62% Impervious Runoff Depth>3.49"
Tc=11.8 min CN=92 Runoff=3.64 cfs 0.311 af

Subcatchment 18S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>1.74"
Tc=11.8 min CN=72 Runoff=1.02 cfs 0.083 af

Subcatchment 19S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>3.48"
Flow Length=250' Tc=21.5 min CN=92 Runoff=1.93 cfs 0.206 af

Subcatchment 20S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>3.29"
Flow Length=365' Tc=12.8 min CN=90 Runoff=3.08 cfs 0.266 af

Reach 4R: POI 1 Inflow=43.09 cfs 3.585 af
Outflow=43.09 cfs 3.585 af

Reach 5R: POI 2 Inflow=18.88 cfs 1.912 af
Outflow=18.88 cfs 1.912 af

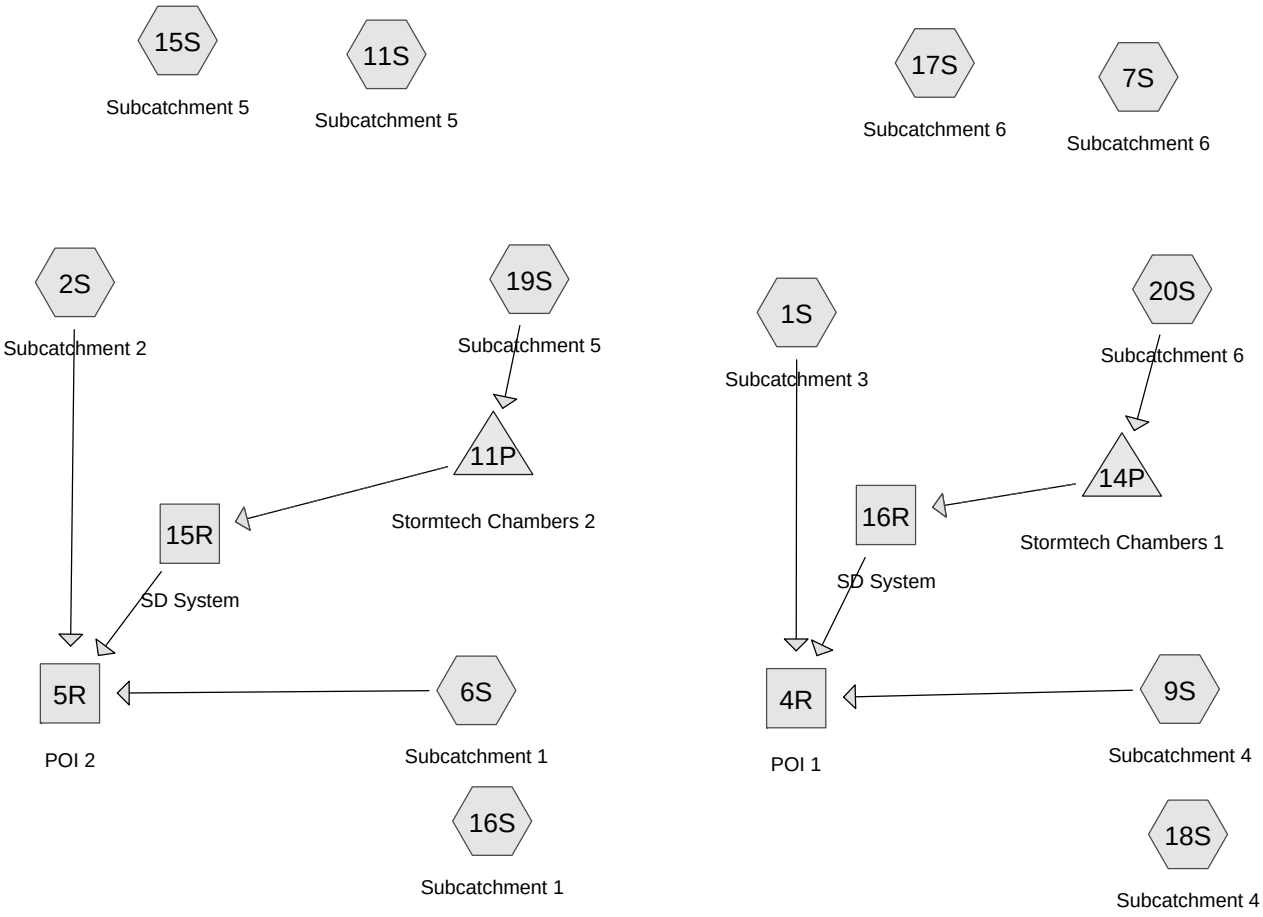
Reach 15R: SD System Avg. Flow Depth=0.32' Max Vel=6.54 fps Inflow=1.78 cfs 0.201 af
18.0" Round Pipe n=0.013 L=50.0' S=0.0300 '/' Capacity=18.19 cfs Outflow=1.78 cfs 0.201 af

Reach 16R: SD System Avg. Flow Depth=0.37' Max Vel=8.54 fps Inflow=2.86 cfs 0.265 af
18.0" Round Pipe n=0.013 L=235.0' S=0.0431 '/' Capacity=21.80 cfs Outflow=2.86 cfs 0.265 af

Pond 11P: Stormtech Chambers 2 Peak Elev=74.56' Storage=0.019 af Inflow=1.93 cfs 0.206 af
Primary=0.03 cfs 0.033 af Secondary=1.75 cfs 0.168 af Outflow=1.78 cfs 0.201 af

Pond 14P: Stormtech Chambers 1 Peak Elev=81.80' Storage=0.003 af Inflow=3.08 cfs 0.266 af
Primary=0.03 cfs 0.003 af Secondary=2.83 cfs 0.262 af Outflow=2.86 cfs 0.265 af

Total Runoff Area = 40.726 ac Runoff Volume = 7.260 af Average Runoff Depth = 2.14"
65.69% Pervious = 26.752 ac 34.31% Impervious = 13.974 ac



Subcat Reach Pond Link

Routing Diagram for Post Development 2
Prepared by Gorrill Palmer, Printed 5/19/2017
HydroCAD® 10.00-16 s/n 01265 © 2015 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>2.71"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=60.09 cfs 4.834 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>2.89"
Flow Length=855' Tc=15.9 min CN=75 Runoff=19.27 cfs 1.726 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>3.35"
Flow Length=610' Tc=25.6 min CN=80 Runoff=6.99 cfs 0.765 af

Subcatchment 7S: Subcatchment 6 Runoff Area=1.067 ac 65.62% Impervious Runoff Depth>4.60"
Flow Length=365' Tc=12.8 min CN=92 Runoff=4.60 cfs 0.409 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>2.60"
Flow Length=240' Tc=30.9 min CN=72 Runoff=1.05 cfs 0.123 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.865 ac 68.20% Impervious Runoff Depth>4.69"
Flow Length=250' Tc=21.5 min CN=93 Runoff=3.10 cfs 0.338 af

Subcatchment 15S: Subcatchment 5 Runoff Area=0.865 ac 68.20% Impervious Runoff Depth>4.69"
Flow Length=250' Tc=21.5 min CN=93 Runoff=3.10 cfs 0.338 af

Subcatchment 16S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>3.35"
Flow Length=610' Tc=25.6 min CN=80 Runoff=6.99 cfs 0.765 af

Subcatchment 17S: Subcatchment 6 Runoff Area=1.067 ac 65.62% Impervious Runoff Depth>4.60"
Tc=11.8 min CN=92 Runoff=4.73 cfs 0.409 af

Subcatchment 18S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>2.62"
Tc=11.8 min CN=72 Runoff=1.54 cfs 0.124 af

Subcatchment 19S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>4.59"
Flow Length=250' Tc=21.5 min CN=92 Runoff=2.51 cfs 0.271 af

Subcatchment 20S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>4.39"
Flow Length=365' Tc=12.8 min CN=90 Runoff=4.04 cfs 0.354 af

Reach 4R: POI 1 Inflow=63.80 cfs 5.311 af
Outflow=63.80 cfs 5.311 af

Reach 5R: POI 2 Inflow=27.16 cfs 2.757 af
Outflow=27.16 cfs 2.757 af

Reach 15R: SD System Avg. Flow Depth=0.36' Max Vel=7.07 fps Inflow=2.33 cfs 0.266 af
18.0" Round Pipe n=0.013 L=50.0' S=0.0300 '/' Capacity=18.19 cfs Outflow=2.33 cfs 0.266 af

Reach 16R: SD System Avg. Flow Depth=0.40' Max Vel=8.95 fps Inflow=3.39 cfs 0.354 af
18.0" Round Pipe n=0.013 L=235.0' S=0.0431 '/' Capacity=21.80 cfs Outflow=3.38 cfs 0.354 af

Pond 11P: Stormtech Chambers 2 Peak Elev=74.87' Storage=0.023 af Inflow=2.51 cfs 0.271 af
Primary=0.03 cfs 0.035 af Secondary=2.30 cfs 0.231 af Outflow=2.33 cfs 0.266 af

Pond 14P: Stormtech Chambers 1 Peak Elev=82.22' Storage=0.010 af Inflow=4.04 cfs 0.354 af
Primary=0.03 cfs 0.004 af Secondary=3.36 cfs 0.350 af Outflow=3.39 cfs 0.354 af

Total Runoff Area = 40.726 ac Runoff Volume = 10.456 af Average Runoff Depth = 3.08"
65.69% Pervious = 26.752 ac 34.31% Impervious = 13.974 ac

Summary for Subcatchment 1S: Subcatchment 3

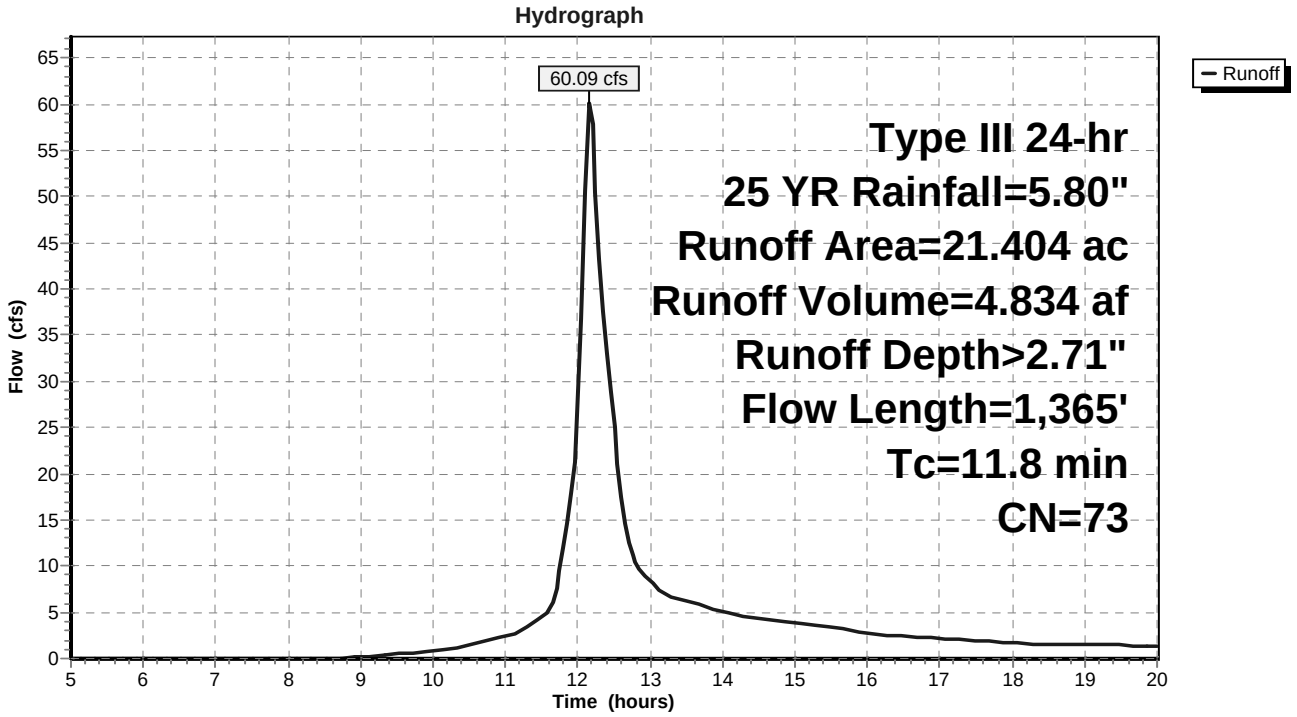
Runoff = 60.09 cfs @ 12.17 hrs, Volume= 4.834 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
10.530	61	1/4 acre lots, 38% imp, HSG A
0.979	81	1/3 acre lots, 30% imp, HSG C
9.244	86	1/3 acre lots, 30% imp, HSG D
0.345	72	1/3 acre lots, 30% imp, HSG B
0.125	70	Woods, Good, HSG C
0.181	80	>75% Grass cover, Good, HSG D
21.404	73	Weighted Average
14.232		66.49% Pervious Area
7.172		33.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	150	0.0800	0.32		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
3.0	700	0.0680	3.91		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.3	100	0.0050	5.91	29.00	**Pipe Channel, C-D** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.013 Corrugated PE, smooth interior
0.2	243	0.0570	16.89	101.31	**Channel Flow, D-E** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
0.2	92	0.0100	9.44	66.70	**Pipe Channel, E-F** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013 Concrete pipe, bends & connections
0.2	80	0.0150	8.66	51.97	**Channel Flow, F-G** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
11.8	1,365	Total			

Subcatchment 1S: Subcatchment 3



Summary for Subcatchment 2S: Subcatchment 2

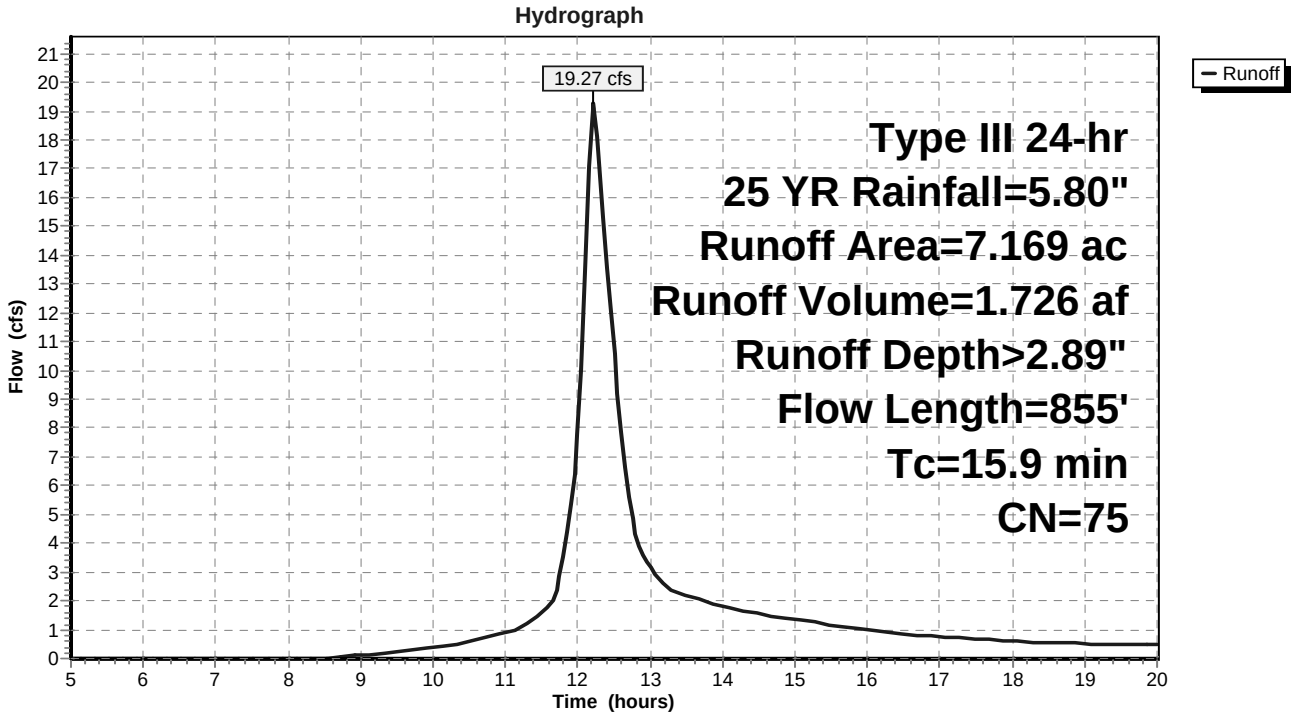
Runoff = 19.27 cfs @ 12.22 hrs, Volume= 1.726 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
3.212	61	1/4 acre lots, 38% imp, HSG A
0.192	80	1/2 acre lots, 25% imp, HSG C
2.607	87	1/4 acre lots, 38% imp, HSG D
0.141	83	1/4 acre lots, 38% imp, HSG C
1.017	86	1/3 acre lots, 30% imp, HSG D
7.169	75	Weighted Average
4.551		63.48% Pervious Area
2.618		36.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	150	0.0600	0.28		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
6.3	340	0.0325	0.90		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.7	365	0.0204	8.49	15.00	**Pipe Channel, C-D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
15.9	855	Total			

Subcatchment 2S: Subcatchment 2



Summary for Subcatchment 6S: Subcatchment 1

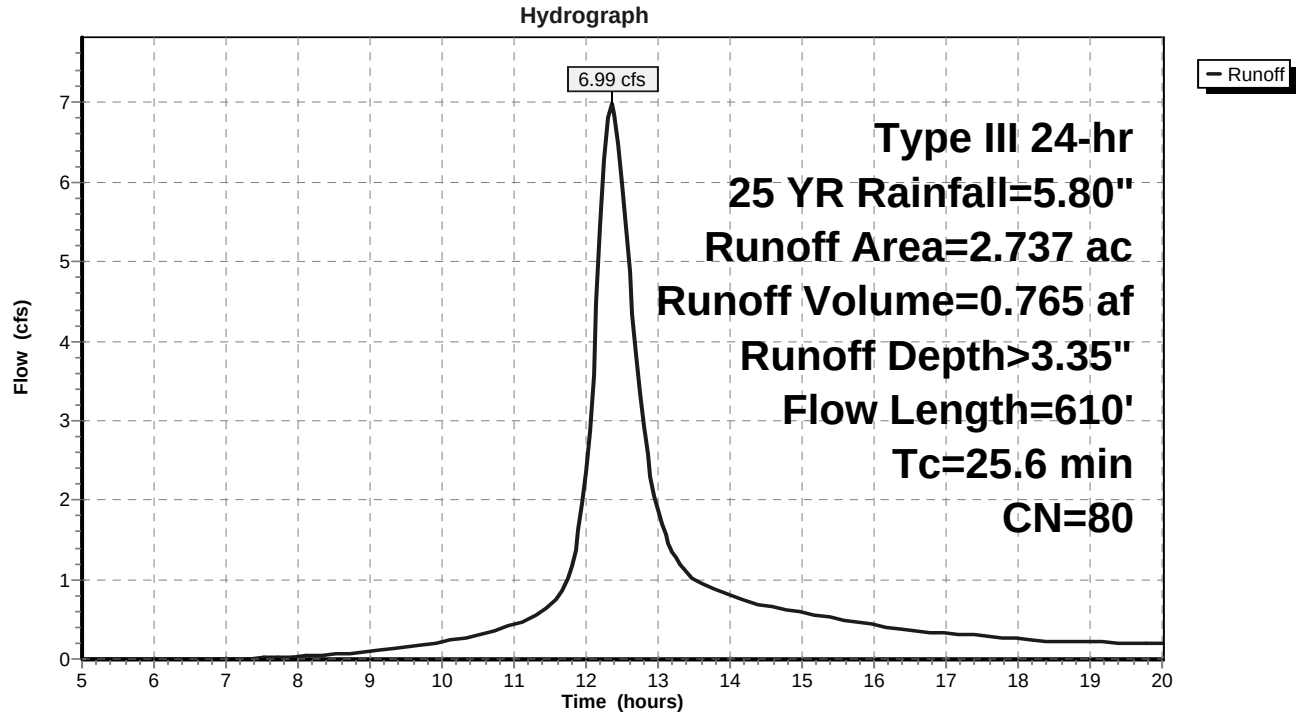
Runoff = 6.99 cfs @ 12.35 hrs, Volume= 0.765 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
1.954	77	Woods, Good, HSG D
0.698	86	1/3 acre lots, 30% imp, HSG D
0.085	98	Paved roads w/curbs & sewers
2.737	80	Weighted Average
2.443		89.24% Pervious Area
0.294		10.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0310	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
6.6	140	0.0050	0.35		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.7	370	0.0200	8.41	14.86	**Pipe Channel, C-D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
25.6	610	Total			

Subcatchment 6S: Subcatchment 1



Summary for Subcatchment 7S: Subcatchment 6

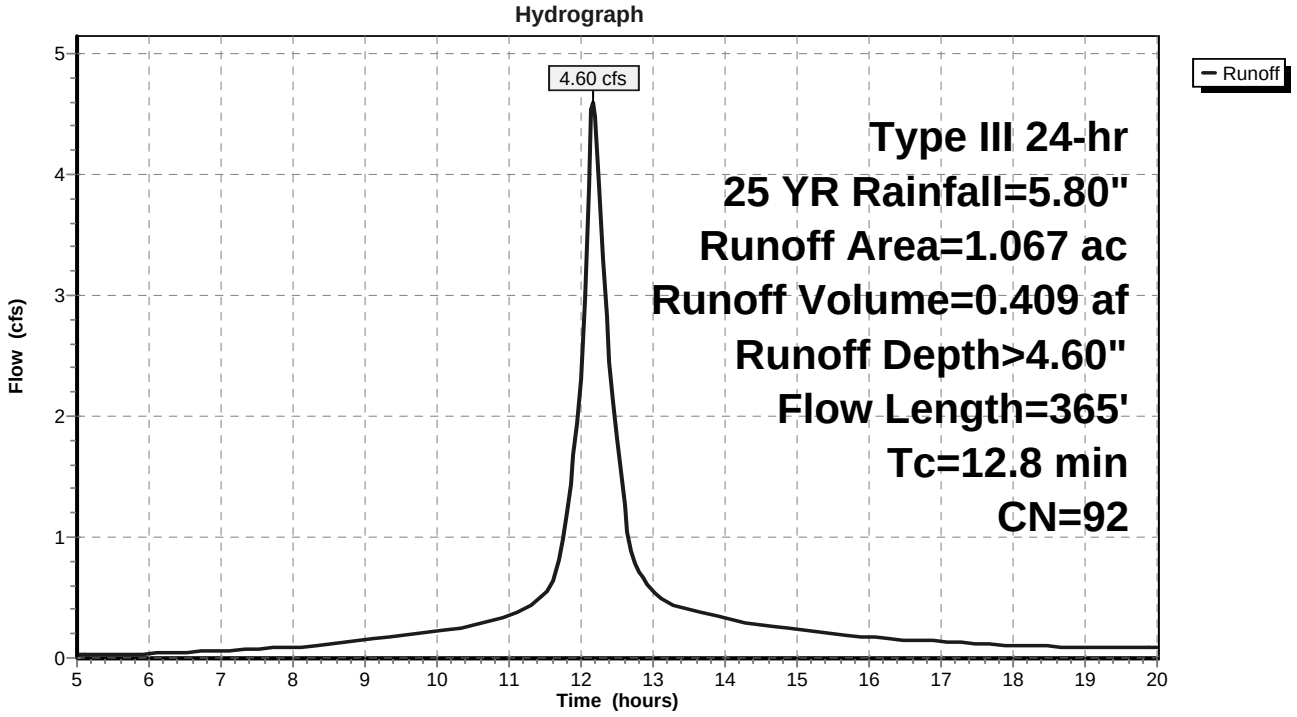
Runoff = 4.60 cfs @ 12.17 hrs, Volume= 0.409 af, Depth> 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.543	98	Paved roads w/curbs & sewers
0.524	86	1/3 acre lots, 30% imp, HSG D
1.067	92	Weighted Average
0.367		34.38% Pervious Area
0.700		65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	150	0.0350	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	15	0.0050	1.06		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
12.8	365	Total			

Subcatchment 7S: Subcatchment 6



Summary for Subcatchment 9S: Subcatchment 4

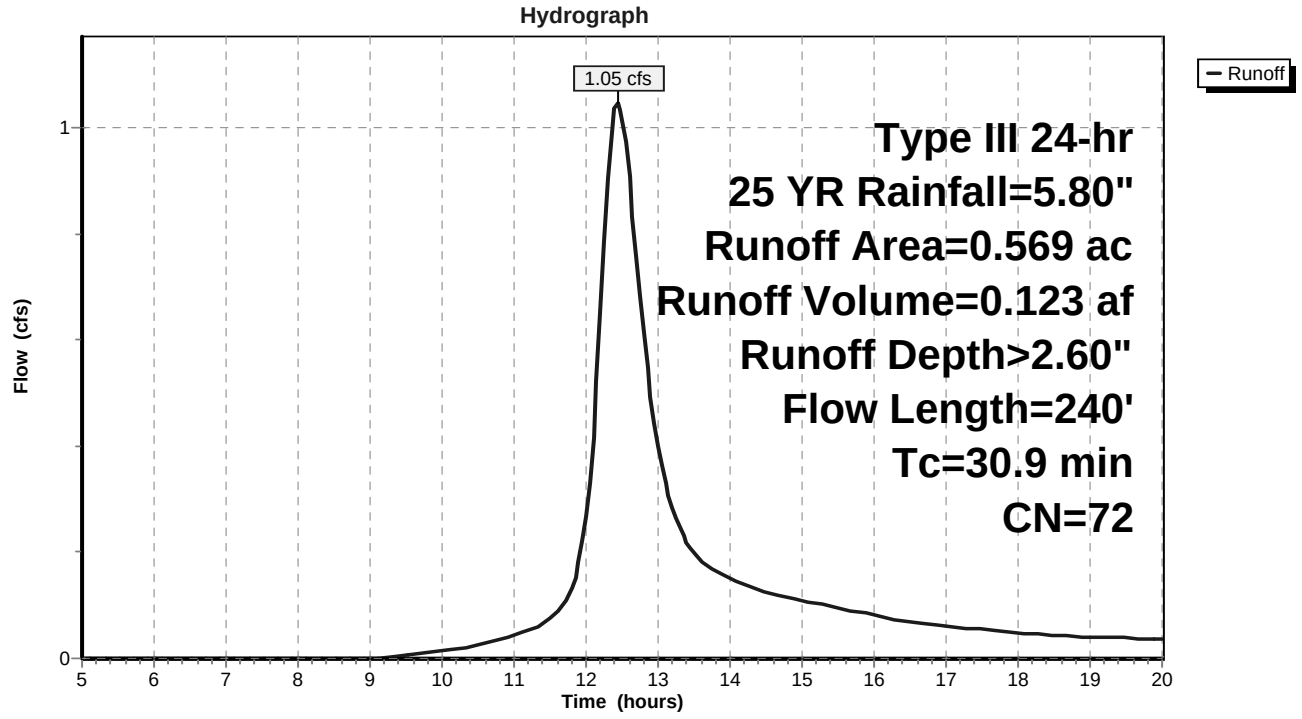
Runoff = 1.05 cfs @ 12.44 hrs, Volume= 0.123 af, Depth> 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.379	70	Woods, Good, HSG C
0.190	77	Woods, Good, HSG D
0.569	72	Weighted Average
0.569		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	150	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
0.7	90	0.1800	2.12		**Shallow Concentrated Flow, B-G** Woodland Kv= 5.0 fps
30.9	240	Total			

Subcatchment 9S: Subcatchment 4



Summary for Subcatchment 11S: Subcatchment 5

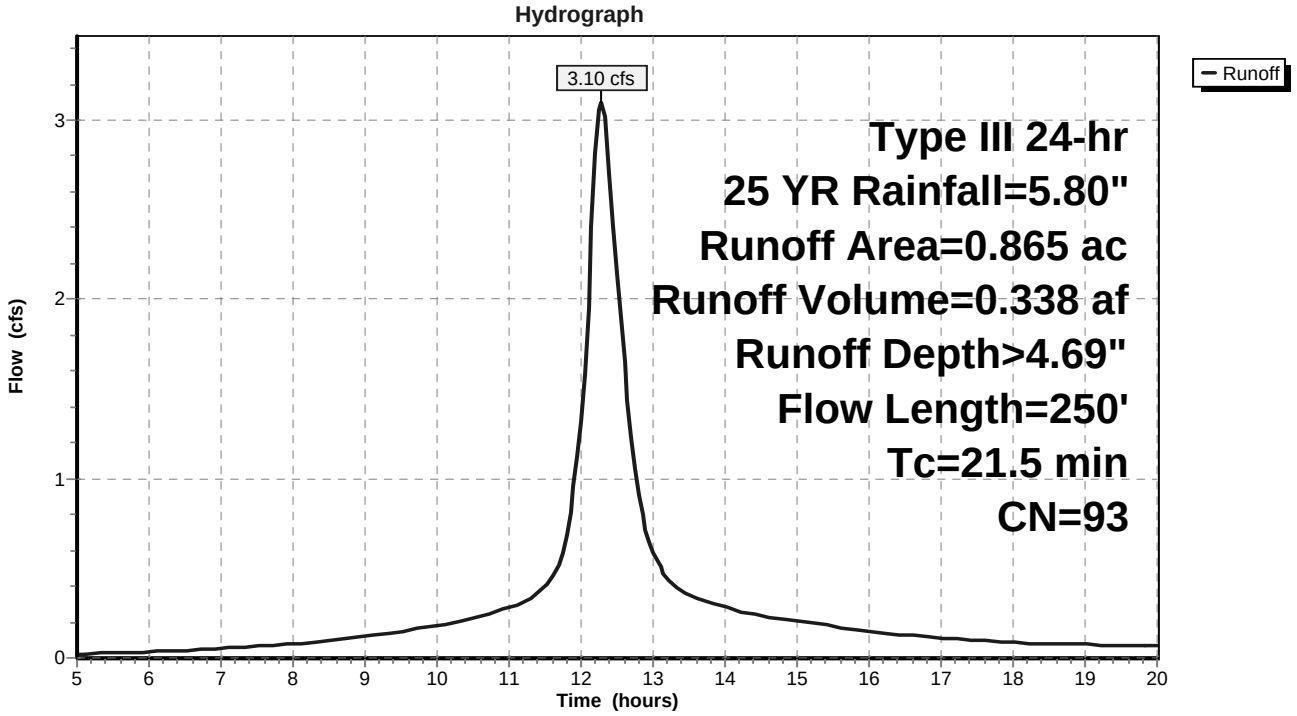
Runoff = 3.10 cfs @ 12.28 hrs, Volume= 0.338 af, Depth> 4.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.472	98	Paved roads w/curbs & sewers
0.393	86	1/3 acre lots, 30% imp, HSG D
0.865	93	Weighted Average
0.275		31.80% Pervious Area
0.590		68.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	125	0.0125	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
0.6	125	0.0325	3.66		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
21.5	250	Total			

Subcatchment 11S: Subcatchment 5



Summary for Subcatchment 15S: Subcatchment 5

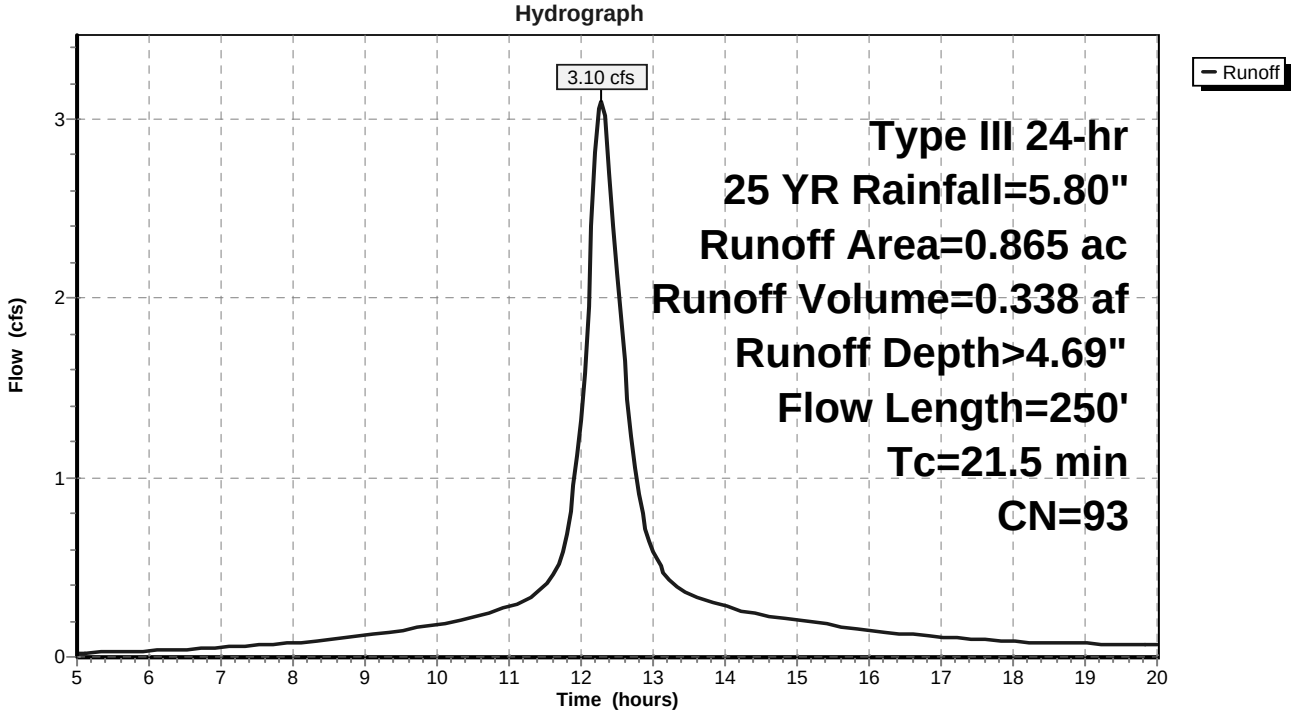
Runoff = 3.10 cfs @ 12.28 hrs, Volume= 0.338 af, Depth> 4.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.472	98	Paved roads w/curbs & sewers
0.393	86	1/3 acre lots, 30% imp, HSG D
0.865	93	Weighted Average
0.275		31.80% Pervious Area
0.590		68.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	125	0.0125	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
0.6	125	0.0325	3.66		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
21.5	250	Total			

Subcatchment 15S: Subcatchment 5



Summary for Subcatchment 16S: Subcatchment 1

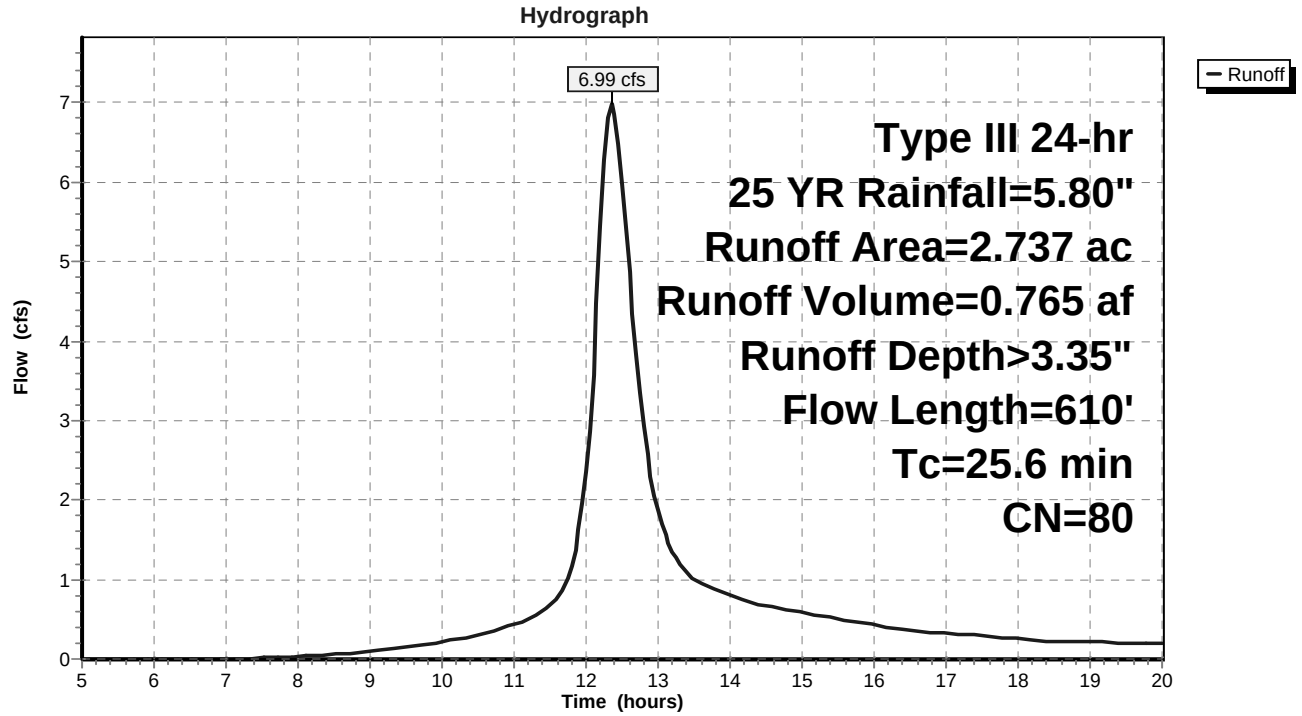
Runoff = 6.99 cfs @ 12.35 hrs, Volume= 0.765 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
1.954	77	Woods, Good, HSG D
0.698	86	1/3 acre lots, 30% imp, HSG D
0.085	98	Paved roads w/curbs & sewers
2.737	80	Weighted Average
2.443		89.24% Pervious Area
0.294		10.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0310	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
6.6	140	0.0050	0.35		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.7	370	0.0200	8.41	14.86	**Pipe Channel, C-D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
25.6	610	Total			

Subcatchment 16S: Subcatchment 1



Summary for Subcatchment 17S: Subcatchment 6

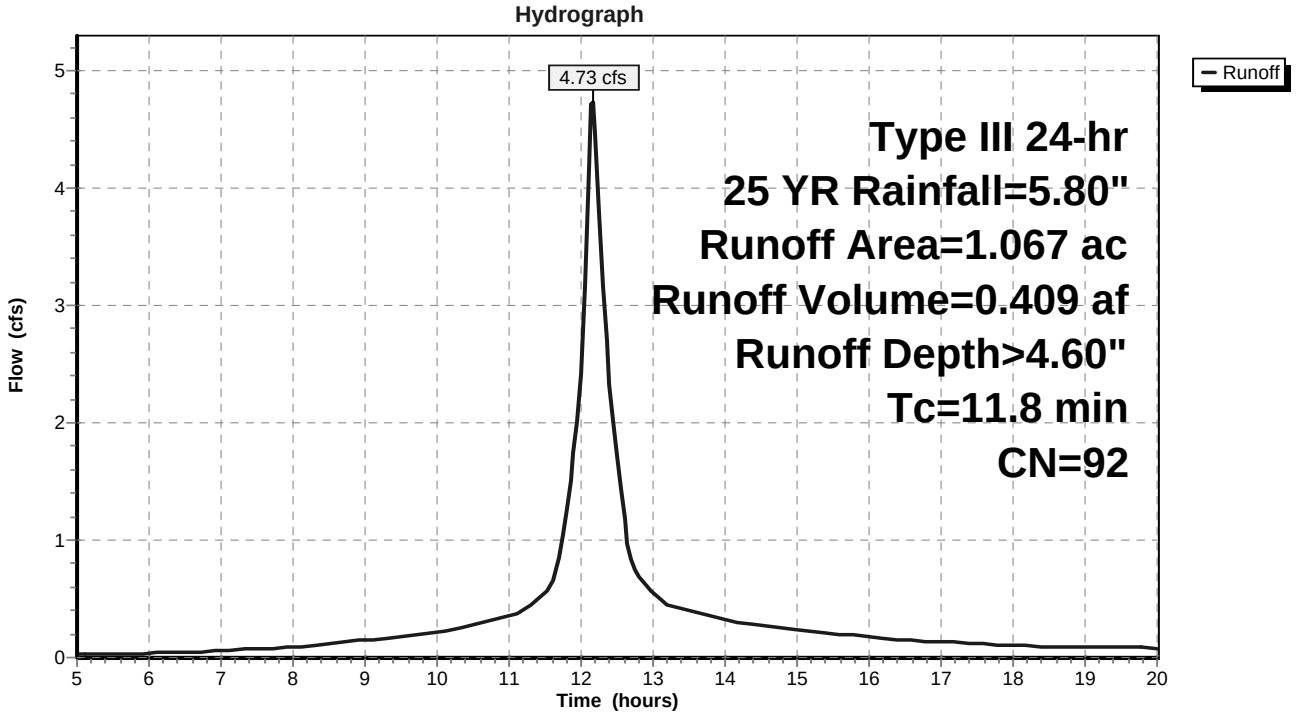
Runoff = 4.73 cfs @ 12.16 hrs, Volume= 0.409 af, Depth> 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.543	98	Paved roads w/curbs & sewers
0.524	86	1/3 acre lots, 30% imp, HSG D
1.067	92	Weighted Average
0.367		34.38% Pervious Area
0.700		65.62% Impervious Area

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

Subcatchment 17S: Subcatchment 6



Summary for Subcatchment 18S: Subcatchment 4

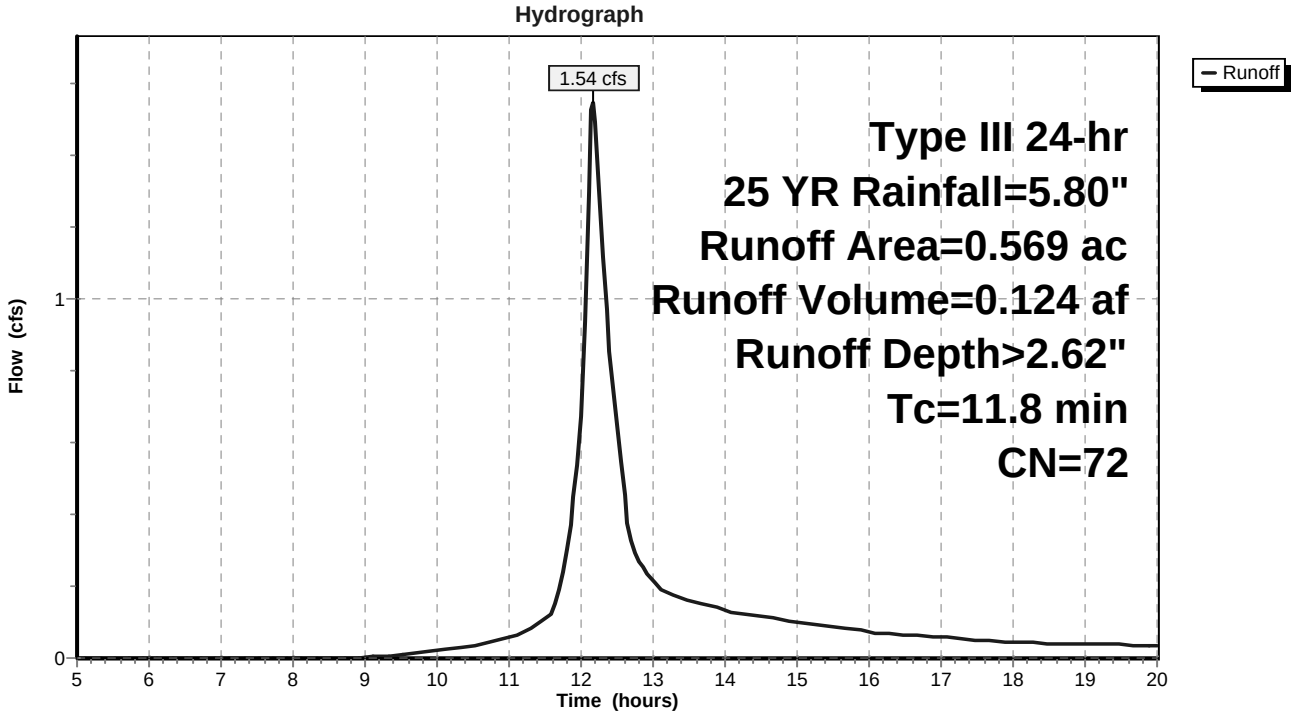
Runoff = 1.54 cfs @ 12.17 hrs, Volume= 0.124 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.379	70	Woods, Good, HSG C
0.190	77	Woods, Good, HSG D
0.569	72	Weighted Average
0.569		100.00% Pervious Area

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

Subcatchment 18S: Subcatchment 4



Summary for Subcatchment 19S: Subcatchment 5

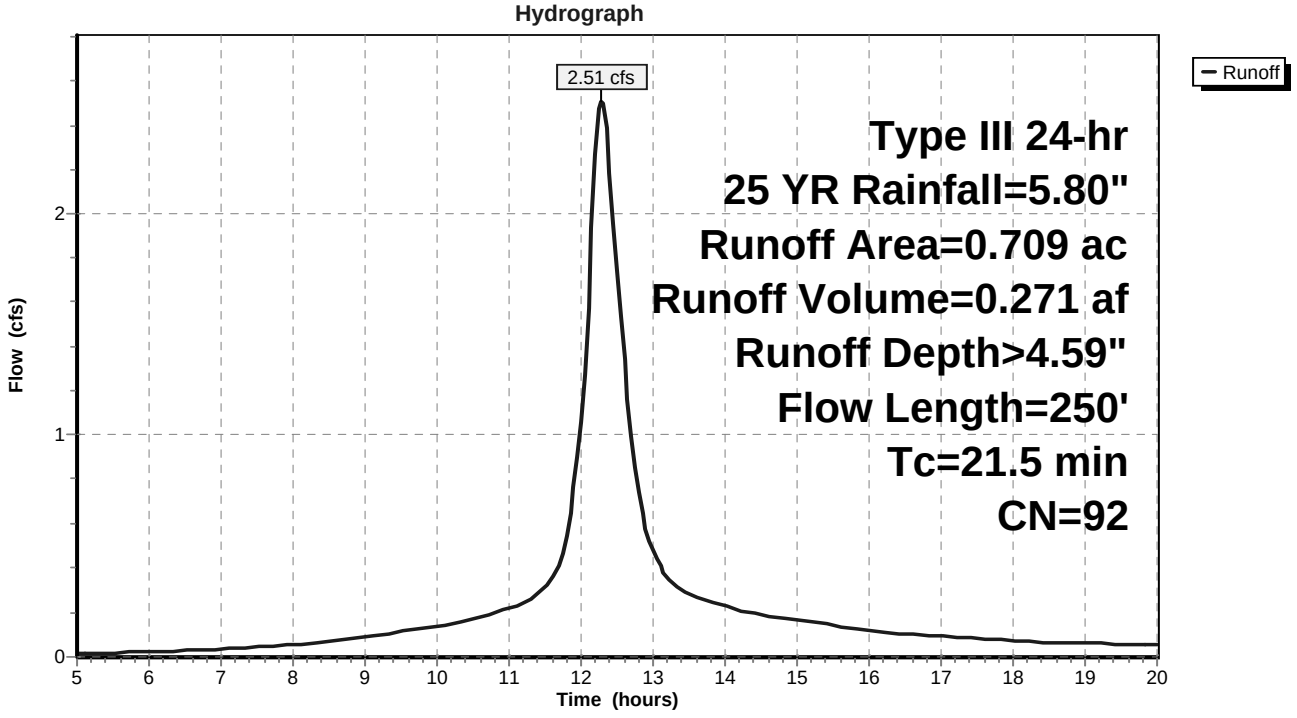
Runoff = 2.51 cfs @ 12.28 hrs, Volume= 0.271 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.472	98	Paved roads w/curbs & sewers
0.237	80	>75% Grass cover, Good, HSG D
0.709	92	Weighted Average
0.237		33.43% Pervious Area
0.472		66.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	125	0.0125	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
0.6	125	0.0325	3.66		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
21.5	250	Total			

Subcatchment 19S: Subcatchment 5



Summary for Subcatchment 20S: Subcatchment 6

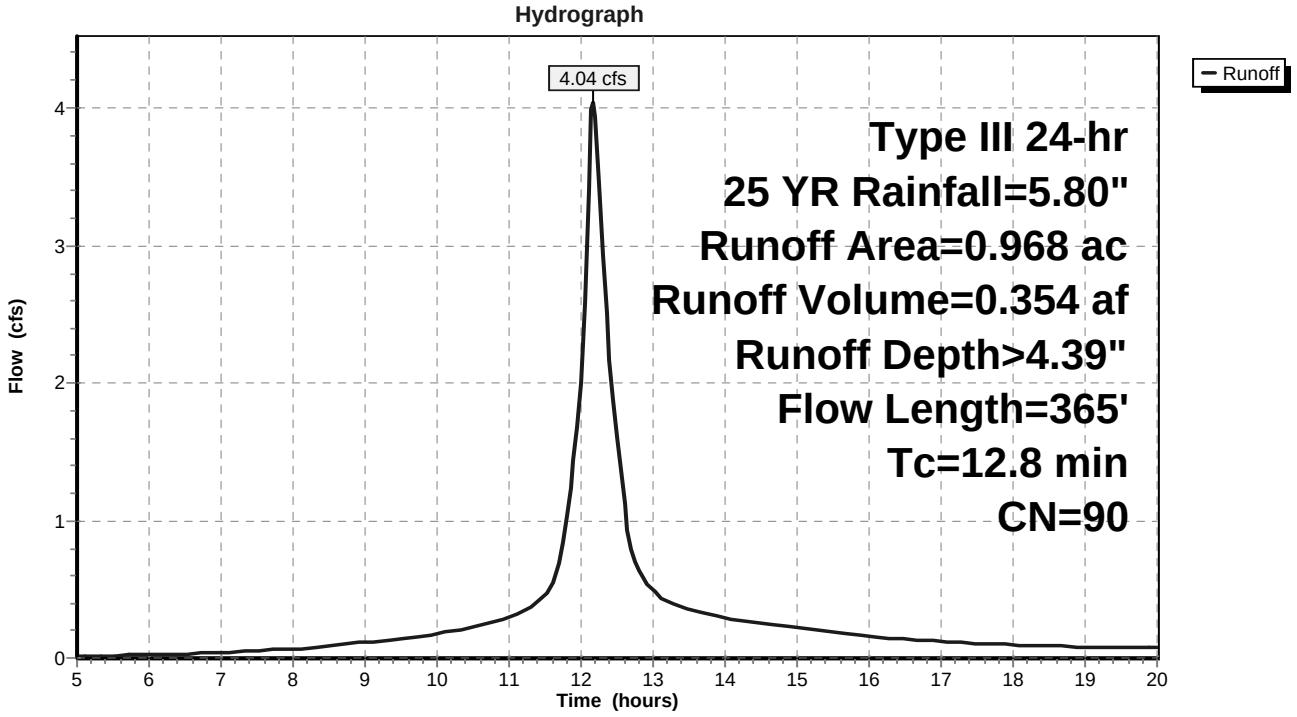
Runoff = 4.04 cfs @ 12.17 hrs, Volume= 0.354 af, Depth> 4.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.543	98	Paved roads w/curbs & sewers
0.425	80	>75% Grass cover, Good, HSG D
0.968	90	Weighted Average
0.425		43.90% Pervious Area
0.543		56.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	150	0.0350	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	15	0.0050	1.06		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
12.8	365	Total			

Subcatchment 20S: Subcatchment 6

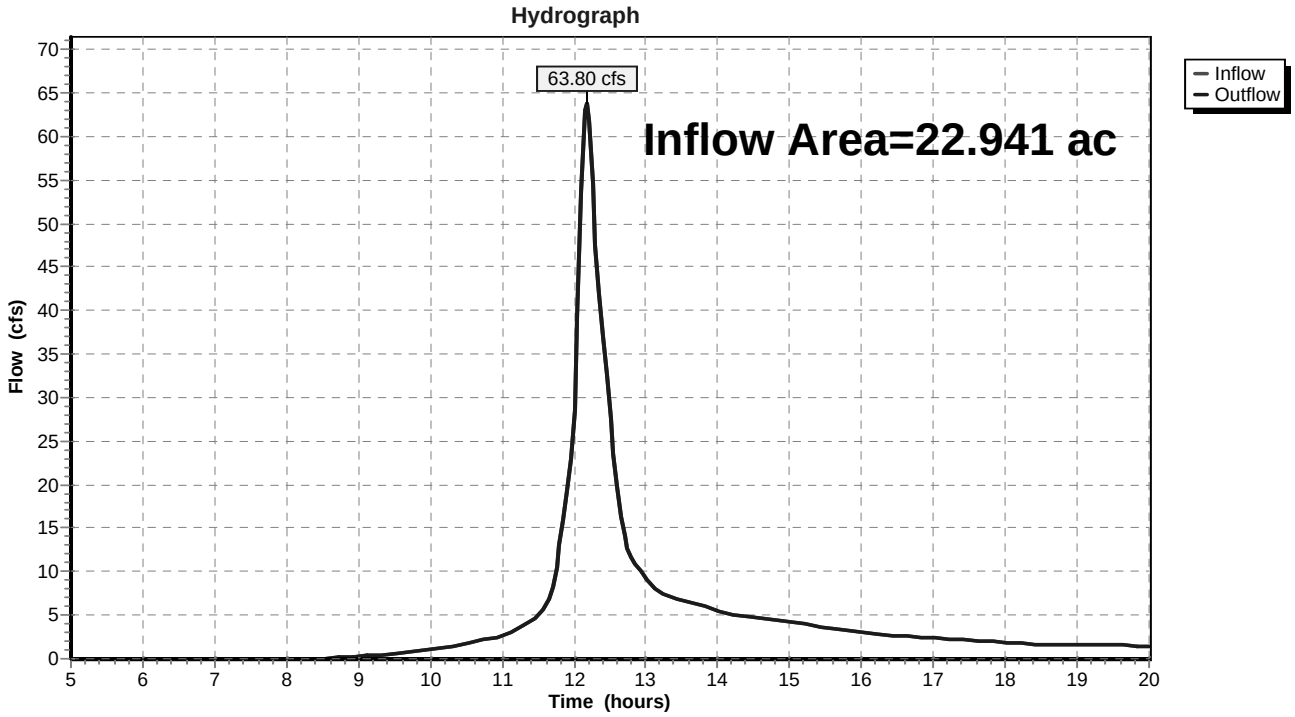


Summary for Reach 4R: POI 1

Inflow Area = 22.941 ac, 33.63% Impervious, Inflow Depth > 2.78" for 25 YR event
Inflow = 63.80 cfs @ 12.17 hrs, Volume= 5.311 af
Outflow = 63.80 cfs @ 12.17 hrs, Volume= 5.311 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POI 1

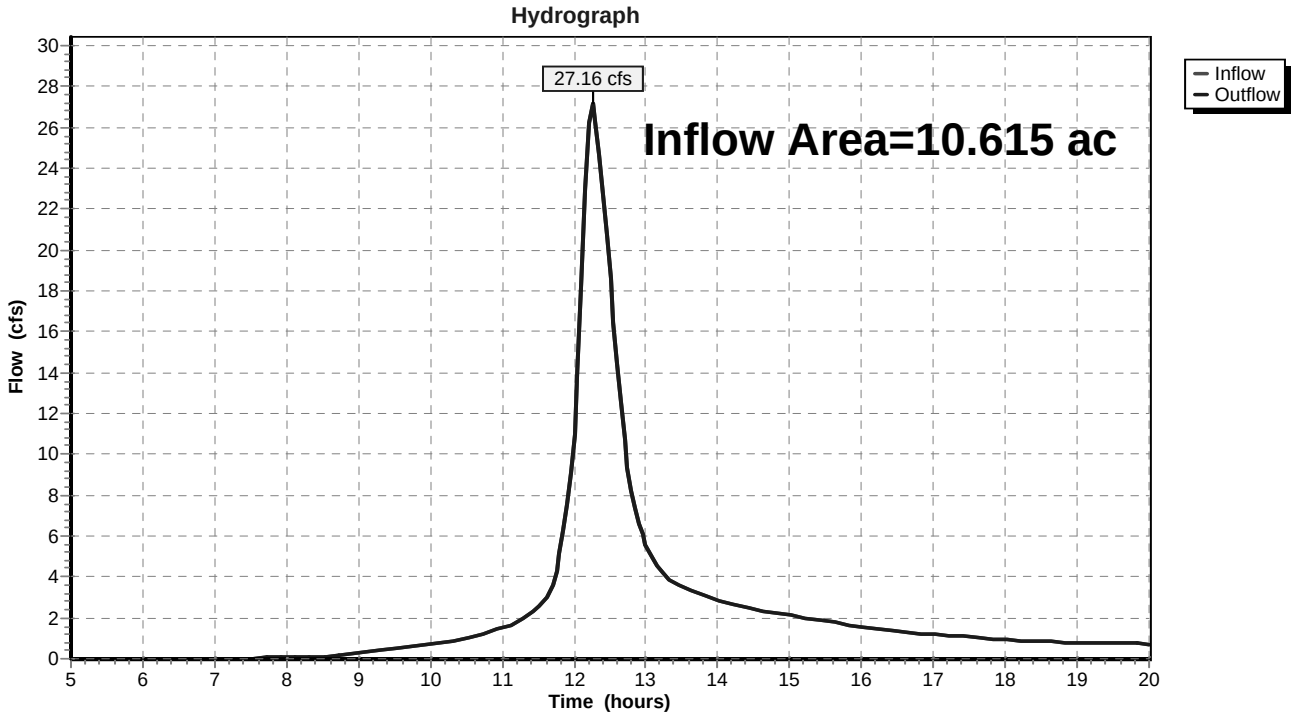


Summary for Reach 5R: POI 2

Inflow Area = 10.615 ac, 31.88% Impervious, Inflow Depth > 3.12" for 25 YR event
Inflow = 27.16 cfs @ 12.25 hrs, Volume= 2.757 af
Outflow = 27.16 cfs @ 12.25 hrs, Volume= 2.757 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POI 2



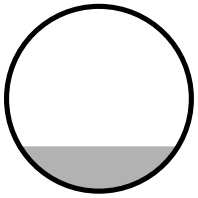
Summary for Reach 15R: SD System

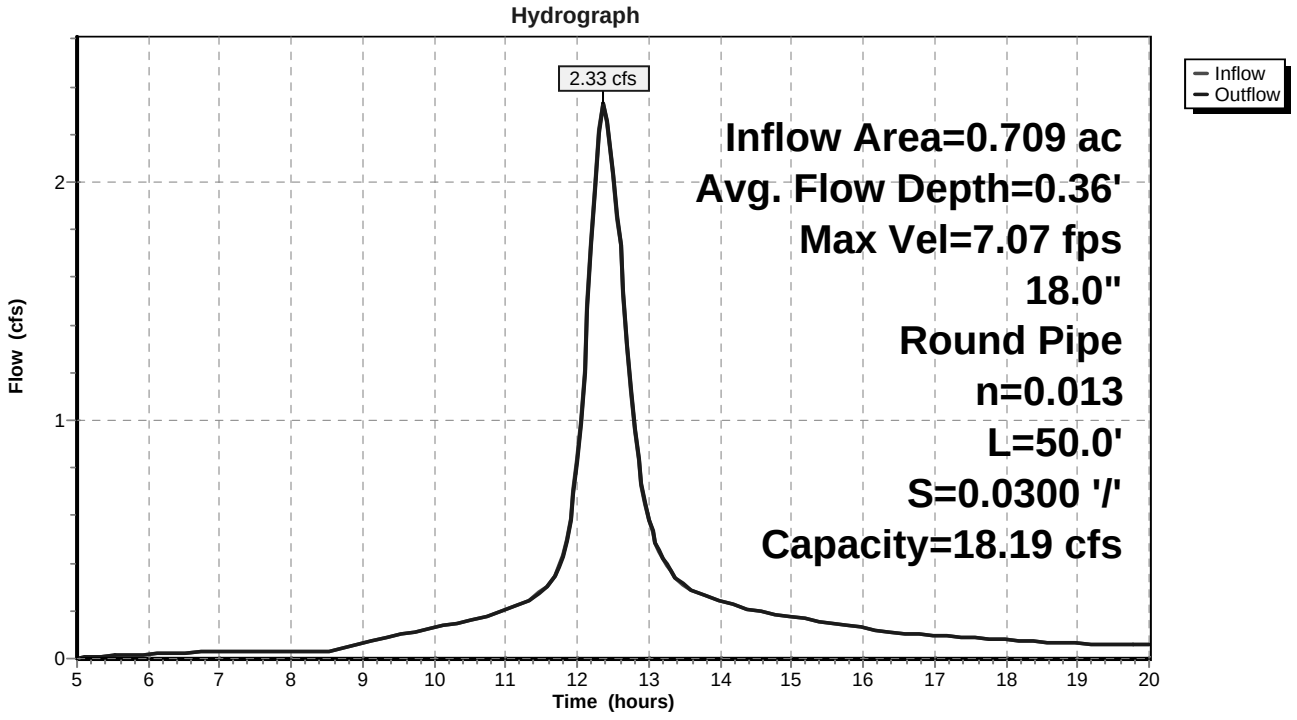
Inflow Area = 0.709 ac, 66.57% Impervious, Inflow Depth > 4.51" for 25 YR event
Inflow = 2.33 cfs @ 12.37 hrs, Volume= 0.266 af
Outflow = 2.33 cfs @ 12.37 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.07 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.94 fps, Avg. Travel Time= 0.3 min

Peak Storage= 16 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.19 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 50.0' Slope= 0.0300 '/'
Inlet Invert= 72.50', Outlet Invert= 71.00'





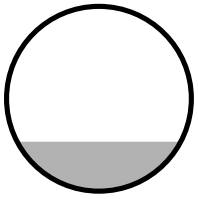
Summary for Reach 16R: SD System

Inflow Area = 0.968 ac, 56.10% Impervious, Inflow Depth > 4.39" for 25 YR event
Inflow = 3.39 cfs @ 12.26 hrs, Volume= 0.354 af
Outflow = 3.38 cfs @ 12.28 hrs, Volume= 0.354 af, Atten= 0%, Lag= 1.3 min

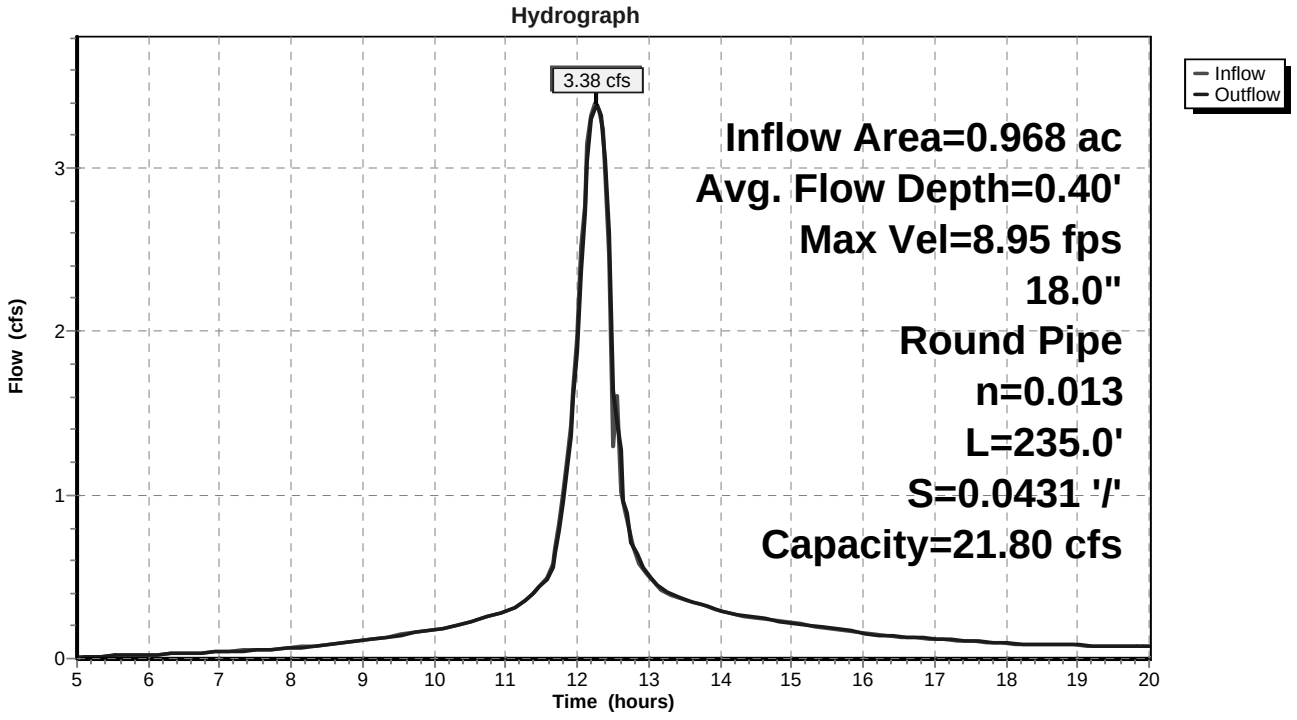
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.95 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 3.65 fps, Avg. Travel Time= 1.1 min

Peak Storage= 89 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 21.80 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 235.0' Slope= 0.0431 '/'
Inlet Invert= 80.80', Outlet Invert= 70.68'



Reach 16R: SD System



Summary for Pond 11P: Stormtech Chambers 2

Inflow Area = 0.709 ac, 66.57% Impervious, Inflow Depth > 4.59" for 25 YR event
Inflow = 2.51 cfs @ 12.28 hrs, Volume= 0.271 af
Outflow = 2.33 cfs @ 12.37 hrs, Volume= 0.266 af, Atten= 7%, Lag= 5.0 min
Primary = 0.03 cfs @ 6.95 hrs, Volume= 0.035 af
Secondary = 2.30 cfs @ 12.37 hrs, Volume= 0.231 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 74.87' @ 12.37 hrs Surf.Area= 0.017 ac Storage= 0.023 af

Plug-Flow detention time= 19.3 min calculated for 0.265 af (98% of inflow)
Center-of-Mass det. time= 11.9 min (775.4 - 763.5)

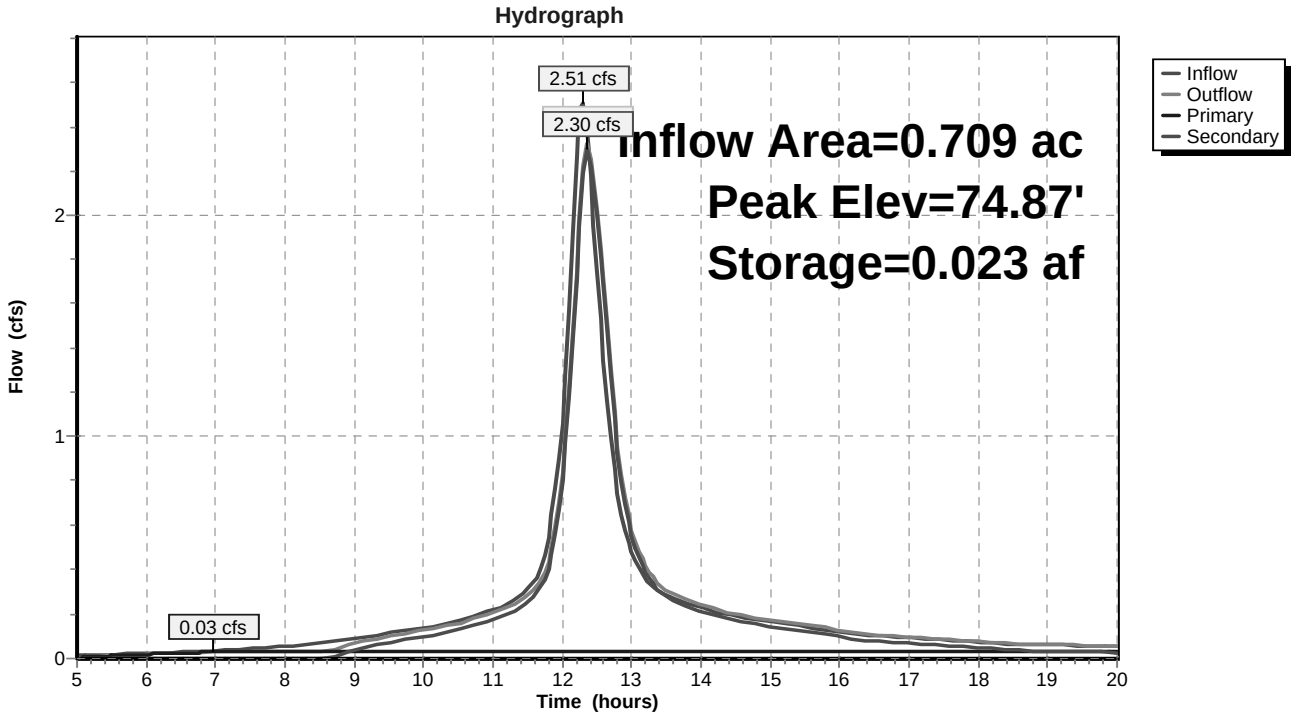
Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	0.015 af	**4.75'W x 7.20'L x 3.50'H Prismatoid** x 22 0.060 af Overall - 0.023 af Embedded = 0.037 af x 40.0% Voids
#2	73.50'	0.023 af	**StormTech SC-740** x 22 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#3	80.60'	0.002 af	**4.00'D x 6.00'H Vertical Cone/Cylinder**
		0.040 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	**0.03 cfs Exfiltration at all elevations**
#2	Secondary	73.50'	**10.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 73.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#3	Secondary	76.50'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.03 cfs @ 6.95 hrs HW=73.14' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=2.29 cfs @ 12.37 hrs HW=74.86' (Free Discharge)
├**2=Culvert** (Barrel Controls 2.29 cfs @ 4.19 fps)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11P: Stormtech Chambers 2



Summary for Pond 14P: Stormtech Chambers 1

Inflow Area = 0.968 ac, 56.10% Impervious, Inflow Depth > 4.39" for 25 YR event
Inflow = 4.04 cfs @ 12.17 hrs, Volume= 0.354 af
Outflow = 3.39 cfs @ 12.26 hrs, Volume= 0.354 af, Atten= 16%, Lag= 5.2 min
Primary = 0.03 cfs @ 12.10 hrs, Volume= 0.004 af
Secondary = 3.36 cfs @ 12.26 hrs, Volume= 0.350 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.22' @ 12.26 hrs Surf.Area= 0.024 ac Storage= 0.010 af

Plug-Flow detention time= 0.7 min calculated for 0.353 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (763.0 - 762.3)

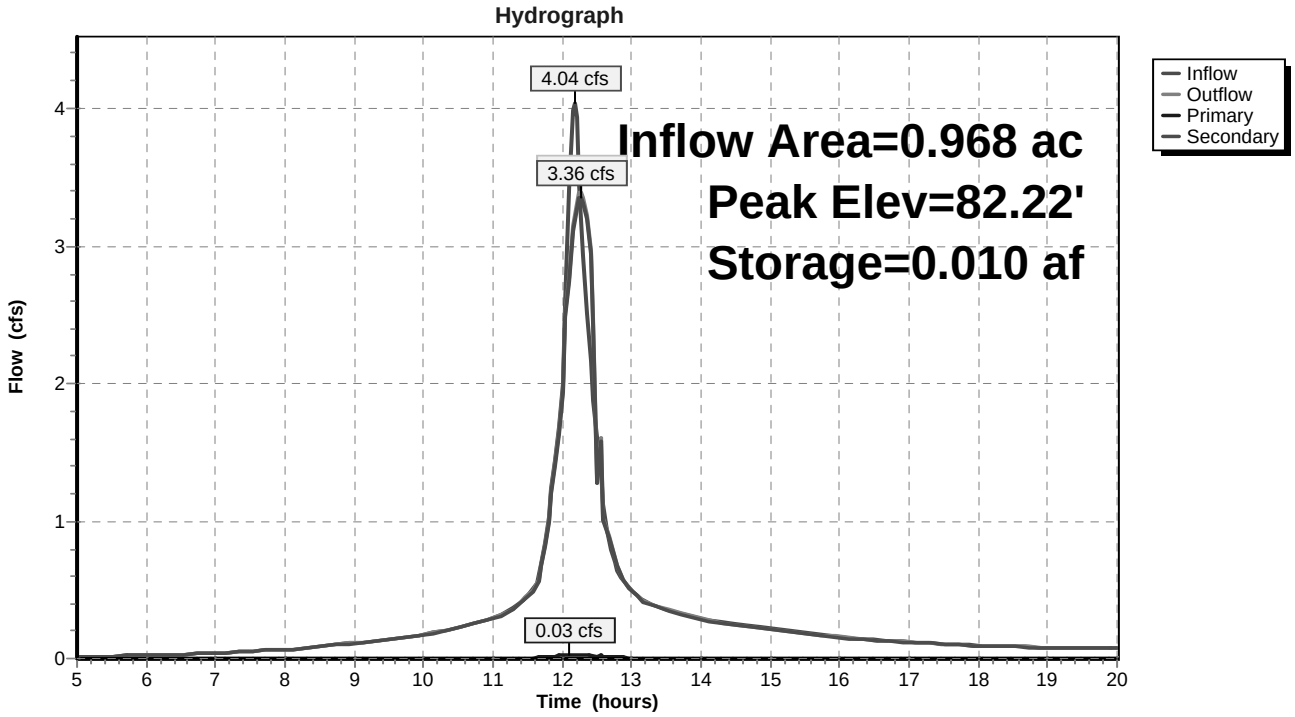
Volume	Invert	Avail.Storage	Storage Description
#1	81.45'	0.020 af	**4.75'W x 7.20'L x 3.50'H Prismatoid** x 30 0.082 af Overall - 0.032 af Embedded = 0.051 af x 40.0% Voids
#2	81.95'	0.032 af	**StormTech SC-740** x 30 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#3	86.96'	0.002 af	**4.00'D x 7.00'H Vertical Cone/Cylinder**
		0.054 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	81.45'	**0.03 cfs Exfiltration at all elevations**
#2	Secondary	80.17'	**10.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.17' / 80.00' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#3	Secondary	84.95'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.03 cfs @ 12.10 hrs HW=81.74' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=3.35 cfs @ 12.26 hrs HW=82.22' (Free Discharge)
├**2=Culvert** (Inlet Controls 3.35 cfs @ 6.15 fps)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 14P: Stormtech Chambers 1



ATTACHMENT C
Filterra and Grassed Underdrained Soil Filter Sizing Calculations

Notes

1) refer to hand calculations for breakdown of lot square footage and calculations
2) Area from lots assumed from existing conditions
3) Driveway width assumed at 18'

Filterra Sizing

1	Filterra	RT	Sta	5+12	to	9+97	485	ft	**ROW**
			Width				14	ft	
			Area				6,790	sq ft	
			Radius at Entrance				72	sq ft	
			6 trail parking spaces				972	sq ft	
			Impervious Area				**7,834**	**sq ft**	
			Vegetated Area				**-**	**sq ft**	
			0.4*Vegetated Area				**-**	**sq ft**	
			Subtotal Area				**7,834**	**sq ft**	
							0.18	**ac**	4X8 Filterra Required
2	Filterra	LT	Sta	5+12	to	9+97	485	ft	**ROW**
			Width				14	ft	
			Area				6,790	sq ft	
			Radius at Entrance				72	sq ft	
			Driveway Aprons		5 on LT side		1,000	sq ft	
			Esplanade		6 ft width	373' length	2,238	sq ft	
			Sidewalk		5 ft width	373' length	1,865	sq ft	
			Lot 1						**LOTS**
			Vegeated Area				461	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				450	sq ft	
			Lot 2						
			Vegeated Area				2,460	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				558	sq ft	
			Lot 3						
			Vegeated Area				4,044	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				558	sq ft	
			Lot 4						
			Vegeated Area				4,350	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				432	sq ft	
			Lot 5						
			Vegeated Area				1,605	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				198	sq ft	
			Lot 6						
			Vegeated Area				2,127	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				-	sq ft	
			Impervious Area				**11,923**	**sq ft**	
			Vegetated Area				**17,285.00**	**sq ft**	
			0.4*Vegetated Area				**6,914.00**	**sq ft**	
			Subtotal Area				**18,837.00**	**sq ft**	
							0.432	**ac**	6X12 Filterra Required
3			Sta	11+45	to	14+10	265	ft	**ROW**
			Width				14	ft	
			Area				3,710	sq ft	
			Driveway Aprons		4 on RT side		800	sq ft	
			Esplanade		6 ft width	120' length	720	sq ft	
			Sidewalk		5 ft width	120' length	600	sq ft	
			Lot 13						

	Filterra	RT	Vegetated Area				629	sq ft	LOTS
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				360	sq ft	
			Lot 14						
			Vegetated Area				2,354	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				360	sq ft	
			Lot 15						
			Vegetated Area				3,058	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				360	sq ft	
			Lot 16						
			Vegetated Area				1,568	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				1,200		
			Impervious Area				**7,390**	**sq ft**	
			Vegetated Area				**8,329**	**sq ft**	
			0.4*Vegetated Area				**3,331.60**	**sq ft**	
			Subtotal Area				**10,722**	**sq ft**	
							0.25	**ac**	6X8 Filterra Required
4			Sta	11+45	to	14+05	260	ft	ROW
			Width				14	ft	
			Area				3,640	sq ft	
			Driveway Aprons	3 on LT Side			600	sq ft	
			Esplanade	6 ft width	170' length		1,020	sq ft	
			Sidewalk	5 ft width	170' length		850	sq ft	
	Filterra	LT	**Lot 7**						Lots
			Vegetated Area				1,492	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				176		
			Lot 8						
			Vegetated Area				1,477	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				360	sq ft	
			Lot 9						
			Vegetated Area				1,503	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				414	sq ft	
			Lot 10						
			Vegetated Area				800	sq ft	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				414	sq ft	
			Lot 11						
			Vegetated Area				-	Untreated/Biocell	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				-	Untreated	
			Lot 12						
			Vegetated Area				-	Untreated/Biocell	
			Impervious Roof				-	Dripline Filter	
			Impervious Driveway				-	Untreated	
			Impervious Area				**6,454**	**sq ft**	
			Vegetated Area				**6,292**	**sq ft**	
			0.4*Vegetated Area				**2,517**	**sq ft**	
			Subtotal Area				**8,971**	**sq ft**	
							0.21	**ac**	6X6 Filterra Required

1) refer to hand calculations for breakdown of lot square footage and calculations
2) Storage size calculated from 1" of runoff for impervious areas and 0.4" of runoff from vegetated areas
3) Depth of bio cell storage assumed at 1' x the surface area (3:1 side slope not included for storage at this time)
4) 1' storage depth - 6" pooling in bio cell and 6" assumed storage in filter media

	Bio Cell Sizing				
1	Soil Filter	Proposed	**Area**	**305**	**sq ft**
	Sizing	Impervious Area		-	sq ft
		Vegetated Area		8,576.00	sq ft
		Surface Area Min.		**171.52**	**sq ft**
		Storage Size		**285.87**	**CF**
2	Soil Filter	Proposed	**Area**	**442**	**sq ft**
	Sizing	Impervious Area		2,464.00	sq ft
		Vegetated Area		6,080.00	sq ft
		Surface Area Min.		**244.80**	**sq ft**
		Storage Size		**408.00**	**CF**
3	Soil Filter	Proposed	**Area**	**354.00**	**sq ft**
	Sizing	Impervious Area		400.00	sq ft
		Vegetated Area		5,296.00	sq ft
		Surface Area Min.		**125.92**	**sq ft**
		Storage Size		**209.87**	**CF**
		Proposed			

4	Soil Filter	**Area**	**440.00**	**sq ft**	
	Sizing	Impervious Area	-	sq ft	
		Vegetated Area	9,592.00	sq ft	
		Surface Area Min.	**191.84**	**sq ft**	
		Storage Size	**319.73**	**CF**	
5	Soil Filter	Proposed **Area**	677	**sq ft**	
	Sizing	Impervious Area	400	sq ft	
		Vegetated Area	14,035.00	sq ft	
		Surface Area Min.	**300.70**	**sq ft**	
		Storage Size	**501.167**	**CF**	

ATTACHMENT D
Correspondence of Manufactures Review and Approval of Proposed Filterra Design

Contech Engineered Solutions LLC
7037 Ridge Road, Suite 350
Hanover, MD 21076
Phone: (866) 740-3318
Fax: (866) 376-8511
www.ContechES.com

Benjamin M. Grondin
Gorrill Palmer
707 Sable Oaks Drive, Suite 30
South Portland, ME 04106

May 19, 2017

RE: Hope Avenue Subdivision (Contech Reference No. 551,609)
Review of Filterra Design

Dear Mr. Grondin:

The purpose of this letter is to document Contech Engineered Solutions' review of the plans and the proposed application of the Filterra water quality units for the Hope Avenue Subdivision site in Portland, ME.

Contech Engineered Solutions (Contech) has reviewed the Filterra design for this project. We believe both the Filterra configuration with internal bypass and standard offline configuration are appropriate water quality solutions for this site. The Filterra system is approved for use by MEDEP as an alternate to the General Standards of the Stormwater Rules (Chapter 500) if designed, installed, and maintained in accordance with the provisions noted in the February 2, 2017 approval letter from the MEDEP.

Based on our review, the Filterras were designed in accordance with the sizing design guidelines to treat 90% of the annual runoff volume prior to bypass. In order to adequately treat the runoff from this area, Contech recommends the following units:

Unit Name	Impervious Area	Filterra Size	Model Name
Filterra 1	0.18 ac	8x4	FTIB-C-C0804
Filterra 2	0.43 ac	12x6	FTIB-C-C1206
Filterra 3	0.25 ac	8x6	FT0806
Filterra 4	0.21 ac	6x6	FT0606

Our systems require periodic maintenance to continue operating properly. Given typical runoff pollutant loading rates, Contech recommends maintenance inspections on an annual basis. Based on the location of the system, we anticipate replacement of the mulch layer every 12 months for the system to continue to remove pollutants. Contech will be responsible for the first year of maintenance as included in the purchase of the Filterra unit; subsequent years of maintenance shall be performed by a third party at the owner's expense.

This system is expected to operate in accordance with Contech's design intent. Please feel free to contact me if you have any questions or concerns.

Sincerely,

Christopher J. Allen
Contech Engineered Solutions, LLC.
(443) 457-1519
callen@conteches.com

GORRILL PALMER

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

May 18, 2017

Jamie Cough
Central Maine Power
162 Canco Road
Portland, ME 04103

Re: Brandy Lane Residential Subdivision
22 Hope Avenue, Portland
Letter of Ability to Serve

Dear Jamie:

LBW, LLC. has retained Gorrill Palmer to prepare plans and permit applications for a proposed residential subdivision at 22 Hope Ave. The site is shown on Assessor's Map 448 A004, is approximately 6.46 acres in size and is located in the Conditional Zone. As required by the reviewing authorities, we are writing to request a letter indicating the ability of Central Maine Power to serve this project. A preliminary utility plan is enclosed for your review.

Description of Development Site

The project site is located at 22 Hope Ave and consists of Tax Map 448 A004 as shown on the Portland Assessor's Map. The site is approximately 6.46 acres in size and has approximately 120 feet of frontage along Hope Avenue.

The project site is currently undeveloped with a landcover of woodlands. Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. Abutting land uses include:

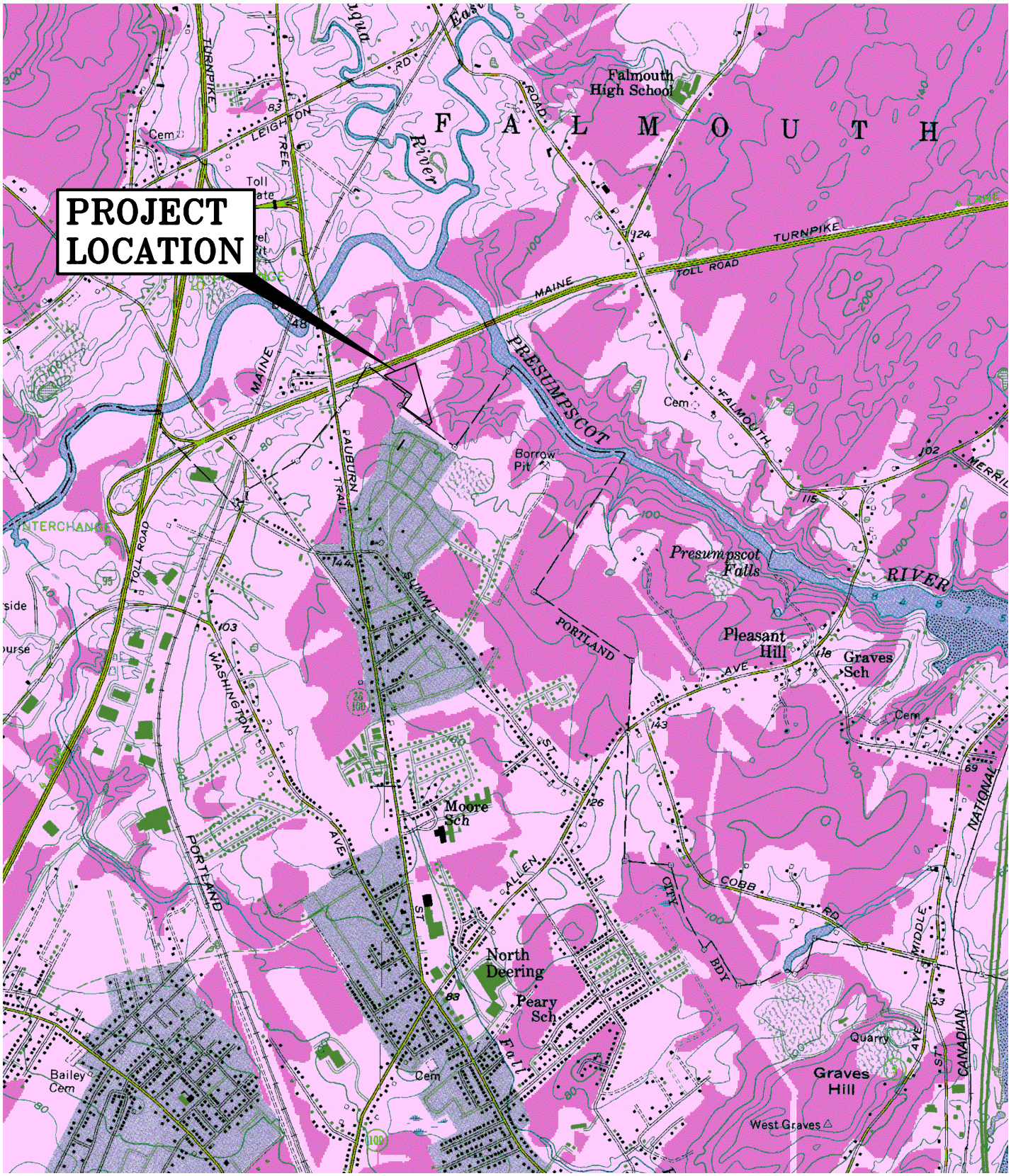
- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

Refer to Figure 1 – Location Map following this page for the project location.

Project Description

The project is a residential subdivision development consisting of a sixteen lots with public water and sewer. Existing electric service is located on the opposite side of Hope Avenue. The proposed electrical would have underground service.

At this time, service requirements are not known. It is anticipated that this development would have single phase electric service requirements similar to other residential developments within the Greater Portland area.



U.S.G.S. Location Map

Riverwalk Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: JAN 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1–LOCMAP1.dwg	

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207.657.6910

Figure 1

Ability to Serve

In support of the applications to the reviewing authorities, we are writing to request a letter indicating the ability of Central Maine Power Company to serve the project. In addition, we are interested in receiving:

- Indication as to the acceptability of the proposed layout.
- Indication of the Utility Company responsible for the setting of poles in this area.
- Information as to any easements that you may require on-site.
- Any estimate of construction and connection fees
- Any other information that you believe would be useful as this project proceeds.

Please contact me If you have any questions relative to this matter at 772-2515 or at bgrondin@gorrillpalmer.com.

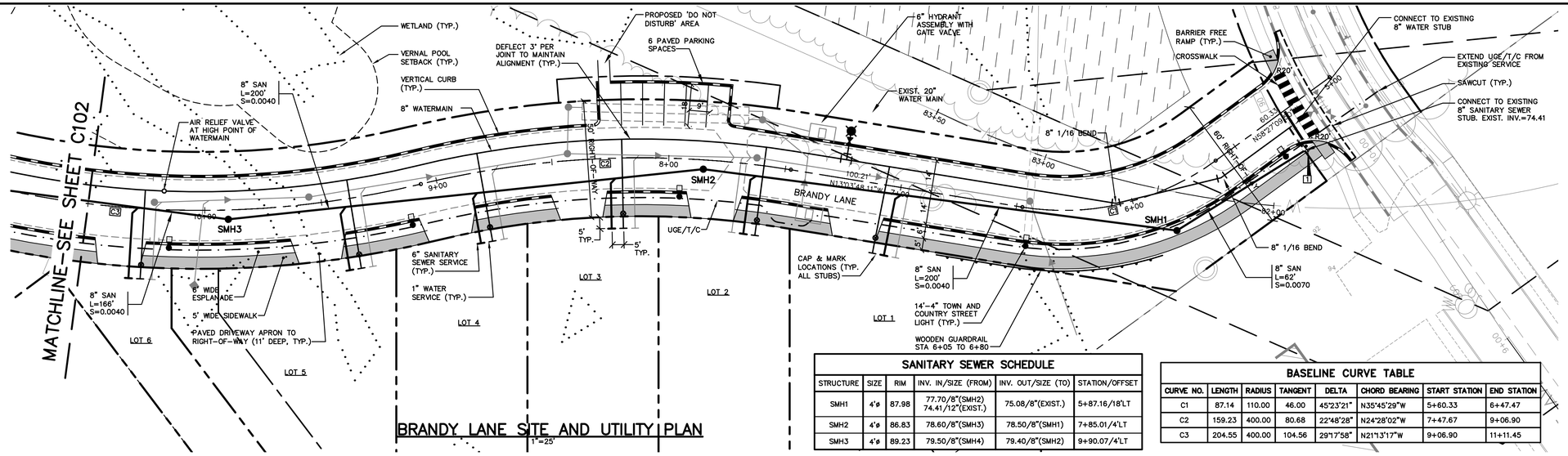
Sincerely,

Gorrill Palmer

Benjamin M. Grondin
Design Engineer

Copy: Burt Wolf

DJG/ U:\98089.08 - Design and Permitting 'Long' Road\H Utilities\CMP 1-5-17.doc



BRANDY LANE SITE AND UTILITY PLAN

1"=25'

SANITARY SEWER SCHEDULE

STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET
SMH1	4'ø	87.98	77.70/8"(SMH2) 74.41/12"(EXIST.)	75.08/8"(EXIST.)	5+87.16/18"LT
SMH2	4'ø	86.83	78.60/8"(SMH3)	78.50/8"(SMH1)	7+85.01/4"LT
SMH3	4'ø	89.23	79.50/8"(SMH4)	79.40/8"(SMH2)	9+90.07/4"LT

BASELINE CURVE TABLE

CURVE NO.	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	START STATION	END STATION
C1	87.14	110.00	46.00	45°23'21"	N35°45'29"W	5+60.33	6+47.47
C2	159.23	400.00	80.68	22°48'28"	N24°28'02"W	7+47.67	9+06.90
C3	204.55	400.00	104.56	29°17'58"	N21°13'17"W	9+06.90	11+11.45

PAVEMENT LEGEND

ALL PAVEMENT SHALL BE STANDARD DUTY EXCEPT AS FOLLOWS:

BITUMINOUS SIDEWALK

CURBING LEGEND

VERTICAL GRANITE CURB

STRIPING LEGEND

SIGNAGE, STRIPING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGARDING SIZE, INSTALLATION, LOCATION & REFLECTIVITY.

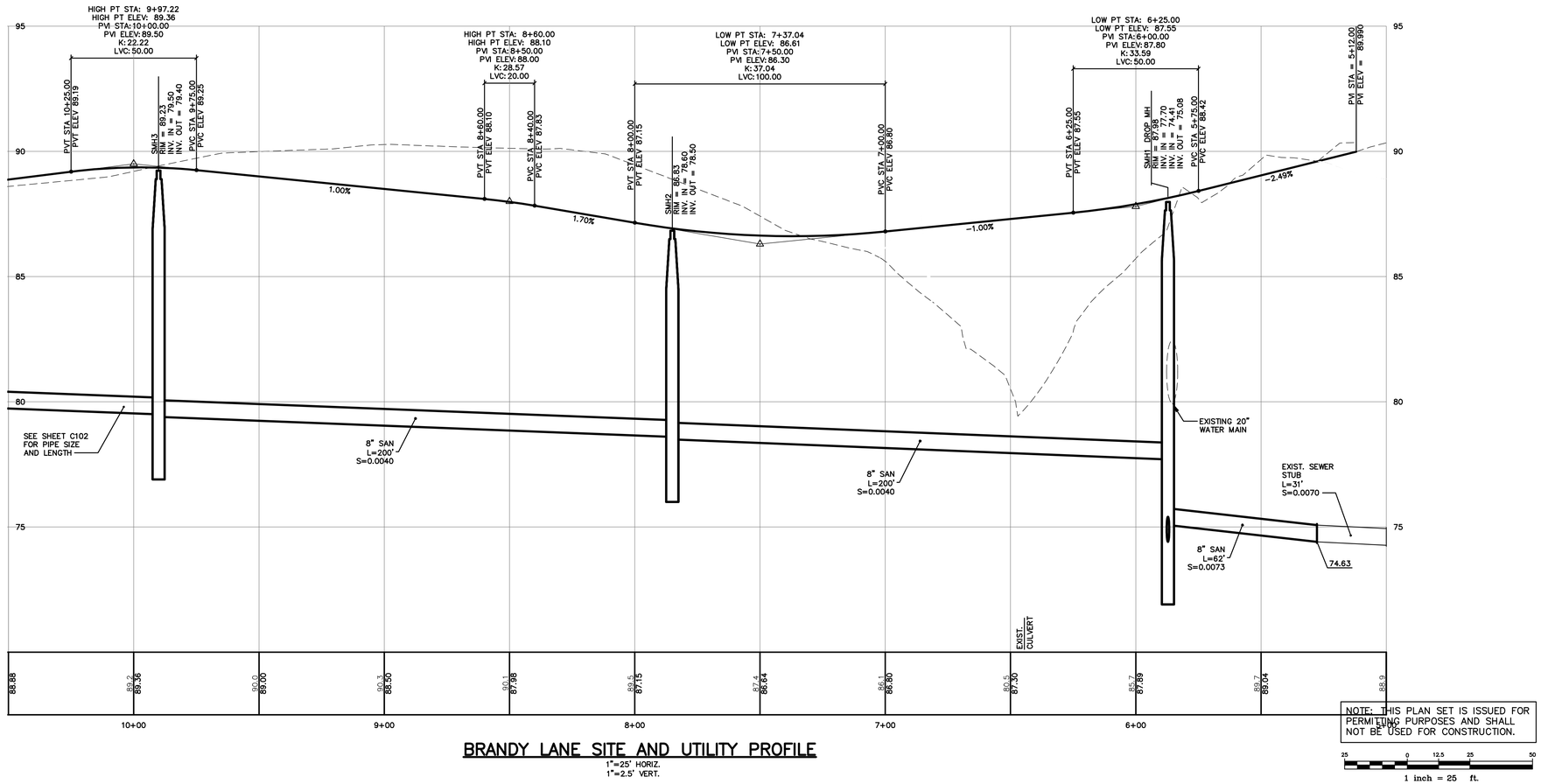
12"SL – 12" WIDTH STOP LINE
4"SWLL – 4" WIDTH SOLID WHITE LANE LINE
4"DYCL – 4" WIDTH DOUBLE YELLOW CENTERLINE
4"DWLL – 4" WIDTH DASHED WHITE LANE LINE

SIGN LEGEND

STOP
R1-1
30"x 30"
1

UTILITY NOTES:

1. INSTALL WATER SERVICE 10' FROM DRIVEWAY OR IN DRIVEWAY PROTECTED WITH VALVE BOX.
1. 5' SEPARATION BETWEEN WATER AND SEWER.



BRANDY LANE SITE AND UTILITY PROFILE

1"=25' HORIZ.
1"=2.5' VERT.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

25 0 12.5 25 50
1 inch = 25 ft.

C:\CAD WORKING\98089.08 Riverwalk Long Road\DWG\98089-08-PP-SP.dwg – 5/17/2017 1:14 PM

Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE–APPLICATION MEETING WITH CITY	~~6/24/16~~	AMP

Design: DJG	Draft: CG	Date: JAN 2017
Checked: DER	Scale: 1"=25'	Job No.: 98089.08

File Name: 98089-08-PP-SP.dwg

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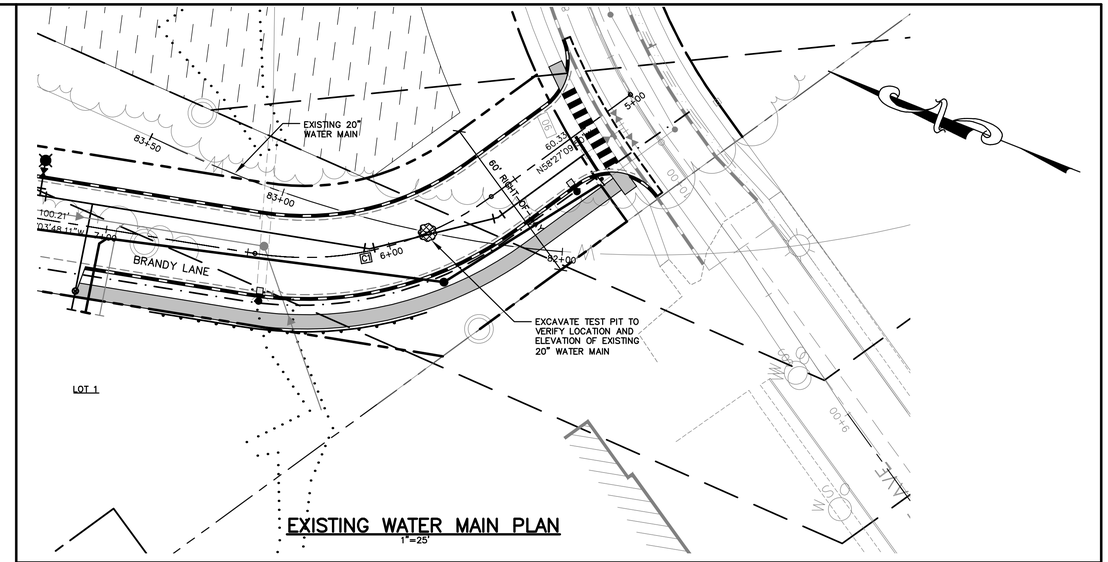
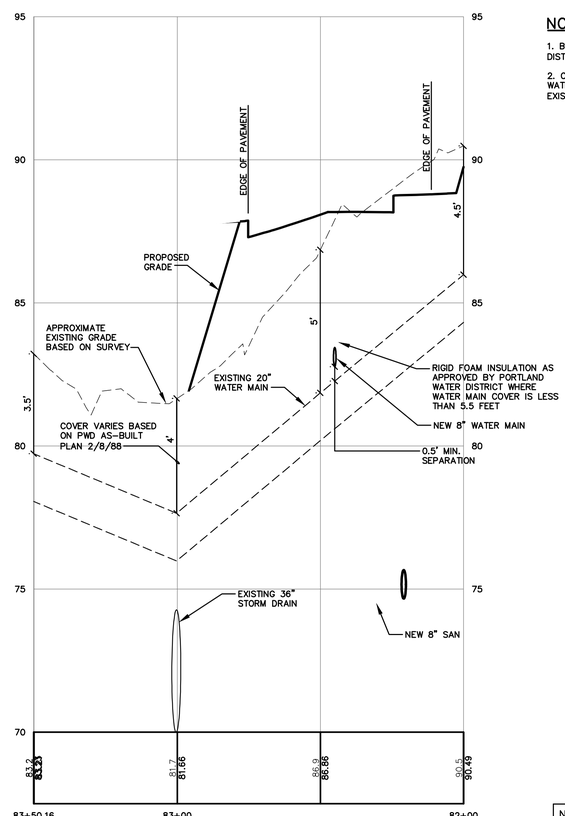
207.772.2515

Drawing Name: Site and Utility Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C101





NOTES:

1. BASELINE STATIONS ARE FROM PORTLAND WATER DISTRICT AS-BUILT PLAN 2/8/88.

2. COVER DEPTHS AS NOTED ARE FROM PORTLAND WATER DISTRICT AS-BUILT PLAN AT LOCATIONS OF EXISTING 20" WATER MAIN.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

25 0 12.5 25 50

1 inch = 25 ft.

Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: DJG	Draft: CG	Date: JAN 2017
Checked: DER	Scale: 1"=25'	Job No.: 98089.08

File Name: 98089-08-PP-SP.dwg

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207.772.2515

Drawing Name: **Water Main Plan and Profile**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. *C101A*

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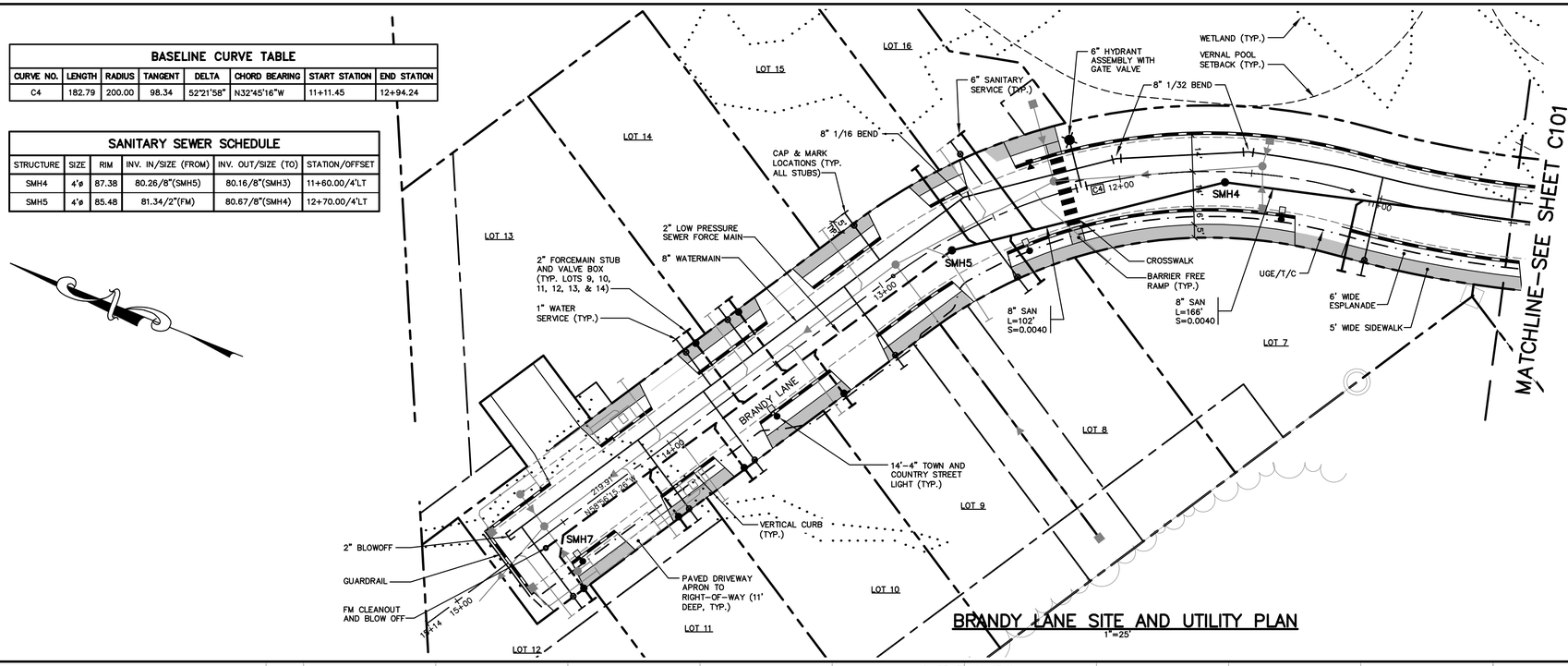
BASELINE CURVE TABLE							
CURVE NO.	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	START STATION	END STATION
C4	182.79	200.00	98.34	52°21'58"	N32°45'16"W	11+11.45	12+94.24

SANITARY SEWER SCHEDULE					
STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET
SMH4	4'ø	87.38	80.26/8"(SMH5)	80.16/8"(SMH3)	11+60.00/4'LT
SMH5	4'ø	85.48	81.34/2"(FM)	80.67/8"(SMH4)	12+70.00/4'LT



BRANDY LANE SITE AND UTILITY PLAN
1"=25'

PAVEMENT LEGEND

ALL PAVEMENT SHALL BE STANDARD DUTY EXCEPT AS FOLLOWS:

BITUMINOUS SIDEWALK

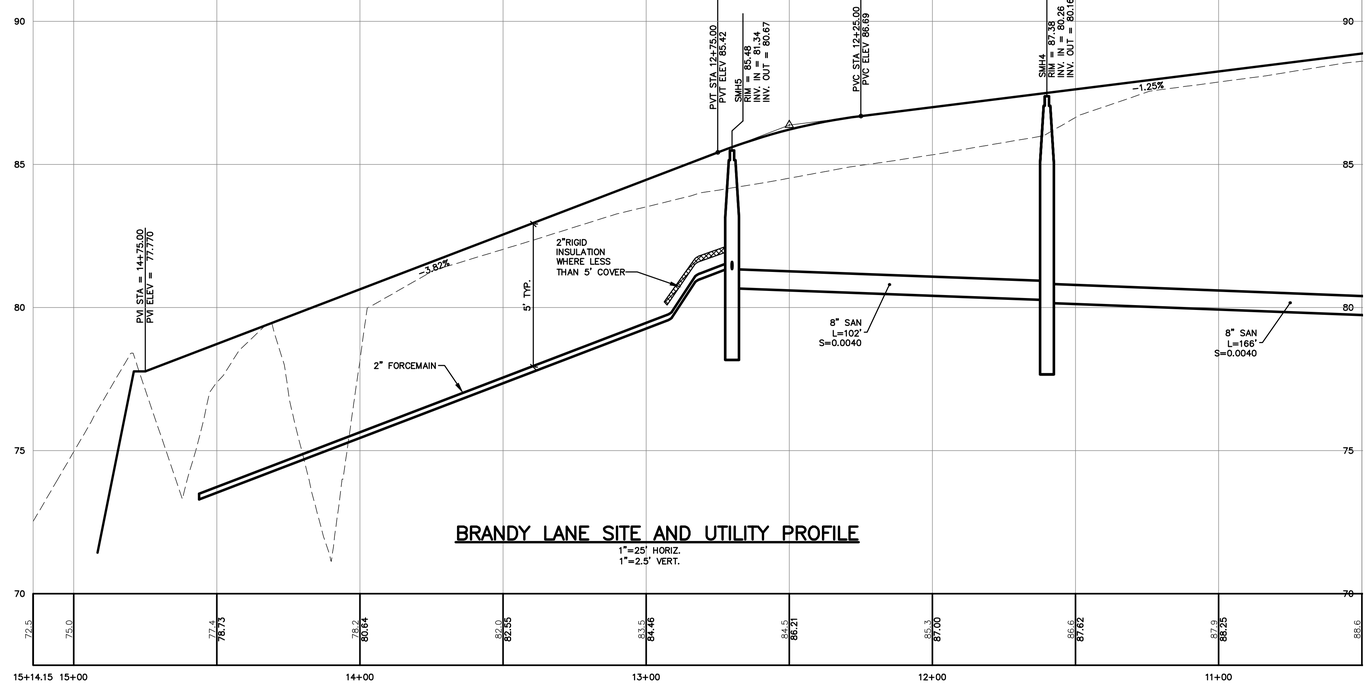
CURBING LEGEND

VERTICAL GRANITE CURB

UTILITY NOTES:

1. INSTALL WATER SERVICE 10' FROM DRIVEWAY OR IN DRIVEWAY PROTECTED WITH VALVE BOX.

1. 5' SEPARATION BETWEEN WATER AND SEWER.



BRANDY LANE SITE AND UTILITY PROFILE
1"=25' HORIZ.
1"=2.5' VERT.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

25 0 12.5 25 50
1 inch = 25 ft.

C:\CAD WORKING\98089.08 Riverwalk Long Road\DWG\98089-08-PP-SP.dwg - 5/17/2017 1:15 PM

Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: DJG | Draft: CG | Date: JAN 2017
Checked: DER | Scale: 1"=25' | Job No.: 98089.08
File Name: 98089-08-PP-SP.dwg

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Drawing Name: Site and Utility Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C102

GORRILL PALMER

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

May 18, 2017

Jay Arnold
Portland Water District
225 Douglas Street
Portland, Maine 04104

Re: Brandy Lane Residential Subdivision
22 Hope Avenue, Portland
Letter of Ability to Serve

Dear Mr. Arnold:

LBW, LLC. has retained Gorrill Palmer to prepare plans and permit applications for a proposed residential subdivision at 22 Hope Ave. The site is shown on Assessor's Map 448 A004, is approximately 6.46 acres in size and is located in the Conditional Zone. As required by the reviewing authorities, we are writing to request a letter indicating the ability of Portland Water District to serve this project. A preliminary utility plan is enclosed for your review.

Description of Development Site

The project site is located at 22 Hope Ave and consists of Tax Map 448 A004 as shown on the Portland Assessor's Map. The site is approximately 6.46 acres in size and has approximately 120 feet of frontage along Hope Avenue.

The project site is currently undeveloped with a landcover of woodlands. Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. Abutting land uses include:

- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

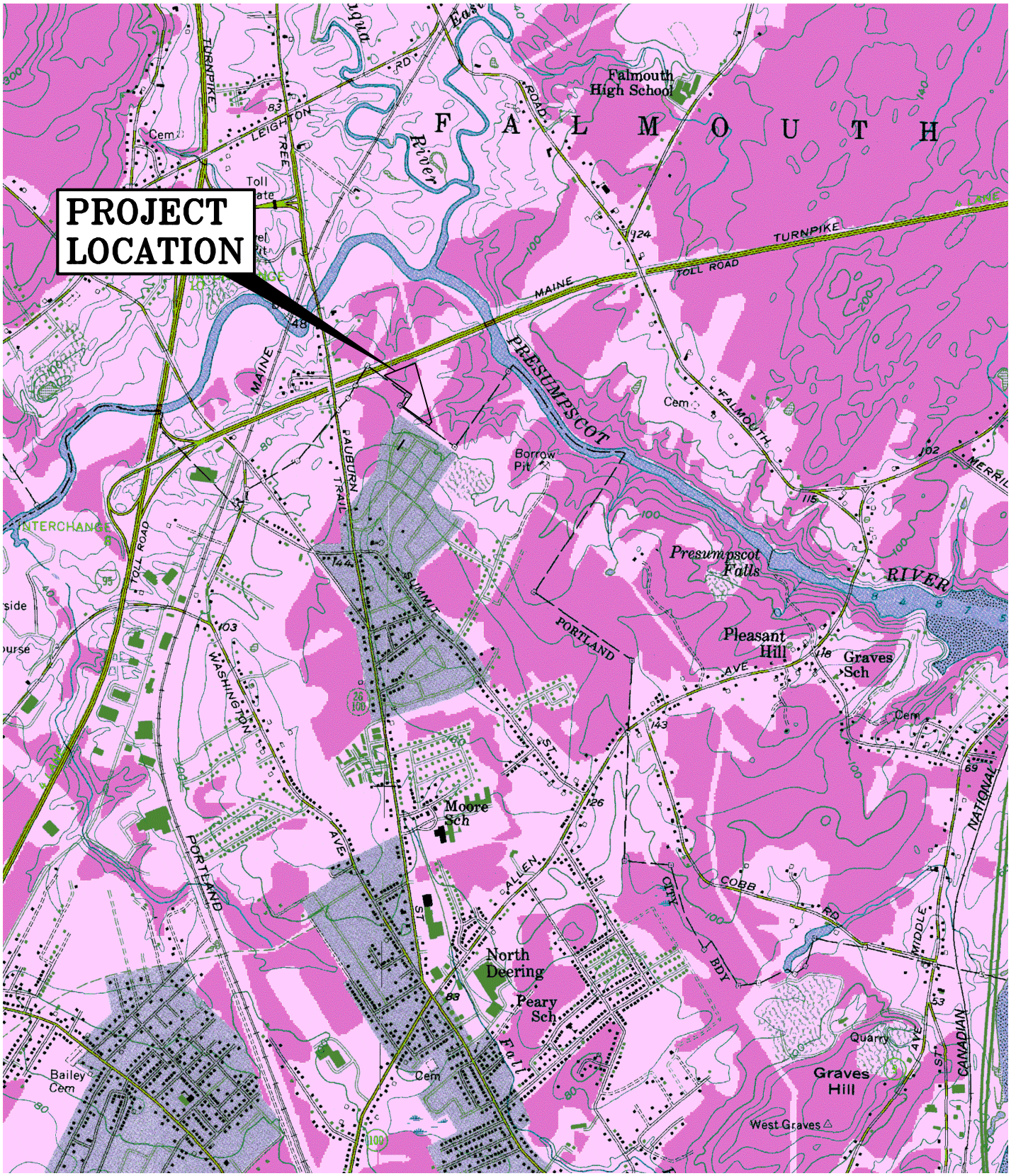
Refer to Figure 1 – Location Map following this page for the project location.

Project Description

The project is a residential subdivision development consisting of a sixteen lots with water service by Portland Water District and wastewater service by the City of Portland. The utility plan shows the construction of two fire hydrants.

Existing Service

An existing 8" water main stub is located in Hope Ave at the location of the proposed entrance. The project proposes to connect each lot with a 1" water service as depicted on the enclosed preliminary utility plan. A 20" existing water main crosses the proposed roadway between stations 5+50 to 6+25.



U.S.G.S. Location Map

Riverwalk Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: JAN 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1–LOCMAP1.dwg	

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207.657.6910

Figure 1

This existing water main is assumed to have 5.5 feet of cover based upon profile provided by Portland Water District. With the proposed roadway profile, the bottom of the 20" water main would be at a max depth of less than 10 feet. A copy of the profile of the proposed roadway over the existing 20" water main is included with this letter.

Anticipated Flows

The anticipated wastewater generation for the development was computed using the Maine Subsurface Waste Water Disposal Rules Section 4.E.1 for single-family dwelling units and Table 4A. Based on the publication Water Supply and Pollution Control, Third Edition, by Clark, Viessman and Hammer, Chapter 4, Section 5; the peak daily use can be considered to about 180% of the average daily use. The table below is a summary of the wastewater generation that is anticipated for the development.

Anticipated Wastewater Generation		
	Average Daily Wastewater Generation (gpd)	Peak Daily Wastewater Generation (gpd)
Proposed 16 lot single family subdivision	3200	5,760

The Water/Wastewater Generation Calculation sheet is attached to this letter.

Ability to Serve

In support of the applications to the reviewing authorities, we are writing to request a letter indicating the ability of Portland Water District to serve the project. In addition, we are interested in receiving:

- An estimate for any work the Water District would perform within the right-of-way.
- Information as to any easements that the District may require on-site.
- Any results of hydrant tests in the vicinity of the site.
- Any other information that you believe would be useful as this project proceeds.

Please contact me if you have any questions relative to this matter at 772-2515 or bgrondin@gorrillpalmer.com .

Sincerely,

Gorrill Palmer

Benjamin M. Grondin
Design Engineer

Copy: Burt Wolf

DJG/ U:\98089.08 - Design and Permitting 'Long' Road\H Utilities\PWD 1-5-17.doc

GORRILL PALMER

JOB	98089.08 Brandy Lane (Hope Ave Subdivision)			
SHEET NO.	1	OF	1	
CALCULATED BY	DJG	DATE	1/5/2017	
CHECKED BY		DATE		
SCALE	N/A			

Task: Determine daily water demand/wastewater generation for proposed development of Hope Ave Subdivision

Reference: 1. Maine Subsurface Waste Water Disposal Rules for peak flow rates 2015

2. Water Supply and Pollution Control, Third Edition, By Clark, Viessman & Hammer
Chapter 4, Section 5

Assumptions: Proposed development assumed to consist of the following:
Sixteen residential single family units with four bedrooms per unit.

Single Family Dwelling Units		**16**	units
with	4 bedroom/Unit =	**64**	bedrooms

Calculations:

Single Family Dwellings: From Ref. 1, Section 4.E.1, peak flow rate Table 4A
360 gpd/unit

Peak Water/Wastewater Generation:	**5760**	**gpd**
Average Water/Wastewater Generation (Ref. 2): (peak flow =180% of average flow)	**3200**	**gpd**

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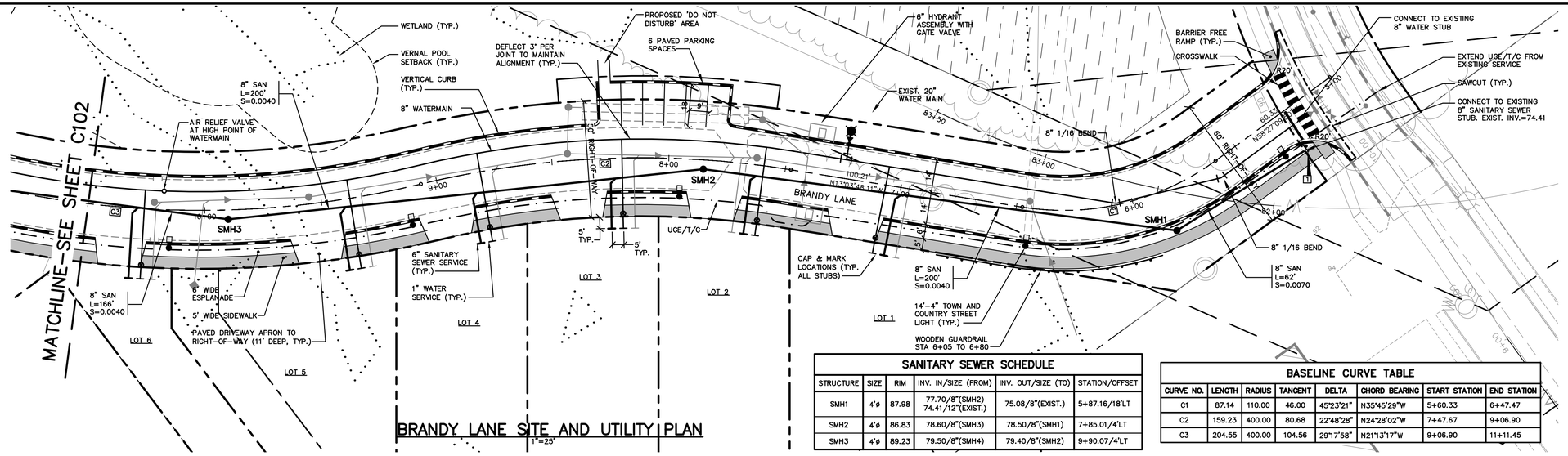

BRANDY LANE SITE AND UTILITY PLAN

1"=25'

SANITARY SEWER SCHEDULE

STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET
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PAVEMENT LEGEND

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UTILITY NOTES:

1. INSTALL WATER SERVICE 10' FROM DRIVEWAY OR IN DRIVEWAY PROTECTED WITH VALVE BOX.
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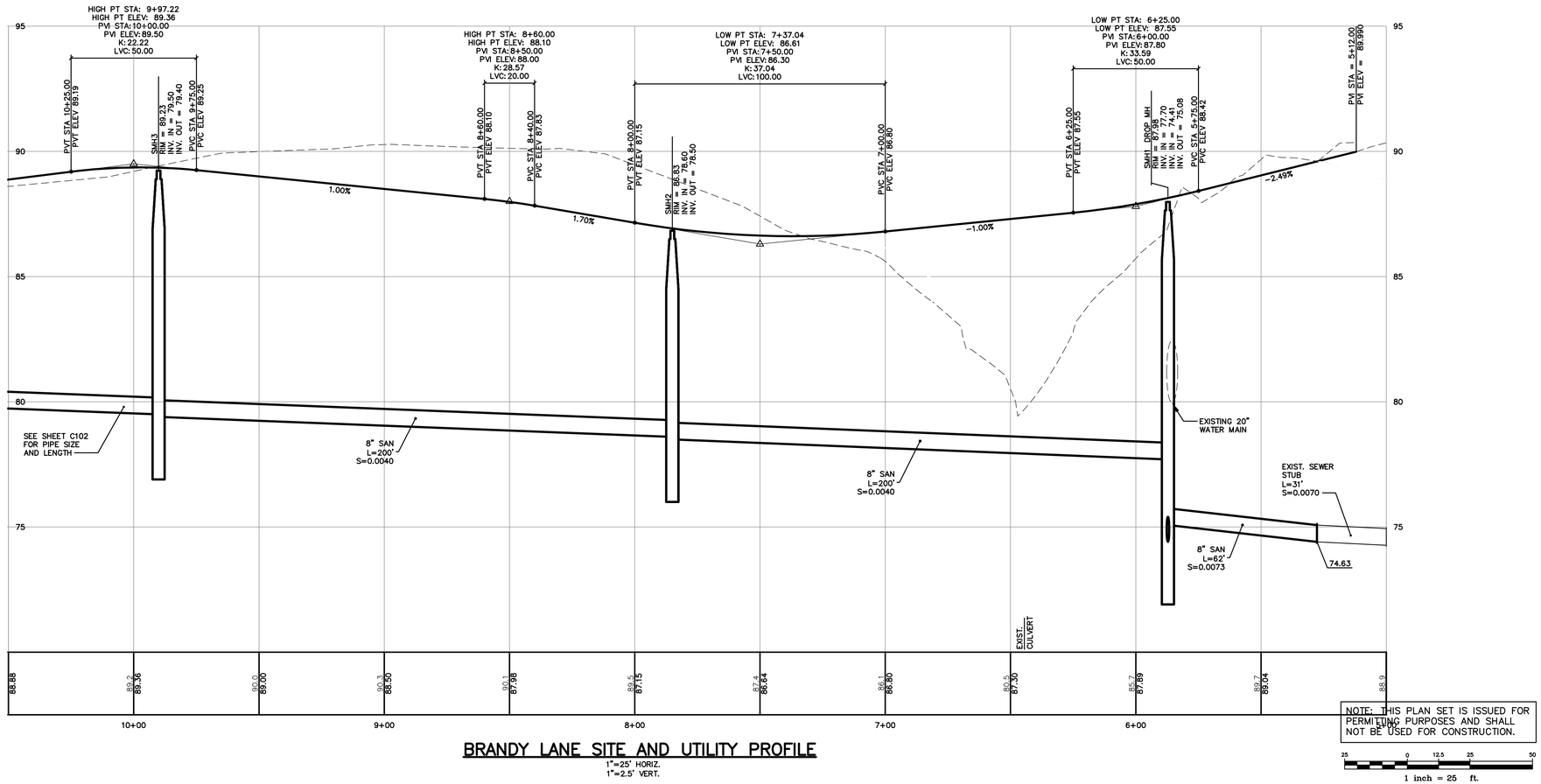

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Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE–APPLICATION MEETING WITH CITY	~~6/24/16~~	AMP

Design: DJG	Draft: CG	Date: JAN 2017
Checked: DER	Scale: 1"=25'	Job No.: 98089.08

File Name: 98089-08-PP-SP.dwg

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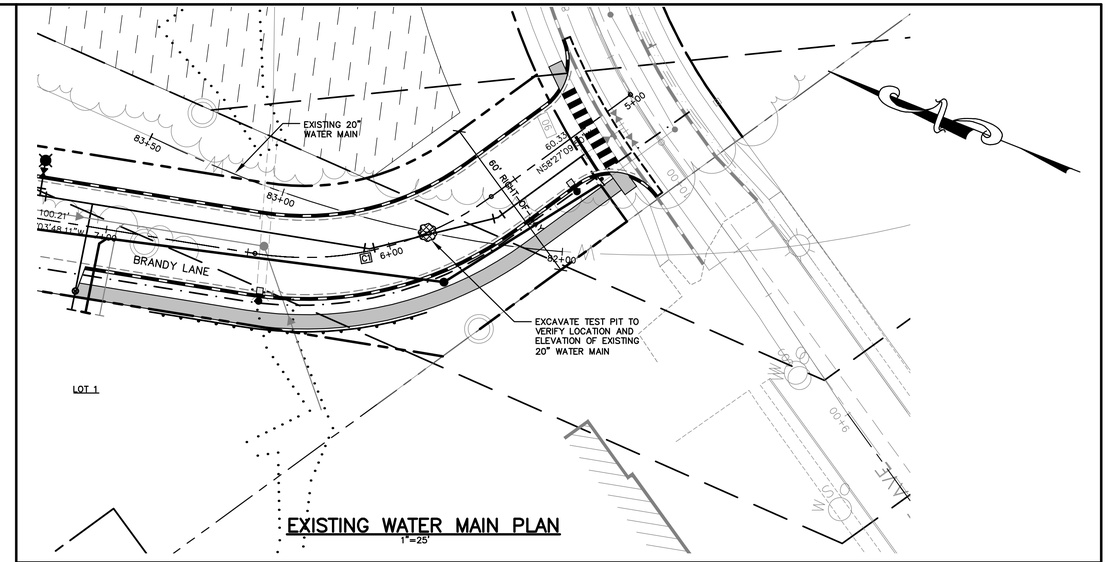
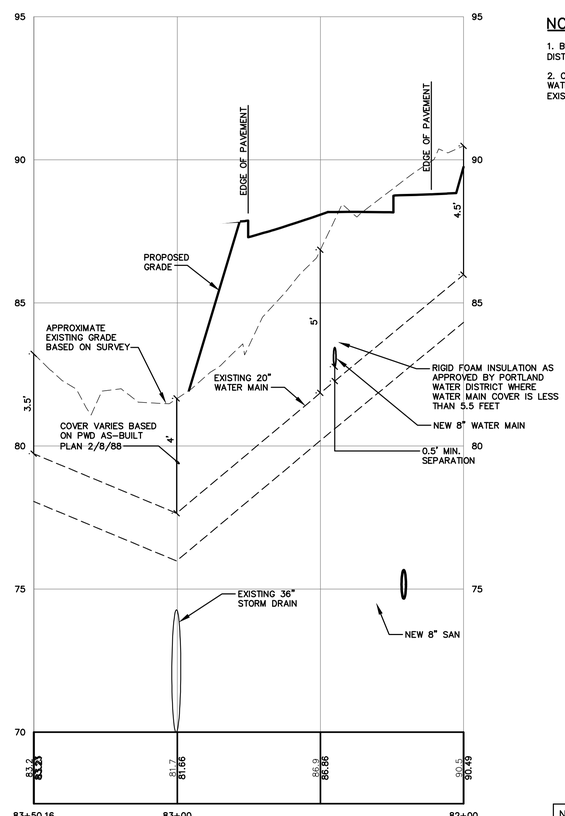
207.772.2515

Drawing Name: Site and Utility Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C101





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Drawing Name: **Water Main Plan and Profile**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. *C101A*

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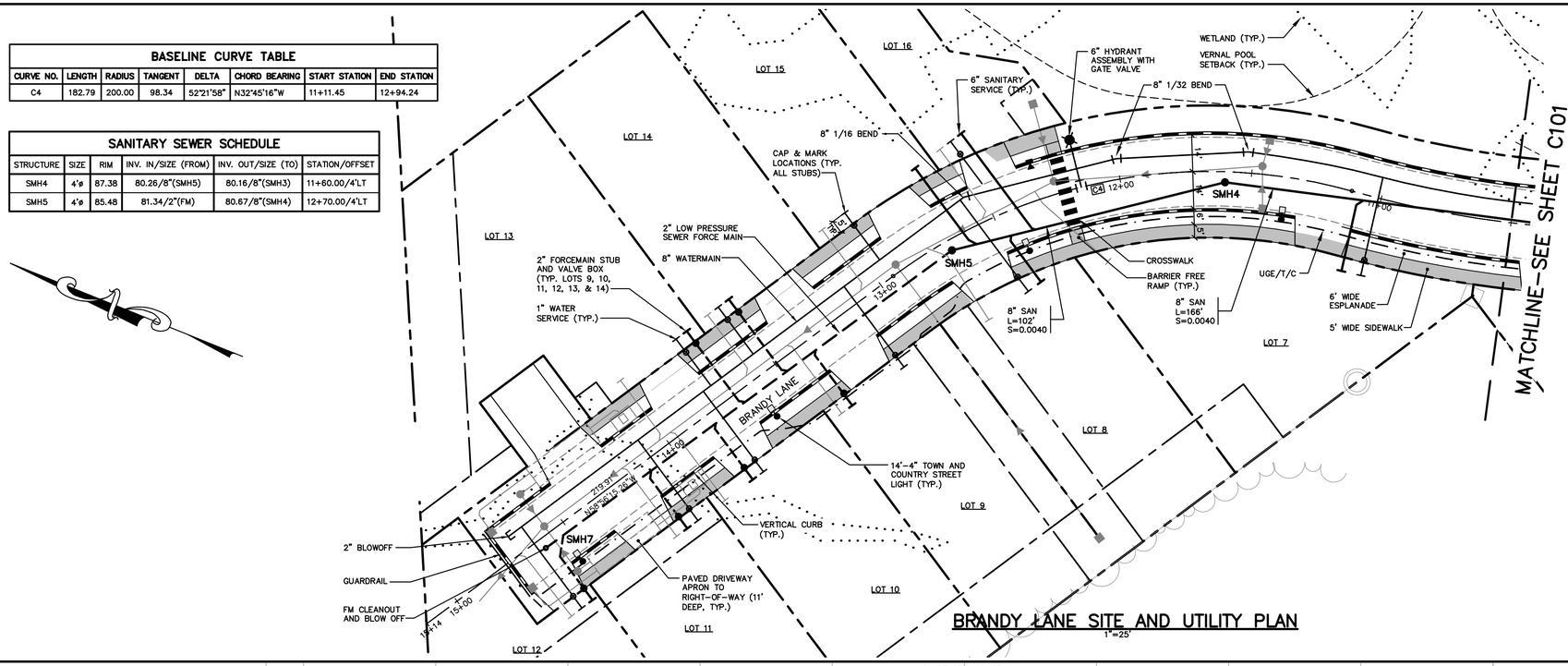

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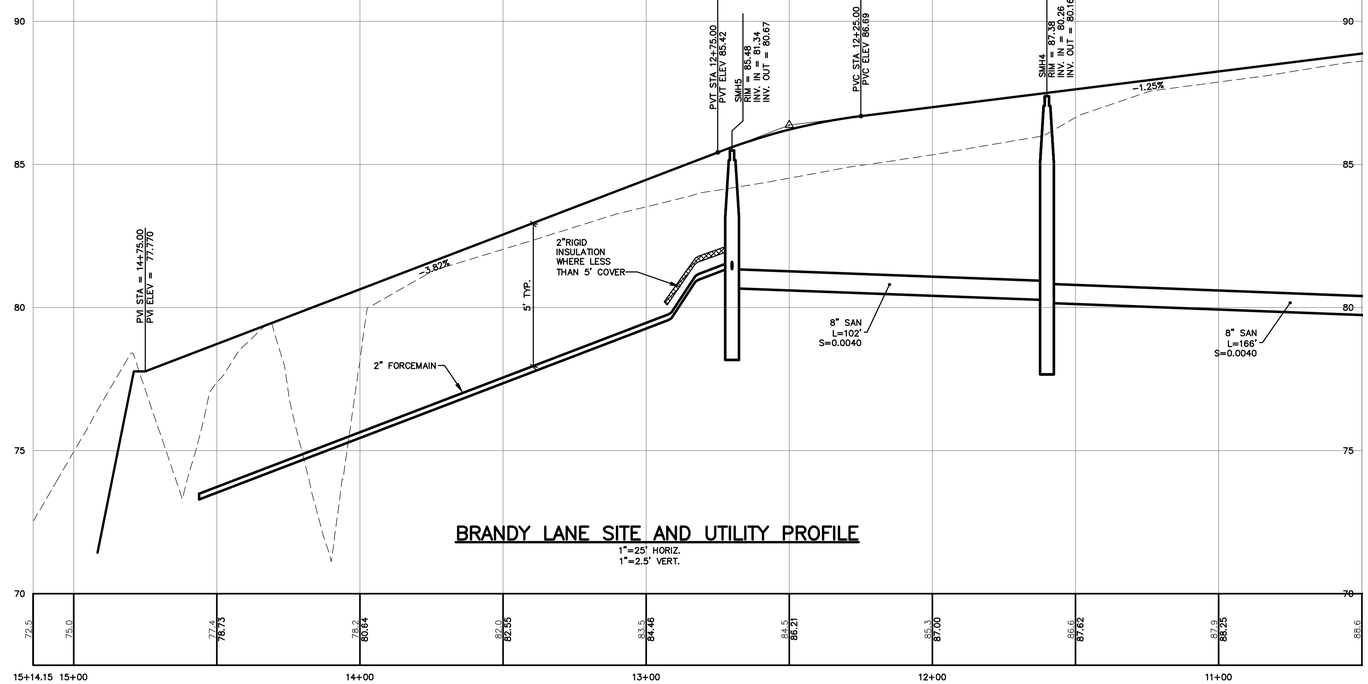

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Drawing Name: Site and Utility Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C102

GORRILL PALMER

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

May 18, 2017

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

Re: Brandy Lane Residential Subdivision
22 Hope Avenue, Portland
Letter of Ability to Serve

Dear Mr. Roland,

LBW, LLC. has retained Gorrill Palmer to prepare plans and permit applications for a proposed residential subdivision at 22 Hope Ave. The site is shown on Assessor's Map 448 A004, is approximately 6.46 acres in size and is located in the Conditional Zone. As required by the reviewing authorities, we are writing to request a letter indicating the ability of the Department of Public Services to serve this project. A preliminary utility plan is enclosed for your review.

Description of Development Site

The project site is located at 22 Hope Ave and consists of Tax Map 448 A004 as shown on the Portland Assessor's Map. The site is approximately 6.46 acres in size and has approximately 120 feet of frontage along Hope Avenue.

The project site is currently undeveloped with a landcover of woodlands. Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. Abutting land uses include:

- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

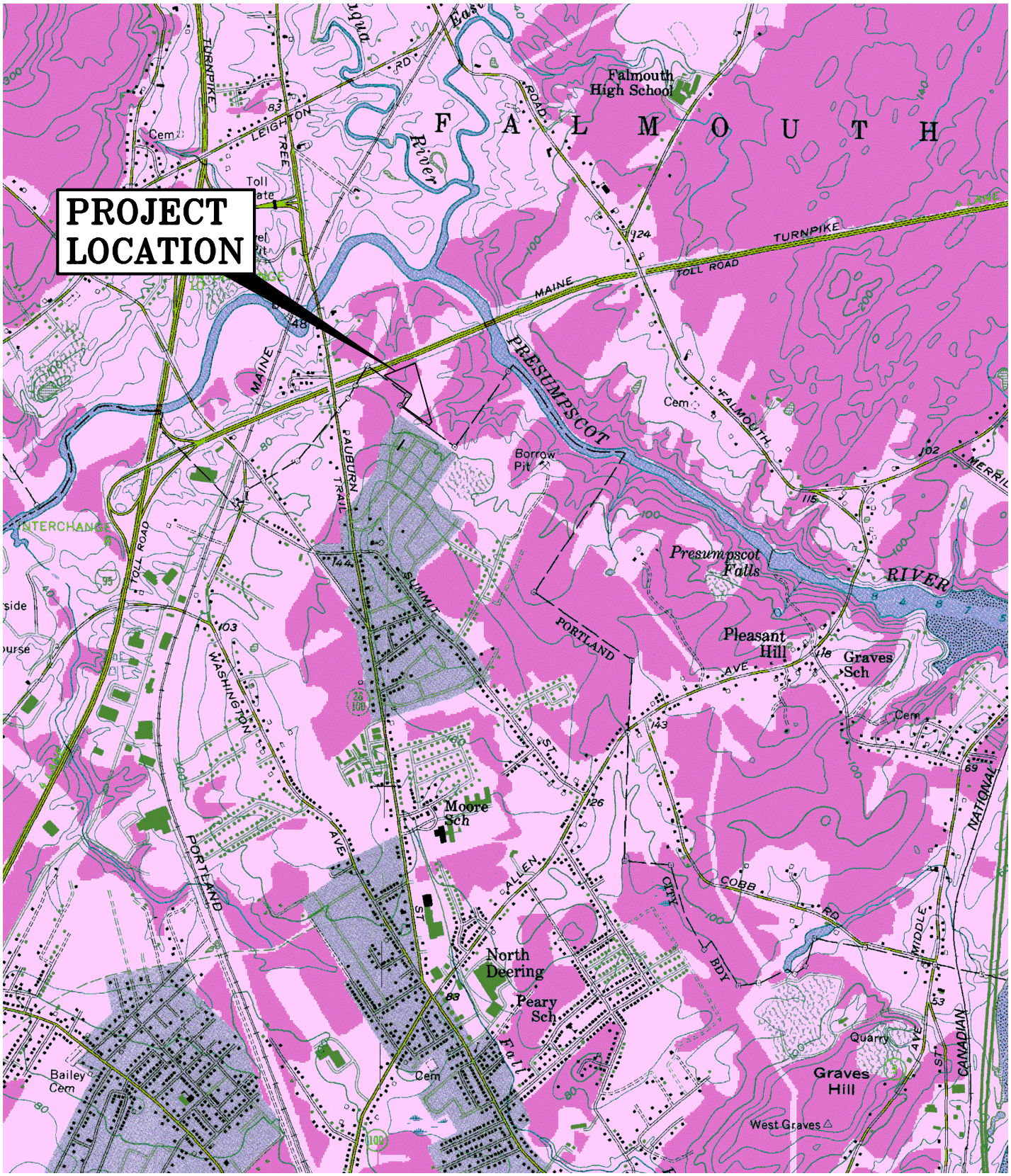
Refer to Figure 1 – Location Map following this page for the project location.

Project Description

The project is a residential subdivision development consisting of a sixteen lots with wastewater service by the Department of Public Services.

Existing Service

An existing 8" sanitary sewer stub is located in Hope Ave at the location of the proposed entrance. The project proposes to connect each lot with a 6" sanitary sewer service. Lots 9, 10, 11, 12, 13, and 14 are proposed to be served by a low pressure force main system due to existing topography as depicted on the enclosed preliminary utility plan.



U.S.G.S. Location Map

Riverwalk Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: JAN 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1–LOCMAP1.dwg	

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Figure 1

Anticipated Flows

The anticipated wastewater generation for the development was computed using the Maine Subsurface Waste Water Disposal Rules Section 4.E.1 for single-family dwelling units and Table 4A. Based on the publication Water Supply and Pollution Control, Third Edition, by Clark, Viessman and Hammer, Chapter 4, Section 5; the peak daily use can be considered to about 180% of the average daily use. The table below is a summary of the wastewater generation that is anticipated for the development.

Anticipated Wastewater Generation		
	Average Daily Wastewater Generation (gpd)	Peak Daily Wastewater Generation (gpd)
Proposed 16 lot single family subdivision	3200	5,760

The Water/Wastewater Generation Calculation sheet is attached to this letter.

Ability to Serve

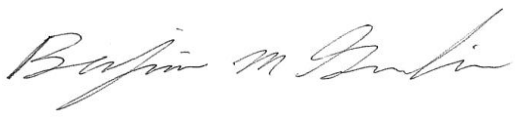
Attached to this letter is the City of Portland Wastewater Capacity Application from the Level III Site Plan Application which will be submitted to the City. In support of the applications to the reviewing authorities, we are writing to request a letter indicating the ability of the Department of Public Services to serve the proposed project. In addition, we are interested in receiving:

- Information as to any easements that the Department of Public Services may require on-site.
- Any impact or connection fees associated with the development.
- Issues relating to any combined stormwater/sewer system which may affect the project.
- Any other information that you believe would be useful as this project proceeds.

Please contact me if you have any questions relative to this matter at 772-2515 or at bgrondin@gorrillpalmer.com.

Sincerely,

Gorrill Palmer



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JOB	98089.08 Brandy Lane (Hope Ave Subdivision)			
SHEET NO.	1	OF	1	
CALCULATED BY	DJG	DATE	1/5/2017	
CHECKED BY		DATE		
SCALE	N/A			

Task: Determine daily water demand/wastewater generation for proposed development of Hope Ave Subdivision

Reference: 1. Maine Subsurface Waste Water Disposal Rules for peak flow rates 2015

2. Water Supply and Pollution Control, Third Edition, By Clark, Viessman & Hammer
Chapter 4, Section 5

Assumptions: Proposed development assumed to consist of the following:
Sixteen residential single family units with four bedrooms per unit.

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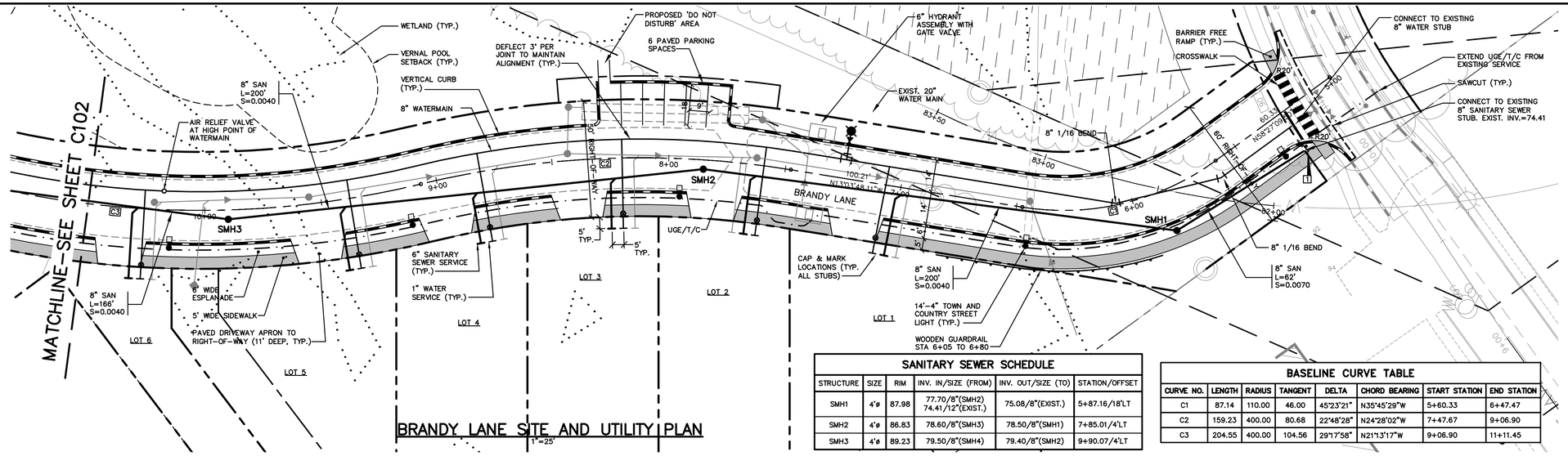

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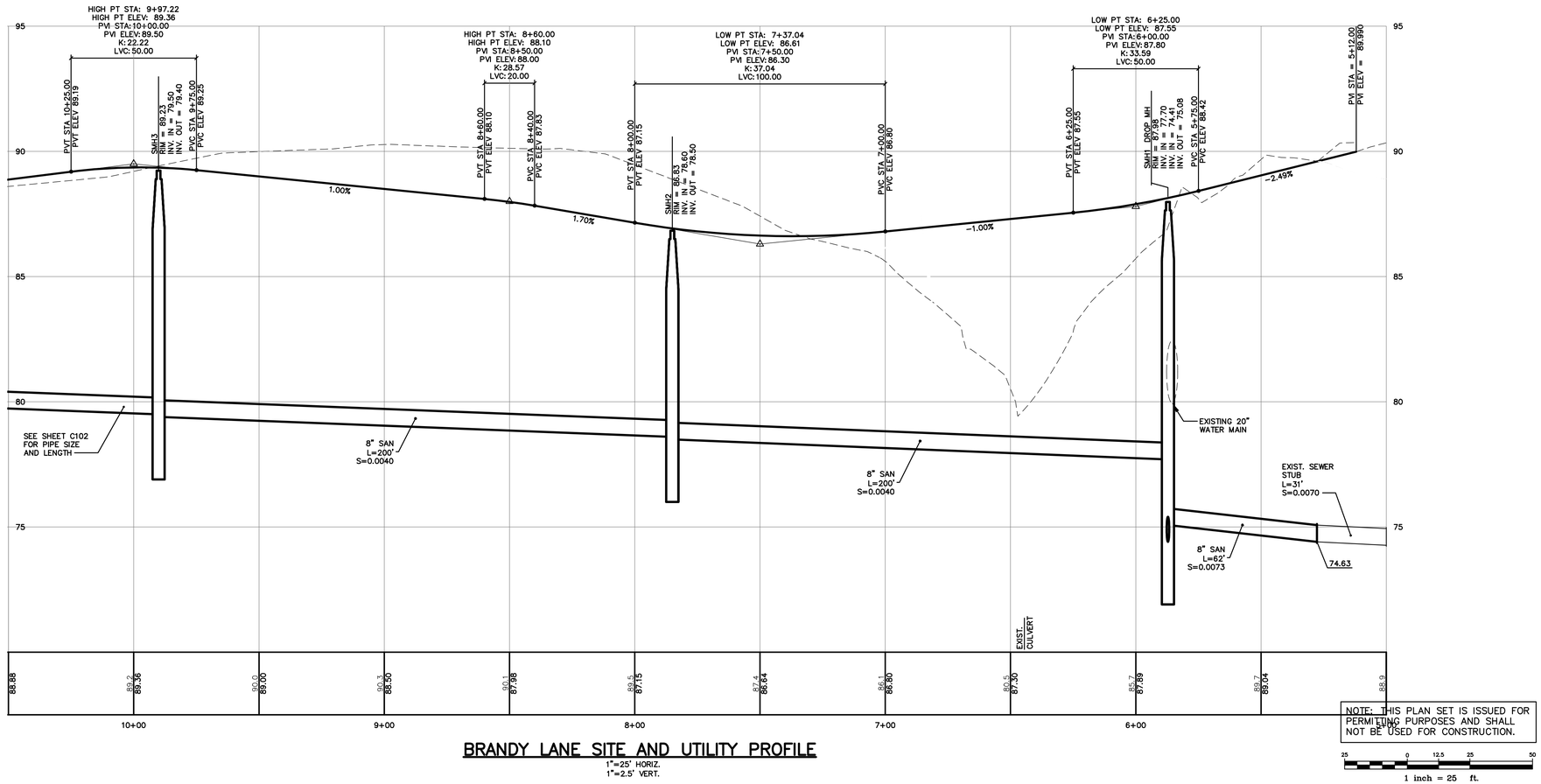

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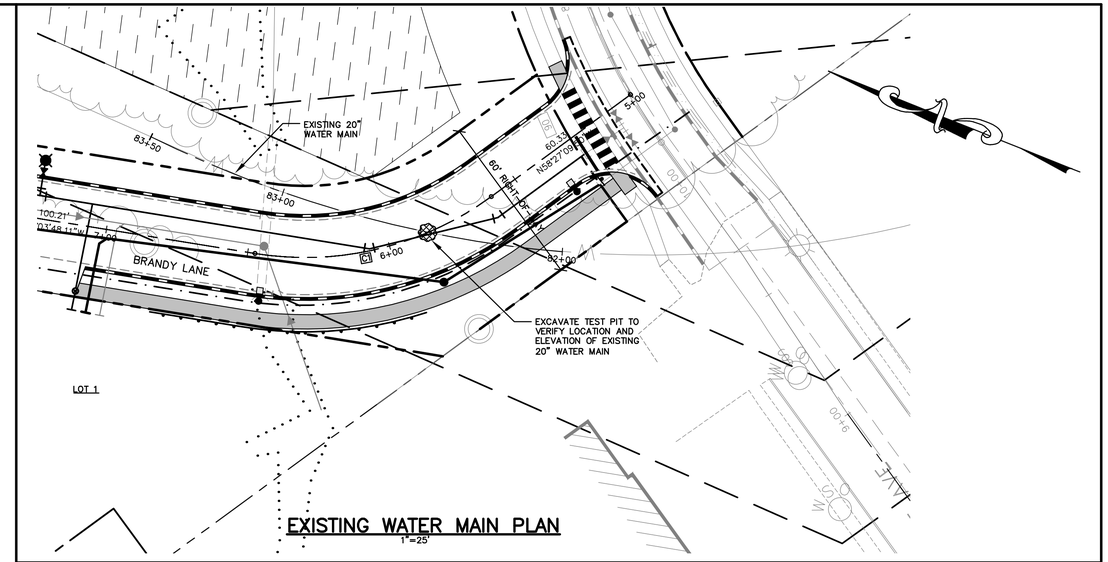

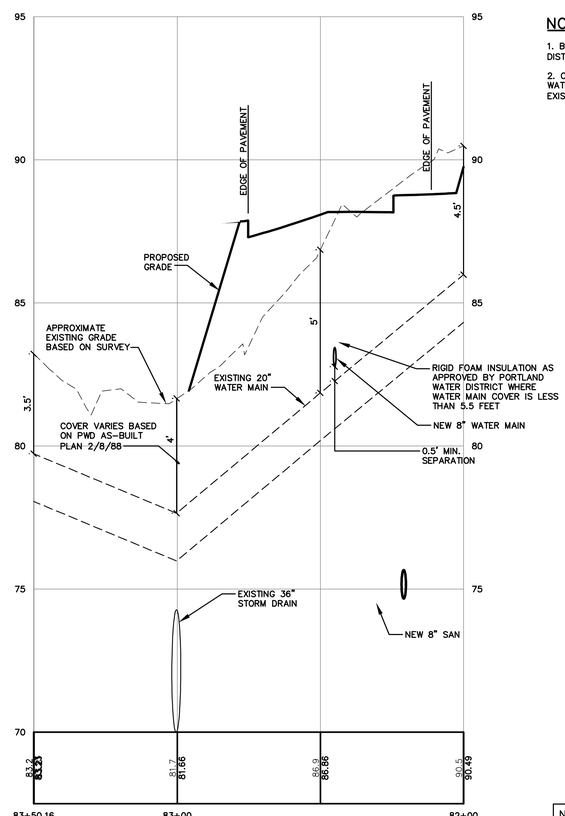

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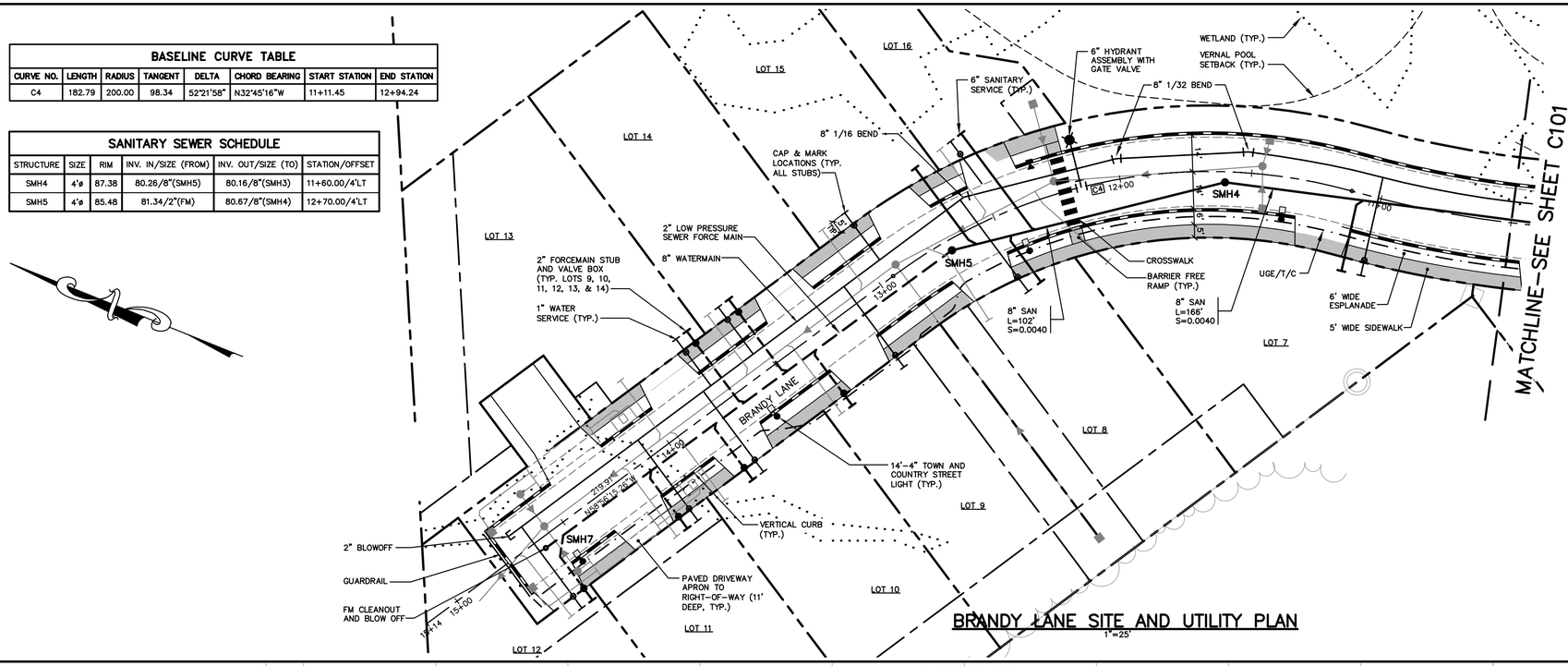

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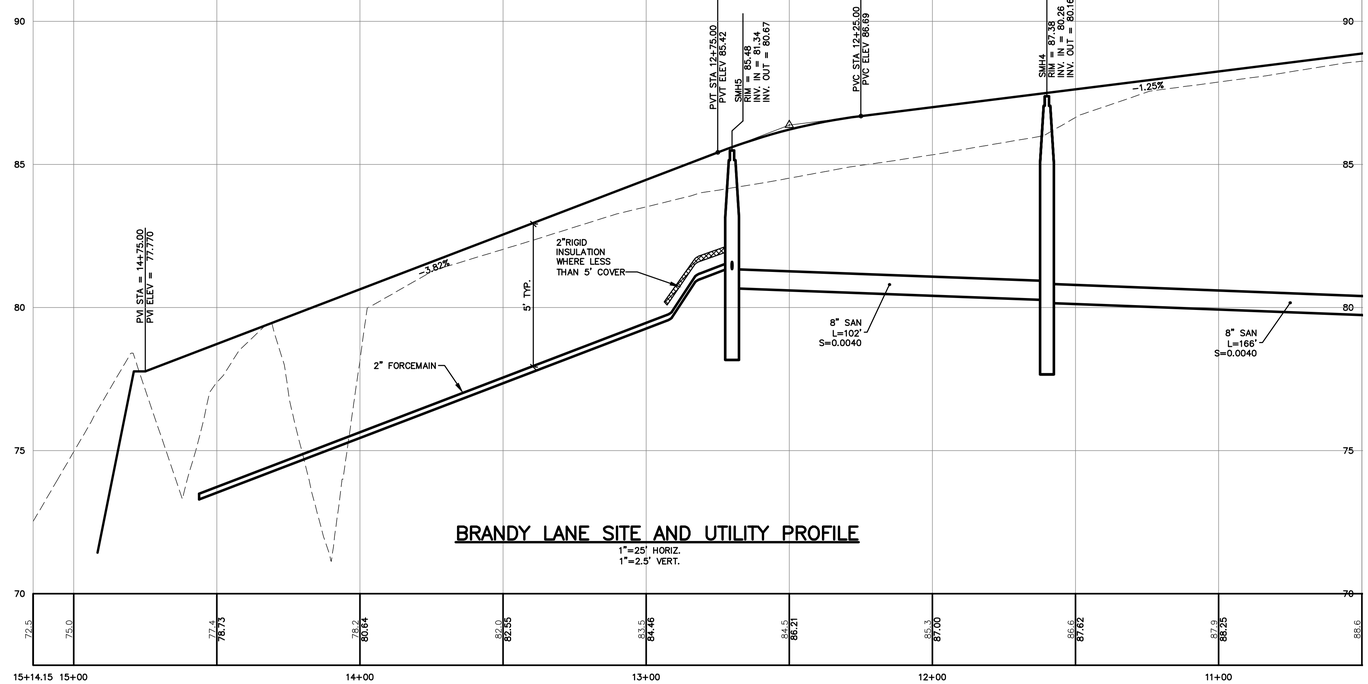
1. INSTALL WATER SERVICE 10' FROM DRIVEWAY OR IN DRIVEWAY PROTECTED WITH VALVE BOX.

1. 5' SEPARATION BETWEEN WATER AND SEWER.



BRANDY LANE SITE AND UTILITY PROFILE
1"=25' HORIZ.
1"=2.5' VERT.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

25 0 12.5 25 50
1 inch = 25 ft.

C:\CAD WORKING\98089.08 Riverwalk Long Road\DWG\98089-08-PP-SP.dwg - 5/17/2017 1:15 PM

Rev.	Date	Revision
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: DJG | Draft: CG | Date: JAN 2017
Checked: DER | Scale: 1"=25' | Job No.: 98089.08
File Name: 98089-08-PP-SP.dwg

This plan shall not be modified without written permission from Gorrill Palmer(GP). Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to GP.

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Drawing Name: Site and Utility Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C102

GORRILL PALMER

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

May 23, 2017

Mr. Kirk Mohney
State Historic Preservation Officer
Maine Historic Preservation Commission
55 Capitol Street, State House Station 65
Augusta, ME 04333-0065

Subject: Presence of Historical Areas
Brandy Lane Residential Subdivision
22 Hope Avenue, Portland, Maine

Dear Mr. Mohney,

LBW, LLC has retained Gorrill Palmer to prepare design plans and permit applications for a proposed residential subdivision at 22 Hope Avenue. The site is shown on Assessor's Map 448 A004 and is approximately 6.46 acres in size.

The project site is shown on the attached Location Map.

As required by the reviewing authorities, Gorrill Palmer requests information from your department relative to the presence of any nearby structure or area with historical, architectural or archeological significance as defined by the National Historic Preservation Act.

Thank you for your consideration. If you have any questions regarding the proposed project, please contact our office.

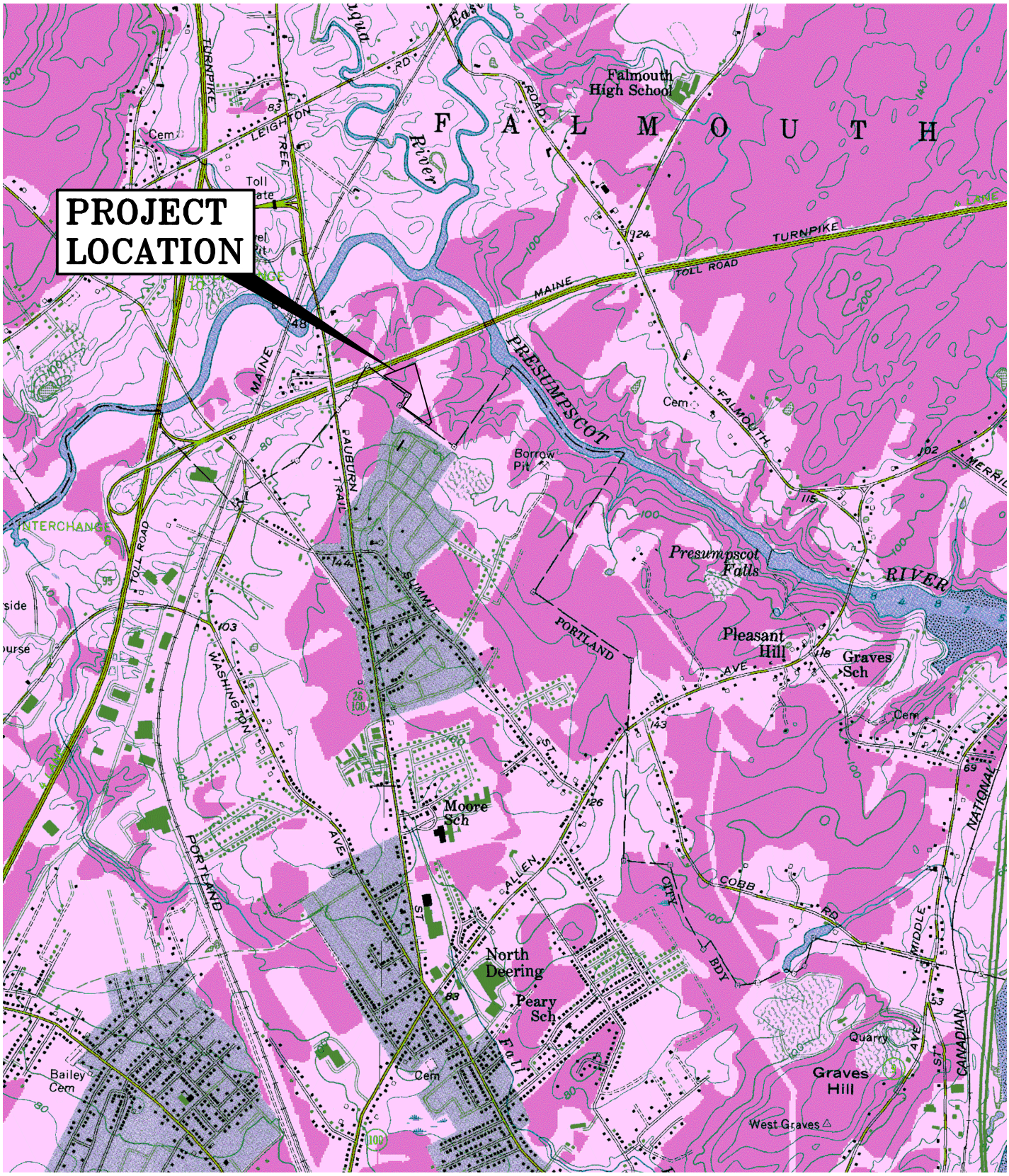
Sincerely,

Gorrill Palmer

Benjamin M. Grondin
Design Engineer

Enclosure

bmg/U:\98089.08 - Design and Permitting 'Long' Road\P Applications\Local\Resource Letters\Mohney_5-23-2017.doc



U.S.G.S. Location Map

Brandy Lane Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: MAY 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1-LOCMAP1.dwg	

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207.657.6910

Figure 1

GORRILL PALMER

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

May 23, 2017

Mr. John Perry
Environmental Review Coordinator
Maine Dept. of Inland Fisheries & Wildlife
284 State Street
41 State House Station
Augusta, ME 04333-0041

Subject: Presence of Essential Habitat
Brandy Lane Residential Subdivision
22 Hope Avenue, Portland, Maine

Dear Mr. Perry,

LBW, LLC has retained Gorrill Palmer to prepare design plans and permit applications for a proposed residential subdivision at 22 Hope Avenue. The site is shown on Assessor's Map 448 A004 and is approximately 6.46 acres in size.

The project site is shown on the attached Location Map.

As required by the reviewing authorities, Gorrill Palmer requests information from your department regarding any threatened, endangered, and special status wildlife or fisheries species and/or habitats, within the project area which might be impacted by this project.

Thank you for your consideration. If you have any questions regarding the proposed project, please contact our office.

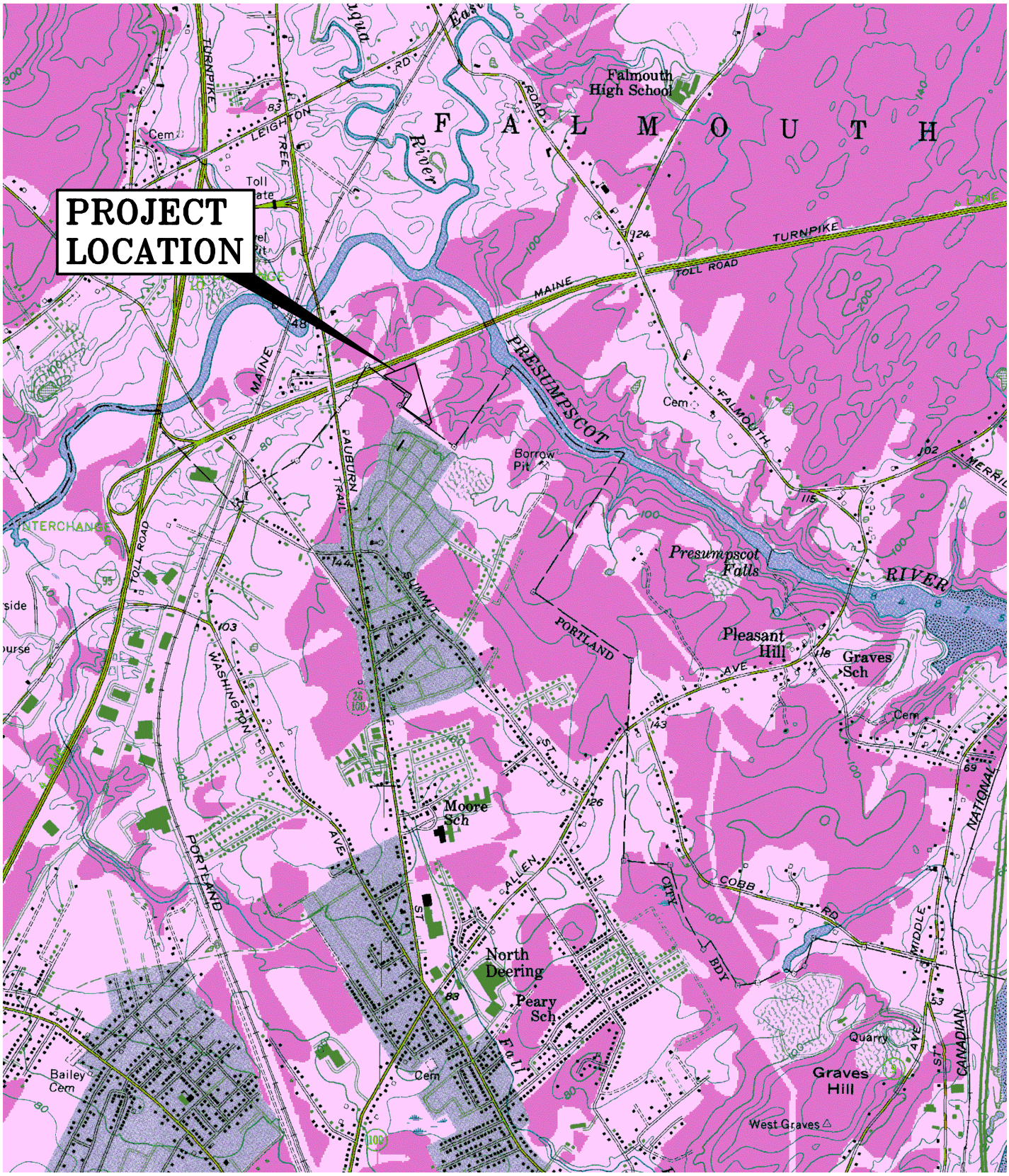
Sincerely,

Gorrill Palmer

Benjamin M. Grondin
Design Engineer

Enclosure

bmg/U:\98089.08 - Design and Permitting 'Long' Road\P Applications\Local\Resource Letters\Perry_5-23-2017.doc



U.S.G.S. Location Map

Brandy Lane Subdivision- Portland, Maine

U.S.G.S. Map Portland West, Maine-7.5 Minute Series (Topographic)

Design: DJG	Date: MAY 2017
Draft: CG	Job No.: 98089.06
Checked: DER	Scale: NTS
File Name: 98089.1-LOCMAP1.dwg	

GORRILL PALMER

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207.657.6910

Figure 1

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

May 23, 2017

Benjamin Grondin
Gorrill Palmer
707 Sable Oaks Drive, Suite 30
South Portland, ME 04106

Via email: bgrondin@gorrillpalmer.com

Re: Rare and exemplary botanical features in proximity to: Project 98089.06, Brandy Lane Subdivision, 22 Hope Ave, Portland, Maine

Dear Mr. Grondin:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received May 23, 2017 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Don Cameron | Ecologist | Maine Natural Areas Program
207-287-8041 | don.s.cameron@maine.gov

Rare and Exemplary Botanical Features within 4 miles of

Project: #98089.06, Brandy Lane Subdivision, 22 Hope Ave, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
	SC	S2	G5	2001-08-28	28	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G5	2000-06-06	5	Dry barrens (partly forested, upland)
Columbia Water-meal						
	SC	S2	G5	2002-08-04	2	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5Q	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Enriched Northern Hardwoods Forest						
	<null>	S3	GNR	2001-08-28	34	Hardwood to mixed forest (forest, upland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Foxtail Bog-clubmoss						

Rare and Exemplary Botanical Features within 4 miles of

Project: #98089.06, Brandy Lane Subdivision, 22 Hope Ave, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
	E	S1	G5	2014-09-24	1	<null>
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed						
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5?	2011-08-04	19	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress						
	T	S1	G5?Q	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Mountain-laurel						
	SC	S2	G5	1985-08-01	13	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Mountain Honeysuckle						
	E	S2	G5	2014-08-03	14	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2007-07-30	10	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Pitch Pine Woodland						
	<null>	S3	G2	2005-12-08	28	Rocky summits and outcrops (non-forested, upland)

Rare and Exemplary Botanical Features within 4 miles of

Project: #98089.06, Brandy Lane Subdivision, 22 Hope Ave, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Rattlesnake Hawkweed						
	E	S1	G5T4Q	1909-07	1	Dry barrens (partly forested, upland)
Screwstem						
	T	S1	G5	2014-09-24	17	Coastal non-tidal wetland (non-forested, wetland)
Slender Knotweed						
	PE	SH	G5	1902-09-07	1	Dry barrens (partly forested, upland)
Small Reed Grass						
	SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Smooth Winterberry Holly						
	SC	S3	G5	2010-06-13	32	Forested wetland
Spotted Pondweed						
	T	S1	G5	1995-10-01	3	Open water (non-forested, wetland)
Tidal Marsh Estuary Ecosystem						
	<null>	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Upper Floodplain Hardwood Forest						
	<null>	S3	GNR	2010-06-23	20	Forested wetland
Upright Bindweed						
	T	S2	G4G5	2007-06-28	5	Dry barrens (partly forested, upland),Old field/roadside (non-forested, wetland or upland)
Variable Sedge						
	E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	1911-06-29	9	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	2012-08-09	1	Dry barrens (partly forested, upland),Hardwood to mixed forest

Rare and Exemplary Botanical Features within 4 miles of

Project: #98089.06, Brandy Lane Subdivision, 22 Hope Ave, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
						(forest, upland)
	E	S1	G3	2006-07-12	6	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	2014-09-24	4	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Vasey's Pondweed						
	SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Water-plantain Spearwort						
	PE	SH	G4	1903-07-29	2	Open water (non-forested, wetland)
Wild Garlic						
	SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNR Not yet ranked.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: May 23, 2017
Consultation Code: 05E1ME00-2017-SLI-0609
Event Code: 05E1ME00-2017-E-01160
Project Name: Brandy Lane

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site:
http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines:
http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2017-SLI-0609

Event Code: 05E1ME00-2017-E-01160

Project Name: Brandy Lane

Project Type: LAND - CLEARING

Project Description: 22 Hope Avenue, approximately 6.46 acres

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.72406262400402N70.28952407923211W

Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat *(Myotis septentrionalis)*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9045

Critical habitats

There are no critical habitats within your project area.

Post-Construction Stormwater Management Plan

As part of the Stormwater Permit, the applicant is required to meet the standards in Section 5 of the City of Portland Technical Manual for Stormwater Management. The General Standard in item IV. Submission Requirements states that a project must submit a Post-Construction Stormwater Inspection & Maintenance Plan per Maine DEP Chapter 500 Appendix B with reporting requirements per Chapter 32 of City of Portland Code of Ordinances, and a Stormwater Maintenance Agreement. The management plan shall comply to Chapter 32 of City of Portland Code of Ordinances as follows:

(a) 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 pones, 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) 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 record of the deficiency and corrective action(s) to the Homeowner's Association in an annual report.

(c) 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 the Homewoner's Association, 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.

STORMWATER MANAGEMENT

12.1 Overview

This Exhibit demonstrates the developer has made adequate provision for controlling Stormwater Runoff.

Att. S

12.2 Introduction

LBW, LLC has retained Gorrill Palmer to prepare plans and permit applications for a proposed residential subdivision off Hope Avenue. The site is shown on Assessor's Map 448 Lot A004, is approximately 6.46 acres in size and is located in the Conditional Zone. Figure 1 is a map showing the project location. The developer will construct the roadway, driveway aprons, utility services 5 feet beyond the right-of-way, and stormwater appurtenances. Lot development will also be by the developer of the subdivision. This stormwater permit application includes an allowance for developed area on each lot. The developer is currently seeking a subdivision permit from the City of Portland and a Stormwater Permit reviewed by the City of Portland under their delegated authority. The plans prepared by Gorrill Palmer include the infrastructure necessary to serve the project. This narrative contains the Stormwater Management measures which are appropriate for the site.

12.3 Development Description

The project is a residential subdivision consisting of 16 single family residential lots, a 950 linear foot roadway, and associated infrastructure off 22 Hope Avenue in Portland, Maine.

The project site is currently undeveloped with a landcover of brush and woods. Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site.
Abutting land uses include:

- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

The development of the site will create approximately 1.6 acres of impervious area with a total disturbed area of approximately 4.1 acres.

12.4 Surface Water

There are no lakes located on, adjacent to or downstream of the project site. The site contains several drainage ways which outlet to the Presumpscot River, which is north and east of the site.

12.5 General Topography

Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. Elevations on site range from 90' at Hope Avenue to 74' at the southwesterly property line.

12.6 Flooding

Based upon the FEMA maps, the site is located within a Zone C floodplain. Zone C is defined as "areas of minimal flooding".

Section 5.III of the Technical Manual States,

"Developments as specified under Section II Applicability in Portland must comply with the most recent version of the Maine Department of Environmental Protection (Maine DEP) Chapter 500 Rules for Stormwater Management, including but not limited to the standards for Urban Impaired Stream, Basic, General, and Flooding Standards for the suitability, design, installation, and maintenance of systems to comply with the General and Flooding Standards are provided in Volume III of the Maine Stormwater Best Management Practices Manual."

12.7 Natural Drainage Ways

The project as currently proposed includes alteration of a natural drainage way in the northern portion of the site. The drainage way is located in an area of proposed house lots. Therefore, the drainage way is to be filled to provide a level area for development. Piping systems and stormwater BMPs are designed to re-route water draining to the area.

12.8 Alterations to Land Cover

Changes in land cover will include removal of wooded areas of the project site and the addition of paved surfaces, buildings, and lawns.

12.9 Stormwater Management Control

Section 14-526.b.3.b of the Land Use Ordinance states that all development other than Level I residential shall comply with Section 5 of the Technical Manual including Basic, General, and Flooding standards as applicable to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

Section 5.II.b and Section 5.11.c of the Technical Manual states that Level II and III site plans shall be required to submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including Basic, General and Flooding standards.

The Basic Standard is presented in the Erosion and Sedimentation Control report included with this permit application. The General Standard and Flooding Standard are presented as follows:

The development will utilize 4 FocalPoints, 3 systems of Cultec chambers, 5 Grassed Underdrained Soil Filters, and 16 Roof Dripline Filters to provide water quality treatment and storage.

The Maine Department of Environmental Protection rules and regulations regarding stormwater concentrate on four stormwater management objectives:

- Effective Pollutant Removal
- Cooling
- Channel Protection
- Flood Control

These objectives may be met either directly by providing BMP's that manage and treat the runoff after it has been created, or indirectly by incorporating low impact development site planning concepts to minimize production and contamination of runoff by maximizing infiltration and evapotranspiration.

12.9.1 Current Treatment Methods

Under the General Standard, the project is required to meet the BMP Standards as the development site is not tributary to a lake watershed. The BMP Standard requires no less than 95% of the impervious area and no less than 80% of the developed area associated with a project to be controlled. The house lot development will be treated to the required 95% and 80% levels. The proposed roadway will be treated as a linear project and the project will provide treatment for runoff according to the requirements for a linear project. For a linear portion of a project the BMP Standard requires no less than 75% of the impervious area and no less than 50% of the developed area associated with a project to be controlled. The four treatment measures listed in Chapter 500 and described in Volume III of the Stormwater BMP Manual are:

- Wetponds
- Filters
- Infiltration
- Buffers

Below is a brief description of each treatment method.

<u>Wetpond with detention above the permanent pool:</u>

Wet ponds are stormwater detention impoundments that have a permanent pool of water and have the capacity to temporarily store storm water runoff while it is released at a controlled rate. They can be designed to provide flood control as well as water quality treatment. Properly sized and maintained, wet ponds can achieve high rates of removal for a number of urban pollutants, including sediment and the pollutants associated with sediment, such as trace metals, hydrocarbons, BOD, nutrients, and pesticides. The addition of an underdrained gravel trench in the bench area around the permanent pool allows for slow, extended release of stormwater without risk of blockage and effective cooling to avoid thermal impacts. This BMP treatment method is generally used to treat runoff from large drainage areas.

<u>Filters</u>

Filtration BMPs have shown to be very effective at removing a wide range of pollutants from stormwater runoff, particularly organic soil filter medias. They can be constructed in combination with infiltration practices, or with an underdrain filter, where infiltration is not feasible. Soil filters can be designed and constructed using common materials. Underdrained soil filters control stormwater quality by capturing and retaining runoff and passing it through a

filter bed comprised of a specific soil media. Various filter medias may be used, the most common including sand filters and organic filters. Once through the soil media, the runoff is collected in a perforated underdrain pipe and discharged to the receiving water. The filter and underdrain provides for slow release of smaller storm events, minimizing stream channel erosion, as well as cooling the discharge. Vegetated underdrain soil filters can also be designed to provide detention above the channel protection volume.

Infiltration

Infiltration measures control stormwater quantity and quality, by retaining all or part of runoff on-site and discharging it into the ground. Infiltration is designed to occur at the surface (as in infiltration basins and to a degree vegetated swales and buffers), or in subsurface systems (e.g., infiltration trenches and infiltrators). The basic function of an infiltration system is to remove a portion of runoff from the total runoff volume of the site and treatment comes about through absorption, straining, microbial decomposition in the soil and trapping of particulate matter within pretreatment areas. Pretreatment to remove sediments, grease and oils is required prior to discharge to the infiltration measure. Possible pretreatment measures include filter strips, swales with check dams, sand filters, sediment traps, grease and oil traps, and sediment basins.

Buffers

Buffer strips are natural, undisturbed strips of natural vegetation or planted strips of close growing vegetation adjacent to and downslope of developed areas. As stormwater runoff travels over the buffer area, vegetation slows the runoff and traps particulate pollutants. They are also effective for phosphorus removal when designed in accordance with the volume III BMP technical design manual. The buffers are preceded by a level lip spreader which allows for thermal cooling of the runoff and a distribution of the flow to a sheet flow rather than direct discharge. The effectiveness of buffers for pollutant removal depends on the flow path length and slope, the buffer berm length, the soil permeability, the size of drainage area, and the type and density of vegetation. Buffers are used to treat runoff from relatively small amounts of impervious area, as typically found in residential developments and small commercial and industrial sites. This type of BMP requires minimal maintenance and provides an aesthetically pleasing area.

12.9.2 Approach and Analysis for Quality

The proposed development will be required to meet the BMP Standard under the General Standard. Based upon review of the four recommended and approved methods for mitigating the increased frequency and duration of channel erosive flows, as required by the BMP Standards, the developer is proposing to use sixteen Roof Dripline Filters, five grassed underdrained soil filters and four FocalPoints coupled with Cultec Chamber systems to provide cooling, and storage to provide water quality control.

The sixteen Roof Dripline Filters, five grassed underdrained soil filters and four filterras coupled with Stormtech systems are proposed for treatment of runoff from the roadway and developed area of 16 residential house lots. The impervious roof area of house lots are proposed to be treated with Roof Dripline Filters due to their lot locations and limitations presented by existing topography. In addition to the limitations presented by existing topography and narrow development area, in order to provide adequate treatment for the house lots, five grassed underdrained soil filters would be required. Test pits should be conducted prior to construction to confirm the seasonal high groundwater elevation. Until test

pits have been conducted, it is assumed filters would need to be lined with an impermeable membrane since the project site consists of Type D soils. In order to meet the Land Use Ordinance and adhere to the City of Portland's Technical Manual Low Impact Design technologies were investigated. FocalPoint systems are a subsurface bioretention system with an inlet set at the curb line of the roadway. Due to the small footprint of FocalPoint systems, they were chosen to treat the linear portion of the site as well as some of the lot area. Cultech chambers sized to contain the water quality volume are connected to the FocalPoint systems in accordance with the MDEP BMP Standards.

12.9.3 Water Quality Sizing Requirements

Under BMP standards the development is required to treat the runoff from 95% of the project's impervious area and from 80% of the project's developed area for the house lot development, and for the linear portion, treatment is required for 75% of the impervious area and 50% of the developed area.

Roof Dripline Filter

Roof Dripline Filtration will be utilized for the residential units on lots. The dripline provides treatment for the tributary roof area. The reservoir layer is designed to provide storage for the 25-Year rainfall of 5.8 inches in order to meet the Flooding Standard in accordance with MDEP BMP 7.5. A 40% void ratio was used to calculate the storage. The Drip Strip Detail for the assumed house footprint is included in the detail sheets.

The individual lot treatment is shown in the following table. The house lots are assumed to contain 1,540 square feet of roof area, except for lot 7 which is assumed to contain 1,237 square feet of roof area. Due to the limited development footprint, a lawn and driveway area was calculated for each lot.

TABLE 1				
PROPOSED LOT TREATMENT				
LOT NUMBER	FRONT ROOF	REAR ROOF	DRIVEWAY	LAWN
1	Dripline Filter	Dripline Filter	450 sf /FocalPoint 2	461 sf /FocalPoint 2 1,264 sf /Soil Filter 1
2	Dripline Filter	Dripline Filter	558 sf /FocalPoint 2	2,460 sf /FocalPoint 2 4,000 sf /Soil Filter 1
3	Dripline Filter	Dripline Filter	558 sf /FocalPoint 2	4,044 sf /FocalPoint 2 480 sf /Soil Filter 1
4	Dripline Filter	Dripline Filter	432 sf /FocalPoint 2	4,350 sf /FocalPoint 2 3,824 sf /Soil Filter 2
5	Dripline Filter	Dripline Filter	198 sf /FocalPoint 2	1,605 sf /FocalPoint 2
6	Dripline Filter	Dripline Filter	2,464 sf /Soil Filter 2	2,127 sf /FocalPoint 2 2,832 sf /Soil Filter 1 2,256 sf /Soil Filter 2
7	Dripline Filter	Dripline Filter	176 sf /FocalPoint 4 400 sf /Soil Filter 3	1,492 sf /FocalPoint 4 3,344 sf /Soil Filter 3
8	Dripline Filter	Dripline Filter	360 sf /FocalPoint 4	1,477 sf /FocalPoint 4 1,952 sf/Soil Filter 3
9	Dripline Filter	Dripline Filter	414 sf /FocalPoint 4	1,503 sf /FocalPoint 4 1,928 sf /Soil Filter 4
10	Dripline Filter	Dripline Filter	414 sf /FocalPoint 4	800 sf /FocalPoint 4 2,560 sf /Soil Filter 4
11	Dripline Filter	Dripline Filter	None	2,496 sf /Soil Filter 4
12	Dripline Filter	Dripline Filter	None	2,608 sf /Soil Filter 4
13	Dripline Filter	Dripline Filter	360 sf /FocalPoint 3	629 sf /FocalPoint 3 4,368 sf /Soil Filter 5
14	Dripline Filter	Dripline Filter	360 sf /FocalPoint 3	2,354 sf /FocalPoint 3 832 sf /Soil Filter 5
15	Dripline Filter	Dripline Filter	360 sf /FocalPoint 3	3,058 sf /FocalPoint 3 265 sf /Soil Filter 5
16	Dripline Filter	Dripline Filter	1,200 sf /FocalPoint 3 400 sf /Soil Filter 5	1,568 sf /FocalPoint 3 8,835 sf /Soil Filter 5

FocalPoints

The proposed FocalPoints will treat the stormwater runoff from a portion of the roadway as shown on the Post Development Watershed Plan enclosed in Attachment A of this report. The driveway aprons, trail parking area, and turnaround are included in the linear portion of the project. It has been assumed that the roadway sideslopes will be mowed no more than twice a year, therefore they were not considered as developed area.

The FocalPoint systems have been design in accordance with the MDEP approval letter dated February 2, 2017. The sizing is in accordance with the manufacturers standard New England Testing Results. Based upon discussion with ACF representatives, the FocalPoint unit was sized based upon the tributary impervious area and an equivalent impervious area for the tributary vegetated area. The equivalent area is calculated by multiplying the vegetated area by 0.4 to

account for the MDEP treatment requirement of 0.4" of runoff from vegetated areas. The FocalPoint outflow and bypass have been directed to a Cultec chamber system designed to retain the water quality volume, based upon 1" of runoff from impervious areas and 0.4" of runoff from vegetated area. An Isolator Row has been included to allow for maintenance of the system. Outlet control structures with the weir set at the water quality elevation will detain the water quality volume. The water quality volume will be conveyed from the chambers by the underdrain outlet. Flow from larger storms will overtop the weir and be conveyed to the discharge point through the stormdrain system.

The following table presents the filterras performance.

TABLE 2		
FocalPoint 1		
	REQUIRED	PROVIDED
Impervious Area		
Roadway		7,834 sq. ft.
House lot		0 sq. ft.
Vegetated Developed Area		
Roadway		0 sq. ft.
House Lot		0 sq. ft.
Filterra Size	4 X 8	4 X 8
Water Quality Volume	653 cu. ft.	
Cultec 330XLHD	9	9

TABLE 3		
FocalPoint 2		
	REQUIRED	PROVIDED
Impervious Area		
Roadway		9,727 sq. ft.
House lot		2,196 sq. ft.
Vegetated Developed Area		
Roadway		2,238 sq. ft.
House Lot		15,047 sq. ft.
FocalPoint Size	6 X 12.5	6 X 12.5
Water Quality Volume	1570 cu. ft.	
Cultec 330XLHD	20	21

TABLE 4		
FocalPoint 3		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		5,110 sq. ft.
House lot		2,280 sq. ft.
Vegetated Developed Area		
Roadway		720 sq. ft.
House Lot		7,609 sq. ft.
FocalPoint Size	4 X 8	4 X 8
Water Quality Volume	894 cu. ft.	
Cultec 330XLHD	12	12

TABLE 5		
FocalPoint 4		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		5,090 sq. ft.
House lot		1,364 sq. ft.
Vegetated Developed Area		
Roadway		1,020 sq. ft.
House Lot		5,272 sq. ft.
FocalPoint Size	6 X 6	6 X 6
Water Quality Volume	748 cu. Ft.	
Cultec 330XLHD	10	10

Grassed Underdrained Soil Filter

Due to the project site's topography and layout, in order to provide the required 95% treatment of impervious area and 80% treatment of the developed area, Grassed Underdrained Soil Filters are proposed to reach the required treatment levels. The Grassed Underdrained Soil Filters are currently oversized for the treatment area to be conservative for the sites unique layout.

Grassed Underdrained Soil Filters are defined in Volume III, Section 7 of the Stormwater Management Best Management Practices Manual published by the Maine Department of Environmental Protection. The development will be required to provide the treatment volume for 1.0 inch times the subcatchments impervious area plus 0.4 inch times the subcatchments landscaped developed area. The surface area of the filters are required to be no less than the sum of 5% of the impervious area and 2% of the landscaped area draining to the filters. The channel protection volume is allowed to pond up to 18" deep within the filters. Runoff from larger storms will be conveyed from the filters by spillways with its crest set at the channel protection elevation. A valve will be placed on the filters underdrain to regulate the outflow through the soil media. The valve will be field adjusted to maintain the outflow time between 24 and 48 hours for the channel protection volume. Yearly maintenance of the filters will include monitoring the outflow after a rainfall event to ensure the outflow time is within the required parameters. The filter media will be a layered system consisting of 12" of sand and 6" of loamy topsoil with a transition layer of 2" of the topsoil rototilled into the sand layer. The

attached Watershed Map was utilized to determine the water surface elevation for larger storms.

The following tables present the Grassed Underdrained Soil Filter information:

TABLE 6		
GRASSED UNDERDRAINED SOIL FILTER 1		
	REQUIRED	PROVIDED
Impervious Area		0 sq. ft.
Developed Area (non-impervious)		8,576 sq. ft.
Treatment Volume	286 cu. ft.	305 cu. ft.
Filter Surface Area	172 sq. ft.	305 sq. ft.
Cell Base Elevation		86 ft.
Overflow Outlet Elevation		87.5 ft.

TABLE 7		
GRASSED UNDERDRAINED SOIL FILTER 2		
	REQUIRED	PROVIDED
Impervious Area		2,464 sq. ft.
Developed Area (non-impervious)		6,080 sq. ft.
Treatment Volume	408 cu. ft.	442 cu. ft.
Filter Surface Area	245 sq. ft.	442 sq. ft.
Cell Base Elevation		88 ft.
Overflow Outlet Elevation		89.5 ft.

TABLE 8		
GRASSED UNDERDRAINED SOIL FILTER 3		
	REQUIRED	PROVIDED
Impervious Area		400 sq. ft.
Developed Area (non-impervious)		5296 sq. ft.
Treatment Volume	210 cu. ft.	354 cu. ft.
Filter Surface Area	126 sq. ft.	354 sq. ft.
Cell Base Elevation		82 ft.
Overflow Outlet Elevation		83.5 ft.

TABLE 9		
GRASSED UNDERDRAINED SOIL FILTER 4		
	REQUIRED	PROVIDED
Impervious Area		0 sq. ft.
Developed Area (non-impervious)		9,592 sq. ft.
Treatment Volume	320 cu. ft.	440 cu. ft.
Filter Surface Area	191 sq. ft.	440 sq. ft.
Cell Base Elevation		79 ft.
Overflow Outlet Elevation		80.5 ft.

TABLE 10		
GRASSED UNDERDRAINED SOIL FILTER 5		
	REQUIRED	PROVIDED
Impervious Area		400 sq. ft.
Developed Area (non-impervious)		14,035 sq. ft.
Treatment Volume	502 cu. ft.	677 cu. ft.
Filter Surface Area	301 sq. ft.	677 sq. ft.
Cell Base Elevation		80 ft.
Overflow Outlet Elevation		81.5 ft.

12.9.4 Conclusion – Overall Treatment

The following table summarizes the proposed treatment for the linear portion of the project. The roadway, sidewalk, turnaround, trail parking, and driveway aprons are the impervious areas associated with the linear portion of the project. The esplanade is the landscaped area associated with the linear portion of the project.

TABLE 11 – LINEAR PORTION		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by FocalPoints (sf)	27,761	31,739
Area treated by Grassed Underdrained Soil Filters (sf)	0	0
Total Area Treated (sf)	27,761	31,739
Area Untreated (sf)	8,189	8,855
Total Area of Project (sf)	35,950	40,594
Percent Treated	77.2%	78.2%
Percent Required	75%	50%

The following table summarizes the proposed treatment for the house lot portion of the project. The house lots are assumed to contain 1,540 square feet of roof area except for lot 7 which is assumed to contain 1,237 square feet of roof area. Due to the limited development footprint, a lawn and driveway area was calculated for each lot.

TABLE 12 – HOUSE LOTS		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by FocalPoints (sf)	5,840	33,768
Area treated by Grassed Underdrained Soil Filters (sf)	3,264	47,108
Roof Dripline Filters (sf)	24,337	36,657
Total Area Treated (sf)	33,441	117,533
Area Untreated (sf)	660	21,331
Total Area of Project (sf)	34,101	138,864
Percent Treated	98%	85%
Percent Required	95%	80%

The proposed development of the residential subdivision will utilize four FocalPoints, five Grassed Underdrained Soil Filters and twelve Roof Dripline Filters to mitigate the development as required by the BMP Standards. The development is required to control runoff from no less than 95% of the impervious area and no less than 80% of the developed area and, for the linear portion of the project, the development is required to control runoff from no less than 75% of the impervious area and no less than 50% of the developed area. As proposed, the development is controlling approximately 95% of the created impervious area, and approximately 82% of the developed area for the house lots, and is controlling approximately 75.2% of the created impervious area, and approximately 76.4% of the developed area for the linear portion, which meets or exceeds the required control.

A Water Quality Map is included in attachment A.

12.9.5 Water Quantity Sizing Requirements

The stormwater management study provides an analysis of predevelopment and post development stormwater runoff rates.

The Natural Resource Conservation Service Medium Intensity Soil Survey was used to identify onsite and offsite soils. The project site is comprised of hydrologic soil types B, C, and D. An excerpt from the Medium Intensity Soil Survey follows this page.

The SCS TR-20 methodology, using the HydroCad program, was employed by Gorrill Palmer to analyze predevelopment and post-development conditions. A 24-hour, SCS Type III storm distribution for the two, ten and twenty five year storm frequencies was used. The corresponding rainfall amounts for these storms are 3.1", 4.6" and 5.8" respectively.

Land use cover, delineations of watershed hydraulic flow paths, and hydrologic soils data were obtained using the following data:

1. Portland 7.5 Minute Quadrangle Maps prepared by the U.S.G.S.
2. On-site topographic survey with 2' contour intervals from an existing conditions plan of the site.

3. Aerial Photography of the project site, obtained from the Maine Office of GIS.
4. Natural Resource Conservation Service Medium Intensity Soil Survey
5. Field Reconnaissance.

Predevelopment Conditions

The drainage study analyzes the watershed in the predevelopment condition as depicted on the Predevelopment Watershed Map.

The predevelopment was analyzed as two subcatchments and two points of interest (POI) were analyzed. POI 1 is the location in a swale at the lot's eastern boundary and the POI 2 is the location in a swale at the lots northern boundary.

Subcatchment 1S consists of the drainage area to POI 1. Most of Subcatchment 1S is off site.

Subcatchment 2S consists of the drainage area to POI 2.

A watershed map for the predevelopment conditions is attached to this section as drawing number W1. The predevelopment conditions were analyzed using HydroCAD modeling. Table 13 presents the peak flow rates at the point of interest in the predevelopment condition.

Table 13 - Predevelopment Peak Flow Rates (cfs)			
Point of Interest	Peak Flow (cfs)		
	2 YR	10 YR	25 YR
	Pre	Pre	Pre
POI # 1	18.6	42.9	64.4
POI # 2	9.1	19.8	29.2

Copies of the calculations for the predevelopment conditions are included in Attachment B.

Post Development Conditions

Analysis for the post development condition consists of determining post development peak flows and limiting the post development flows to predevelopment levels. The Post Development was analyzed as six subcatchments and two points of interest (POI) were analyzed. POI 1 is the location in a swale at the lot's eastern boundary and the POI 2 is the location in a swale at the lot's northern boundary.

Subcatchment 1S is composed of offsite and onsite area draining to the culvert shown on the plan set.

Subcatchment 7S is the area tributary to the Stormtech Subsurface Chamber Systems.

Subcatchment 9S is the onsite area tributary to POI 1.

These subcatchments are routed to the existing culvert and swale, POI 1.

Subcatchment 2S is composed of offsite and onsite area tributary to proposed stormdrain system.

Subcatchment 6S is the onsite area tributary to POI 2.

Subcatchment 11S is the area tributary to the Stormtech Subsurface Chamber Systems.

These subcatchments are routed to the proposed stormdrain system and swale, POI 2.

The runoff from the roof areas of twelve lot's is stored within the drip strips in accordance with MDEP BMP 7.5. Since the Flooding Standard has been met by storing the 25-Year Rainfall, the twelve roof areas have been removed from the post development HydroCAD model, due to the many assumptions required to route twelve small areas through the drip strip storage and outlets. The post development watershed area is less than the predevelopment area due to the removal of the roofs.

A watershed map for the post development conditions is attached to this section as drawing number W2. Attachment B includes the TR-20 calculations.

The runoff from subcatchments 7S and 11S was routed through the Cultec chambers which are part of the FocalPoint water quality system. The chambers provide some attenuation of the tributary runoff.

A comparison of Pre and Post Development peak flows is presented in the following table:

Table 15 - Post Development Peak Flow Rates (cfs)						
Point of Interest	Peak Flow (cfs)					
	2 YR		10 YR		25 YR	
	Pre	Post	Pre	Post	Pre	Post
POI # 1	18.6	17.5	42.9	43.3	64.4	64.6
POI # 2	9.1	8.9	19.9	19.5	29.2	27.8

As shown in the table above, the Post Development peak flow for the 25-Year storm is less than the peak flow from the Pre Development storm for POI 2.

The Post Development peak flow for the 10-Year storm at POI 2 is less than the Pre Development peak flow.

The Post Development peak flow for the 2-Year storm at POI 1 and 2 is less than the Pre Development peak flow. The following table presents the increase:

Table 16 – Post Development Peak Flow Increases						
Point of Interest	Peak Flow (cfs)					
	2-Year Storm		10-Year Storm		25-Year Storm	
	Increase	% of Pre Develop.	Increase	% of Pre Develop.	Increase	% of Pre Develop.
POI # 1	-	-	0.4	0.9	0.2	0.3
POI # 2	-	-	-	-	-	-

Due to the proximity of the Presumpscot River to the project, these slight increases are considered to be insignificant.

12.9.6 Conclusion – Overall Water Quantity

As a result of attenuation within the proposed Cultec chambers, and the storage of the 25-Year Rainfall within drip strips at 12 house lot's, the peak Post Development runoff has been reduced to be at or below Pre Development levels for the 25-Year, 10-Year and 2-Year storms at POI 2. The slight increase in peak flow for the 25-Year and 10-Year storms at POI 1 is considered insignificant due to the location of the parcel just upstream from the Presumpscot River.

12.10 Construction BMPs

Additional water quality treatment will be provided during construction by best management practices (BMP). Standard BMPs to be employed include siltation fencing around the downslope construction perimeter, riprap, stabilized construction entrances, and erosion control fabrics applied to slopes prior to revegetation.

12.11 Maintenance of Facilities

See the Erosion and Sedimentation Control report for this project.

12.12 Conclusion

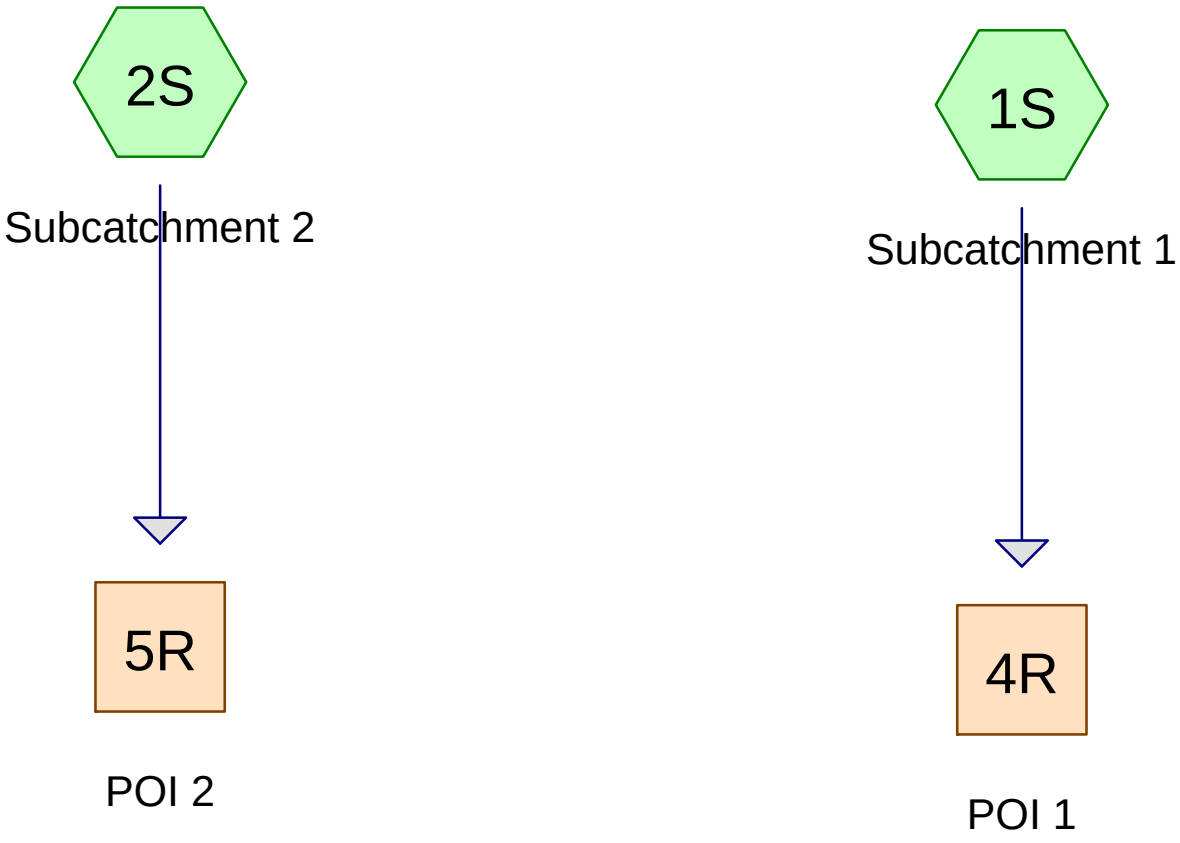
Gorrill Palmer has been retained by LBW, LLC. to prepare plans and permit applications for a proposed residential subdivision, located off Hope Avenue in Portland, Maine. The proposed development will include 16 residential lots, an approximately 950 linear foot of roadway and associated infrastructure. As a result, the proposed development will create more than 1 acre of impervious area but less than 3 acres of impervious area, and thereby require a Stormwater Law Permit Application. Based upon the attached calculations, the proposed development meets or exceeds the requirement of the BMP Standard through the use of FocalPoints, Drip Strips, and Grassed Underdrained Soil Filters. The project also meets the flooding standard due to attenuation of runoff within the BMP treatment facilities.

12.13 Attachments

Attached to this section are the following items:

Attachment A – Watershed Map, Water Quality Map
Attachment B – TR-20 Calculations
Attachment C – FocalPoint sizing calculations
Attachment D – Correspondence of manufacturers review and approval of proposed FocalPoint design

ATTACHMENT B



Subcat Reach Pond Link

Routing Diagram for Pre Development
Prepared by Gorrill Palmer, Printed 1/5/2018
HydroCAD® 10.00-16 s/n 01265 © 2015 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>0.83"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=18.61 cfs 1.603 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>0.93"
Flow Length=800' Tc=15.6 min CN=75 Runoff=9.05 cfs 0.838 af

Reach 4R: POI 1 Inflow=18.61 cfs 1.603 af
Outflow=18.61 cfs 1.603 af

Reach 5R: POI 2 Inflow=9.05 cfs 0.838 af
Outflow=9.05 cfs 0.838 af

Total Runoff Area = 33.864 ac Runoff Volume = 2.441 af Average Runoff Depth = 0.86"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>1.81"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=42.89 cfs 3.493 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>1.96"
Flow Length=800' Tc=15.6 min CN=75 Runoff=19.79 cfs 1.763 af

Reach 4R: POI 1 Inflow=42.89 cfs 3.493 af
Outflow=42.89 cfs 3.493 af

Reach 5R: POI 2 Inflow=19.79 cfs 1.763 af
Outflow=19.79 cfs 1.763 af

Total Runoff Area = 33.864 ac Runoff Volume = 5.255 af Average Runoff Depth = 1.86"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>2.71"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=64.44 cfs 5.215 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>2.89"
Flow Length=800' Tc=15.6 min CN=75 Runoff=29.18 cfs 2.593 af

Reach 4R: POI 1 Inflow=64.44 cfs 5.215 af
Outflow=64.44 cfs 5.215 af

Reach 5R: POI 2 Inflow=29.18 cfs 2.593 af
Outflow=29.18 cfs 2.593 af

Total Runoff Area = 33.864 ac Runoff Volume = 7.808 af Average Runoff Depth = 2.77"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Summary for Subcatchment 1S: Subcatchment 1

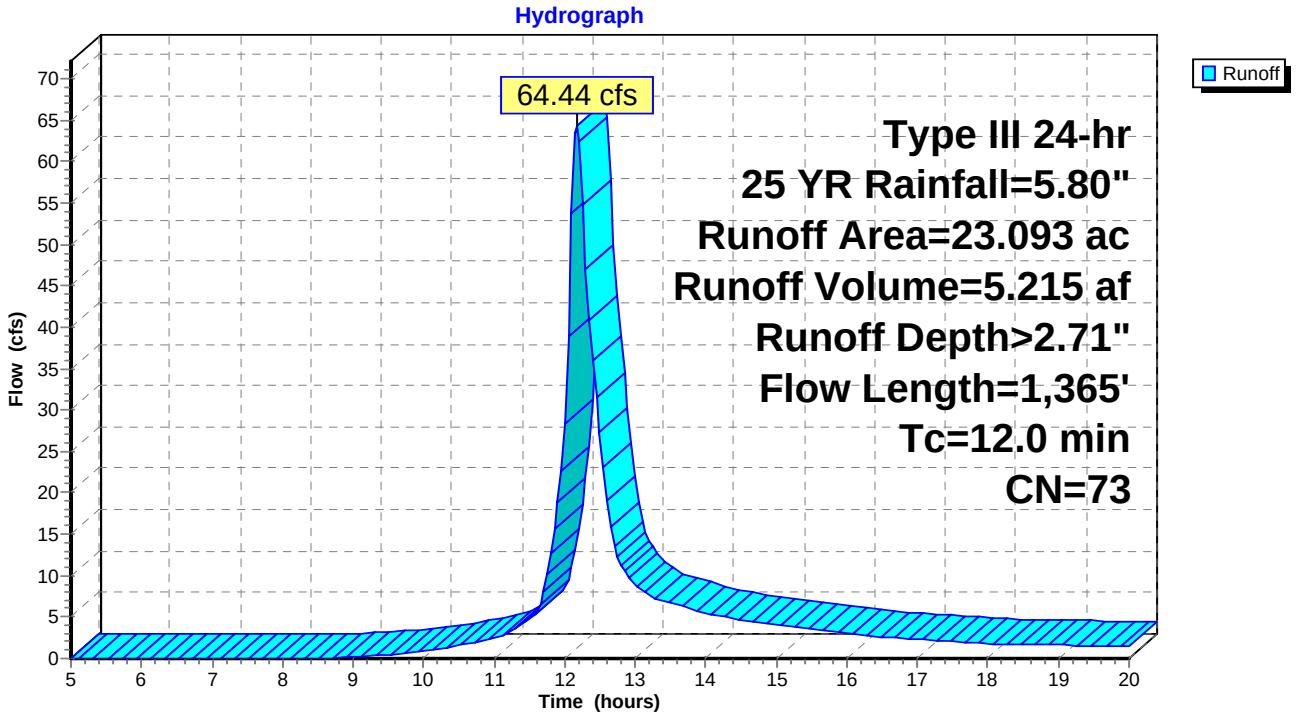
Runoff = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
10.530	61	1/4 acre lots, 38% imp, HSG A
0.979	81	1/3 acre lots, 30% imp, HSG C
9.244	86	1/3 acre lots, 30% imp, HSG D
0.718	70	Woods, Good, HSG C
1.277	77	Woods, Good, HSG D
0.345	72	1/3 acre lots, 30% imp, HSG B
23.093	73	Weighted Average
15.921		68.94% Pervious Area
7.172		31.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	150	0.0800	0.32		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
3.0	700	0.0680	3.91		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.3	100	0.0050	5.91	29.00	**Pipe Channel, C-D** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.013 Corrugated PE, smooth interior
0.3	280	0.0570	16.89	101.31	**Channel Flow, D-E** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
0.3	55	0.0010	2.86	14.05	**Pipe Channel, E-F** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.012 Concrete pipe, finished
0.2	80	0.0100	7.07	42.43	**Channel Flow, F-G** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
12.0	1,365	Total			

Subcatchment 1S: Subcatchment 1



Summary for Subcatchment 2S: Subcatchment 2

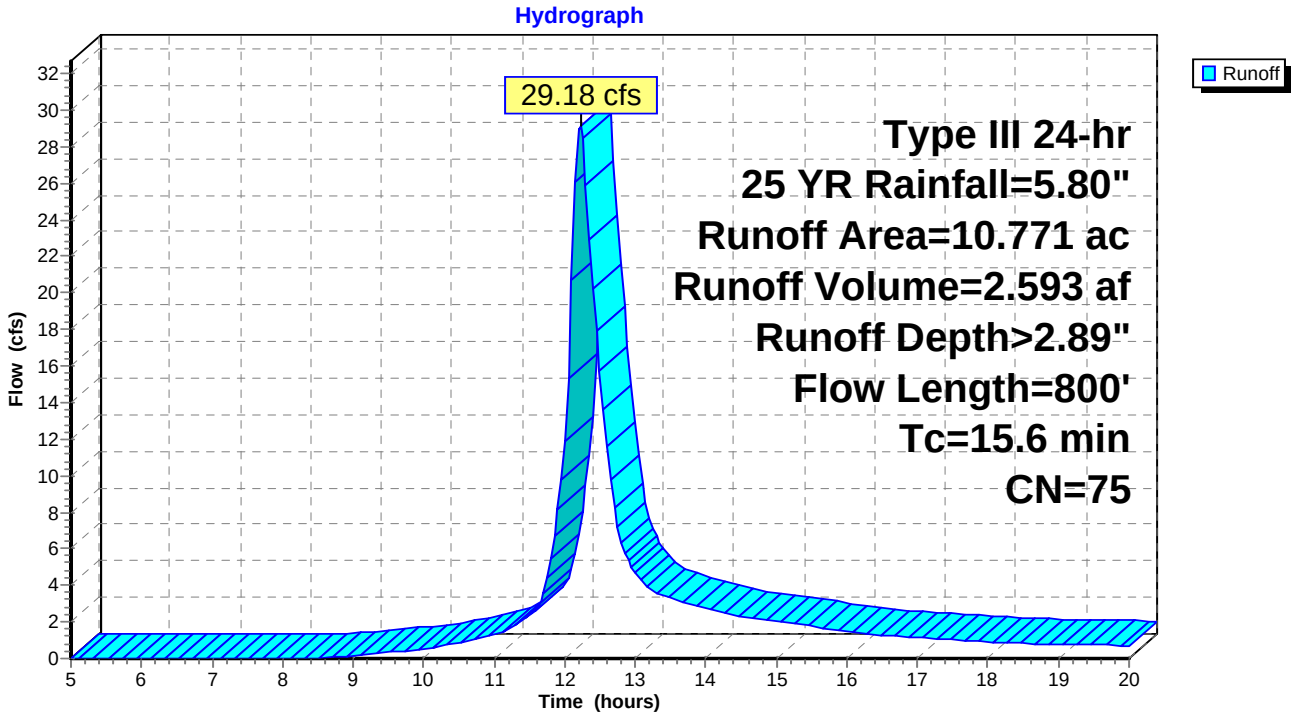
Runoff = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
3.212	61	1/4 acre lots, 38% imp, HSG A
0.192	80	1/2 acre lots, 25% imp, HSG C
2.607	87	1/4 acre lots, 38% imp, HSG D
0.157	70	Woods, Good, HSG C
4.603	77	Woods, Good, HSG D
10.771	75	Weighted Average
8.512		79.02% Pervious Area
2.259		20.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	150	0.0600	0.28		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
6.4	370	0.0375	0.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	280	0.0400	14.14	84.87	**Channel Flow, C-D** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
15.6	800	Total			

Subcatchment 2S: Subcatchment 2

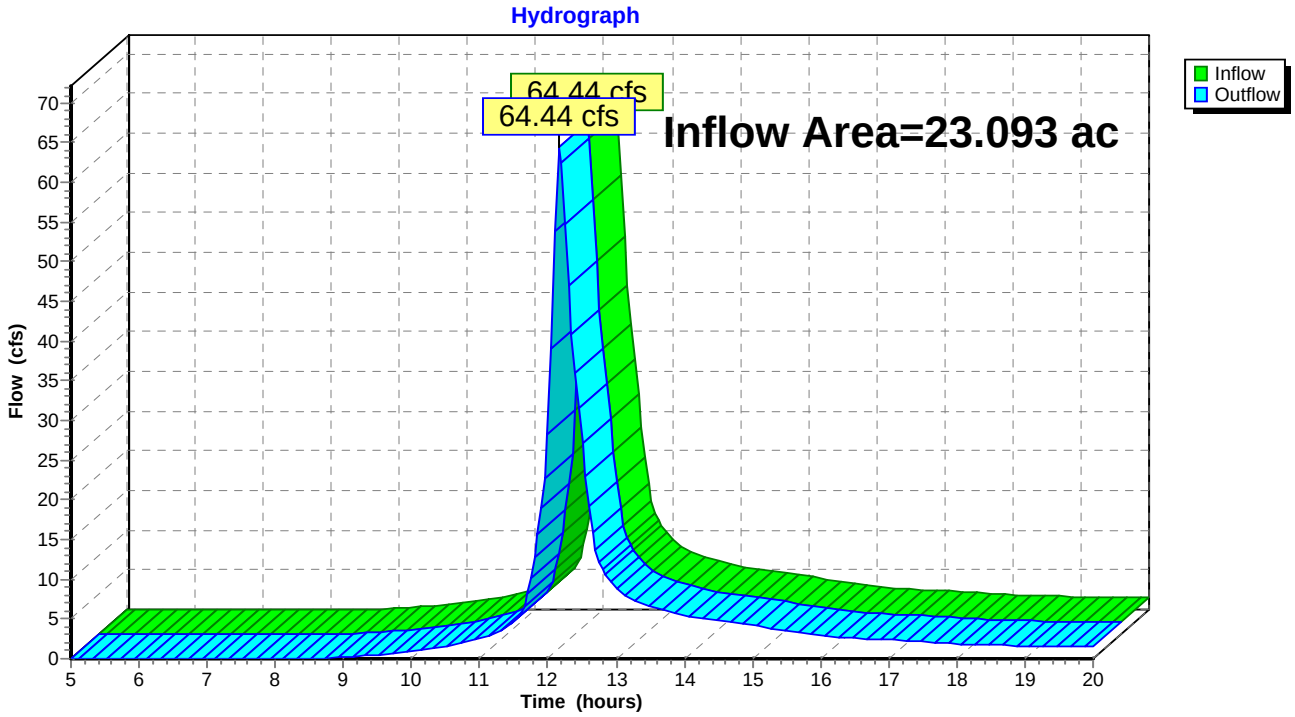


Summary for Reach 4R: POI 1

Inflow Area = 23.093 ac, 31.06% Impervious, Inflow Depth > 2.71" for 25 YR event
Inflow = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af
Outflow = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POI 1

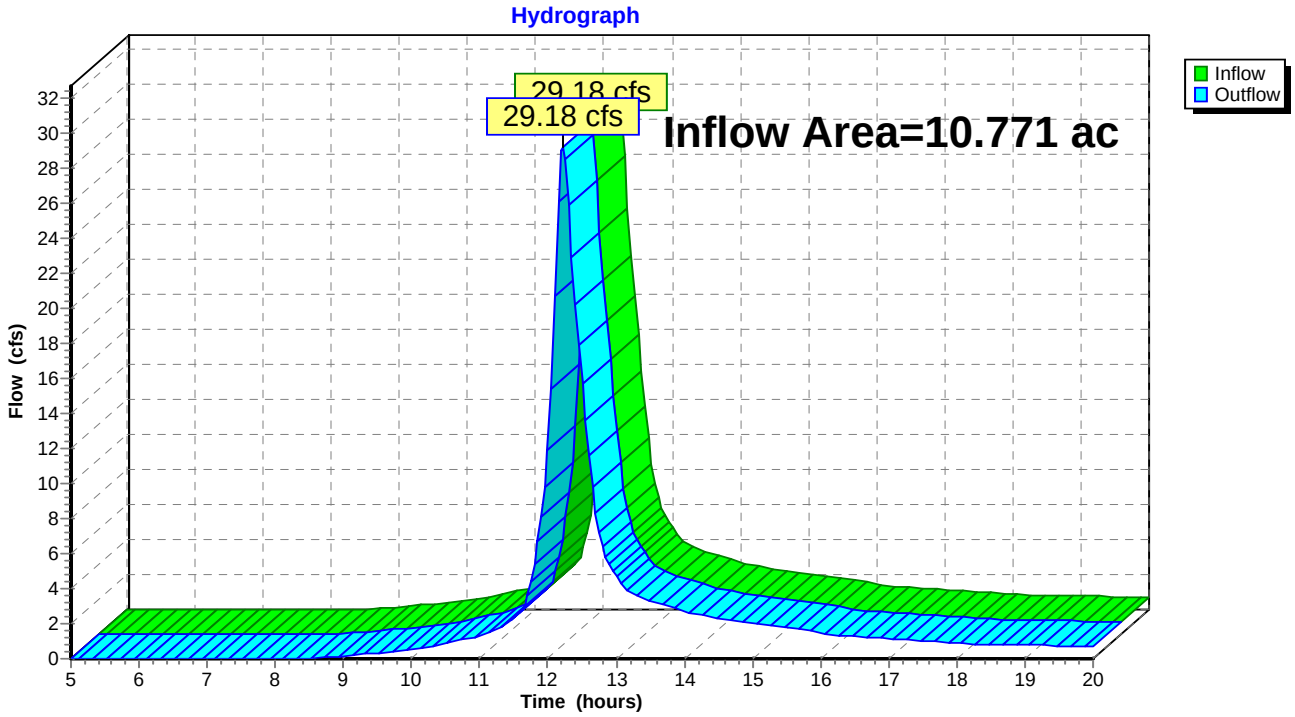


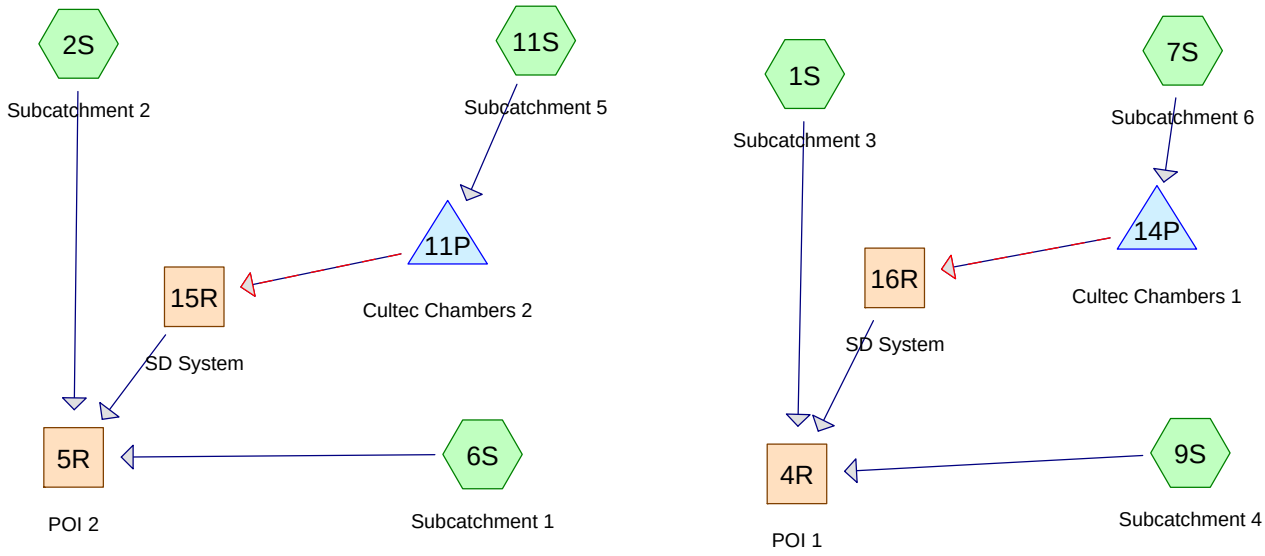
Summary for Reach 5R: POI 2

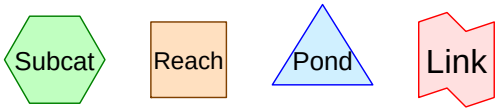
Inflow Area = 10.771 ac, 20.98% Impervious, Inflow Depth > 2.89" for 25 YR event
Inflow = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af
Outflow = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POI 2







Routing Diagram for Post Development FocalPoint
Prepared by Gorrill Palmer, Printed 1/5/2018
HydroCAD® 10.00-16 s/n 01265 © 2015 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>0.83"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=17.33 cfs 1.486 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>0.93"
Flow Length=855' Tc=15.8 min CN=75 Runoff=6.00 cfs 0.558 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>1.21"
Flow Length=610' Tc=25.6 min CN=80 Runoff=2.53 cfs 0.277 af

Subcatchment 7S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>1.95"
Flow Length=365' Tc=12.8 min CN=90 Runoff=1.87 cfs 0.157 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>0.78"
Flow Length=240' Tc=30.9 min CN=72 Runoff=0.29 cfs 0.037 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>2.12"
Flow Length=250' Tc=21.5 min CN=92 Runoff=1.20 cfs 0.125 af

Reach 4R: POI 1 Inflow=17.50 cfs 1.619 af
Outflow=17.50 cfs 1.619 af

Reach 5R: POI 2 Inflow=8.89 cfs 0.917 af
Outflow=8.89 cfs 0.917 af

Reach 15R: SD System Avg. Flow Depth=0.25' Max Vel=8.05 fps Inflow=1.85 cfs 0.082 af
24.0" Round Pipe n=0.013 L=26.0' S=0.0596 '/' Capacity=55.24 cfs Outflow=1.76 cfs 0.082 af

Reach 16R: SD System Avg. Flow Depth=0.31' Max Vel=7.04 fps Inflow=1.34 cfs 0.096 af
12.0" Round Pipe n=0.013 L=220.0' S=0.0384 '/' Capacity=6.98 cfs Outflow=1.38 cfs 0.096 af

Pond 11P: Cultec Chambers 2 Peak Elev=75.42' Storage=0.043 af Inflow=1.20 cfs 0.125 af
Primary=0.03 cfs 0.030 af Secondary=1.82 cfs 0.052 af Outflow=1.85 cfs 0.082 af

Pond 14P: Cultec Chambers 1 Peak Elev=83.85' Storage=0.058 af Inflow=1.87 cfs 0.157 af
Primary=0.03 cfs 0.029 af Secondary=1.31 cfs 0.067 af Outflow=1.34 cfs 0.096 af

Total Runoff Area = 33.556 ac Runoff Volume = 2.639 af Average Runoff Depth = 0.94"
66.92% Pervious = 22.457 ac 33.08% Impervious = 11.099 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>1.82"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=40.00 cfs 3.238 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>1.96"
Flow Length=855' Tc=15.8 min CN=75 Runoff=13.10 cfs 1.173 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>2.36"
Flow Length=610' Tc=25.6 min CN=80 Runoff=4.95 cfs 0.538 af

Subcatchment 7S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>3.29"
Flow Length=365' Tc=12.8 min CN=90 Runoff=3.08 cfs 0.266 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>1.73"
Flow Length=240' Tc=30.9 min CN=72 Runoff=0.69 cfs 0.082 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>3.48"
Flow Length=250' Tc=21.5 min CN=92 Runoff=1.93 cfs 0.206 af

Reach 4R: POI 1 Inflow=43.30 cfs 3.525 af
Outflow=43.30 cfs 3.525 af

Reach 5R: POI 2 Inflow=19.52 cfs 1.874 af
Outflow=19.52 cfs 1.874 af

Reach 15R: SD System Avg. Flow Depth=0.27' Max Vel=8.60 fps Inflow=2.27 cfs 0.163 af
24.0" Round Pipe n=0.013 L=26.0' S=0.0596 '/' Capacity=55.24 cfs Outflow=2.22 cfs 0.163 af

Reach 16R: SD System Avg. Flow Depth=0.47' Max Vel=8.67 fps Inflow=3.13 cfs 0.205 af
12.0" Round Pipe n=0.013 L=220.0' S=0.0384 '/' Capacity=6.98 cfs Outflow=3.12 cfs 0.205 af

Pond 11P: Cultec Chambers 2 Peak Elev=75.45' Storage=0.043 af Inflow=1.93 cfs 0.206 af
Primary=0.03 cfs 0.034 af Secondary=2.24 cfs 0.129 af Outflow=2.27 cfs 0.163 af

Pond 14P: Cultec Chambers 1 Peak Elev=83.99' Storage=0.058 af Inflow=3.08 cfs 0.266 af
Primary=0.03 cfs 0.033 af Secondary=3.10 cfs 0.172 af Outflow=3.13 cfs 0.205 af

Total Runoff Area = 33.556 ac Runoff Volume = 5.502 af Average Runoff Depth = 1.97"
66.92% Pervious = 22.457 ac 33.08% Impervious = 11.099 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>2.71"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=60.09 cfs 4.834 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>2.89"
Flow Length=855' Tc=15.8 min CN=75 Runoff=19.32 cfs 1.726 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>3.35"
Flow Length=610' Tc=25.6 min CN=80 Runoff=6.99 cfs 0.765 af

Subcatchment 7S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>4.39"
Flow Length=365' Tc=12.8 min CN=90 Runoff=4.04 cfs 0.354 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>2.60"
Flow Length=240' Tc=30.9 min CN=72 Runoff=1.05 cfs 0.123 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>4.59"
Flow Length=250' Tc=21.5 min CN=92 Runoff=2.51 cfs 0.271 af

Reach 4R: POI 1 Inflow=64.64 cfs 5.253 af
Outflow=64.64 cfs 5.253 af

Reach 5R: POI 2 Inflow=27.80 cfs 2.719 af
Outflow=27.80 cfs 2.719 af

Reach 15R: SD System Avg. Flow Depth=0.30' Max Vel=8.99 fps Inflow=2.74 cfs 0.228 af
24.0" Round Pipe n=0.013 L=26.0' S=0.0596 '/' Capacity=55.24 cfs Outflow=2.59 cfs 0.228 af

Reach 16R: SD System Avg. Flow Depth=0.55' Max Vel=9.17 fps Inflow=4.04 cfs 0.296 af
12.0" Round Pipe n=0.013 L=220.0' S=0.0384 '/' Capacity=6.98 cfs Outflow=3.98 cfs 0.296 af

Pond 11P: Cultec Chambers 2 Peak Elev=75.49' Storage=0.043 af Inflow=2.51 cfs 0.271 af
Primary=0.03 cfs 0.036 af Secondary=2.71 cfs 0.193 af Outflow=2.74 cfs 0.228 af

Pond 14P: Cultec Chambers 1 Peak Elev=84.05' Storage=0.058 af Inflow=4.04 cfs 0.354 af
Primary=0.03 cfs 0.035 af Secondary=4.01 cfs 0.261 af Outflow=4.04 cfs 0.296 af

Total Runoff Area = 33.556 ac Runoff Volume = 8.073 af Average Runoff Depth = 2.89"
66.92% Pervious = 22.457 ac 33.08% Impervious = 11.099 ac

Summary for Subcatchment 1S: Subcatchment 3

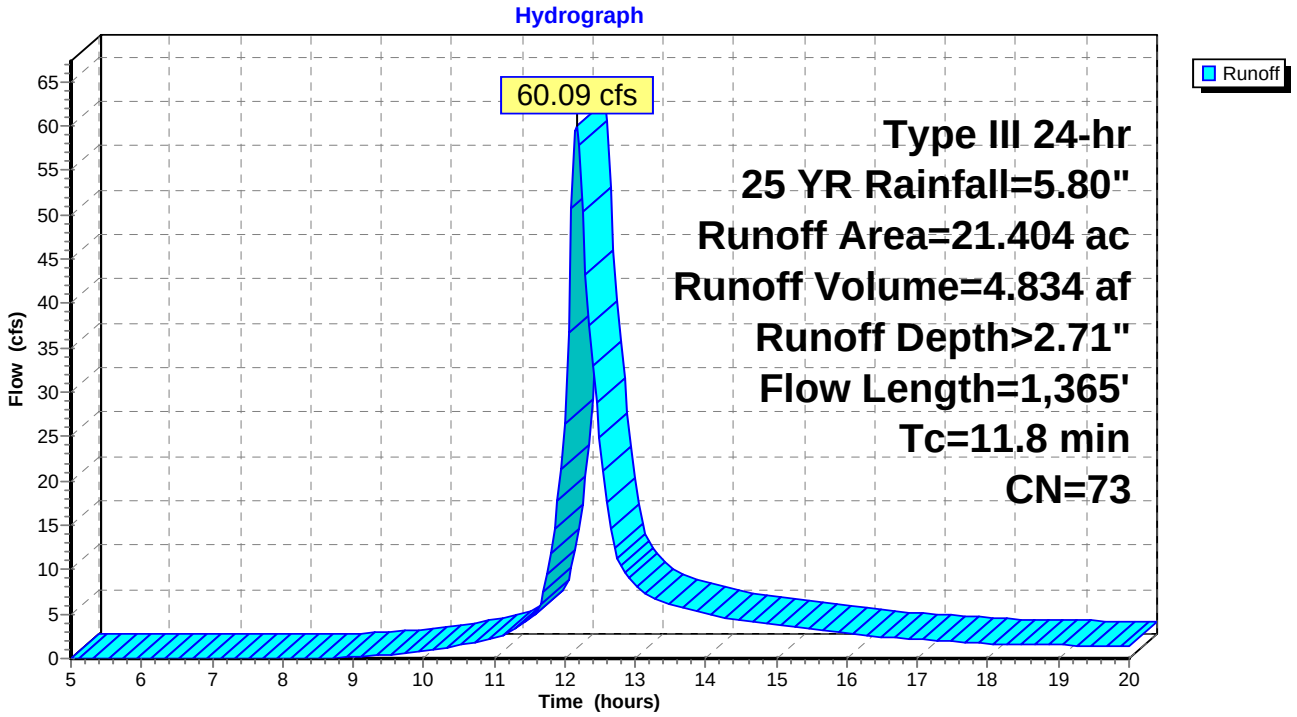
Runoff = 60.09 cfs @ 12.17 hrs, Volume= 4.834 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
10.530	61	1/4 acre lots, 38% imp, HSG A
0.979	81	1/3 acre lots, 30% imp, HSG C
9.244	86	1/3 acre lots, 30% imp, HSG D
0.345	72	1/3 acre lots, 30% imp, HSG B
0.125	70	Woods, Good, HSG C
0.181	80	>75% Grass cover, Good, HSG D
21.404	73	Weighted Average
14.232		66.49% Pervious Area
7.172		33.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	150	0.0800	0.32		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
3.0	700	0.0680	3.91		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.3	100	0.0050	5.91	29.00	**Pipe Channel, C-D** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.013 Corrugated PE, smooth interior
0.2	243	0.0570	16.89	101.31	**Channel Flow, D-E** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
0.2	92	0.0100	9.44	66.70	**Pipe Channel, E-F** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013 Concrete pipe, bends & connections
0.2	80	0.0150	8.66	51.97	**Channel Flow, F-G** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
11.8	1,365	Total			

Subcatchment 1S: Subcatchment 3



Summary for Subcatchment 2S: Subcatchment 2

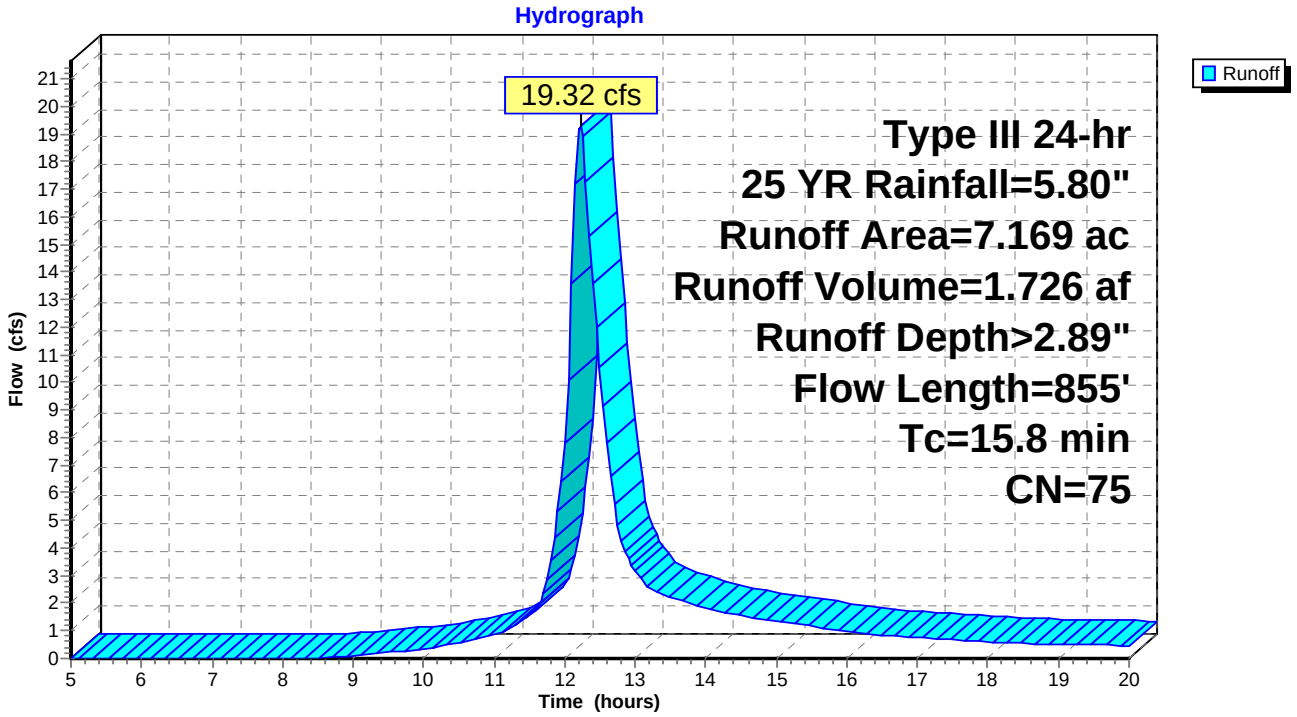
Runoff = 19.32 cfs @ 12.22 hrs, Volume= 1.726 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
3.212	61	1/4 acre lots, 38% imp, HSG A
0.192	80	1/2 acre lots, 25% imp, HSG C
2.607	87	1/4 acre lots, 38% imp, HSG D
0.141	83	1/4 acre lots, 38% imp, HSG C
1.017	86	1/3 acre lots, 30% imp, HSG D
7.169	75	Weighted Average
4.551		63.48% Pervious Area
2.618		36.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	150	0.0600	0.28		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
6.3	340	0.0325	0.90		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.6	365	0.0204	10.28	32.31	**Pipe Channel, C-D** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
15.8	855	Total			

Subcatchment 2S: Subcatchment 2



Summary for Subcatchment 6S: Subcatchment 1

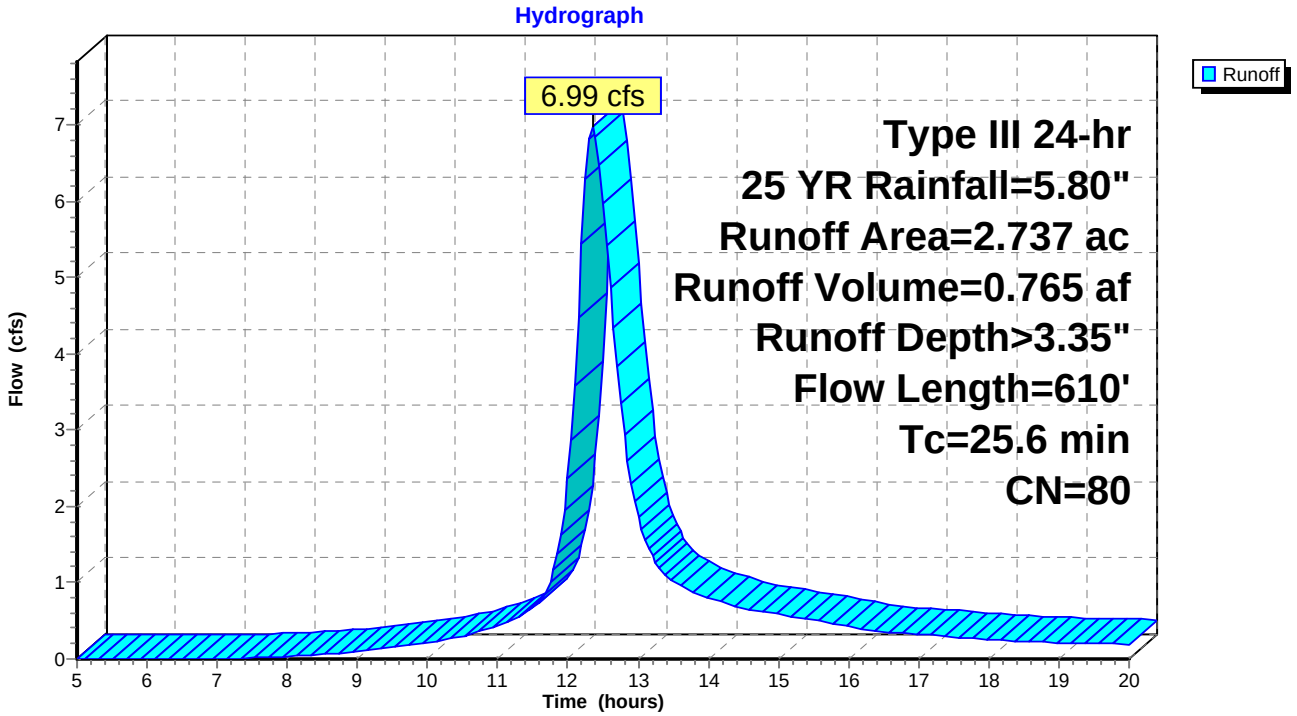
Runoff = 6.99 cfs @ 12.35 hrs, Volume= 0.765 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
1.954	77	Woods, Good, HSG D
0.698	86	1/3 acre lots, 30% imp, HSG D
0.085	98	Paved roads w/curbs & sewers
2.737	80	Weighted Average
2.443		89.24% Pervious Area
0.294		10.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0310	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
6.6	140	0.0050	0.35		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.7	370	0.0200	8.41	14.86	**Pipe Channel, C-D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
25.6	610	Total			

Subcatchment 6S: Subcatchment 1



Summary for Subcatchment 7S: Subcatchment 6

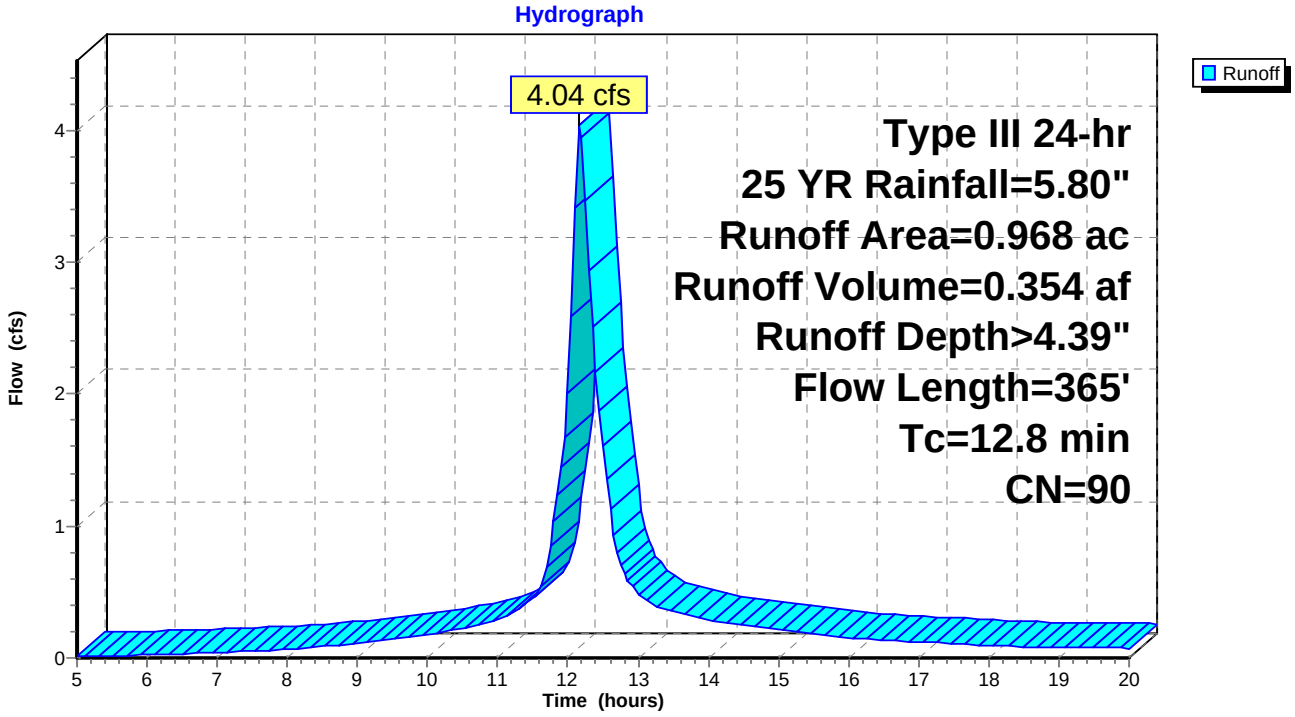
Runoff = 4.04 cfs @ 12.17 hrs, Volume= 0.354 af, Depth> 4.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.543	98	Paved roads w/curbs & sewers
0.425	80	>75% Grass cover, Good, HSG D
0.968	90	Weighted Average
0.425		43.90% Pervious Area
0.543		56.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	150	0.0350	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	15	0.0050	1.06		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
12.8	365	Total			

Subcatchment 7S: Subcatchment 6



Summary for Subcatchment 9S: Subcatchment 4

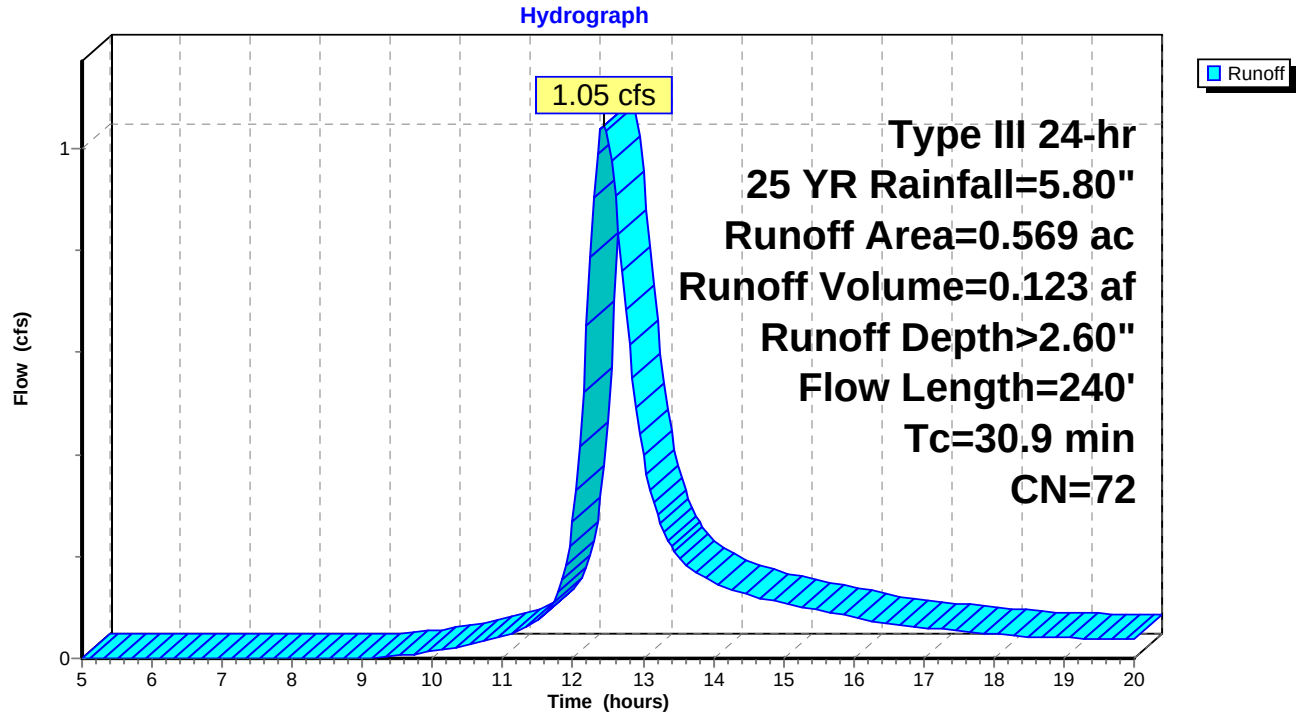
Runoff = 1.05 cfs @ 12.44 hrs, Volume= 0.123 af, Depth> 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.379	70	Woods, Good, HSG C
0.190	77	Woods, Good, HSG D
0.569	72	Weighted Average
0.569		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	150	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
0.7	90	0.1800	2.12		**Shallow Concentrated Flow, B-G** Woodland Kv= 5.0 fps
30.9	240	Total			

Subcatchment 9S: Subcatchment 4



Summary for Subcatchment 11S: Subcatchment 5

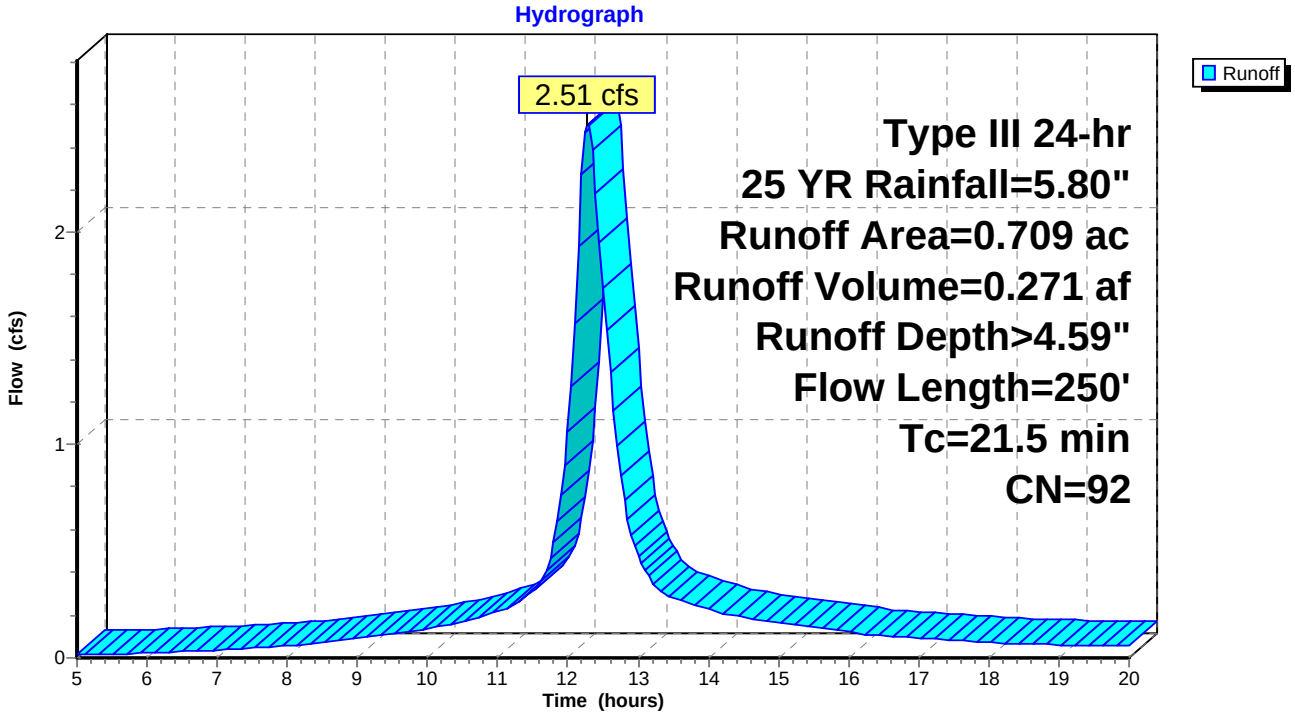
Runoff = 2.51 cfs @ 12.28 hrs, Volume= 0.271 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.472	98	Paved roads w/curbs & sewers
0.237	80	>75% Grass cover, Good, HSG D
0.709	92	Weighted Average
0.237		33.43% Pervious Area
0.472		66.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	125	0.0125	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
0.6	125	0.0325	3.66		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
21.5	250	Total			

Subcatchment 11S: Subcatchment 5

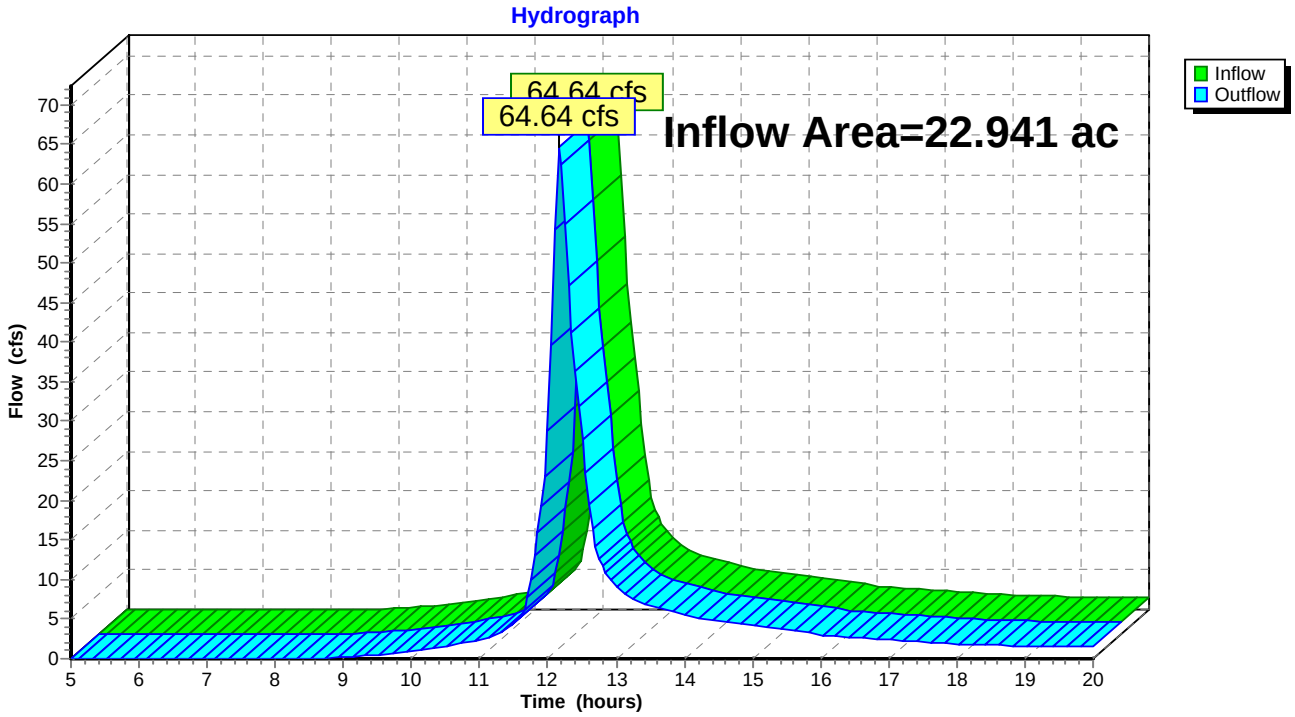


Summary for Reach 4R: POI 1

Inflow Area = 22.941 ac, 33.63% Impervious, Inflow Depth > 2.75" for 25 YR event
Inflow = 64.64 cfs @ 12.17 hrs, Volume= 5.253 af
Outflow = 64.64 cfs @ 12.17 hrs, Volume= 5.253 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POI 1

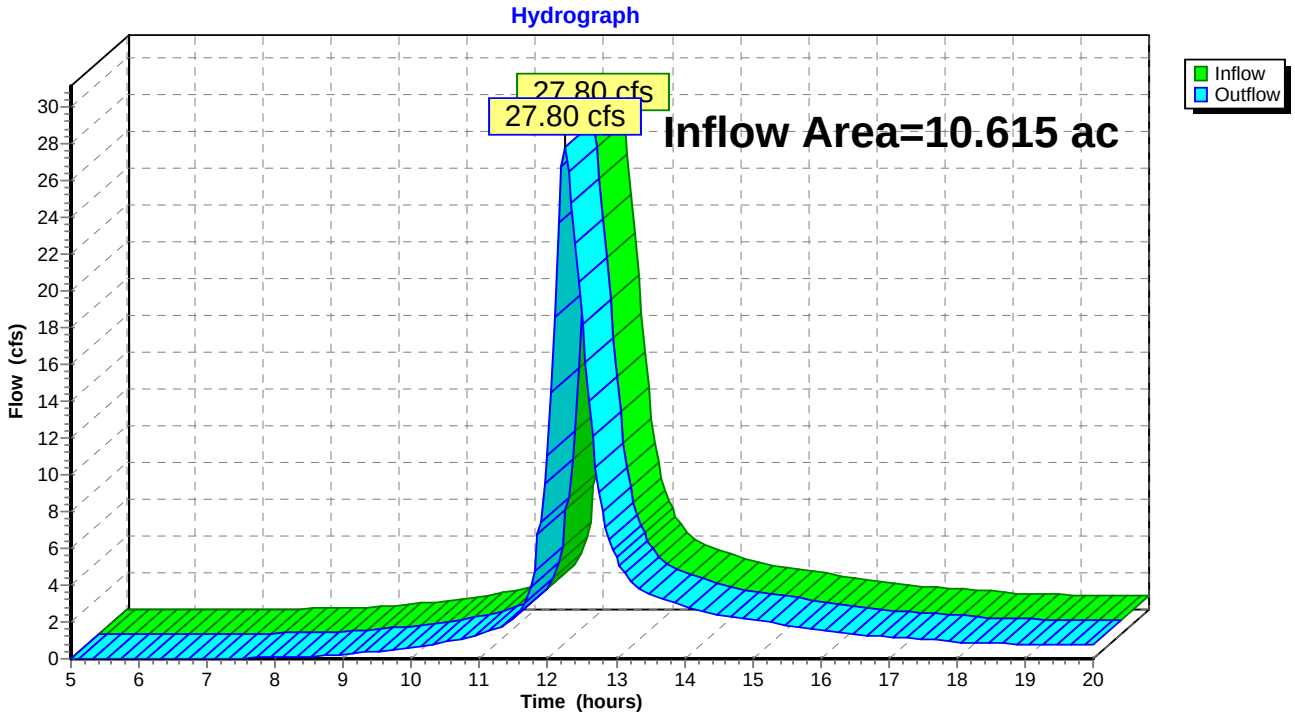


Summary for Reach 5R: POI 2

Inflow Area = 10.615 ac, 31.88% Impervious, Inflow Depth > 3.07" for 25 YR event
Inflow = 27.80 cfs @ 12.25 hrs, Volume= 2.719 af
Outflow = 27.80 cfs @ 12.25 hrs, Volume= 2.719 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POI 2



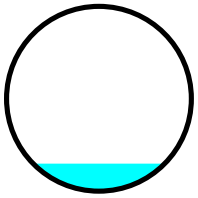
Summary for Reach 15R: SD System

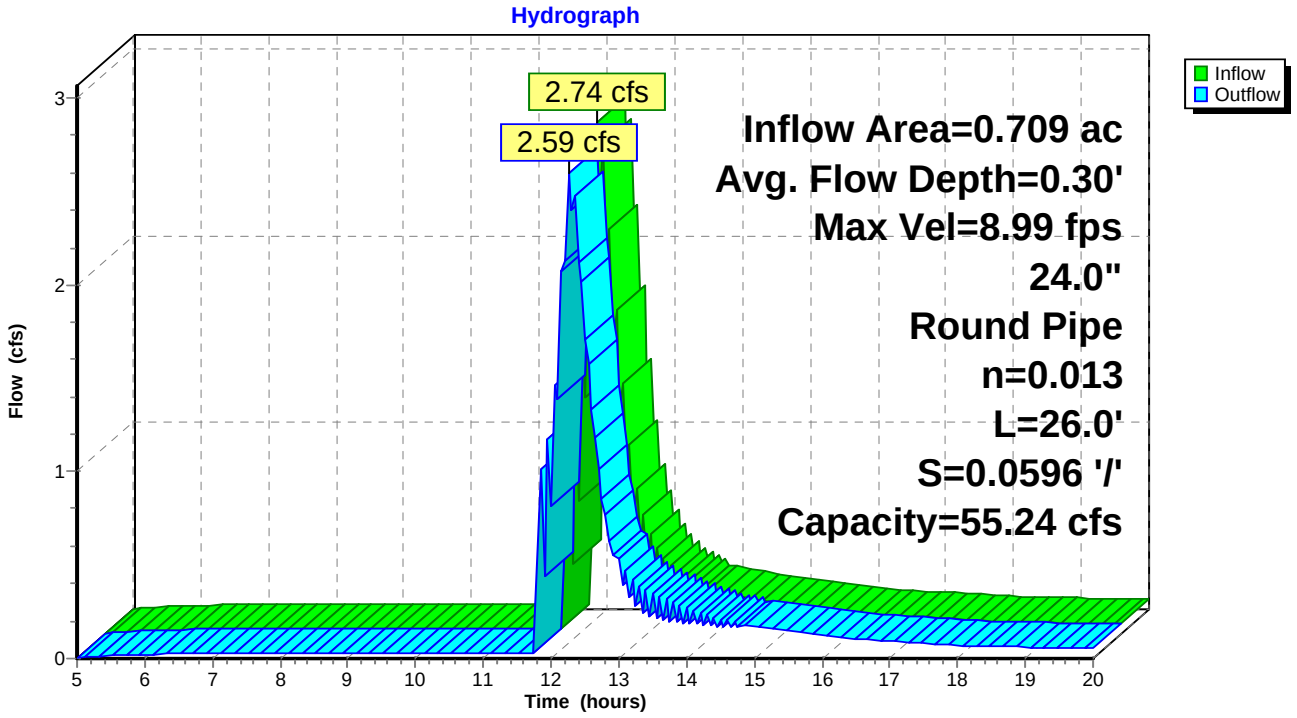
Inflow Area = 0.709 ac, 66.57% Impervious, Inflow Depth > 3.87" for 25 YR event
Inflow = 2.74 cfs @ 12.26 hrs, Volume= 0.228 af
Outflow = 2.59 cfs @ 12.26 hrs, Volume= 0.228 af, Atten= 5%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.99 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.29 fps, Avg. Travel Time= 0.1 min

Peak Storage= 8 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 55.24 cfs

24.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 26.0' Slope= 0.0596 '/'
Inlet Invert= 71.55', Outlet Invert= 70.00'





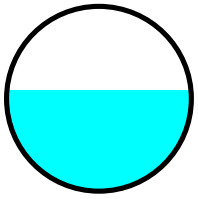
Summary for Reach 16R: SD System

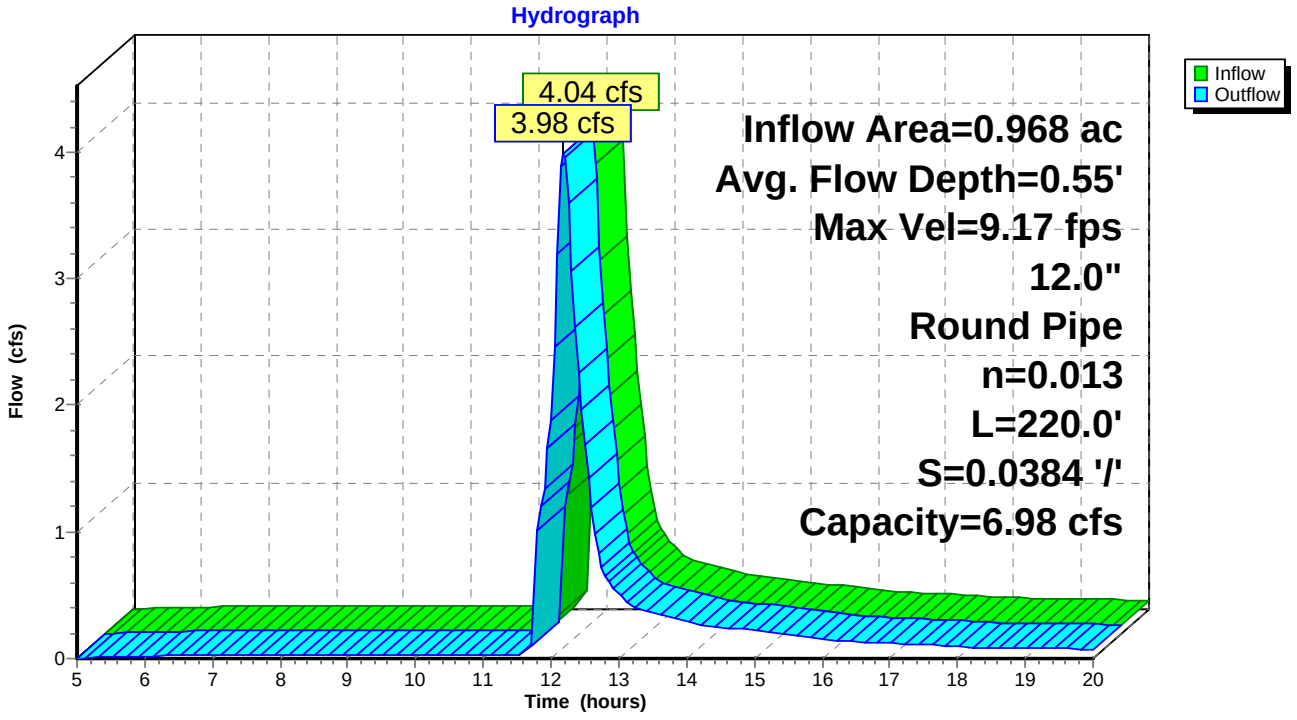
Inflow Area = 0.968 ac, 56.10% Impervious, Inflow Depth > 3.67" for 25 YR event
Inflow = 4.04 cfs @ 12.17 hrs, Volume= 0.296 af
Outflow = 3.98 cfs @ 12.18 hrs, Volume= 0.296 af, Atten= 1%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.17 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 3.24 fps, Avg. Travel Time= 1.1 min

Peak Storage= 97 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.98 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 220.0' Slope= 0.0384 '/'
Inlet Invert= 80.05', Outlet Invert= 71.60'





Summary for Pond 11P: Cultec Chambers 2

Inflow Area = 0.709 ac, 66.57% Impervious, Inflow Depth > 4.59" for 25 YR event
Inflow = 2.51 cfs @ 12.28 hrs, Volume= 0.271 af
Outflow = 2.74 cfs @ 12.26 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min
Primary = 0.03 cfs @ 6.80 hrs, Volume= 0.036 af
Secondary = 2.71 cfs @ 12.26 hrs, Volume= 0.193 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.49' @ 12.26 hrs Surf.Area= 0.018 ac Storage= 0.043 af

Plug-Flow detention time= 69.8 min calculated for 0.228 af (84% of inflow)
Center-of-Mass det. time= 25.3 min (788.8 - 763.5)

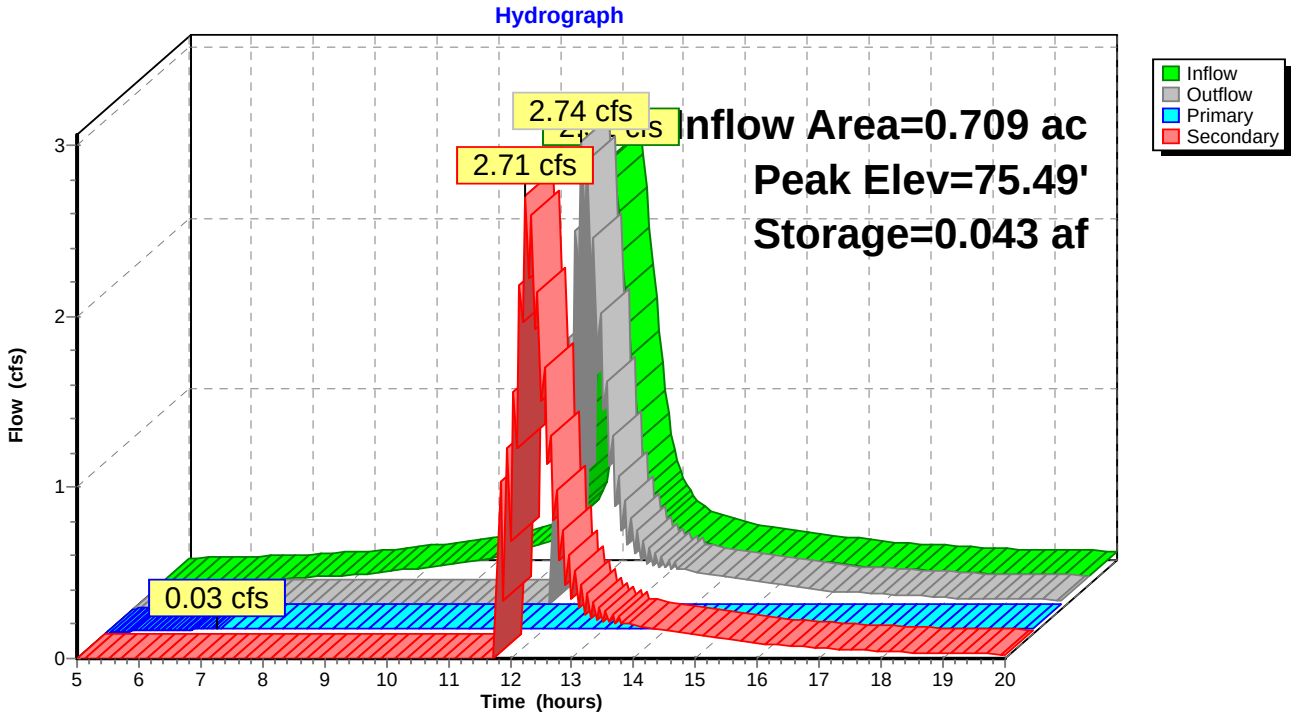
Volume	Invert	Avail.Storage	Storage Description
#1	71.65'	0.014 af	**4.83'W x 7.20'L x 3.54'H Prismatoid** x 22 0.062 af Overall - 0.026 af Embedded = 0.036 af x 40.0% Voids
#2	72.15'	0.026 af	**Cultec R-330XLHD** x 22 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
#3	72.10'	0.004 af	**6.00'D x 6.00'H Vertical Cone/Cylinder**
		0.045 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	71.65'	**0.03 cfs Exfiltration at all elevations**
#2	Device 3	72.15'	**24.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.15' / 72.08' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#3	Secondary	75.19'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.03 cfs @ 6.80 hrs HW=71.72' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=2.64 cfs @ 12.26 hrs HW=75.48' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 2.64 cfs @ 1.51 fps)
└**2=Culvert** (Passes 2.64 cfs of 8.17 cfs potential flow)

Pond 11P: Cultec Chambers 2



Summary for Pond 14P: Cultec Chambers 1

Inflow Area = 0.968 ac, 56.10% Impervious, Inflow Depth > 4.39" for 25 YR event
Inflow = 4.04 cfs @ 12.17 hrs, Volume= 0.354 af
Outflow = 4.04 cfs @ 12.17 hrs, Volume= 0.296 af, Atten= 0%, Lag= 0.1 min
Primary = 0.03 cfs @ 6.75 hrs, Volume= 0.035 af
Secondary = 4.01 cfs @ 12.17 hrs, Volume= 0.261 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 84.05' @ 12.17 hrs Surf.Area= 0.025 ac Storage= 0.058 af

Plug-Flow detention time= 72.7 min calculated for 0.295 af (83% of inflow)
Center-of-Mass det. time= 26.8 min (789.2 - 762.3)

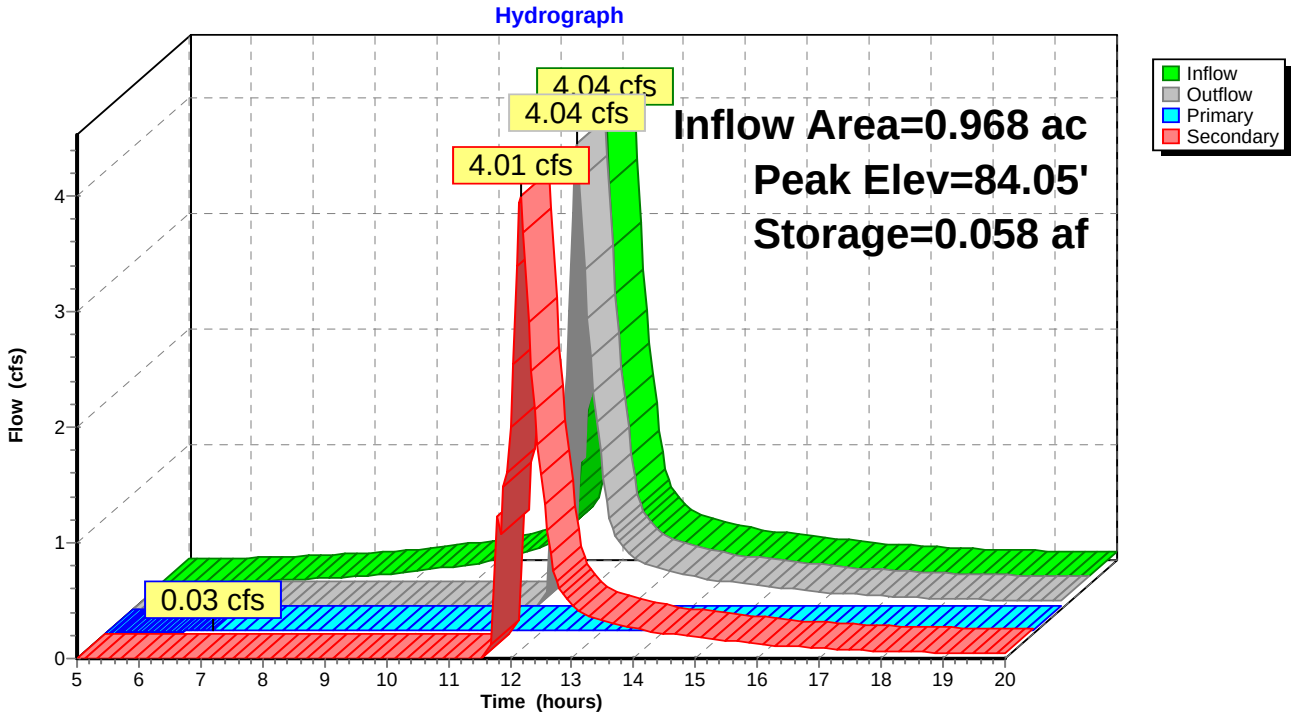
Volume	Invert	Avail.Storage	Storage Description
#1	80.13'	0.020 af	**5.08'W x 7.00'L x 3.54'H Prismatoid** x 30 0.087 af Overall - 0.036 af Embedded = 0.051 af x 40.0% Voids
#2	80.63'	0.036 af	**Cultec R-330XLHD** x 30 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
#3	80.58'	0.005 af	**6.00'D x 7.00'H Vertical Cone/Cylinder**
		0.061 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	80.13'	**0.03 cfs Exfiltration at all elevations**
#2	Device 3	80.63'	**24.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.63' / 80.58' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#3	Secondary	83.67'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.03 cfs @ 6.75 hrs HW=80.20' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=3.92 cfs @ 12.17 hrs HW=84.05' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 3.92 cfs @ 1.73 fps)
└**2=Culvert** (Passes 3.92 cfs of 9.30 cfs potential flow)

Pond 14P: Cultec Chambers 1



STORMWATER MANAGEMENT

12.1 Overview

This Exhibit demonstrates the developer has made adequate provision for controlling Stormwater Runoff.

12.2 Introduction

LBW, LLC has retained Gorrill Palmer to prepare plans and permit applications for a proposed residential subdivision off Hope Avenue. The site is shown on Assessor's Map 448 Lot A004, is approximately 6.46 acres in size and is located in the Conditional Zone. Figure 1 is a map showing the project location. The developer will construct the roadway, driveway aprons, utility services 5 feet beyond the right-of-way, and stormwater appurtenances. Lot development will also be by the developer of the subdivision. This stormwater permit application includes an allowance for developed area on each lot. The developer is currently seeking a subdivision permit from the City of Portland and a Stormwater Permit reviewed by the City of Portland under their delegated authority. The plans prepared by Gorrill Palmer include the infrastructure necessary to serve the project. This narrative contains the Stormwater Management measures which are appropriate for the site.

12.3 Development Description

The project is a residential subdivision consisting of 16 single family residential lots, a 950 linear foot roadway, and associated infrastructure off 22 Hope Avenue in Portland, Maine.

The project site is currently undeveloped with a landcover of brush and woods. Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site.
Abutting land uses include:

- North – Maine Turnpike Spur
- West – Residential
- South – Residential
- East – Resource Protection

The development of the site will create approximately 1.6 acres of impervious area with a total disturbed area of approximately 4.1 acres.

12.4 Surface Water

There are no lakes located on, adjacent to or downstream of the project site. The site contains several drainage ways which outlet to the Presumpscot River, which is north and east of the site.

12.5 General Topography

Topography in the area of the proposed construction varies from flat slopes of approximately 0.5% to steep slopes of 40%. The steeper slopes are associated with drainage ways at the front and rear of the site. Elevations on site range from 90' at Hope Avenue to 74' at the southwesterly property line.

12.6 Flooding

Based upon the FEMA maps, the site is located within a Zone C floodplain. Zone C is defined as "areas of minimal flooding".

Section 5.III of the Technical Manual States,

"Developments as specified under Section II Applicability in Portland must comply with the most recent version of the Maine Department of Environmental Protection (Maine DEP) Chapter 500 Rules for Stormwater Management, including but not limited to the standards for Urban Impaired Stream, Basic, General, and Flooding Standards for the suitability, design, installation, and maintenance of systems to comply with the General and Flooding Standards are provided in Volume III of the Maine Stormwater Best Management Practices Manual."

12.7 Natural Drainage Ways

The project as currently proposed includes alteration of a natural drainage way in the northern portion of the site. The drainage way is located in an area of proposed house lots. Therefore, the drainage way is to be filled to provide a level area for development. Piping systems and stormwater BMPs are designed to re-route water draining to the area.

12.8 Alterations to Land Cover

Changes in land cover will include removal of wooded areas of the project site and the addition of paved surfaces, buildings, and lawns.

12.9 Stormwater Management Control

Section 14-526.b.3.b of the Land Use Ordinance states that all development other than Level I residential shall comply with Section 5 of the Technical Manual including Basic, General, and Flooding standards as applicable to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

Section 5.II.b and Section 5.11.c of the Technical Manual states that Level II and III site plans shall be required to submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including Basic, General and Flooding standards.

The Basic Standard is presented in the Erosion and Sedimentation Control report included with this permit application. The General Standard and Flooding Standard are presented as follows:

The development will utilize 4 Filterras, 3 systems of StormTech chambers, 5 Grassed Underdrained Soil Filters, and 16 Roof Dripline Filters to provide water quality treatment and storage.

The Maine Department of Environmental Protection rules and regulations regarding stormwater concentrate on four stormwater management objectives:

- Effective Pollutant Removal
- Cooling
- Channel Protection
- Flood Control

These objectives may be met either directly by providing BMP's that manage and treat the runoff after it has been created, or indirectly by incorporating low impact development site planning concepts to minimize production and contamination of runoff by maximizing infiltration and evapotranspiration.

12.9.1 Current Treatment Methods

Under the General Standard, the project is required to meet the BMP Standards as the development site is not tributary to a lake watershed. The BMP Standard requires no less than 95% of the impervious area and no less than 80% of the developed area associated with a project to be controlled. The house lot development will be treated to the required 95% and 80% levels. The proposed roadway will be treated as a linear project and the project will provide treatment for runoff according to the requirements for a linear project. For a linear portion of a project the BMP Standard requires no less than 75% of the impervious area and no less than 50% of the developed area associated with a project to be controlled. The four treatment measures listed in Chapter 500 and described in Volume III of the Stormwater BMP Manual are:

- Wetponds
- Filters
- Infiltration
- Buffers

Below is a brief description of each treatment method.

<u>Wetpond with detention above the permanent pool:</u>

Wet ponds are stormwater detention impoundments that have a permanent pool of water and have the capacity to temporarily store storm water runoff while it is released at a controlled rate. They can be designed to provide flood control as well as water quality treatment. Properly sized and maintained, wet ponds can achieve high rates of removal for a number of urban pollutants, including sediment and the pollutants associated with sediment, such as trace metals, hydrocarbons, BOD, nutrients, and pesticides. The addition of an underdrained gravel trench in the bench area around the permanent pool allows for slow, extended release of stormwater without risk of blockage and effective cooling to avoid thermal impacts. This BMP treatment method is generally used to treat runoff from large drainage areas.

<u>Filters</u>

Filtration BMPs have shown to be very effective at removing a wide range of pollutants from stormwater runoff, particularly organic soil filter medias. They can be constructed in combination with infiltration practices, or with an underdrain filter, where infiltration is not feasible. Soil filters can be designed and constructed using common materials. Underdrained soil filters control stormwater quality by capturing and retaining runoff and passing it through a

filter bed comprised of a specific soil media. Various filter medias may be used, the most common including sand filters and organic filters. Once through the soil media, the runoff is collected in a perforated underdrain pipe and discharged to the receiving water. The filter and underdrain provides for slow release of smaller storm events, minimizing stream channel erosion, as well as cooling the discharge. Vegetated underdrain soil filters can also be designed to provide detention above the channel protection volume.

Infiltration

Infiltration measures control stormwater quantity and quality, by retaining all or part of runoff on-site and discharging it into the ground. Infiltration is designed to occur at the surface (as in infiltration basins and to a degree vegetated swales and buffers), or in subsurface systems (e.g., infiltration trenches and infiltrators). The basic function of an infiltration system is to remove a portion of runoff from the total runoff volume of the site and treatment comes about through absorption, straining, microbial decomposition in the soil and trapping of particulate matter within pretreatment areas. Pretreatment to remove sediments, grease and oils is required prior to discharge to the infiltration measure. Possible pretreatment measures include filter strips, swales with check dams, sand filters, sediment traps, grease and oil traps, and sediment basins.

Buffers

Buffer strips are natural, undisturbed strips of natural vegetation or planted strips of close growing vegetation adjacent to and downslope of developed areas. As stormwater runoff travels over the buffer area, vegetation slows the runoff and traps particulate pollutants. They are also effective for phosphorus removal when designed in accordance with the volume III BMP technical design manual. The buffers are preceded by a level lip spreader which allows for thermal cooling of the runoff and a distribution of the flow to a sheet flow rather than direct discharge. The effectiveness of buffers for pollutant removal depends on the flow path length and slope, the buffer berm length, the soil permeability, the size of drainage area, and the type and density of vegetation. Buffers are used to treat runoff from relatively small amounts of impervious area, as typically found in residential developments and small commercial and industrial sites. This type of BMP requires minimal maintenance and provides an aesthetically pleasing area.

12.9.2 Approach and Analysis for Quality

The proposed development will be required to meet the BMP Standard under the General Standard. Based upon review of the four recommended and approved methods for mitigating the increased frequency and duration of channel erosive flows, as required by the BMP Standards, the developer is proposing to use sixteen Roof Dripline Filters, five grassed underdrained soil filters and four filterras coupled with Stormtech systems to provide cooling, and storage to provide water quality control.

The sixteen Roof Dripline Filters, five grassed underdrained soil filters and four filterras coupled with Stormtech systems are proposed for treatment of runoff from the roadway and developed area of 16 residential house lots. The impervious roof area of house lots are proposed to be treated with Roof Dripline Filters due to their lot locations and limitations presented by existing topography. In addition to the limitations presented by existing topography and narrow development area, in order to provide adequate treatment for the house lots, five grassed underdrained soil filters would be required. Test pits should be conducted prior to construction to confirm the seasonal high groundwater elevation. Until test

pits have been conducted, it is assumed filters would need to be lined with an impermeable membrane since the project site consists of Type D soils. In order to meet the Land Use Ordinance and adhere to the City of Portland's Technical Manual Low Impact Design technologies were investigated. Filterra systems are a subsurface bioretention system with an inlet set at the curb line of the roadway. Due to the small footprint of Filterra systems, they were chosen to treat the linear portion of the site as well as some of the lot area. Stormtech chambers sized to contain the water quality volume are connected to the Filterra systems in accordance with the MDEP BMP Standards.

12.9.3 Water Quality Sizing Requirements

Under BMP standards the development is required to treat the runoff from 95% of the project's impervious area and from 80% of the project's developed area for the house lot development, and for the linear portion, treatment is required for 75% of the impervious area and 50% of the developed area.

Roof Dripline Filter

Roof Dripline Filtration will be utilized for the residential units on lots. The dripline provides treatment for the tributary roof area. The reservoir layer is designed to provide storage for the 25-Year rainfall of 5.8 inches in order to meet the Flooding Standard in accordance with MDEP BMP 7.5. A 40% void ratio was used to calculate the storage. The Drip Strip Detail for the assumed house footprint is included in the detail sheets.

The individual lot treatment is shown in the following table. The house lots are assumed to contain 1,540 square feet of roof area, except for lot 7 which is assumed to contain 1,237 square feet of roof area. Due to the limited development footprint, a lawn and driveway area was calculated for each lot.

TABLE 1				
PROPOSED LOT TREATMENT				
LOT NUMBER	FRONT ROOF	REAR ROOF	DRIVEWAY	LAWN
1	Dripline Filter	Dripline Filter	450 sf /Filterra 2	461 sf /Filterra 2 1,264 sf /Soil Filter 1
2	Dripline Filter	Dripline Filter	558 sf /Filterra 2	2,460 sf /Filterra 2 4,000 sf /Soil Filter 1
3	Dripline Filter	Dripline Filter	558 sf /Filterra 2	4,044 sf /Filterra 2 480 sf /Soil Filter 1
4	Dripline Filter	Dripline Filter	432 sf /Filterra 2	4,350 sf /Filterra 2 3,824 sf /Soil Filter 2
5	Dripline Filter	Dripline Filter	198 sf /Filterra 2	1,605 sf /Filterra 2
6	Dripline Filter	Dripline Filter	2,464 sf /Soil Filter 2	2,127 sf /Filterra 2 2,832 sf /Soil Filter 1 2,256 sf /Soil Filter 2
7	Dripline Filter	Dripline Filter	176 sf /Filterra 4 400 sf /Soil Filter 3	1,492 sf /Filterra 4 3,344 sf /Soil Filter 3
8	Dripline Filter	Dripline Filter	360 sf /Filterra 4	1,477 sf /Filterra 4 1,952 sf/Soil Filter 3
9	Dripline Filter	Dripline Filter	414 sf /Filterra 4	1,503 sf /Filterra 4 1,928 sf /Soil Filter 4
10	Dripline Filter	Dripline Filter	414 sf /Filterra	800 sf /Filterra 4 2,560 sf /Soil Filter 4
11	Dripline Filter	Dripline Filter	None	2,496 sf /Soil Filter 4
12	Dripline Filter	Dripline Filter	None	2,608 sf /Soil Filter 4
13	Dripline Filter	Dripline Filter	360 sf /Filterra 3	629 sf /Filterra 3 4,368 sf /Soil Filter 5
14	Dripline Filter	Dripline Filter	360 sf /Filterra 3	2,354 sf /Filterra 3 832 sf /Soil Filter 5
15	Dripline Filter	Dripline Filter	360 sf /Filterra 3	3,058 sf /Filterra 3 265 sf /Soil Filter 5
16	Dripline Filter	Dripline Filter	1,200 sf /Filterra 3 400 sf /Soil Filter 5	1,568 sf /Filterra 3 8,835 sf /Soil Filter 5

Filterra

The proposed Filterras will treat the stormwater runoff from a portion of the roadway as shown on the Post Development Watershed Plan enclosed in Attachment A of this report. The driveway aprons, trail parking area, and turnaround are included in the linear portion of the project. It has been assumed that the roadway sideslopes will be mowed no more than twice a year, therefore they were not considered as developed area.

The Filterra systems have been design in accordance with the MDEP approval letter dated February 2, 2017. The sizing is in accordance with the manufacturers standard New England Testing Results. Based upon discussion with Contech representatives, the Filterra unit was sized based upon the tributary impervious area and an equivalent impervious area for the tributary vegetated area. The equivalent area is calculated by multiplying the vegetated area by

0.4 to account for the MDEP treatment requirement of 0.4" of runoff from vegetated areas. The Filterra outflow and bypass have been directed to a Stormtech chamber system designed to retain the water quality volume, based upon 1" of runoff from impervious areas and 0.4" of runoff from vegetated area. An Isolator Row has been included to allow for maintenance of the system. Outlet control structures with the weir set at the water quality elevation will detain the water quality volume. The water quality volume will be conveyed from the chambers by the underdrain outlet. Flow from larger storms will overtop the weir and be conveyed to the discharge point through the stormdrain system.

The following table presents the filterras performance.

TABLE 2		
Filterra 1		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		7,834 sq. ft.
House lot		0 sq. ft.
Vegetated Developed Area		
Roadway		0 sq. ft.
House Lot		0 sq. ft.
Filterra Size	4 X 8	4 X 8
Water Quality Volume	653 cu. ft.	
SC-740 Stormtech	9	9

TABLE 3		
Filterra 2		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		9,727 sq. ft.
House lot		2,196 sq. ft.
Vegetated Developed Area		
Roadway		2,238 sq. ft.
House Lot		15,047 sq. ft.
Filterra Size	7 X 13	7 X 13
Water Quality Volume	1570 cu. ft.	
SC-740 Stormtech	21	21

TABLE 4		
Filterra 3		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		5,110 sq. ft.
House lot		2,280 sq. ft.
Vegetated Developed Area		
Roadway		720 sq. ft.
House Lot		7,609 sq. ft.
Filterra Size	6 X 10	6 X 10
Water Quality Volume	894 cu. ft.	
SC-740 Stormtech	12	12

TABLE 5		
Filterra 4		
	REQUIRED	**PROVIDED**
Impervious Area		
Roadway		5,090 sq. ft.
House lot		1,364 sq. ft.
Vegetated Developed Area		
Roadway		1,020 sq. ft.
House Lot		5,272 sq. ft.
Filterra Size	6 X 8	6 X 8
Water Quality Volume	748	
SC-740 Stormtech	10	10

Grassed Underdrained Soil Filter

Due to the project site's topography and layout, in order to provide the required 95% treatment of impervious area and 80% treatment of the developed area, Grassed Underdrained Soil Filters are proposed to reach the required treatment levels. The Grassed Underdrained Soil Filters are currently oversized for the treatment area to be conservative for the sites unique layout.

Grassed Underdrained Soil Filters are defined in Volume III, Section 7 of the Stormwater Management Best Management Practices Manual published by the Maine Department of Environmental Protection. The development will be required to provide the treatment volume for 1.0 inch times the subcatchments impervious area plus 0.4 inch times the subcatchments landscaped developed area. The surface area of the filters are required to be no less than the sum of 5% of the impervious area and 2% of the landscaped area draining to the filters. The channel protection volume is allowed to pond up to 18" deep within the filters. Runoff from larger storms will be conveyed from the filters by spillways with its crest set at the channel protection elevation. A valve will be placed on the filters underdrain to regulate the outflow through the soil media. The valve will be field adjusted to maintain the outflow time between 24 and 48 hours for the channel protection volume. Yearly maintenance of the filters will include monitoring the outflow after a rainfall event to ensure the outflow time is within the required parameters. The filter media will be a layered system consisting of 12" of sand and 6" of loamy topsoil with a transition layer of 2" of the topsoil rototilled into the sand layer. The

attached Watershed Map was utilized to determine the water surface elevation for larger storms.

The following tables present the Grassed Underdrained Soil Filter information:

TABLE 6		
GRASSED UNDERDRAINED SOIL FILTER 1		
	REQUIRED	PROVIDED
Impervious Area		0 sq. ft.
Developed Area (non-impervious)		8,576 sq. ft.
Treatment Volume	286 cu. ft.	305 cu. ft.
Filter Surface Area	172 sq. ft.	305 sq. ft.
Cell Base Elevation		86 ft.
Overflow Outlet Elevation		87.5 ft.

TABLE 7		
GRASSED UNDERDRAINED SOIL FILTER 2		
	REQUIRED	PROVIDED
Impervious Area		2,464 sq. ft.
Developed Area (non-impervious)		6,080 sq. ft.
Treatment Volume	408 cu. ft.	442 cu. ft.
Filter Surface Area	245 sq. ft.	442 sq. ft.
Cell Base Elevation		88 ft.
Overflow Outlet Elevation		89.5 ft.

TABLE 8		
GRASSED UNDERDRAINED SOIL FILTER 3		
	REQUIRED	PROVIDED
Impervious Area		400 sq. ft.
Developed Area (non-impervious)		5296 sq. ft.
Treatment Volume	210 cu. ft.	354 cu. ft.
Filter Surface Area	126 sq. ft.	354 sq. ft.
Cell Base Elevation		82 ft.
Overflow Outlet Elevation		83.5 ft.

TABLE 9		
GRASSED UNDERDRAINED SOIL FILTER 4		
	REQUIRED	PROVIDED
Impervious Area		0 sq. ft.
Developed Area (non-impervious)		9,592 sq. ft.
Treatment Volume	320 cu. ft.	440 cu. ft.
Filter Surface Area	191 sq. ft.	440 sq. ft.
Cell Base Elevation		79 ft.
Overflow Outlet Elevation		80.5 ft.

TABLE 10		
GRASSED UNDERDRAINED SOIL FILTER 5		
	REQUIRED	PROVIDED
Impervious Area		400 sq. ft.
Developed Area (non-impervious)		14,035 sq. ft.
Treatment Volume	502 cu. ft.	677 cu. ft.
Filter Surface Area	301 sq. ft.	677 sq. ft.
Cell Base Elevation		80 ft.
Overflow Outlet Elevation		81.5 ft.

12.9.4 Conclusion – Overall Treatment

The following table summarizes the proposed treatment for the linear portion of the project. The roadway, sidewalk, turnaround, trail parking, and driveway aprons are the impervious areas associated with the linear portion of the project. The esplanade is the landscaped area associated with the linear portion of the project.

TABLE 11 – LINEAR PORTION		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by Filterras (sf)	27,761	31,739
Area treated by Grassed Underdrained Soil Filters (sf)	0	0
Total Area Treated (sf)	27,761	31,739
Area Untreated (sf)	8,189	8,855
Total Area of Project (sf)	35,950	40,594
Percent Treated	77.2%	78.2%
Percent Required	75%	50%

The following table summarizes the proposed treatment for the house lot portion of the project. The house lots are assumed to contain 1,540 square feet of roof area except for lot 7 which is assumed to contain 1,237 square feet of roof area. Due to the limited development footprint, a lawn and driveway area was calculated for each lot.

TABLE 12 – HOUSE LOTS		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by Filterras (sf)	5,840	33,768
Area treated by Grassed Underdrained Soil Filters (sf)	3,264	47,108
Roof Dripline Filters (sf)	24,337	36,657
Total Area Treated (sf)	33,441	117,533
Area Untreated (sf)	660	21,331
Total Area of Project (sf)	34,101	138,864
Percent Treated	98%	85%
Percent Required	95%	80%

The proposed development of the residential subdivision will utilize four Filterras, five Grassed Underdrained Soil Filters and twelve Roof Dripline Filters to mitigate the development as required by the BMP Standards. The development is required to control runoff from no less than 95% of the impervious area and no less than 80% of the developed area and, for the linear portion of the project, the development is required to control runoff from no less than 75% of the impervious area and no less than 50% of the developed area. As proposed, the development is controlling approximately 95% of the created impervious area, and approximately 82% of the developed area for the house lots, and is controlling approximately 75.2% of the created impervious area, and approximately 76.4% of the developed area for the linear portion, which meets or exceeds the required control.

A Water Quality Map is included in attachment A.

12.9.5 Water Quantity Sizing Requirements

The stormwater management study provides an analysis of predevelopment and post development stormwater runoff rates.

The Natural Resource Conservation Service Medium Intensity Soil Survey was used to identify onsite and offsite soils. The project site is comprised of hydrologic soil types B, C, and D. An excerpt from the Medium Intensity Soil Survey follows this page.

The SCS TR-20 methodology, using the HydroCad program, was employed by Gorrill Palmer to analyze predevelopment and post-development conditions. A 24-hour, SCS Type III storm distribution for the two, ten and twenty five year storm frequencies was used. The corresponding rainfall amounts for these storms are 3.1", 4.6" and 5.8" respectively.

Land use cover, delineations of watershed hydraulic flow paths, and hydrologic soils data were obtained using the following data:

1. Portland 7.5 Minute Quadrangle Maps prepared by the U.S.G.S.
2. On-site topographic survey with 2' contour intervals from an existing conditions plan of the site.

3. Aerial Photography of the project site, obtained from the Maine Office of GIS.
4. Natural Resource Conservation Service Medium Intensity Soil Survey
5. Field Reconnaissance.

Predevelopment Conditions

The drainage study analyzes the watershed in the predevelopment condition as depicted on the Predevelopment Watershed Map.

The predevelopment was analyzed as two subcatchments and two points of interest (POI) were analyzed. POI 1 is the location in a swale at the lot's eastern boundary and the POI 2 is the location in a swale at the lots northern boundary.

Subcatchment 1S consists of the drainage area to POI 1. Most of Subcatchment 1S is off site.

Subcatchment 2S consists of the drainage area to POI 2.

A watershed map for the predevelopment conditions is attached to this section as drawing number W1. The predevelopment conditions were analyzed using HydroCAD modeling. Table 13 presents the peak flow rates at the point of interest in the predevelopment condition.

Table 13 - Predevelopment Peak Flow Rates (cfs)			
Point of Interest	Peak Flow (cfs)		
	2 YR	10 YR	25 YR
	Pre	Pre	Pre
POI # 1	18.6	42.9	64.4
POI # 2	9.1	19.8	29.2

Copies of the calculations for the predevelopment conditions are included in Attachment B.

Post Development Conditions

Analysis for the post development condition consists of determining post development peak flows and limiting the post development flows to predevelopment levels. The Post Development was analyzed as six subcatchments and two points of interest (POI) were analyzed. POI 1 is the location in a swale at the lot's eastern boundary and the POI 2 is the location in a swale at the lot's northern boundary.

Subcatchment 1S is composed of offsite and onsite area draining to the culvert shown on the plan set.

Subcatchment 7S is the area tributary to the Stormtech Subsurface Chamber Systems.

Subcatchment 9S is the onsite area tributary to POI 1.

These subcatchments are routed to the existing culvert and swale, POI 1.

Subcatchment 2S is composed of offsite and onsite area tributary to proposed stormdrain system.

Subcatchment 6S is the onsite area tributary to POI 2.

Subcatchment 11S is the area tributary to the Stormtech Subsurface Chamber Systems.

These subcatchments are routed to the proposed stormdrain system and swale, POI 2.

The runoff from the roof areas of twelve lot's is stored within the drip strips in accordance with MDEP BMP 7.5. Since the Flooding Standard has been met by storing the 25-Year Rainfall, the twelve roof areas have been removed from the post development HydroCAD model, due to the many assumptions required to route twelve small areas through the drip strip storage and outlets. The post development watershed area is less than the predevelopment area due to the removal of the roofs.

A watershed map for the post development conditions is attached to this section as drawing number W2. Attachment B includes the TR-20 calculations.

The runoff from subcatchments 7S and 11S was routed through the Stormtech chambers which are part of the Filterra water quality system. The chambers provide some attenuation of the tributary runoff.

A comparison of Pre and Post Development peak flows is presented in the following table:

Table 15 - Post Development Peak Flow Rates (cfs)						
Point of Interest	Peak Flow (cfs)					
	2 YR		10 YR		25 YR	
	Pre	Post	Pre	Post	Pre	Post
POI # 1	18.6	17.4	42.9	43.3	64.4	64.6
POI # 2	9.1	9.6	19.9	19.2	29.2	27.6

As shown in the table above, the Post Development peak flow for the 25-Year storm is less than the peak flow from the Pre Development storm for POI 1.

The Post Development peak flow for the 10-Year storm at POI 2 is less than the Pre Development peak flow.

The Post Development peak flow increases slightly from Pre Development levels for the 25-Year and 10-Year storms at POI 1 and the 2-Year storm at POI 2. The following table presents the increase:

Table 16 – Post Development Peak Flow Increases						
Point of Interest	Peak Flow (cfs)					
	2-Year Storm		10-Year Storm		25-Year Storm	
	Increase	% of Pre Develop.	Increase	% of Pre Develop.	Increase	% of Pre Develop.
POI # 1	-	-	0.4	0.9	0.2	0.3
POI # 2	0.5	5.5	-	-	-	-

Due to the proximity of the Presumpscot River to the project, these slight increases are considered to be insignificant.

12.9.6 Conclusion – Overall Water Quantity

As a result of attenuation within the proposed Stormtech chambers, and the storage of the 25-Year Rainfall within drip strips at 12 house lot's, the peak Post Development runoff has been reduced to be at or below Pre Development levels for the 25-Year storm at POI 2 and for the 10-Year storm at POI 2. The slight increase in peak flow for the 25-Year and 10-Year storms at POI 1 and for the 2-Year storm at POI 2 is considered insignificant due to the location of the parcel just upstream from the Presumpscot River.

12.10 Construction BMPs

Additional water quality treatment will be provided during construction by best management practices (BMP). Standard BMPs to be employed include siltation fencing around the downslope construction perimeter, riprap, stabilized construction entrances, and erosion control fabrics applied to slopes prior to revegetation.

12.11 Maintenance of Facilities

See the Erosion and Sedimentation Control report for this project.

12.12 Conclusion

Gorrill Palmer has been retained by LBW, LLC. to prepare plans and permit applications for a proposed residential subdivision, located off Hope Avenue in Portland, Maine. The proposed development will include 16 residential lots, an approximately 950 linear foot of roadway and associated infrastructure. As a result, the proposed development will create more than 1 acre of impervious area but less than 3 acres of impervious area, and thereby require a Stormwater Law Permit Application. Based upon the attached calculations, the proposed development meets or exceeds the requirement of the BMP Standard through the use of Filterras, Drip Strips, and Grassed Underdrained Soil Filters. The project also meets the flooding standard due to attenuation of runoff within the BMP treatment facilities.

12.13 Attachments

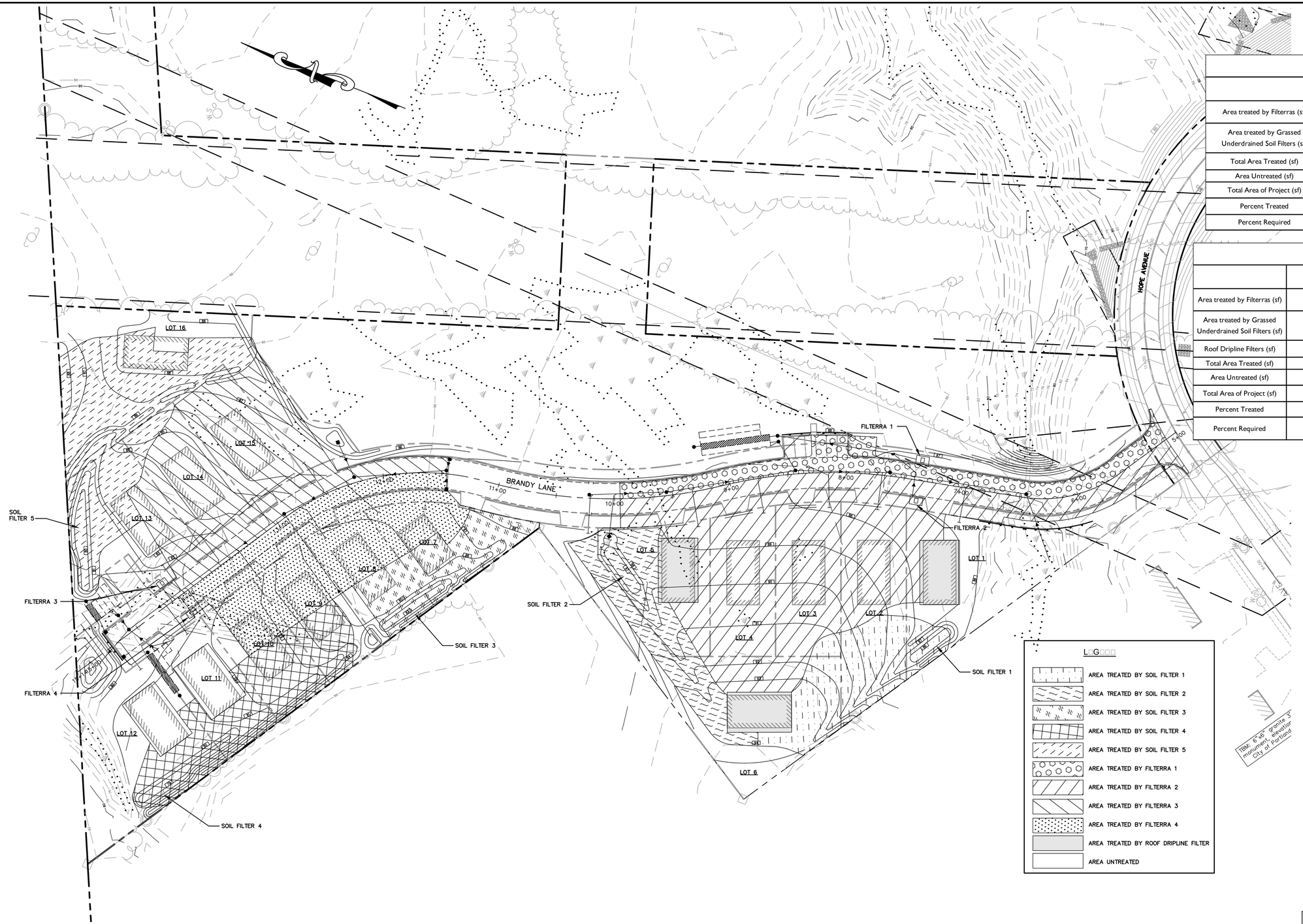
Attached to this section are the following items:

Attachment A – Watershed Map, Water Quality Map
Attachment B – TR-20 Calculations
Attachment C – Filterra and Grassed Underdrained Soil Filter sizing calculations
Attachment D – Correspondence of manufacturers review and approval of proposed Filterra design

ATTACHMENT A
Watershed Map and Water Quality Map

TABLE 11 – LINEAR PORTION		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by Filterras (sf)	27,021	30,999
Area treated by Grassed Underdrained Soil Filters (sf)	0	0
Total Area Treated (sf)	27,021	30,999
Area Untreated (sf)	8,929	9,595
Total Area of Project (sf)	35,950	40,594
Percent Treated	75.20%	76.40%
Percent Required	75%	50%

TABLE 12 – HOUSE LOTS		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by Filterras (sf)	17,610	54,448
Area treated by Grassed Underdrained Soil Filters (sf)	7,084	50,919
Roof Dripline Filters (sf)	7,700	8,525
Total Area Treated (sf)	32,394	113,892
Area Untreated (sf)	1,702	24,972
Total Area of Project (sf)	34,096	138,864
Percent Treated	95%	82%
Percent Required	95%	80%



NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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1 inch = 40 ft.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9220
9-28-17
LICENSED PROFESSIONAL ENGINEER

Rev.	Date	Revision
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE–APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: AMP | Draft: CG | Date: SEPT 2014
Checked: AMP | Scale: 1"=40' | Job No.: 98089.08
File Name: 98089–08–WQ.dwg

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207.772.2515

Drawing Name: **Water Quality Plan**
Project: **Brandy Lane**, Portland, Maine
Client: **LBW, LLC**, PO Box 1382, Portland, Maine 04104

Drawing No. WQ

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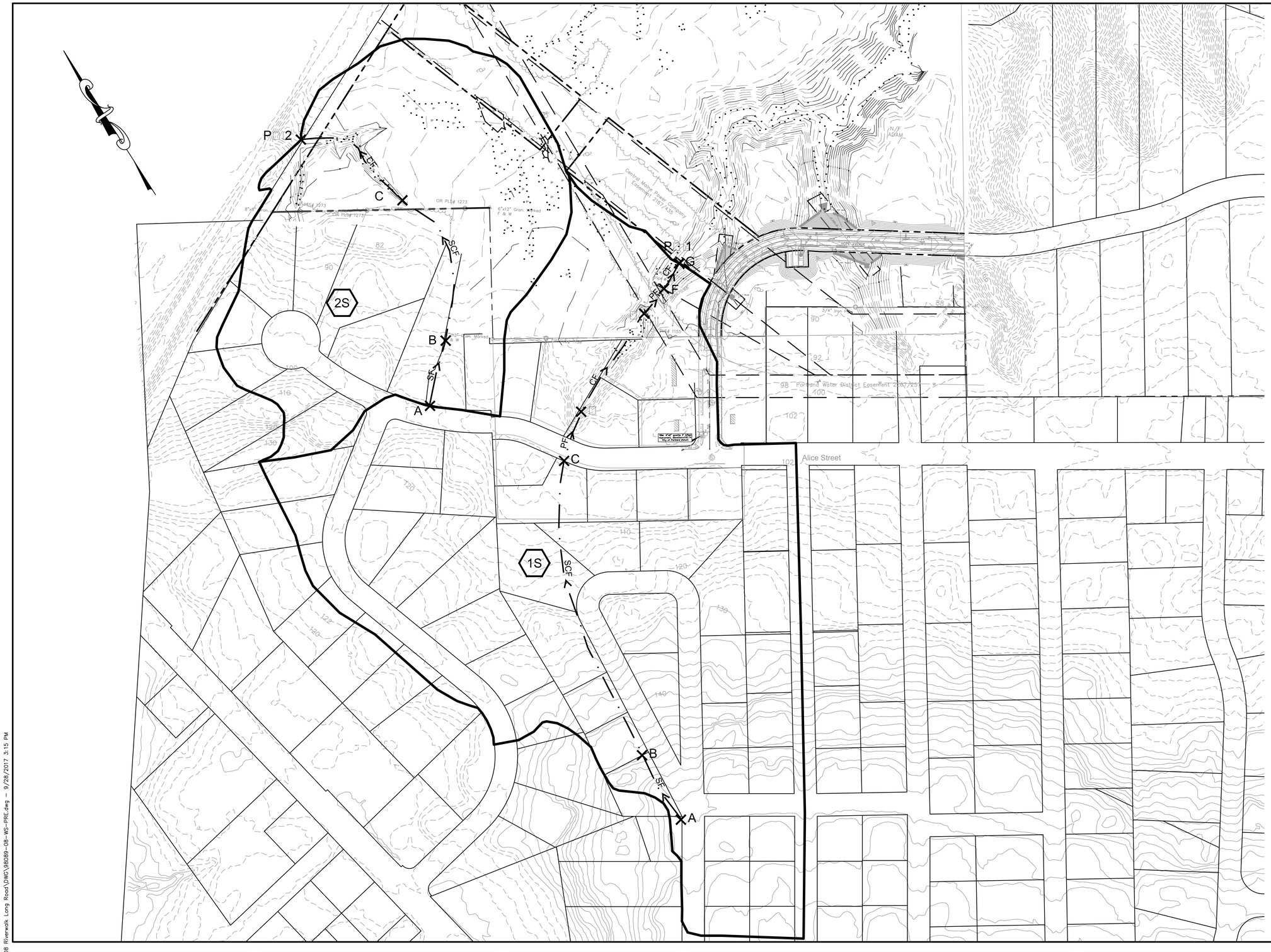

LEGEND

1	SUBCATCHMENT AREA
A	TIME OF CONCENTRATION FLOW PATH
	WATERSHED BOUNDARY
	WETLAND BOUNDARY
SF	SHEET FLOW
PF	PIPE FLOW
SCF	SHALLOW CONCENTRATED FLOW
CF	CHANNEL FLOW
P□□	POINT OF INTEREST
1	REACH

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

100 0 50 100 200
1 inch = 100 ft.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9280
9-28-17
REGISTERED PROFESSIONAL ENGINEER

Rev.	Date	Revision
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: DER	Draft: CG	Date: FEB 2017
Checked: AMP	Scale: 1"=100'	Job No.: 98089.08
File Name: 98089-08-WS-PRE.dwg		

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Drawing Name: **Pre Development Watershed Map**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. *W1*

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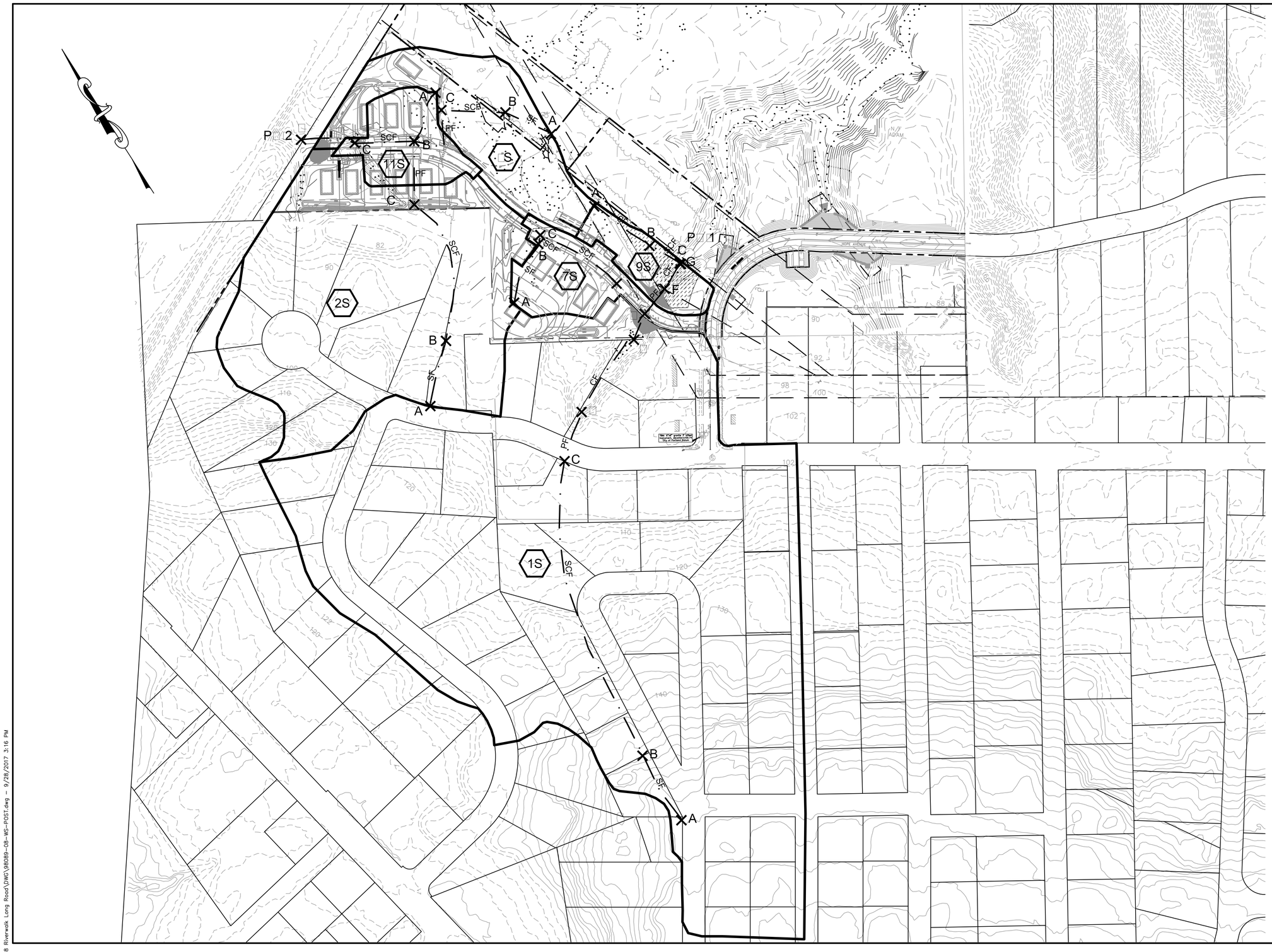

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Rev.	Date	Revision
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: AMP	Draft: CG	Date: SEPT 2014
Checked: AMP	Scale: 1"=40'	Job No.: 98089.08
File Name: 98089-08-WS-POST.dwg		

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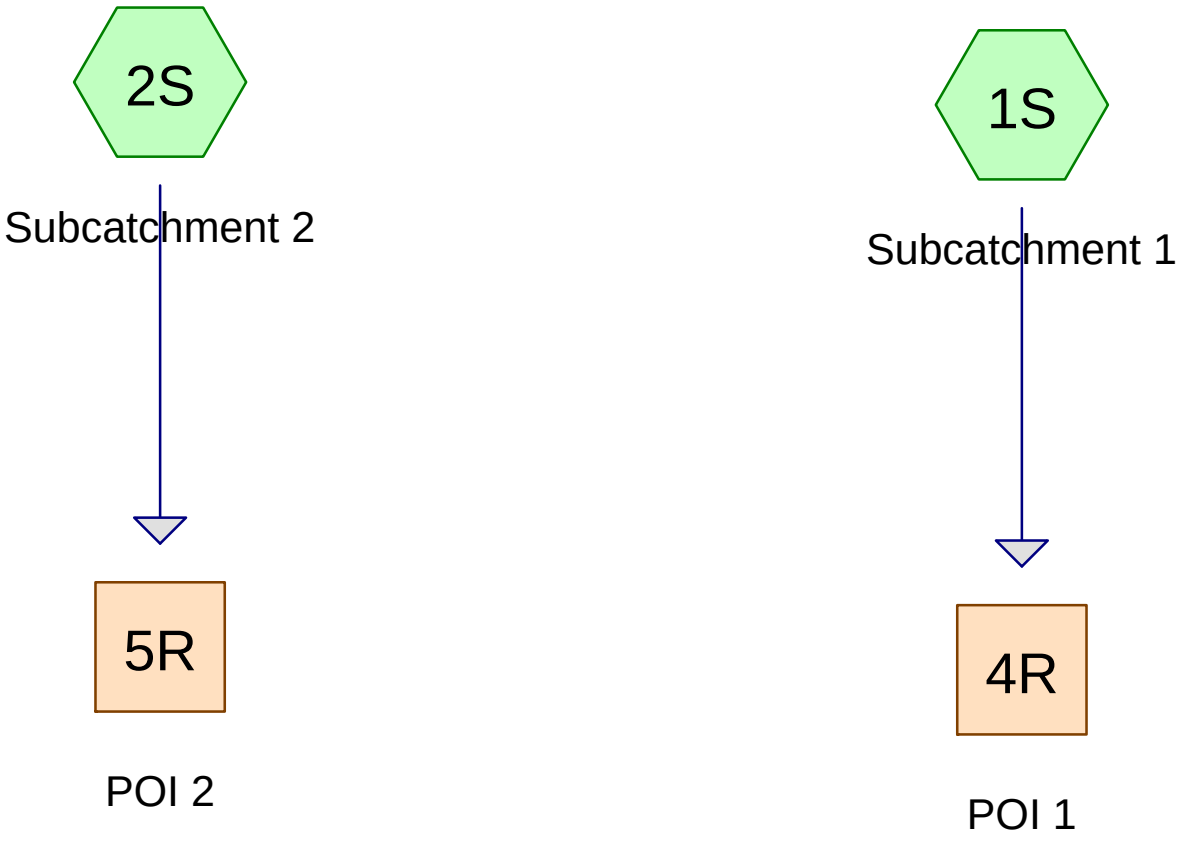
Drawing Name: POST DEVELOPMENT WATERSHED MAP

Project: Brandy Lane
Portland, Maine

Client: LBW, LLC
PO Box 1382, Portland, Maine 04104

Drawing No. W2

ATTACHMENT B
TR-20 Calculations



Subcat Reach Pond Link

Drainage Diagram for Pre Development
Prepared by Gorrill Palmer, Printed 9/14/2017
HydroCAD® 8.50 s/n 001265 © 2007 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>0.83"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=18.61 cfs 1.603 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>0.93"
Flow Length=800' Tc=15.6 min CN=75 Runoff=9.05 cfs 0.838 af

Reach 4R: POI 1 Inflow=18.61 cfs 1.603 af
Outflow=18.61 cfs 1.603 af

Reach 5R: POI 2 Inflow=9.05 cfs 0.838 af
Outflow=9.05 cfs 0.838 af

Total Runoff Area = 33.864 ac Runoff Volume = 2.441 af Average Runoff Depth = 0.86"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>1.81"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=42.89 cfs 3.493 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>1.96"
Flow Length=800' Tc=15.6 min CN=75 Runoff=19.79 cfs 1.763 af

Reach 4R: POI 1 Inflow=42.89 cfs 3.493 af
Outflow=42.89 cfs 3.493 af

Reach 5R: POI 2 Inflow=19.79 cfs 1.763 af
Outflow=19.79 cfs 1.763 af

Total Runoff Area = 33.864 ac Runoff Volume = 5.255 af Average Runoff Depth = 1.86"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1 Runoff Area=23.093 ac 31.06% Impervious Runoff Depth>2.71"
Flow Length=1,365' Tc=12.0 min CN=73 Runoff=64.44 cfs 5.215 af

Subcatchment 2S: Subcatchment 2 Runoff Area=10.771 ac 20.98% Impervious Runoff Depth>2.89"
Flow Length=800' Tc=15.6 min CN=75 Runoff=29.18 cfs 2.593 af

Reach 4R: POI 1 Inflow=64.44 cfs 5.215 af
Outflow=64.44 cfs 5.215 af

Reach 5R: POI 2 Inflow=29.18 cfs 2.593 af
Outflow=29.18 cfs 2.593 af

Total Runoff Area = 33.864 ac Runoff Volume = 7.808 af Average Runoff Depth = 2.77"
72.15% Pervious = 24.433 ac 27.85% Impervious = 9.431 ac

Summary for Subcatchment 1S: Subcatchment 1

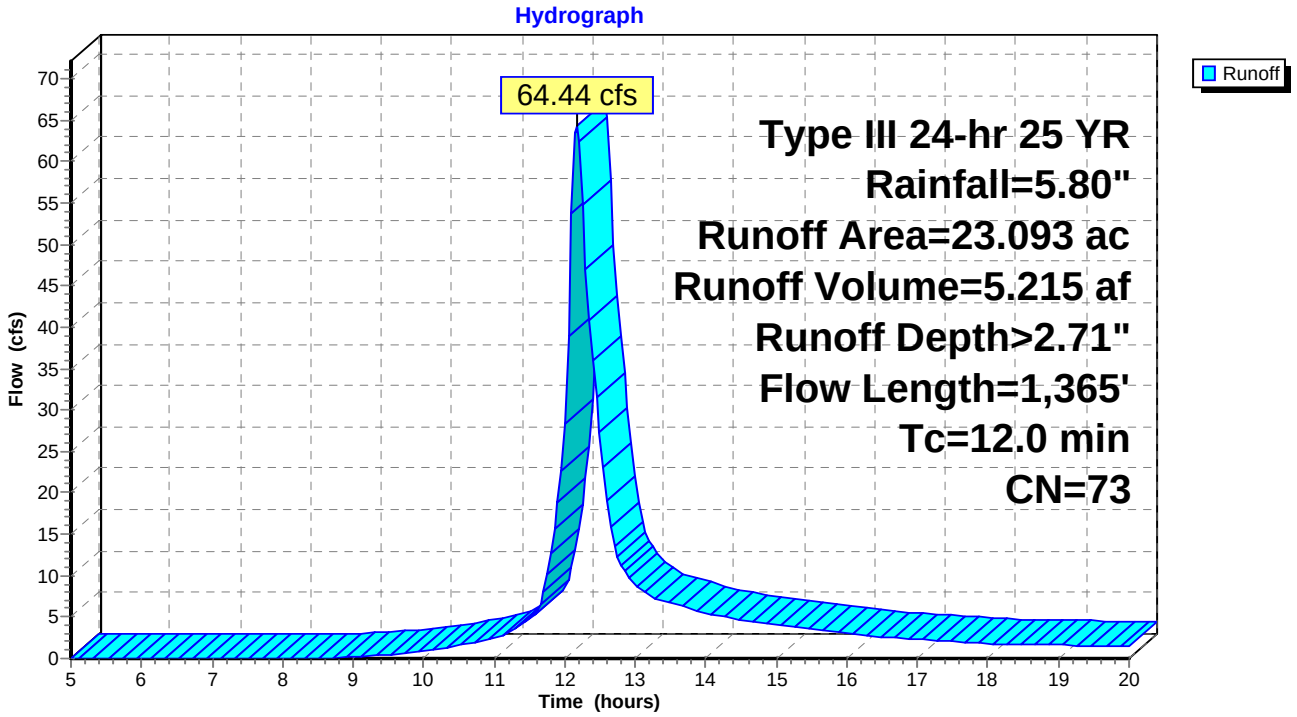
Runoff = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
10.530	61	1/4 acre lots, 38% imp, HSG A
0.979	81	1/3 acre lots, 30% imp, HSG C
9.244	86	1/3 acre lots, 30% imp, HSG D
0.718	70	Woods, Good, HSG C
1.277	77	Woods, Good, HSG D
0.345	72	1/3 acre lots, 30% imp, HSG B
23.093	73	Weighted Average
15.921		Pervious Area
7.172		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	150	0.0800	0.32		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
3.0	700	0.0680	3.91		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.3	100	0.0050	5.91	29.00	**Circular Channel (pipe), C-D** Diam= 30.0" Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.013 Corrugated PE, smooth interior
0.3	280	0.0570	16.89	101.31	**Channel Flow, D-E** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
0.3	55	0.0010	2.86	14.05	**Circular Channel (pipe), E-F** Diam= 30.0" Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.012 Concrete pipe, finished
0.2	80	0.0100	7.07	42.43	**Channel Flow, F-G** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
12.0	1,365	Total			

Subcatchment 1S: Subcatchment 1



Summary for Subcatchment 2S: Subcatchment 2

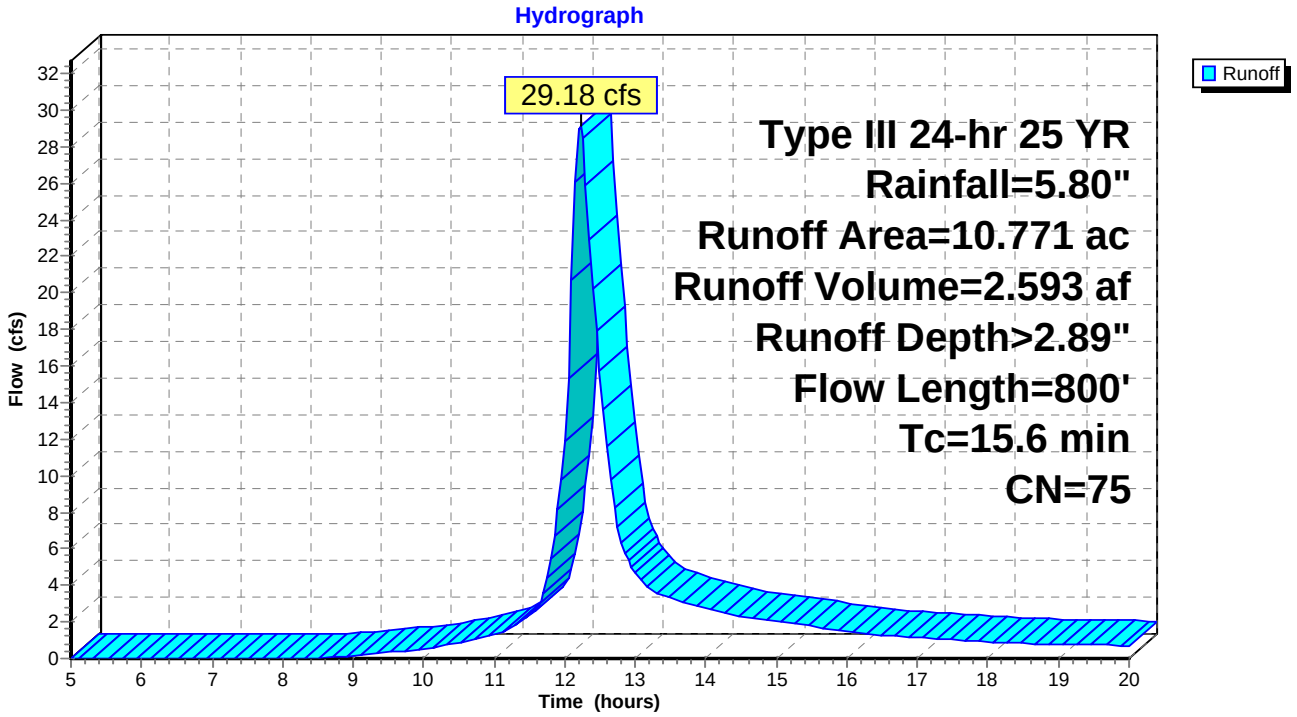
Runoff = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
3.212	61	1/4 acre lots, 38% imp, HSG A
0.192	80	1/2 acre lots, 25% imp, HSG C
2.607	87	1/4 acre lots, 38% imp, HSG D
0.157	70	Woods, Good, HSG C
4.603	77	Woods, Good, HSG D
10.771	75	Weighted Average
8.512		Pervious Area
2.259		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	150	0.0600	0.28		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
6.4	370	0.0375	0.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	280	0.0400	14.14	84.87	**Channel Flow, C-D** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
15.6	800	Total			

Subcatchment 2S: Subcatchment 2



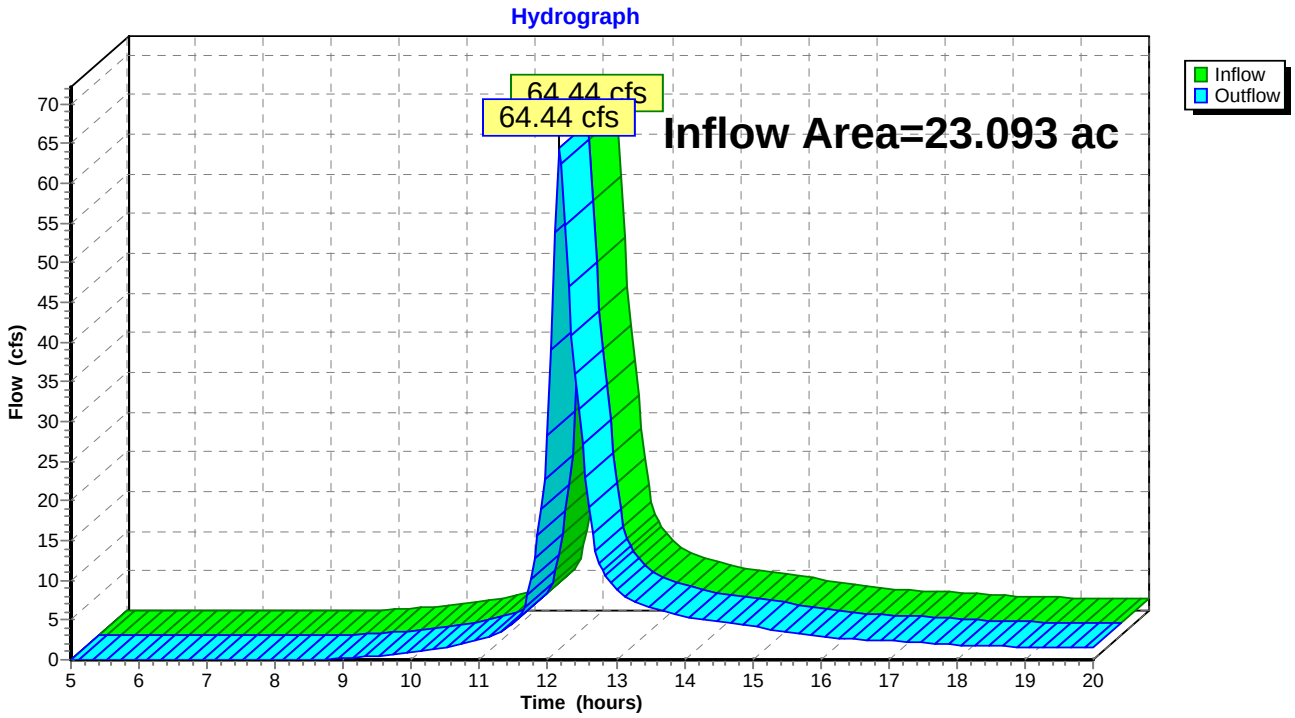
Summary for Reach 4R: POI 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 23.093 ac, 31.06% Impervious, Inflow Depth > 2.71" for 25 YR event
Inflow = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af
Outflow = 64.44 cfs @ 12.17 hrs, Volume= 5.215 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POI 1



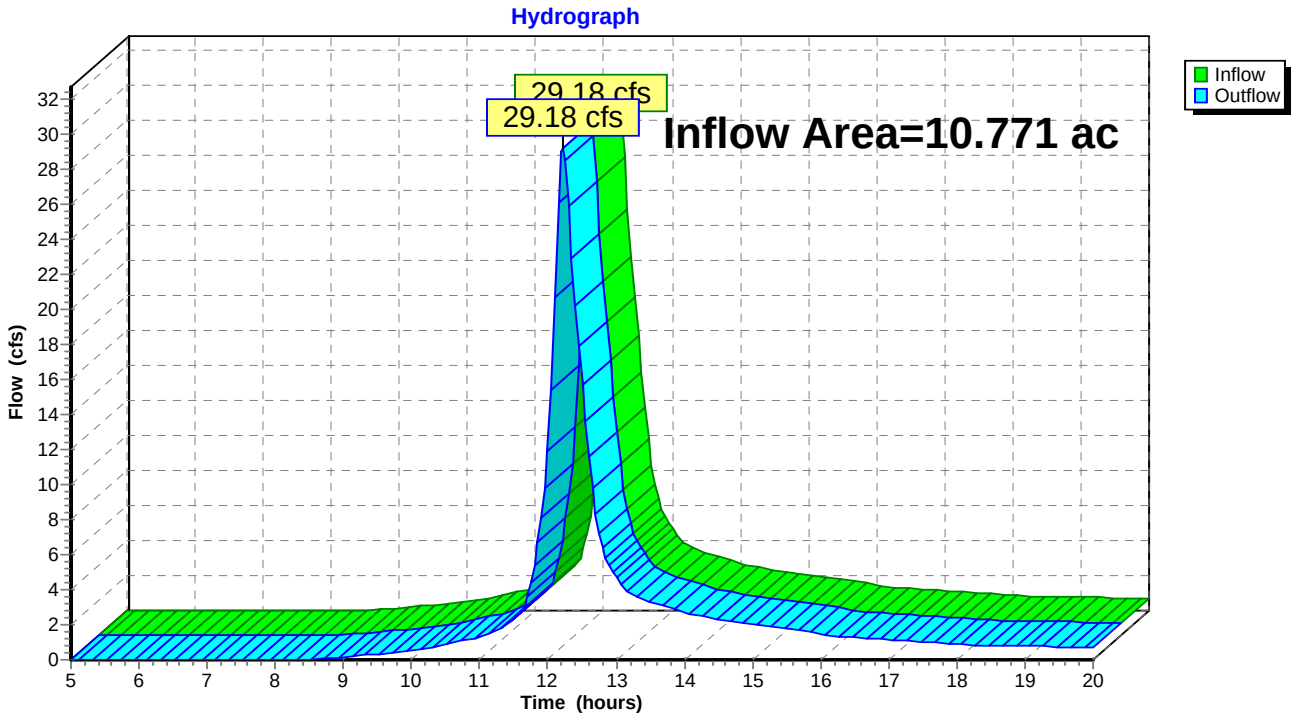
Summary for Reach 5R: POI 2

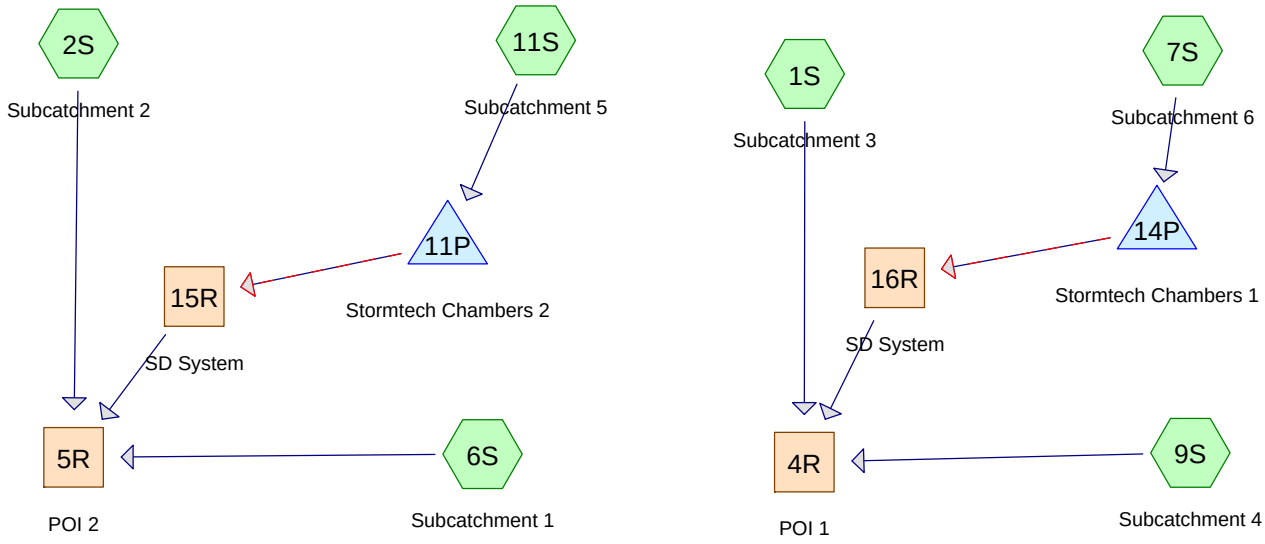
[40] Hint: Not Described (Outflow=Inflow)

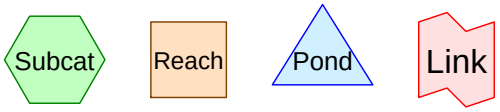
Inflow Area = 10.771 ac, 20.98% Impervious, Inflow Depth > 2.89" for 25 YR event
Inflow = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af
Outflow = 29.18 cfs @ 12.22 hrs, Volume= 2.593 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POI 2







Drainage Diagram for Post Development 2
Prepared by Gorrill Palmer, Printed 9/27/2017
HydroCAD® 8.50 s/n 001265 © 2007 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>0.83"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=17.33 cfs 1.486 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>0.93"
Flow Length=855' Tc=15.8 min CN=75 Runoff=6.00 cfs 0.558 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>1.21"
Flow Length=610' Tc=25.6 min CN=80 Runoff=2.53 cfs 0.277 af

Subcatchment 7S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>1.95"
Flow Length=365' Tc=12.8 min CN=90 Runoff=1.87 cfs 0.157 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>0.78"
Flow Length=240' Tc=30.9 min CN=72 Runoff=0.29 cfs 0.037 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>2.12"
Flow Length=250' Tc=21.5 min CN=92 Runoff=1.20 cfs 0.125 af

Reach 4R: POI 1 Inflow=17.42 cfs 1.625 af
Outflow=17.42 cfs 1.625 af

Reach 5R: POI 2 Inflow=9.55 cfs 0.921 af
Outflow=9.55 cfs 0.921 af

Reach 15R: SD System Avg. Depth=0.31' Max Vel=6.55 fps Inflow=2.17 cfs 0.087 af
D=24.0" n=0.013 L=50.0' S=0.0300 '/' Capacity=39.18 cfs Outflow=1.93 cfs 0.087 af

Reach 16R: SD System Avg. Depth=0.35' Max Vel=7.46 fps Inflow=1.75 cfs 0.102 af
D=12.0" n=0.013 L=230.0' S=0.0379 '/' Capacity=6.94 cfs Outflow=1.69 cfs 0.102 af

Pond 11P: Stormtech Chambers 2 Peak Elev=77.43' Storage=0.038 af Inflow=1.20 cfs 0.125 af
Primary=0.03 cfs 0.030 af Secondary=2.14 cfs 0.057 af Outflow=2.17 cfs 0.087 af

Pond 14P: Stormtech Chambers 1 Peak Elev=83.41' Storage=0.052 af Inflow=1.87 cfs 0.157 af
Primary=0.03 cfs 0.029 af Secondary=1.72 cfs 0.073 af Outflow=1.75 cfs 0.102 af

Total Runoff Area = 33.556 ac Runoff Volume = 2.639 af Average Runoff Depth = 0.94"
66.92% Pervious = 22.457 ac 33.08% Impervious = 11.099 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>1.82"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=40.00 cfs 3.238 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>1.96"
Flow Length=855' Tc=15.8 min CN=75 Runoff=13.10 cfs 1.173 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>2.36"
Flow Length=610' Tc=25.6 min CN=80 Runoff=4.95 cfs 0.538 af

Subcatchment 7S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>3.29"
Flow Length=365' Tc=12.8 min CN=90 Runoff=3.08 cfs 0.266 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>1.73"
Flow Length=240' Tc=30.9 min CN=72 Runoff=0.69 cfs 0.082 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>3.48"
Flow Length=250' Tc=21.5 min CN=92 Runoff=1.93 cfs 0.206 af

Reach 4R: POI 1 Inflow=43.33 cfs 3.534 af
Outflow=43.33 cfs 3.534 af

Reach 5R: POI 2 Inflow=19.22 cfs 1.879 af
Outflow=19.22 cfs 1.879 af

Reach 15R: SD System Avg. Depth=0.30' Max Vel=6.47 fps Inflow=2.05 cfs 0.168 af
D=24.0" n=0.013 L=50.0' S=0.0300 '/' Capacity=39.18 cfs Outflow=1.94 cfs 0.168 af

Reach 16R: SD System Avg. Depth=0.47' Max Vel=8.58 fps Inflow=3.59 cfs 0.215 af
D=12.0" n=0.013 L=230.0' S=0.0379 '/' Capacity=6.94 cfs Outflow=3.07 cfs 0.214 af

Pond 11P: Stormtech Chambers 2 Peak Elev=77.35' Storage=0.038 af Inflow=1.93 cfs 0.206 af
Primary=0.03 cfs 0.033 af Secondary=2.02 cfs 0.134 af Outflow=2.05 cfs 0.168 af

Pond 14P: Stormtech Chambers 1 Peak Elev=83.54' Storage=0.052 af Inflow=3.08 cfs 0.266 af
Primary=0.03 cfs 0.033 af Secondary=3.56 cfs 0.182 af Outflow=3.59 cfs 0.215 af

Total Runoff Area = 33.556 ac Runoff Volume = 5.502 af Average Runoff Depth = 1.97"
66.92% Pervious = 22.457 ac 33.08% Impervious = 11.099 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 3 Runoff Area=21.404 ac 33.51% Impervious Runoff Depth>2.71"
Flow Length=1,365' Tc=11.8 min CN=73 Runoff=60.09 cfs 4.834 af

Subcatchment 2S: Subcatchment 2 Runoff Area=7.169 ac 36.52% Impervious Runoff Depth>2.89"
Flow Length=855' Tc=15.8 min CN=75 Runoff=19.32 cfs 1.726 af

Subcatchment 6S: Subcatchment 1 Runoff Area=2.737 ac 10.76% Impervious Runoff Depth>3.35"
Flow Length=610' Tc=25.6 min CN=80 Runoff=6.99 cfs 0.765 af

Subcatchment 7S: Subcatchment 6 Runoff Area=0.968 ac 56.10% Impervious Runoff Depth>4.39"
Flow Length=365' Tc=12.8 min CN=90 Runoff=4.04 cfs 0.354 af

Subcatchment 9S: Subcatchment 4 Runoff Area=0.569 ac 0.00% Impervious Runoff Depth>2.60"
Flow Length=240' Tc=30.9 min CN=72 Runoff=1.05 cfs 0.123 af

Subcatchment 11S: Subcatchment 5 Runoff Area=0.709 ac 66.57% Impervious Runoff Depth>4.59"
Flow Length=250' Tc=21.5 min CN=92 Runoff=2.51 cfs 0.271 af

Reach 4R: POI 1 Inflow=64.63 cfs 5.258 af
Outflow=64.63 cfs 5.258 af

Reach 5R: POI 2 Inflow=27.65 cfs 2.723 af
Outflow=27.65 cfs 2.723 af

Reach 15R: SD System Avg. Depth=0.34' Max Vel=7.01 fps Inflow=2.72 cfs 0.233 af
D=24.0" n=0.013 L=50.0' S=0.0300 '/' Capacity=39.18 cfs Outflow=2.53 cfs 0.233 af

Reach 16R: SD System Avg. Depth=0.55' Max Vel=9.13 fps Inflow=4.41 cfs 0.301 af
D=12.0" n=0.013 L=230.0' S=0.0379 '/' Capacity=6.94 cfs Outflow=3.99 cfs 0.301 af

Pond 11P: Stormtech Chambers 2 Peak Elev=77.81' Storage=0.038 af Inflow=2.51 cfs 0.271 af
Primary=0.03 cfs 0.035 af Secondary=2.69 cfs 0.198 af Outflow=2.72 cfs 0.233 af

Pond 14P: Stormtech Chambers 1 Peak Elev=83.59' Storage=0.052 af Inflow=4.04 cfs 0.354 af
Primary=0.03 cfs 0.035 af Secondary=4.38 cfs 0.266 af Outflow=4.41 cfs 0.301 af

Total Runoff Area = 33.556 ac Runoff Volume = 8.073 af Average Runoff Depth = 2.89"
66.92% Pervious = 22.457 ac 33.08% Impervious = 11.099 ac

Summary for Subcatchment 1S: Subcatchment 3

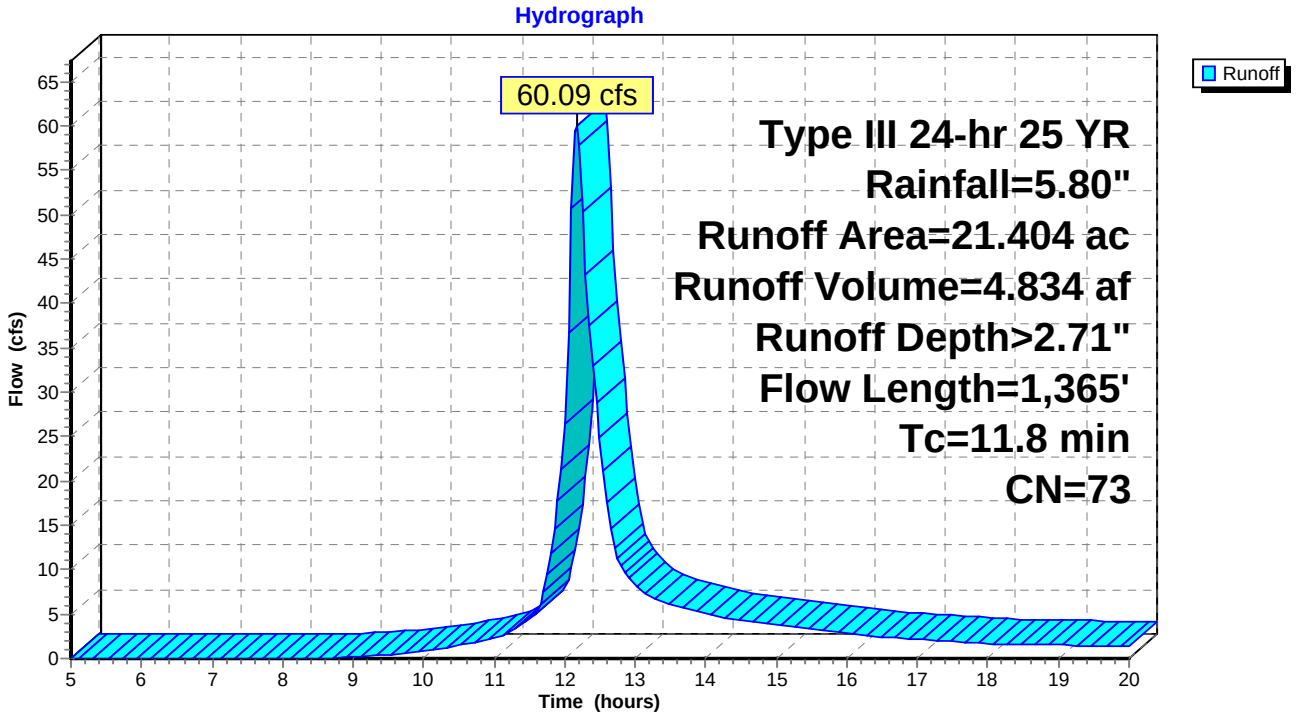
Runoff = 60.09 cfs @ 12.17 hrs, Volume= 4.834 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
10.530	61	1/4 acre lots, 38% imp, HSG A
0.979	81	1/3 acre lots, 30% imp, HSG C
9.244	86	1/3 acre lots, 30% imp, HSG D
0.345	72	1/3 acre lots, 30% imp, HSG B
0.125	70	Woods, Good, HSG C
0.181	80	>75% Grass cover, Good, HSG D
21.404	73	Weighted Average
14.232		Pervious Area
7.172		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	150	0.0800	0.32		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
3.0	700	0.0680	3.91		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.3	100	0.0050	5.91	29.00	**Circular Channel (pipe), C-D** Diam= 30.0" Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.013 Corrugated PE, smooth interior
0.2	243	0.0570	16.89	101.31	**Channel Flow, D-E** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
0.2	92	0.0100	9.44	66.70	**Circular Channel (pipe), E-F** Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013 Concrete pipe, bends & connections
0.2	80	0.0150	8.66	51.97	**Channel Flow, F-G** Area= 6.0 sf Perim= 5.6' r= 1.07' n= 0.022 Earth, clean & straight
11.8	1,365	Total			

Subcatchment 1S: Subcatchment 3



Summary for Subcatchment 2S: Subcatchment 2

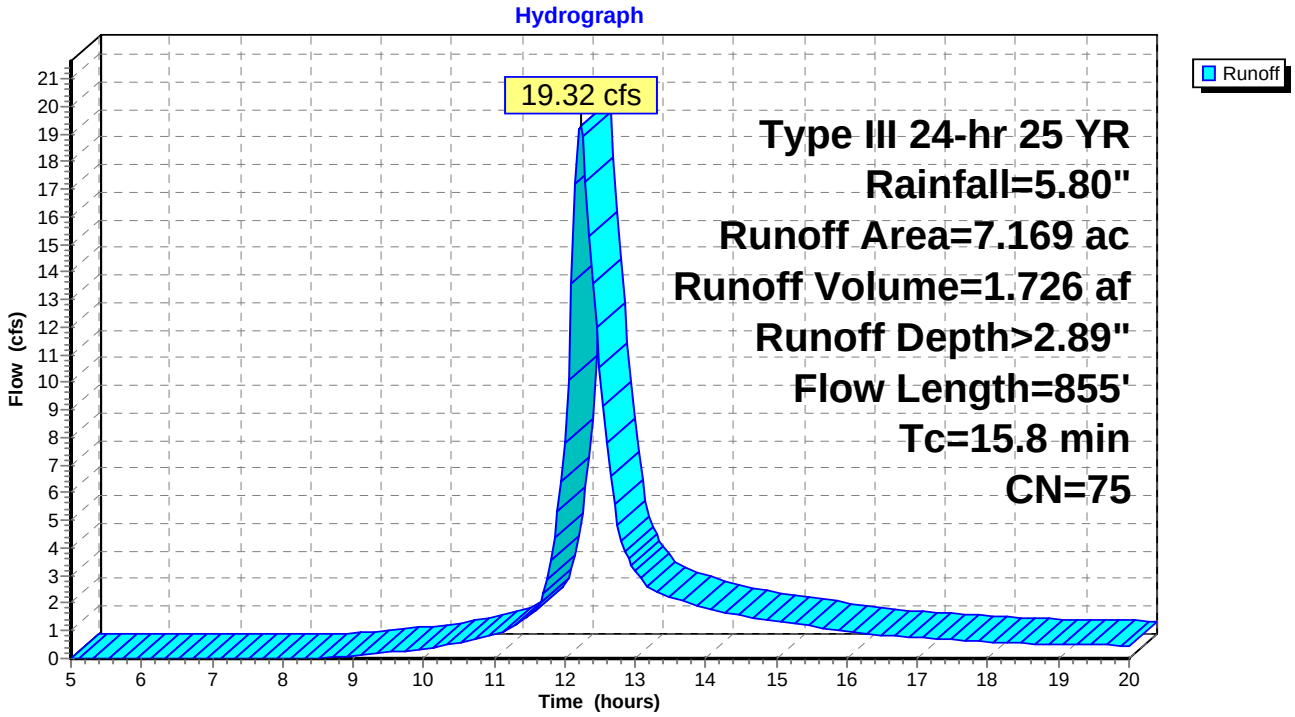
Runoff = 19.32 cfs @ 12.22 hrs, Volume= 1.726 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
3.212	61	1/4 acre lots, 38% imp, HSG A
0.192	80	1/2 acre lots, 25% imp, HSG C
2.607	87	1/4 acre lots, 38% imp, HSG D
0.141	83	1/4 acre lots, 38% imp, HSG C
1.017	86	1/3 acre lots, 30% imp, HSG D
7.169	75	Weighted Average
4.551		Pervious Area
2.618		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	150	0.0600	0.28		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
6.3	340	0.0325	0.90		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.6	365	0.0204	10.28	32.31	**Circular Channel (pipe), C-D** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
15.8	855	Total			

Subcatchment 2S: Subcatchment 2



Summary for Subcatchment 6S: Subcatchment 1

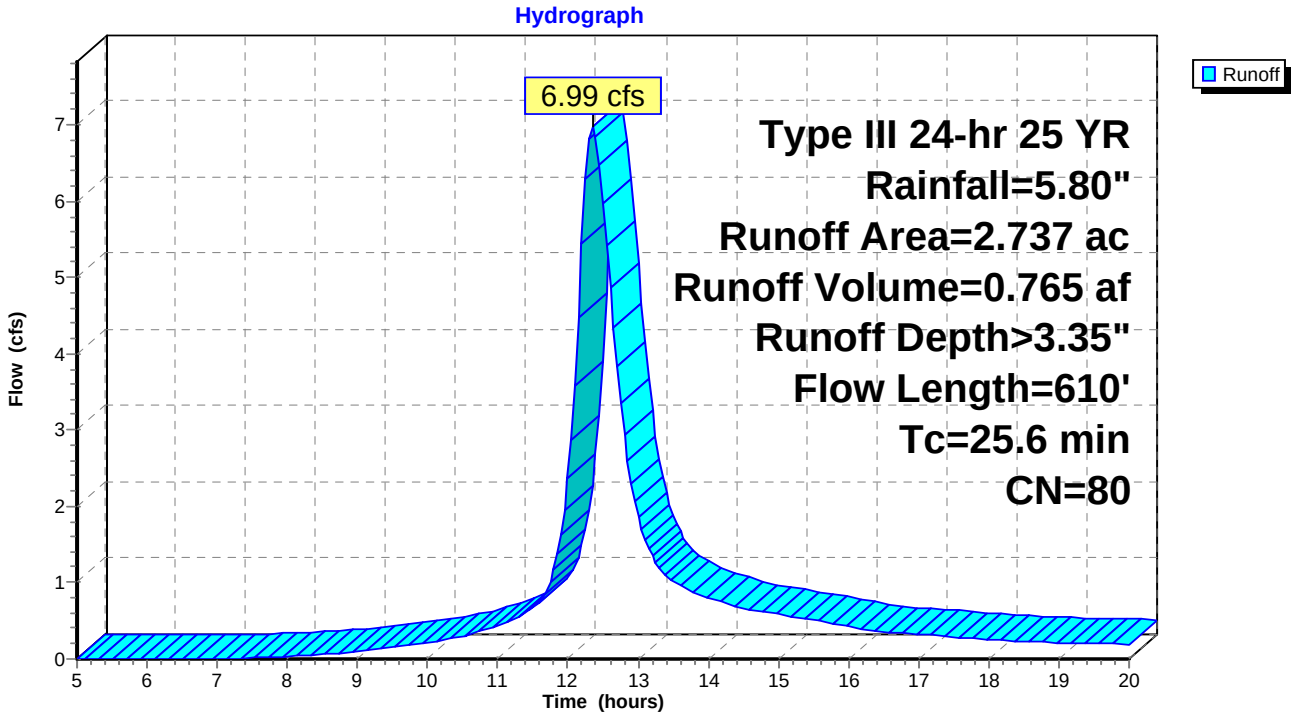
Runoff = 6.99 cfs @ 12.35 hrs, Volume= 0.765 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
1.954	77	Woods, Good, HSG D
0.698	86	1/3 acre lots, 30% imp, HSG D
0.085	98	Paved roads w/curbs & sewers
2.737	80	Weighted Average
2.443		Pervious Area
0.294		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0310	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
6.6	140	0.0050	0.35		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.7	370	0.0200	8.41	14.86	**Circular Channel (pipe), C-D** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
25.6	610	Total			

Subcatchment 6S: Subcatchment 1



Summary for Subcatchment 7S: Subcatchment 6

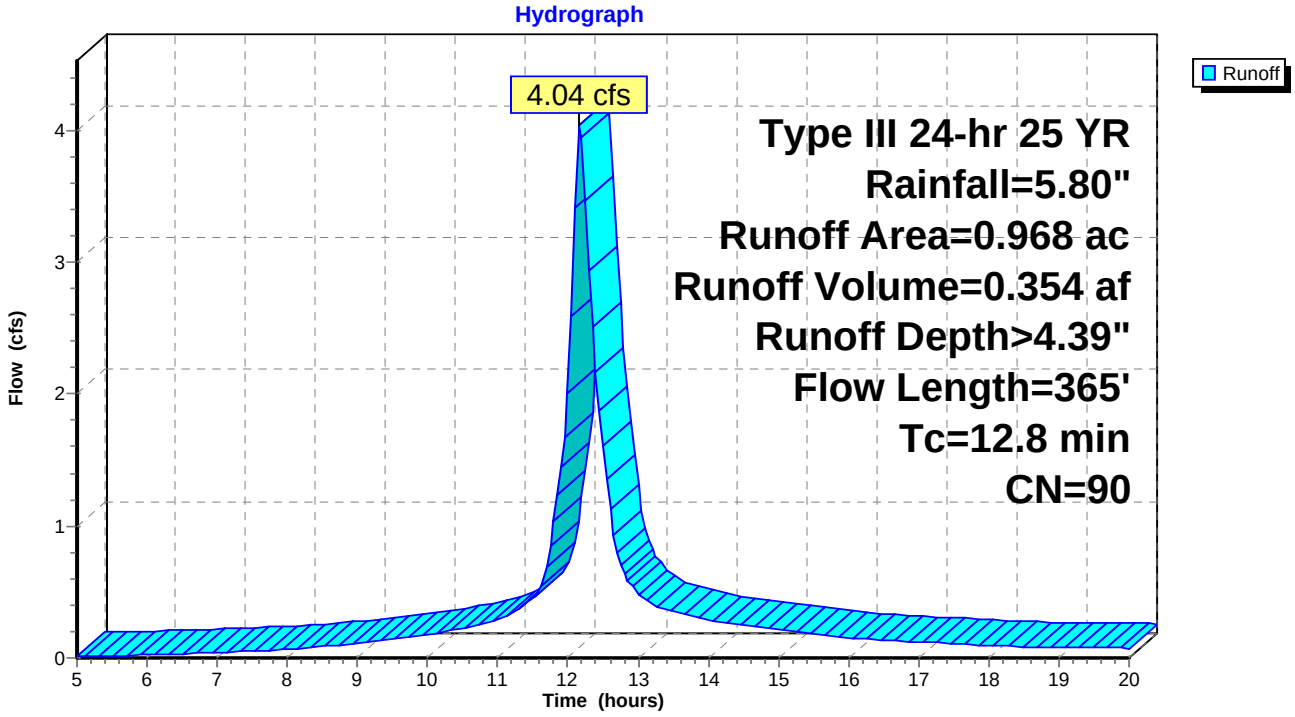
Runoff = 4.04 cfs @ 12.17 hrs, Volume= 0.354 af, Depth> 4.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.543	98	Paved roads w/curbs & sewers
0.425	80	>75% Grass cover, Good, HSG D
0.968	90	Weighted Average
0.425		Pervious Area
0.543		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	150	0.0350	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	15	0.0050	1.06		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
12.8	365	Total			

Subcatchment 7S: Subcatchment 6



Summary for Subcatchment 9S: Subcatchment 4

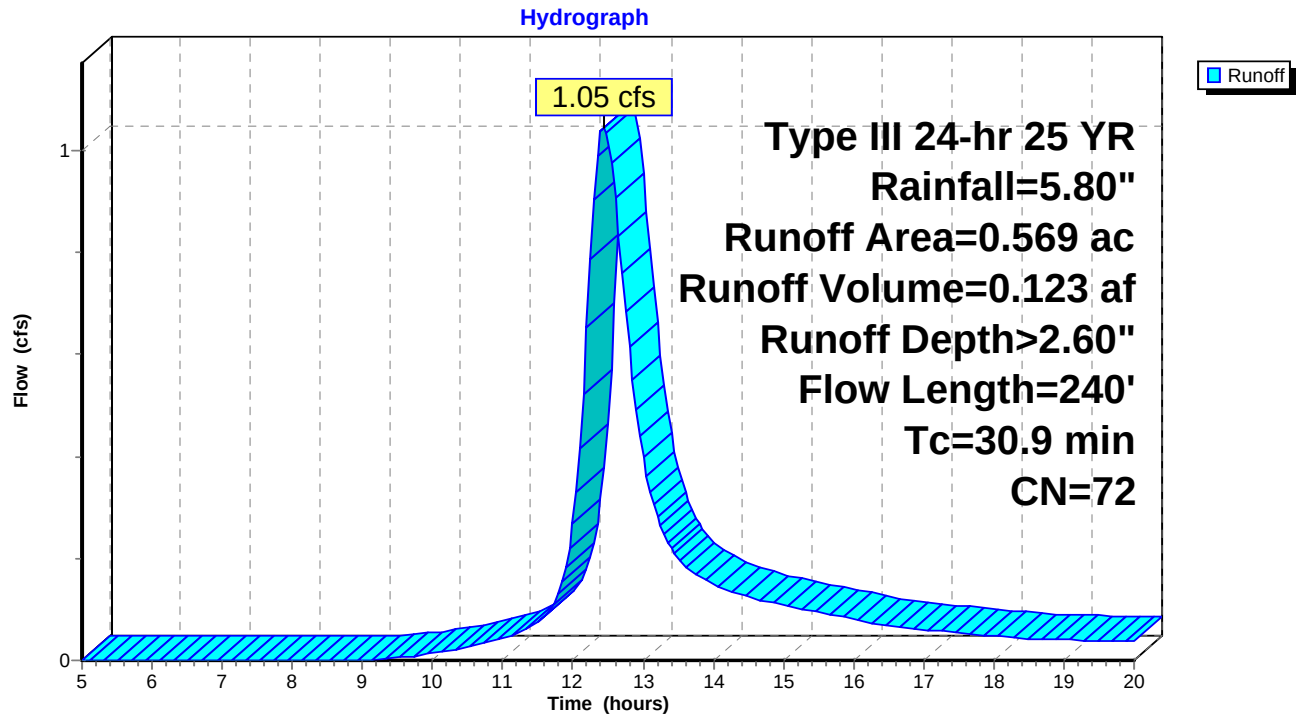
Runoff = 1.05 cfs @ 12.44 hrs, Volume= 0.123 af, Depth> 2.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.379	70	Woods, Good, HSG C
0.190	77	Woods, Good, HSG D
0.569	72	Weighted Average
0.569		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	150	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
0.7	90	0.1800	2.12		**Shallow Concentrated Flow, B-G** Woodland Kv= 5.0 fps
30.9	240	Total			

Subcatchment 9S: Subcatchment 4



Summary for Subcatchment 11S: Subcatchment 5

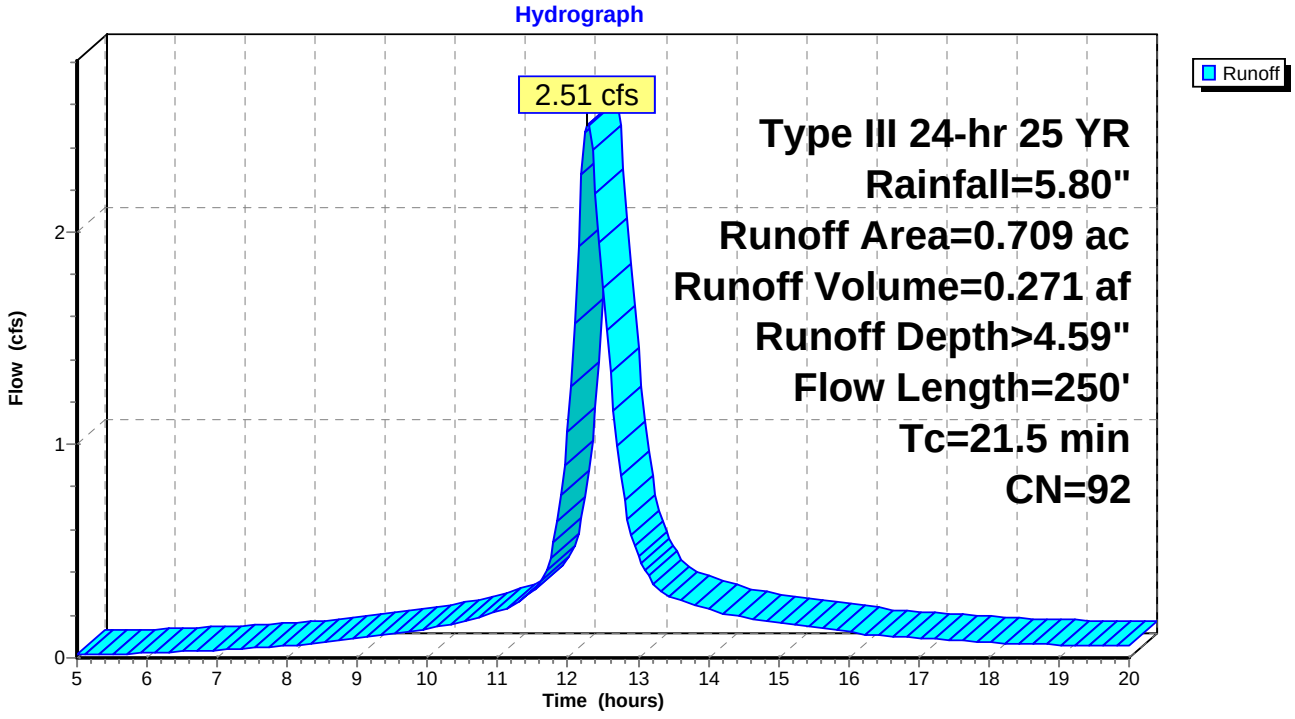
Runoff = 2.51 cfs @ 12.28 hrs, Volume= 0.271 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (ac)	CN	Description
0.472	98	Paved roads w/curbs & sewers
0.237	80	>75% Grass cover, Good, HSG D
0.709	92	Weighted Average
0.237		Pervious Area
0.472		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	125	0.0125	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
0.6	125	0.0325	3.66		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
21.5	250	Total			

Subcatchment 11S: Subcatchment 5



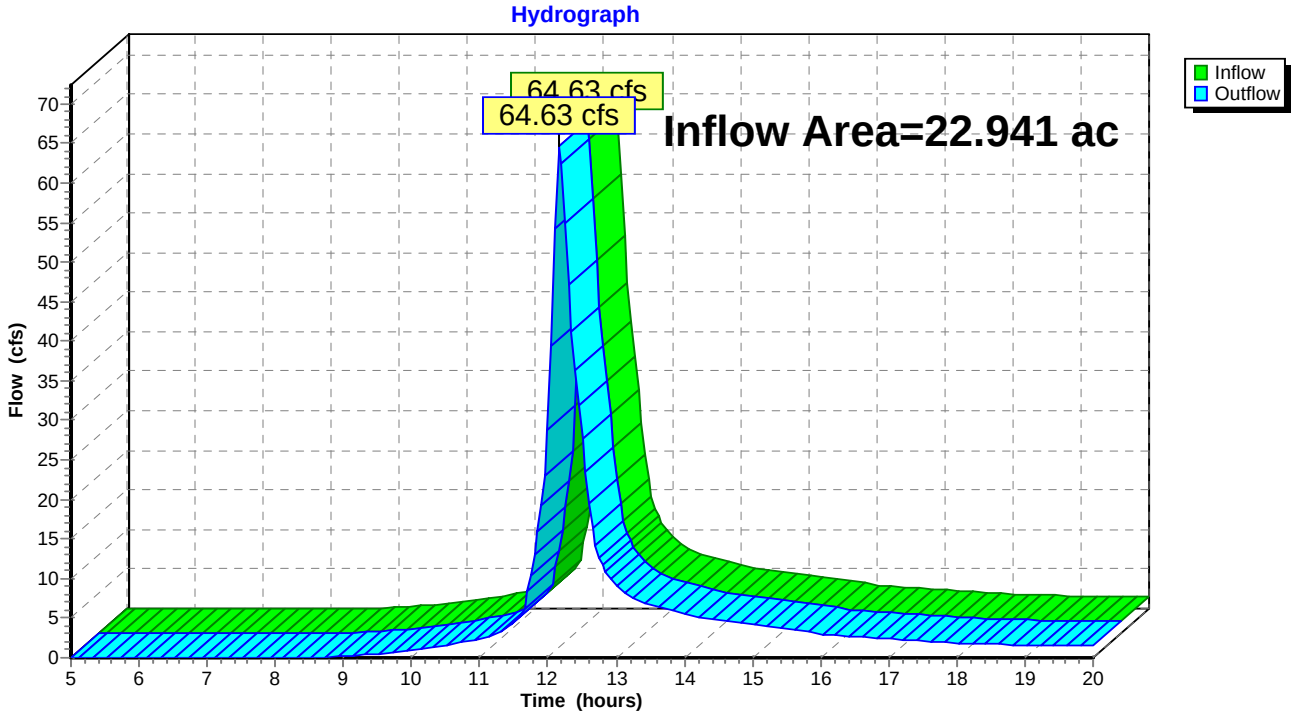
Summary for Reach 4R: POI 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.941 ac, 33.63% Impervious, Inflow Depth > 2.75" for 25 YR event
Inflow = 64.63 cfs @ 12.17 hrs, Volume= 5.258 af
Outflow = 64.63 cfs @ 12.17 hrs, Volume= 5.258 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POI 1



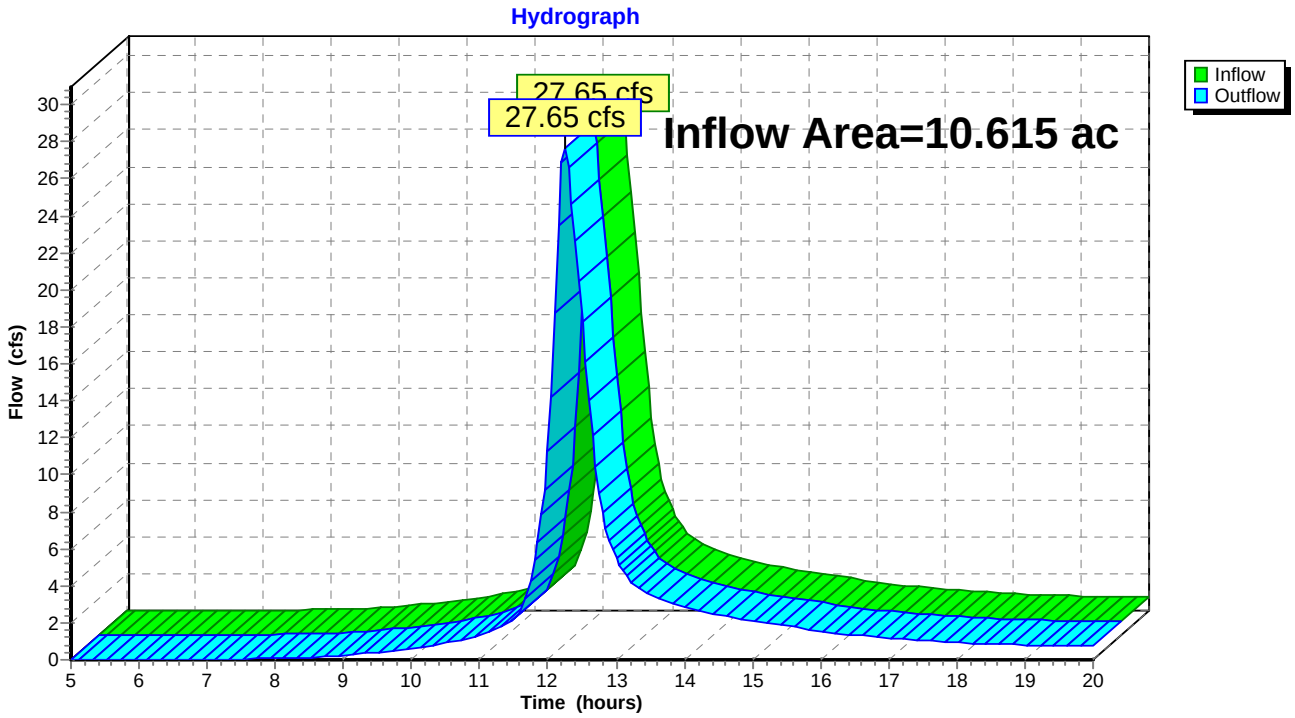
Summary for Reach 5R: POI 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 10.615 ac, 31.88% Impervious, Inflow Depth > 3.08" for 25 YR event
Inflow = 27.65 cfs @ 12.25 hrs, Volume= 2.723 af
Outflow = 27.65 cfs @ 12.25 hrs, Volume= 2.723 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POI 2



Summary for Reach 15R: SD System

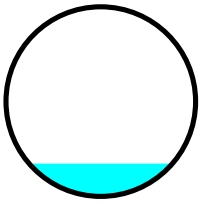
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.709 ac, 66.57% Impervious, Inflow Depth > 3.94" for 25 YR event
Inflow = 2.72 cfs @ 12.30 hrs, Volume= 0.233 af
Outflow = 2.53 cfs @ 12.29 hrs, Volume= 0.233 af, Atten= 7%, Lag= 0.0 min

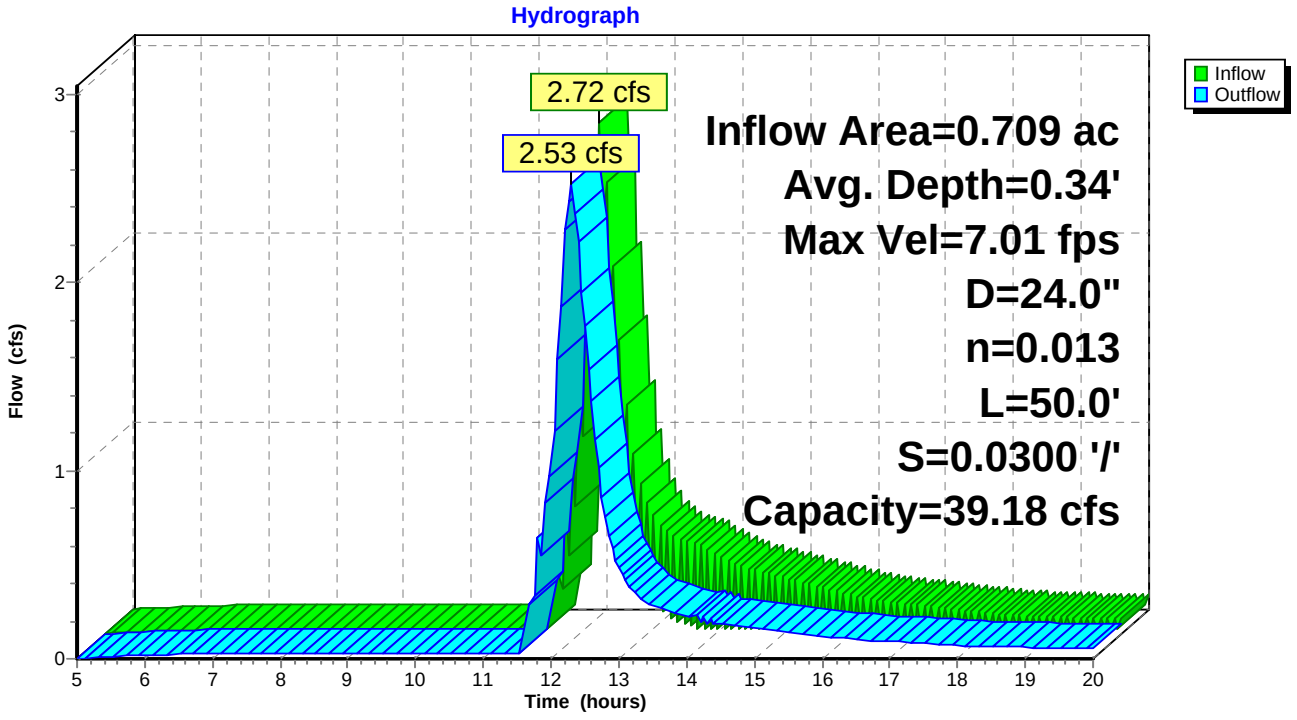
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.01 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.59 fps, Avg. Travel Time= 0.3 min

Peak Storage= 18 cf @ 12.29 hrs, Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 39.18 cfs

24.0" Diameter Pipe, n= 0.013 Corrugated PE, smooth interior
Length= 50.0' Slope= 0.0300 '/'
Inlet Invert= 72.50', Outlet Invert= 71.00'



Reach 15R: SD System



Summary for Reach 16R: SD System

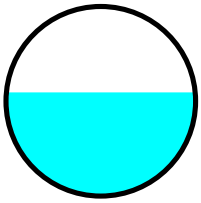
[52] Hint: Inlet/Outlet conditions not evaluated
[78] Warning: Submerged Pond 14P Primary device # 1 by 0.39'

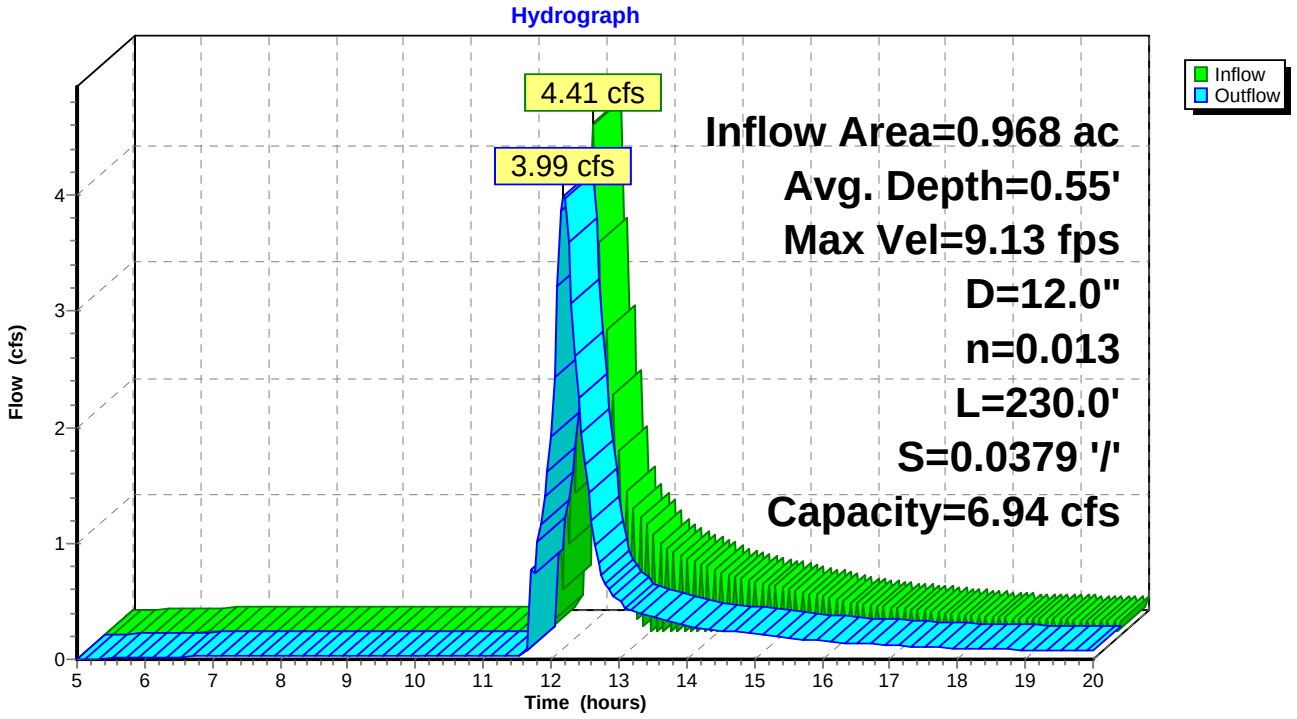
Inflow Area = 0.968 ac, 56.10% Impervious, Inflow Depth > 3.73" for 25 YR event
Inflow = 4.41 cfs @ 12.19 hrs, Volume= 0.301 af
Outflow = 3.99 cfs @ 12.19 hrs, Volume= 0.301 af, Atten= 9%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.13 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 3.23 fps, Avg. Travel Time= 1.2 min

Peak Storage= 101 cf @ 12.18 hrs, Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 6.94 cfs

12.0" Diameter Pipe, n= 0.013 Corrugated PE, smooth interior
Length= 230.0' Slope= 0.0379 '/'
Inlet Invert= 79.54', Outlet Invert= 70.82'





Summary for Pond 11P: Stormtech Chambers 2

[82] Warning: Early inflow requires earlier time span
[88] Warning: Qout>Qin may require Finer Routing>1
[85] Warning: Oscillations may require Finer Routing>1

Inflow Area = 0.709 ac, 66.57% Impervious, Inflow Depth > 4.59" for 25 YR event
Inflow = 2.51 cfs @ 12.28 hrs, Volume= 0.271 af
Outflow = 2.72 cfs @ 12.30 hrs, Volume= 0.233 af, Atten= 0%, Lag= 0.8 min
Primary = 0.03 cfs @ 6.95 hrs, Volume= 0.035 af
Secondary = 2.69 cfs @ 12.30 hrs, Volume= 0.198 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.81' @ 12.30 hrs Surf.Area= 0.017 ac Storage= 0.038 af

Plug-Flow detention time= 65.4 min calculated for 0.232 af (86% of inflow)
Center-of-Mass det. time= 24.3 min (787.8 - 763.5)

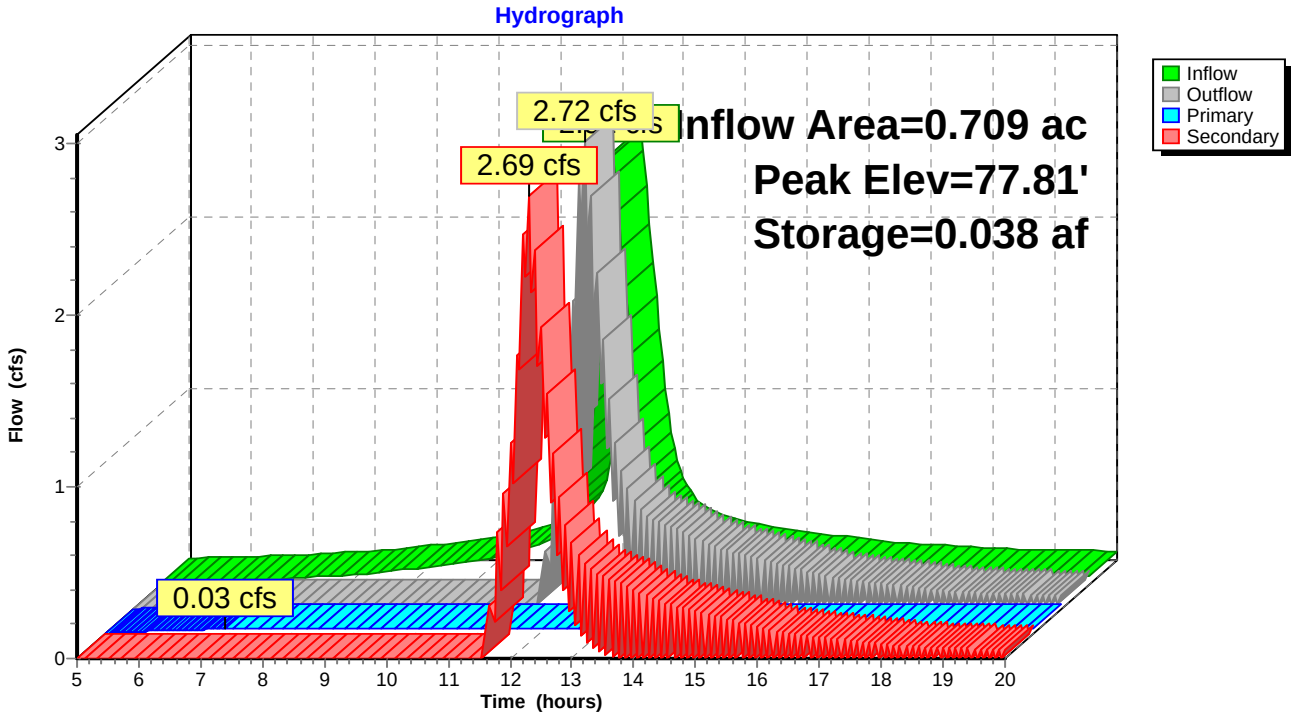
Volume	Invert	Avail.Storage	Storage Description
#1	73.26'	0.015 af	**4.75'W x 7.20'L x 3.50'H Prismatoid** x 22 0.060 af Overall - 0.023 af Embedded = 0.037 af x 40.0% Voids
#2	73.76'	0.023 af	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 22 Inside #1
#3	80.60'	0.002 af	**4.00'D x 6.00'H Vertical Cone/Cylinder**
		0.040 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	73.26'	**0.03 cfs Exfiltration at all elevations**
#2	Device 3	73.82'	**10.0" x 20.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 73.62' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior
#3	Secondary	76.76'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.03 cfs @ 6.95 hrs HW=73.39' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=2.67 cfs @ 12.30 hrs HW=77.80' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Passes 2.67 cfs of 20.16 cfs potential flow)
└**2=Culvert** (Inlet Controls 2.67 cfs @ 4.90 fps)

Pond 11P: Stormtech Chambers 2



Summary for Pond 14P: Stormtech Chambers 1

[82] Warning: Early inflow requires earlier time span
[88] Warning: Qout>Qin may require Finer Routing>1
[85] Warning: Oscillations may require Finer Routing>1

Inflow Area = 0.968 ac, 56.10% Impervious, Inflow Depth > 4.39" for 25 YR event
Inflow = 4.04 cfs @ 12.17 hrs, Volume= 0.354 af
Outflow = 4.41 cfs @ 12.19 hrs, Volume= 0.301 af, Atten= 0%, Lag= 1.4 min
Primary = 0.03 cfs @ 7.00 hrs, Volume= 0.035 af
Secondary = 4.38 cfs @ 12.19 hrs, Volume= 0.266 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 83.59' @ 12.19 hrs Surf.Area= 0.024 ac Storage= 0.052 af

Plug-Flow detention time= 70.2 min calculated for 0.301 af (85% of inflow)
Center-of-Mass det. time= 26.1 min (788.4 - 762.3)

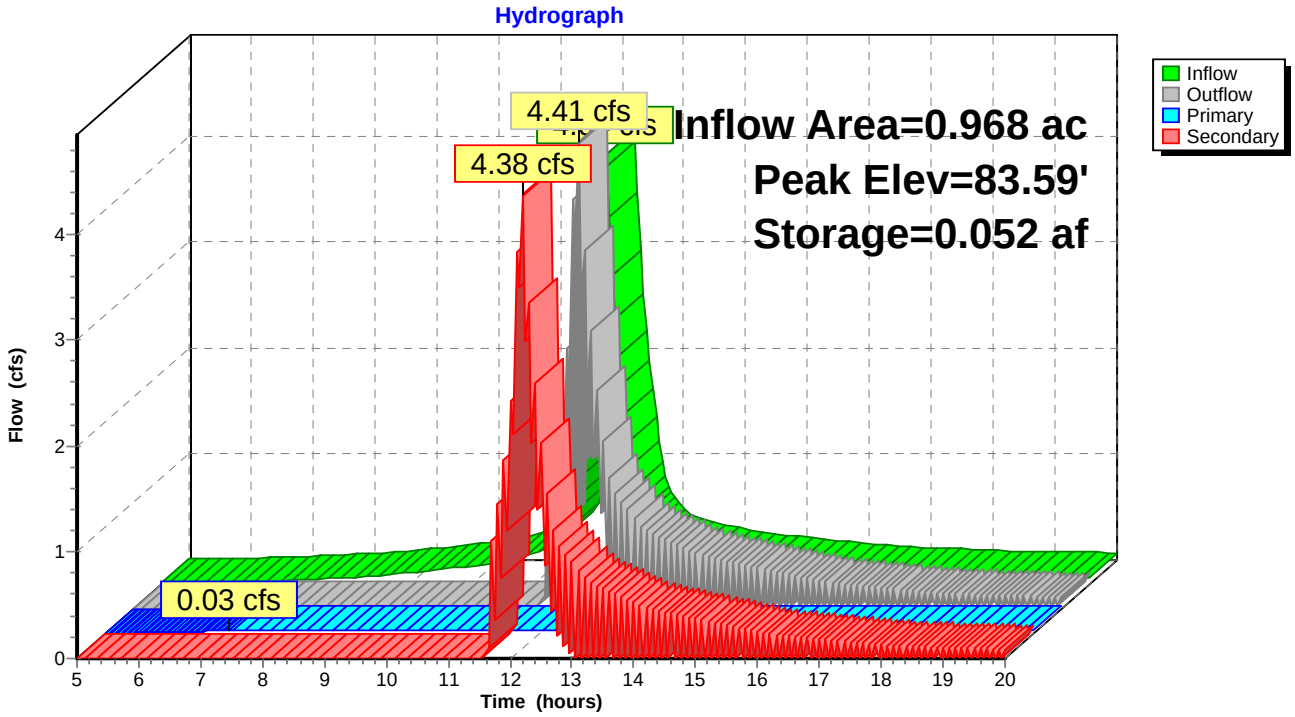
Volume	Invert	Avail.Storage	Storage Description
#1	79.69'	0.020 af	**4.75'W x 7.20'L x 3.50'H Prismatoid** x 30 0.082 af Overall - 0.032 af Embedded = 0.051 af x 40.0% Voids
#2	80.19'	0.032 af	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 30 Inside #1
#3	86.96'	0.002 af	**4.00'D x 7.00'H Vertical Cone/Cylinder**
		0.054 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	79.69'	**0.03 cfs Exfiltration at all elevations**
#2	Device 3	80.25'	**24.0" x 5.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 80.05' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior
#3	Secondary	83.19'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.03 cfs @ 7.00 hrs HW=79.84' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=4.20 cfs @ 12.19 hrs HW=83.58' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 4.20 cfs @ 1.77 fps)
└**2=Culvert** (Passes 4.20 cfs of 9.51 cfs potential flow)

Pond 14P: Stormtech Chambers 1



ATTACHEMENT C

CULVERT AND GRATE CALCULATIONS

GORRILL PALMER
Relationships. Responsiveness. Results.
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JOB 98089.08 BRANDY LANE
SHEET NO. _____ OF _____
CALCULATED BY DJG DATE 9/15/17
CHECKED BY _____ DATE _____
SCALE _____

CATCH BASIN 6

AREA: 2.737 ACRES, 119,224 SF

T_C = 25.6 min (FROM HYDROCAD)

i_{25} = 3.25, C = 0.80

$Q_{25} = (0.80)(3.25)(2.737) = 7.12$ CFS

MANNINGS CAPACITY → FOR PIPE FROM CB6 TO DMH 8

$$Q = (1.5/n) A R^{(2/3)} S^{(1/2)}$$

D = 18", A = 1.766 SF, R = 0.375 FT
n = 0.011, S = 0.0058 FT/FT

Q = 9.539 CFS (CAPACITY) ✓GOOD

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JOB 98089.08 - BRANDY LANE
SHEET NO. _____ OF _____
CALCULATED BY DJV DATE 09/19/17
CHECKED BY _____ DATE _____
SCALE _____

DMH 1 - EVALUATION OF THE EXISTING 36" RCP CULVERT. MANNING'S CAPACITY FROM DMH 1 TO PLUNGE POOL

ASSUME: $Q_{25} = 64.63$ CFS

$n = 0.012$

KNOWN: $D = 36" = 3'$

$$S = \frac{72.14 - 70.68}{54'} = 0.027$$

SOLVE: $A = \frac{\pi}{4} D^2$, $P = \pi D$, $R = \frac{A}{P}$

$$Q = \frac{1.49}{n} A (R^{2/3})(S^{1/2})$$

$$A = \frac{\pi}{4}(3')^2 = 7.069 \text{ SF}$$

$$R = \frac{A}{P} = \frac{\frac{\pi}{4} D^2}{\pi D} = \frac{D}{4}$$

$$R = \frac{3'}{4} = 0.75$$

$$Q = \frac{1.49}{0.012} (7.069)(0.75)^{2/3}(0.027)^{1/2}$$

$Q = 119.0$ CFS

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JOB 98089.08 BRANDY LANE
SHEET NO. _____ OF _____
CALCULATED BY DJG DATE 9/27/17
CHECKED BY _____ DATE _____
SCALE _____

CULVERT AT STA 12+90

AREA TO CULVERT INLET = 7.169 AC, 312,282 SF

T_c = 15.8 MINUTES (FROM HYDROCAD)

CN = 0.75 i_{25} = 4.1

$Q_{25} = (0.75)(4.1)(7.169) =$ 22.04 CFS

USE 24" DIAMETER CULVERT

HW/D = 1.5, HW = 3'

CULVERT CAPACITY, n = 0.012, S = 0.02

FROM MANNING'S EQ → CAPACITY = 34.9 CFS ✓OK

CATCH BASIN INLET CAPACITY (BASED ON PONDED WATER)
Gorrill-Palmer Consulting Engineers, Inc.

JOB DATA

Project: 98089.08 Brandy Lane
Calc. by: DJG
Date: 9/28/2017
Pipe at: CB6

EQUATIONS:

Orifice equation, $Q_o = CA(2gh)^{1/2}$, Ref: Vennard & Street, 6th ed., p. 535
C = entrance coefficient = 0.6 for square edge openings, Ref: Ibid
A = area of flow
g = gravitational constant = 32.2 feet/second^2
h = head in feet
Clogging factor = 2/3 (i.e., flow reduced by 1/3) Ref: Seelye, "Design", 1960, p. 18-27

Weir flow, $Q_w = 3.3P(h)^{1.5}$, Ref: "Inlet Grate Capacities", Neenah Found.Co., 1987, p. 52
P = perimeter of grate in feet = perimeter of outside edge of grate, Ref: Ibid
h = head in feet

INPUT:

Head (h) =	0.77 ft	
Open Area (A) =	3.70 ft^2	Neenah R-1878 B8G
Flow Coefficient (C) =	0.60	Double Grate
Clogging Factor (f) =	0.66	
Grate Perimeter (P) =	12.60 ft	

OUTPUT:

Orifice Capacity (Qo) =	10.3	cfs
Weir Capacity (Qw) =	28.1	cfs
Inlet Capacity =	10.3	cfs

Neighborhood Meeting Certification

I, Doug Reynolds, hereby certify that a neighborhood meeting was held on November 28, 2017 at Lyman Moore Middle School at 5:30 PM.

I also certify that on November 15, 2017, invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 100 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 and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

12/8/17 (date)

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

GORRILL PALMER

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

November 15, 2017

Dear Neighbor:

On behalf of Burt Wolf, Gorrill Palmer is preparing plans and permitting for a sixteen lot subdivision located at 22 Hope Ave. Please join us for a neighborhood meeting to discuss our plans.

Meeting Location: Moore Middle School - Library
Meeting Date: November 28th, 2017
Meeting Time: 5:30 PM – 6:30 PM

(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 772-2515.

Sincerely,

Gorrill Palmer

Note:
Under Section 14-32(C) and 14-524(a)d of the City Code Ordinance, 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

Brandy Lane
Portland, ME

Neighborhood Meeting
Sign-In Sheet
Tue. Nov 28
Page 1

Name:	Address:	Tel #:	Email:
Alex Kappelmann	19 Alice St	207-317-6910	alex@locationsinmaine.com
Jeff Grinvalsky	1265 Washington	408-7666	jgrinvalsky@nerec.org
Dave Hesselink	3 Alice St.	878-2089	
Bob Milliken	9 Alice ct		
Kim Rich	65 Copley Woods		VoteKimRich@gmail.com
John Eisenhart	39 Alice Ct.	207-319-6590	john.a.eisenhart@me.com
Jaime Parker (Portland Trails)	805 Commercial St.	775-2411	jaime@trails.org
Mark Avienti	110 Alice St.	712-1359	mtavienti@gmail.com
Dan Anderson	1326 Washington Ave	7123741	danandersonmyfirepoint.net
Alex Coupe	27 Cypress St	207-838-4546	coupexc30@yahoo.com

GORRILL PALMER

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

MEETING NOTES

Project: Brandy Lane Subdivision
Client: LBW, LLC
GP Project No: 98089.08
Date/Location of Meeting: November 28, 2017; Lyman Moore Middle School
GP Personnel: Doug Reynolds, Drew Gagnon, David Vitali
Attendees: see sign in sheet

Distribution: LBW LLC, City of Portland, File

Summary of Discussions

Doug Reynolds gave an overview of the project and where it currently stands in the permitting process. Major topics of concern during the meeting are summarized below, with responses given at the meeting in bold.

Laurie Hesselinn: How does the application process work and where are you in the process? **First, it goes through a staff review by the City of Portland. Next, the planning board reviews it and then there is a neighborhood meeting. There will be a public hearing before final approval from the planning board.**

Bob Milliken: I remember that tree frog habitats were an issue last time. Do you have to go through the EPA? **There are no issues with tree frogs for this project. The Maine Department of Inland Fisheries and Wildlife identified long-eared bats in the area and the only restriction involves removing trees during their pupping season.**

Kim Rich: What is the size of each lot? **They range from 6,000-17,000SF.**

Kim: How wide is the road? Will it be the legal width? **Yes, it is designed to meet city standards and we anticipate that it will be a public road.**

Kim: Are there any wetlands impacts? **Yes, about 7,000SF. That will be permitted through the MDEP.**

Kim: Will stormwater be stored in an open pool? **Stormwater will be treated using low impact development methods. The developer is proposing focal points and grassed underdrain soil filters for the stormwater management.**

Kim: The low impact development methods on Ray Street is unsightly. It is often filled with water and it is dangerous for children. **That is due to a lack of maintenance. The stormwater treatment will be grassed and have a valve for controlled release. They should drain in 24-36 hours and are intended to be dry most of the time.**

John Eisenhart: There is a detention pond behind me house on Alice Court. How are you going to treat stormwater from this project? Will you be clearing the trees? **There will be a 3 to 4 ft deep ditch that direct water to a grassed underdrained soil filter, not a typical detention pond. Trees**

will be removed as necessary, but saving as many trees as possible is of importance to the developer.

Jamie Parker: Where will the current trail be relocated? **The existing trail will not be relocated, but trail-goers will enter the trail closer to the Presumpscot River. Trail parking will be relocated to the east side of Brandy Lane.**

Jamie: Will that be parking for the trail? **Yes, that is for the trail**

Jamie: Will this be a public road? Will there be on-street parking? **Yes, it is anticipated the road will become public. The road is designed to be the standard width required by the City of Portland. While a parking lot for trail-goers is proposed, on street parking for overflow could be used.**

Jamie: If there is on-street parking, I am okay with no trail parking if that reduces impervious area. **No response necessary.**

Dave Hesselinn: How will the drainage be maintained? **The Home Owners Association is responsible for annual maintenance.**

Dan Anderson: The City is responsible for maintenance if the HOA is not acting. **Clarification. No response necessary.**

Kim Rich: Why would the HOA be responsible for maintenance if it is a public road? **The HOA is responsible for the stormwater facilities.**

Bob Milliken: Is it your intent to clear the trees on the property facing Alice Court? **Trees will not be cleared in the corner of the development near his house. Trees were cleared along the property line prior to this project. The developer will save as many trees as possible during construction.**

Bob Milliken: Will wetlands on my property be affected from this project? **Any wetlands disturbance will be permitted through the MDEP. The wetlands on your property are not related to this project.**

John Eisenhart: How quickly can this proceed? **We are required to follow City of Portland site plan applications procedure and it is dependent on that schedule.**

Laurie Hesselinn: How are buses and plows going to turn around? **The proposed turnaround at the end of Brandy Lane is designed to meet the City of Portland standards.**

Doug Reynolds concluded the meeting and offered to speak with attendees with further questions.

GORRILL PALMER

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

January 15, 2018

Mathew Grooms
Planning and Urban Development Department
City of Portland
Fourth Floor, City Hall
389 Congress Street
Portland, Maine 04101

Subject: Brandy Lane Subdivision – Portland, ME
Request for Additional Information

Dear Mathew,

Per correspondence with you, the Dept. of Public Works, the planning board workshop on October 10th, 2017, and others, additional information has been requested relative to the permitting for the Brandy Lane Subdivision. The items that you requested are listed below followed by additional information, if appropriate. Peer review updates can be found in bold.

Planning Board Workshop Comments/Memo

Comment (1): *The applicant may want to consider asking for a waiver for driveway width to minimize impervious area.*

Response: No waiver for driveway widths is proposed at this time.

Comment (2): *Please clarify who owns the trail parking spaces.*

Response: The portion of the trail parking spaces that is within the right-of-way will be owned by the City. The portion of trails and pedestrian access way out of the right-of-way will be given as an easement to Portland Trails for maintenance.

Comment (3): *The ordinance requires submission to include a preliminary landscape plan, and staff have advised the applicant that tree saves are generally sought for subdivisions. A more detailed landscape and tree save plan will need to be prepared for final submission. The applicant is proposing 32 street trees. Tree save proposals should address the need for buffering between the subdivision and the surrounding existing homes.*

Response: The Overall Grading, Drainage and Erosion Control Plan, Sheet C103 is also provided as a preliminary landscape plan. The street trees are reinforced on the plan, and a proposed tree line is shown. The contractor will be reminded to save every tree to greatest practical extent during construction. A revised plan can be found in the plan set included with this submission.

The following comments are from the Planning Division memorandum dated October 5th, 2017:

Traffic Comments from Mr. Errico – Email dated October 6, 2017

Comment (1): *A sidewalk shall be constructed on both sides of Brandy Lane per City standards. The applicant can request a waiver for sidewalks with supporting documentation per City waiver requirements.* ***The applicant***

has noted that the construction of a sidewalk on both sides of Brandy Lane will have wetland impacts and thus requests a waiver for the eastern side of the street. The applicant should consider providing a sidewalk on the eastern side of the street, without a grass esplanade, in areas of wetland impact. Additionally, the applicant should specifically note the area of wetland impact and how this impact would alter permitting requirements.

Response: After discussions with Planning Board staff on October 10th, 2017 at the planning board workshop, it was determined a sidewalk on both sides of Brandy Lane is not necessary and that a waiver would be granted due to the reduction of impervious area near a wetland as shown on the plan.

Peer Engineering Review – Memorandum dated October 6, 2017

Comment (1): *The Applicant has noted that a MDEP NRPA Tier I wetland permit and approval from the ACOE are required, copies of all permit approvals should be forwarded to the City upon receipt.* ***Applicant has acknowledged, and will be providing the permits when available.***

Response: No response necessary.

Comment (2): *The Applicant has included letters to utilities in their application. Ability to serve confirmation should be provided when available.* ***Applicant has acknowledged, and will be providing the information when available.***

Response: No response necessary.

Comment (3): *The Applicant is maintaining drainage that passes beneath the proposed roadway at the southern end of the site. A 36-inch pipe currently exists at this location. The upstream, western end of this pipe will be replaced, but the eastern, outlet end of the existing pipe will be maintained. The Applicant should provide information on any existing condition and any known capacity issues that exist. While overall flow at the study point at this location is not increasing, concentrated flow from the development is being added to this pipe. The adequacy of this pipe should be addressed.* ***The Applicant has provided capacity calculations. Additional information verifying the existing condition or the pipe should be provided (photos, etc.). If cleaning or repair of the existing pipe is required, this should be noted on the plans.***

Response: The 36" culvert is in acceptable condition. Photos verifying the existing condition of the pipe are provided and can be found in Attachment 2.

Comment (4): *Maintenance of the stormwater management features has been described in the Erosion & Sedimentation Control Report. A stormwater maintenance agreement will be required from the Applicant. Additional information should be provided on the ownership and maintenance of the stormwater treatment systems throughout the subdivision, i.e., will a homeowners association be put into place to pay for and manage the maintenance throughout the site.* ***The Applicant has included a Post- Construction Stormwater Management Plan document as their Maintenance Agreement. The Applicant should note that a recorded agreement with the City is required in accordance with Chapter 32.***

Response: The Erosion & Sedimentation Control Report has been revised to include that a recorded agreement with the city is required.

Comment (5): ***It is our understanding that no stormwater treatment infrastructure is allowed within the Right-of-Way. The Applicant's Plans show the Filterra units within the Right-of- Way. The Applicant should confirm with the Department of Public Works that this layout will be acceptable.***

Response: The stormwater management plan has been revised to use FocalPoints with Cultec subsurface chamber storage in place of Filterras. Please see the updated stormwater management plan in Attachment 1 included with this submission.

Inclusionary Zoning Comments – Victoria Volent Email dated September 18, 2017

Comment (1): *The applicant has satisfied the 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.*

Response: No response necessary.

Comment (2): *The applicant has satisfied the requirement that at least ten percent of the dwelling units in the development are designated as Workforce Units.*

Response: No response necessary.

Comment (3): *Based on materials submitted (the Inclusionary Zoning- Workforce Housing Standards and Marketing Strategy prepared by Gorrill Palmer), it is unclear if the applicant has met the requirement that the number of bedrooms in the Workforce unit is at least 10% of the total number of bedrooms made available as part of the development. The applicant should provide a breakdown of the number of bedrooms, by unit, within the proposed development to confirm the 10% requirement.*

Response: The applicant has proposed two units to be Workforce Housing. This meets the requirement that 10% of the dwelling units are Workforce Units (2 Workforce housing units/16 total units = 12.5%). Assuming 3 bedrooms per unit, the proposed addition of a second Workforce Housing Unit satisfies the requirement that 10% of the total number of bedrooms are made available as Workforce housing. See calculation below:

- 16 units X 3 bedrooms/unit = 48 bedroom
- 2 Workforce Housing units X 3 bedrooms/unit = 6 Workforce Housing bedrooms
- 6 Workforce Housing bedrooms/48 total bedrooms = 12.5%

Attachments:

Attachment 1 – Stormwater Management Report
Attachment 2 – Photos of Existing Culvert
Attachment 3 – Revised Plan Set

The applicant appreciates the City staff comments to date and looks forward to continue to work with the staff on this project.

If you have any further questions please contact us.

Sincerely,
Gorrill Palmer

Douglas E Reynolds P.E.
Project Manager

Copy: Burt Wolf, LBW, LLC

DER/djg/U:\98089.08 - Design and Permitting 'Long' Road\P Applications\Local\Site Plan Review\Response 12-18-2017\2017 12 18 comment response letter.doc

GORRILL PALMER

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

September 28, 2017

Mathew Grooms
Planning and Urban Development Department
City of Portland
Fourth Floor, City Hall
389 Congress Street
Portland, Maine 04101

Subject: Brandy Lane Subdivision – Portland, ME
Request for Additional Information

Dear Mathew,

Per correspondence with you, the Dept. of Public Works, and others, additional information has been requested relative to the permitting for the Brandy Lane Subdivision. The items that you requested are listed below followed by additional information, if appropriate.

<u>Woodard & Curran Peer Review Comments</u>

Comment (1): *The Applicant has noted that a MDEP NRPA Tier I wetland permit and approval from the ACOE are required, copies of all permit approvals should be forwarded to the City upon receipt.*

Response: Copies of all permit approvals will be forwarded to the City upon receipt.

Comment (2): *The Applicant has included letters to utilities in their application. Ability to serve confirmation should be provided when available.*

Response: Copies of confirmation of ability to serve letters will be forwarded to the City upon receipt.

Comment (3a): *In accordance with Section 5 of the City of Portland Technical Manual, a Subdivision is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:*
a) Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.

- *Additional silt fence should be installed in some areas along the western property line adjacent to proposed grading activities.*

Response: A revised grading plan with additional silt fence along the western property line is included with this submission. The stormwater treatment systems (Stormtechs) have been moved to outside the right-of-way, please see attached drainage plan in plan set provided.

Comment (4a): *We have the following comments on the proposed stormwater management system for the site:*
a) The HydroCAD model for the Post-Development system includes six subcatchments that are not connected to the stormdrainage system. We understand that the Applicant is not connecting the roof drain

filters to the model, and we are in agreement that this is appropriate, but it appears based on the impervious surface designations on the disconnected subcatchments that more than just the roofs are included. Additional clarification is required.

Response: Revised HydroCAD and TR-20 calculations showing pre and post development systems is included with this submission. The 6 subcatchments were "dummy" subcatchments not included in calculations.

Comment (4b): *The Applicant has noted in their stormwater narrative that roadway sideslopes are anticipated to be mowed more than twice per year and have not been included in the developed area. Please clarify this statement, and how the sideslope areas have been accounted for in the stormwater calculations.*

Response: As stated in the letter, the roadway sideslopes will be mowed no more than twice a year; excluding the area from the city's development calculations. A revised Section 12 – Stormwater management report is included with this submission.

Comment (4c): *It is noted that the Maine DEP now allows for the installation of Filterra Tree Box filters without the use of an isolator row. It is understood that this may be providing some flow attenuation, but the Applicant may consider eliminating the isolator row if it helps with fitting stormwater treatment on the site, but outside of the right-of-way as is now required by the City.*

Response: The isolator row will remain in the plan set. Please see the plan set for stormwater treatment locations included with this submission.

Comment (4d): *The HydroCAD model has modeled all proposed stormdrain pipes as 18 inches in diameter. The drawings show 12-inch pipe. The Applicant should verify pipe size and that it has been adequately designed to accommodate flow.*

Response: The HydroCAD model and drainage plan have been revised to show the correct and matching pipe sizes proposed. Please see attached calculations following the stormwater report for pipe sizing relative to expected flows.

Comment (4e): *The Applicant is maintaining drainage that passes beneath the proposed roadway at the southern end of the site. A 36-inch pipe currently exists at this location. The upstream, western end of this pipe will be replaced, but the eastern, outlet end of the existing pipe will be maintained. The Applicant should provide information on any existing condition and any known capacity issues that exist. While overall flow at the study point at this location is not increasing, concentrated flow from the development is being added to this pipe. The adequacy of this pipe should be addressed.*

Response: Included at the end of the stormwater report are calculations showing the capacity of the pipe due to the proposed concentrated flow at the culvert.

Comment (4f): *The Applicant should consider a drop manhole structure for DMH 1. The pipe from the roadway has an invert that is almost 8 feet higher than the existing 36-inch pipe that is being tied into the structure.*

Response: DMH 1 has been revised as an outside drop manhole structure. Please see the revised grading plan and drainage details included with this submission.

Comment (4g): *The Applicant should note the sizes of the proposed foundation stubs. Are these stubs also intended to connect to the roof drip strip piping? Additional clarification on the use of the stubs to the stormwater system from each lot should be provided.*

Response: The proposed foundation drain stubs are 6" pipe. The roof drip strip piping and foundation drains will be connected to the proposed foundation drain stub upon construction of the lots. A revised drainage and grading plan showing the sizes is included with this submission.

Comment (4h): *Catch Basin 6 is located within Lot 16 in a drainage easement. Based on grading, it is unclear what area this will be collecting. If it is collecting a large, offsite area, the adequacy of the catch basin grate and proposed pipe size to manage flow should be considered.*

Response: Catch basin 6 is collecting area above the site. CB6 is collecting the southern portion of subcatchment 6s, shown on the attached post watershed map. Calculations showing the proposed pipe size are provided and included with this submission.

Comment (4i): *The underdrain soil filters are not shown on the drainage plan and profile sheets. We recommend showing these for clarity of grading.*

Response: A revised grading and drainage plan is attached showing the underdrain soil filters.

Comment (4j): *Details should be provided for the rip rap outlets with rip rap sizing and thickness as appropriate for the pipe sizes and anticipated flow.*

Response: Details have been added to sheet C402 in the attached plan set relative to rip rap sizing and thickness.

Comment (4k): *Maintenance of the stormwater management features has been described in the Erosion & Sedimentation Control Report. A stormwater maintenance agreement will be required from the Applicant. Additional information should be provided on the ownership and maintenance of the stormwater treatment systems throughout the subdivision, i.e., will a homeowners association be put into place to pay for and manage the maintenance throughout the site.*

Response: A stormwater maintenance agreement is included in the revised stormwater report attached. Additional notes have been added to the plan set to clarify ownership and maintenance.

City of Portland Dept. of Public Works Comments

Sheet C101 & C102

Comment: *The Department of Public Works (DPW) does not accept ownership of low pressure force-mains within the right-of-way. The "association" is required to retain ownership and maintenance the forcemain.*

Response: A note has been added to the plan set requiring the association to retain ownership and maintenance of the force main.

Comment: *Refer to the Utility Locations in Streets detail in Section 1 of the Technical Manual for proposed utility locations within the City ROW. Proposed utilities should be revised to more align with the above detail to the extent possible*

Response: The location and alignment of proposed has been placed relative to the existing sewer and water main stubs off Hope Avenue. The alignment of utilities follows the street detail in Section 1 of the Technical Manual to the best extent practical.

Comment: *Sanitary sewer and water mains should maintain ten (10) feet in separation (per PWD standards).*

Response: Revisions have been made to maintain 10' separation between the sewer and water from Station 5+50 to Station 7+25 and from Station 9+00 to Station 11+00. Please see plan set included with this submission.

Comment: *Sanitary sewer slope shall be no less than .4 percent (.4%) when existing conditions govern, however a greater slope is recommended. Please review the proposed gravity sewer main to see if the slope could be increased from the minimum.*

Response: The proposed gravity sewer main is now shown with a .5 percent (0.5%) slope. The sewer schedule and profile have been updated and is included in this submission.

Comment: *Where practical, manhole structures should be located in center of the travel lane or in a location outside of axle tracking.*

Response: The locations of proposed manhole covers is in accordance with Figure I-4 from the City's Technical Manual. Manhole structures have been located outside of axle tracking to the best extent practical.

Comment: *Proposed utilities should cross perpendicular (to the extent possible) to the existing 20- inch water main.*

Response: The angle of intersection between the proposed 8" water main and the existing 20" water main has been revised to achieve as close to perpendicular as possible. Please see layout and utility plan included with this submission.

Comment: *Profile(s) should include all utilities (proposed and existing) to identify potential crossing conflicts.*

Response: Profiles have been revised to show all utilities (proposed and existing) in the plan over profile sheets included with this submission.

Comment: *Revise note on proposed curb to include type (vertical granite curb).*

Response: The note has been revised to include the word "granite."

Sheet C103, C104 & C105

Comment: *DPW does not permit stormwater treatment structures (structural BMP's) within the City right-of-way for proposed subdivisions.*

Response: Stormwater treatment structures have been moved to outside the right-of-way. Please see updated grading and drainage plans included with this submission.

Comment: *Provide detail on DMH1. Does the existing 36" RCP connect/terminate at DMH1? Label existing 36" in profile.*

Response: Additional notes have been added to the drainage plans to clarify the proposed DMH 1. The existing 36" culvert has been added to the profile of the drainage and utility sheets.

Comment: *What are the flows to CB5 and CB6? Are the grates modeled? What storm event do they pass prior to overflowing towards the down gradient lots?*

Response: Calculations showing the flows and pipe assumptions are attached following the stormwater report. The pipes have been sized to pass a 25 year storm. CB5 has been revised and is now proposed as a culvert. CB6 has been modeled with a Neenah R-1878 B8G double grate. Calculations proving the adequacy of the grate can be found following the stormwater report.

General Comments:

Comment: *Provide/clarify grading at intersection.*

Response: Plans have been revised to clarify grading at the intersection with Hope Avenue.

Comment: *Provide riprap sizing and thickness at all proposed locations.*

Response: Additional details have been added to the plan set at all proposed rip rap locations.

Comment: *The applicant should consider proposing screening from the Falmouth Spur.*

Response: Screening from the Falmouth Spur will be installed at the discretion of the abutter.

Comment: *Please revise the construction management plan to include the details presented in the attached draft plan.*

Response: A revised construction management plan is included with this submission.

Comment: *Details should be in accordance with the City's Technical Manual.*

Response: The plan set has been revised to represent the City's technical manual to best extent practical.

Subdivision Plat Review Comments (Mr. Bill Scott):

Comment (1): *The plan is very "busy" in places and that makes it hard to read. Lightening the contours or removing them altogether would help a lot. Also, it appears that some of the CAD point blocks were left "on" which is causing some double symbols and double descriptions for a lot of the monumentation. Freezing this layer would also help de-clutter the plan.*

Response: A revised subdivision plat can be found in the plan set included with this submission.

Comment (2): *A portion of Hope Avenue appears to show design layers. There are some double symbols and descriptions to clean up.*

Response: The plan set has been revised to address the clean-up items. Please see the plan set included with this submission.

Comment (3): *Please add "see Note 2" to subdivision plat North Arrow.*

Response: The notes have been added to the subdivision plat.

Comment (4): *Please label the easement type that crosses Lot 1 and 2.*

Response: The notes have been added to the subdivision plat.

Comment (5): *The proposed street line figure has a misclosure of 0.086'. Please minimize misclosure.*

Response: Upon further review of the closure by the surveyor of the proposed road, it was found to close properly.

Rest of Plan Set (Mr. Bill Scott):

Comment (1): *Add a note to the Cover Sheet to verify that the elevations for this project are on the City's datum. They should also say which City benchmark was used as the basis for the survey.*

Response: A note has been added to the cover sheet. Please see the plan set included with this submission.

Comment (2): *All TBM's used to control construction on this site should be labeled as to location, description and elevation. These should be labeled on all of the sheets showing proposed manhole and catch basin structures with elevations.*

Response: TBM's have been labeled and added to the appropriate plan set.

Comment (3): *Please show the center line PC's, PT's and PRC's and label the stationing of each on the Overall Subdivision Plan sheet and on the plan and profile sheets.*

Response: The labels and stationing notes have been added to the Overall Subdivision Plan and on the plan and profile sheets. Please see the plan set included with this submission.

Staff Review Comments

Comment (1): *The applicant shall provide a revised sidewalk detail which demonstrates an acceptable 2% cross-slope across proposed driveway aprons as required under Section 1.8.3 of the City's Technical Manual.*

Response: A revised sidewalk and driveway apron detail is included in the plan set included with this submission.

Comment (2): *A tree plan, showing groups of existing, sizeable trees which the subdivider intends to preserve should be provide. Please note, this plan can be submitted as a separate plan.*

Response: A proposed tree line has been added to the grading sheets in the plan set included with this submission.

Comment (3): *As required in under Section 14-499(f), a minimum of two street trees shall be provided per lot, and shown on applicable plan sheets.*

Response: A note has been added to the plan set to meet the City of Portland landscaping standard. Please see the plan set included with this submission.

Comment (4): *Please note, it is understood that the submission of a construction management plan shall be recommended to the Planning Board as a condition for approval with the understanding that this document be provide and approved by DPW and Planning prior to the issuance of any building permits.*

Response: A draft Construction Management Plan is included with this submission.

Comment (5): *Please note, it is understood that utility capacity letters shall be recommended as a condition for approval with the understanding that those documents be received prior to the issuance of any building permits.*

Response: Utility capacity response letters plan will be forwarded to the appropriate reviewing authorities prior to final approval.

Comment (6): *At present, parking for the Presumpscot Preserve Trail head is shown to be partially located within easements 2 and 4. The applicant shall provide evidence that parking is permitted in this location.*

Response: Proposed parking spaces have been shifted north alongside Brandy Lane in order to avoid overlap with the Portland Water District Easement. The drainage features have been moved accordingly. Please see the plan set included with this submission.

Comment (7): *Would the applicant consider placing some kind of guard-rail or barrier between the proposed parking for the trail head and the start of the trail.*

Response: A wooden guardrail has been added as a barrier between the trail and proposed parking. Please see attached layout and utility plan.

Comment (8): *From the submitted documents, it is not clear who will be maintaining the temporary pedestrian easement located on this property. Can the applicant provide all applicable easement documentation as referenced on the recording plat.*

Response: An agreement will be made between Portland Trails and the owner prior to construction.

Comment (9): *On the recording plat, the location of all easements should be clearly called out, specifically referencing the 25' drainage easement which runs along the westerly property lines of lots 1 and 2, and the northerly property line of lot 13.*

Response: The subdivision plat has been revised to call out all easements.

Comment (10): *Provide the location and dimensions of all proposed exterior and rooftop mechanical equipment as well as associated details.*

Response: No exterior and rooftop mechanical equipment is proposed.

Traffic Comments from Mr. Errico

Comment: *A sidewalk shall be constructed on both sides of Brandy Lane per City standards. The applicant can request a waiver for sidewalks with supporting documentation per City waiver requirements.*

Response: The applicant is requesting a waiver from Section 14-498 (b) 8.a from the City of Portland Land Use Code for the construction of sidewalks on both sides of Brandy Lane due to the presence of wetlands and proposed use of subdivision. A sidewalk is proposed on the western side of the roadway for the entire length of the subdivision and connecting to Hope Avenue for pedestrian access. The construction of a sidewalk on the eastern side of the roadway will provide little to no positive impact on pedestrian circulation.

Attachments:

- Plan Set
- Section 12 – Stormwater Management Report
- Construction Management Plan

If you have any further questions please contact us.

Sincerely,
Gorrill Palmer

Douglas E Reynolds P.E.
Project Manager

Copy: Jim Wolf, W.A. One

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Doc#: 72265 Bk:24532 Pg: 134

First Amendment To
Declaration of Covenants, Restrictions and Easements
RIVERWALK SUBDIVISION
Section 1
City of Portland, Cumberland County, Maine

Received
Recorded Register of Deeds
Nov 02,2006 11:21:39A
Cumberland County
John B OBrien

This First Amendment to Declaration of Covenants, Restrictions and Easements, Riverwalk Subdivision, Section 1, is made by Lloyd B. Wolf, of South Portland, Maine.

WHEREAS, Lloyd B. Wolf, as Declarant, previously submitted certain property to the provisions of the Declaration of Covenants, Restrictions and Easements, Riverwalk Subdivision, Section 1, dated April 5, 2006, and recorded in the Cumberland County Registry of Deeds in Book 23889, Page 335 (the "Declaration"); and

WHEREAS, Declarant has yet to convey any lots in the subdivision to third parties; and

WHEREAS, pursuant to Article C(1) & (2)(A)(i) of the Declaration, Declarant reserved the right to amend the Declaration, and Declarant now desires to amend the Declaration; and

NOW THEREFORE, Declarant hereby amends the Declaration as follows:

A. Article A(2) is hereby amended and replaced in its entirety with the following language:

"2. Primary Structure. No structure shall be erected on any lot except one detached single family, residential dwelling containing not less than One Thousand (1,000) square feet of enclosed space above the foundation, excluding garages, porches and breezeways. All homes shall be required to include an attached garage containing not less than one (1) bay. Any barns, sheds or outbuildings of any nature shall be built of style and material similar to the dwelling structure."

B. This First Amendment to Declaration of Covenants, Restrictions and Easements, Riverwalk Subdivision, Section 1, shall become effective upon the date it is recorded in the Cumberland County Registry of Deeds.

IN WITNESS WHEREOF, Declarant has executed this document this 3 day of October, 2006.

Lloyd B. Wolf

STATE OF MAINE
CUMBERLAND, ss.

October 3, 2006

Personally appeared before me the above named Lloyd B. Wolf, and acknowledged the foregoing instrument to be his free act and deed.

Diane R Snow
Notary Public/~~Attorney at Law~~

DIANE R. SNOW
Notary Public, Maine
My Comm. Expires 06-18-2010

Second Amendment To
Declaration of Covenants, Restrictions and Easements
RIVERWALK SUBDIVISION
Section 1
City of Portland, Cumberland County, Maine

This Second Amendment to Declaration of Covenants, Restrictions and Easements, Riverwalk Subdivision, Section 1, is made by Lloyd B. Wolf, an individual residing in South Portland, Maine.

WHEREAS, Lloyd B. Wolf, as Declarant, previously submitted certain property to the provisions of the Declaration of Covenants, Restrictions and Easements, Riverwalk Subdivision, Section 1, dated April 5, 2006, and recorded in the Cumberland County Registry of Deeds in Book 23889, Page 335 (the "Declaration"); and

WHEREAS Declarant has previously filed his First Amendment to the Declaration by instrument dated October 3, 2006 and recorded in said Registry of Deeds in Book 24532, Page 134; and

WHEREAS, pursuant to Article C(2) (B)(i) the Declaration, Declarant has reserved the right to add real estate to the Riverwalk Subdivision; and

WHEREAS, Declarant has convey Lots 17-23 of the subdivision to Rivertrails, Inc.; and

WHEREAS, pursuant to Article C (1) & (2)(A)(i) of the Declaration, Declarant reserved the right to amend the Declaration, and Declarant now desires to amend the Declaration; and

WHEREAS, this Second Amendment and the release of the age-restricted covenants are seen and agreed to by all owners of Lots 17-23 of the Riverwalk Subdivision, namely: Rivertrails, Inc. (owner of Lots 18, 20, 21, 22, and 23); Minott P. Blackmer and Lorna M. Blackmer (owners of Lot 19); and Sabatino M. Nappi and Frances A. Nappi (owners of Lot 17); and

WHEREAS, as required by Article C (1) of the Declaration, the City of Portland has approved Declarant's request to remove the age-restricted requirement for the Property, as defined in the Declaration, as evidenced by that Amendment to City Code and First Amendment to Conditional Zone Agreement dated November 19, 2012 and recorded in said Registry of Deeds in Book 30243, Page 126.

NOW THEREFORE, Declarant hereby amends the Declaration as follows:

- the following provision on the first page of the Declaration is deleted in its entirety: "WHEREAS, Declarant intends to establish said subdivision as a senior housing community, for the occupancy of persons fifty-five (55) years of age or older, consistent with provisions of the Fair Housing Act, 42 U.S.C. § 3601, et seq. (hereinafter referred to as the "FHA"); and"

- Paragraph 18 on Page 4 is deleted in its entirety; and
- Subsection (e) of Paragraph 1 of Article B (Homeowners Association) is deleted in its entirety; and
- the following clause in Article C (General Provisions) (1) is deleted: "Article A(18) relating to the elderly housing restrictions, and".

This Second Amendment to Declaration of Covenants, Restrictions and Easements, Riverwalk Subdivision, Section 1, shall become effective upon the date it is recorded in the Cumberland County Registry of Deeds.

IN WITNESS WHEREOF, Declarant has executed this document this 15th day of February, 2013.

Lloyd B. Wolf, Declarant

STATE OF Florida
COUNTY OF Miami-Dade

February 15, 2013

Personally appeared before me the above named Lloyd B. Wolf, and acknowledged the foregoing instrument to be his free act and deed.

Notary Public/Attorney at Law

MYRIAM RESTREPO
MY COMMISSION # DD911836
EXPIRES: October 18, 2013
1-800-3-NOTARY Fl. Notary Discount Assoc. Co.

SEEN AND AGREED TO by:

Rivertrails, Inc.

By: Lloyd B. Wolf
Its: President

Minott P. Blackmer

Lorna M. Blackmer

Sabatino M. Nappi

Frances A. Nappi

Received
Recorded Register of Deeds
Apr 17,2013 02:51:10P
Cumberland County
Pamela E. Lovley

Order 184 -04/05
Given first reading: 3/7/05
Postponed on 3/21/05
Amended & Passed: 4/4/05 9-0

C40

JILL C. DUSON (MAYOR)(A/L)
PETER O'DONNELL (A/L)
JAMES F. CLOUTIER(A/L)
NICHOLAS M. MAVODONES (A/L)

CITY OF PORTLAND

IN THE CITY COUNCIL

WILLIAM R. GORHAM (1)
KAREN A. GERAGHTY (2)
DONNA J. CARR (3)
CHERYL A. LEEMAN (4)
JAMES I. COHEN (5)

AMENDMENT TO CITY CODE
SEC. 14-49 (ZONING TEXT AND MAP AMENDMENT)
RE: CONDITIONAL REZONING FOR PROPERTY
IN THE VICINITY OF
NORTH DEERING/PRESUMPSCOT RIVER

ORDERED, that the zoning map and text of the City of Portland, dated December 2000 as amended and on file in the Department of Planning & Development, and incorporated by reference into the Zoning Ordinance by Sec. 14-49 of the Portland City Code, is hereby amended to reflect a conditional rezoning as detailed below.

CONDITIONAL ZONE AGREEMENT

AGREEMENT made this _____ day of _____, 2005, by Lloyd B. Wolf of Portland, Maine, his heirs, successors, devisees, and assigns (hereinafter "**APPLICANT**").

W I T N E S S E T H

WHEREAS, APPLICANT, desires to develop a 8.2 acre piece of property, located in Portland at Map 390-A-1; Map 390-A-12, and Map 448-A-1, (referred to herein as the "**PROPERTY**") (See Exhibit A) which is a portion of the property annexed to the City of Portland by the Maine State Legislature in a Private and Special Law, Chapter 62, S.P.499 and L.D. 1586, April 2, 2002 (See Exhibit B)); and

WHEREAS, APPLICANT and Robert L. Adam entered into an Agreement with the City of Portland, dated September 21, 2001 (hereinafter referred to as the "Development Agreement"), whereby the **CITY** would be willing to allow up to a total of eighty (80) age-restricted housing units (consisting of a minimum of fifty-five (55) clustered units [two or more

units with common walls] and a maximum of twenty-five (25) detached single family units) to be developed, as compactly as possible, but in any event on no more than twenty (20) acres of developable land on property adjacent to the Falmouth town line; and

WHEREAS, this Conditional Zone Agreement shall apply to the development of the detached single family housing units allowed upon the **PROPERTY**, pursuant to the Development Agreement; and

WHEREAS, APPLICANT has requested a rezoning of the **PROPERTY** in order to permit the development of such age-restricted housing; and

WHEREAS, the Planning Board of the City of Portland, pursuant to 30-A M.R.S.A. § 4352(8) and Portland City Code §§ 14-60 to 14-62 and 14-264, and after notice and hearing and due deliberation thereon, recommended the rezoning of the **PROPERTY** as aforesaid, subject, however, to certain conditions; and

WHEREAS, the **CITY** by and through its City Council has determined that said rezoning would be and is pursuant to and consistent with the housing component of the **CITY'S** comprehensive land use plan; and

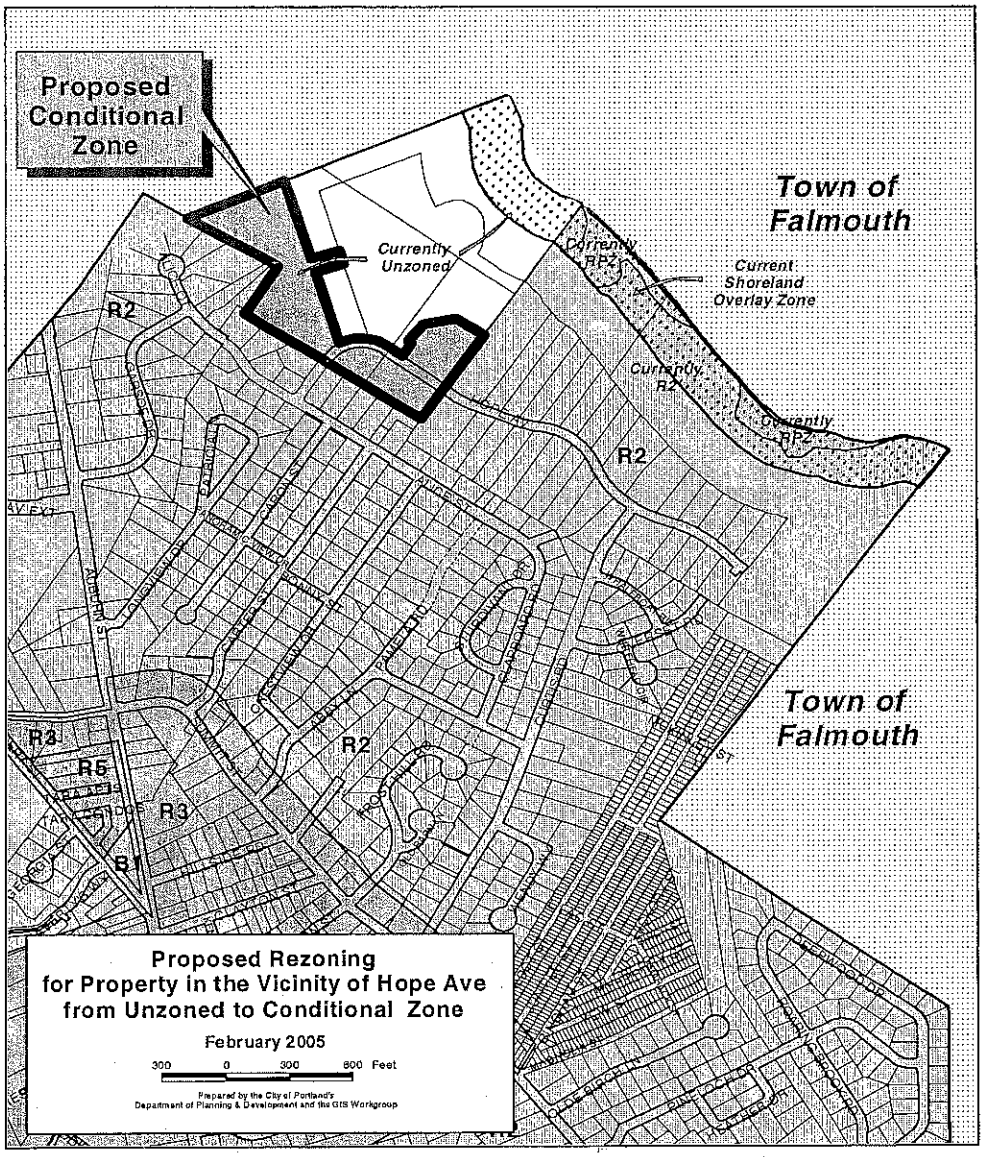
WHEREAS, the **CITY** has determined that the proposed development will be designed and constructed so that it will prevent undue adverse environmental impacts, substantial diminution of the value or utility of neighboring properties, or significant hazards to the health or safety of neighboring residents. These goals shall be achieved through the curtailment of clearing and cutting of vegetation, disturbance or destruction of natural topography and ground cover, soil erosion, filling, noise levels, emissions, traffic, lighting, odors, and any other potential negative impacts of the proposal; and

WHEREAS, the **CITY** authorized the execution of this Agreement on

_____, 2005; and

NOW, THEREFORE, in consideration of the rezoning, the **APPLICANT** covenants and agrees as follows:

1. The **CITY** shall amend the Zoning Map of the City of Portland dated December 2000, as amended, and on file in the Department of Planning and Development, and incorporated by reference into the Zoning Ordinance by Section 14-49 of the Portland City Code, by adopting the following map change amendment:



2. The following plans and documents are attached and incorporated into this Agreement:

Exhibit A: **PROPERTY:** Detached Single Family Housing with lot designation and building envelopes
Exhibit B: Parcel annexed from Falmouth
Exhibit C: Parcels to be conveyed by and between Adam and Wolf and the City of Portland
Exhibit D: Homeowner's Association Documents
Exhibit E: Lot Layout and Grading Plan for Lots 18-23
Exhibit F: "Do Not Disturb" Area Plan
Exhibit G: Reserved
Exhibit H: River Access Parking Plan
Exhibit I: Feeno Marker Plan

GENERAL REQUIREMENTS

3. An executed copy of this Conditional Zone Agreement shall be recorded by the APPLICANT at the Cumberland County Registry of Deeds no later than thirty (30) days after the date of Portland City Council approval of this Conditional Rezoning Agreement. If this Agreement is not recorded by said date, then the Conditional Rezoning shall become null and void and the zoning of the PROPERTY shall revert to Residential-2 (R-2) zone. At the time of recording the document noted in paragraph 3, the APPLICANT shall also record in the Cumberland County Registry of Deeds an affidavit from land surveyors, Titcomb and Associates, attesting that they have surveyed the parcel boundary line depicted on Exhibit B and that said line is now the boundary between the City of Portland and the Town of Falmouth, along with an accurate metes and bounds description of the parcel of land surveyed and subsequently annexed to the City of Portland by Private and Special Law Chapter 62, S.P.499 and L.D. 1586, April 2, 2002, a copy of which recording shall also be provided to the City of Portland Public Works Department and the Town of Falmouth. Confirmation of such recording and delivery shall be made to Donna Katsiaficas, Esq., c/o Corporation Counsel's Office, Portland City Hall, Portland, Maine. A copy of the Book and Page Number shall be provided to the City upon recording.

4. Executed copies of the exchange of land between the **CITY** and the **APPLICANT** and Adam (as shown on Exhibit C) shall be recorded by the **APPLICANT** before subdivision review by the Portland Planning Board of the development shown on Exhibit A. A copy of the Book and Page Number shall be provided to the City upon recording.

5. This Conditional Zone Agreement shall apply to the development of twenty-three (23) detached, single-family house lots on property depicted on Exhibit A. Development of the **PROPERTY** shall be subject to **CITY** Subdivision review and approval as well as review **and** approval under the Site Location of Development Act either by the Maine Department of Environmental Protection (DEP) or the **CITY** under its delegated authority. **APPLICANT shall** obtain all Environmental Protection Agency (EPA) and DEP permits required prior to final action by the Portland Planning Board on any such application for Subdivision or Site Location approval. Within sixty (60) days after this Conditional Rezoning is approved by the Portland City Council, **APPLICANT** will file all required applications with the EPA and DEP or the **CITY** under its delegated authority. **APPLICANT** shall comply with all requirements of the EPA and DEP or the **CITY,** except that, where **CITY** standards are more restrictive, the more restrictive standards shall apply. The "subdivision plans" submitted in conjunction with this Conditional Rezoning do not constitute final approval of the plans. Rather, the in depth review and approval of the Subdivision rests exclusively with the Portland Planning Board.

6. **APPLICANT** may contract for the installation of improvements noted in this Conditional Rezoning but shall remain ultimately liable to the **CITY** for the financial obligation for compliance with **CITY** ordinances and approvals. Such financial obligation shall not be transferable without prior authorization of the transfer by the Planning Board. The foregoing notwithstanding, in the event that **APPLICANT** sells all of its interest in the **PROPERTY, APPLICANT** shall be entitled to transfer such financial obligation for compliance with **CITY** ordinances and approvals to said buyer, provided that the **CITY** is reasonably satisfied with the buyer's financial capacity.

7. The provisions of this Agreement are intended to supersede what would otherwise be Residential 2 (R-2) Zone and to the extent not otherwise superceded, the requirements of the R-2 zone shall apply.

CONDITIONS

8. The following conditions shall apply to the development:

A. *Permitted Uses.* **APPLICANT** shall be authorized to establish and maintain the following uses on the **PROPERTY**:

1. Age restricted residential use, consisting of twenty-three (23) single-family house lots. "Age- restricted" shall mean that each housing unit shall be required to have one (1) owner-occupied individual who is fifty-five (55) years of age or older living in at least eighty (80%) percent of the total occupied units. Said residential use shall be subject to the federal Fair Housing Act, the age-restricted limitations and restrictions contained within the Homeowner's Association documents, and shall also be subject to the enforcement provisions set forth therein. The Homeowners Association documents are attached hereto and incorporated herein as Exhibit D, (entitled "Declaration of Covenants, Restrictions and Easements Riverwalk Subdivision Section 1 City of Portland, Cumberland County Maine and Bylaws of Riverwalk Subdivision, Section 1, Homeowner's Association"). Said Homeowner's Association documents relative to age eligibility and enforcement shall not be modified or altered without the express written consent of the Portland City Council.

The **CITY** is not obligated to enforce the age restricted eligibility requirements of this development, but, by virtue of this Conditional Zone Agreement, shall have a cause of action under the **CITY's** Zoning Ordinance against the **APPLICANT** (or any of his successors or assigns, including any Homeowner's Association), for any failure or neglect on the part of the **APPLICANT,** to enforce the provisions of this Conditional Zone Agreement. The remedy for breach shall include, at minimum, specific performance, monetary penalties and attorney fees. The **APPLICANT** (or any of his successors, including any Homeowners' Association) shall keep annual records of all occupants of the age-restricted units and shall make them available for **CITY** inspection upon reasonable notice. At such time as four (4) of the total units have been occupied by eligible individual homeowners, responsibility for maintaining annual records shall pass from the **APPLICANT** to the Homeowners' Association and any requirements of keeping annual records shall be the responsibility of the Homeowners' Association.

2. Accessory uses: trail networks, and public access uses.

B. *Phasing*. **APPLICANT** may develop or sell in three phases:

1. Lot 17 on Hope Avenue;
2. Lots 18-23 on Road B; and
3. Lots 1-16 on Road A.

APPLICANT reserves the right to re-order the phases according to demand and economic conditions.

C. *Zoning Requirements:*

1. The setbacks listed below notwithstanding, there shall be no building or ground disturbance of any kind within Do Not Disturb Areas noted on Exhibit F. Otherwise, the following minimum dimensional standards shall be required for any development:

a. Front yard – Principal or accessory structure: Ten (10') feet

b. Side yard – Principal or accessory structure with ground coverage greater than one hundred (100) square feet: Twelve (12') feet. Accessory detached structures with ground coverage of one hundred (100) square feet or less: Five (5) feet.

c. Side yard on side street – twelve (12) feet

d. Rear yard setback shall be a minimum twenty (20) feet except that lots 1-7 ~~shall~~may shall be a minimum twenty-five (25)~~fifteen (15)~~ feet; provided, however, lot 1 may be a minimum fifteen (15) feet -where necessary to accommodate Road A as set forth on Exhibit A; and lots ~~2 through 7 shall be a minimum twenty five (25) feet and lot 8~~ shall be a minimum twenty five (25) feet except that ~~the~~ portion of the rear yard abutting I-95 shall be a minimum twenty (20) feet

e. Minimum lot size - 6,000 s.f.

f. Minimum floor area, excluding garage – 1,000 s.f.

g. Maximum structure height – Thirty-five (35') feet

h. Minimum no cut/no fill/no disturb rear yard buffer on Lots 21-23 – 15 feet adjacent to City of Portland Pedestrian Easement

i. Minimum area per dwelling unit: Six thousand (6,000) square feet

j. Minimum street frontage: Fifty (50) feet

k. Maximum lot coverage (building first floor area): Forty (40) percent of lot area

l. Minimum Lot width: Fifty (50) feet

Note that these zoning requirements do not guarantee a buildable lot for any lot depicted on Exhibit A. The buildability of any lot depends upon finished floor elevations, grading plans, soil stability and erosion control, etc. which shall be reviewed by the **CITY** during site plan review.

D. *Site Plan Requirements:*

1. On lots 18 through 23, the **APPLICANT** will adhere to the following: a) the Lot Layout and Grading plans attached hereto as Exhibit E, which plans contains a clear delineation of the limit of work on these lots and the "Do Not Disturb area" adjacent to these lots. The "Do Not Disturb area" restrictions are more fully set out in paragraph 3 below. The **CITY** shall be permitted to plant additional vegetation within the 15 foot "Do Not Disturb" area on the **PROPERTY** at the rear of lots 21 through 23, at its cost and expense. **APPLICANT** shall convey to the **CITY** the deed for the easement area over this 15 foot strip and shall clearly mark, as set forth in paragraph F. (3), the "Do Not Disturb area" for lots 18 through 23, only, prior to the release of the subdivision plat.

2. The building envelopes for lots 18 through 23, as shown on Exhibit E, represent the maximum area for the construction of principal and accessory structures. Any deviations from, or changes to, the building envelopes from those depicted on Exhibit E must receive the approval of the Portland Planning Board prior to commencement of construction, and such approval, if granted, will be recorded in the Cumberland County Registry of Deeds with a reference to the Plan Book and Page Number of the originally approved plat. Note that building envelopes shown on Exhibit E do not guarantee a buildable lot for any lot depicted on Exhibit A. The buildability of any lot depends upon finished floor elevations, grading plans, preservation, soil stability and erosion control, etc. which shall be reviewed by the **CITY** during site plan review.

3. The "Do Not Disturb Area(s)" are an integral part of this development and provide an important public benefit of natural and undisturbed open space. To preserve the natural vegetation in the area and to avoid and/or minimize the potential for the effects of windthrow, sunscald, loss of tree vigor on **CITY** property and to preserve the existing vegetation beyond the property boundaries of the individual lots (i.e. those areas labeled "Do Not Disturb area,") the **APPLICANT** shall adhere to the written and graphic plan for buffer preservation around the perimeter of the **PROPERTY**, which plan includes proper arboricultural practices being implemented on the **PROPERTY**, as shown on Exhibit F. In carrying out these practices the standards contained within the

National Arborist Association, Inc. Standards for Tree Care Operations shall be followed. However, **APPLICANT** shall not be responsible for performing any work on the **CITY** property. The "Do Not Disturb areas" shall forever remain in their natural state and shall be in the nature of a conservation easement and the enforcement of any violation of the "Do Not Disturb areas" restriction contained herein shall accrue to the Homeowners' Association, individual lot owners within the subdivision and/or the **CITY.** The remedy for any violation of this paragraph shall include, at minimum, specific performance, monetary penalties and attorneys fees.

E. *Subdivision Requirements:*

1. No further subdivision of lots shall be permitted without an amendment to this Conditional Zone Agreement by the City Council. No movement of lot lines shall be permitted without further review and approval of the Portland Planning Board.

2. The roadways servicing the **PROPERTY** shall be conveyed to the City of Portland as public roadways. Notwithstanding the street width requirements contained in the site plan and subdivision sections of the Portland City Code, the dedicated rights of way shall be at least fifty (50) feet wide, with the paved travel portion of at least twenty eight~~four~~ (284) feet wide except where a lesser width is necessary to achieve a twenty five (25) foot setback on lot 1, and built to City Standards as contained in the City of Portland Technical and Design Standards and Guidelines, March 2000. ~~Granite curb and s~~Sidewalks~~,~~ shall be provided on both sides of the street as practicable, designated as Road A, so labeled on Exhibit A, and on one side of the street designated as Road B, so labeled on Exhibit A. Granite curbing shall be installed on both sides of roads A and BThe roadways will be completed and offered to the **CITY** for acceptance within two (2) years of the posting of each performance guarantee, unless the **CITY** and **APPLICANT** agree in writing to extend the duration for acceptance, and the performance guarantee is extended accordingly.

3. A turn around easement (at the terminus of Road B) for snow plowing and other **CITY** uses shall be provided. It shall not be located within the thirty (30) foot pedestrian easement shown on Exhibit A. The **APPLICANT** shall build and pave said turnaround easement area according to City Standards as contained in the City of Portland Technical and Design Standards and Guidelines, March 2000 as may be amended from time to time. **APPLICANT** shall convey said turn around easement to the **CITY** without consideration and no later than the date upon which the **APPLICANT** conveys Road B to the **CITY**.

4. When either Road A or B has been completed, or both Roads A and B have been completed, to the satisfaction of the **CITY**, the Portland City Council may accept said streets. Unless and until the **CITY** accepts Road A or Road B, said roadways shall be the financial responsibility of the **APPLICANT** for

maintaining said roadways (including the cost of street sweeping, snowplowing, sanding, salting and street lighting as well as the cost of curb-side trash pick up). The **CITY** is not, and shall not, become responsible for providing such services until the streets are accepted as **CITY** streets. This provision shall be included, verbatim, in all conveyances of the property or any interest therein by **APPLICANT** or his successors, and shall not merely be referenced to a recorded instrument containing such restrictions.

5. Prior to the release of the subdivision plat the **APPLICANT** shall deed to the **CITY** a 20 foot wide public recreation easement running between Lots 13 and 14 (labeled " 30' Future Access Right-of-Way" on Exhibit A), and a public pedestrian easement that is the width and length of the two adjacent **CITY** owned parcels such that the "gap" between the two parcels is joined, all as delineated on Exhibit A. Such easements shall be in a form satisfactory to the **CITY's** Corporation Counsel's Office. Note that the 30' Future Access Right-of-Way" depicted on Exhibit A is not intended to be a lot and may only be used for pedestrian and vehicle access.

6. Off street parking shall be provided to accommodate two (2) spaces per dwelling unit and shall be permitted on the driveway within the front setback of each dwelling unit. On-street parking shall be permitted on one side of Road A and Road B.

7. **APPLICANT** shall retain a licensed Civil Engineer to design the surface and subsurface improvements of the public right of way, which design shall be subject to the approval of the Portland Planning Board at the time of subdivision review.

8. Public parking for trail access is an integral part of this Conditional Rezoning as it provides an important public benefit. As a result, at the time of subdivision approval, a perpetual public easement shall be conveyed by the **APPLICANT** to the **CITY** for public parking purposes. The perpetual public easement granted to the **CITY** shall specify that the easement holders shall not be entitled to pave the easement area but the **CITY** may take all other reasonable steps to maintain the lot. The public parking lot shall be designed and constructed by **APPLICANT** to accommodate up to six (6) vehicles. The public parking lot shall consist of a graded gravel surface, and bordered by a wooden split-rail fence and **APPLICANT** shall have no obligation to pave or otherwise improve the public parking lot to comply with **CITY** standards for streets. The **APPLICANT** shall construct the public parking lot no later than two (2) years from the subdivision approval. All costs and expenses of constructing the public parking lot shall be shared equally by **APPLICANT** and **CITY**. The easement shall be conveyed from the **APPLICANT** to the **CITY** without a fee. The land area depicted on Exhibit G may constitute the location for such parking lot. The Planning Board, during subdivision review shall determine the feasibility of locating the parking lot in such location. It may require the **APPLICANT** to

locate the parking lot in a different location. In any event, a six (6) car parking lot shall be required to be located and constructed on the site in a location approved by the Planning Board as physically feasible and appropriately located to serve this public purpose.

9. **APPLICANT** shall convey a 30' wide easement to the **CITY**, to be located on the southeasterly edge of the development (labeled " 30' Pedestrian Easement" on Exhibit A) within the area indicated on Exhibit A, for use as a pedestrian trail. The 30' wide easement shall include language sufficient to protect area residents and abutters from unreasonable disruption (including, without limitation, reasonable restrictions and rules regarding hours of use, noise, trash, activities, etc.). Conveyance of the additional easement noted in paragraph E(5) also shall be conveyed to the **CITY** prior to the release of the subdivision. The easements shall be conveyed from the **APPLICANT** to the **CITY** without a fee.

10. The **APPLICANT** shall contribute $17,500.00 to the City of Portland for its use in providing recreational trails through the Presumpscot River Preserve, which trails will serve as the recreational amenity to the development described herein.

11. The **APPLICANT** shall submit to the Planning Board, during subdivision review, a construction vehicle management plan to minimize the impacts of construction vehicles and activities on the surrounding neighborhood.

12. The **APPLICANT** shall consider, during subdivision review, shifting roadway A in a northeasterly direction, to the extent practicable and as necessary to permit a 25 foot setback on Lot 1, at the point road A intersects with Hope Ave.

F. *Construction Conditions:*

1. During construction of Roadways A and B, so labeled on Exhibit A, **APPLICANT** shall retain either a licensed Civil Engineer or Landscape Architect ("**PROFESSIONAL**") to conduct site inspections and to report the results of such inspections to the **CITY**, in writing, on a semimonthly basis. At minimum, site inspections shall occur both semimonthly and as follows: 1) prior to site clearing and the commencement of construction; 2) at the completion of clearing and grubbing; 3) at the completion of rough grading; 4) at the completion of final grading; 5) upon completion of surface restoration; and 6) prior to the removal of erosion control measures.

The **PROFESSIONAL** shall submit to the Planning Authority, at least semimonthly, written notes of each inspection visit, summarizing: 1) the construction activity underway; 2) the compliance or non-compliance with the approved site plan and subdivision plan; 3) corrective actions, as appropriate, required to secure such compliance; 4) any changes in field conditions which

require modification to the design or the roadway; and 5) the plan for construction activity to take place in the time period following the inspection. In addition, **PROFESSIONAL** shall also provide written certification to the Portland Planning Authority upon completion of construction of the road improvements certifying that the work is in substantial conformance to the approved plans and that all conditions of approval have been satisfied. Such certification shall be based upon the Engineer's or Landscape Architect's professional opinion. Any and all improvements which cannot be completed according to the initial approved plans shall obtain **CITY** approval prior to any deviation from the approved plans.

2. **APPLICANT** shall require each Lot Owner to retain a licensed Maine Land Surveyor to lay out and certify the location and elevation of each foundation for each proposed house, on lots 17 – 23 (Exhibit E), in order to ensure that said locations and elevations conform to approved site plan submissions. **APPLICANT** shall also require each lot owner of lots 18-23, to retain a licensed civil engineer or landscaped architect to assist in design of the improvements on their lots. The owners of these lots shall also retain that professional to provide construction phase services including, but not limited to, periodic site inspection for adherence to all required erosion and sedimentation control measures and to address any changes in field conditions which require modification to the design of the lot improvements. Site inspection requirements will not apply to lots 1 – 17 unless the Portland Planning authority determines in writing upon submission of a lot site plan that these services are required due to the location of the improvements on the lot, site conditions, grading and proposed building elevations. At a minimum, the following site inspection must be conducted:

- Subsequent to staking of house and driveway, the installation of silt fence and prior to clearing; and
- Upon completion of clearing and grubbing; and
- Upon completion of rough grading; and
- Upon setting the forms but prior to pouring the foundation; and
- Upon completion of final grading; and
- Upon completion of surface restoration; and
- Prior to removal of erosion control measures.

The professional shall provide a written statement to the Portland Planning Authority upon completion of construction of lot improvements affirming that the work is in substantial conformance to the approved plans and that all conditions

of approval have been satisfied. This requirement shall appear as a note in all property deeds except lots 1-17.

3. **APPLICANT** shall install one permanent Feeno-type marker (as described below) (see Exhibit H) at each of the rear yard corners of lots 10, 12, 13, 14 and 16 and at the limit of the "Do Not Disturb Area" at the rear yard of lots 21-23. "Feeno- type" survey markers shall be markers with a granite head and an engraved identity disk with legend reading "City of Portland Presumpscot River Preserve", or an equivalent survey marker system approved by the Portland Planning Authority. **APPLICANT** otherwise shall install iron pins, with ID caps, at all other corners of lots 10-16, and at all corners of lots 1-9.

4. All backfill material placed within the right of ways for Roads A and B shall meet the MDOT common borrow specification.

5. Prior to the issuance of the first temporary certificate of occupancy, the respective roadway access (Road A or B on Exhibit _A_) shall be completed to, at a minimum, base course pavement.

6. The storage of materials during construction shall be determined by the Planning Board during subdivision.

7. Upon **APPLICANT's** sale of each lot, the owner of said lot and or the Homeowner's Association shall be responsible for ensuring that construction, development and use of said lot complies with the terms and conditions contained in this Agreement. **APPLICANT** shall include a covenant in each deed conveying a lot within that provides the **CITY** with the right to enforce restrictions on the lots and includes a requirement for restoration by the owner and payment of the **CITY's** reasonable attorney's fees.

CONCLUSION

9. The above restrictions, provisions and conditions of this Agreement are an essential part of the rezoning, shall run with the **PROPERTY**, shall inure to the benefit of, be enforceable by and bind **APPLICANT**, his successors or assigns, and any party in possession or occupancy of the **PROPERTY** or any part thereof, and said restrictions, provisions and conditions shall inure to the benefit of, be enforceable by and bind the **CITY**, acting by and through its duly authorized representatives.

If any of the restrictions, provisions, conditions, or portions thereof, set forth herein should for any reason be held to be invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision and such determination shall not affect the validity of the remaining portions hereof.

Except as expressly modified herein, the development, use, and occupancy of the subject premises shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

This Conditional Rezoning agreement may be enforced by the **CITY** pursuant to the land use enforcement provisions of state law (including 30-A MRSA 4452) and City Ordinance. Following any determination of a zoning violation by the Court, either the Portland Planning Board on its own initiative, or at the request of the Planning Authority, may make a recommendation to the City Council that the Conditional Rezoning be modified or the **PROPERTY** rezoned.

WITNESS: **APPLICANT:**

_____ _____

Lloyd B. Wolf

STATE OF MAINE
CUMBERLAND, ss. _____, 2004

Personally appeared before me the above-named Lloyd B. Wolf, and acknowledged the foregoing instrument to be his free act and deed.

Notary Public/Attorney at Law

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

22 Hope Ave Subdivision of Brandy Lane

Julie Armstrong <jarmstrong@cornerstonetitlecompany.com> Thu, Jul 27, 2017 at 12:07 PM
To: mgrooms@portlandmaine.gov

Good morning, Mr. Grooms,

Thank you for sending the notice of subdivision as described above. I wonder if the City has considered buying this parcel. It seems to me that this would be an ideal location for a softball/baseball/soccer complex and with city land quickly being used up for other purposes, it would make sense for the City to have a central location for fields as pretty much every single other town or city in the area. It amazes me that our tax dollars are not being put toward a project like this……

Julie Armstrong

President

Cornerstone Title and Settlement Company, Inc.

1438 Washington Avenue

Portland, ME 04103

Phone: (207) 797-8595

Fax: (207) 797-8599

closings@cornerstonetitlecompany.com

www.cornerstonetitlecompany.com

jarmstrong@cornerstonetitlecompany.com

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Be aware! Wire and online banking fraud is on the rise. If you receive an email containing wire transfer instructions, always call your closing agent immediately using a trusted phone number to verify the information prior to sending funds.

PC2

Google Groups

Application ID # 2017-117 or CBL #448 A004001

Steven Smalley <ssmalley@kisales.com> Sep 9, 2017 12:25 PM

Posted in group: **Planning Board**

I live at 88 Garsoe Drive in Portland and an writing you pertaining to the application of the Brandy lane subdivision proposal.

I hope I am not too late to be heard as we just found your post card.

My concerns are that of the following:

- Our streets are too narrow to support more cars / trucks. Too many cars speed on our street (a few speed bumps would be great) and now we have many new children in our neighborhood.
- These streets cannot handle more traffic as Garsoe is a cut through street to access these other neighborhoods.
- Exiting Garsoe onto Auburn street has NO LIGHT and is probably one of the most dangerous intersections in the city. (check to see how many accidents have happened here)

I would suggest the planning board come over to Garsoe during the morning and evening commutes and observe how dangerous our intersection.

Drivers from Garsoe and Washington Avenue Extension have to time their turns exactly at the same time to avoid hitting each other while trying to doge the traffic in both directions on Auburn Street.

We have too many accidents and one day there will be a fatal one due to the volume of traffic these surrounding neighborhoods create now not to mention adding more homes in this area.

I would hope the city takes a hard look at this and puts more faith in lives verses protentional tax revenue!

I appreciate you allowing us to voice our opinions.

Steven Smalley

88 Garsoe Drive

Portland, ME 04103

797-0890

Steven Smalley

Distributor Business Manager

KeyImpact Sales and Systems, Inc.

60 Gray Road, Unit #6

Falmouth, ME 04105

Cell 207-233-4445

ssmalley@kisales.com

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PC3

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

22 Hope Ave.

Jaime Parker <jaime@trails.org> Mon, Oct 2, 2017 at 10:58 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Kara Wooldrik <kara@trails.org>

Hi Matt,

We saw the recent notice about the Conditional Use application and just want to catch up on where this project is. As you likely know this is a major entrance to the Portland Trails managed / City of Portland owned "Presumpscot River Preserve". I note a reference to 1.9 acres of OS as well.

Could you share the latest lot plan, and any info relevant to the trail access?

Thanks Matt,

Jaime

Jaime Parker
Trails and Transportation Manager
Portland Trails
jaime@trails.org
329.6180

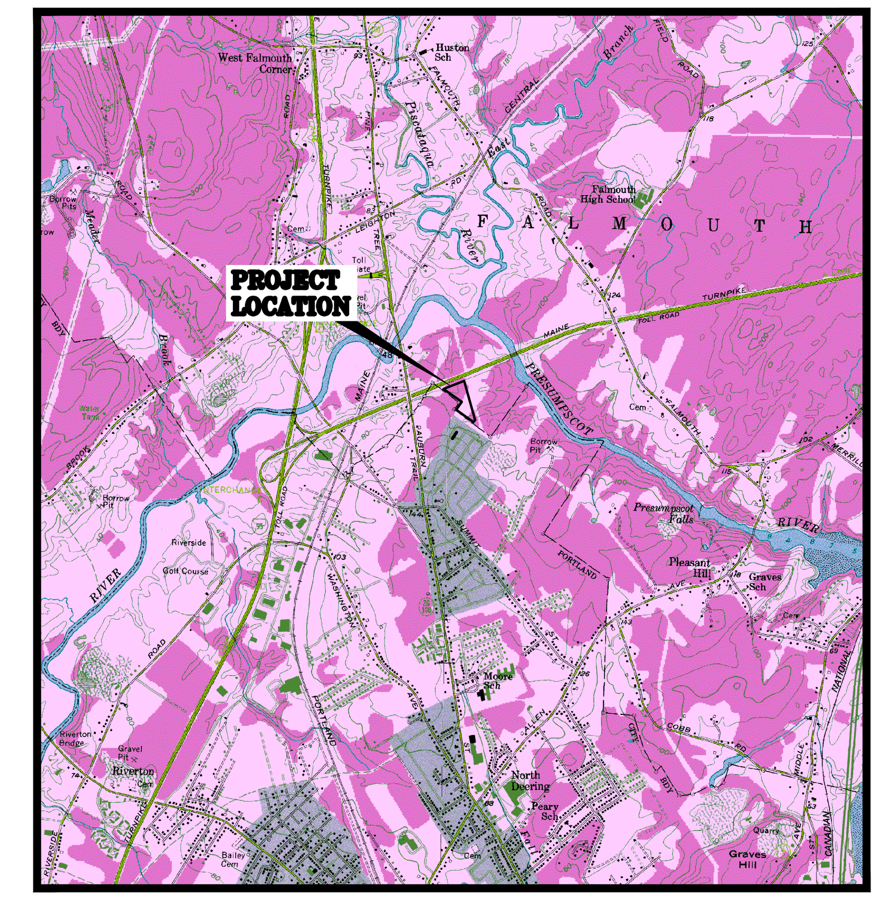
Non Sibi, Sed Omnibus

PROJECT PARCEL SITE PORTLAND ASSESSOR'S MAP & LOT NUMBERS	
MAP	LOT
448	A004

Applicant:
LBW, LLC
P.O. BOX 1382
PORTLAND, ME 04104
CLIENT PHONE 207-776-0742

BRANDY LANE SUBDIVISION

PORTLAND, MAINE



LOCATION MAP
N.T.S.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	BUILDING	
	RIGHT OF WAY	
	PROPERTY LINE	
	BUILDING SETBACK	
	ZONE LINE	
	WETLAND BOUNDARY	
	GUIDE RAIL	
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL DRIVE	
—100—	GRADING CONTOUR LINE	100
X 226.4	SPOT ELEVATION	100.31
	TREELINE	
	TREES & HEDGES	
	POLE WITH LIGHT FIXTURE(S)	
	UTILITY POLE	
	FREESTANDING SIGN	
	PAINTED DIRECTIONAL TRAFFIC ARROW	
OE	OVERHEAD ELECTRIC/TELEPHONE	OHE/T
UE	UNDERGROUND ELECTRIC/TELEPHONE	UGE/T
W	WATER LINE	8"W
D	STORM DRAIN LINE	18"SD
	CULVERT	18"CULVERT
	HYDRANT	
	WATER GATE VALVE	
	WATER SHUT OFF VALVE	
	MANHOLE	
	CATCH BASIN	
	TEST PIT	
	IRON ROD (SET)	
	IRON ROD (FOUND)	
	MONUMENT	
	RIPRAP	
	SILT FENCE – PERIMETER	
	STONE SEDIMENT BARRIER	
	FENCE	
	WELL	

GENERAL NOTES

GENERAL NOTES

1. TOPOGRAPHIC DATA AND EXISTING CONDITIONS WAS PREPARED BY TITCOMB ASSOCIATES OF FALMOUTH MAINE.

2. 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.

3. MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE TO THE OWNER AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTIONS OF THE OWNER, THE CITY OF PORTLAND OR THEIR REPRESENTATIVES AT NO ADDITIONAL COST TO THE OWNER.

4. 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.

5. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, AND/OR CITY OF PORTLAND SPECIFICATIONS.

6. WETLANDS ON THIS PLAN WERE DELINEATED AND GPS LOCATED BY TRC.

7. ELEVATIONS FOR THIS PROJECT ARE ON THE CITY'S DATUM.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF A SUBDIVISION APPROVAL FROM THE CITY OF PORTLAND. THE CONSTRUCTION WILL BE GOVERNED BY THE CITY OF PORTLAND ZONING ORDINANCE WHICH IS AVAILABLE FOR VIEWING AT THE OFFICE OF THE ENGINEER OR THE MUNICIPAL OFFICE.

2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

LAYOUT NOTES

1. ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB.

2. OFFSETS TO CATCH BASINS AND MANHOLES ARE TO THE CENTER OF THE FRAME.

3. PIPE LENGTH EQUALS THE CENTER TO CENTER DISTANCES BETWEEN CATCH BASINS AND/OR MANHOLES MINUS ONE-HALF OF THE DIAMETER OF EACH CATCH BASIN OR MANHOLE.

4. PROPERTY LINE AND R.O.W. MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTOR'S EXPENSE, BY A MAINE LICENSED LAND SURVEYOR.

5. PROPOSED RIGHT OF WAY MONUMENTS AND PROPERTY LINE PINS SHALL BE INSTALLED UNDER THE DIRECTION OF A MAINE LICENSED LAND SURVEYOR.

6. CURB RADII UNLESS OTHERWISE NOTED ON THE PLAN SHALL BE A MINIMUM OF 3'.

UTILITY NOTES

1. ALL WATER UTILITY MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO PORTLAND WATER DISTRICT STANDARDS. ALL WATER DISTRIBUTION PIPING SHALL BE CLASS 52 DUCTILE IRON PIPE, DOUBLE CEMENT LINED AND BITUMINOUS COATED CONFORMING TO AWWA/ANSI C104/A21.4. DISINFECTION OF WATER LINES SHALL CONFORM TO AWWA STANDARD C651, LATEST REVISION.

2. THE LOCATION OF THE PROPOSED UNDERGROUND ELECTRICAL SERVICE IS APPROXIMATE AND THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION WITH CENTRAL MAINE POWER COMPANY.

3. THRUST BLOCKS AND/OR LOCKING RETAINER GLANDS SHALL BE PLACED ON THE WATER DISTRIBUTION LINES AT ALL BENDS, TEES, VALVES, CHANGES IN DIRECTION, ETC. THE THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL MEET THE REQUIREMENTS OF THE PORTLAND WATER DISTRICT.

4. TEST PITS AT ALL UTILITY CROSSINGS SHALL BE COMPLETED TWO WEEKS IN ADVANCE OF THE START OF CONSTRUCTION OR ORDERING OF MATERIALS. TEST PIT INFORMATION SHALL BE PROMPTLY PROVIDED TO ENGINEER FOR REVIEW.

5. ALL GAS UTILITY MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO UNITIL STANDARDS.

GRADING AND DRAINAGE NOTES

1. UNLESS OTHERWISE NOTED, ALL STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603-- PIPE CULVERTS AND STORM DRAINS, LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS:

   REINFORCED CONCRETE PIPE, CLASS III
   POLYVINYL-CHLORIDE (PVC) PIPE
   SMOOTH BORE POLYETHYLENE – ADS OR HANCOR

2. TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO BE DESIGNATED BY THE OWNER. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFF SITE.

3. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY. NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING.

EROSION CONTROL NOTES

1. LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE SITE.

2. PRIOR TO BEGINNING ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL THE PERIMETER SILT FENCES AND THE CONSTRUCTION ENTRANCE.

3. ALL GROUND AREAS DISTURBED FOR CONSTRUCTION WILL BE GRADED, LOAMED AND SEEDED AS SOON AS POSSIBLE. PERMANENT SEED MIXTURE SHALL CONFORM TO THE SEEDING PLAN CONTAINED IN THE EROSION CONTROL NOTES INCLUDED ON SHEET C408.

4. PRIOR TO PAVING, THE CONTRACTOR SHALL FLUSH SEDIMENT FROM ALL STORM DRAIN LINES, REMOVE ACCUMULATED SEDIMENT FROM SUMPS AND INVERTS AND PROPERLY DISPOSE OF.

5. ALL CATCH BASINS WITH OUTLET PIPES 18" DIAMETER OR LESS SHALL BE PROVIDED WITH A "SNOUT" SEDIMENTATION HOOD PER DETAIL.

6. SILT FENCES SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES.

7. THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCE AS IT BECOMES SATURATED WITH MUD TO ENSURE THAT IT WORKS AS PLANNED DURING CONSTRUCTION.

8. SILT REMOVED FROM AROUND INLETS AND BEHIND THE SILT FENCES SHALL BE PLACED ON A TOPSOIL STOCKPILE AND MIXED INTO IT FOR LATER USE IN LANDSCAPING OPERATIONS.

9. EROSION CONTROL NOTES ACCOMPANY THIS PLAN SET AND ARE CONTAINED ON DRAWING C408 OF THIS PLAN SET.

10. THE MAINTENANCE SCHEDULE FOR THE CATCH BASIN SEDIMENT SUMPS IS CONTAINED IN THE EROSION CONTROL NOTES INCLUDED ON SHEET C408.

11. THE CONTRACTOR IS CAUTIONED THAT FAILURE TO COMPLY WITH THE SEQUENCE OF CONSTRUCTION, EROSION/SEDIMENT CONTROL PLAN, AND OTHER PERMIT REQUIREMENTS BASED UPON ANY THIRD PARTY REVIEW (ie MDEP) MAY RESULT IN MONETARY PENALTIES. THE CONTRACTOR SHALL BE ASSESSED ALL SUCH PENALTIES AT NO COST TO THE OWNER OR PERMITTEE.

12. ALL NON-PAVED AREAS DISTURBED DURING CONSTRUCTION SHALL BE LOAMED AND SEEDED, UNLESS OTHERWISE DIRECTED BY THE OWNER.

13. ALL DISTURBED AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL PRIOR TO PERMANENT SEEDING.

PERMITS

TYPE OF PERMIT	GOVERNING BODY	STATUS
NRPA TIER 2	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION 312 CANCO ROAD PORTLAND, ME 04103 (207) 822-6300	SUBMITTED: ANTICIPATED JAN 2018
SUBDIVISION APPLICATION	CITY OF PORTLAND PLANNING DEPARTMENT 398 CONGRESS STREET PORTLAND, ME 04101 (207) 874-8719	SUBMITTED: MAY 24, 2017

UTILITIES

WATER:
PORTLAND WATER DISTRICT
225 DOUGLASS STREET
PORTLAND, MAINE 04102
(207) 774-5961
CONTACT: JAY ARNOLD

SEWER:
PORTLAND PUBLIC WORKS DEPT.
55 PORTLAND STREET
PORTLAND, MAINE 04101
(207) 874-8871
CONTACT: BRAD ROLAND

ELECTRIC:
CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, MAINE 04103
(207) 826-2869
CONTACT: JAMIE COUGH

TELEPHONE:
VERIZON
5 DAVIS FARM ROAD
PORTLAND, MAINE 04103
(207) 797-1842

CABLE:
TIME WARNER CABLE
118 JOHNSON ROAD
PORTLAND, MAINE 04102
(207) 775-3431
CONTACT: MARK PELLETIER

INDEX

C001	COVER SHEET, GENERAL NOTES, & LEGEND
	BRANDY LANE SUBDIVISION PLAT (TITCOMB ASSOCIATES)
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C101	LAYOUT AND UTILITY PLAN AND PROFILE
C101A	EXISTING WATER MAIN PLAN AND PROFILE
C102	LAYOUT AND UTILITY PLAN AND PROFILE
C103	OVERALL GRADING, DRAINAGE, AND EROSION CONTROL PLAN
C104	GRADING AND DRAINAGE PLAN AND PROFILE
C105	GRADING AND DRAINAGE PLAN AND PROFILE
C401	SITE DETAILS
C402	SITE, UTILITY, AND EROSION CONTROL DETAILS
C403	DRAINAGE AND UTILITY DETAILS
C404	SEWER AND WATER DETAILS
C405	DRAINAGE DETAILS
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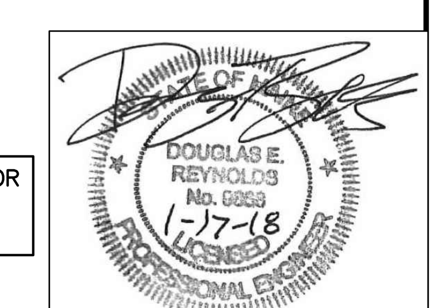
W1	PRE DEVELOPMENT WATERSHED MAP
W2	POST DEVELOPMENT WATERSHED MAP

CALL BEFORE YOU DIG
1-888-344-7233

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.



U:\98089.08 – Design and Permitting 'Long' Road\Z – CAD\DWG\98089-08-COVER.dwg – 1/16/2018 2:29 PM

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: JAN 2018
Checked: DER	Scale: 1"=40'	Job No.: 98089.08
File Name: 98089-08-COVER.dwg		

This plan shall not be modified without written permission from Gorrill Palmer(GP). Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to GP.

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Drawing Name: Cover Sheet, General Notes, and Legend
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No.
C001

Approved by the City of Portland Planning Board

Dated_____

see note 2

N/F
Robert L. Adam
23889/320

3/4" iron pipe

S19°30'58"E
75.00'

EASEMENT #3

EASEMENT #4 50'

EASEMENT #5

N/F
City of Portland
17463/276

N/F
City of Portland
17463/276

N7°29'02"E 150.00'

S7°29'02"W 150.00'

135'

6"x6" granite

S19°30'58"E 430.11'

168.26'

261.85'

S19°30'58"E 404.18'

N: 325418.19
E: 2920230.88
Maine State Plane
Coordinate (typical)

N: 324549.50
E: 2920499.57

EASEMENT #2

no disturb drea

L=60.81'
R=225.00'
CB=S51°08'37"W
C=60.63'

S7°29'02"W 24.17'

150.45'

16
18,641
square feet

S31°03'45"W 81.37'

54.00'

S58°56'15"E 167.57'

54.00'

15
6,089
square feet

S31°03'45"W 115.22'

27.23'
S12°45'59"E

drainage easement to benefit City of Portland

15'

15'

150.65'

R=225.00'
L=205.64'

Remaining Land
83,779
square feet

drainage easement to benefit Homeowner's Association

parking / access easement to benefit Portland Trails

20'

N69°05'34"E 8.10'

S30°26'25"E 90.50'

L=58.61'

L=31.27'

L=169.18'
R=425.00'

L=58.31'
R=217.40'
CB=S22°34'34"E
C=58.14'

L=53.53'

10' wide pedestrian easement*

L=160.49'
L=191.76'
R=375.00'

S13°03'48"E 100.21'

1" iron pipe

S58°27'09"E 60.07'

S58°27'09"E

L=67.34'
R=85.00'

L=44.70'
R=225.00'
CB=S37°42'37"W
C=44.62'

S32°01'10"W 15.45'

6"x6" granite

N: 324466.50
E: 2920413.43

Hope Avenue

50'

Brandy Lane
49,900 square feet

N60°15'24"E 21.42'

50'

R=375.00'
L=149.28'

L=56.14'
R=375.00'

L=52.73'
R=375.00'

3.57'

N13°03'48"W 170.45'

166.88'

79.93'

capped iron rod
PLS# 1155

1" iron pipe

drainage easement to benefit Homeowner's Association

25'

13
9,917
square feet

S31°03'45"W 112.00'

S58°56'15"E 54.00'

30.00'

30.00'

N31°03'45"E 112.00'

S58°56'15"E 124.05'

54.00'

S31°03'45"W 112.00'

16.00'

R=225.00'
L=228.13'

R=225.00'
L=50.99'

R=175.00'
L=159.94'

L=99.38'
R=175.00'

L=57.20'
R=175.00'

7
7,024
square feet

S70°17'14"W 4.19'

L=54.03'
R=425.00'

L=50.06'
R=425.00'

R=425.00'
L=217.33'

L=96.56'
R=425.00'

L=40.41'
R=375.00'

L=16.69'
R=425.00'

N67°45'22"E 25.51'

18.71'

20'

N30°42'29"E 106.08'

114.47'

5
8,088
square feet

4
6,961
square feet

3
7,370
square feet

2
9,581
square feet

1
12,128
square feet

10' wide drainage / access easement to benefit Homeowner's Association

N67°45'22"E 118.35'

N67°45'22"E 129.35'

132.45'

193.54'

S67°45'22"W 147.24'

204.17'

N58°27'09"W 457.24'

N/F
Henry Downs
Brenda J. Downs
14132/166

8
6,068
square feet

9
6,159
square feet

drainage easement

111.85'

N31°03'45"E

65.97'

25'

56.00'

51.64'

L=2.35'
R=175.00'

N58°56'15"E 236.88'

55.00'

10
6,159
square feet

111.99'
N31°03'45"E

248.36'

55.00'

11
6,159
square feet

111.99'
N31°03'45"E

248.36'

55.00'

12
14,224
square feet

111.99'
N31°03'45"E

248.36'

25'

drainage easement to benefit Homeowner's Association

10'

10'

10'

75.04'

76.65'

N58°56'30"W 482.24'

5/8" rebar

112.00'

capped Iron Rod
PLS# 1273

irregular shaped stone marked "F" "W"

20' drainage easement to benefit Homeowner's Association

25' drainage easement to benefit Homeowner's Association

N30°25'13"E 280.78'

32.09'
25.06'

56.00'
N22°14'38"W 144.09'
56.00'

6
17,024
square feet

61.09'

30.98'

69.40'

capped Iron Rod
PLS# 1155

drainage easement to benefit Homeowner's Association

25'

105.00'

N58°27'09"W 457.24'

15.76'

TBM: 6"x6" granite 3' offset monument, elevation=100.74 City of Portland Datum

6"x6" granite

50'

Maine Turnpike
Falmouth Spur

478.86'

N64°31'06"E 134.24'

S58°56'15"E 49.58'

194.17'

149.05'

capped iron rod
PLS# 1273

51.39'

6"x6" granite

N: 325229.91
E: 2919790.59

irregular shaped stone marked "F" "W"

103.73'

N/F
Donata R. Nelson
16384/153

N/F
James S. Griffin
Karen A. Griffin
30003/77

N/F
John Eisenhart
Ann Eisenhart
33830/262

N/F
Carmen R. Rapolla
Elizabeth A. Rapolla
31935/230

N/F
The Robert G Milliken
Living Trust
25721/203

N/F
Liza B. Nelson
Joseph W. Nelson
33164/325

N/F
Laurie J. Downey
Daniel S. Downey, Sr.
19558/98

Alice Street

50'

50'-0"
5'-0" SIDEWALK (WHERE SHOWN ON PLAN)
6'-0" ESPLANADE
14'-0"
14'-0"
6'-0" ESPLANADE
5'-0" SIDEWALK (WHERE SHOWN ON PLAN)
GRANITE CURB (TYP.)
5:1 MAX. SLOPE (TYP.)
SLOPE 0.03 (TYP.)
SLOPE 0.02 (TYP.)
SIDEWALK
ESPLANADE (TYP.) 4" LOAM, SEED AND MULCH
1 1/2" HOT BITUMINOUS PAVEMENT, GRADING "C" (12.5 mm)
2" HOT BITUMINOUS PAVEMENT, GRADING "B" (19 mm)
3" AGGREGATE BASE COURSE, TYPE "B" GRAVEL
15" AGGREGATE SUBBASE COURSE, TYPE "D" GRAVEL
STREET RIGHT OF WAY

LOCAL STREET CROSS SECTION
N.T.S.

SCALE IN FEET
40 0 40 80
1" = 40'

SURVEYOR'S SEAL IS FOR INTERIOR LOT CALCULATIONS ONLY. THE BOUNDARY PERIMETER IS BASED ON INFORMATION PROVIDED BY THE OWNER AND INFORMATION SHOWN ON A PLAN OF PROPERTY MADE FOR ROBERT ADAM BY LAND USE CONSULTANTS DATED AUGUST 1978 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 125, PAGES 45 AND 46. NO CERTIFICATIONS ARE STATED OR IMPLIED REGARDING THE ACCURACY OR VALIDITY OF THE PERIMETER BOUNDARIES.

Rex J. Croteau
MAINE PLS #2273

STATE OF MAINE
REX J. CROTEAU
2273
PROFESSIONAL LAND SURVEYOR

State of Maine, Cumberland ss
Registry of Deeds
Received _____ 20____
at__h__m__M and recorded in
Plan Book _____ Page ____
Attest:_____
Register

LEGEND

■	Monument – to be set (6"x6"/3' offset)
⊡	Monument – found
○	Iron marker – found
●	Iron marker – to be set (#5 rebar)
———	Property line (locus)
———	Property line (abutter)
— — —	Proposed property line
——— – ———	Easement line
N/F	Now or formerly of
1234/567	Deed reference (Book/Page)

PLAN REFERENCES

(1) Plan of Property for Robert Adam made by Land Use Consultants dated August 1978. Recorded in Plan Book 125, Pages 45 and 46.

(2) Presumpscot River Place Amended Recording Plat made for The Teal Company by Land Use Consultants dated May 10, 1983 and revised February 6, 1984. Recorded in Plan Book 141, Page 42.

(3) Plan of Crestview Acres, Section 5, made for Donald R. Peters by H.I. & E.C. Jordan dated December 24, 1969. Recorded in Plan Book 81, Page 23.

(4) Third Amended Recording Plat of Alice Street Subdivision made for Lloyd B. Wolf by Land Use Consultants dated February 27, 1996. Recorded in Plan Book 196, Page 319.

(5) Plan of Oatnuts Park owned by A.M. Hayes. Recorded on February 18, 1902 in Plan Book 9, Page 103.

(6) Plan of Valley View Heights (Curtis Road) made for C.H. Hanson Co. by H.I. & E.C. Jordan Company dated January 31, 1967. Recorded in Plan Book 74, Page 1.

(7) Presumpscot River Place II made for The Teal Company by Land Use Consultants dated June 26, 1984 and revised August 9, 1985. Recorded in Plan Book 149, Page 64.

(8) Auburn Pines Subdivision Plan made for Neptune Properties, Inc. by Pinkham & Greer dated April 28, 1999. Recorded in Plan Book 199, Page 393.

(9) Presumpscot River Place III–Subdivision Plan made for Robert Adam and Burt Wolf by Titcomb Associates dated December 4, 2001. Recorded in Plan Book 202, Page 650.

(10) Riverwalk Subdivision Plan made for Gorrill–Palmer by Titcomb Associates dated October 25, 2005 and revised February 24, 2006. Recorded in Plan Book 206, Page 412.

NOTES

(1) Surveyors seal is for interior lot dimensions only. Property perimeter is based on plan reference #1.

(2) Bearings are based on True North as shown on plan reference #1. The Maine State Coordinates labeled for the perimeter corners were derived from GPS observations utilizing the NOAA OPUS application (NAD83 West Zone).

(3) Abutters noted on this plan are per City of Portland and Town of Falmouth records.

(4) Property lies within Zone X based on FIRM Community #230045 Panel #0008 B, dated October 16, 1984. It does not lie within a special flood hazard area.

(5) Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499–L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

(6) The street monuments to be set will be in accordance with the City of Portland standards.

EASEMENTS / ENCUMBRANCES

1) Property is subject to a Temporary Easement granted to the City of Portland by Lloyd B. Wolf recorded in Book 26744, Page 103.

2) Property is subject to a Temporary Pedestrian Easement granted to the City of Portland by Lloyd B. Wolf recorded in Book 23889, Page 346.

3) Property is subject to a Pedestrian Easement granted to the City of Portland by Lloyd B. Wolf recorded in Book 23889, Page 349.

4) Property is subject to an easement conveyed to Portland Water District recorded in Book 2267, Page 257.

5) Property is subject to an easement conveyed to Central Maine Power Company by Philip E. Hamlin and Elizabeth G. Hamlin recorded in Book 2167, Page 435.

TOTAL AREA

281,318 square feet / 6.46 acres
(includes the Remaining Land)

OWNER OF RECORD

Lloyd B. Wolf: Book 23889, Page 327
9 Loveitt's Field, South Portland, Maine

PLAN OF

Brandy Lane Subdivision Plat

MADE FOR

LBW, LLC

PO Box 1382 Portland, Maine

JOB #99064	DATE: January 15, 2018	SCALE: 1" = 40'
BOOK #		
99064 Brandy Lane Sub		

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207)797-9199 www.titcombsurvey.com

SPACE AND BULK STANDARDS	
_____ ZONE	REQUIRED
MIN. LOT SIZE	6,000 S.F.
BUILDING SETBACKS FRONT SIDE REAR	 10' 12' 20'*
MIN. FLOOR AREA	1,000 S.F.
MAX. STRUCTURE HEIGHT	35 FT.
MIN. STREET FRONTAGE	50 FT.
MAX. LOT COVERAGE	40%
MIN. LOT WIDTH	50 FT.

* FOR LOTS ABUTTING I95, REAR SETBACK IS 25'

NOTE:

TOTAL WETLAND IMPACT = 7,920 SF

R2 ZONE

RPZ ZONE

N/F CITY OF PORTLAND

PORTLAND WATER DISTRICT EASEMENT

NON-JURISDICTIONAL VERNAL POOL

PERMANENT PEDESTRIAN EASEMENT TO CITY OF PORTLAND. LOCATION AND DIMENSIONS OF EASEMENT TO BE DETERMINED

CENTRAL MAINE POWER EASEMENT

HOPE AVENUE

LOT 16 18,641 SF

WETLAND IMPACT (3,366 SF)

DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

75' SETBACK

LAND TO BE RETAINED BY DEVELOPER

WETLAND (TYP.)

WETLAND IMPACT (60 SF)

WETLAND IMPACT (669 SF)

WETLAND IMPACT (1,141 SF)

C40 ZONE

25' WIDE DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

5" WIDE TRAIL ENTRANCE LOCATION TO BE DETERMINED IN THE FIELD

10' WIDE PARKING AND ACCESS EASEMENT TO BENEFIT PORTLAND TRAILS

9' WIDE PAVED PARKING

WETLAND IMPACT (98 SF)

PC: 5+60.33

PC: 7+47.67

PT: 6+47.47

PRC: 11+11.45

PRC: 9+06.90

BRANDY LANE

RIGHT-OF-WAY

60'

10' FRONT SETBACK

25' WIDE DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

20' REAR SETBACK

LOT 13 9,917 SF

LOT 14 6,048 SF

LOT 15 6,089 SF

WETLAND IMPACT (1,343 SF)

LOT 12 12,556 SF

LOT 11 6,159 SF

LOT 10 6,159 SF

LOT 9 6,159 SF

LOT 8 6,068 SF

LOT 7 7,024 SF

25' REAR SETBACK

25' DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

25' DRAINAGE EASEMENT

DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

WETLAND IMPACT (450 SF)

LOT 5 8,088 SF

LOT 4 6,961 SF

LOT 3 7,370 SF

LOT 2 9,581 SF

LOT 1 12,128 SF

WETLAND IMPACT (153 SF)

WETLAND IMPACT (551 SF)

12' SIDE SETBACK

APPROXIMATE LOCATION 2-STORY SINGLE FAMILY HOUSE 2,171 SF (TYP.)

20' WIDE DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

WETLAND IMPACT (89 SF)

LOT 6 17,024 SF

25' WIDE DRAINAGE EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

10' WIDE DRAINAGE ACCESS EASEMENT TO BENEFIT HOMEOWNERS ASSOCIATION

25' REAR SETBACK

BUILDING DEPICTS POTENTIAL PROPOSED BUILDING AND SHOULD NOT BE CONSIDERED FINAL DIMENSION OR LOCATION (TYP.)

NOTE: PER CITY OF PORTLAND REQUIREMENTS, CONTRACTOR SHALL PLACE TWO TREES PER LOT IN ESPLANADE.

TBM: 6"x6" granite 3' ±(rear) monument, elevation=109.74 City of Portland Datum

40 0 20 40 80

1 inch = 40 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 8959
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
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PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: DJG | Draft: CG | Date: JAN 2018
Checked: DER | Scale: 1"=40' | Job No.: 98089.08
File Name: 98089-08-SUBDVN.dwg

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207.772.2515

Drawing Name: Overall Plan
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C100

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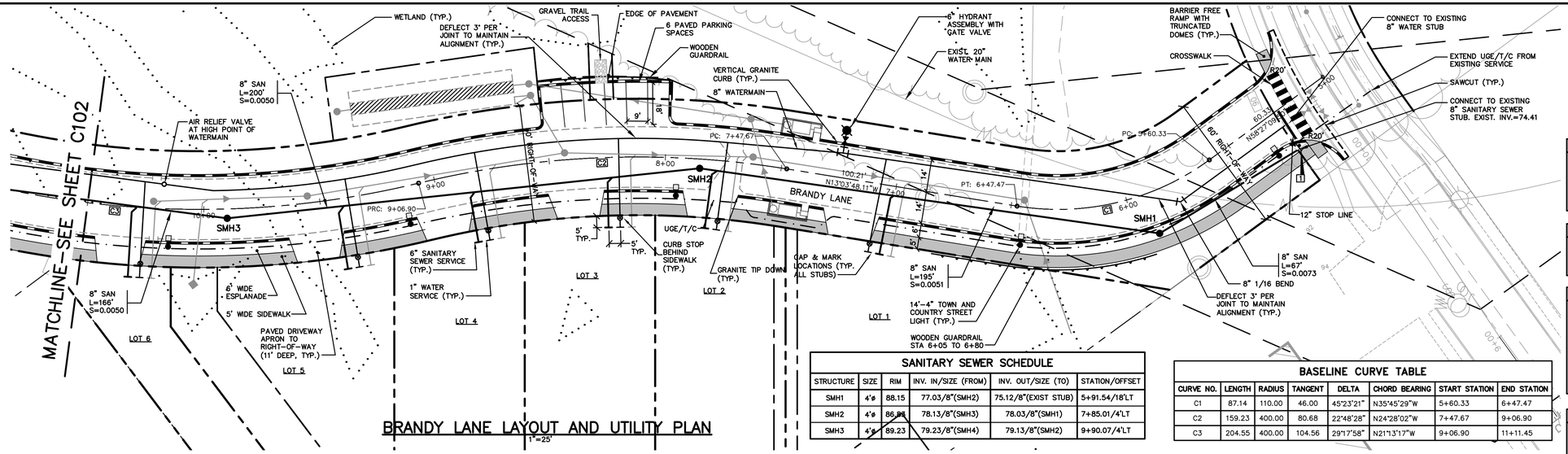


BRANDY LANE LAYOUT AND UTILITY PLAN

1"=25'

SANITARY SEWER SCHEDULE

STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET
SMH1	4'ø	88.15	77.03/8"(SMH2)	75.12/8"(EXIST STUB)	5+91.54/18'LT
SMH2	4'ø	86.83	78.13/8"(SMH3)	78.03/8"(SMH1)	7+85.01/4'LT
SMH3	4'ø	89.23	79.23/8"(SMH4)	79.13/8"(SMH2)	9+90.07/4'LT

BASELINE CURVE TABLE

CURVE NO.	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	START STATION	END STATION
C1	87.14	110.00	46.00	45°23'21"	N35°45'29"W	5+60.33	6+47.47
C2	159.23	400.00	80.68	22°48'28"	N24°28'02"W	7+47.67	9+06.90
C3	204.55	400.00	104.56	29°17'58"	N21°13'17"W	9+06.90	11+11.45

PAVEMENT LEGEND

ALL PAVEMENT SHALL BE STANDARD DUTY EXCEPT AS FOLLOWS:

BITUMINOUS SIDEWALK

CURBING LEGEND

VERTICAL GRANITE CURB

STRIPING LEGEND

SIGNAGE, STRIPING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGARDING SIZE, INSTALLATION, LOCATION & REFLECTIVITY.

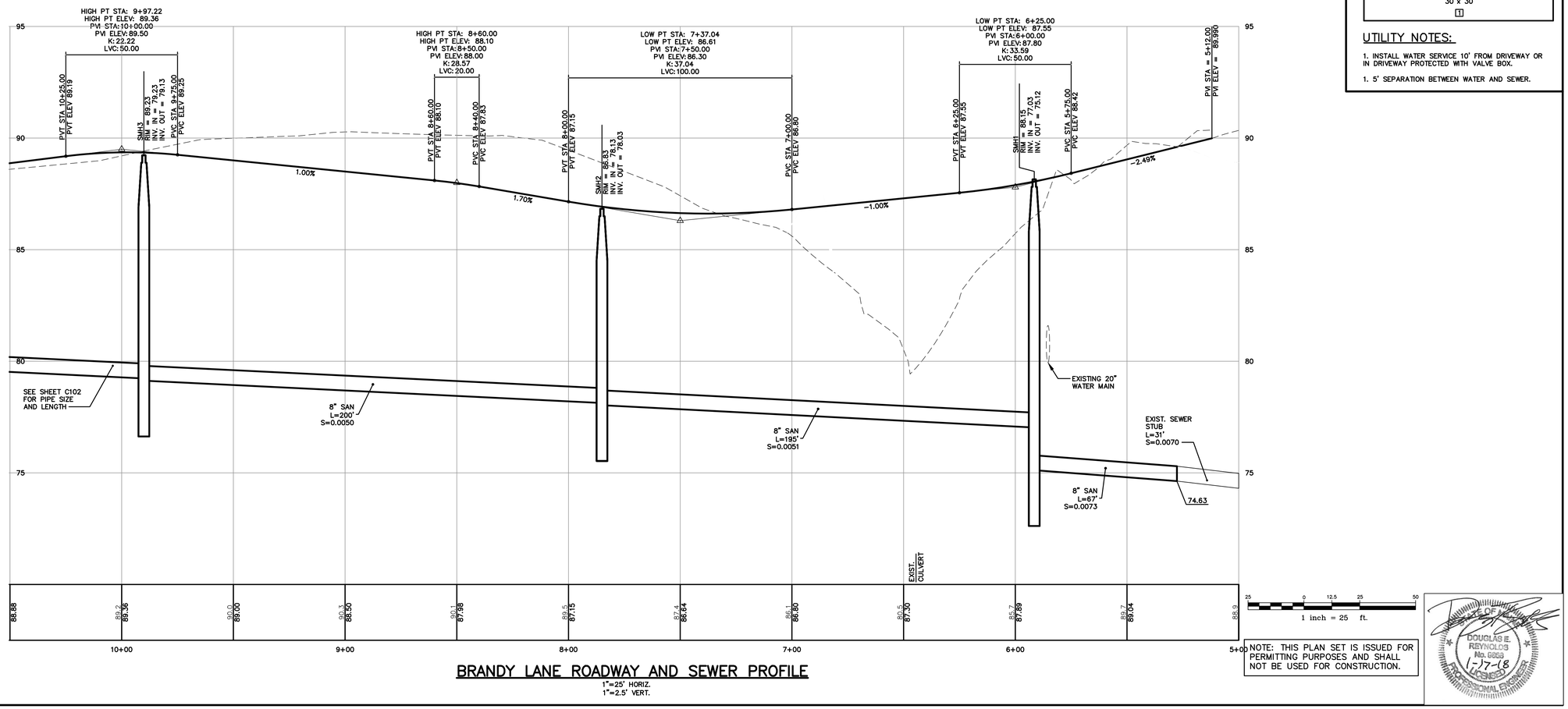
12"SL – 12" WIDTH STOP LINE
4"SWLL – 4" WIDTH SOLID WHITE LANE LINE
4"DYCL – 4" WIDTH DOUBLE YELLOW CENTERLINE
4"DWLL – 4" WIDTH DASHED WHITE LANE LINE

SIGN LEGEND

STOP
R1-1
30"x 30"
[1]

UTILITY NOTES:

1. INSTALL WATER SERVICE 10' FROM DRIVEWAY OR IN DRIVEWAY PROTECTED WITH VALVE BOX.
1. 5' SEPARATION BETWEEN WATER AND SEWER.



BRANDY LANE ROADWAY AND SEWER PROFILE

1"=25' HORIZ.
1"=2.5' VERT.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 6859
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: JAN 2018
Checked: DER | Scale: 1"=25' | Job No.: 98089.08
File Name: 98089-08-PP-SP.dwg

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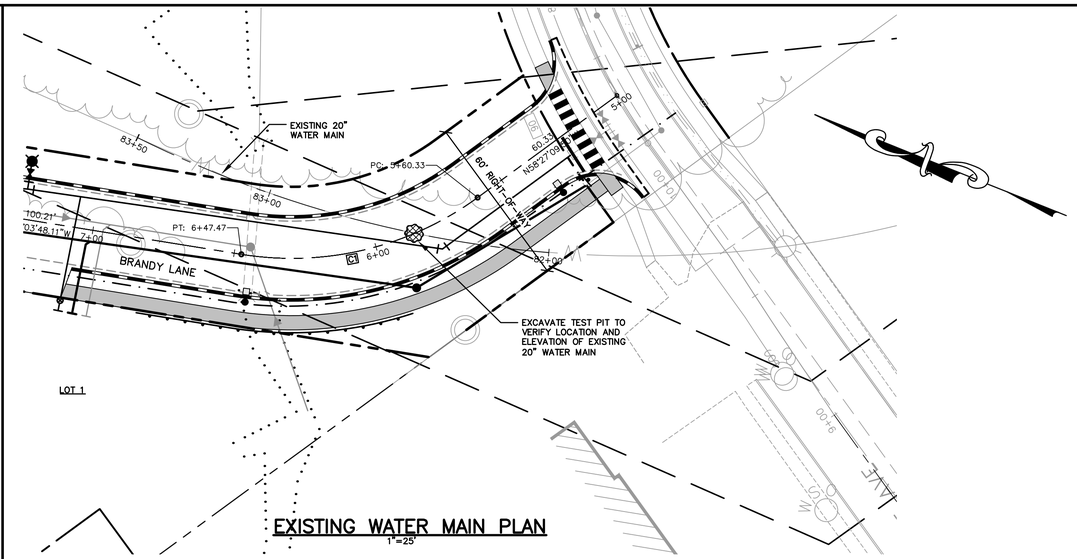
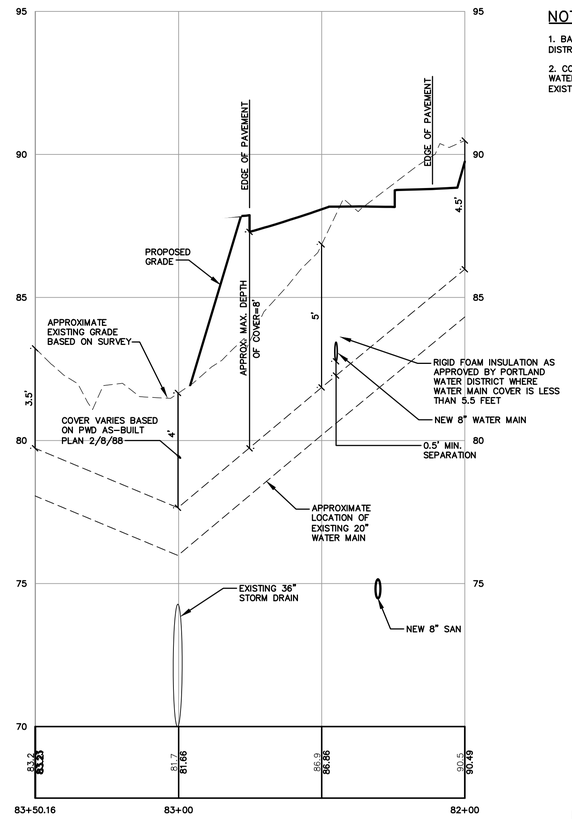
207.772.2515

Drawing Name: Layout and Utility Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C101

U:\98089.08 - Design and Permitting 'Long' Road\Z - CAD\DWG\98089-08-PP-SP.dwg - 1/16/2018 2:40 PM





EXISTING WATER MAIN PROFILE
1"=25' HORIZ.
1"=2.5' VERT.

NOTES:

1. BASELINE STATIONS ARE FROM PORTLAND WATER DISTRICT AS-BUILT PLAN 2/8/88.

2. COVER DEPTHS AS NOTED ARE FROM PORTLAND WATER DISTRICT AS-BUILT PLAN AT LOCATIONS OF EXISTING 20" WATER MAIN.

25 0 12.5 25 50
1 inch = 25 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9969
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: JAN 2018
Checked: DER | Scale: 1"=25' | Job No.: 98089.08
File Name: 98089-08-PP-SP.dwg

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207.772.2515

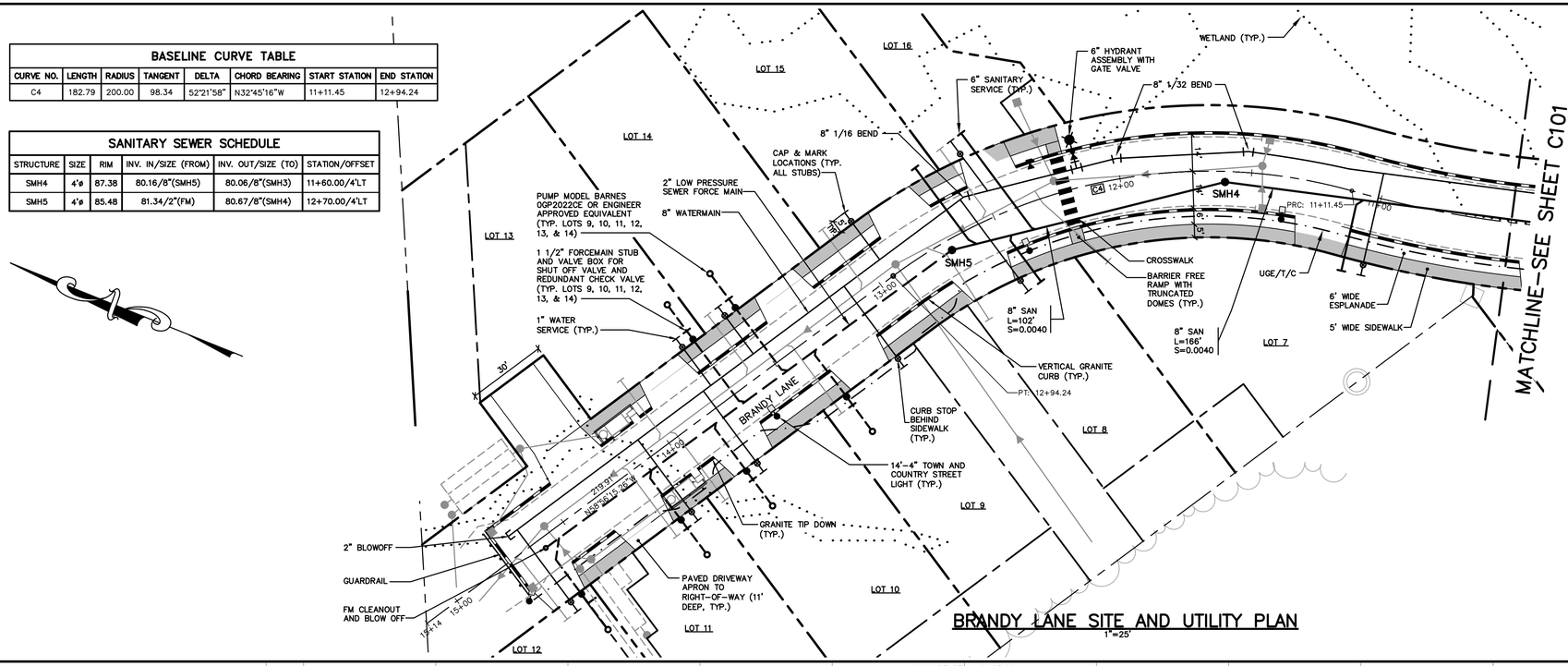
Drawing Name: Existing Water Main Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C101A

U:\98089.08 - Design and Permitting 'Long' Road\Z - CAD\DWG\98089-08-PP-SP.dwg - 1/16/2018 2:41 PM

BASELINE CURVE TABLE							
CURVE NO.	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	START STATION	END STATION
C4	182.79	200.00	98.34	52°21'58"	N32°45'16"W	11+11.45	12+94.24

SANITARY SEWER SCHEDULE					
STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET
SMH4	4'ø	87.38	80.16/8"(SMH5)	80.06/8"(SMH3)	11+60.00/4'LT
SMH5	4'ø	85.48	81.34/2"(FM)	80.67/8"(SMH4)	12+70.00/4'LT



BRANDY LANE SITE AND UTILITY PLAN

1"=25'

PAVEMENT LEGEND

ALL PAVEMENT SHALL BE STANDARD DUTY EXCEPT AS FOLLOWS:

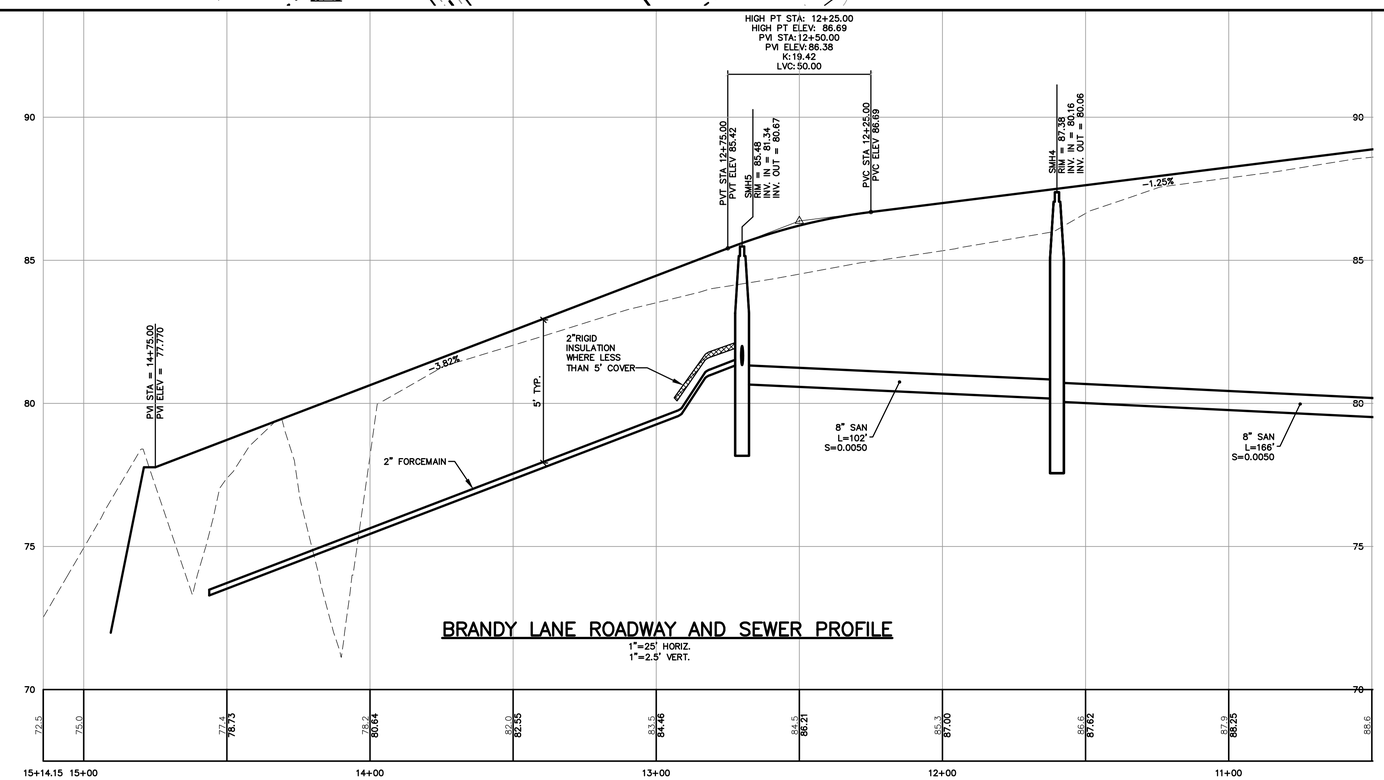
BITUMINOUS SIDEWALK

CURBING LEGEND

VERTICAL GRANITE CURB

UTILITY NOTES:

1. INSTALL WATER SERVICE 10' FROM DRIVEWAY OR IN DRIVEWAY PROTECTED WITH VALVE BOX.
2. 5' SEPARATION BETWEEN WATER AND SEWER.
3. THE HOMEOWNERS ASSOCIATION WILL RETAIN OWNERSHIP AND PROVIDE MAINTENANCE TO THE LOW PRESSURE SEWER SYSTEM.



BRANDY LANE ROADWAY AND SEWER PROFILE

1"=25' HORIZ.
1"=2.5' VERT.

25 0 12.5 25 50

1 inch = 25 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 6853
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: JAN 2018
Checked: DER	Scale: 1"=25'	Job No.: 98089.08
File Name: 98089-08-PP-SP.dwg		

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207.772.2515

Drawing Name: **Layout and Utility Plan and Profile**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. **C102**

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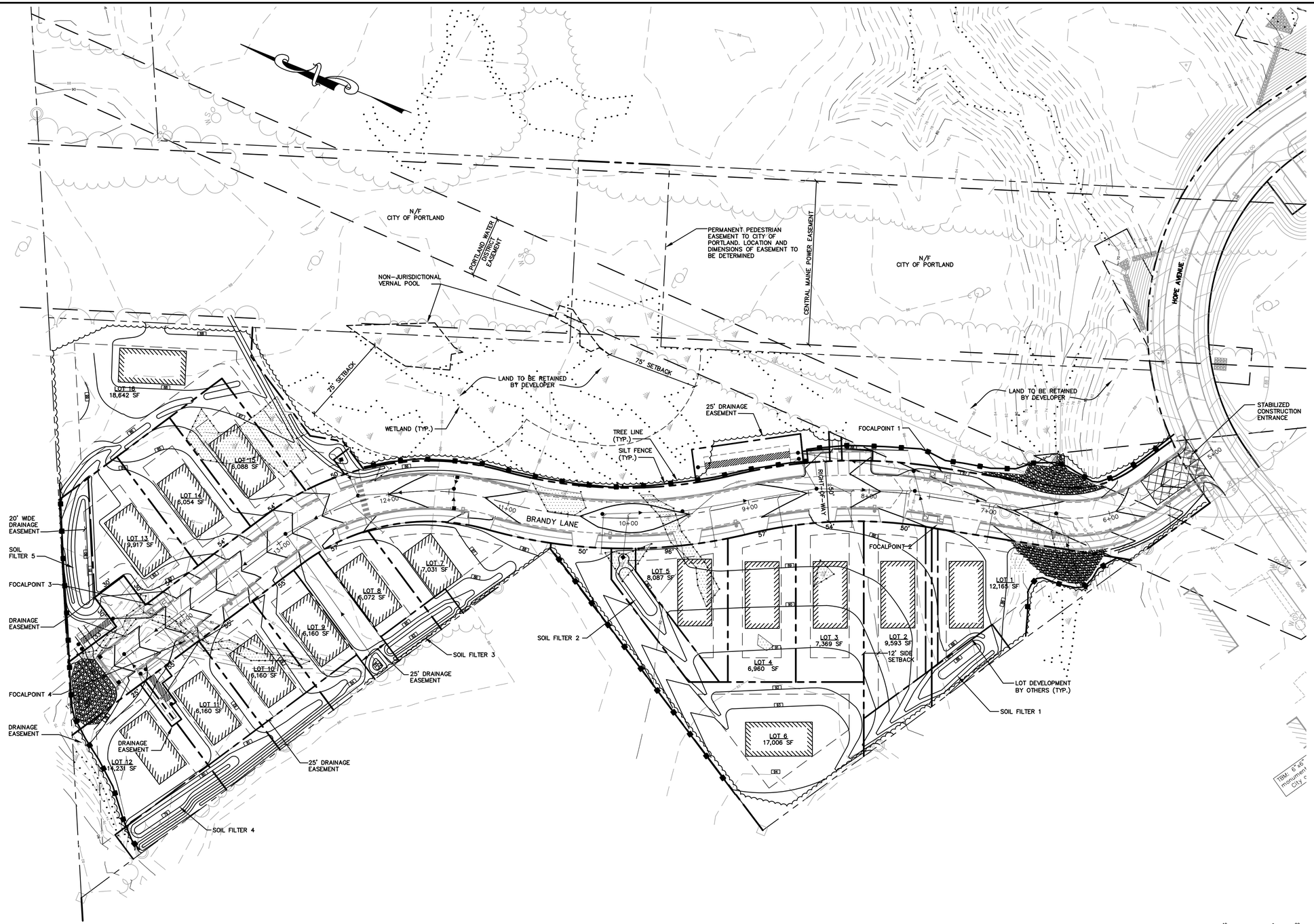

NOTES:

1. GRADING SHOWN WITHIN BUILDING ENVELOPES OF RESIDENTIAL LOTS IS PRELIMINARY AND MAY BE MODIFIED FOR CONSTRUCTION OF HOUSE SUCH THAT IT DOES NOT EFFECT SUBCATCHMENT DRAINAGE AREAS.

2. GRADING OF STORMWATER TREATMENT BMP'S AND DRAINAGE SWALES SHALL BE COMPLETED AS SHOWN ON THIS PLAN AND THE DETAIL SHEETS.

3. DRIVEWAYS FOR LOTS 6 AND 16 SHALL BE SUPER ELEVATED TO DIVERT FLOW TO STORM WATER FEATURE AS SHOWN ON THIS PLAN.

4. CONTRACTOR TO PLANT 2 TREES PER LOT IN ESPLANADE

40 0 20 40 80
1 inch = 40 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9869
1-17-18
LICENSED PROFESSIONAL ENGINEER

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Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: MAY 2017
Checked: DER	Scale: 1"=40'	Job No.: 98089.08

File Name: 98089-08-GRADE-OVERALL.dwg

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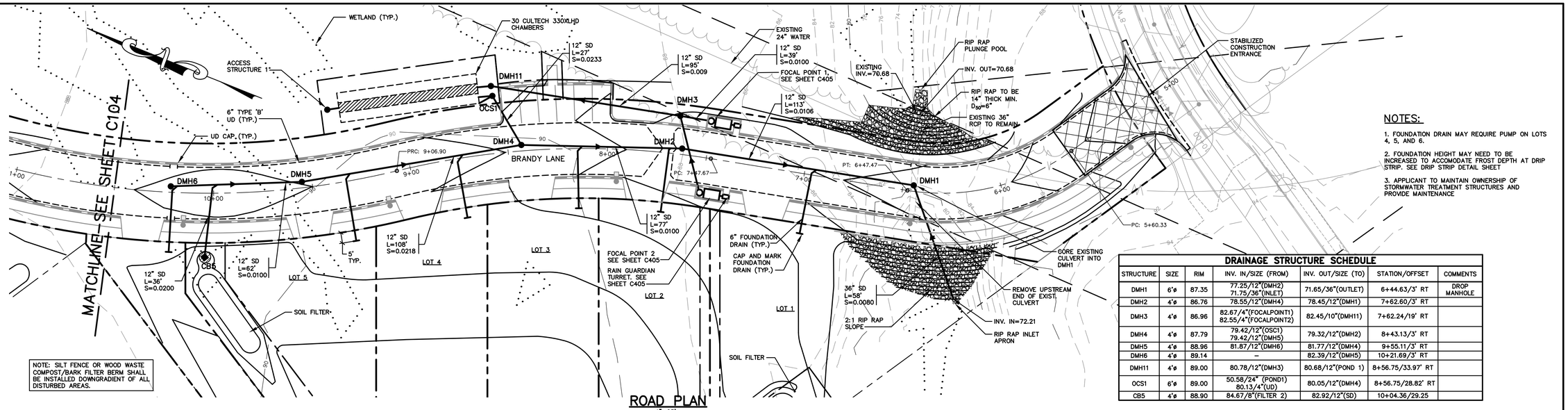
Drawing Name: **Overall Grading, Drainage, and Erosion Control Plan**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. *C103*



ROAD PLAN
1"=25'

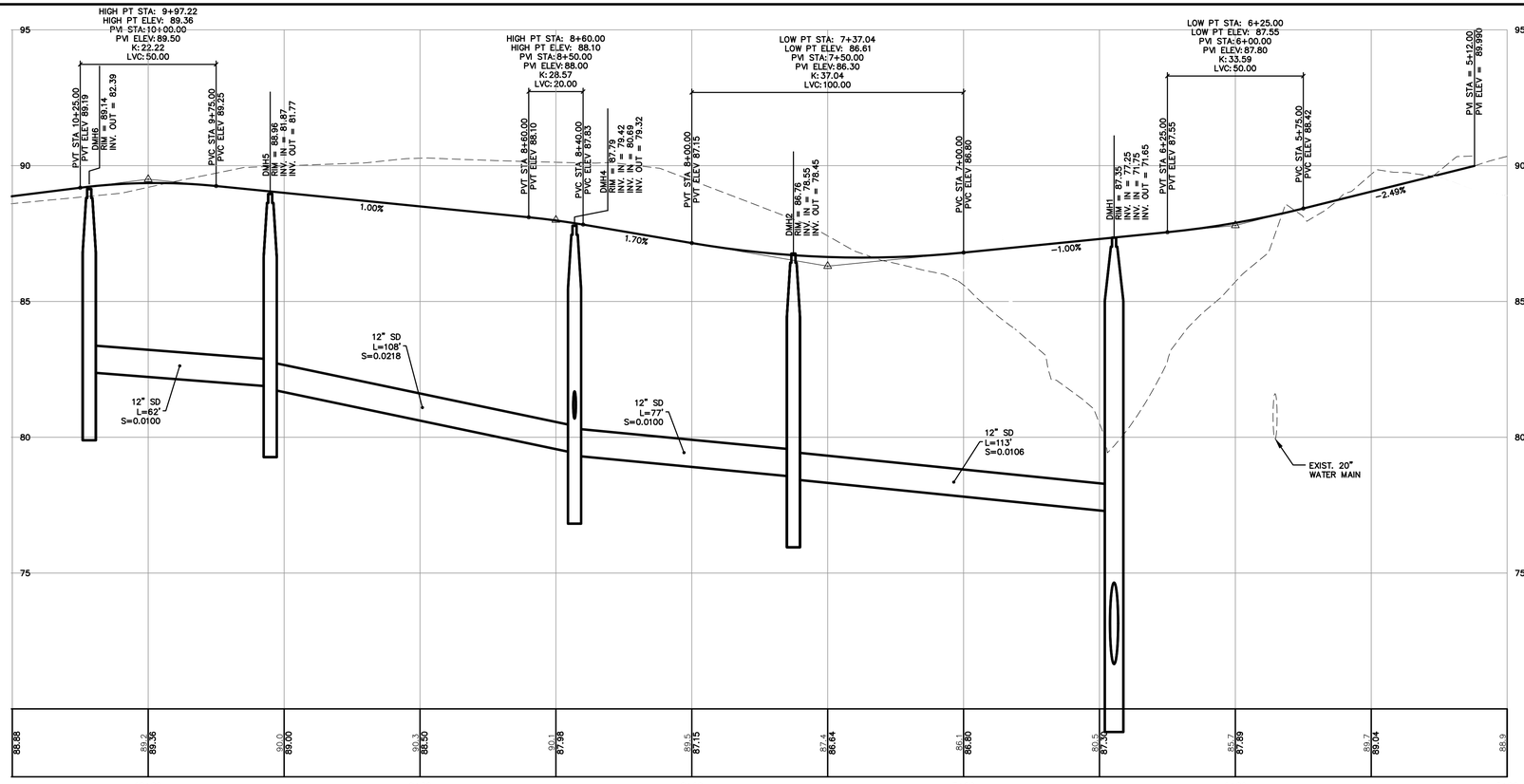
NOTES:

1. FOUNDATION DRAIN MAY REQUIRE PUMP ON LOTS 4, 5, AND 6.
2. FOUNDATION HEIGHT MAY NEED TO BE INCREASED TO ACCOMODATE FROST DEPTH AT DRIP STRIP. SEE DRIP STRIP DETAIL SHEET
3. APPLICANT TO MAINTAIN OWNERSHIP OF STORMWATER TREATMENT STRUCTURES AND PROVIDE MAINTENANCE

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET	COMMENTS
DMH1	6'ø	87.35	77.25/12"(DMH2) 71.75/36"(INLET)	71.65/36"(OUTLET)	6+44.63/3' RT	DROP MANHOLE
DMH2	4'ø	86.76	78.55/12"(DMH4)	78.45/12"(DMH1)	7+62.60/3' RT	
DMH3	4'ø	86.96	82.67/4"(FOCALPOINT1) 82.55/4"(FOCALPOINT2)	82.45/10"(DMH11)	7+62.24/19' RT	
DMH4	4'ø	87.79	79.42/12"(OSC1) 79.42/12"(DMH5)	79.32/12"(DMH2)	8+43.13/3' RT	
DMH5	4'ø	88.96	81.87/12"(DMH6)	81.77/12"(DMH4)	9+55.11/3' RT	
DMH6	4'ø	89.14	–	82.39/12"(DMH5)	10+21.69/3' RT	
DMH11	4'ø	89.00	80.78/12"(DMH3)	80.68/12"(POND 1)	8+56.75/33.97' RT	
OCS1	6'ø	89.00	50.58/24" (POND1) 80.13/4"(UD)	80.05/12"(DMH4)	8+56.75/28.82' RT	
CB5	4'ø	88.90	84.67/8"(FILTER 2)	82.92/12"(SD)	10+04.36/29.25	

NOTE: INSTALL SEDIMENT HOODS (SNOUT) ON ALL CATCH BASIN OUTLET PIPES 18"ø AND LESS.



ROAD PROFILE
1"=25' HORIZ.
1"=2.5' VERT.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

1 inch = 25 ft.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9959
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: JAN 2018
Checked: DER | Scale: 1"=25' | Job No.: 98089.08
File Name: 98089-08-PP-GRADE.dwg

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Drawing Name: **Grading and Drainage Plan and Profile**
Project: **Brandy Lane**, Portland, Maine
Client: **LBW, LLC**, PO Box 1382, Portland, Maine 04104

Drawing No. *C104*

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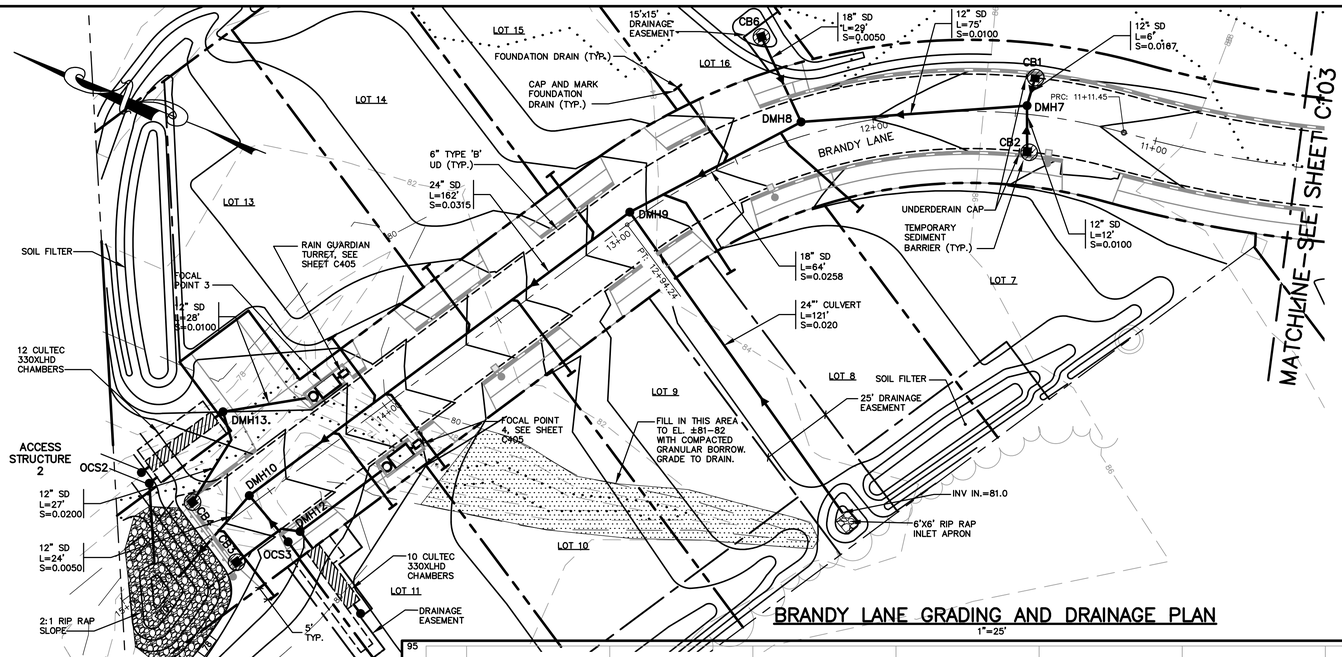


BRANDY LANE GRADING AND DRAINAGE PLAN

1"=25'

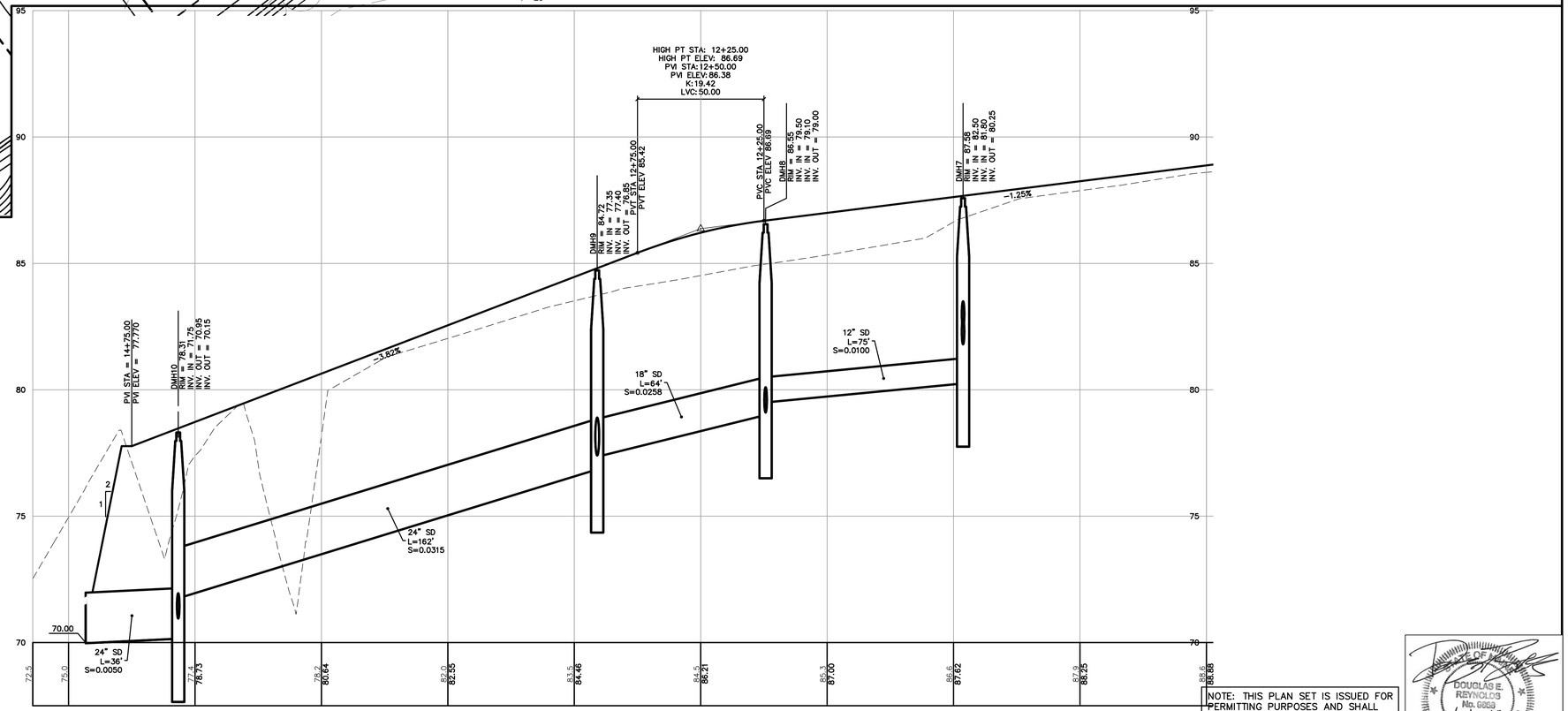
DRAINAGE STRUCTURE SCHEDULE						
STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	STATION/OFFSET	COMMENTS
DMH7	4'ø	87.58	82.50/6"(CB1) 81.80/6"(CB2)	80.25/12"(DMH8)	11+46.24/3' RT	
DMH8	4'ø	86.55	79.5/12"(DMH7) 79.1/18"(CB6)	79.00/18"(DMH9)	12+24.33/5' RT	
DMH9	4'ø	84.72	77.35/18"(DMH8) 78.58/24"(CULVERT)	76.85/24"(DMH10)	12+90.93/3' RT	
DMH10	6'ø	78.07	71.75/24"(DMH9) 72.87/24"(OCS3)	70.18/24"(OUTFALL)	14+56.64/3' RT	
DMH12	4'ø		73.68/12"(CB3) 75.49/12"(BEEHIVE)	72.20/24"(POND3)	14+50.04/17.66' LT	
DMH13	4'ø	80.00	73.58/12"(CB4) 75.83/12"(BEEHIVE)	72.2/12"(POND2)	14+45.63/32.08' RT	
CB1	4'ø	87.11	83.60/6"(UD)	82.60/12"(DMH7)	11+44.48/13' RT	
CB2	4'ø	87.11	83.60/6"(UD)	81.92/12"(DMH7)	11+44.48/13' LT	
CB3	4'ø	77.26	–	73.93/12"(DMH12)	14+73.94/13' LT	
CB4	4'ø	77.26	–	73.93/12"(DMH13)	14+73.88/13' RT	
CB6	4'ø	83.23	–	79.23/18"(DMH8)	12+28.33/37' RT	NEENAH R-1878 B8G DOUBLE GRATE
OCS2	6'ø	81.16	72.10/24"(POND2) 71.65/4"(UD)	71.55/24"(OUTFALL)	14+56.64/22' RT	
OCS3	6'ø	81.66	72.08/24"(POND3) 71.59/4"(UD)	71.49/24"(DMH10)	14+56.64/22' LT	

NOTE: INSTALL SEDIMENT HOODS (SNOUT) ON ALL CATCH BASIN OUTLET PIPES 18"ø AND LESS.

NOTES:

1. FOUNDATION DRAIN MAY REQUIRE PUMP ON LOTS 4, 5, AND 6.
2. FOUNDATION HEIGHT MAY NEED TO BE INCREASED TO ACCOMODATE FROST DEPTH AT DRIP STRIP. SEE DRIP STRIP DETAIL SHEET

NOTE: SILT FENCE OR WOOD WASTE COMPOST/BARK FILTER BERM SHALL BE INSTALLED DOWNGRADIENT OF ALL DISTURBED AREAS.



BRANDY LANE GRADING AND DRAINAGE PROFILE

1"=25' HORIZ.
1"=2.5' VERT.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9869
1-17-18
LICENSED PROFESSIONAL ENGINEER

25 0 12.5 25 50
1 inch = 25 ft.

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Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: JAN 2018
Checked: DER | Scale: 1"=25" | Job No.: 98089.08
File Name: 98089-08-PP-GRADE.dwg

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GORRILL PALMER
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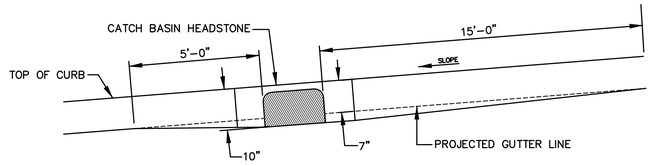
207.772.2515

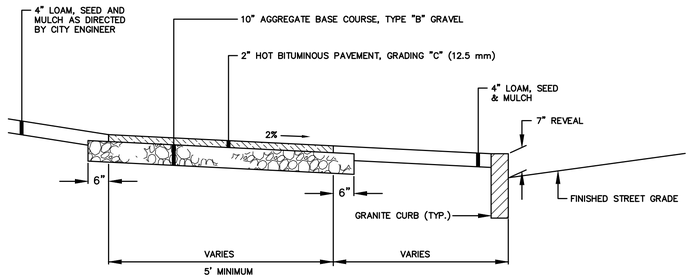
Drawing Name: Grading and Drainage Plan and Profile
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C105



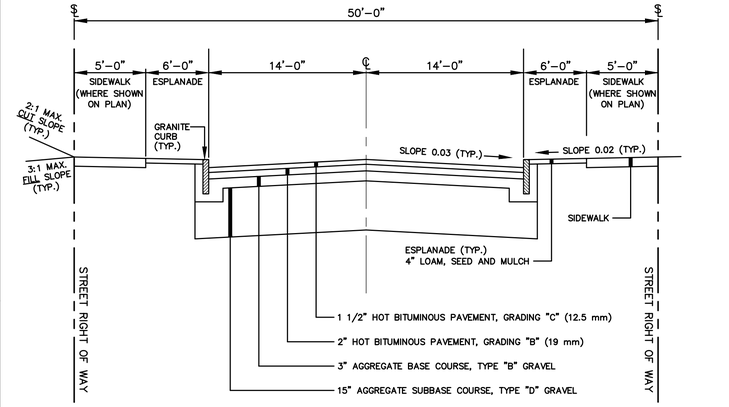
TYPICAL PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET

N.T.S.



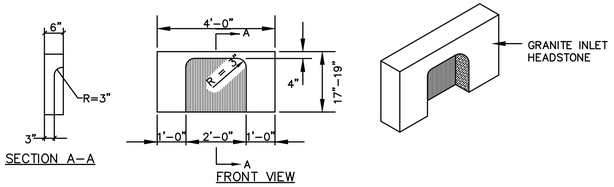
BITUMINOUS SIDEWALK

N.T.S.



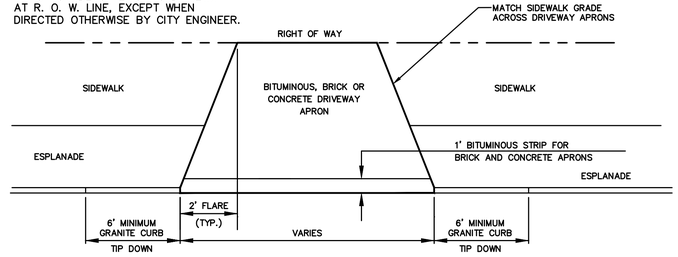
LOCAL STREET CROSS SECTION

N.T.S.



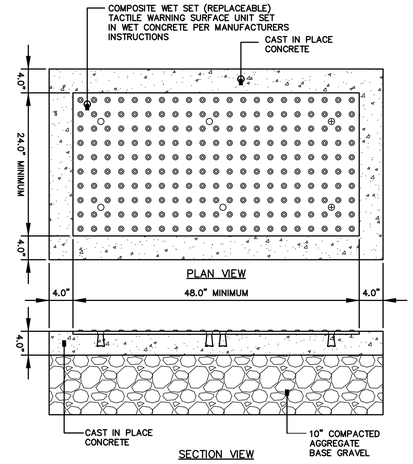
4' GRANITE HEADSTONE FOR CATCH BASIN INLET

N.T.S.



DRIVEWAY APRON LAYOUT

N.T.S.

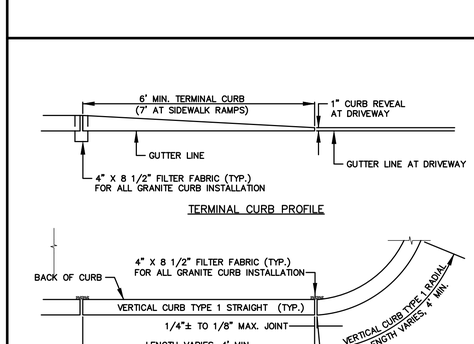


NOTES:

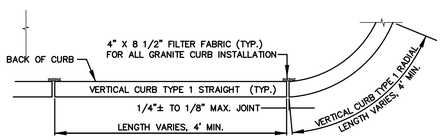
1. COMPOSITE WET SET (REPLACEABLE) TACTILE WARNING SURFACE UNITS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A GROOVED EDGE BETWEEN THE TILE AND CONCRETE, ALONG WITH 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. FOR ALL SIDEWALK RAMPS MADE OF CONCRETE OR ASPHALT, FEDERAL YELLOW COLORED (#33538) TILES SHALL BE USED. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
5. FOR ALL SIDEWALK RAMPS MADE OF BRICK, SEATTLE YELLOW (#23594) COATED COLORED TILES SHALL BE USED.

SIDEWALK RAMP DETECTABLE WARNING TILE

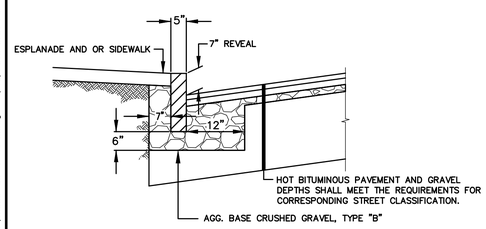
N.T.S.



TERMINAL CURB PROFILE



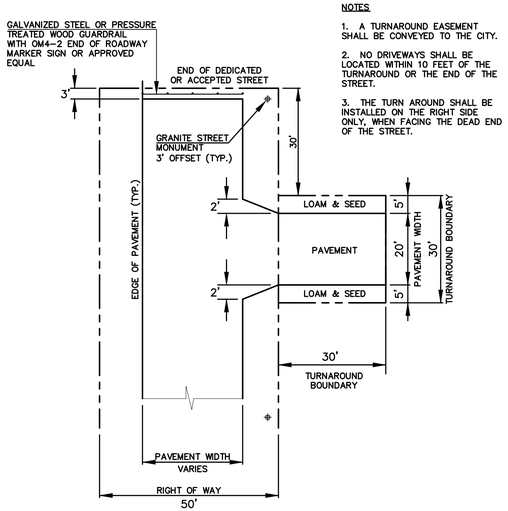
VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

VERTICAL GRANITE CURB FULL DEPTH STREET CONSTRUCTION

N.T.S.

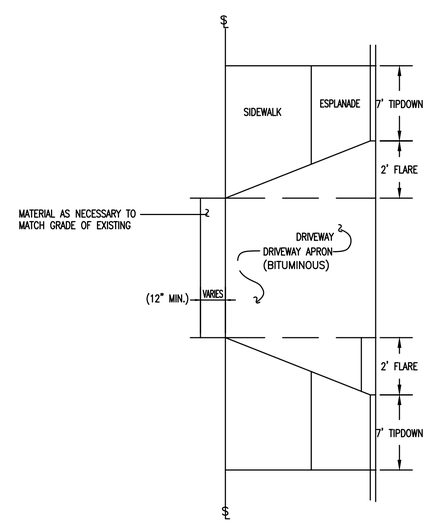


NOTES

1. A TURNAROUND EASEMENT SHALL BE CONVEYED TO THE CITY.
2. NO DRIVEWAYS SHALL BE LOCATED WITHIN 10 FEET OF THE TURNAROUND OR THE END OF THE STREET.
3. THE TURN AROUND SHALL BE INSTALLED ON THE RIGHT SIDE ONLY, WHEN FACING THE DEAD END OF THE STREET.

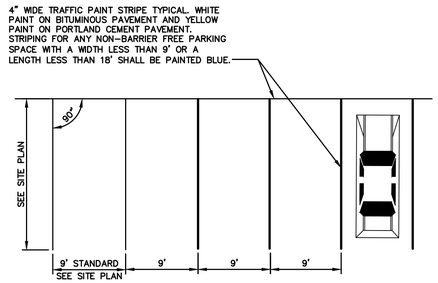
TURNAROUND ON DEAD END STREET

N.T.S.



SIDEWALK AND DRIVEWAY CONSTRUCTION

N.T.S.



PARKING SPACE DIMENSIONS

NOT TO SCALE

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9869
1-17-18
LICENSED PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
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Design: BMG	Draft: CG	Date: JAN 2018
Checked: DER	Scale: NTS	Job No.: 98089.08
File Name: 98089-08-DETAILS.dwg		

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Drawing Name: Site Details
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C401

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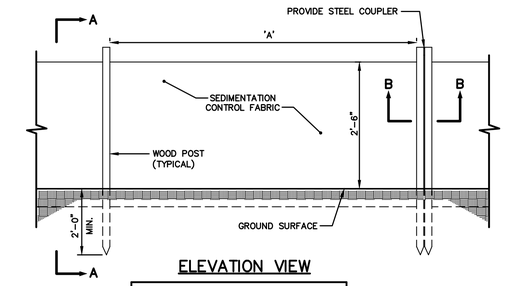
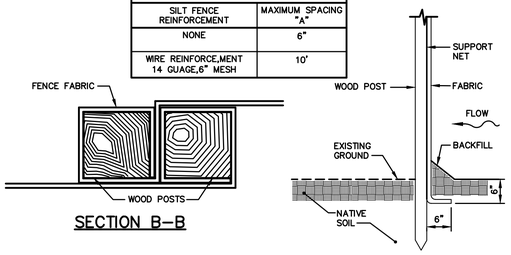


ELEVATION VIEW

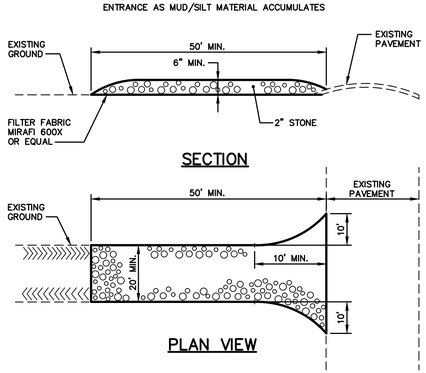
SILT FENCE	
SILT FENCE REINFORCEMENT	MAXIMUM SPACING "A"
NONE	6"
WIRE REINFORCE,MENT 14 GUAGE,6" MESH	10'



SECTION B–B

SECTION A–A

SILTATION FENCE
NOT TO SCALE



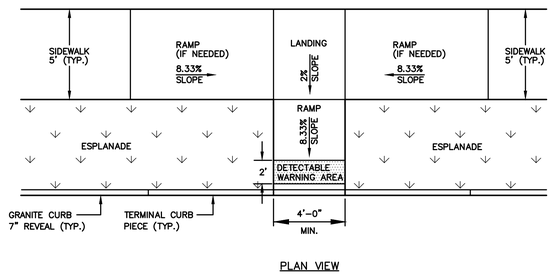
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:

ALL RAMPS SHALL COMPLY WITH ADA STANDARDS.

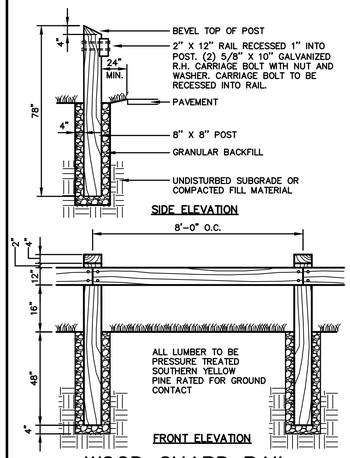
GRANITE CURB ADJACENT TO LANDING SHALL BE FLUSH WITH STREET.

SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

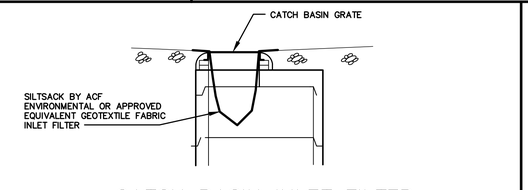


PLAN VIEW

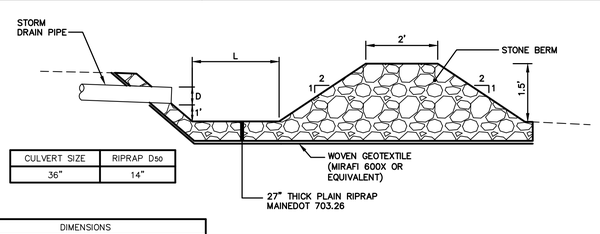
PERPENDICULAR ADA RAMP LAYOUT FOR NARROW SIDEWALK WITH ESPLANADE
NOT TO SCALE



WOOD GUARD RAIL
NOT TO SCALE



CATCH BASIN INLET FILTER
NOT TO SCALE

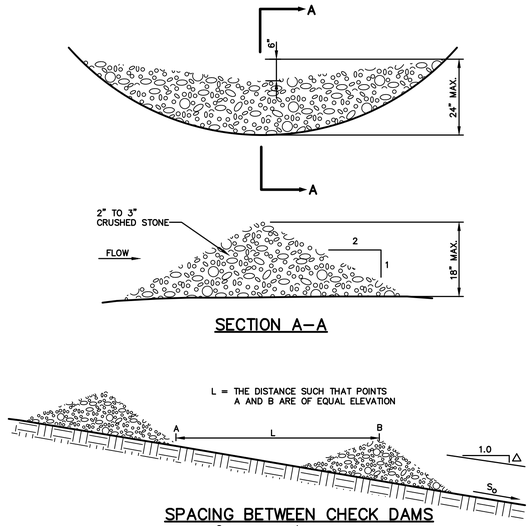


CULVERT SIZE	RIPRAP D50
36"	14"

DIMENSIONS		
CULVERT SIZE	L	W
30'	14'	10'

NOTE: RIPRAP SHALL BE UNDERLAIN BY GRAVEL BEDDING OR NON–WOVEN GEOTEXTILE SUCH AS MIRAFI 140N.

PLUNGE POOL
NOT TO SCALE

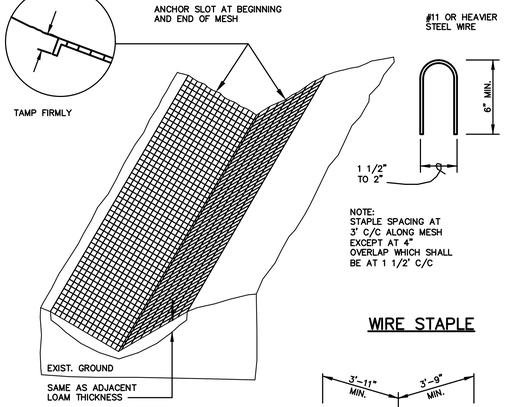


SECTION A–A

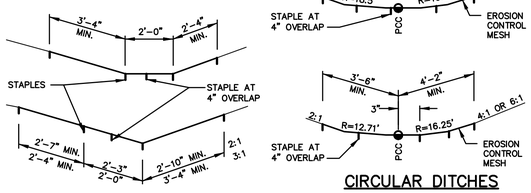
SPACING BETWEEN CHECK DAMS

So (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

STONE CHECK DAM
NOT TO SCALE



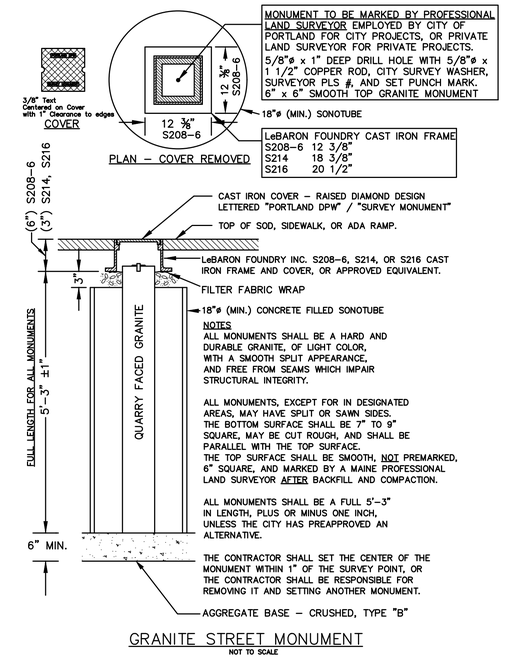
WIRE STAPLE



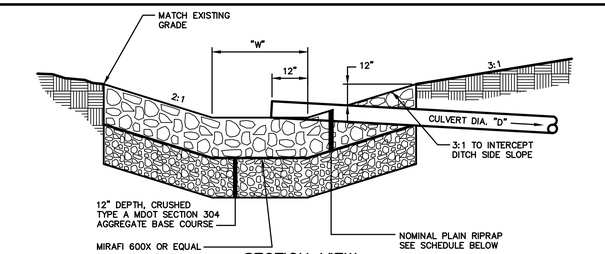
CIRCULAR DITCHES

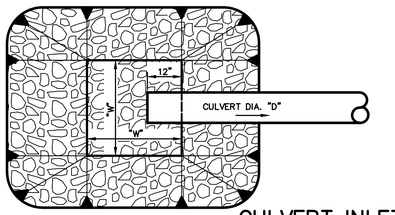
STAPLES AT EDGES, AT QUARTER POINTS, AT 4" OVERLAP

EROSION CONTROL MESH
NOT TO SCALE



GRANITE STREET MONUMENT
NOT TO SCALE





PLAN VIEW

SCHEDULE			
CULVERT DIAMETER (D)	WIDTH (W)	STONE d50	RIPRAP THICKNESS
24"	6'	6"	14"

CULVERT INLET APRON
NOT TO SCALE

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
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Design: BMG	Draft: CG	Date: JAN 2018
Checked: DER	Scale: NTS	Job No.: 98089.08

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Drawing Name: Site, Utility, and Erosion Control Details

Project: Brandy Lane, Portland, Maine

Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C402

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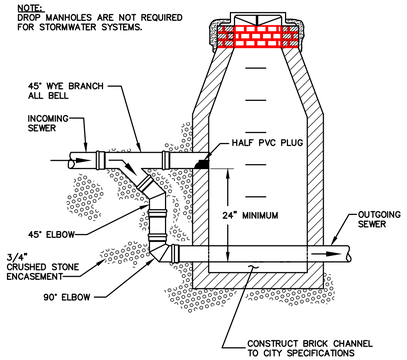
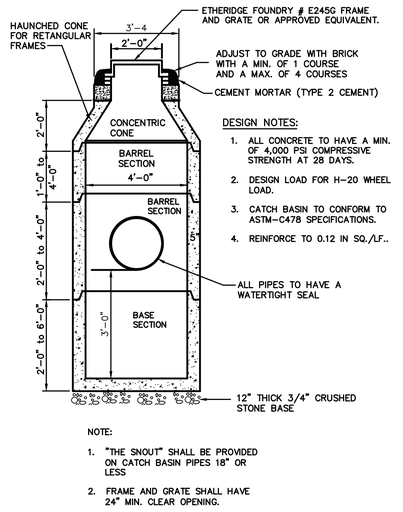


TYPICAL OUTSIDE DROP MANHOLE

N.T.S.



DESIGN NOTES:

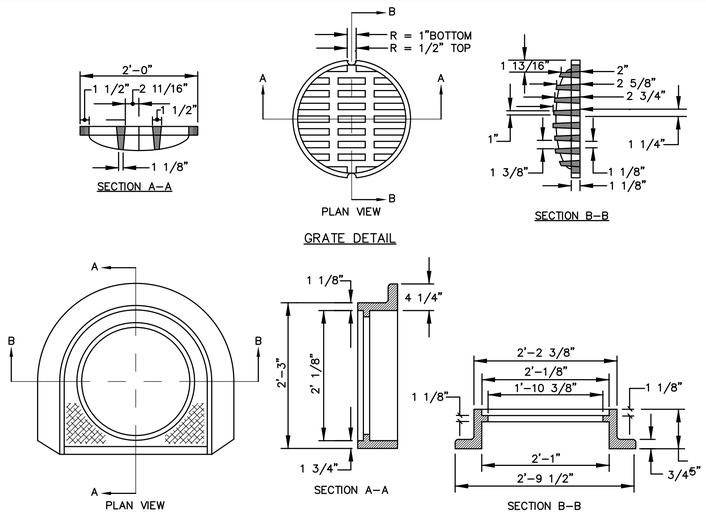
1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF..

NOTE:

1. "THE SNOUT" SHALL BE PROVIDED ON CATCH BASIN PIPES 18" OR LESS
2. FRAME AND GRATE SHALL HAVE 24" MIN. CLEAR OPENING.

4'-0" PRECAST CATCH BASIN

N.T.S.



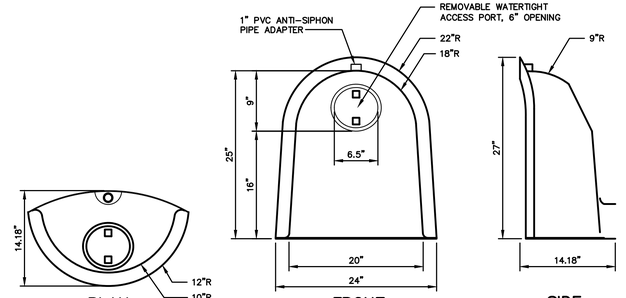
FRAME DETAIL

CATCH BASIN FRAME & GRATE

N.T.S.

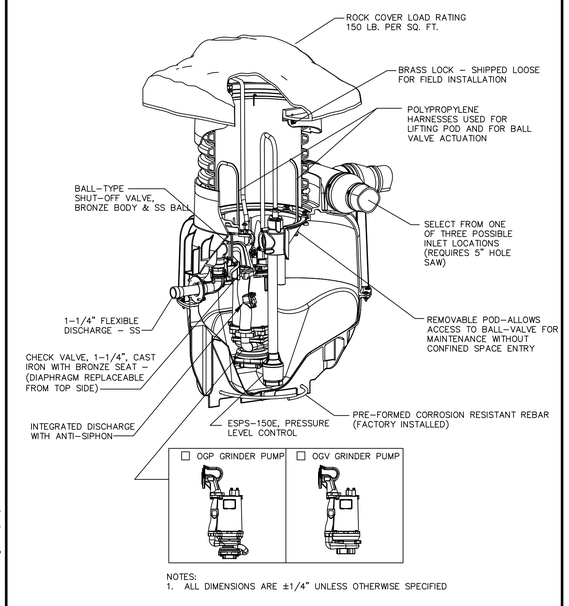
GENERAL NOTES FOR MANHOLES AND CATCH BASINS

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVED EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DR5A OR APPROVED EQUAL.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP. SEE FIGURE II-09.



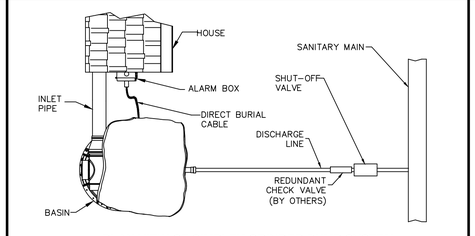
"THE SNOUT"

NOTE:
FOR USE ON CATCH BASIN OUTLET 18" IN DIAMETER AND LESS

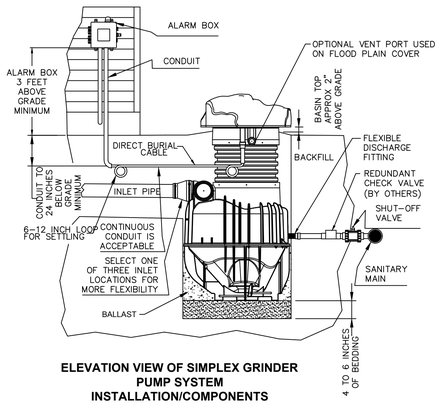


NOTES:
1. ALL DIMENSIONS ARE ±1/4" UNLESS OTHERWISE SPECIFIED

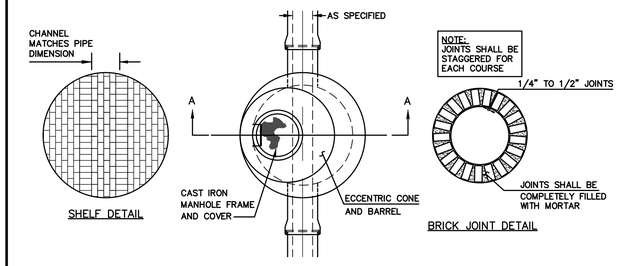
SIMPLEX, ECOTRAN SYSTEM

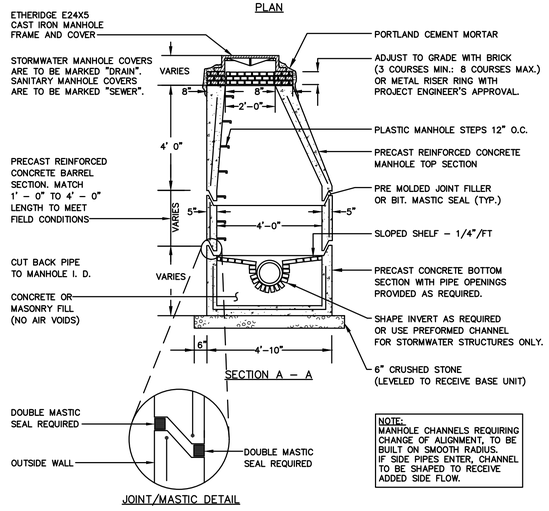


PLAN VIEW OF SIMPLEX GRINDER PUMP SYSTEM INSTALLATION/COMPONENTS



ELEVATION VIEW OF SIMPLEX GRINDER PUMP SYSTEM INSTALLATION/COMPONENTS

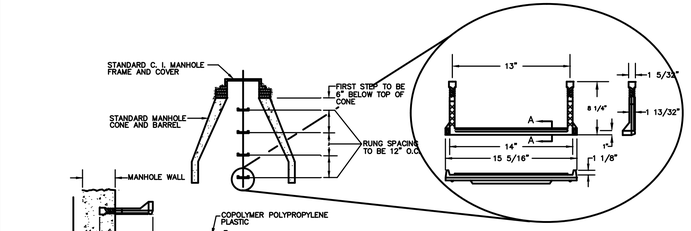




NOTE:
MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.

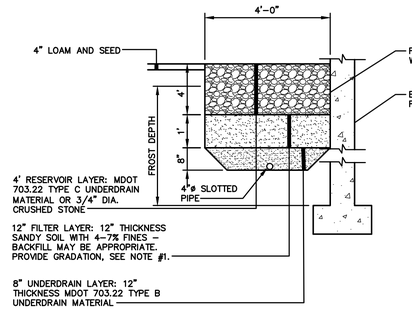
PRECAST CONCRETE MANHOLE

N.T.S.



PLASTIC MANHOLE STEPS

N.T.S.



DRIP STRIP NOTES:

1. FILTER LAYER SHALL CONSIST OF A SANDY SOIL WITH BETWEEN 4% AND 7% FINES (PASSING #200 SIEVE).
2. SUBMIT RESULTS OF FIELD AND LABORATORY TESTING TO PROJECT ENGINEER.
3. SUBMIT 75 LB. SAMPLE OF EACH TYPE OF MATERIAL IN AIR TIGHT CONTAINERS TO TESTING FACILITY.
4. THE FOLLOWING MATERIAL SHALL BE SUBMITTED:
   A. RESERVOIR LAYER MATERIAL
   B. FILTER LAYER MATERIAL
   C. UNDERDRAIN LAYER
5. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136-STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES, ON EACH TYPE OF THE SAMPLE MATERIAL AND SUBMIT RESULTS TO PROJECT ENGINEER.

DRIP STRIP SECTION

NOT TO SCALE

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9859
1-17-18
REGISTERED PROFESSIONAL ENGINEER

Rev.	Date	Revision
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Drawing Name: **Drainage and Utility Details**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. **C403**

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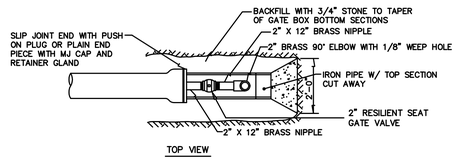
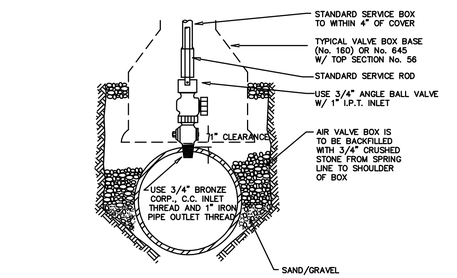
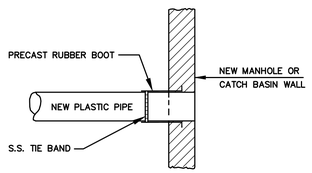


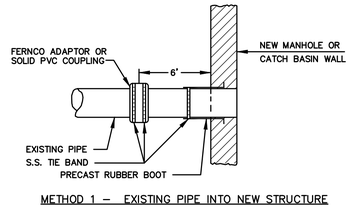
STANDARD 2" BLOW OFF



TYPICAL AIR VALVE (1")



METHOD 2 – NEW CONSTRUCTION

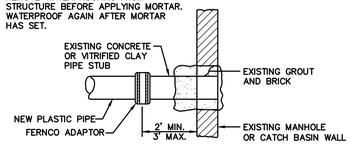


METHOD 1 – EXISTING PIPE INTO NEW STRUCTURE

PLASTIC PIPE CONNECTIONS

N.T.S.

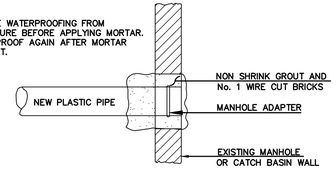
NOTE:
REMOVE WATERPROOFING FROM STRUCTURE BEFORE APPLYING MORTAR. WATERPROOF AGAIN AFTER MORTAR HAS SET.



METHOD 4 – NEW PIPE TO EXISTING STRUCTURE STUB

NOTE: EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY SAW CUT THE STRUCTURE TO CREATE PIPE OPENING. THE NEW OPENING MUST THEN BE SEALED AND WATERTIGHT BOTH INSIDE AND OUTSIDE THE STRUCTURE.

NOTE:
REMOVE WATERPROOFING FROM STRUCTURE BEFORE APPLYING MORTAR. WATERPROOF AGAIN AFTER MORTAR HAS SET.

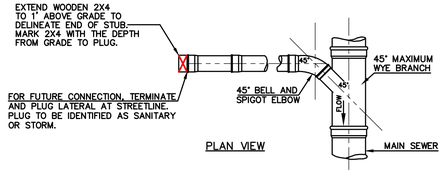


METHOD 3 – NEW PIPE INTO EXISTING STRUCTURE

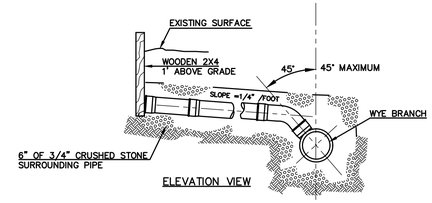
PLASTIC PIPE CONNECTIONS

N.T.S.

NOTE:
LOCATION / WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.



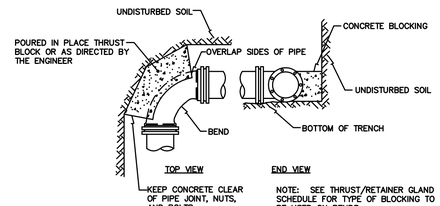
PLAN VIEW



ELEVATION VIEW

HOUSE LATERAL TEE/WYE CONNECTION

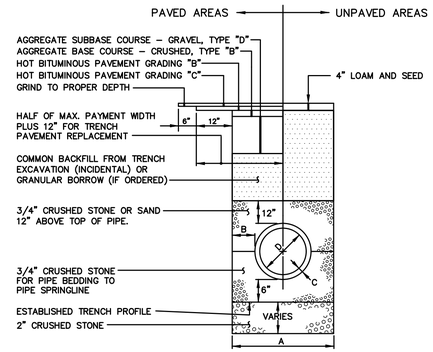
N.T.S.



STANDARD BEND BLOCKING

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..



PIPE TRENCH INSTALLATION

N.T.S.

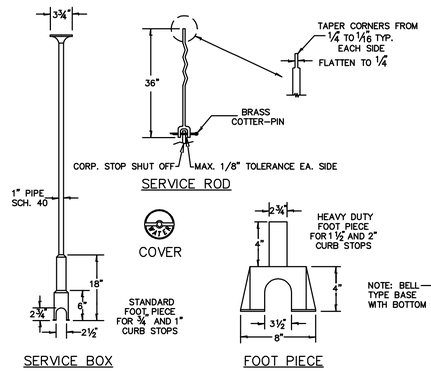
NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
4. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE FOLLOWING TABLE.

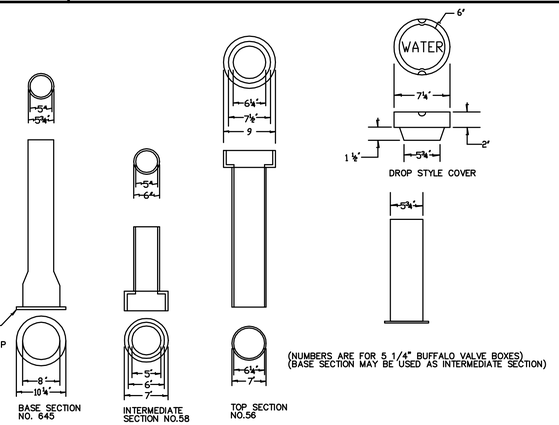
PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4 – – – –	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18 – – – –	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36 – – – –	6.0
42	7.0
48	7.0

PIPE INSTALLATION – NOTES

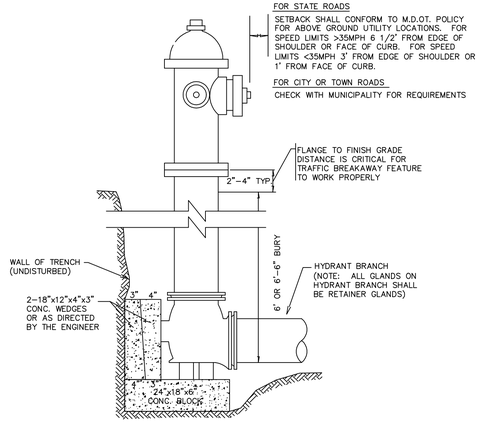
N.T.S.



NOTE : ANY EXTENSION OF SERVICE BOX REQUIRES:
1) 1" FEMALE IRON PIPE COUPLING
2) 1" THREADED PIPE
(THIS IS TO BE A NON-WELDED, TWO PIECE ARRANGEMENT. SLIP ON ADAPTERS ARE NOT PERMISSIBLE.)



VALVE BOX & COVER



TYPICAL HYDRANT INSTALLATION DETAIL

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE–APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: JAN 2018
Checked: DER	Scale: NTS	Job No.: 98089.08
File Name: 98089–08–DETAILS.dwg		

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Drawing Name:	Sewer and Water Details
Project:	Brandy Lane Portland, Maine
Client:	LBW, LLC PO Box 1382, Portland, Maine 04104

Drawing No. C404

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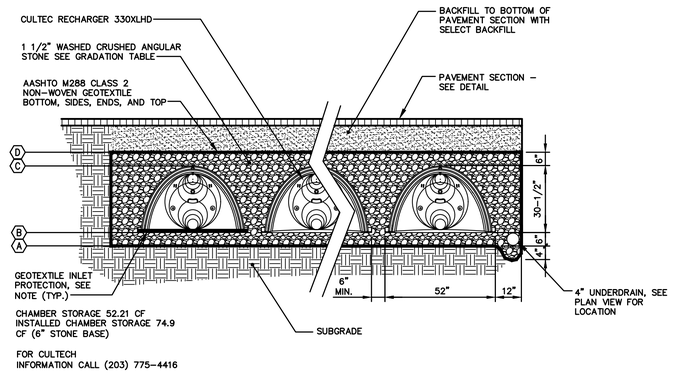


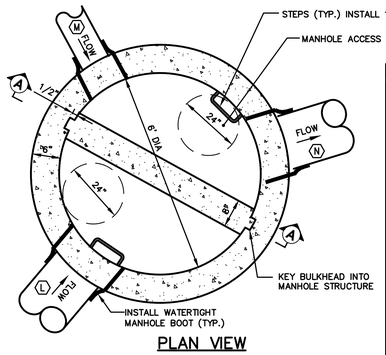
CHAMBER CROSS SECTION

NOT TO SCALE

Chambers				
Structure	ELEVATION			
POND	A	B	C	D
1	80.13	80.63	83.17	83.67
2	71.65	72.15	74.69	75.19
3	71.65	72.15	74.69	75.19

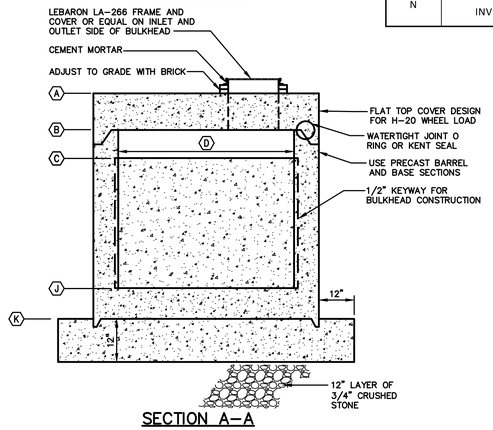
GEOTEXTILE LINEAR NOTE:
THE SUBSURFACE DETENTION POND SHALL BE WRAPPED IN LINEAR LOW DENSITY POLYETHYLENE LINER, MIN. 20 MIL THICKNESS IF HIGH WATER MARK

GEOTEXTILE INLET PROTECTION NOTE:
AT ALL PIPE INLETS TO CHAMBER PLACE WOVEN GEOTEXTILE THAT MEETS AASHTO M288 CLASS 1 REQUIREMENTS BETWEEN FOUNDATION STONE AND CHAMBER. PLACE A 5' - 6' WIDE STRIP CENTERED ON CHAMBER WIDTH WITH A LENGTH ALONG THE CHAMBERS EQUAL TO THE WIDTH OF THE FABRIC ROLL, BUT NOT LESS THAN 10'.



Schedule C				
	Item Description	Elevation		
		OCS 1	OCS 2	OCS 3
A	TOP OF STRUCTURE	88.5	76.9	78.76
B	UNDERSIDE TOP SLAB	87.89	76.29	78.15
C	TOP CONCRETE BULKHEAD	83.67	75.19	75.19
D	WEIR LENGTH	6'	6'	6'
J	MANHOLE INVERT	80.05	71.55	71.49
K	BOTTOM OF STRUCTURE	79.05	70.57	70.49
L	PIPE DIAMETER	12"	12"	12"
	INVERT IN	80.58	72.1	72.08
M	PIPE DIAMETER	4"	4"	4"
	INVERT IN	80.15	71.65	71.59
N	PIPE DIAMETER	12"	12"	12"
	INVERT OUT	80.05	71.55	71.49

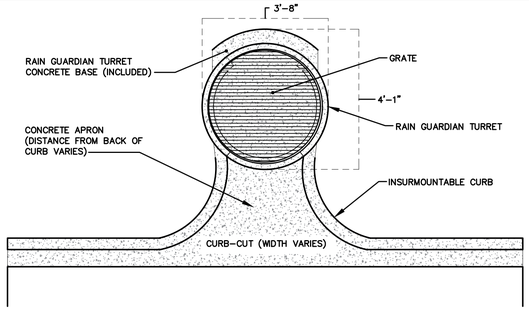
PLAN VIEW



SECTION A-A

OUTLET CONTROL STRUCTURE TYPICAL

SEE SCHEDULE C
NOT TO SCALE

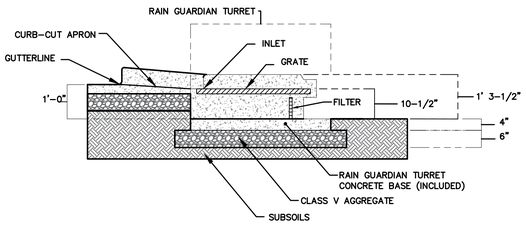


SPECIFICATIONS:

1. STEEL REINFORCED, COLD JOINT SECURED MONOLITHIC CONCRETE STRUCTURE (1,030 LBS).
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. CONCRETE AIR ENTRAINED (4 PERCENT TO 8 PERCENT BY VOLUME).
3. MANUFACTURED AND DESIGNED TO ASTM C858.
4. THREE-POINT PICK USING RECESSED LIFTING POCKETS WITH A STANDARD HOOK.
5. SOIL UNDER BASE TO BE COMPACTED TO 95 PERCENT STANDARD PROCTOR.
6. TWO-PIECE LIGHT-DUTY GALVANIZED GRATE (34.5 LBS/PIECE) FOR 541 LB CONCENTRATED LOAD OR 309 LB/SQFT UNIFORM LOAD.
7. TWO-PIECE HEAVY-DUTY GALVANIZED GRATE (77.5 LBS/PIECE) FOR 2,456 LB CONCENTRATED LOAD OR 1,404 LB/SQFT UNIFORM LOAD.
8. USE EXPANSION JOINT MATERIAL BETWEEN TURRET AND BIORETENTION INLET.

RAIN GUARDIAN TURRET PLAN VIEW

1"=20'



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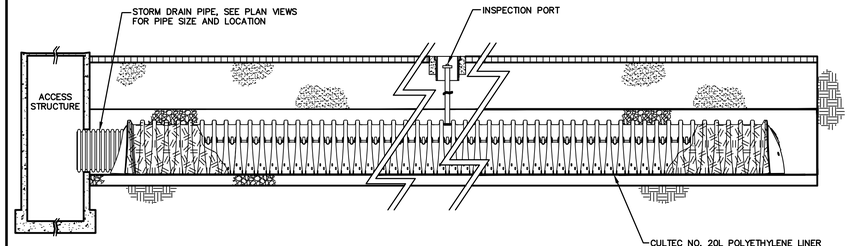
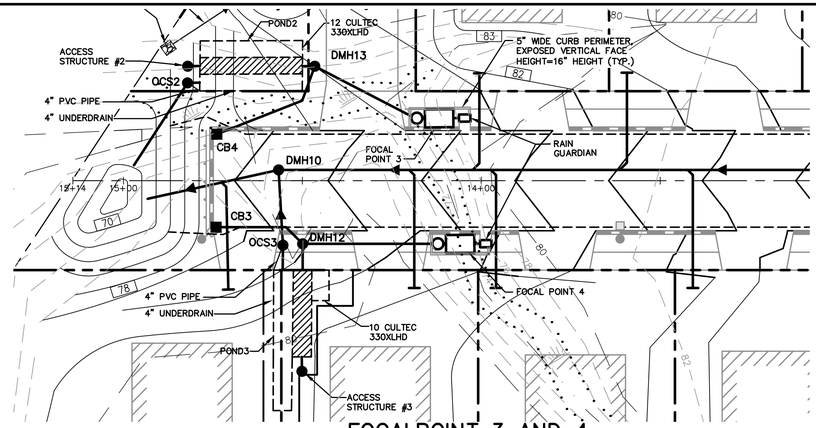
RAIN GUARDIAN TURRET SECTION VIEW

1"=20'



CHAMBER ISOLATOR ROW

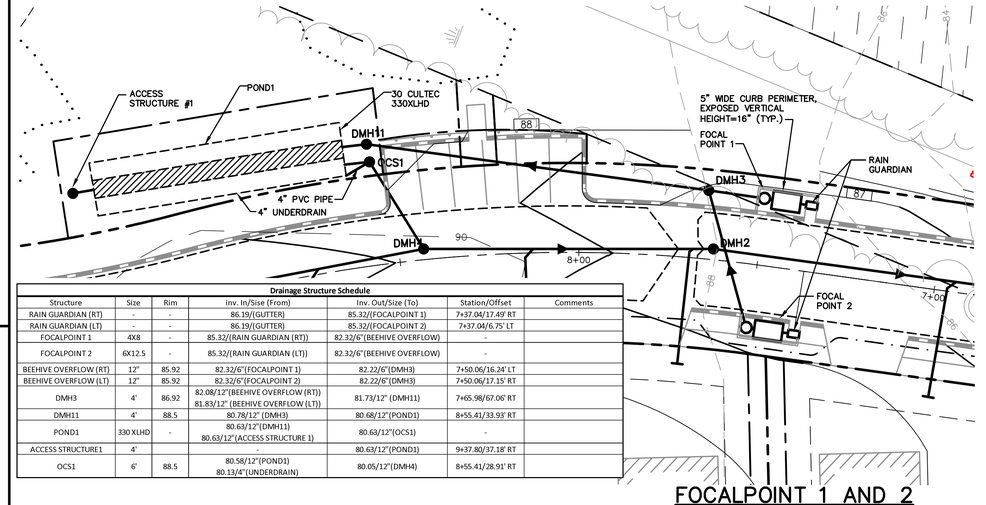
NOT TO SCALE



FOCALPOINT 3 AND 4

1"=20'

Drainage Structure Schedule						
Structure	Size	Rim	inv. In/Size (From)	Inv. Out/Size (To)	Station/Offset	Comments
RAIN GUARDIAN (RT)	-	-	80.08/(GUTTER)	79.21/(FOCALPOINT 3)	14+3.07/14' RT	
FOCALPOINT 3	4X8	-	79.21/(RAIN GUARDIAN (RT))	76.21/6"(BEEHIVE OVERFLOW)	-	
BEEHIVE OVERFLOW	12"	79.81	76.21/6"(FOCALPOINT 3)	76.11/12"(DMH13)	14+17.78/17.51' RT	
CB4	4'	77.43	-	73.93/12"(DMH13)	14+77.73/13' RT	
DMH13	4'	78.79	75.83/12"(BEEHIVE OVERFLOW) 73.58/12"(CB4)	72.2/12"(POND2)	14+45.63/32.08' RT	
POND2	330XLHD	-	72.15/12"(DMH13) 72.15/12"(ACCESS STRUCTURE 2)	72.15/12"(OCS2)	-	
ACCESS STRUCTURE 2	4'	-	-	72.15/12"(POND2)	14+82.88/31.99	
OCS2	6'	76.9	72.10/12"(POND2) 71.65/4"(UD)	71.55/24"(OUTFALL)	14+82.88/27.33' RT	
RAIN GUARDIAN (LT)	-	-	80.38/(GUTTER)	79.51/(FOCALPOINT 4)	13+97.54/14' LT	
FOCALPOINT 4	6X6	-	79.51/(RAINGUARDIAN (LT))	76.51/6"(BEEHIVE OVERFLOW)	-	
BEEHIVE OVERFLOW	12"	80.01	76.51/6"(FOCALPOINT 4)	76.41/12"(DMH12)	14+13.05/17.60' LT	
CB3	4'	77.43	-	73.93/12"(DMH12)	14+77.73/13' LT	
DMH12	4'	78.9	75.49/12"(BEEHIVE OVERFLOW) 73.68/12"(CB3)	72.2/12"(POND3)	14+50.04/17.66' LT	
POND3	330XLHD	-	72.15/12"(DMH12) 72.15/12"(ACCESS STRUCTURE 3)	72.15/12"(OCS3)	-	
ACCESS STRUCTURE 3	4'	-	-	72.15/12"(POND3)	14+50.04/53.30' LT	
OCS3	6'	78.76	72.08/24"(POND3) 71.59/4"(UD)	71.49/24"(DMH10)	14+56.47/18.08' LT	



Drainage Structure Schedule						
Structure	Size	Rim	inv. In/Sise (From)	Inv. Out/Size (To)	Station/Offset	Comments
RAIN GUARDIAN (RT)	-	-	86.19/(GUTTER)	85.32/(FOCALPOINT 1)	7+37.04/17.49' RT	
RAIN GUARDIAN (LT)	-	-	86.19/(GUTTER)	85.32/(FOCALPOINT 2)	7+37.04/6.75' LT	
FOCALPOINT 1	4X8	-	85.32/(RAIN GUARDIAN (RT))	82.32/6"(BEEHIVE OVERFLOW)	-	
FOCALPOINT 2	6X12.5	-	85.32/(RAIN GUARDIAN (LT))	82.32/6"(BEEHIVE OVERFLOW)	-	
BEEHIVE OVERFLOW (RT)	12"	85.92	82.32/6"(FOCALPOINT 1)	82.22/6"(DMH3)	7+50.06/16.24' LT	
BEEHIVE OVERFLOW (LT)	12"	85.92	82.32/6"(FOCALPOINT 2)	82.22/6"(DMH3)	7+50.06/17.15' RT	
DMH3	4'	86.92	82.08/12"(BEEHIVE OVERFLOW (RT)) 81.83/12" (BEEHIVE OVERFLOW (LT))	81.73/12" (DMH11)	7+65.98/67.06' RT	
DMH11	4'	88.5	80.78/12" (DMH3)	80.68/12"(POND1)	8+55.41/33.93' RT	
POND1	330 XLHD	-	80.63/12"(DMH11) 80.63/12"(ACCESS STRUCTURE 1)	80.63/12"(OCS1)	-	
ACCESS STRUCTURE1	4'			80.63/12"(POND1)	9+37.80/37.18' RT	
OCS1	6'	88.5	80.58/12"(POND1) 80.13/4"(UNDERDRAIN)	80.05/12"(DMH4)	8+55.41/28.91' RT	

FOCALPOINT 1 AND 2

1"=20'

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 6869
1-17-18
LICENSED
PROFESSIONAL ENGINEER

3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS
Rev.	Date	Revision

LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
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Design: BMG	Draft: CG	Date: JAN 2018
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Drawing Name:	Drainage Details
Project:	Brandy Lane Portland, Maine
Client:	LBW, LLC PO Box 1382, Portland, Maine 04104

Drawing No.
C405

U:\98089.08 - Design and Permitting 'Long' Road\Z - CAD\DWG\98089-08-DETAILS.dwg - 1/16/2018 3:55 PM

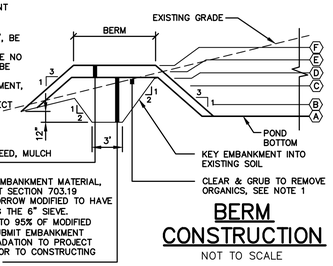
CONSTRUCTION OVERSIGHT

INSPECTION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER WITH REQUIRED REPORTING TO THE DEP. AT A MINIMUM, INSPECTIONS WILL OCCUR:

1. AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED.
2. AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA.
3. AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED.
4. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS.
5. ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN WILL BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

NOTE: CONTRACTOR SHALL NOTIFY PROJECT ENGINEER 48 HOURS PRIOR TO THE MILESTONES LISTED ABOVE TO ALLOW FOR INSPECTION.

NOTES:
1. EMBANKMENT FOOTPRINT SHALL BE CLEARED OF TRASH/DEBRIS AND ANY ROCKS GREATER THAN 6", BE FREE OF ANY STANDING WATER, BE GRADED TO BE NO STEEPER THAN 1H:1V, BE SCARIFIED PRIOR TO EMBANKMENT FILL PLACEMENT, AND BE INSPECTED AND APPROVED BY THE PROJECT ENGINEER BEFORE FILL PLACEMENT BEGINS.



BERM CONSTRUCTION
NOT TO SCALE

SCHEDULE B – EMBANKMENT SCHEDULE

ITEM DESCRIPTION	DIMENSION/ELEVATION 1	2	3	4	5
(A) POND BASE ELEVATION	86.00	88.00	83.00	79.00	80.00
(B) PEAK ELEVATION – CHANNEL PROTECTION VOLUME	86.70	88.70	83.50	79.55	80.60
(C) PEAK ELEVATION – 2 YEAR STORM	86.80	88.54	83.47	79.64	80.87
(D) PEAK ELEVATION – 10 YEAR STORM	87.51	88.58	83.98	80.25	81.51
(E) PEAK ELEVATION – 25 YEAR STORM	87.56	88.60	84.37	80.52	81.57
(F) TOP OF BERM	88.10	89.30	85.00	81.50	82.10

TYPICAL POND CROSS SECTION
NOT TO SCALE

GRASSED UNDERDRAINED SOIL FILTER NOTES:

SOIL SPECIFICATIONS:

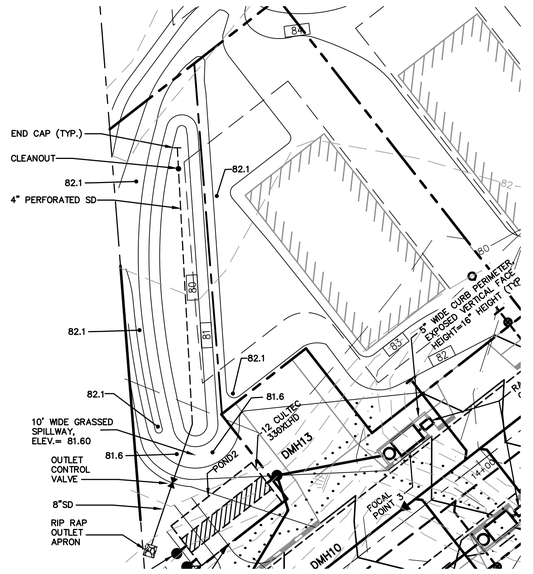
1. THE SOIL FILTER MEDIA SHALL BE A LAYERED SYSTEM CONSISTING OF THE FOLLOWING FROM THE BOTTOM:
   A. 12" OF LOAMY COARSE SAND, SEE TABLE 1.
   B. 2" LAYER OF TOPSOIL (SEE "C" BELOW) ROTOTILLED INTO THE LOAMY COARSE SAND LAYER.
   C. 6" OF NON-CLAYEY, LOAMY TOPSOIL SUCH AS USDA SANDY LOAM TOPSOIL WITH 5-8% HUMIFIED ORGANIC MATTER. SUPERHUMUS OR EQUIVALENT MAY BE ADDED TO THE TOPSOIL TO INCREASE ORGANIC CONTENT, SEE TABLE 3.
2. SOIL FILTER MEDIA MIXTURE SHALL HAVE A PERMEABILITY OF 2.4 IN./HR. TO 4 IN./HR UPON COMPACTION BETWEEN 90% AND 92% STANDARD PROCTOR (ASTM D698).

SUBMITTALS:

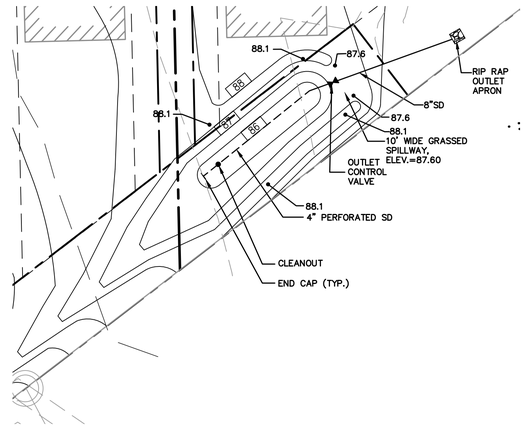
1. SUBMIT RESULTS OF FIELD AND LABORATORY TESTING TO PROJECT ENGINEER.
2. SUBMIT 75 lb. SAMPLE OF EACH TYPE OF MATERIAL: SUBMIT IN AIR TIGHT CONTAINERS TO PROJECT ENGINEER.
3. THE FOLLOWING MATERIAL SHALL BE SUBMITTED:
   A. SAND.
   B. UNDERDRAIN BEDDING MATERIAL.
4. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 – STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES; 1996a ON EACH TYPE OF THE SAMPLE MATERIAL AND SUBMIT RESULTS TO PROJECT ENGINEER.
5. PERFORM A PERMEABILITY TEST ON THE SOIL FILTER MEDIA MIXTURE CONFORMING TO ASTM D2434 WITH THE MIXTURE COMPACTED TO 90% TO 92% OF MAXIMUM DRY DENSITY BASED ON ASTM D698. SUBMIT RESULTS TO THE PROJECT ENGINEER.
6. PERFORM ONE COMPACTION DENSITY TEST ON THE IN PLACE SOIL FILTER FOR EVERY 2,000 SQUARE FEET OF FILTER SURFACE AREA. TEST SHALL CONFORM TO ASTM D 2922 – STANDARD TEST METHODS FOR DENSITY OF SOIL AND SOIL-AGGREGATE IN PLACE BY NUCLEAR METHODS (SHALLOW DEPTH); 1996. SUBMIT RESULTS TO THE PROJECT ENGINEER.

CONSTRUCTION:

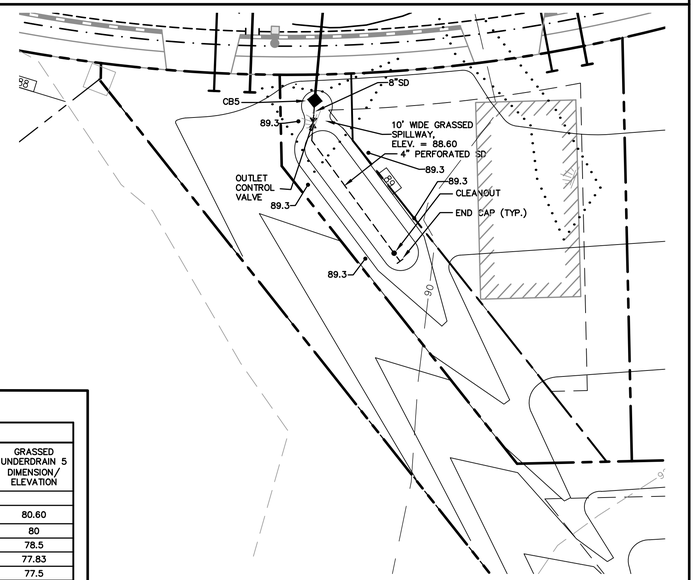
1. SOIL FILTER MEDIA AND UNDERDRAIN BEDDING MATERIAL SHALL BE COMPACTED TO BETWEEN 90% AND 92% STANDARD PROCTOR.
2. PERFORATED UNDERDRAIN PIPE SHALL BE 4" PIPE. SPACED 15 FEET ON CENTER MAXIMUM.
3. TRIBUTARY AREAS SHALL BE STABILIZED PRIOR TO INSTALLATION OF THE SOIL FILTER MEDIA MIXTURE AND UNDERDRAIN. STABILIZED IS DEFINED AS PAVED IF IN A PARKING AREA OR ROADWAY, AND 90% GRASS CATCH IF IN A VEGETATED AREA.
4. OUTFLOW OF THE VEGETATED UNDERDRAIN SHALL BE CONTROLLED BY A 4" DUCTILE IRON GATE VALVE WITH VALVE WRENCH AND EXTENSION (AVAILABLE FROM E.J. PRESCOTT OR EQUIVALENT). A THREE PIECE VALVE BOX (AVAILABLE FROM E.J. PRESCOTT OR EQUIVALENT) SHALL BE INSTALLED OVER THE VALVE.
5. ALL EQUIPMENT USED WITHIN THE LIMITS OF THE VEGETATED UNDERDRAIN SHALL BE LOW GROUND PRESSURE VEHICLES (LESS THAN 2.0 PSI) WHEN FULLY LOADED.
6. UPON COMPLETION OF THE INSTALLATION OF THE SOIL FILTER MEDIA AND THE ESTABLISHMENT OF A 90% CATCH OF GRASS OVER THE FILTER MEDIA, THE CONTRACTOR SHALL FLOOD THE VEGETATED UNDERDRAIN TO THE DESIGN ELEVATION WITH CLEAN WATER AND ADJUST THE VALVE TO OBTAIN A 24 HOUR TO 32 HOUR RELEASE TIME.



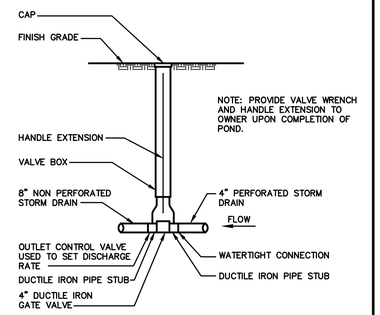
GRASSED UNDERDRAIN SOIL FILTER 5
1"=20'



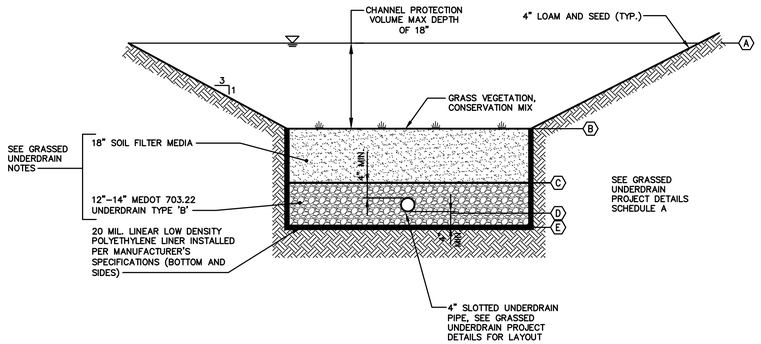
GRASSED UNDERDRAIN SOIL FILTER 1
1"=20'



GRASSED UNDERDRAIN SOIL FILTER 2
1"=20'



OUTLET VALVE
NOT TO SCALE

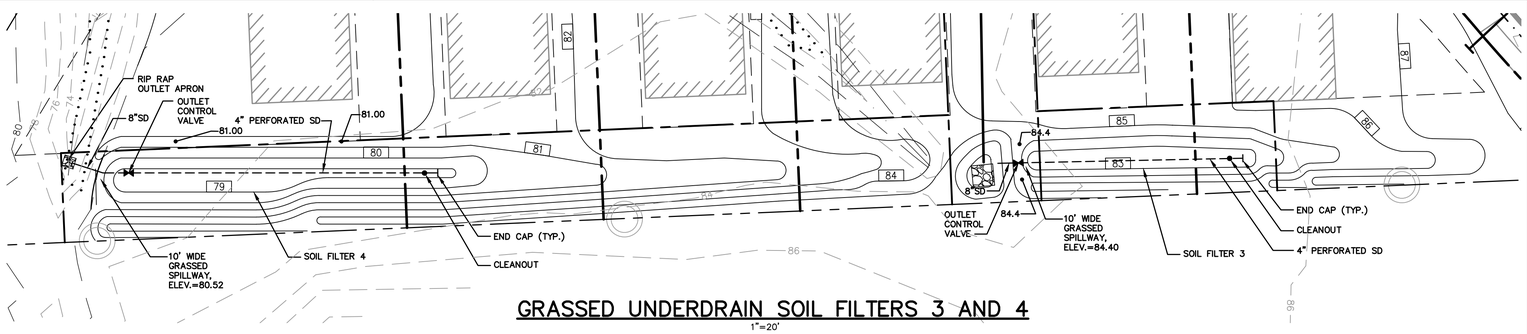


GRASSED UNDERDRAIN DETAIL
NOT TO SCALE

GRASS VEGETATION	
CREEPING RED FESCUE	20 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
BIRDSFOOT TREEFOIL	8 LBS/ACRE

SCHEDULE A

	ITEM DESCRIPTION	GRASSED UNDERDRAIN 1 DIMENSION/ ELEVATION	GRASSED UNDERDRAIN 2 DIMENSION/ ELEVATION	GRASSED UNDERDRAIN 3 DIMENSION/ ELEVATION	GRASSED UNDERDRAIN 4 DIMENSION/ ELEVATION	GRASSED UNDERDRAIN 5 DIMENSION/ ELEVATION
A	CHANNEL PROTECTION VOLUME STAGE	86.70	88.70	83.50	79.55	80.60
B	TOP SOIL FILTER	86	88	83	79	80
C	TOP UNDERDRAIN BEDDING STONE	84.5	86.5	81.5	77.5	78.5
D	PIPE INVERT: 4" PERF. UD	83.83	85.83	80.83	76.83	77.83
E	BOTTOM UNDERDRAIN BEDDING	83.5	85.5	80.5	76.5	77.5



GRASSED UNDERDRAIN SOIL FILTERS 3 AND 4
1"=20'

Table 1
Loamy Coarse Sand

SIEVE SIZE	% PASSING BY WEIGHT
#10	85–100
#20	70–100
#60	15–40
#200	8–15
#200 CLAY SIZE	<2.0

Table 3
Sandy Loam Topsoil

SIEVE SIZE	% PASSING BY WEIGHT
#4	75–95
#10	60–90
#40	35–85
#200	20–70
#200 CLAY SIZE	<2.0

Table 2 MEDOT Specifications for Underdrain Type B (MEDOT #703.22)

SIEVE SIZE	% PASSING BY WEIGHT
1"	90–100
1/2"	75–100
#4	50–100
#20	15–80
#50	0–15
#200	0–5

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STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9869
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
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Issued For	Date	By
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MDEP STORMWATER PRE APP	1/23/17	AMP
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Design: BMG	Draft: CG	Date: JAN 2018
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Drawing Name: Soil Filter Plan and Details
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. C406

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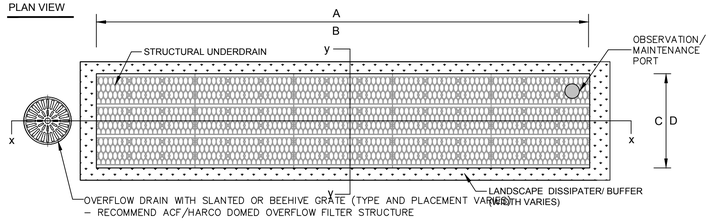
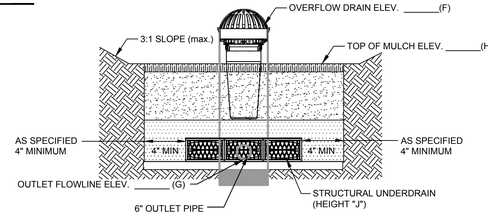
PLAN VIEW

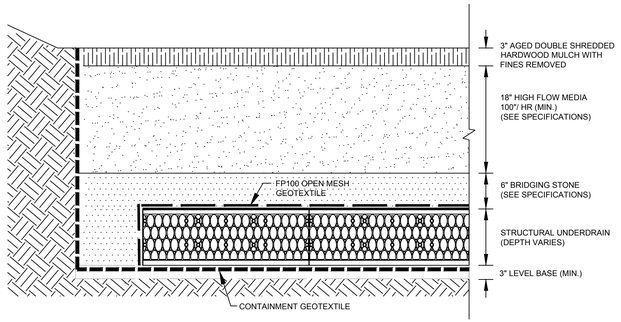


SECTION Y-Y



1

FOCALPOINT CONSTRUCTION GUIDE



FOCALPOINT HP PERFORMANCE SPECIFICATION:

HIGH PERFORMANCE MEDIA

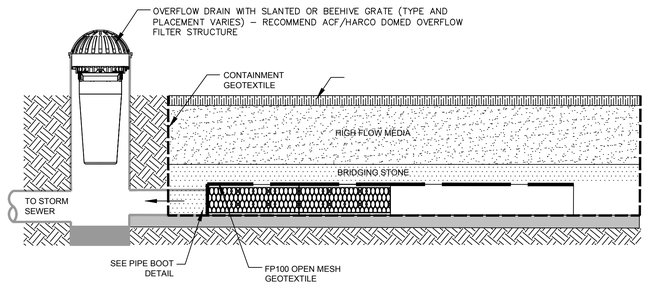
HIGH PERFORMANCE MEDIA MUST MEET A MINIMUM OF 100"PER HOUR INFILTRATION RATE.

HIGH PERFORMANCE STRUCTURAL UNDERDRAIN

MUST HAVE A MINIMUM OF 19 SQUARE INCHES OF ORIFICE OPENING PER SQUARE FOOT.
MUST MEET H20 LOADING REQUIREMENTS.
MUST BE MODULAR IN NATURE AND ASSEMBLED ON SITE.
MUST HAVE MINIMUM 90% INTERIOR VOID SPACE.

2

FOCALPOINT DETAILED CROSS SECTION



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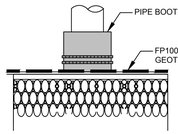
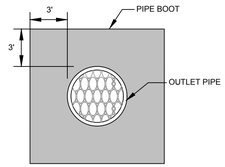
OBSERVATION/ MAINTENANCE PORT CONNECTION

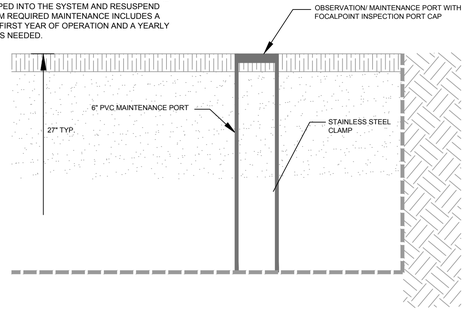


PIPE BOOT DETAIL



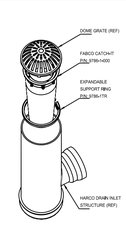
OBSERVATION/ MAINTENANCE PORT

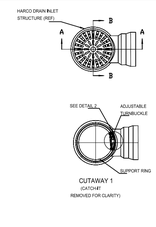
PORT USED FOR INSPECTION PURPOSES AND FOR SYSTEM MAINTENANCE AS REQUIRED. WATER SHALL BE PUMPED INTO THE SYSTEM AND RESUSPEND ACCUMULATED SEDIMENT. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION FOR THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER FLUSH AS NEEDED.

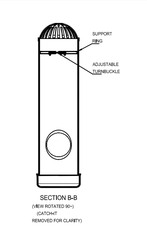


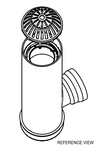
NOTES:
1. STORMSACK WEIGHT (EMPTY): 12 LB MAX
2. MATERIAL:
A) SHROUD: HIGH DENSITY POLYETHYLENE (TYPICAL WALL THICKNESS .125")
B) SUPPORT HUB: CRS, POWDER COATED
C) STORMSACK: WOVEN POLYPROPYLENE GEOTEXTILE (GEOTEX 117F)
D) HARDWARE: ALUMINUM POP-RIVETS
3. RECOMMENDED MINIMUM VAULT DEPTH: 2-IN BELOW CARTRIDGE
4. TYPICAL INSTALLATION: RAISE STORM GRATE, PUSH CATCHIT SHROUD DOWN ON FRAME SUPPORT LEDGE UNTIL LOCKING-CLIPS CLICK IN PLACE, LOWER STORM GRATE.
5. USE ONLY WITH FABCO REPLACEABLE STORMSACK.

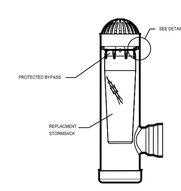
STRUCTURE DIAMETER (INCHES)	DEBRIS CAPACITY (CF)	FILTERED FLOWRATE (CFS)	BYPASS FLOWRATE (CFS)	TOTAL SYSTEM FLOWRATE (CFS)
12	0.77	2.2	1.2	3.4
18	1.65	2.5	1.0	3.5

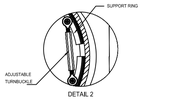


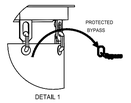












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Drawing Name:	FocalPoint Details
Project:	Brandy Lane Portland, Maine
Client:	LBW, LLC PO Box 1382, Portland, Maine 04104

Drawing No.
C407

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EROSION AND SEDIMENTATION CONTROL BASIC STANDARDS

1.3.5 EROSION CONTROL MEASURES AND SITE STABILIZATION

THE PRIMARY EMPHASIS OF THE EROSION/SEDIMENTATION CONTROL PLAN, WHICH WILL BE IMPLEMENTED FOR THIS PROJECT, IS AS FOLLOWS:

- DEVELOPMENT OF A CAREFUL CONSTRUCTION SEQUENCE.
- RAPID REVEGETATION OF DENUDED AREAS TO MINIMIZE THE PERIOD OF SOIL EXPOSURE.
- RAPID STABILIZATION OF DRAINAGE PATHS TO AVOID RILL AND GULLY EROSION.
- THE USE OF ON-SITE MEASURES TO CAPTURE SEDIMENT (HAY BALES/ STONE CHECK DAMS/SILT FENCE, 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 LATEST EDITION OF THE MAINE EROSION AND SEDIMENT CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS.

A. DEWATERING

WATER FROM CONSTRUCTION TRENCH DEWATERING OR POND CONSTRUCTION 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 50 FEET OF A PROTECTED NATURAL RESOURCE.

B. 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 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

C. TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING MEASURES ARE PLANNED AS TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION:

1. CRUSHED STONE-STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE OFF HOPE AVENUE.

2. SILTATION FENCE OR WOOD WASTE COMPOST BERMS SHALL BE INSTALLED DOWNSTREAM OF ANY DISTURBED AREAS TO TRAP RUNOFF-BORNE SEDIMENTS UNTIL GRASS AREAS ARE REVEGETATED. THE SILT FENCE AND/OR WOOD WASTE COMPOST BERMS SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THIS PACKAGE AND INSPECTED AT LEAST ONCE A WEEK AND BEFORE AND IMMEDIATELY AFTER A STORM EVENT OF 0.5 INCHES OR GREATER, AND AT LEAST DAILY DURING PROLONGED RAINFALL. 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 THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM. WOOD WASTE COMPOST BERMS ARE NOT TO BE USED ADJACENT TO WETLAND AREAS THAT ARE NOT TO BE DISTURBED.

3. STRAW OR HAY MULCH INCLUDING HYDROSEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. 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 A FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. FABRIC NETTING AND STAPLES SHALL BE USED ON DISTURBED AREAS WITHIN 50' OF LAKES, STREAMS, AND WETLANDS REGARDLESS OF THE UPSTREAM SLOPE. MULCH PLACED BETWEEN OCTOBER 15TH AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT SHALL BE COVERED WITH A FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SLOPES STEEPER THAN 3:1 AND EQUAL TO OR FLATTER THAN 2:1, WHICH ARE TO BE REVEGETATED, SHALL RECEIVE CURLEX BLANKETS BY AMERICAN EXCELSIOR OR EQUAL. SLOPES STEEPER THAN 2:1 SHALL RECEIVE RIPRAP AS NOTED ON THE PLANS. THE MULCH APPLICATION RATE FOR BOTH TEMPORARY AND PERMANENT SEEDING IS 75 LBS PER 1000 SF AS IDENTIFIED IN ATTACHMENT A OF THIS SECTION. MULCH SHALL NOT BE PLACED OVER SNOW.

4. TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION WILL BE PROTECTED AS FOLLOWS:

a) TEMPORARY STOCKPILES SHALL NOT BE LOCATED WITHIN 100 FEET OF ANY WETLANDS WHICH WILL NOT BE DISTURBED AND SHALL BE LOCATED AWAY FROM DRAINAGE SWALES.

b) STOCKPILES SHALL BE STABILIZED WITHIN 7 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 HAY, STRAW, OR EROSION CONTROL MIX.

c) STOCKPILES SHALL BE SURROUNDED BY SEDIMENTATION BARRIER AT THE TIME OF FORMATION.

5. ALL DENUDED AREAS THAT ARE WITHIN 100 FEET OF AN UNDISTURBED WETLAND, WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE ROADWAY SUBBASE AREA, SHALL RECEIVE MULCH OR EROSION CONTROL MESH FABRIC WITHIN 48 HOURS OF INITIAL DISTURBANCE OF SOIL. ALL AREAS WITHIN 100 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.

6. FOR WORK, WHICH IS CONDUCTED BETWEEN OCTOBER 15TH AND APRIL 15TH OF ANY CALENDAR YEAR, ALL DENUDED AREAS, SHALL BE COVERED WITH HAY MULCH OR EROSION CONTROL MIX, APPLIED AT TWICE THE NORMAL APPLICATION RATE AND ANCHORED WITH A FABRIC NETTING. THE TIME PERIOD FOR APPLYING MULCH SHALL BE LIMITED TO 2 DAYS FOR ALL AREAS.

7. HOPE AVENUE 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.

8. DURING GRUBBING OPERATIONS STONE CHECK DAMS SHALL BE INSTALLED AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINTS AND AS DIRECTED ON THE EROSION CONTROL PLANS.

9. SILT FENCING WITH A MINIMUM STAKE SPACING OF 6 FEET SHALL BE USED, UNLESS THE FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT OF MINIMUM 14 GAUGE AND WITH A MAXIMUM MESH SPACING OF 6 INCHES, IN WHICH CASE STAKES MAY BE SPACED A MAXIMUM OF 10 FEET APART. THE BOTTOM OF THE FENCE SHALL BE ANCHORED.

10. WOOD WASTE COMPOST/BARK BERMS MAY BE USED IN LIEU OF SILTATION FENCING. BERMS SHALL BE REMOVED AND SPREAD IN A LAYER NOT TO EXCEED 3" THICK ONCE UPSTREAM AREAS ARE COMPLETED AND A 90% CATCH OF VEGETATION IS ATTAINED.

11. WATER AND/OR CALCIUM CHLORIDE SHALL BE FURNISHED AND APPLIED IN ACCORDANCE WITH MDOT SPECIFICATIONS – SECTION 637 – DUST CONTROL.

12. LOAM AND SEED IS INTENDED TO SERVE, AS THE PRIMARY PERMANENT REVEGETATIVE MEASURE FOR ALL DENUDED AREAS NOT PROVIDED WITH OTHER EROSION CONTROL MEASURES, SUCH AS RIPRAP. APPLICATION RATES ARE PROVIDED IN ATTACHMENT A OF THIS SECTION. SEEDING SHALL NOT OCCUR OVER SNOW.

D. PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES HAVE BEEN DESIGNED AS PART OF THE EROSION/SEDIMENTATION CONTROL PLAN:

1. ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.) WILL BE LOAMED, LIMED, FERTILIZED, MULCHED, AND SEEDED. FABRIC NETTING, ANCHORED WITH STAPLES, SHALL BE PLACED OVER THE MULCH IN AREAS AS NOTED IN TEMPORARY EROSION CONTROL MEASURES PARAGRAPH 3 OF THIS REPORT. ALL AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 48 HOUR WINDOW. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

2. ALL STORM DRAIN PIPE OUTLETS SHALL HAVE RIPRAP APRONS AT THEIR OUTLET TO PROTECT THE OUTLET AND RECEIVING CHANNEL FROM SCOUR AND DETERIORATION. INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. THE APRONS SHALL BE INSTALLED AND STABILIZED TO THE EXTENT PRACTICABLE PRIOR TO DIRECTING RUNOFF TO THE TRIBUTARY PIPE OR CULVERT.

1.4 IMPLEMENTATION SCHEDULE

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE OPTIMIZED:

IT IS ANTICIPATED THAT CONSTRUCTION OF THE SUBDIVISION AND RELATED INFRASTRUCTURE WILL COMMENCE IN SPRING OF 2018 AND BE COMPLETED BY WINTER OF 2018. SURFACE COURSE PAVING SHALL BE COMPLETED AFTER THE BASE COURSE PAVEMENT HAS GONE THROUGH ONE COMPLETE WINTER SEASON AS REQUIRED BY THE CITY OF PORTLAND.

NOTE: FOR ALL GRADING ACTIVITIES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO OVEREXPOSE THE SITE, THIS SHALL BE ACCOMPLISHED BY LIMITING THE DISTURBED AREA.

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE AT THE INTERSECTION OF THE ACCESS DRIVE AND HOPE AVENUE.
2. INSTALL PERIMETER SILT FENCE AND/OR WOOD WASTE BERMS PRIOR TO GRUBBING RESPECTIVE AREAS.
3. CLEAR AND GRUB FOR ROADWAY CONSTRUCTION. INSTALL STONE CHECK DAMS AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINTS.
4. COMMENCE EARTHWORK AND GRADING TO SUBGRADE.
5. COMMENCE INSTALLATION OF DRAINAGE APPURTENANCES.
6. COMMENCE GRASSED UNDERDRAINED SOIL FILTER CONSTRUCTION.
7. COMMENCE INSTALLATION OF WATER AND SEWER LINES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF UNDERGROUND UTILITIES TO 5' BEYOND RIGHT-OF-WAY.
10. INSTALL SUB-BASE AND BASE GRAVEL WITHIN ROADWAY AND DRIVEWAY APRONS.
11. INSTALL BASE COURSE PAVING FOR ROADWAY AND DRIVEWAY APRONS.
12. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS.
13. ONCE THE SITE IS STABILIZED AND A 90% CATCH OF VEGETATION HAS BEEN OBTAINED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
14. TOUCH UP LOAM AND SEED.
15. INSTALL SURFACE COURSE PAVING AFTER THE BASE COURSE PAVING HAS GONE THROUGH ONE COMPLETE WINTER SEASON.
16. TOUCH UP LOAM AND SEED.

NOTE: ALL DENUDED AREAS NOT SUBJECT TO FINAL PAVING, RIPRAP, OR GRAVEL SHALL BE REVEGETATED.

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 FOLLOWING CRITERIA:

1. THE ABOVE CONSTRUCTION SEQUENCE SHOULD GENERALLY BE COMPLETED 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 SILT FENCE AND CONSTRUCTION ENTRANCES IN PLACE BEFORE LARGE AREAS OF LAND ARE DENUDED.

2. THE WORK SHALL BE CONDUCTED IN SECTIONS WHICH SHALL:

a) LIMIT THE AMOUNT OF EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE PROCEEDING 30 DAYS.

b) REVEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT; OR TEMPORARILY STABILIZED WITHIN 48 HOURS OF INITIAL DISTURBANCE OF SOIL FOR AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND AND 7 DAYS FOR ALL OTHER AREAS. AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 48 HOUR WINDOW.

c) INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEM AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE. THE DITCHES SHALL BE IMMEDIATELY LINED OR REVEGETATED AS SOON AS THEIR INSTALLATION IS COMPLETE.

1.5 EROSION, SEDIMENTATION AND STABILIZATION CONTROL PLAN

THE EROSION CONTROL PLAN IS INCLUDED IN THE PLAN SET.

1.6 DETAILS AND SPECIFICATIONS

THE EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

1.7 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 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT; VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD.

WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT ANY AREA LEFT EXPOSED CAN BE CONTROLLED BY THE CONTRACTOR. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDER TAKEN DURING THE PROCEEDING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN ROADWAY/PARKING AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 LBS./1,000 S.F. (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 S.F. (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.

2. NATURAL RESOURCE PROTECTION
ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH EROSION CONTROL MATS. DURING WINTER CONSTRUCTION, A DOUBLE LINE OF SEDIMENT BARRIERS (I.E. SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

3. 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.

4. MULCHING
AN AREA SHALL BE CONSIDERED DENUDED 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 S.F. 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 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, 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.

5. 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 THAT 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.

6. SEEDING
BETWEEN THE DATES OF OCTOBER 15 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 3 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/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

1. STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS –– THE APPLICANT SHALL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 15. THE APPLICANT SHALL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 1. IF THE APPLICANT FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 1, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.

INSTALL A SOD LINING IN THE DITCH –– THE APPLICANT SHALL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.

INSTALL A STONE LINING IN THE DITCH ––THE APPLICANT SHALL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 15. THE APPLICANT SHALL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE APPLICANT SHALL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

2. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES –– THE APPLICANT SHALL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE APPLICANT SHALL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 1. THE DEPARTMENT SHALL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% TO BE A SLOPE. IF THE APPLICANT FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 1, THEN THE APPLICANT SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS –– BY SEPTEMBER 1 THE APPLICANT SHALL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE 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 SLOPE BY NOVEMBER 1, THEN THE APPLICANT SHALL COVER THE SLOPE WITH A LAYER OF WOODWASTE COMPOST AS DESCRIBED IN ITEM III OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM IV OF THIS STANDARD.

STABILIZE THE SLOPE WITH SOD –– THE APPLICANT SHALL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY SEPTEMBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE APPLICANT SHALL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

STABILIZE THE SLOPE WITH WOODWASTE COMPOST –– THE APPLICANT SHALL PLACE A SIX-INCH LAYER OF WOODWASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOODWASTE COMPOST, THE APPLICANT SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT SHALL NOT USE WOODWASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

STABILIZE THE SLOPE WITH STONE RIPRAP –– THE APPLICANT SHALL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT SHALL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

3. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS –– BY SEPTEMBER 15 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 SEPTEMBER 1 THE APPLICANT SHALL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT 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 1, THEN THE APPLICANT SHALL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED BELOW.

STABILIZE THE SOIL WITH SOD –– THE APPLICANT SHALL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY SEPTEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

STABILIZE THE SOIL WITH MULCH –– BY NOVEMBER 15 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.

1.8 MAINTENANCE OF FACILITIES

THE STORMWATER FACILITIES WILL BE MAINTAINED BY THE APPLICANT, LBW, LLC. OR THEIR ASSIGNED HEIRS. THE CONTRACT DOCUMENTS WILL REQUIRE THE CONTRACTOR TO DESIGNATE A PERSON RESPONSIBLE FOR MAINTENANCE OF THE SEDIMENTATION CONTROL FEATURES DURING CONSTRUCTION AS REQUIRED BY THE EROSION CONTROL REPORT. LONG-TERM OPERATION/MAINTENANCE RECOMMENDED FOR THE STORMWATER FACILITIES IS PRESENTED BELOW.

THE RESPONSIBLE PARTY MAY CONTRACT WITH SUCH PROFESSIONALS, AS MAY BE NECESSARY IN ORDER TO COMPLY WITH THIS PROVISION AND MAY RELY ON THE ADVICE OF SUCH PROFESSIONALS IN CARRYING OUT ITS DUTY HEREUNDER, PROVIDED, THAT THE FOLLOWING OPERATION AND MAINTENANCE PROCEDURES ARE HEREBY ESTABLISHED AS A MINIMUM FOR COMPLIANCE WITH THIS SECTION. A MAINTENANCE LOG OF THE INSPECTIONS SHALL BE KEPT BY THE RESPONSIBLE PARTY.

A SIGNED STORMWATER MAINTENANCE AGREEMENT BETWEEN THE CITY OF PORTLAND AND THE APPLICANT WILL BE REACHED PRIOR TO CONSTRUCTION.

A TYPICAL MAINTENANCE LOG FOR THE SUBDIVISION IS INCLUDED IN ATTACHMENT C.

INSPECTION AND MAINTENANCE FREQUENCY AND CORRECTIVE MEASURES:
THE FOLLOWING AREAS, FACILITIES, AND MEASURES WILL BE INSPECTED AND THE IDENTIFIED DEFICIENCIES WILL BE CORRECTED. CLEAN-OUT MUST INCLUDE THE REMOVAL AND LEGAL DISPOSAL OF ANY ACCUMULATED SEDIMENTS AND DEBRIS.

CULVERTS:
INSPECT CULVERTS 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE CULVERTS ARE WORKING IN THEIR INTENDED FASHION AND THAT THEY ARE FREE OF DEBRIS. REMOVE ANY OBSTRUCTIONS TO FLOW; REMOVE ACCUMULATED SEDIMENTS AND DEBRIS AT THE INLET, AT THE OUTLET, AND WITHIN THE CONDUIT AND REPAIR ANY EROSION DAMAGE AT THE CULVERT'S INLET AND OUTLET.

STORMDRAIN OUTLETS:
INSPECT OUTLETS 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE OUTLETS ARE WORKING IN THEIR INTENDED FASHION AND THAT THEY ARE FREE OF DEBRIS. REMOVE ANY OBSTRUCTIONS TO FLOW; REMOVE ACCUMULATED SEDIMENTS AND DEBRIS AT THE OUTLET AND WITHIN THE CONDUIT REPAIR ANY EROSION DAMAGE AT THE STORMDRAIN OUTLET.

CATCH BASINS:
INSPECT CATCH BASINS 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE CATCH BASINS ARE WORKING IN THEIR INTENDED FASHION AND THAT THEY ARE FREE OF DEBRIS. CLEAN STRUCTURES WHEN SEDIMENT DEPTHS REACH 12" FROM INVERT OF OUTLET. IF THE BASIN OUTLET IS DESIGNED WITH A HOOD TO TRAP FLOATABLE MATERIALS (I.E. SNOUT), CHECK TO ENSURE WATERTIGHT SEAL IS WORKING. AT A MINIMUM, REMOVE FLOATING DEBRIS AT THE TIME OF THE INSPECTION.

INLET/OUTLET CONTROL STRUCTURES:
INSPECT STRUCTURES AND PIPING 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE STRUCTURES ARE WORKING IN THEIR INTENDED FASHION AND THAT THEY ARE FREE OF DEBRIS. REMOVE ANY OBSTRUCTIONS TO FLOW; REMOVE ACCUMULATED SEDIMENTS AND DEBRIS WITHIN THE STRUCTURE.

SOIL FILTER – GRASSED UNDERDRAINED SOIL FILTER:
INSPECT ALL UPSTREAM PRE-TREATMENT MEASURES 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) FOR SEDIMENT AND FLOATABLES ACCUMULATION. REMOVE AND DISPOSE OF ANY SEDIMENTS OR DEBRIS.

SURFACE (UNDERDRAIN POND, SWALE OR BIO-FILTER):
THE SOIL FILTER WILL BE INSPECTED WITHIN THE FIRST THREE MONTHS AFTER CONSTRUCTION; THEREAFTER THE FILTER WILL BE INSPECTED 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE FILTER IS DRAINING WITHIN 24 TO 48 HOURS OF A RAIN EVENT EQUIVALENT TO 1" OR MORE. ADJUSTMENTS WILL BE MADE TO THE OUTLET VALVE TO ENSURE THAT THE GRASSED UNDERDRAINED SOIL FILTER DRAINS WITHIN 24 TO 48 HOURS. FAILURE TO DRAIN IN 72 HOURS WILL REQUIRE PART OR ALL OF THE SOIL FILTER MEDIA TO BE REMOVED AND REPLACED WITH NEW MATERIAL MEETING THE SOIL FILTER GRADATION. THE FACILITIES WILL BE INSPECTED AFTER MAJOR STORMS AND ANY IDENTIFIED DEFICIENCIES WILL BE CORRECTED. HARVESTING AND WEEDING OF EXCESSIVE GROWTH SHALL BE PERFORMED AS NEEDED. INSPECT FOR UNWANTED OR INVASIVE PLANTS AND REMOVE AS NECESSARY.

SUBSURFACE DETENTION CHAMBERS:
INSPECT CHAMBERS PER MANUFACTURER'S RECOMMENDATION. AT A MINIMUM INSPECT CHAMBERS 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE STRUCTURES ARE WORKING IN THEIR INTENDED FASHION AND THAT THEY ARE FREE OF DEBRIS. REMOVE SEDIMENT FROM ISOLATOR ROW WHEN DEPTH OF SEDIMENT REACHES 3 INCHES.

ROOFLINE DRIP STRIP:
THE DRIP STRIP WILL BE INSPECTED WITHIN THE FIRST THREE MONTHS AFTER CONSTRUCTION; THEREAFTER THE FILTER WILL BE INSPECTED 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THAT THE FILTER IS DRAINING WITHIN 24 TO 48 HOURS OF A RAIN EVENT EQUIVALENT TO 1" OR MORE. ADJUSTMENTS WILL BE MADE TO THE OUTLET VALVE TO ENSURE THAT THE DRIP STRIP DRAINS WITHIN 24 TO 48 HOURS. FAILURE TO DRAIN IN 72 HOURS WILL REQUIRE PART OR ALL OF THE SOIL FILTER MEDIA TO BE REMOVED AND REPLACED WITH NEW MATERIAL MEETING THE SOIL FILTER GRADATION. THE FACILITIES WILL BE INSPECTED AFTER MAJOR STORMS AND ANY IDENTIFIED DEFICIENCIES WILL BE CORRECTED. INSPECT FOR UNWANTED OR INVASIVE PLANTS AND REMOVE AS NECESSARY. REMOVE DEBRIS FROM THE SURFACE. SINCE THE ROOFLINE DRIP EDGE IS A PART OF THE APPROVED STORMWATER MANAGEMENT PLAN, IT CANNOT BE PAVED OVER OR ALTERED IN ANY WAY. GUTTERS SHALL NOT BE INSTALLED ALONG THE ROOFLINE.

VEGETATED AREAS:
INSPECT SLOPES AND EMBANKMENTS EARLY IN THE GROWING SEASON TO IDENTIFY ACTIVE OR POTENTIAL EROSION PROBLEMS. REPLANT BARE AREAS OR AREAS WITH SPARSE GROWTH. WHERE RILL EROSION IS EVIDENT, ARMOR THE AREA WITH AN APPROPRIATE LINING OR DIVERT THE EROSIVE FLOWS TO ON-SITE AREAS ABLE TO WITHSTAND THE CONCENTRATED FLOWS. THE FACILITIES WILL BE INSPECTED AFTER MAJOR STORMS AND ANY IDENTIFIED DEFICIENCIES WILL BE CORRECTED.

DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS:
INSPECT 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL) TO ENSURE THEY ARE WORKING IN THEIR INTENDED FASHION AND THAT THEY ARE FREE OF SEDIMENT AND DEBRIS. REMOVE ANY OBSTRUCTIONS TO FLOW, INCLUDING ACCUMULATED SEDIMENTS AND DEBRIS AND VEGETATED GROWTH. REPAIR ANY EROSION OF THE DITCH LINING. VEGETATED DITCHES WILL BE MOWED AT LEAST ANNUALLY OR OTHERWISE MAINTAINED TO CONTROL THE GROWTH OF WOODY VEGETATION AND MAINTAIN FLOW CAPACITY. ANY WOODY VEGETATION GROWING THROUGH RIPRAP LININGS MUST ALSO BE REMOVED. REPAIR ANY SLUMPING SIDE SLOPES AS SOON AS PRACTICABLE. IF THE DITCH HAS A RIPRAP LINING, REPLACE RIPRAP ON AREAS WHERE ANY UNDERLYING FILTER FABRIC OR UNDERDRAIN GRAVEL IS SHOWING THROUGH THE STONE OR WHERE STONES HAVE DISLODGED. CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDESLOPES. THE FACILITIES SHALL BE INSPECTED AFTER MAJOR STORMS AND ANY IDENTIFIED DEFICIENCIES SHALL BE CORRECTED.

ROADWAYS: CLEAR ACCUMULATIONS OF WINTER SAND IN PARKING LOTS AND ALONG ROADWAYS AT LEAST ONCE A YEAR, PREFERABLY IN THE SPRING. ACCUMULATIONS ON PAVEMENT MAY BE REMOVED BY PAVEMENT SWEEPING. ACCUMULATIONS OF SAND ALONG ROAD SHOULDERS MAY BE REMOVED BY GRADING EXCESS SAND TO THE PAVEMENT EDGE AND REMOVING IT MANUALLY OR BY A FRONT-END LOADER. REPAIR POTHOLES AND OTHER ROADWAY OBSTRUCTIONS AND HAZARDS. PLOWING AND SANDING OF PAVED AREAS SHALL BE PERFORMED AS NECESSARY TO MAINTAIN VEHICULAR TRAFFIC SAFETY.

FOCALPOINTS UNITS:
THE FIRST YEAR OF MAINTENANCE SHALL BE PERFORMED BY THE SUPPLIER OR A SUPPLIER APPROVED CONTRACTOR. SUBSEQUENT MAINTENANCE SHALL BE PERFORMED AT LEAST 2 TIMES PER YEAR (PREFERABLY IN SPRING AND FALL). AT A MINIMUM, THE MAINTENANCE SHALL CONSIST OF THE FOLLOWING:
1. FOCALPOINT INSPECTION
2. FOREIGN DEBRIS, SILT, MULCH & TRASH REMOVAL
3. MULCH REPLACEMENT
4. PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY
5. CLEAN AREA AROUND FOCALPOINT
6. COMPLETE PAPERWORK, INCLUDING DATE STAMPED PHOTOS OF TASKS LISTED ABOVE.

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN

AS PART OF THE STORMWATER PERMIT, THE APPLICANT IS REQUIRED TO MEET THE STANDARDS IN SECTION 5 OF THE CITY OF PORTLAND TECHNICAL MANUAL FOR STORMWATER MANAGEMENT. THE GENERAL STANDARD IN ITEM IV. SUBMISSION REQUIREMENTS STATES THAT A PROJECT MUST SUBMIT A POST-CONSTRUCTION STORMWATER INSPECTION & MAINTENANCE PLAN PER MAINE DEP CHAPTER 500 APPENDIX B WITH REPORTING REQUIREMENTS PER CHAPTER 32 OF CITY OF PORTLAND CODE OF ORDINANCES, AND A STORMWATER MAINTENANCE AGREEMENT. THE MANAGEMENT PLAN SHALL COMPLY TO CHAPTER 32 OF CITY OF PORTLAND CODE OF ORDINANCES AS FOLLOWS:

(a) 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 PONES, 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) 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 RECORD OF THE DEFICIENCY AND CORRECTIVE ACTION(S) TO THE DEPARTMENT OF PUBLIC WORKS ("DPW") IN THE ANNUAL REPORT
(c) 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 DPW IN A FORM PROVIDED BY DPW, 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) ANY PERSONS REQUIRED TO FILE AN ANNUAL CERTIFICATION UNDER THIS SECTION SHALL INCLUDE WITH THE ANNUAL CERTIFICATION A FILING FEE ESTABLISHED BY DPW TO PAY THE ADMINISTRATIVE AND TECHNICAL COSTS OF REVIEW OF THE ANNUAL CERTIFICATION.
(e) IN ORDER TO DETERMINE COMPLIANCE WITH THIS ARTICLE AND WITH THE POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN, DPW MAY ENTER UPON PROPERTY AT REASONABLE HOURS WITH THE CONSENT OF THE OWNER, OCCUPANT OR AGENT TO INSPECT THE BMPS

HOUSEKEEPING

AS PART OF THE STORMWATER PERMIT, THE APPLICANT IS REQUIRED TO MEET THE STANDARDS IN APPENDIX C OF THE CHAPTER 500 RULES. THE FOLLOWING PROCEDURES ARE HEREBY ESTABLISHED AS A MINIMUM FOR COMPLIANCE WITH THIS SECTION. FOR FURTHER INFORMATION ON THE PROCEDURES LISTED BELOW, REFER TO CHAPTER 500 RULES – APPENDIX C.

SPILL PREVENTION:
APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING/IMPLEMENTATION SHALL BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE.

GROUNDWATER PROTECTION:
DURING CONSTRUCTION, HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER SHALL NOT BE STORED OR HANDLED IN AREAS OF THE SITE WHICH DRAIN TO AN INFILTRATION AREA.

FUGITIVE SEDIMENT AND DUST:
APPROPRIATE MEASURES SHALL BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF THE SOILS AND WATER AND/OR CALCIUM CHLORIDE SHALL BE USED TO ENSURE THAT ACTIVITIES DO NOT RESULT IN FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION.

DEBRIS AND OTHER MATERIALS:
LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

TRENCH OR FOUNDATION DE-WATERING:
WATER COLLECTED THROUGH THE PROCESS OF TRENCHING AND/OR DE-WATERING MUST BE REMOVED FROM THE PONDED AREA, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR OTHER AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE.

NON-STORMWATER DISCHARGES:
IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

CONCLUSION

THE APPLICANT HAS PROVIDED TEMPORARY AND PERMANENT EROSION CONTROL MEASURES AS WELL AS SPECIFYING A SEQUENCE OF CONSTRUCTION AS MEASURES TO MINIMIZE EROSION AND SEDIMENTATION.

1 ATTACHMENTS

ATTACHMENT A – SEEDING PLAN
ATTACHMENT B – INSPECTION REPORT
ATTACHMENT C – SUBDIVISION MAINTENANCE LOG

PROJECT: BRANDY LANE

SITE LOCATION: HOPE AVENUE, PORTLAND, ME

X PERMANENT SEEDING   TEMPORARY SEEDING

1. INSTRUCTION ON PREPARATION OF SOIL: PREPARE A GOOD SEED BED FOR PLANTING METHOD USED.
2. APPLY LIME AS FOLLOWS: _# / ACRES, OR 138 # /M SQ. FT.
3. FERTILIZE WITH ____ POUNDS OF ____ N-P-K/AC. OR 18.4 POUNDS OF 10-20-20 N-P-K/M SQ. FT.
4. METHOD OF APPLYING LIME AND FERTILIZER: SPREAD AND WORK INTO THE SOIL BEFORE SEEDING.
5. SEED WITH THE FOLLOWING MIXTURE:
   40% CREEPING RED FESCUE
   30% CHARGER II PERENNIAL RYEGRASS
   20% KENBLUE KENTUCKY BLUEGRASS
   10% TIFFANY CHEWINGS FESCUE
6. MULCHING INSTRUCTIONS: APPLY AT THE RATE OF ____PER ACRE, OR 75 POUNDS PER M. SQ. FT.

		AMOUNT	UNIT # TONS. ETC.
7.	TOTAL LIME	138	#/1000 SQ. FT.
8.	TOTAL FERTILIZER	18.4	#/1000 SQ. FT.
9.	TOTAL SEED	1.03	#/1000 SQ. FT.
10.	TOTAL MULCH	75	#/1000 SQ. FT.
11.	TOTAL OTHER MATERIALS, SEEDS, ETC.		
12.	REMARKS		

SPRING SEEDING IS RECOMMENDED, HOWEVER, LATE SUMMER (PRIOR TO SEPTEMBER 1) SEEDING CAN BE MADE. PERMANENT SEEDING SHOULD BE MADE PRIOR TO AUGUST 5 OR AS A DORMANT SEEDING AFTER THE FIRST KILLING FROST AND BEFORE THE FIRST SNOWFALL. IF SEEDING CANNOT BE DONE WITHIN THESE SEEDING DATES, TEMPORARY SEEDING AND MULCHING SHALL BE USED TO PROTECT THE SITE. PERMANENT SEEDING SHALL BE DELAYED UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

SEEDING PLAN

PROJECT: BRANDY LANE

SITE LOCATION: HOPE AVENUE, PORTLAND, ME

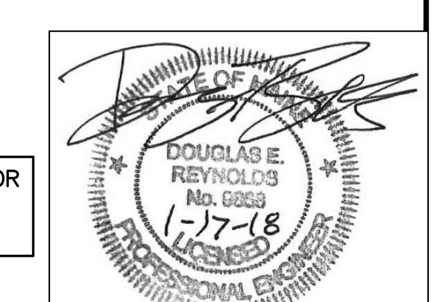
PERMANENT SEEDING   X TEMPORARY SEEDING

1. INSTRUCTION ON PREPARATION OF SOIL: PREPARE A GOOD SEED BED FOR PLANTING METHOD USED.
2. APPLY LIME AS FOLLOWS: _# / ACRES, OR 138 # /M SQ. FT.
3. FERTILIZE WITH ____ POUNDS OF ____ N-P-K/AC. OR 13.8 POUNDS OF 10-10-10 N-P-K/M SQ. FT.
4. METHOD OF APPLYING LIME AND FERTILIZER: SPREAD AND WORK INTO THE SOIL BEFORE SEEDING.
5. SEED WITH THE FOLLOWING MIXTURE:
   50% WINTER RYE
   50% ANNUAL RYE
6. MULCHING INSTRUCTIONS: APPLY AT THE RATE OF ____PER ACRE, OR 75 POUNDS PER M. SQ. FT.

		AMOUNT	UNIT # TONS. ETC.
7.	TOTAL LIME	138	#/1000 SQ. FT.
8.	TOTAL FERTILIZER	13.8	#/1000 SQ. FT.
9.	TOTAL SEED	1.03	#/1000 SQ. FT.
10.	TOTAL MULCH	75	#/1000 SQ. FT.
11.	TOTAL OTHER MATERIALS, SEEDS, ETC.		
12.	REMARKS		

SPRING SEEDING IS RECOMMENDED; HOWEVER, LATE SUMMER (PRIOR TO SEPTEMBER 1) SEEDING CAN BE MADE. PERMANENT SEEDING SHOULD BE MADE PRIOR TO AUGUST 5 OR AS A DORMANT SEEDING AFTER THE FIRST KILLING FROST AND BEFORE THE FIRST SNOWFALL. IF SEEDING CANNOT BE DONE WITHIN THESE SEEDING DATES, TEMPORARY SEEDING AND MULCHING SHALL BE USED TO PROTECT THE SITE. PERMANENT SEEDING SHALL BE DELAYED UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.



Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
2	9/28/17	REVISED PER CITY COMMENTS
1	12/21/16	REVISED LAYOUT PER CITY COMMENTS

Issued For	Date	By
LEVEL III SUBDIVISION APPLICATION	5/12/17	DER
MDEP STORMWATER PRE APP	1/23/17	AMP
PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: JAN 2018
Checked: DER	Scale: NTS	Job No.: 98089.08

File Name: 98089-08-DETAILS.dwg

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Drawing Name: **Erosion Control Notes**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. C408

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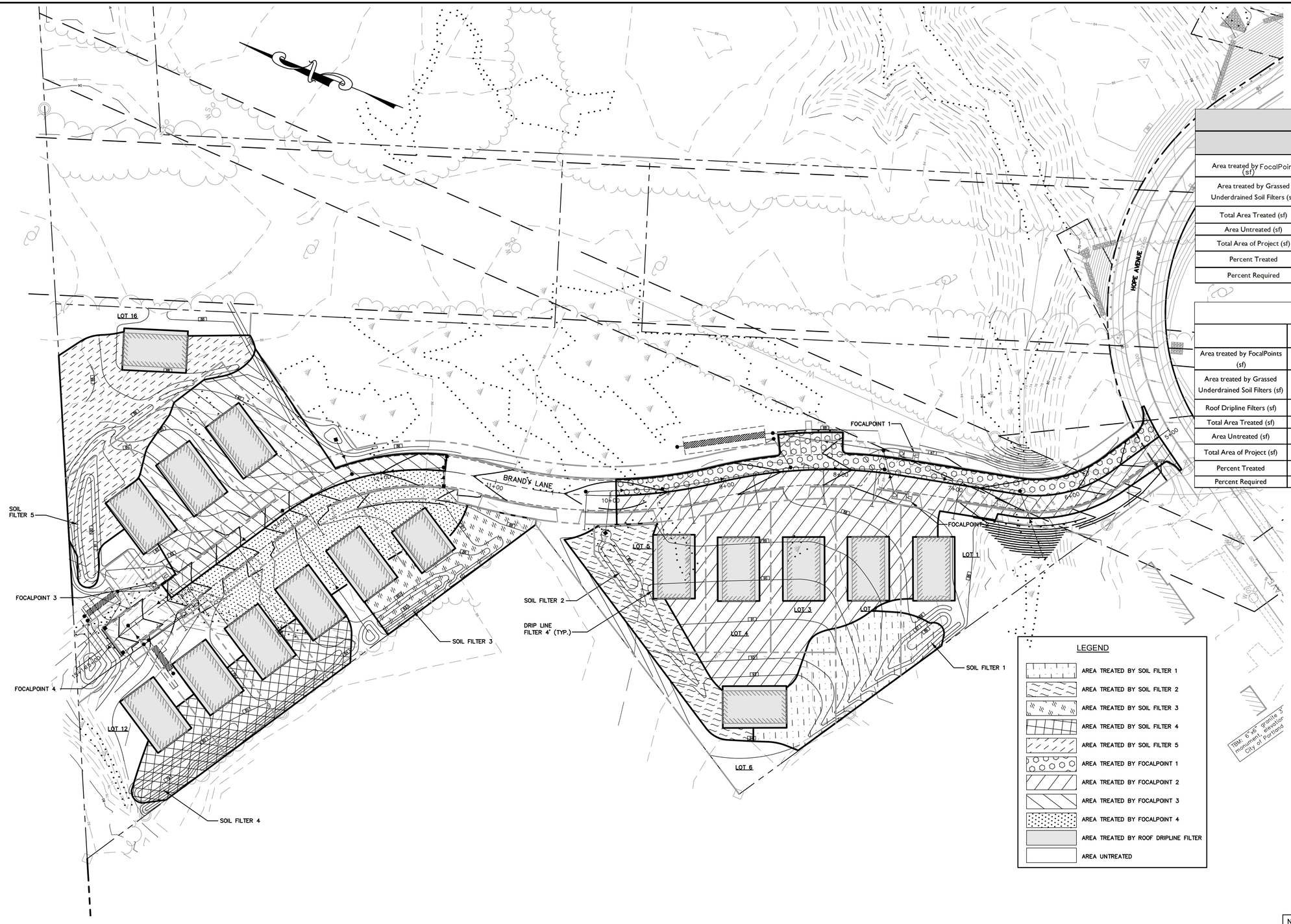

TABLE 11 – LINEAR PORTION		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by FocalPoints (sf)	27,761	31,739
Area treated by Grassed Underdrained Soil Filters (sf)	0	0
Total Area Treated (sf)	27,761	31,739
Area Untreated (sf)	8,189	8,855
Total Area of Project (sf)	35,950	40,594
Percent Treated	77.20%	78.20%
Percent Required	75%	50%

TABLE 12 – HOUSE LOTS		
	IMPERVIOUS	DEVELOPED (Impervious + Landscaped)
Area treated by FocalPoints (sf)	5,840	33,768
Area treated by Grassed Underdrained Soil Filters (sf)	3,264	47,108
Roof Dripline Filters (sf)	24,337	36,657
Total Area Treated (sf)	33,441	117,533
Area Untreated (sf)	660	21,331
Total Area of Project (sf)	34,101	138,864
Percent Treated	98%	85%
Percent Required	95%	80%

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

40 0 20 40 80
1 inch = 40 ft.

STATE OF MAINE
DOUGLAS E. REYNOLDS
No. 9859
1-17-18
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
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PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG	Draft: CG	Date: JAN 2018
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File Name: 98089-08-WQ.dwg		

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Drawing Name: **Water Quality Plan**

Project: **Brandy Lane**
Portland, Maine

Client: **LBW, LLC**
PO Box 1382, Portland, Maine 04104

Drawing No. **WQ**

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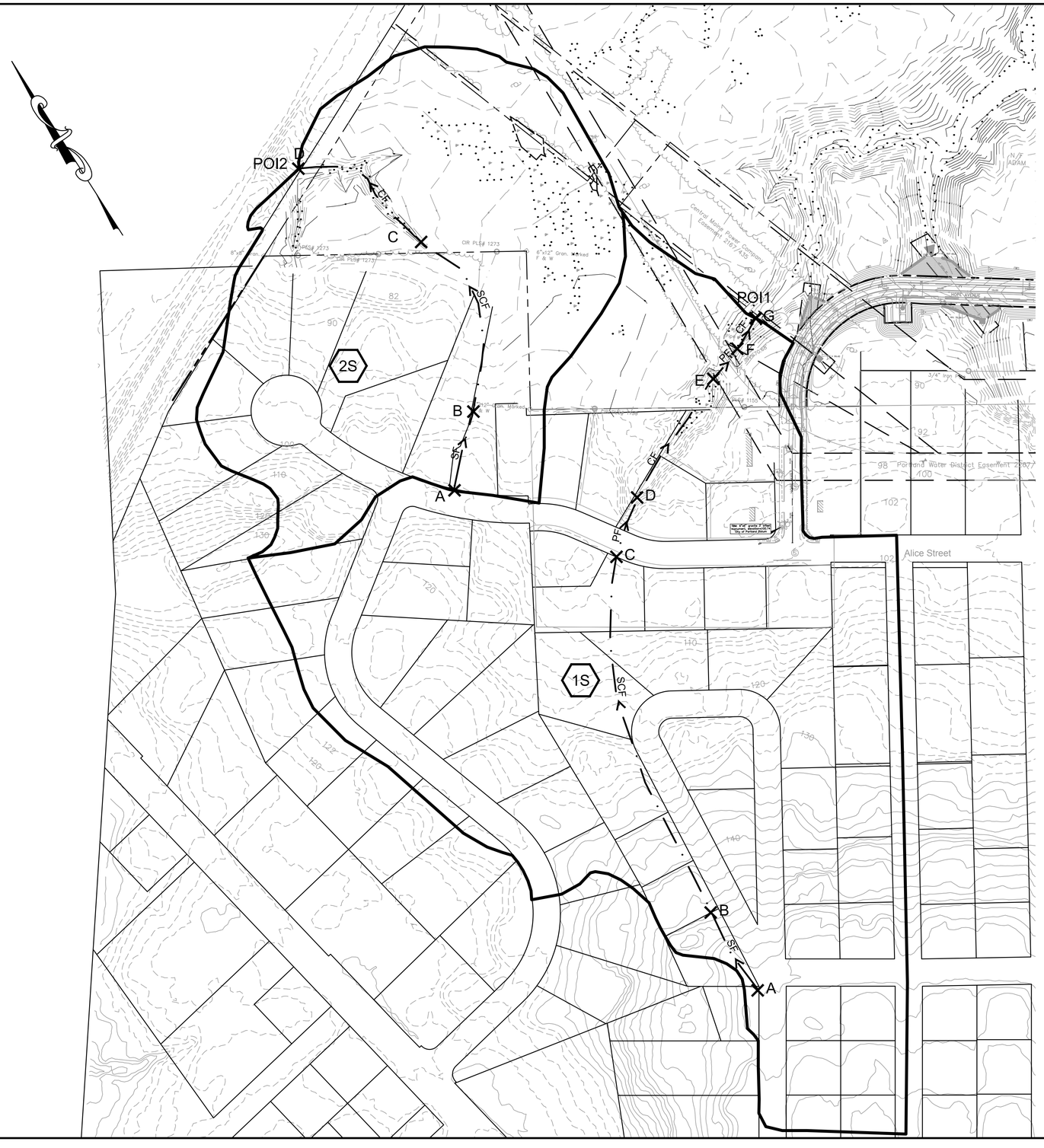

LEGEND

1	SUBCATCHMENT AREA
A	TIME OF CONCENTRATION FLOW PATH
	WATERSHED BOUNDARY
	WETLAND BOUNDARY
SF	SHEET FLOW
PF	PIPE FLOW
SCF	SHALLOW CONCENTRATED FLOW
CF	CHANNEL FLOW
POI	POINT OF INTEREST
1	REACH

DOUGLAS E. REYNOLDS No. 9959 1-17-18 LICENSED PROFESSIONAL ENGINEER

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
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PRICING	9/16/16	AMP
PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: JAN 2018
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File Name: 98089-08-WS-PRE.dwg

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Drawing Name: Pre Development Watershed Map
Project: Brandy Lane, Portland, Maine
Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. W1

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LEGEND

- 1 — SUBCATCHMENT AREA
- A — TIME OF CONCENTRATION FLOW PATH
- WATERSHED BOUNDARY
- WETLAND BOUNDARY
- SF — SHEET FLOW
- PF — PIPE FLOW
- SCF — SHALLOW CONCENTRATED FLOW
- CF — CHANNEL FLOW
- POI — POINT OF INTEREST
- 1 — REACH

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

100 0 50 100 200

1 inch = 100 ft.

STATE OF MAINE — DOUGLAS E. REYNOLDS No. 9859 LICENSED PROFESSIONAL ENGINEER — 1-17-18

Rev.	Date	Revision
3	1/17/18	REVISED PER CITY STAFF COMMENTS
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PRE-APPLICATION MEETING WITH CITY	6/24/16	AMP

Design: BMG | Draft: CG | Date: JAN 2018
Checked: AMP | Scale: 1"=40' | Job No.: 98089.08
File Name: 98089-08-WS-POST.dwg

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207.772.2515

Drawing Name: Post Development Watershe Map

Project: Brandy Lane, Portland, Maine

Client: LBW, LLC, PO Box 1382, Portland, Maine 04104

Drawing No. W2

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Draft Construction Management Plan
September 27, 2017
City of Portland
Brandy Lane Subdivision

Purpose:

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City's goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

Narrative:

LBW, LLC. has retained Gorrill Palmer to prepare plans and permit applications for the construction of a proposed sixteen (16) lot single family residential subdivision, 960 linear foot roadway, and infrastructure off Hope Avenue in Portland, Maine. The project will develop approximately 4.57 acres and the work will include:

1. Install stabilized construction entrance at the intersection of the access drive and Hope Avenue.
2. Install perimeter silt fence and/or wood waste berms prior to grubbing respective areas.
3. Clear and grub for roadway construction. Install stone check dams at any evident concentrated flow discharge points.
4. Commence earthwork and grading to subgrade.
5. Commence installation of drainage appurtenances.
6. Commence grassed underdrained soil filter construction.
7. Commence installation of water and sewer lines.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Complete installation of underground utilities to 5' beyond right-of-way.
10. Install sub-base and base gravel within roadway and driveway aprons.
11. Install base course paving for roadway and driveway aprons.
12. Loam, lime, fertilize, seed and mulch disturbed areas.

13. Once the site is stabilized and a 90% catch of vegetation has been obtained, remove all temporary erosion control measures.

14. Touch up loam and seed.

15. Install surface course paving after the base course paving has gone through one complete winter season.

16. Touch up loam and seed.

Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Part of the Level III Site Plan, the developer will be required to submit a performance guarantee for the proposed work. The performance guarantee will be based upon a cost estimate submitted and approved by the City.

The contractor will be responsible for obtaining street opening and street occupancy permits from the department of public works. All construction in the right of way shall conform to the City of Portland Code.

No blasting is anticipated for this project, but if the need arises, the contractor will be responsible for conforming to all the measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.

Construction Administration and Communication

This project will be managed by a representative from LBW, LLC.

1. Contact Person and contact information:
    - Developer (LBW, LLC): Burt Wolf (207-776-0742)
    - Contractor: TBD
    - Engineer (Gorrill Palmer): Doug Reynolds, P.E. (207-772-2515)
2. Construction Signage will be posted on the site with the above contact information.
3. All construction site signage is temporary and will be removed at project completion.

Construction Schedule

- Site Plan Approval: Expected Fall 2017
- Preconstruction Meeting: Winter 2018
- Construction of Roadway: Approximately 16 weeks. Expected completion – Fall 2018.

1. Construction Schedule:

Estimated Construction Time:	4 Months
Erosion Control Measures Placed:	Week 1
Site Clearing and grubbing:	Week 2
Construction of road subbase:	Week 3
Stormwater Management area for construction:	Week 4 - Week 14
Utility Improvements and roadway construction:	Week 8 - Week 14
Road Base and Binder course:	Week 14 - Week 15
Sidewalks:	Week 15
Start final seeding on stabilized areas:	Week 14
Vegetated Growth monitoring:	Week 14 - Week 16
Reseeding if necessary:	Week 16
Removal of temporary erosion control measures:	Upon final completion

2. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit and Section 25-129. Noise, dust and debris.
3. Extended Hours or Night Work: Pursuant to Section 17-18, this section not apply to emergency utility work or "Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority."
4. If allowed, no construction activity will begin before 8:00 AM on a Saturday, Sunday or legal holiday.
5. Material Deliveries: All deliveries will comply with the noise requirements listed above or be restricted to the hours allowed for construction work.

Security & Public Safety

1. Prior to commencing construction, the contractor will install "Construction Ahead" signs on both the eastbound and westbound lanes to warn traffic and pedestrians of the construction area.
2. The contractor will be responsible for the setup of construction staging area before construction begins. Contractor will provide fencing for staging area if need be. Fenced in areas will be provided with gates that allow emergency vehicles to pass and equipped with a Knox locking device.
3. Contractor will be responsible for the safe storage of materials or equipment on site.
4. Contractor will be responsible with developing a fire safety and emergency protocol and obtain all the necessary contact information.
5. All excavations within the right of way shall be filled on plated for the overnight. Excavations within the site shall be barricaded with construction tape for the overnight.

Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.
2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along arterial and or collector streets are required to submit a satisfactory 'maintenance of traffic" (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
    a) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
    b) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or site lines with the piles of snow.
    c) Clear all walks & ramps with the work zone
    d) Sand or Salt as needed
    e) Clear all basin or drainage to help snow melt
    f) This would include Monday-Friday Sat/Sunday/Holidays

Erosion Control and Preservation of Trees

1. The contractor shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less

than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.

2. The contractor shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

Construction Staging Area

1. The Construction Management Plan depicts the location of the material and equipment storage area
2. Delivery Truck Holding Areas On-Site: The delivery holding area is shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. Delivery Truck Holding Areas Off-Site: In the event that adequate on-site area for holding of trucks is not available, the contractor shall provide an off-site marshalling area will be utilized for trucking.

Parking During Construction

1. Construction Parking: Parking for construction workers shall be on site as indicated on the Construction Management Plan.
2. Truck Routes and Volumes: The Construction Management Plan shows the designated truck routes and expected truck volumes.

Prepared By:

Gorrill Palmer

Douglas Reynolds, P.E.

PLANNING BOARD REPORT
PORTLAND, MAINE

CONVERSION OF STORAGE SPACE INTO SIX APARTMENTS
37 Casco Street
Subdivision Plan and Level III Site Plan
Project ID #2017-144
Ambassador, LLC, Applicant

Submitted to: Portland Planning Board Public Hearing Date: February 27, 2018	Prepared by: Shukria Wiar, Planner Date: February 22, 2018

I. INTRODUCTION

Ambassador, LLC is requesting a public hearing for approval of a Level III Site Plan and Subdivision application at 37 Casco Street. The applicant is proposing to convert storage space in the building into six residential apartments. The proposed reconfiguration of the units will occur within the existing historic structure. There are no proposed changes to the building exterior. The parcel is located in the B-3 Downtown Business Zone and the Congress Street Historic District. This proposal is being reviewed as a final plan and subject to the Site Plan and Subdivision Ordinance of Land Use Code.

Figure 1- Site of Proposed Project

Two hundred (200) notices were sent to area residents within 500 feet of the site and the interested party list. A notice also appeared in the February 19th and 20th editions of the *Portland Press Herald.*

Applicant Name	Ambassador, LLC
Consultants	
Agent Representative	Bianca Garber, Port Property Management
Attorney	Victoria Morales, Morales Law
Surveyor	

II. Project Review

Review	*Applicable Standards*
Site Plan	14-526
Subdivision	14-491

II. PROJECT DATA

Existing Zoning:	B-3 Downtown Business Zone and Overlay of Congress Street Historic District
Proposed Use:	Residential Apartments
Parcel Size:	9,661 sq ft
Total Disturbed Area:	None- all interior improvements

Building Area:	There are no plans to change the total building area	
Total Building Area:	9,661 sq ft	
Project Internal Total:	±3,110 sq ft	
Residential Data:		
Existing Residential Units:		Eighty-six (86) Apartments
Proposed Residential Units:		Six Apartments
Bedroom Mix:		Four Efficiencies; Two one-bedroom
Parking Spaces:		
Existing:	None	
Proposed:	None	
Bicycle Parking Spaces:		
Existing:	None	
Proposed:	None	
Estimated Cost of Project:	$85, 000	

III. PROPOSED DEVELOPMENT

The 9,661 square foot, six-(6) level building at 37 Casco Street is currently occupied by residential apartments. The applicant is proposing to convert existing one three-bedroom unit into six studios and a laundry room into one-bedroom apartment for a total of six new residential apartments.

Figure 2: Exiting Building

The proposed residential units range in size from 280 to 730 square feet in area. The apartments will be studio units and one-bedroom apartments. The units are accessed by the building's existing elevators and stair wells. A common central corridor leads to unit entries. There will be no exterior modifications to the building

The property is located in the B-3 Downtown Business zone and within the Congress Street Historic Overlay district. The B-3 zone allows residential dwelling units with no residential density requirements and the project is exempt from parking requirements under the change of use provisions for an historic structure. Therefore, the applicant does not need to provide any additional dedicated parking for the project under the zoning ordinance as a change of use in the B3 Downtown Business Zone or in the Historic District. The site will provide compact in-city living for renters, which is near services, such as businesses, institutions, employers and public transportation

IV. PUBLIC COMMENT

A Neighborhood Meeting is required for this project and the applicant has confirmed that the neighborhood meeting was held on February 20, 2018, see Attachment H. As of the writing of this report no written public comment has been received.

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

a. The owner of the property is Ambassador, LLC. The applicant has provided a copy of a warranty deed, recorded at the Cumberland County Registry of Deeds (Book 4798 Page 12), which demonstrates their right, title and interest in the property.

b. The estimated cost of the development is $85,000. The applicant has submitted a letter from Camden National Bank, dated 02.01.2018 as demonstration of their financial and technical capacity to complete the proposed development.

VI. ZONING ASSESSMENT

A zoning review has done on this application and the project and all zoning requirements of the B-3 zone are being met at this time.

VIII. DEVELOPMENT REVIEW

A. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527)

The subdivision plat has been reviewed by staff. The plat will need to show the zoning information for the zone and identify that the parcel is within the Congress Street Historic District. The plat will also need to show the uses of the building, the number of residential units (existing and proposed), and the number of parking spaces on site.

B. SUBDIVISION (Section 14-497)

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

1) Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) I), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)
   There is not site alteration, thus the staff finds the proposed project in conformance with this standard.

2) Sufficient Water Available (Section 14-497 (a) 2 and 3)
   The applicant has presented a capacity letter from the Portland Water District.

3) Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)
   Please see paragraph VII (B) 1 below.

4) Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)
   Please see paragraph VII (B) 3 below.

5) Scenic Beauty, Natural, Historic, Habitat and other Resources (Section 14-497 (a) 8)
   The proposed project will not have an adverse effect on the scenic or natural beauty of the area.

6) Comprehensive Plan (Section 14-497 (a) 9)
   The project is consistent with the Housing Goals and Policies of the Comprehensive Plan.

7) Financial Capability (Section 14-497 (a) 10)
   The estimated cost of the development is $85,000. The applicant has submitted a letter from Camden National Bank, dated 02.01.2018 (Attachment E) as demonstration of their financial and technical capacity to complete the proposed development.

C. SITE PLAN STANDARDS (Section 14-526)

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

1. Transportation Standards
    a. Impact on Surrounding Street Systems
    b. Access and Circulation
    c. Public Transit Access
    d. Parking
    e. Transportation Demand Management (TDM)

    STAFF COMMENT: The proposed project is not anticipated to have any significant adverse effect on regional traffic. The site offers space for vehicular loading and unloading at the rear of the building. Metered on-street parking is also available near the project's front entry, as well as surrounded by surface parking lot. In addition, there is a recently approved parking garage off Brown Street, which is to the rear of the building. According to the applicant, tenants either do not own vehicles, park on the street, or lease parking elsewhere. The project is not required to provide any dedicated parking for the project under the zoning ordinance as a change of use in the B3 Downtown Business Zone. Tom Ericco, Consultant Traffic Engineer, has reviewed the proposed project and has no comments.

    Planning staff recommends as a condition of approval that one bicycle rack be installed to serve this project.

2. Environmental Quality Standards
    a. Preservation of Significant Natural Features
    b. Landscaping and Landscape Preservation
    c. Water Quality, Storm Water Management and Erosion Control

    STAFF COMMENT: Under the standards of the subdivision ordinance, all subdivisions are required to provide one (1) street tree per lot or unit for multi-family projects. The subject application is for six (6) units and there is one existing street tree on the proposed site that applicant will get a credit for. The applicant has requested a waiver of the street trees in order to contribute to the City's tree fund for the five required trees. Whereas the subject site is located in a fully developed urban environment, the City Arborist supports the waiver and that the developer shall contribute a fee of $400 per tree required into a street tree fund for a total of $2,000 for use by the City Arborist in the installation and maintenance of urban street trees in the vicinity of the site.

    In its present condition, the site is fully impervious. Existing drainage flows and catchments systems appear to be functioning effectively. No improvements to the existing infrastructure are proposed.

3. Public Infrastructure and Community Safety Standards
    a. Consistency with Master Plans
    b. Public Safety and Fire Prevention
    c. Availability and Adequate Capacity of Public Utilities

    STAFF COMMENT: Captain Robert Thompson of the Fire Department has reviewed the project and has no issues in the site-plan process, as changes to access to the site have not been proposed. The applicant submitted a letter from the Engineering Division of Public Works verifying adequate sewer

capacity to serve the project. The Department of Public Services did evaluate the site and found the sidewalks along the property boundaries to be in good condition, so no public improvements within the right-of-way are required.

4. Site Design Standards
    a. Massing, Ventilation and Wind Impact
    b. Shadows
    c. Snow and Ice Loading
    d. View Corridors
    e. Historic Resources
    f. Exterior Lighting
    g. Noise and Vibration
    h. Signage and Wayfinding
    i. Zoning Related Design Standards

STAFF COMMENT: The building is an existing structure and no exterior modifications are proposed.

VIII. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board approve the propose subdivision and site plan for four additional units at 638 Congress Street.

IX. PROPOSED MOTIONS

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 application 2017-144 relevant to the Site Plan, Subdivision and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan [is or is not] in conformance with the site plan and subdivision standards of the land use code subject to the following conditions of approval:

1. The recording plat shall be revised noting all zoning information, number of units, 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.

2. A bicycle rack meeting the city's specifications in the technical manual shall be installed prior to the issuance of a certificate of occupancy. The location of it will be determined on site.

3. A contribution amount of $2,000 to the City's Street Tree Fund to be substituted for the provision on site of five of the required street trees prior to a building permit.

Attachments:

Applicant's Submittal
A. Attorney Morales Letter
B. Level III Final 5-23-17
C. 37 Casco Street Deed
D. Wastewater Capacity Application

E. Financial Capacity Letter
F. Water Capacity Letter from PWD
G. Wastewater Capacity Letter from DPW
H. Neighborhood Meeting Packet

Plans

Plan 1	Land Survey - Ambassador (37 Casco)
Plan 2	Survey 12-8-2017
Plan 3	37_Casco_Map
Plan 4	37_Casco_Building_CURRENT
Plan 5	37_Casco_Sketch
Plan 6	37_Casco_PROPOSED_CHANGES
Plan 7	Plot Plan 37 Casco Street
Plan 8	Subdivision Plat 12-12-2017

Att. A

Morales Law
Land Use and
Government Relations
Counsel

December 14, 2017

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

Re: Ambassador LLC Project – Level III - Site Plan Application and Subdivision Review

Dear Shukria,

On behalf of the applicant, Ambassador, LLC, located at 37 Casco Street, I am following up on the Preliminary Level III – Site Plan Application submitted for subdivision approval for six (6) additional residential units. The project will consist entirely of inside renovations and does not propose any changes to the building footprint or the building square footage.

Centralized in the B-3 zone, this project proposes to increase the existing eighty six (86) residential units to a total of ninety two residential (92) units. The renovation changes the use of an unused basement space into one (1) residential unit, divides three (3) existing residential units to create three (3) additional units, and converts two (2) office spaces into two (2) residential units. Pursuant to Portland City Code, Chapter 14-332.1, additional off-street parking is not required in the B-3 zone for alterations or changes of use creating additional residential units. This project is consistent with City Code in all other respects.

A Survey and Recording Plat has been prepared by Nadeau Land Surveys and is dated December 8, 2017. The subject property is a 9,744 SF lot shown as "6 Story Brick Apartment Building #37 'The Ambassador'" on the Recording Plat, and on the City Assessor's Map 37, Block D, Lot 7. The applicant has demonstrated right title and interest in this property, including the right-of-way from Maine Savings Bank to Saul G. Chason and Dorothy F. Chason on November 20, 1964, Book 2868, Page 391, referenced in Note 19 on the December 8, 2017 Recording Plat, as evidenced by a Warranty Deed dated June 9, 1981 and recorded in the Cumberland County Registry of Deeds, Book 13963, Page 12. There are no other legal property rights, such as easements or covenants, that impact the property.

In preparation for its neighborhood meeting, the applicant requests that the City provide it with the labels of the abutters within a 500 foot radius of the project. Thank you in advance for your assistance with this application, and please feel free to contact me at 207-216-0643 or vicmorlaw@gmail.com with any questions or concerns.

Very truly yours,

Victoria Morales, Esq.

188 State Street, Suite 303, Portland, Maine 04101 <vicmorlaw@gmail.com>
207.216.0643

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:	AMBASSADOR
Proposed Development Address:	37 CASCO STREET
Project Description:	CHANGE OF USE FROM 86 TO 92 RESIDENTIAL UNITS
Chart/Block/Lot:	037D007001
Preliminary Plan	N/A
Final Plan	N/A

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

APPLICANT

Name:	BIANCA GARBER
Business Name:	PORT PROPERTY MANAGEMENT
Address:	104 GRANT STREET
City/State:	PORTLAND, ME
Zip Code:	04101
Work #:	207-210-6849
Home #:	N/A
Cell #:	207-699-8069
Fax #:	207-761-8048
E-mail:	BIANCA@PORTPROPMGT.COM

OWNER

Name:	AMBASSADOR, LLC
Address:	104 GRANT STREET
City/State:	PORTLAND, ME
Zip Code:	04101
Work #:	207-761-0832
Home #:	207-761-0832
Cell #:	N/A
Fax #:	207-761-8048
E-mail:	BIANCA@PORTPROPMGT.COM

AGENT/REPRESENTATIVE

Name:	BIANCA GARBER
Address:	104 GRANT STREET
City/State:	PORTLAND, ME
Zip Code:	04101
Work #:	207-210-6849
Home #:	N/A
Cell #:	207-699-8069
Fax #:	207-761-8048
E-mail:	BIANCA@PORTPROPMGT.COM

BILLING (to whom invoices will be forwarded to)

Name:	PORT PROPERTY MANAGEMENT
Address:	104 GRANT STREET
City/State:	PORTLAND, ME
Zip Code:	04101
Work #:	207-761-0832
Home #:	N/A
Cell #:	N/A
Fax #:	207-761-8048
E-mail:	BIANCA@PORTPROPMGT.COM

ENGINEER

Name:	N/A
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

SURVEYOR

Name:	N/A
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ARCHITECT

Name:	N/A
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ATTORNEY

Name:	N/A
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	BIANCA GARBER
E-mail:	BIANCA@PORTPROPMGT.COM
Name:	
E-mail:	
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

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

PLAN AMENDMENTS (check applicable review)

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

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☑	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [6] x $25.00 each	$ 650
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☑	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		$

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 ($50.00 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	9661	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	9661	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)	9661	sq. ft.
Impervious Area (Total Proposed)	9661	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	9661	sq. ft.
Building Footprint (Total Proposed)	9661	sq. ft.
Building Floor Area (Total Existing)	57,966	sq. ft.
Building Floor Area (Total Proposed)	57966	sq. ft.
ZONING		
Existing	B3c	
Proposed, if applicable		
LAND USE		
Existing	RESIDENTIAL APARTMETNS	
Proposed	RESIDENTIAL APARTMENTS	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	86	
# of Residential Units (Total Proposed)	92	
# of Lots (Total Proposed)	1	
# of Affordable Housing Units (Total Proposed)	0	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	90	
# of One-Bedroom Units (Total Proposed)	2	
# of Two-Bedroom Units (Total Proposed)	0	
# of Three-Bedroom Units (Total Proposed)	0	
PARKING SPACES		
# of Parking Spaces (Total Existing)	0	
# of Parking Spaces (Total Proposed)	0	
# of Handicapped Spaces (Total Proposed)	0	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$85,000	

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:	BIANCA S. GARBER
Date:	06/19/2017

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
		Proposed grading and contours;	
		Existing structures with distances from property line;	
		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
		Preliminary infrastructure improvements;	
		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
		Exterior building elevations.	

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

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

- Continued on next page -

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

PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST

A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
2.
3. Name address, telephone number of architect

4. Proposed uses of any structures [NFPA and IBC classification]
5.
6. Square footage of all structures [total and per story]

7. Elevation of all structures

8. Proposed fire protection of all structures
   - ***As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)***

9. Hydrant locations

10. Water main[s] size and location

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

12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

Some structures may require Fire flows using annex H of NFPA 1

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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

Bradley Roland, P.E.
Water Resources Division

Date: __06/19/2017_____

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

Site Address: 37 CASCO STREET PORTLAND, ME 04101

Chart Block Lot Number: 037 C007001

Proposed Use: 92 RESIDENTIAL UNITS

Previous Use: 86 RESIDENTIAL UNITS

Existing Sanitary Flows: _____GPD

Existing Process Flows: _____GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

_____

_____

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

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

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____

Owner/Developer Name: _____

Owner/Developer Address: _____

Phone: _____ Fax: _____ E-mail: _____

Engineering Consultant Name: _____

Engineering Consultant Address: _____

Phone: _____ Fax: _____ E-mail: _____

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: _____ GPD

Peaking Factor/ Peak Times: _____

Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: _____

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

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

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

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

Peaking Factor/Peak Process Times: _____

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

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

A Guide to Holding Neighborhood Meetings
Portland, Maine

Planning and Urban Development Department
Planning Division and Planning Board

In order to improve communication between applicants and neighbors, the City of Portland requires applicants who are proposing certain types of development review projects, to hold a neighborhood meeting.

Developments requiring a neighborhood meeting

- Proposed map amendments, contract zones and zoning text amendments that would result in major development;
- Subdivisions of five or more units or lots;
- Master Development Plans; and
- Level III site plan proposals as defined in Section 14-523.

(The Land Use Code, including Article II (Planning Board) and Article V (Site Plan – which contains the neighborhood meeting requirements), are available on the City's web site at www.portlandmaine.gov/citycode/chapter014.pdf)

Timing of meeting

- **Subdivisions of 5 or more units or lots, zone changes, contract zones, zoning text amendments and Level III site plans:**
  - Preliminary Site Plan - The meeting should be held within 30 calendar days of filing the application.
  - Final Site Plan – If only a final plan is submitted, the meeting should be held within 21 calendar days of filing the application and no less than 7 calendar days before the public hearing.
- **Master Plan Development:**
  - The meeting should be held within 30 calendar days of filing the application.
  - The meeting should be held on a date no less than 7 calendar days before a public workshop or public hearing.
  - The meeting shall not be combined with any required neighborhood meeting for the Level III applications.

Location of meeting

- The meeting should be held in the evening, during the week, at a convenient location within the Portland neighborhood surrounding the proposed site. Community meeting spaces at libraries, schools or other places of assembly are recommended. Neighborhood schools are usually available for evening meetings.
- Meetings should not be held on the same day as scheduled Planning Board or City Council meetings. The City Council generally meets on the 1st and 3rd Monday of each month and the Planning Board generally meets on the 2nd and 4th Tuesday of each month; however additional meetings may be scheduled. An updated schedule may be found on the City's website: www.portlandmaine.gov

Invitation List

- Property owners within 500 feet of the proposed development (1000 feet for proposed industrial subdivisions and industrial zone changes)
- Interested citizens and neighborhood groups.

The Planning Division provides the mailing labels. We require at least 48 hours notice to generate the mailing labels and a charge of $1.00 per sheet will be payable upon receipt of the labels. An electronic version (excel or word format) of the labels can also be e-mailed upon request.

A digital copy of the notice must be provided to the Planning Office (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner, which will then be forwarded to those on the interested citizen list who receive e-mail notices.

When to Send Invitations

- Invitations must be sent **no less than 10 days (to include weekends)** prior to the neighborhood meeting.
- Notices may be sent by regular mail and do not need to be sent by certified mail.

Notice Description

A recommended invitation format is included in this packet of material.

Attendance Sheet and Meeting Minutes

- Sign-in sheet must be circulated for those in attendance.
- Applicant shall take accurate minutes of the meeting.
- The sign-in sheet and minutes shall be submitted to the Planning Division.

A public hearing will not be scheduled until the meeting minutes and sign-up sheet are submitted to the Planning Division.

A Certification form is included with this packet to be completed and signed by the applicant.

Please call the Planning Division at 874-8721 or 874-8719 if you have any questions.

Attachments

1. Neighborhood Meeting Invitation Format
2. Neighborhood Meeting Certification

EXAMPLE: Neighborhood Meeting Invitation Format

Applicant/Consultant
Letterhead

(Date)

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for a (development proposal) located at (location/number and street address).

Meeting Location: _____
Meeting Date: _____
Meeting Time: _____

(The City code requires that property owners within 500 feet (1000 feet for proposed industrial subdivisions and industrial zone changes) of the proposed development and residents on an "interested parties list", be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.)

If you have any questions, please call (telephone number of applicant or consultant).

Sincerely,

(Applicant)

Note:
Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

EXAMPLE: Neighborhood Meeting Certification

I, (applicant/consultant) hereby certify that a neighborhood meeting was held on (date) at (location) at (time).

I also certify that on (date at least ten (10) days prior to the neighborhood meeting), invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change.

2. Residents on the "interested parties" list.

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

Signed,

_____ _____ (date)

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

Att. C

(90)

12

WARRANTY DEED
CORPORATION

13962

Know all Men by these Presents,

That SAMUEL & SONS, INC., a Maine corporation with a principal place of business in Portland, Maine,
a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine in consideration of One Dollar and other valuable considerations,

paid by JOHN J. QUIRK and SALLY L. QUIRK

and whose mailing address is 117 Spurwink Road, Scarborough, Maine

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said JOHN J. QUIRK and SALLY L. QUIRK, as tenants in common, their

heirs and assigns forever,

a certain lot or parcel of land, with the buildings thereon, and equipment, furniture and fixtures therein, situated on the easterly side of Casco Street in the City of Portland, County of Cumberland and State of Maine, and numbered 33, 35, 37 on said street, and bounded and described as follows, to wit:

Beginning at a point on said easterly side of said Casco Street where a line eight and one-half (8 1/2) inches northerly of and parallel with the northerly face of the brick wall of the school house belonging to the City of Portland, produced westerly would intersect said easterly side of Casco Street; said above-described line having been established by the City of Portland and Eli Webb, April 9, 1863; thence northerly by said Casco Street sixty-seven and thirty-seven hundredths (67.37) feet to the line of the northerly face of a retaining wall along the lot under description; thence easterly at or nearly at right angles to said street and along the westerly face of retaining walls one hundred forty and seven-tenths (140.7) feet to a fence on line of land now or formerly of the B. Littlefield Estate; thence southerly by said line and fence forty-six and nine-tenths (46.9) feet to a change in direction in said line; thence continuing more southerly on a straight line to an intersection with the established dividing line between the lot under description and that of the City of Portland at a point one hundred thirty and sixty-seven hundredths (130.67) feet from said Casco Street; thence westerly by said line one hundred thirty and sixty-seven hundredths (130.67) feet to the point of beginning. Containing 9,661 square feet.

Also hereby conveying all of its right, title and interest in and to the rights of way conveyed to the Grantor's predecessor in title by Maine Savings Bank by deed dated November 20, 1964, and recorded in the Cumberland County Registry of Deeds in Book 2868, Page 391.

Being the same premises conveyed to Grantor by deed of Saul G. Chason, et al, dated September 27, 1968, and recorded in the Cumberland County Registry of Deeds in Book 3059, Page 241.

Together with all interest in all leases of apartments in the Ambassador as landlord including without limitation key and security deposits.

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said

JOHN J. QUIRK and SALLY L. QUIRK, their

heirs and assigns, to them and their use and behoof forever.

And it does COVENANT with the said Grantees, theiheirs and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances; except as aforesaid

that it has good right to sell and convey the same to the said Grantee s to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantees, their heirs and assigns forever, against the lawful claims and demands of all persons.

14

In Witness Whereof, the said SAMUEL & SONS, INC., has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Sidney Zimelman, its President, thereunto duly authorized, this 9th day of June in the year one thousand nine hundred and eighty-one.

Signed, Sealed and Delivered in presence of

SAMUEL & SONS, INC.
(CORPORATE NAME)

By .....

Its President

(CORPORATE SEAL)

State of ~~Maine~~ OHIO

County of Hamilton **ss.** June 9, 19 81

Then personally appeared the above named Sidney Zimelman, 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,

Carol C Ventura

CAROL C. VENTURA
Notary Public, State of Ohio
My Commission Expires Dec. 11, 1985

Justice of the Peace.
Notary Public.
Attorney at Law.

(NOTARIAL SEAL OHIO STATE)

JUN 12 1981
REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 11 H 44 M A.M. and recorded in
BOOK 4798 PAGE 12 Edward D. Gerrish Register

Attn: Brad Roland

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: 06/19/2017

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

Site Address: 37 CASCO STREET PORTLAND, ME 04101 Chart Block Lot Number: 037 C007001

Proposed Use: 92 RESIDENTIAL UNITS
Previous Use: 86 RESIDENTIAL UNITS
Existing Sanitary Flows: _____ GPD
Existing Process Flows: _____ GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

_____

_____

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

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

2. Please, Submit Contact Information.

City Planner's Name: Shukria Wiar Phone: 207-756-8083
Owner/Developer Name: Port Property Mgt.
Owner/Developer Address: 104 Grant St.
Phone: 207-210-6849 Fax: _____ E-mail: bianca@portpropmgt.com
Engineering Consultant Name: N/A
Engineering Consultant Address: _____
Phone: _____ Fax: _____ E-mail: _____

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

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: New Est. Gallons Per Day = 4,115 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. - 3rd page

4. Please, Submit External Grease Interceptor Calculations.

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

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

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

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

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

Peaking Factor/Peak Process Times: _____

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

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

37 CASCO STREET	HCF* of Water
Nov-17	148
17-Oct	171
17-Sep	157
17-Aug	194
17-Jul	184
17-Jun	144
17-May	140
17-Apr	128
17-Mar	172
17-Feb	144
17-Jan	145
16-Dec	150
Total Annual HCF	1,877
Total Annual Gallons**	1,403,996
Avg. GPD***	3,847
Avg. GPD/Unit (86 units)	45
New Avg. GPD (92 units)	**4,115**

* Hundred Cubic Feet

** HCF = 748 Gallons

*** Gallons Per Day

Att. E

Camden NATIONAL BANK

MARK V. STASIUM
SENIOR VICE PRESIDENT
Direct Dial: 207.699.3392
mstasium@camdennational.com

February 1, 2018

City of Portland Planning Board
Attn: Planning Division
389 Congress Street 4th Floor
Portland, ME 04101

RE: "The Ambassador" – 37 Casco Street, Portland, Maine

Dear Board Members:

I am writing to you in support of your review of the request of Ambassador LLC to add six additional residential units to 37 Casco Street in Portland. The owner has funds on deposit and reserved at Camden National Bank to complete the proposed improvements.

Please contact me at 207-699-3392 if you have additional questions.

Very Truly Yours,

Mark V. Stasium
Senior Vice President

Att. F

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

February 14, 2018

Bianca Garber
Port Property Management
104 Grant Street
Portland, ME 04101

Re: 37 Casco Street, PO
Ability to Serve with PWD Water

Dear Ms. Garber:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on February 9, 2018. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- Since the water demand at this site is not anticipated to change, the existing service line at this site may be used to provide domestic water to the building. Our records show that the property is currently served with a 4-inch domestic water service and a 4-inch fire service. If any use other than that stated in your letter of February 9, 2018 is expected, please contact the District so we can review the ability of the existing service to meet your domestic water needs.

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

Existing Site Service

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

Water System Characteristics

According to District records, there is an 8-inch diameter ductile iron water main in Casco Street and a public fire hydrant located approximately 150 feet from the site. The most recent static pressure reading was 72 psi on April 5, 2017.

Public Fire Protection

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

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

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

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

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

Sincerely,
Portland Water District

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

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

Christopher C. Branch, P.E.
Director of Public Works

Date: February 15, 2018

Re: Wastewater Capacity Authorization

Address: 37 Casco Street
Applicant: Port Property Management

Planner: Shukria Wiar

Anticipated Wastewater Flow:

Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to remain				
Residential Apartments	# Units	86	45* GPD/Unit	3870
Proposed flow				
Residential Apartments	# Units	6	45 GPD/Unit	270
			Net Change	**+ 270**
*Values based existing 12-month flow totals from PWD records				

Comments:
The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

You are reminded that the sewers you are proposing to connect into convey both sanitary and stormwater (Combined Sewer) and therefore a backflow preventer is suggested.

If the City can be of further assistance, please contact me at all 874-8840 or brad@portlandmaine.gov

Sincerely,
CITY OF PORTLAND

Bradley A. Roland, P.E.
Senior Project Engineer

CC:

Jeffrey Levine, Director, Department of Planning and Urban Development, City of Portland
Stuart O'Brien, Planning Director, Department of Planning and Urban Development, City of Portland
Barbara Barhydt, Development Review Services Mgr., Dep't. of Planning and Urban Development, City of Portland

Kathi Earley, City Engineer/Engineering Manager, Portland Department of Public Works
Keith Gray, Senior Project Engineer, Portland Department of Public Works

Nancy Gallinaro, Water Resources Manager, Portland Department of Public Works
Rachel Smith, Industrial Pretreatment Coordinator, Portland Department of Public Works
John Emerson, Wastewater Coordinator, Portland Department of Public Works

Lauren Swett, Woodard & Curran, DPW Development Review
Scott Firmin, Director of Wastewater, Portland Water District

Att. H

Port Property
MANAGEMENT

Neighborhood Meeting Certification

I, Bianca Garber, hereby certify that a neighborhood meeting was held on Tuesday, February 20, 2018 at 5:00 pm at the Portland Public Library, Main Location, Meeting Room 3

I also certify that on Thursday, February 8, 2018, invitations were mailed to all addresses on the mailing list provided by the Planning Division and all residents on the "interested parties" list provided by the Planning Division.

Sincerely,

Bianca
207-210-6849
bianca@portpropmgt.com

Port Property Management
Acquisitions & Development

Attached to this certification are:

- Copy of the invitation sent
- Sign in sheet
- Meeting minutes

Letters mailed on Thursday, Feb 8, 2018 BG

Port Property
MANAGEMENT

Dear Neighbor:

We will be hosting a neighborhood meeting to discuss the addition of 6 units to a property located at 37 Casco Street, Portland, ME 04101.

Meeting Location: Portland Public Library, Meeting Room 3, Main Library
Meeting Date: Tuesday, February 20, 2018
Meeting Time: 5:00 pm

The City of Portland code requires that property owners within 500 feet (1,000 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 207-210-6849.

Sincerely,
Bianca
207-210-6849
Port Property Management
Acquisitions & Development

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 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.

Port Property
MANAGEMENT

Minutes for the Neighborhood Meeting for the Ambassador LLC Project, 37 Casco Street

February 20, 2018 – 5:00 pm

5:00 pm one attendee - went over plans

5:30 ended meeting

104 Grant St. Portland, Maine 04101 • Phone: 207-761-0832 • Fax: 207-761-8048 • www.portpropmgt.com

Port Property
MANAGEMENT

Attendance Sheet for the Neighborhood Meeting for the Ambassador LLC Project, 37 Casco Street

February 20, 2018

1. Colette Bouchard, 18 Hanover St.
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

104 Grant St. Portland, Maine 04101 • Phone: 207-761-0832 • Fax: 207-761-8048 • www.portpropmgt.com

FOR MORTGAGE LENDER USE ONLY

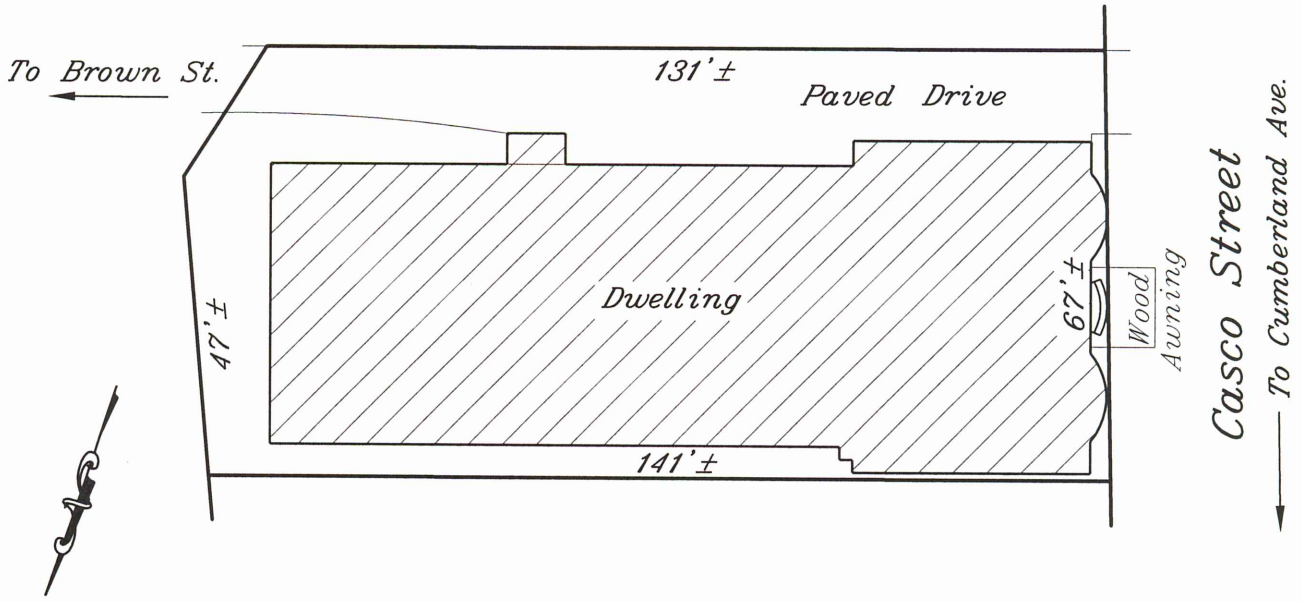
GENERAL NOTES: (1) DISTANCES SHOWN ARE TAKEN FROM PROVIDED TITLE REFERENCES SHOWN BELOW. (2) THE PURPOSE OF THIS INSPECTION IS TO RENDER AN OPINION AS FOLLOWS: A) DWELLING AND ACCESSORY STRUCTURE'S COMPLIANCE WITH RESPECT TO MUNICIPAL ZONING SETBACKS, AND B) FLOOD ZONE DETERMINATION BY HORIZONTAL SCALING ON BELOW REFERENCED FEMA MAP. (3) THIS INSPECTION EXCEPTS OUT ALL TECHNICAL STANDARDS CURRENTLY SET FORTH BY STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS. (4) THIS INSPECTION IS TO BE USED ONLY BY THE BELOW LISTED LENDER AND IS NOT TO BE USED BY ANOTHER PARTY FOR BOUNDARY LINE LOCATIONS OR LAND TITLE OPINIONS. (5) TITLE OR OWNERSHIP NOT DETERMINED. (6) A BOUNDARY SURVEY SHOULD BE PERFORMED TO RENDER A PROFESSIONAL OPINION PERTAINING TO BOUNDARY LINE LOCATIONS, EASEMENTS, RIGHTS OF WAY, ENCUMBRANCES, ENCROACHMENTS, AND/OR CONFLICTS WITH ABUTTER'S DEEDS. (7) LOCATION/EXISTENCE OF WETLANDS NOT DETERMINED UNLESS SHOWN ON A RECORDED SUBDIVISION PLAN. (8) THIS OFFICE DOES NOT GRANT AUTHORIZATION TO ANY THIRD PARTY FOR USE OF THIS INSPECTION IN ANY BOUNDARY LINE EVALUATION FOR PERMITTING/PLANNING/APPROVALS. (9) THIS OFFICE ACCEPTS NO LIABILITY AND/OR RESPONSIBILITY FOR THE IMPROPER USE OF THIS MORTGAGE LOAN INSPECTION.

REV. 08/01/2013

THIS SKETCH IS NOT TO BE USED FOR CONSTRUCTION PURPOSES. IMPROVEMENTS SHOWN ARE APPROXIMATE.

ADDRESS: 37 Casco Street
Portland, Maine

INSP. DATE: 4/6/2016
SCALE: 1" = 30'



See CCRD Book 2868, Page 391 for possible right of way. TPB

SEE PROVIDED TITLE REFERENCES FOR APPURTENANCES, IF ANY.

APPLICANT: Ambassador, LLC FILE#: 21629443
OWNER: Estate of John Quirk CLIENT#: 5955-16
LENDER:
REQ. PARTY: Baxter Title Company

TITLE REFERENCES: COUNTY: Cumberland
DEED BOOK: 4798 PAGE: 12
PLAN BOOK: PAGE: LOT:

MUNICIPAL REFERENCE:
MAP: 37 BLOCK: D LOT: 7

THE DWELLING DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA PER FEMA COMMUNITY MAP No. 230051 PANEL: 0013B ZONE: C DATE: 7/17/1986

THE DWELLING WAS [redacted] IN COMPLIANCE WITH MUNICIPAL ZONING SETBACK REQUIREMENTS AT THE TIME OF CONSTRUCTION.

Nadeau Land Surveys

Professional Land Surveyors
Certified Floodplain Managers

STATE OF MAINE
JAMES D. NADEAU
2124
PROFESSIONAL LAND SURVEYOR

4-7-16

918 BRIGHTON AVE. PH.(207)878-7870
PORTLAND, ME. 04102 F.(207)878-7871

THIS INSPECTION IS VALID ONLY WITH A SURVEYOR'S SEAL AND IS NULL & VOID 90 DAYS AFTER INSPECTION DATE.

THIS IS NOT A BOUNDARY SURVEY - NOT FOR RECORDING

Nadeau Land Surveys

Professional Land Surveyors
Certified Floodplain Managers

PAYMENT DUE FOR SERVICES RENDERED

INVOICE DATE: 3/30/2016
JOB NUMBER: 21629443
YOUR FILE #: 5955-16

REQUESTING PARTY: Baxter Title Company
LENDER:

APPLICANT: Ambassador, LLC
OWNER: Estate of John Quirk

LOCUS ADDRESS: 37 Casco Street
CITY/TOWN: Portland
RTP:

SERVICES RENDERED:

(X) MORTGAGE LOAN INSPECTION WITH FLOOD CERTIFICATION
( ) FLOOD CERTIFICATION ONLY
( ) OTHER _____

TOTAL AMOUNT DUE: $595.00

Thank you for your patronage!!

918 Brighton Avenue
Portland, Maine 04102

www.nadeaulandsurveys.com

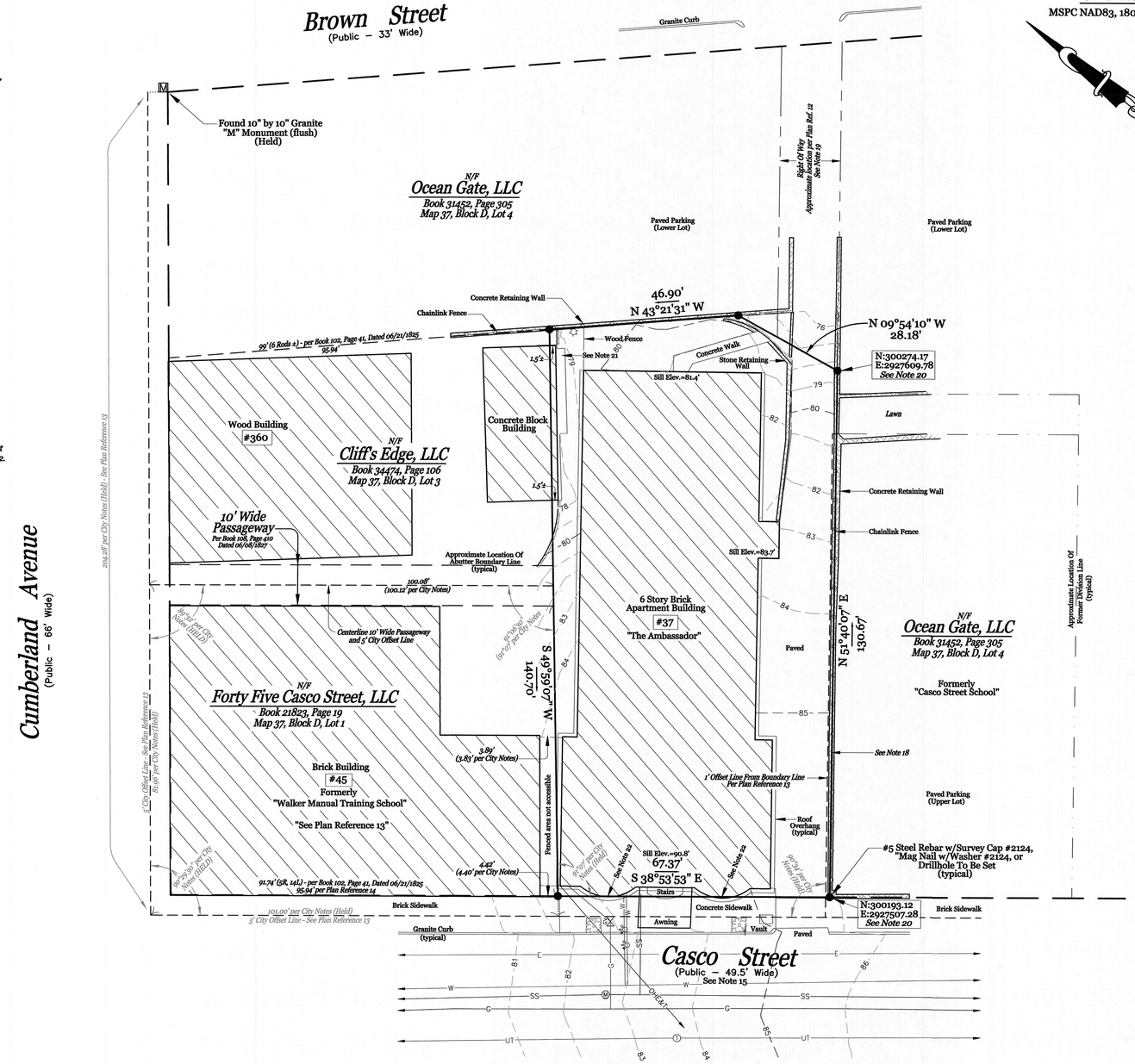
Phone (207) 878 7870
Fax (207) 878-7871

Plan References:

1. Plan depicting the division of the estate of the late Hon. Benjamin Larrabee, recorded May 6, 1812 in CCRD Book 65, Page 25. Another version of said plan is on file in City Engineer's Vault as Book 2, Page 13, prepared by Anson & Cummings.
2. "Atlas Of Cumberland Co. Maine", published 1871 by F.W. Beers & Co.
3. "City Of Portland Revaluation Plans", dated 1882 by W. A. Goodwin, City Eng., recorded October 24, 1884 in CCRD Plan Book 5, Page 37.
4. "Portland Maine", dated October 1886, corrected August 1894, published by the Sanborn Map and Publishing Co.
5. "Insurance Maps, Portland, Maine", dated 1909, last revised 1951 by Sanborn Map Company.
6. "Richards Standard Atlas Of The City Of Portland Including The City Of South Portland, Maine", dated 1914 published by Richards Map Company.
7. "Plan Of Property In Portland Maine Made For Maine Savings Bank And Fred N. Dow Estate", dated November 24, 1948 by H. I. & E. C. Jordan, Civil Engineers, recorded December 1, 1948 in CCRD Plan Book 34, Page 17.
8. "Standard Boundary Survey, New England Telephone And Telegraph Company", dated January 1993, revised January 26, 1993 by T. F. McDonald Land Surveyors, recorded June 7, 1994 in CCRD Plan Book 194, Page 177.
9. "Standard Boundary Survey Of Fleet Bank Properties For Fleet Financial Group, Inc.", dated April 8, 1996, last revised September 17, 1996 by Sebago Technics, recorded September 24, 1996 in CCRD Plan Book 196, Page 329.
10. "ALTA/ACSM Land Title Survey, Maine Savings Plaza Made For C. B. Richard Ellis", dated 1973, last revised October 23, 2002 by Owen Haskell, Inc., recorded January 8, 2003 in CCRD Plan Book 203, Page 10.
11. "ALTA/ACSM Land Title Survey On Casco Street, Shepley Street & Oak Street, Portland, Maine Made For C. B. Richard Ellis", dated October 21, 2002, last revised November 19, 2002 by Owen Haskell, Inc., recorded January 8, 2003 in CCRD Plan Book 203, Pages 11 & 12.
12. "ALTA/ACSM Land Title Survey On Casco Street, Shepley Street & Oak Street, Portland, Maine Made For Record Owner 511 Plaza Limited Partnership", dated October 21, 2002, last revised December 12, 2012 by Owen Haskell, Inc., recorded January 2, 2013 in CCRD Plan Book 213, Pages 1 - 3.
13. Plan depicting a survey of "Walker Manual Training School" and "Casco Street School" along Casco Street. Survey was made September 1923. City File No. 2.
14. "City Of Portland, City Property". Plan is on file in City Engineer's Vault, City File No. 15.

Legend:

- Manhole
- Communications Manhole
- Utility Pole w/Guy Wire
- Water Shutoff
- Water Valve
- Gas Valve
- Water Line
- Gas Line
- Sewer Line
- Overhead Utility Line
- Underground Electric Line
- Communications Line
- Sign
- (123.45') Record only
- Street Tree
- Light Pole



Grid North

MSPC NAD83, 1802 (West Zone)

General Notes:

1. This plan is intended to show the location and boundaries of the subject property, not to depict limits or extent of fee title ownership. An opinion of title should be rendered by a title attorney.
2. This office reserves the right to be held harmless by all 3rd party claims.
3. This survey does not purport to reflect any of the following:
   a. easements other than those that are visible or specifically stated in the referenced documents.
   b. building setback compliance or restrictive covenants.
   c. zoning or other land use regulations.
   d. the location of any underground utilities or structures.
4. This office reserves the right to be held harmless for unknown or unobtainable private records which could affect the results of this survey.
5. Reference is made to "Letter Of Agreement" dated September 22, 2017 between Nadeau Land Surveys and the below listed client(s), which shall be considered an integral part of this survey.
6. N/F is an abbreviation for Now or Formerly.
7. All deeds referenced on this plan are recorded at the Cumberland County Registry of Deeds (CCRD).
8. This office does not accept any liability for any errors which may exist in the plans listed in the Plan References hereon.
9. Locus Parcel is shown on the City of Portland Assessor's Map 37, Block D, as Lot 7, and is listed as 37 Casco Street.
10. Area of Locus Parcel is 9,774 square feet (0.22 acre).
11. The apparent right of way lines depicted on this plan are based on the Plan References listed hereon, monumentation found in the field, and City of Portland Engineering Street Notes.
12. The Locus Parcel does not scale in a Special Flood Hazard Area per FEMA Flood Insurance Rate Map Community-Panel Number 230051 0013B, index dated December 8, 1998. The parcel scales in Zone C.
13. All building corner offsets have been measured from brick building corners.
14. Call 1-888-DIGSAFE at least three business days before performing ANY excavation.
15. Per City Records, Casco Street was first known as Orange Street and laid out May 22, 1824, then discontinued November 1, 1824. The town way was re-petitioned and laid out October 19, 1825 as 3 rods wide (49.5') and described in Session Records Vol. 5, Page 238 during the April 1826 term.
16. Coordinates, bearings and north orientation shown hereon are based upon Grid North, Maine State Plane Coordinates System, North American Datum of 1983, West Zone and checked to the City of Portland Control Network. Contours and elevations shown hereon are based upon National Geodetic Vertical Datum of 1929 per City of Portland. Project Benchmark is the top of granite "M" monument at the westerly corner of Forest Avenue and Cumberland Avenue with an elevation of 80.57' (NGVD29). Referenced horizontal datum was established with GPS static observations taken on site with Topcon HiPer II base and rover units.
17. The underground utilities shown have been located from field survey information and existing drawings. This office make no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The underground utilities shown are approximate location and are located as accurately as possible from information available. This office has not physically located the underground utilities.
18. Per CCRD Book 902, Page 418, dated October 7, 1912, the southeasterly sideline was "established by the City of Portland and Eli Webb, April 9, 1863" and as depicted per Plan Reference 13. This line appears to have been a boundary line agreement between abutters, but no record of the apparent agreement was found in the registry of deeds by this office.
19. See CCRD Book 2868, Page 391, dated November 20, 1964, for a right of way from Maine Savings Bank to Saul G. Chason and Dorothy F. Chason which was in effect until November 15, 1997. This office recommends that a title attorney review status, and rights, title, and interest of this right of way.
20. Spot grades are for engineering purposes only, and shall not be used as project benchmarks. The coordinates depicted on our plan are for municipal approval purposes only and should not be used for construction layout. This office assumes no liability and/or responsibility if used for construction purposes.
21. Portions of the concrete block building and roof overhang on land N/F Cliff's Edge, LLC appear to encroach onto Locus Parcel.
22. Portions of the locus brick building, stairs, awning and roof overhangs appear to encroach into the Casco Street right of way.

Surveyor's Statement:

Nadeau Land Surveys hereby states exclusively to the client listed hereon, 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 Maine Board of Licensure For Professional Land Surveyors Standards of Practice.

This plan is not valid without the signature and stamp of the below listed Professional Land Surveyor who prepared this plan as it may contain unauthorized alterations unknown to this office.

Nadeau Land Surveys

James D. Nadeau, P.L.S. #2124 (agent) Date:

STATE OF MAINE · JAMES D. NADEAU · 2124 · PROFESSIONAL LAND SURVEYOR

Locus Deed Reference:

Shirley F. Quirk - Personal Representative of the
Estates of John J. Quirk & Sally L. Quirk
To
Ambassador, LLC
dated May 18, 2016 and recorded May 19, 2016 at the Cumberland County Registry of Deeds in Book 33121, Page 297.

Graphic Scale:

0' 5' 10' 15' 30' 45' 60'

Plan Depicting The Results Of A Boundary Survey & Topography Survey Made For

Ambassador, LLC

Northeasterly Sideline Of Casco Street

Portland, Maine

PREPARED BY:

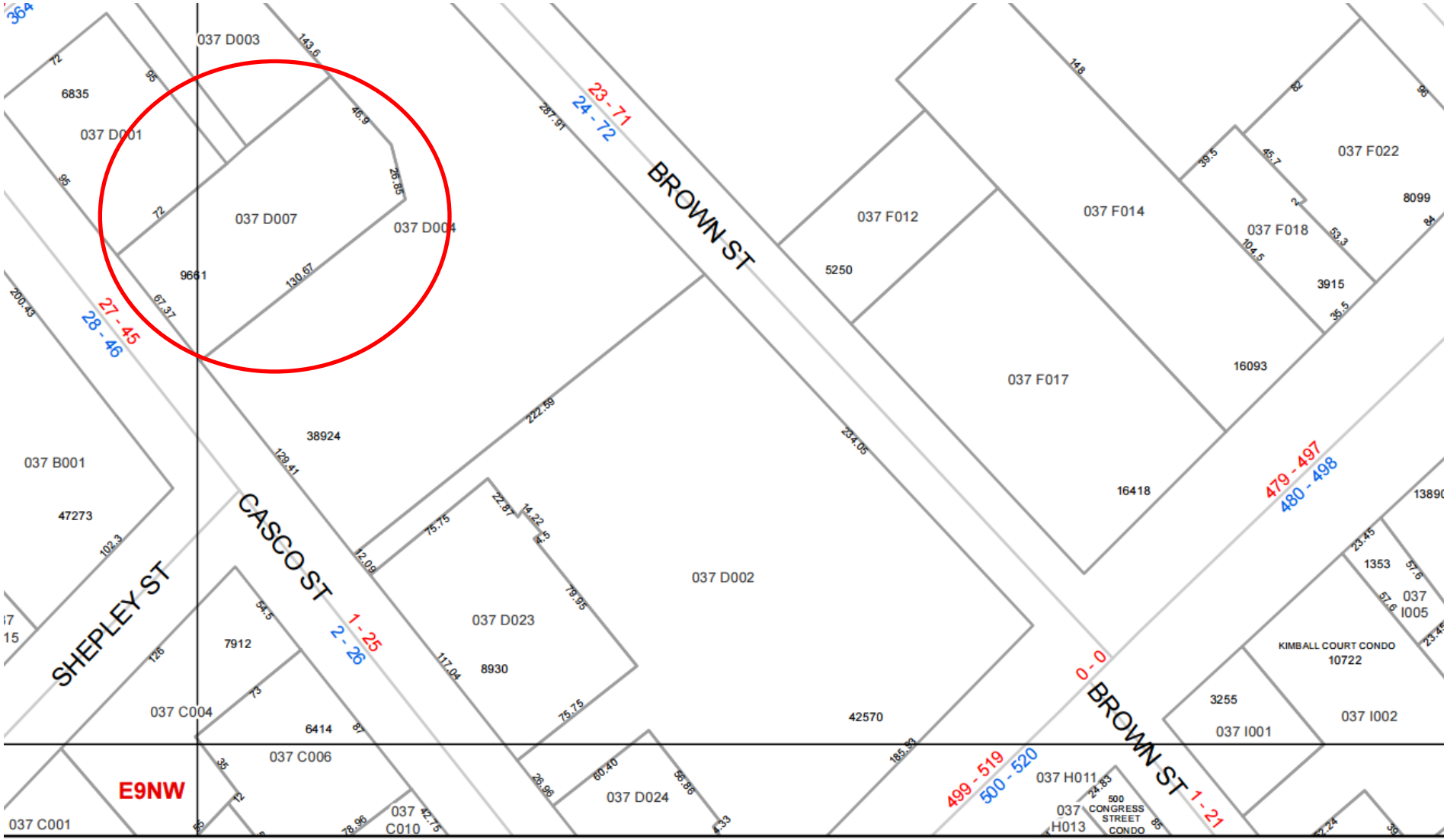
Nadeau Land Surveys

918 BRIGHTON AVENUE
PORTLAND, ME 04102

Professional Land Surveyors
Certified Floodplain Managers

PH. (207) 878-7870
FAX (207) 878-7871

RECORD OWNER: Ambassador, LLC, 104 Grant Street, Portland, Maine 04101	DRAWN BY: MLC	PLAN DATE: 12/8/2017	
	CHECKED BY: JDN/TPB	SURVEY DATE: November 2017	
	INSTR.: Topcon DS-205AC & Topcon HiPer II GPS	SCALE: 1" = 15'	
FIELD BOOK: FB 407 & Topcon Tesla	JOB No: 217178IBT	SHEET No: 1 of 1	



April 2016, fy 2017

Tax Map Index, http://www.portlandassessors.com/taxmaps.htm

↑ CUMBERLAND AVENUE ↑

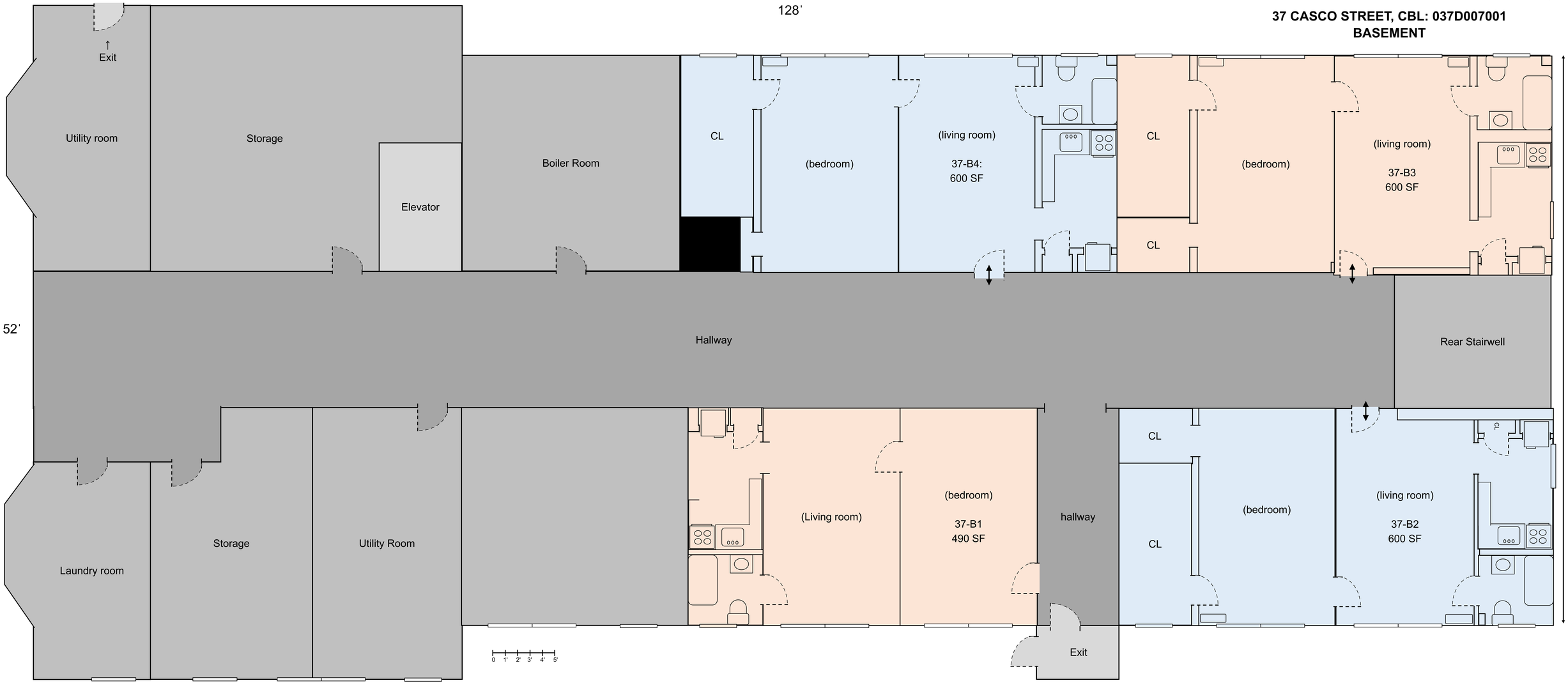
128'

37 CASCO STREET, CBL: 037D007001
BASEMENT

↑ CASCO STREET ↓

52'

44'



↓ CONGRESS STREET ↓

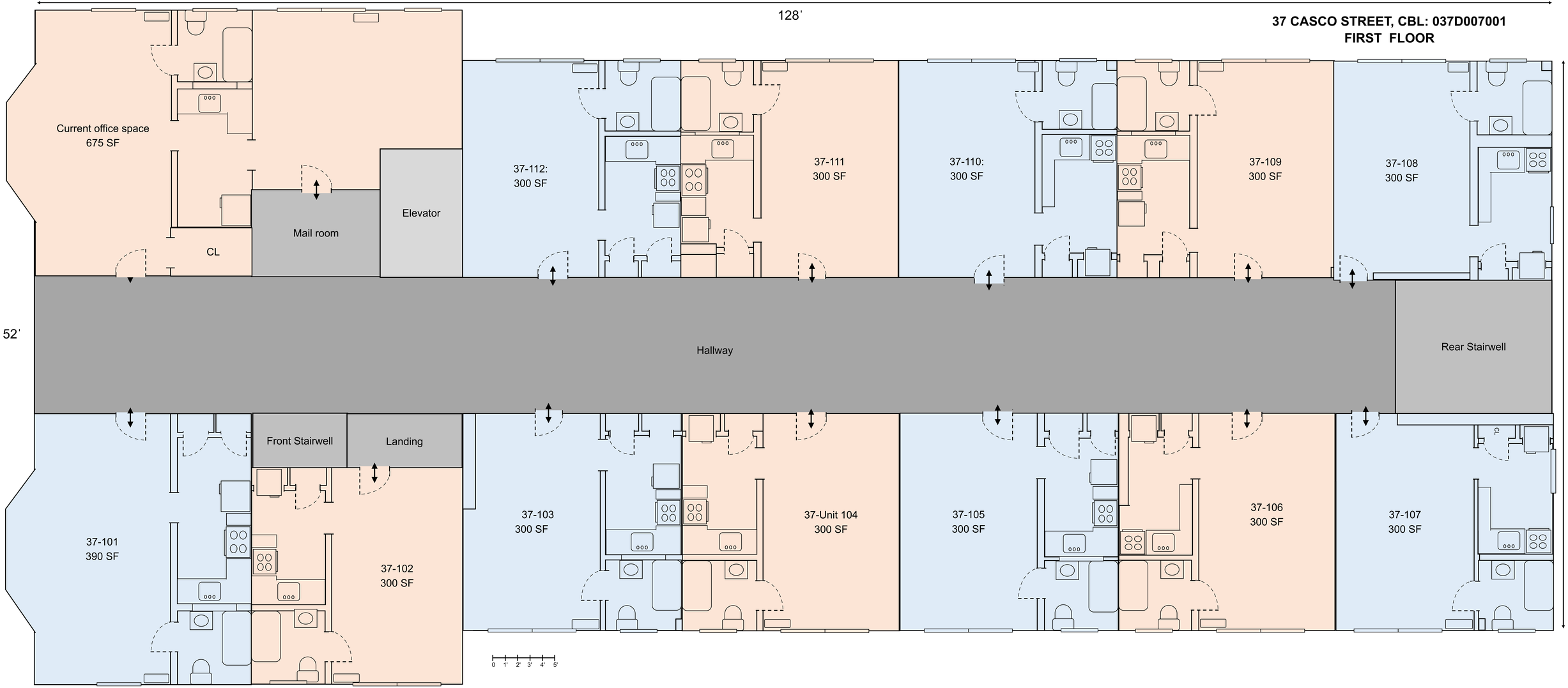
↑ CUMBERLAND AVENUE ↑

128'

37 CASCO STREET, CBL: 037D007001
FIRST FLOOR

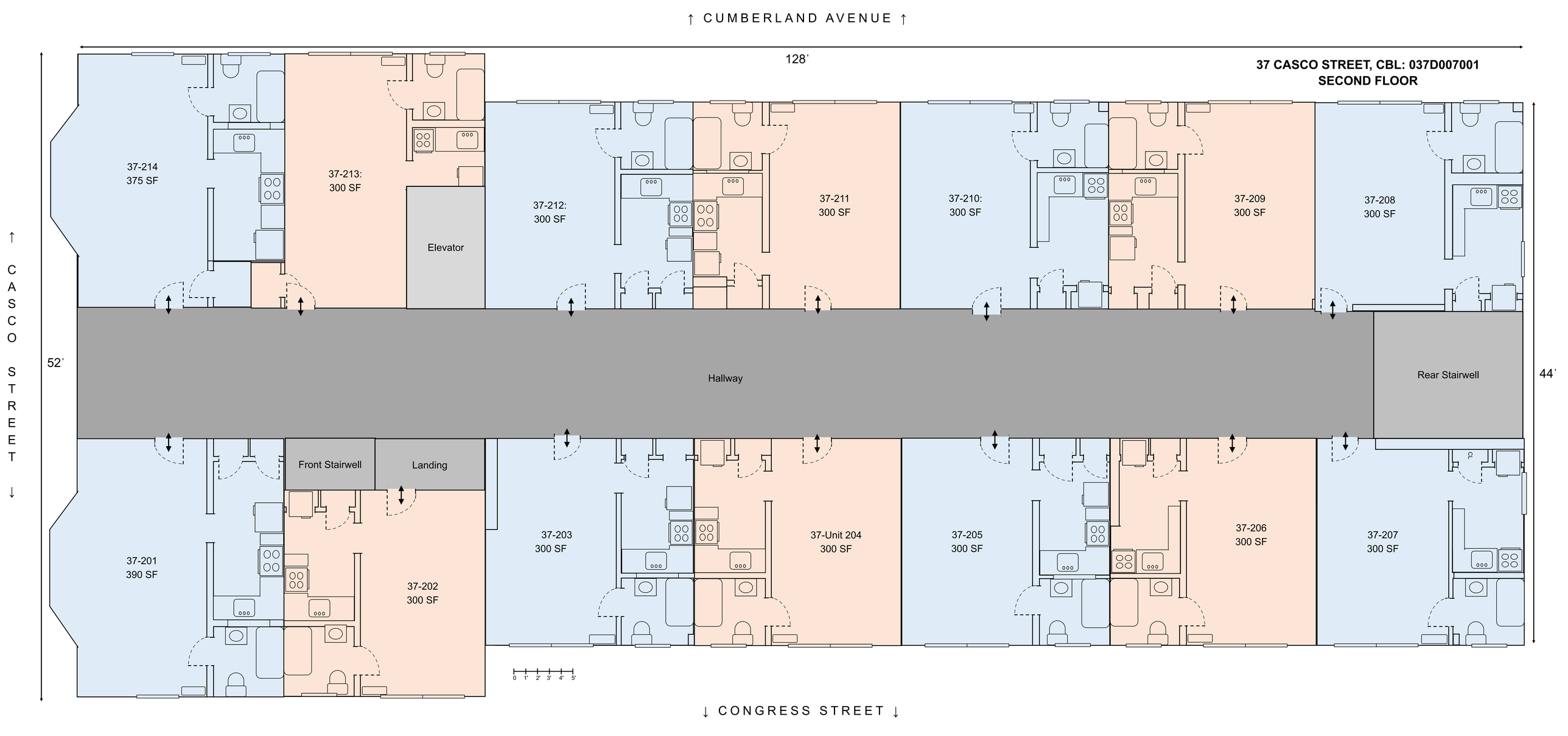
↑ CASCO STREET ↓

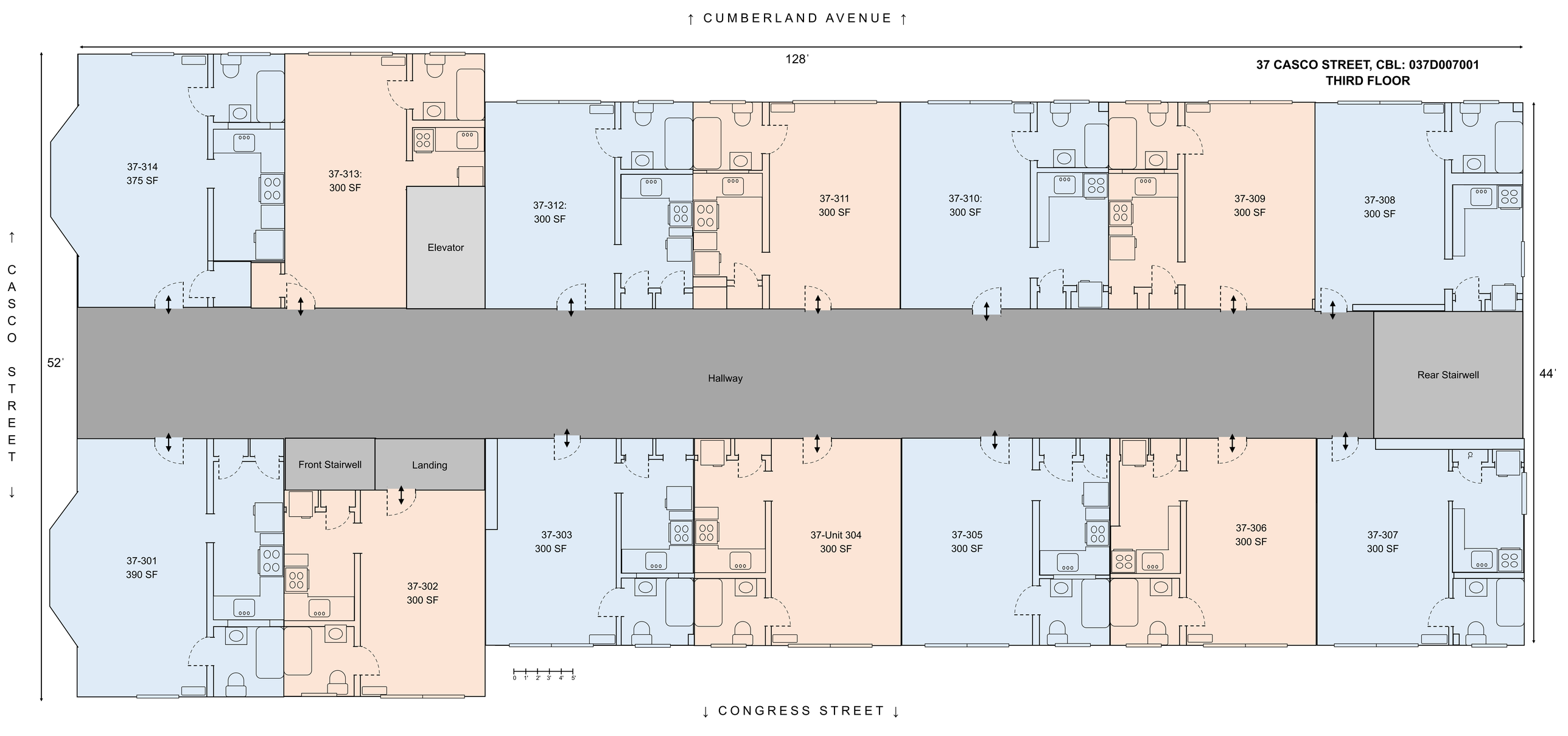
52'

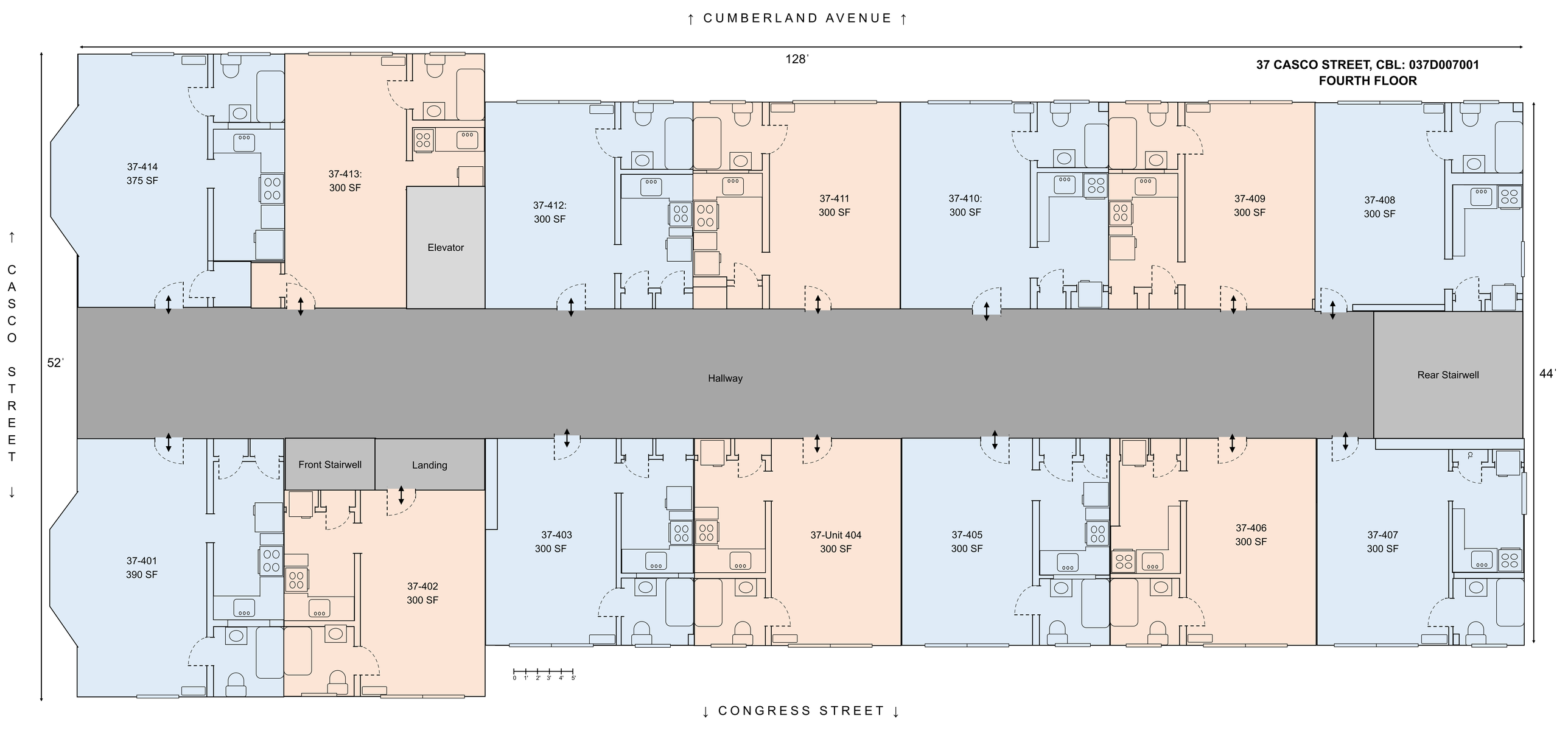


44'

↓ CONGRESS STREET ↓


↑ CUMBERLAND AVENUE ↑
128'
37 CASCO STREET, CBL: 037D007001
SECOND FLOOR
↑ CASCO STREET ↓
52'
44'
37-214
375 SF
37-213:
300 SF
Elevator
37-212:
300 SF
37-211
300 SF
37-210:
300 SF
37-209
300 SF
37-208
300 SF
Hallway
Rear Stairwell
Front Stairwell
Landing
37-201
390 SF
37-202
300 SF
37-203
300 SF
37-Unit 204
300 SF
37-205
300 SF
37-206
300 SF
37-207
300 SF
0 1' 2' 3' 4' 5'
↓ CONGRESS STREET ↓


↑ CUMBERLAND AVENUE ↑
128'
37 CASCO STREET, CBL: 037D007001
THIRD FLOOR
↑ CASCO STREET ↓
52'
44'
37-314
375 SF
37-313:
300 SF
Elevator
37-312:
300 SF
37-311
300 SF
37-310:
300 SF
37-309
300 SF
37-308
300 SF
Hallway
Rear Stairwell
Front Stairwell
Landing
37-301
390 SF
37-302
300 SF
37-303
300 SF
37-Unit 304
300 SF
37-305
300 SF
37-306
300 SF
37-307
300 SF
0 1' 2' 3' 4' 5'
↓ CONGRESS STREET ↓


↑ CUMBERLAND AVENUE ↑
128'
37 CASCO STREET, CBL: 037D007001
FOURTH FLOOR
↑ CASCO STREET ↓
52'
44'
37-414
375 SF
37-413:
300 SF
Elevator
37-412:
300 SF
37-411
300 SF
37-410:
300 SF
37-409
300 SF
37-408
300 SF
Hallway
Rear Stairwell
Front Stairwell
Landing
37-401
390 SF
37-402
300 SF
37-403
300 SF
37-Unit 404
300 SF
37-405
300 SF
37-406
300 SF
37-407
300 SF
0 1' 2' 3' 4' 5'
↓ CONGRESS STREET ↓

↑ CUMBERLAND AVENUE ↑

128'

37 CASCO STREET, CBL: 037D007001
FIFTH FLOOR

↑ CASCO STREET ↓

52'

44'

37-514
375 SF

37-513:
300 SF

Elevator

37-512:
300 SF

37-511
300 SF

37-510:
300 SF

37-509
300 SF

37-508
300 SF

Hallway

Rear Stairwell

Front Stairwell

Landing

37-501
390 SF

37-502
300 SF

37-503
300 SF

37-Unit 504
300 SF

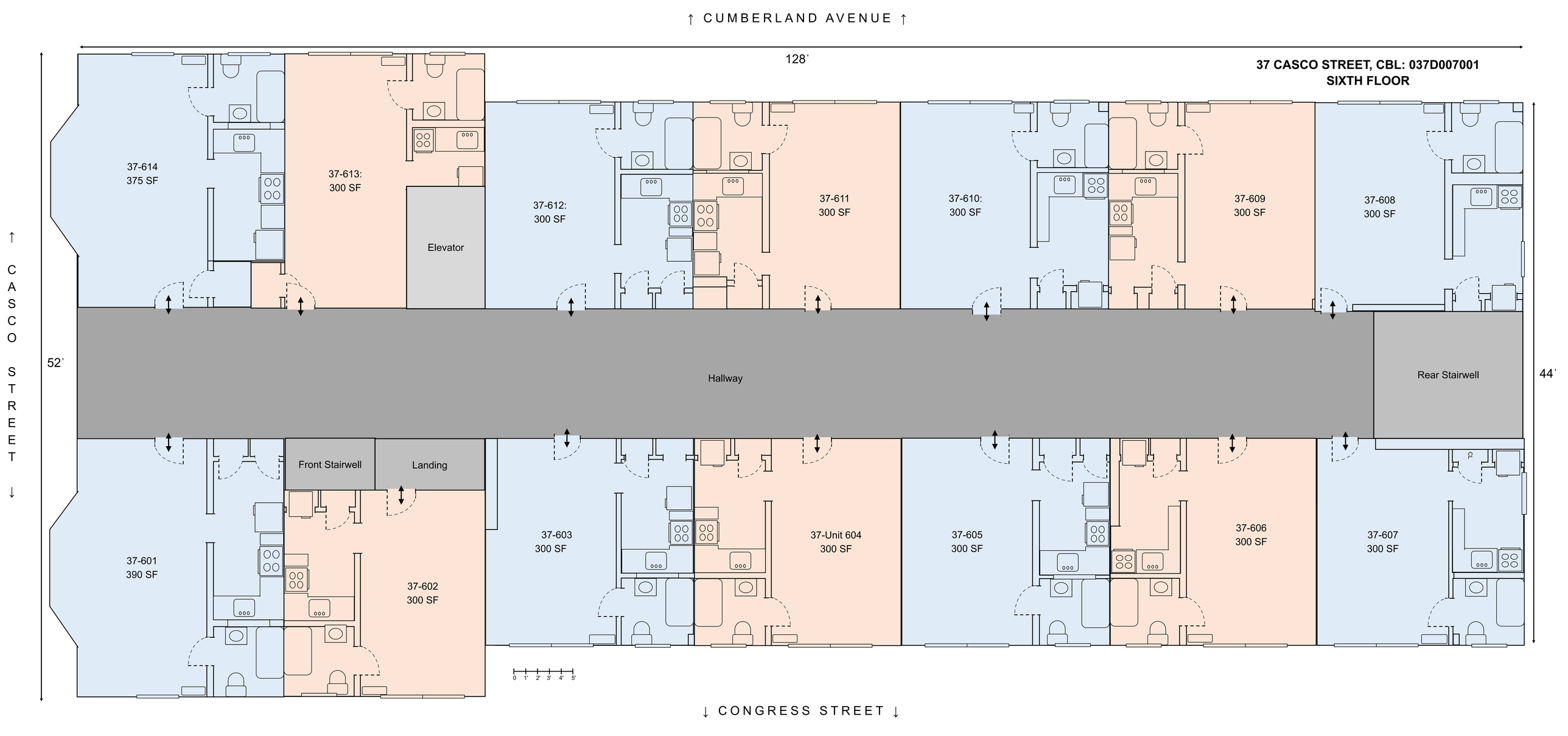
37-505
300 SF

37-506
300 SF

37-507
300 SF

0 1' 2' 3' 4' 5'

↓ CONGRESS STREET ↓


↑ CUMBERLAND AVENUE ↑
128'
37 CASCO STREET, CBL: 037D007001
SIXTH FLOOR
↑ CASCO STREET ↓
52'
44'
37-614
375 SF
37-613:
300 SF
Elevator
37-612:
300 SF
37-611
300 SF
37-610:
300 SF
37-609
300 SF
37-608
300 SF
Hallway
Rear Stairwell
Front Stairwell
Landing
37-601
390 SF
37-602
300 SF
37-603
300 SF
37-Unit 604
300 SF
37-605
300 SF
37-606
300 SF
37-607
300 SF
0 1' 2' 3' 4' 5'
↓ CONGRESS STREET ↓

↑ CUMBERLAND AVENUE ↑
128'
37 CASCO STREET, CBL: 037D007001
BASEMENT
↑ CASCO STREET ↓
52'
44'
↑
Exit
Utility room
LAUNDRY ROOM
Elevator
Boiler Room
CL
37-B7:
280 SF
37-B6:
300 SF
37-B5:
300 SF
37-B4:
300 SF
Hallway
Rear Stairwell
CL
37-B
CL
(bedroom)
Utility room
(Living room)
(bedroom)
37-B1:
490 SF
hallway
37-B2:
300 SF
37-B3:
300 SF
CL
Exit
0 1' 2' 3' 4' 5'
↓ CONGRESS STREET ↓

↑ CUMBERLAND AVENUE ↑

128'

37 CASCO STREET, CBL: 037D007001
FIRST FLOOR

↑ CASCO STREET ↓

52'

44'

37-114
300 SF

CL

37-113
300 SF

Elevator

37-112:
300 SF

37-111
300 SF

37-110:
300 SF

37-109
300 SF

37-108
300 SF

Hallway

Rear Stairwell

Front Stairwell

Landing

37-101
390 SF

37-102
300 SF

37-103
300 SF

37-Unit 104
6th floor, 300 SF

37-105
300 SF

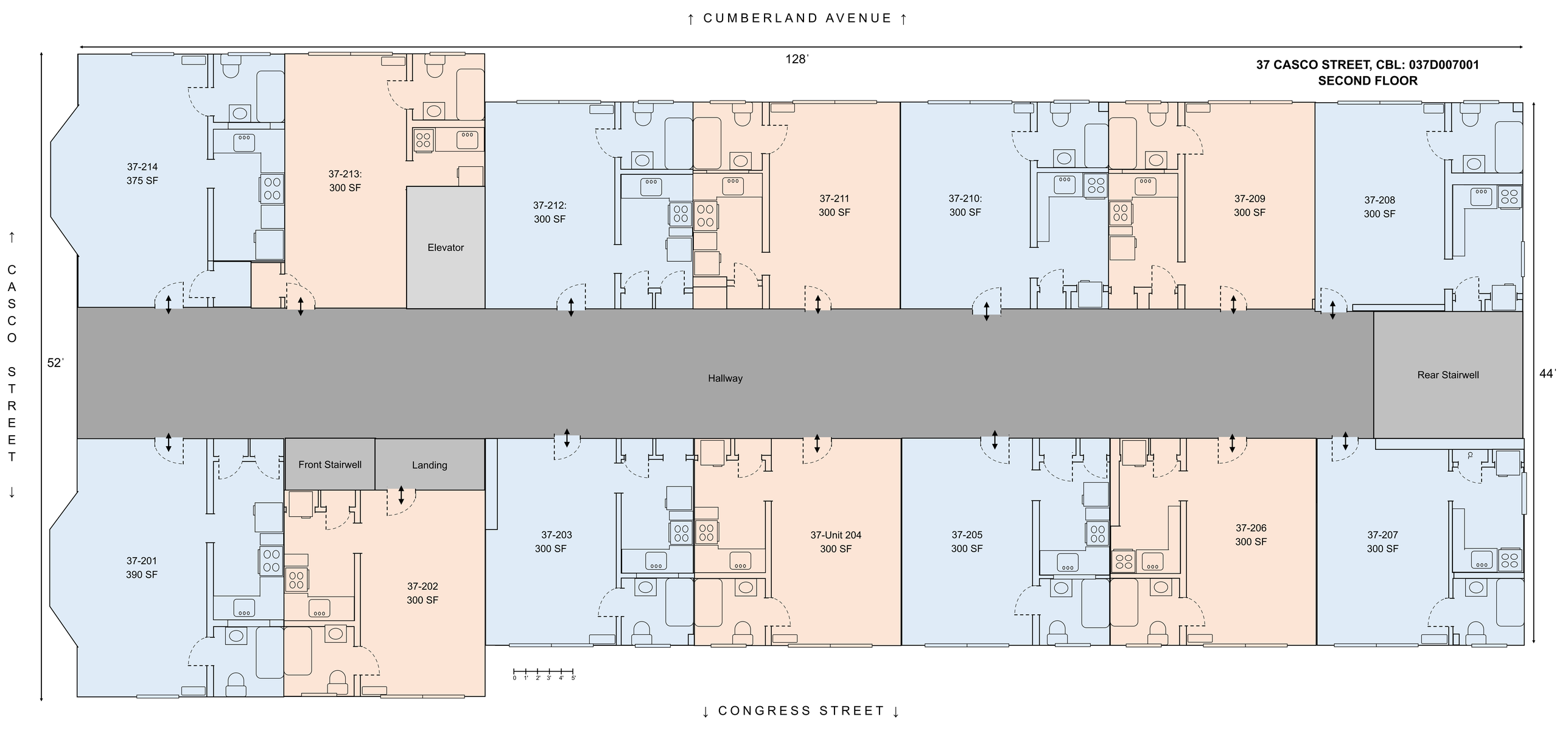
37-106
300 SF

37-107
300 SF

CL

0 1' 2' 3' 4' 5'

↓ CONGRESS STREET ↓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128'
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SECOND FLOOR
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52'
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300 SF
37-203
300 SF
37-Unit 204
300 SF
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300 SF
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37-207
300 SF
0 1' 2' 3' 4' 5'
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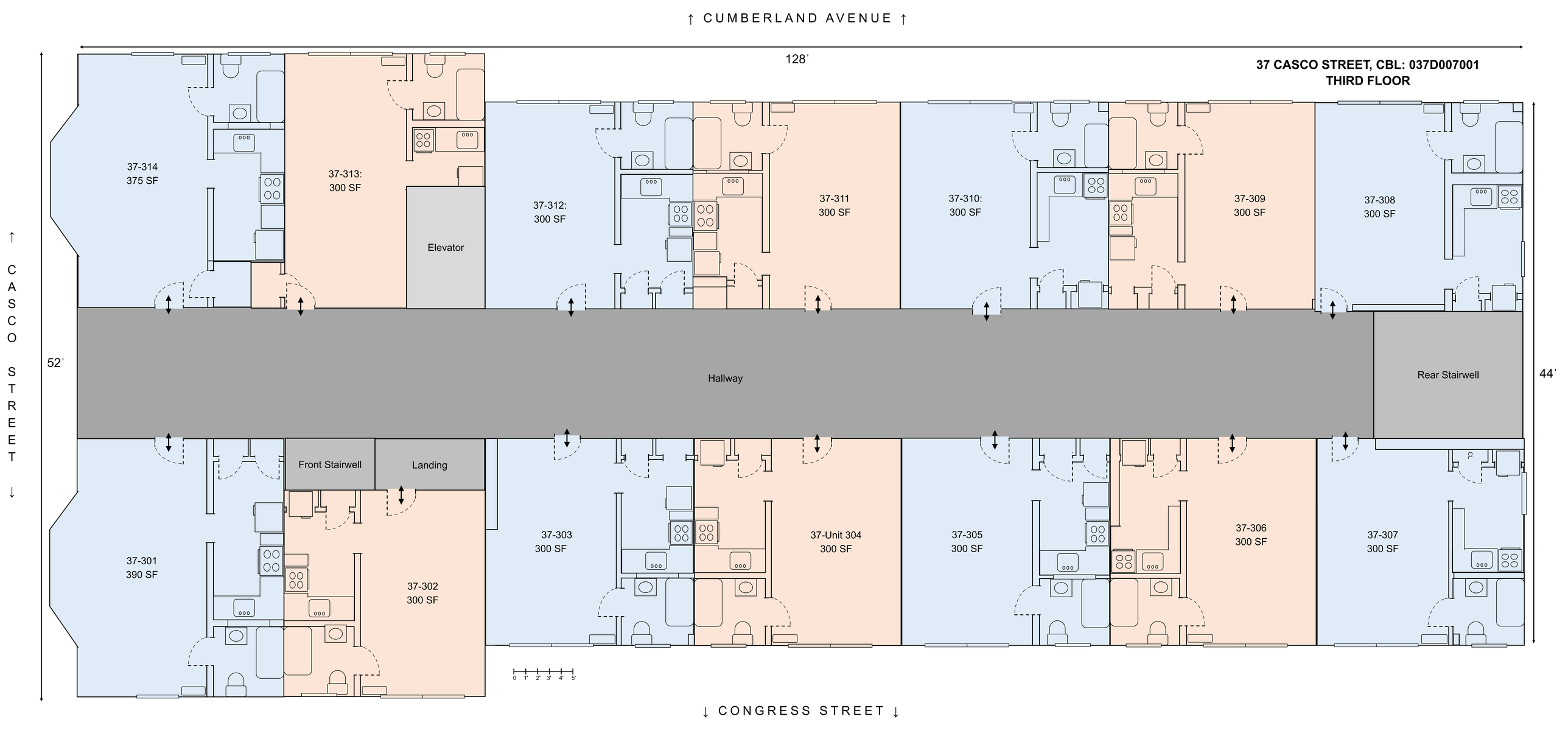
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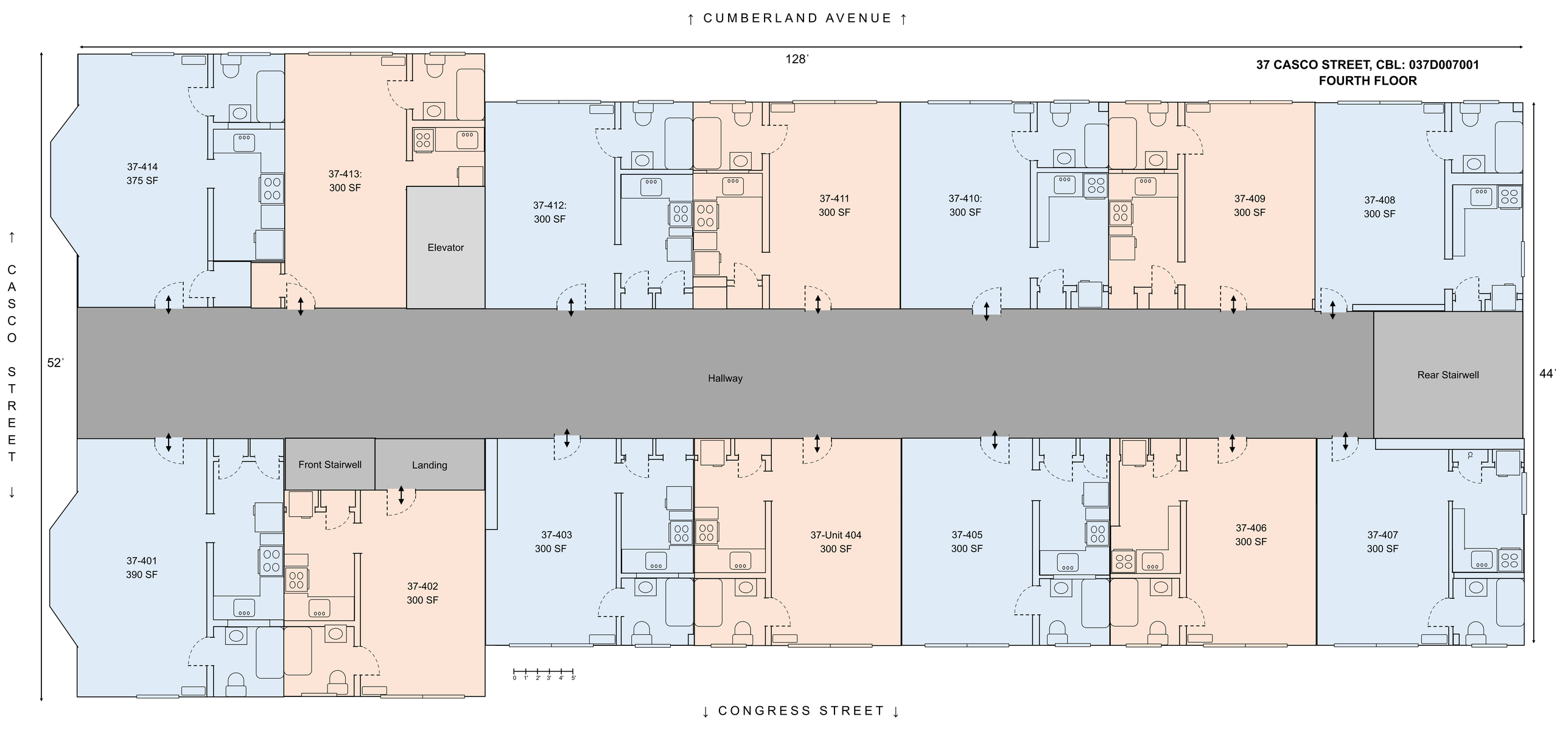
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↑ CASCO STREET ↓
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FIFTH FLOOR

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Elevator

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300 SF

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37-509
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37-508
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Rear Stairwell

Front Stairwell

Landing

37-501
390 SF

37-502
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37-503
300 SF

37-Unit 504
300 SF

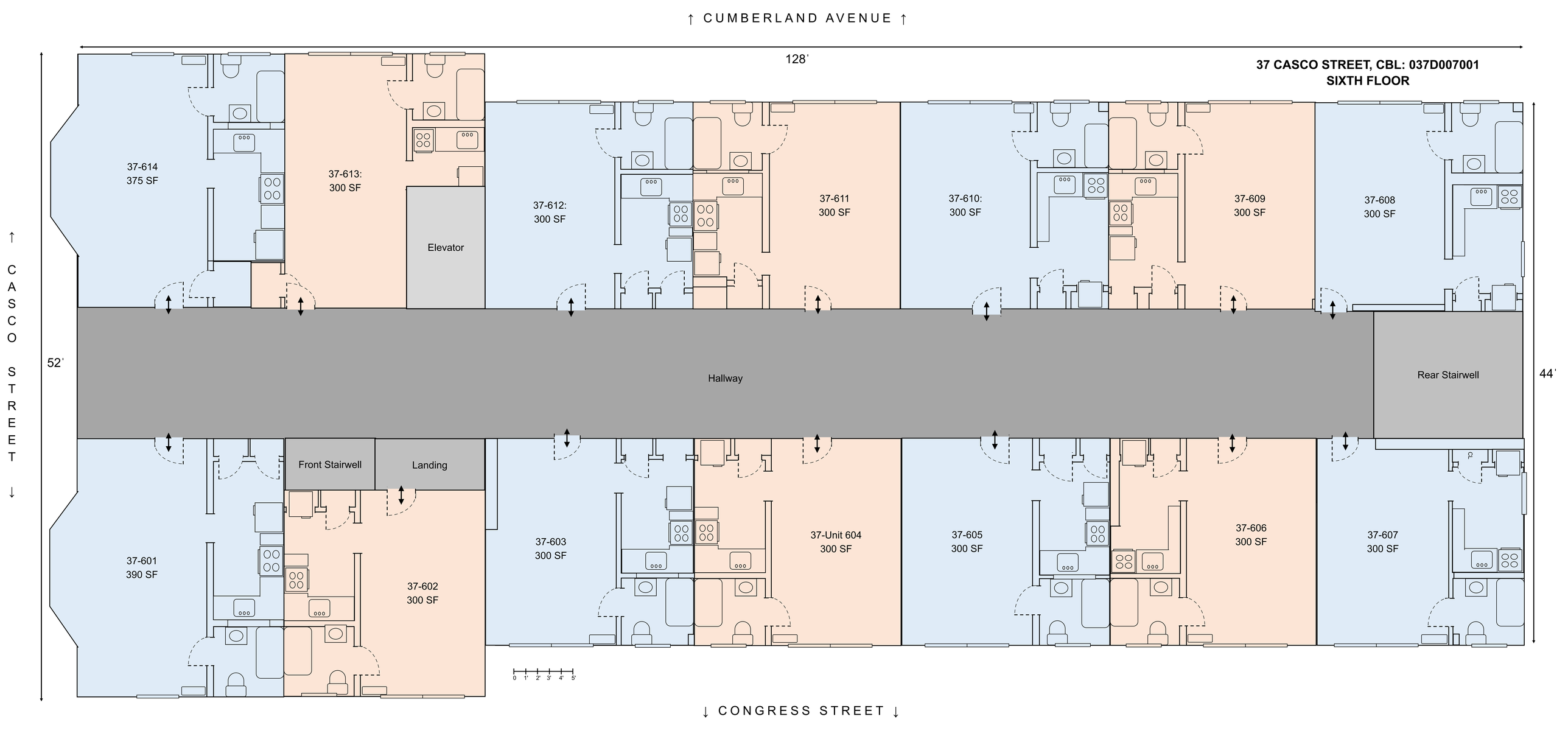
37-505
300 SF

37-506
300 SF

37-507
300 SF

0 1' 2' 3' 4' 5'

↓ CONGRESS STREET ↓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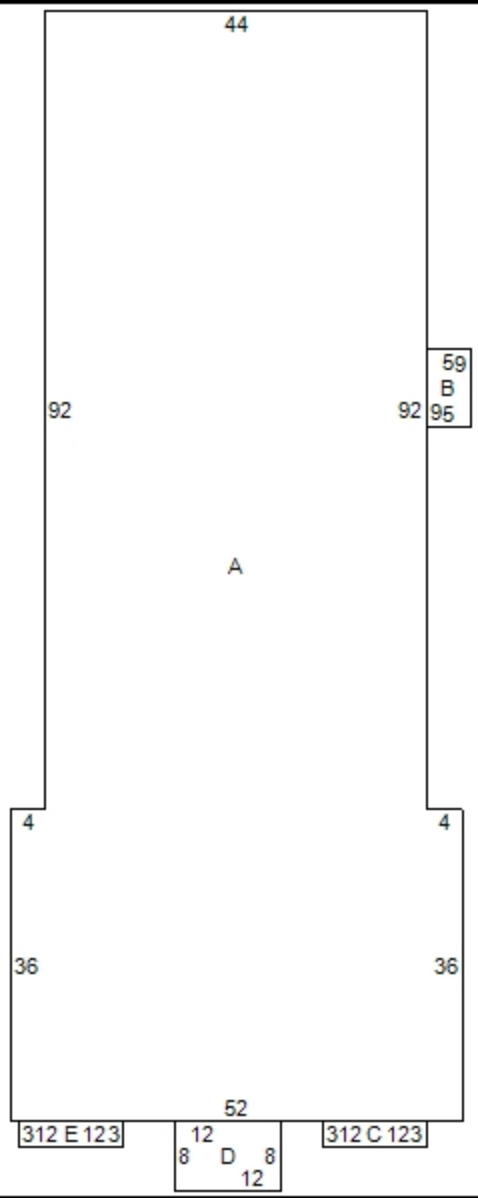
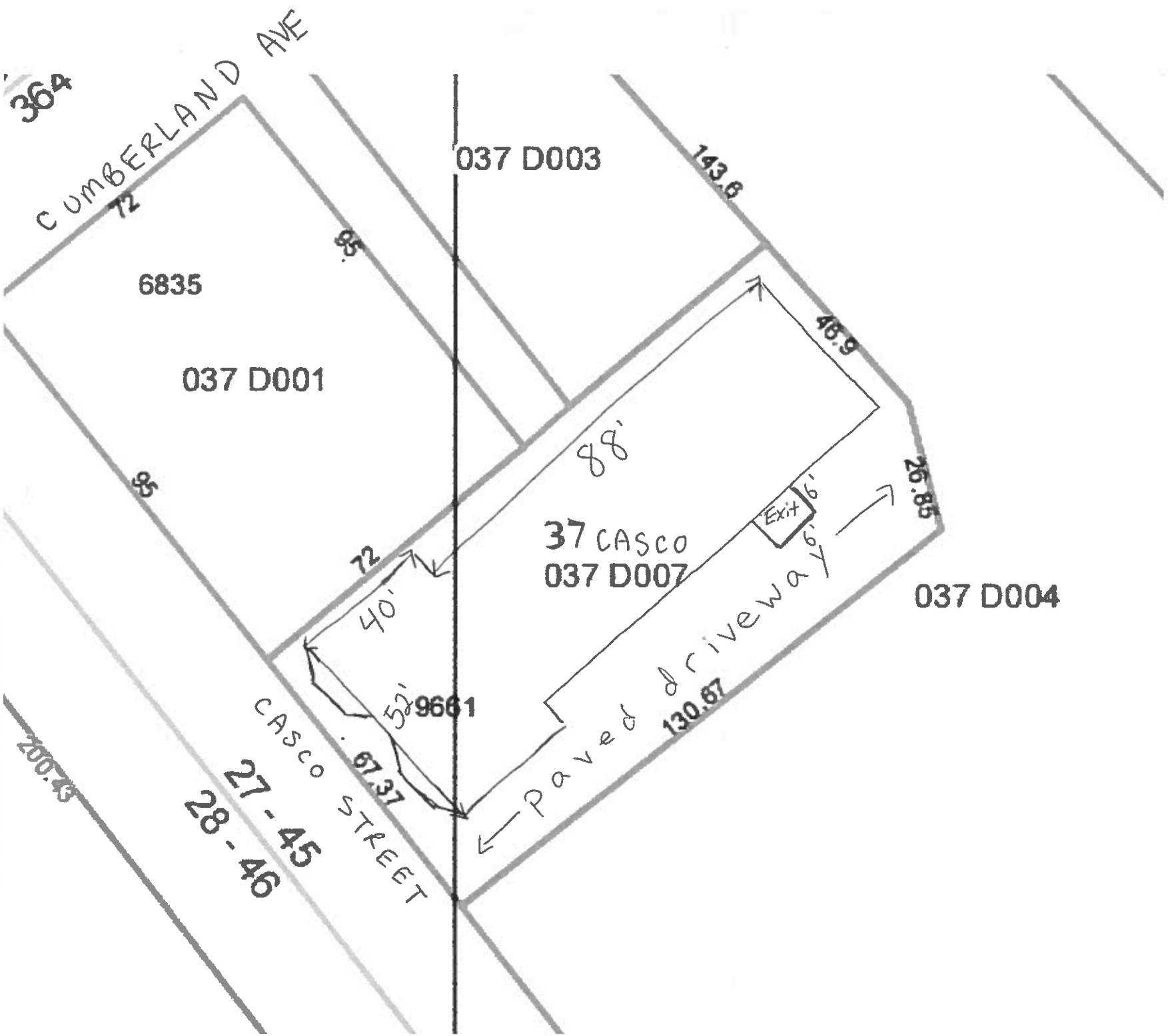
300 SF
Elevator
37-612:
300 SF
37-611
300 SF
37-610:
300 SF
37-609
300 SF
37-608
300 SF
Hallway
Rear Stairwell
Front Stairwell
Landing
37-601
390 SF
37-602
300 SF
37-603
300 SF
37-Unit 604
300 SF
37-605
300 SF
37-606
300 SF
37-607
300 SF
0 1' 2' 3' 4' 5'
↓ CONGRESS STREET ↓



ID	Code	Description	Area
A	VB6	A100	5920
B	VP1	A101	45
C	VB6	A102	36
D	VC1	A103	96
E	VB6	A104	36


364
CUMBERLAND AVE
037 D003
143.6
72
95
6835
037 D001
46.9
88'
95
26.85
Exit
6'
6'
37 CASCO
037 D007
72
037 D004
40'
Paved driveway
52'
9661
130.67
67.37
CASCO STREET
200.43
27 - 45
28 - 46

Plan Reference:

"Plan Depicting The Results Of A Boundary Survey & Topography Survey Made For Ambassador, LLC, Northeasterly Sideline Of Casco Street, Portland, Maine", dated December 8, 2017 by Nadeau Land Surveys, Professional Land Surveyors, Portland, Maine.

Legend:

- Manhole
- Communications Manhole
- Utility Pole w/Guy Wire
- Water Shutoff
- Water Valve
- Gas Valve
- Water Line
- Gas Line
- Sewer Line
- Overhead Utility Line
- Underground Electric Line
- Communications Line
- Sign
- (123.45') Record only
- Street Tree
- Light Pole

Approved By The City Of Portland Planning Board:

Name: _____ Date: _____

Surveyor's Statement:

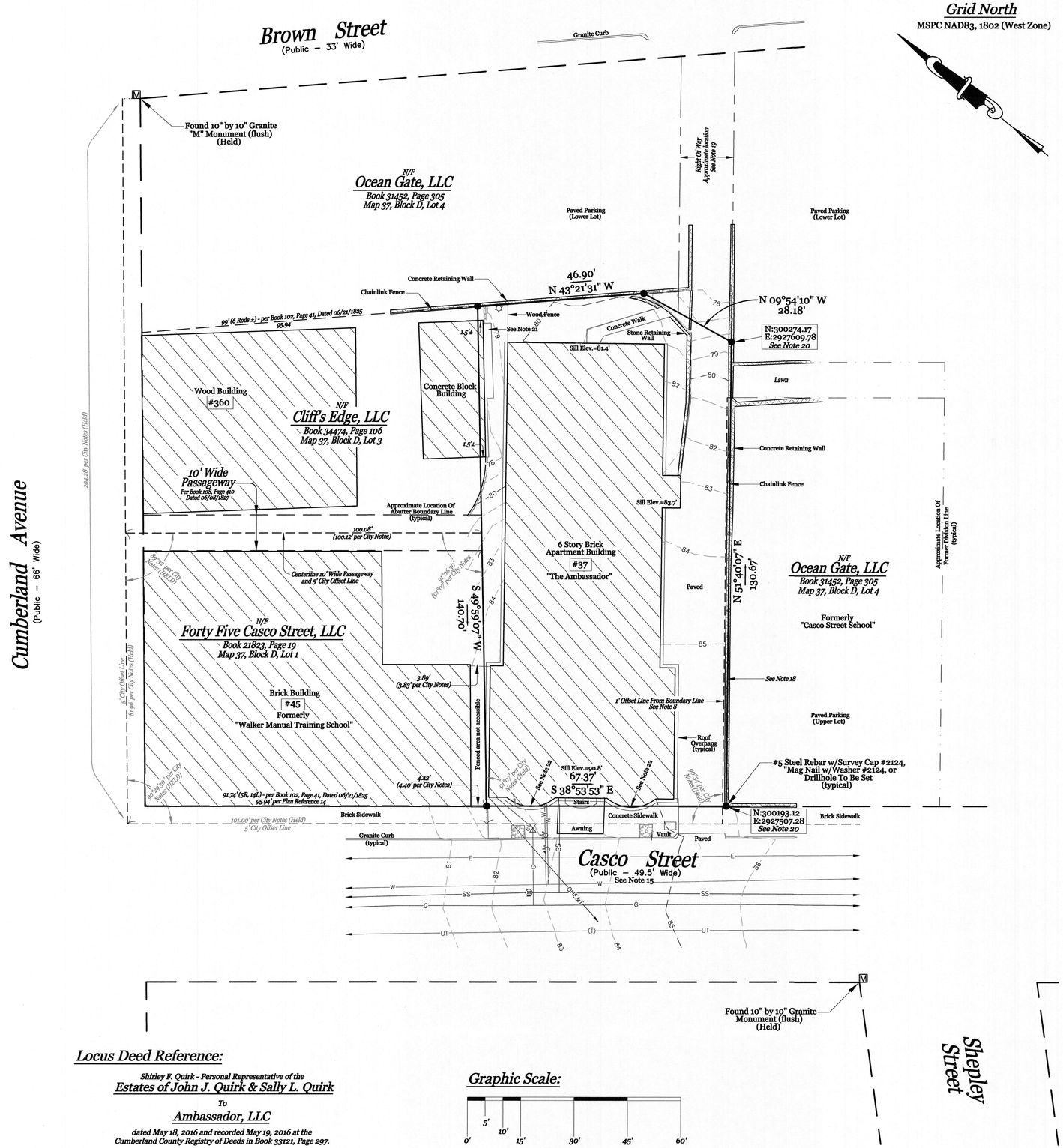
Nadeau Land Surveys hereby states exclusively to the client listed hereon, that this plan is based on, and the result of, an on the ground field survey and that to the best of our knowledge, information, and belief, it conforms to the Maine Board of Licensure For Professional Land Surveyors Standards of Practice.

This plan is not valid without the signature and stamp of the below listed Professional Land Surveyor who prepared this plan as it may contain unauthorized alterations unknown to this office.

Nadeau Land Surveys

James D. Nadeau, P.L.S. #2124 (agent) Date: 12-19-17

STATE OF MAINE · JAMES D. NADEAU · 2124 · PROFESSIONAL LAND SURVEYOR



Grid North

MSPC NAD83, 1802 (West Zone)

General Notes:

1. *This plan is intended to show the location and boundaries of the subject property, not to depict limits or extent of fee title ownership. An opinion of title should be rendered by a title attorney.*
2. *This office reserves the right to be held harmless by all 3rd party claims.*
3. *This survey does not purport to reflect any of the following:*
   a. *easements other than those that are visible or specifically stated in the referenced documents.*
   b. *building setback compliance or restrictive covenants.*
   c. *zoning or other land use regulations.*
   d. *the location of any underground utilities or structures.*
4. *This office reserves the right to be held harmless for unknown or unobtainable private records which could affect the results of this survey.*
5. *Reference is made to "Letter Of Agreement" dated September 22, 2017 between Nadeau Land Surveys and the below listed client(s), which shall be considered an integral part of this survey.*
6. *N/F is an abbreviation for Now or Formerly.*
7. *All deeds referenced on this plan are recorded at the Cumberland County Registry of Deeds (CCRD).*
8. *See the Plan Reference listed hereon for source of boundary information.*
9. *Locus Parcel is shown on the City of Portland Assessor's Map 37, Block D, as Lot 7, and is listed as 37 Casco Street.*
10. *Area of Locus Parcel is 9,774 square feet (0.22 acre).*
11. *The apparent right of way lines depicted on this plan are based on the Plan References listed hereon, monumentation found in the field, and City of Portland Engineering Street Notes.*
12. *The Locus Parcel does not scale in a Special Flood Hazard Area per FEMA Flood Insurance Rate Map Community-Panel Number 230051 0013B, index dated December 8, 1998. The parcel scales in Zone C.*
13. *All building corner offsets have been measured from brick building corners.*
14. *Call 1-888-DIGSAFE at least three business days before performing ANY excavation.*
15. *Per City Records, Casco Street was first known as Orange Street and laid out May 22, 1824, then discontinued November 1, 1824. The town way was re-petitioned and laid out October 19, 1825 as 3 rods wide (49.5') and described in Session Records Vol. 5, Page 238 during the April 1826 term.*
16. *Coordinates, bearings and north orientation shown hereon are based upon Grid North, Maine State Plane Coordinates System, North American Datum of 1983, West Zone and checked to the City of Portland Control Network. Contours and elevations shown hereon are based upon National Geodetic Vertical Datum of 1929 per City of Portland. Project Benchmark is the top of granite "M" monument at the westerly corner of Forest Avenue and Cumberland Avenue with an elevation of 80.57' (NGVD29). Referenced horizontal datum was established with GPS static observations taken on site with Topcon HiPer II base and rover units.*
17. *The underground utilities shown have been located from field survey information and existing drawings. This office make no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The underground utilities shown are approximate location and are located as accurately as possible from information available. This office has not physically located the underground utilities.*
18. *Per CCRD Book 902, Page 418, dated October 7, 1912, the southeasterly sideline was "established by the City of Portland and Eli Webb, April 9, 1863" and as depicted per Plan Reference 13. This line appears to have been a boundary line agreement between abutters, but no record of the apparent agreement was found in the registry of deeds by this office.*
19. *See CCRD Book 2868, Page 391, dated November 20, 1964, for a right of way from Maine Savings Bank to Saul G. Chason and Dorothy F. Chason which was in effect until November 15, 1997. This office recommends that a title attorney review status, and rights, title, and interest of this right of way.*
20. *Spot grades are for engineering purposes only, and shall not be used as project benchmarks. The coordinates depicted on our plan are for municipal approval purposes only and should not be used for construction layout. This office assumes no liability and/or responsibility if used for construction purposes.*
21. *Portions of the concrete block building and roof overhang on land N/F Cliff's Edge, LLC appear to encroach onto Locus Parcel.*
22. *Portions of the locus brick building, stairs, awning and roof overhangs appear to encroach into the Casco Street right of way.*

Locus Deed Reference:

Shirley F. Quirk - Personal Representative of the
Estates of John J. Quirk & Sally L. Quirk
To
Ambassador, LLC
dated May 18, 2016 and recorded May 19, 2016 at the Cumberland County Registry of Deeds in Book 33121, Page 297.

Graphic Scale:

0' 5' 10' 15' 30' 45' 60'

Subdivision Plat
Made For
Ambassador, LLC
Northeasterly Sideline Of Casco Street
Portland, Maine

PREPARED BY:

Nadeau Land Surveys

918 BRIGHTON AVENUE
PORTLAND, ME 04102
Professional Land Surveyors
Certified Floodplain Managers
PH. (207) 878-7870
FAX (207) 878-7871

RECORD OWNER: Ambassador, LLC, 104 Grant Street, Portland, Maine 04101	DRAWN BY: MLC	PLAN DATE:	12/12/2017
	CHECKED BY: JDN/TPB	SURVEY DATE:	November 2017
	INSTR.: Topcon DS-205AC & Topcon HiPer II GPS	SCALE:	1" = 15'
FIELD BOOK: FB 407 & Topcon Tesla	JOB No: 21717815UB	SHEET No:	1 of 1

PLANNING BOARD REPORT
PORTLAND, MAINE

502 Deering Center (502 Stevens Avenue)
Recording Plat Amendment
2016-290
Denis Lachman, Applicant

Submitted to Portland Planning Board Public Hearing Date: February 27, 2018	Prepared by: Matthew Grooms, Christian Roadman Date: February 21, 2018

I. INTRODUCTION

Developer Denis Lachman's mixed-use infill development at 502 Stevens Avenue (immediately east of Lincoln Middle School at the intersection with Hartley Street) requires a recording plat amendment. The project was approved by the Planning Board on March 28, 2017 as a 6-unit residential project with ground floor commercial space. The project will now include 7 residential units, one of which is a ground floor live/work space, and two ground floor commercial spaces.

The proposed plat amendment allows the project to meet federal fair housing requirements while maintaining its previously approved building footprint. On February 13, 2018 the Planning Board recommended adoption of a text amendment to the B-1 and B-1b Neighborhood Business zones spurred in part by this project. That text amendment establishes residential uses as a permitted ground-floor use under set circumstances where active commercial street frontages are maintained, and confirms the established higher residential density for mixed-use projects.

Figure 1: 502 Stevens Avenue Site Location

Other details about the development at 502 Stevens Avenue remain as approved. The development includes a 7,767 sf, three-story mixed-use building, associated pocket park, and 10 surface parking spaces located to the rear of the building. The site is accessed from Stevens Avenue and is within the B-1b zone. The Planning Board reviewed the project for compliance with site plan and subdivision standards, but has not approved the proposed plat amendment.

Noticing: 168 notices were sent to property owners within 500 feet of the site. A legal ad ran on February 19 and 20, 2018 prior to this public hearing. No public comments have been received by the Planning Office.
Applicant: Denis Lachman
Consultant: Don Dostie, Four Points Associates

II. PROJECT DATA

Existing Zoning	Neighborhood Business B-1b
Proposed Development Program	7 Residential Units (Including 1 Live/Work Space), 2 Commercial Spaces
Parcel Size	9,562 sf.
Building Footprint	2,557 sf.
Parking Spaces (on site)	10
Parking Spaces (off-site)	2
Bicycle Parking Spaces	10
Estimated Cost of Project	$1,046,000

III. BACKGROUND

In December of 2017 planning staff learned that two previously approved and partially constructed projects, including 502 Stevens Avenue, did not comply with federal and state fair housing regulations. These require that all residential buildings constructed after 1991 with four or more residential units are required to provide at least one accessible unit. Site conditions and standards of the B-1b district, particularly restrictions placed on ground-floor residential units, made financially feasible mixed-use projects difficult to implement at the scale permitted and in compliance with fair housing standards.

Figure 2: 502 Stevens Avenue

In response to this identified concern, the City proposed a text amendment to the B-1b zone. This amendment establishes residential uses as a permitted ground-floor use under set circumstances where active commercial street frontages are maintained, and confirms permissible residential density for mixed-use projects. At its Public Hearing on February 13, 2018, the Planning Board recommended approval of the proposed text amendment. It will next be considered at the City Council's meeting on March 5, 2018.

IIII. ZONING ANALYSIS

If the B-1b zoning text amendment recommended for approval by the Planning Board is adopted by City Council, the proposed plat amendment will meet zoning requirements.

V. SUBDIVISION

The Planning Board report for the project's original site plan/subdivision review is attached. The past analysis found the subdivision in compliance with the subdivision standards subject to conditions. The project met all conditions of approval. The addition of one unit is in conformance with all subdivision standards.

VI. PROPOSED MOTIONS

SUBDIVISION

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board reports for the public hearings on March 28, 2017 and February 27, 2018 for application 2016-290 relevant to the subdivision regulations; and the testimony presented at the planning board hearings, the Planning Board finds that the plan [is/is not] in conformance with the subdivision standards of the land use code, subject to the following condition of approval, which must be met prior to the signing of the plat:

1. The recording plat can be released for recording only after the City Council adopts the B-1 and B-1b text amendments recommended by the Planning Board at its February 20, 2018 public hearing.

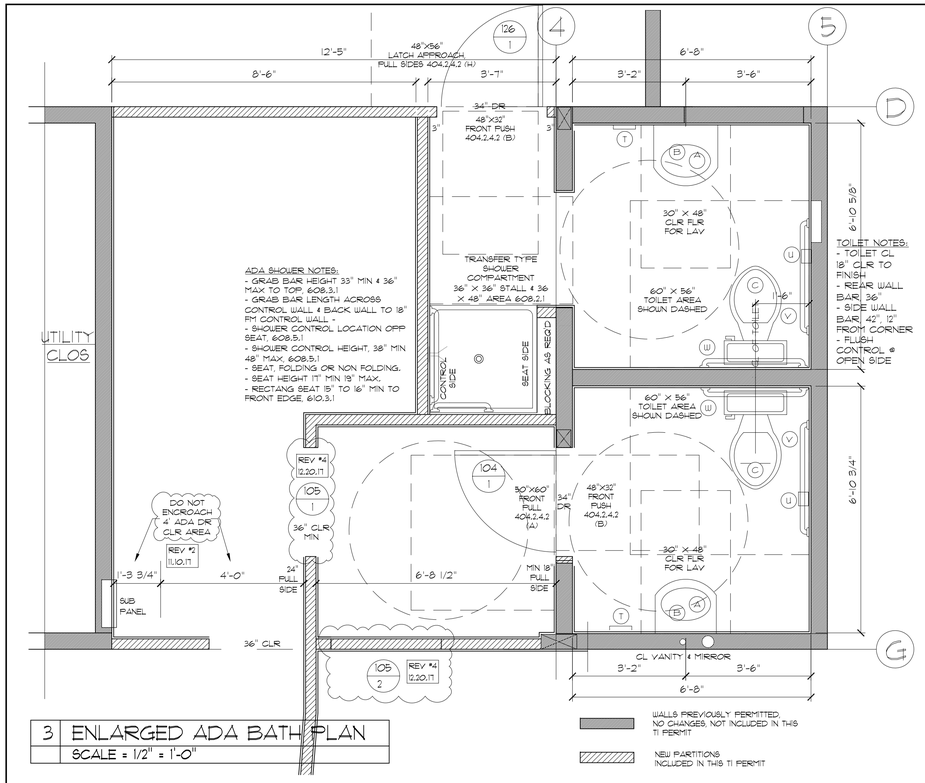
VII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Planning Board Report (3.28.2017)

PLANS

Plan 1. Updated 1st Floor Plan
Plan 2. Front (East) Elevation
Plan 3. Side (South) Elevation
Plan 4. Side (North) Elevation
Plan 5. Rear (West) Elevation
Plan 6. Subdivision Plat



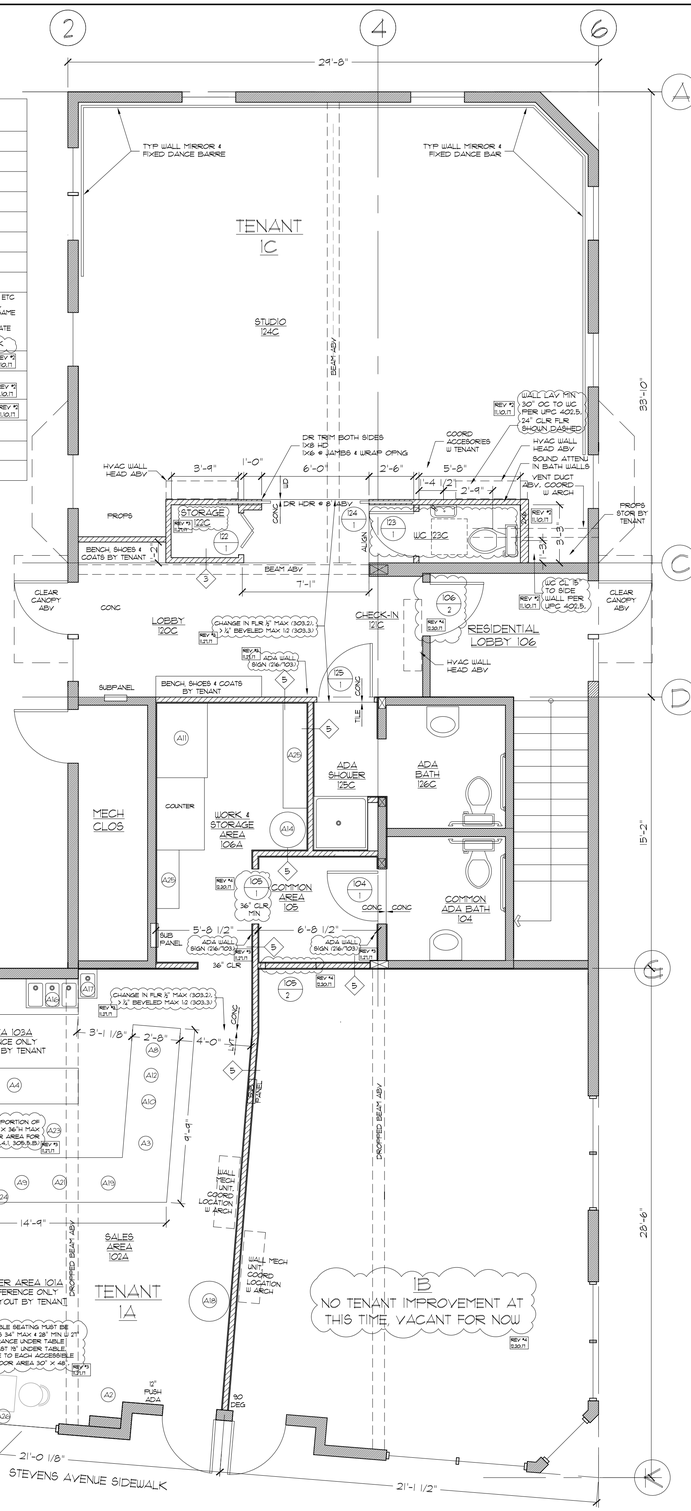
3 | ENLARGED ADA BATH PLAN
SCALE = 1/2" = 1'-0"

SCOPE OF WORK	BASE BLDG PERMITTED	TENANT 1A	TENANT 1B (NO TENANT IMPROV AT THIS TIME, VACANT FOR NOW) REV #3 11.30.17	TENANT 1C
FULLY SPRINKLED	NFPA 13 PREVIOUSLY PERMITTED, NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
RATED STAIR ENCLOSURE	1 HR PREVIOUSLY PERMITTED, NO CHANGE, SEE 2/A0 LIFE SAFETY	NO CHANGE	NO CHANGE	NO CHANGE
RATED MECH CLOSET	1 HR PREVIOUSLY PERMITTED, NO CHANGE, SEE 1/A1.1	NO CHANGE	NO CHANGE	NO CHANGE
RATED CEILING + HEAD OF WALLS TO UNITS ABV	1 HR + STC 50 PREVIOUSLY PERMITTED, NO CHANGE, SEE 3,4,5/A1.2 + 7/A1.1	NO CHANGE	NO CHANGE	NO CHANGE
RATED DEMISING WALLS + DOORS	PREVIOUSLY NONE	NEW BASE AS 1 HR PREVIOUSLY PERMITTED TYPE 5, 2X4 @ 16" O.C. W (1) 5/8" TYPE X BOTH SIDES, SEE 2C/A1.2 + 6/A1.1		
HEATING + COOLING	HEAT PUMPS W DUCTLESS + DUCTED DISTRIBUTION PREVIOUSLY PERMITTED	3 TON	2.5 TON	3 TON
VENTILATION	ERV PREVIOUSLY PERMITTED, NO CHANGE	750 CFM ERV	750 CFM ERV	750 CFM ERV
ELECTRIC SERVICE	SUB PANLES PREVIOUSLY PERMITTED, NO CHANGE	125 AMP	125 AMP	125 AMP
PLUMBING	(2) ADA BATHROOMS PREVIOUSLY PERMITTED, SEE 1/A1.1	BATH 104 - WC, LAV, BARS ETC AS PREVIOUSLY PERMITTED, NO CHANGE, SHARED W 1B, SEE 3/A1.1 ENLARGED ADA BATHROOMS		BATH 126C - WC, LAV, BARS ETC AS PREVIOUSLY PERMITTED, ADD ADA SHOWER, 36X36 SAME AS SHOWERS IN UNITS XX, W BARS (ADD BLKG), SEPARATE SEAT BY TENANT, WC 126C - TOILET W TINY SINK
FLOORS	CONC SLAB PREVIOUSLY PERMITTED	CUSTOMER AREA - LVT WORK AREA - CONC	CONC	LOBBY - CONC REV #3 11.10.17, STUDIO - LVT
CEILINGS	GWB FIRE BARRIER PREVIOUSLY PERMITTED	GWB FIRE BARRIER + EXPOSED PIPES + URES PAINTED	GWB FIRE BARRIER + EXPOSED PIPES + URES PAINTED	GWB FIRE BARRIER + EXPOSED PIPES + URES PAINTED REV #3 11.10.17
LIGHTING	TEMP UTILITY FIXTURES PREVIOUSLY PERMITTED	SUSPENDED FIXTURES BY TENANT	SUSPENDED FIXTURES BY TENANT	SUSPENDED FIXTURES BY TENANT REV #3 11.10.17
FANS	PREVIOUSLY NONE	NONE	NONE	STANDARD, SIZE TBD, REVERSABLE 3 SPEED
INSTALLED FIXTURES + EQUIPMENT	PREVIOUSLY NONE	INSTALLED BY TENANT, SEE EQUIPMENT KEY		NONE MOVEABLE FURNITURE BY TENANT
MOVEABLE FURNITURE	PREVIOUSLY NONE	BY TENANT		BY TENANT

1 | DESCRIPTION + SCOPE OF WORK
SCALE = NONE

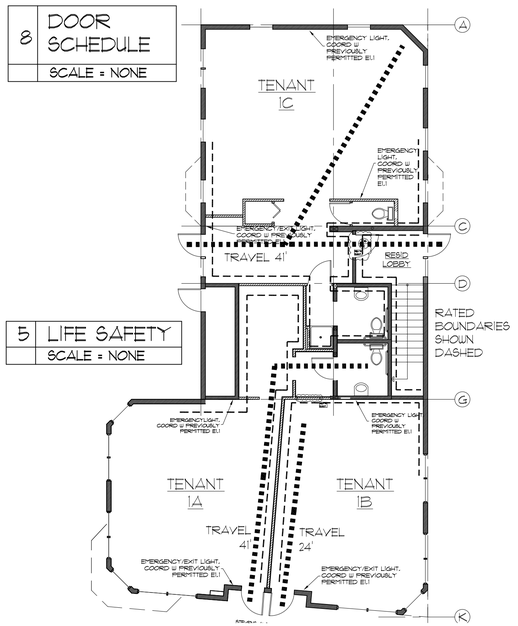
TENANT IMPROVEMENT PERMIT APPLICATION #2017-01492.

THIS SHEET IS AN ADDENDUM TO PREVIOUSLY PERMITTED BASE BUILDING #2017-00612

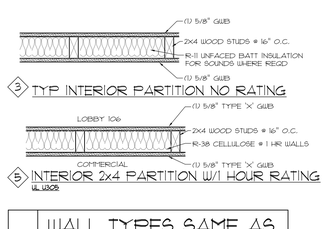


	LOCATION	DOOR WIDTH x HEIGHT	THICK.	MAT'L	FINISH	TYPE	RATING	FRAME MATERIAL	DEPTH	THRESH	HARD-WARE GROUP	FUNCTION
104/1	ADA BATH 104	2'-10"X6'-8" ADA	1 3/8"	BIRCH	CLEAR	E	-	STEEL/PT-X	2X6	NO	X	PRIVACY
105/1	COMMON 105	REMOVED, MIN 36" OPNG										
105/2	COMMON 105	REMOVED										
106/2	CK-IN 121 EXIT TO LOBBY 106	3'-0"X6'-8" ADA	1 3/8"	TBD	PTD		1 HR	STEEL/PT-X	2X4	NO	TBD	EXIT ONLY
122/1	STORAGE 122	2'-4"X6'-8"	1 3/8"	BIRCH	CLEAR	H	BIFOLD	FLAT BD/PT-X	2X4	NO	X	HOOK + EYE REV #3 11.30.17
123/1	WC 123	2'-6"X6'-8"	1 3/8"	BIRCH	CLEAR	E	-	WOOD/PT-X	2X4	NO	X	PRIVACY
124/1	STUDIO 124 PAIR POCKET	3'-0"X8'-0"	1 3/8"	BIRCH	CLEAR	E	-	POCKET	2X4	TBD	X	TBD
		COMMERICAL GRADE POCKET DR FRAME, 36X86X2 SIDE FOR 2X4 WALL. NOTE: POCKET DRS MIGHT BE CUSTOM BY TENANT										

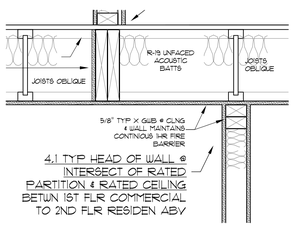
8 | DOOR SCHEDULE
SCALE = NONE



5 | LIFE SAFETY
SCALE = NONE



6 | WALL TYPES SAME AS BASE BLDG, 2C/A1.2
SCALE = 1" = 1'-0"



7 | HEAD OF WALL SAME AS BASE BLDG, 4/A1.2
SCALE = 1" = 1'-0"

NOTE: ALL FIXTURES, EQUIPMENT + FURNITURE PROVIDED + INSTALLED BY TENANT. ALL FIXED FURNITURE TO BE ADA COMPLIANT. REV #3 11.30.17

TAG	
	COFFEE EQUIPMENT
A1	ESPRESSO GRINDER, REGULAR COFFEE GRINDER, COFFEE BREWER, ESPRESSO MACHINE
A2	COFFEE CONDIMENT CART REV #3 11.30.17
	FOOD EQUIPMENT
A3	FOOD WARMER
A4	ICE MACHINE
A5	BLENDER ON CART
A6	OVEN, QUICK HALF SHEET
A7	INDUCTION BURNER
A8	DISHWASHER
A9	FRIDGE 3-DOOR (W STAINLESS TOPS)
A10	FRIDGE 2-DOOR (W STAINLESS TOPS)
A11	FRIDGE/FREEZER COMBO 2-DOOR?
A12	CONVEYOR TOASTER
A13	RESERVED
A14	WATER HEATER ?? GAL
A15	MICROWAVE
A16	TRIPLE SINK
A17	HAND SINK
	DISPLAY
A18	ROUND FRIDGE GRAB N GO
A19	GRAB N GO STANDING
	TECHNOLOGY
A21	COMPUTER WORK STATION/POINT OF SALE
A22	RESERVED
A23	MONITORS FOR MENU, PRODUCT, IPADS, SOUND
	BUILT INS + FINISHES
A24	GLASS SCREEN
A25	STORAGE SHELVES FOR PAPER GOODS, MAX (13" W) REV #3 11.10.17
A26	FIGUER STRIP FOR CUSTOMERS

4 | TENANT 1A EQUIP KEY
SCALE = NONE

2 | 1ST FLOOR TENANT IMPROVEMENT PLAN
SCALE = 1/4" = 1'-0"

Lachman
Architects & Planners

Architecture
Community Design
Preservation

58 Fore St. Bldg 30
Portland, Maine 04101
207-831-8585

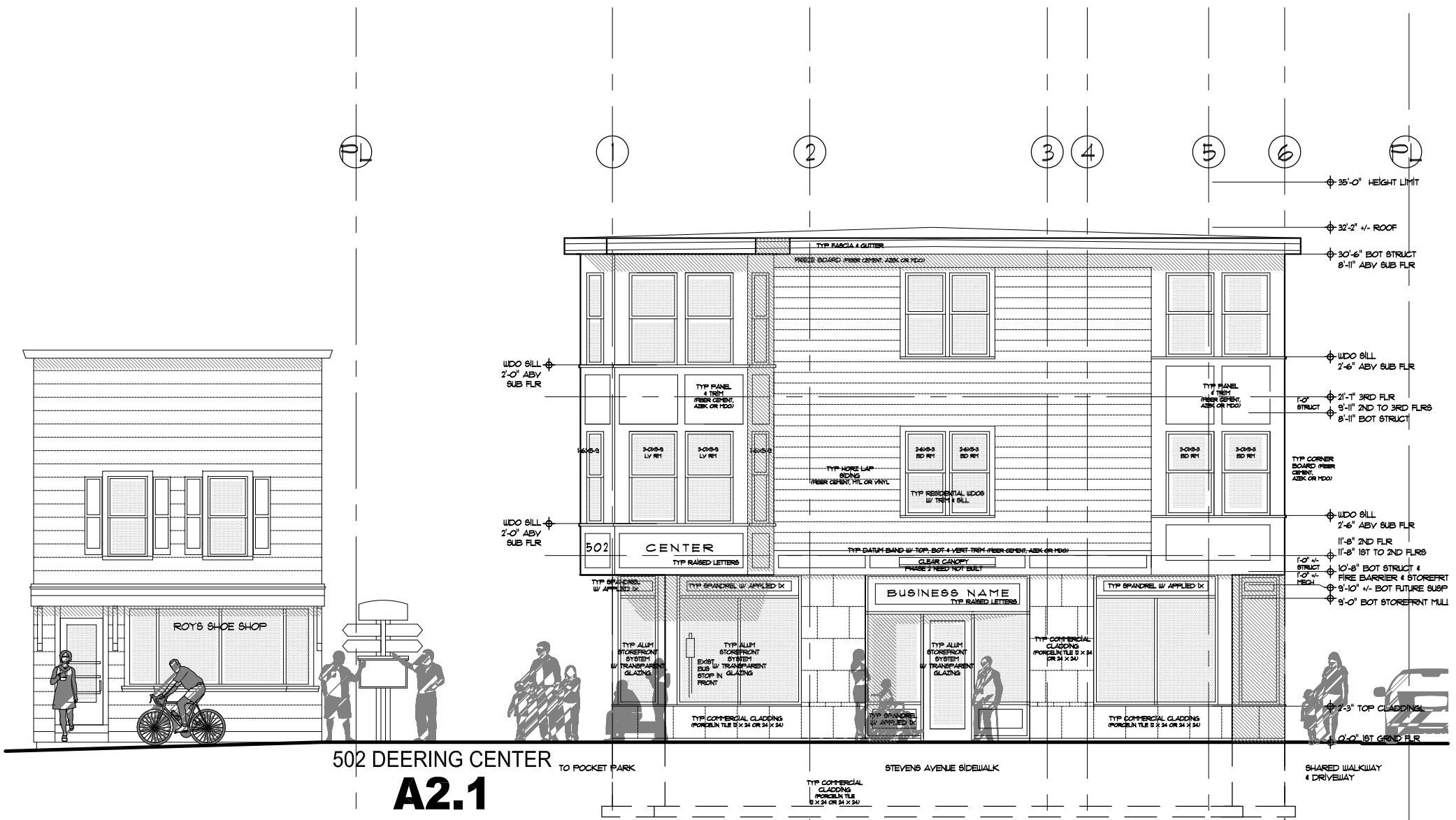
LICENSED ARCHITECT DENIS LACHMAN NO. 2691 STATE OF MAINE

502 DERING CENTER
NEW MIXED USE
502 STEVENS AVE, PORTLAND ME

TITLE: TENANT IMPROVEMENT SHELL

REV	DATE	ISSUE
4	12/20 2017	PERMIT REVSIONS
3	11/27 2017	PERMIT REVSIONS
2	11/10 2017	PERMIT REVSIONS
1	10/09 2017	CONSTRUCTION
A	09/26 2017	PERMIT + BUDGET

DRAWING NO: A1.1



502 DEERING CENTER

A2.1

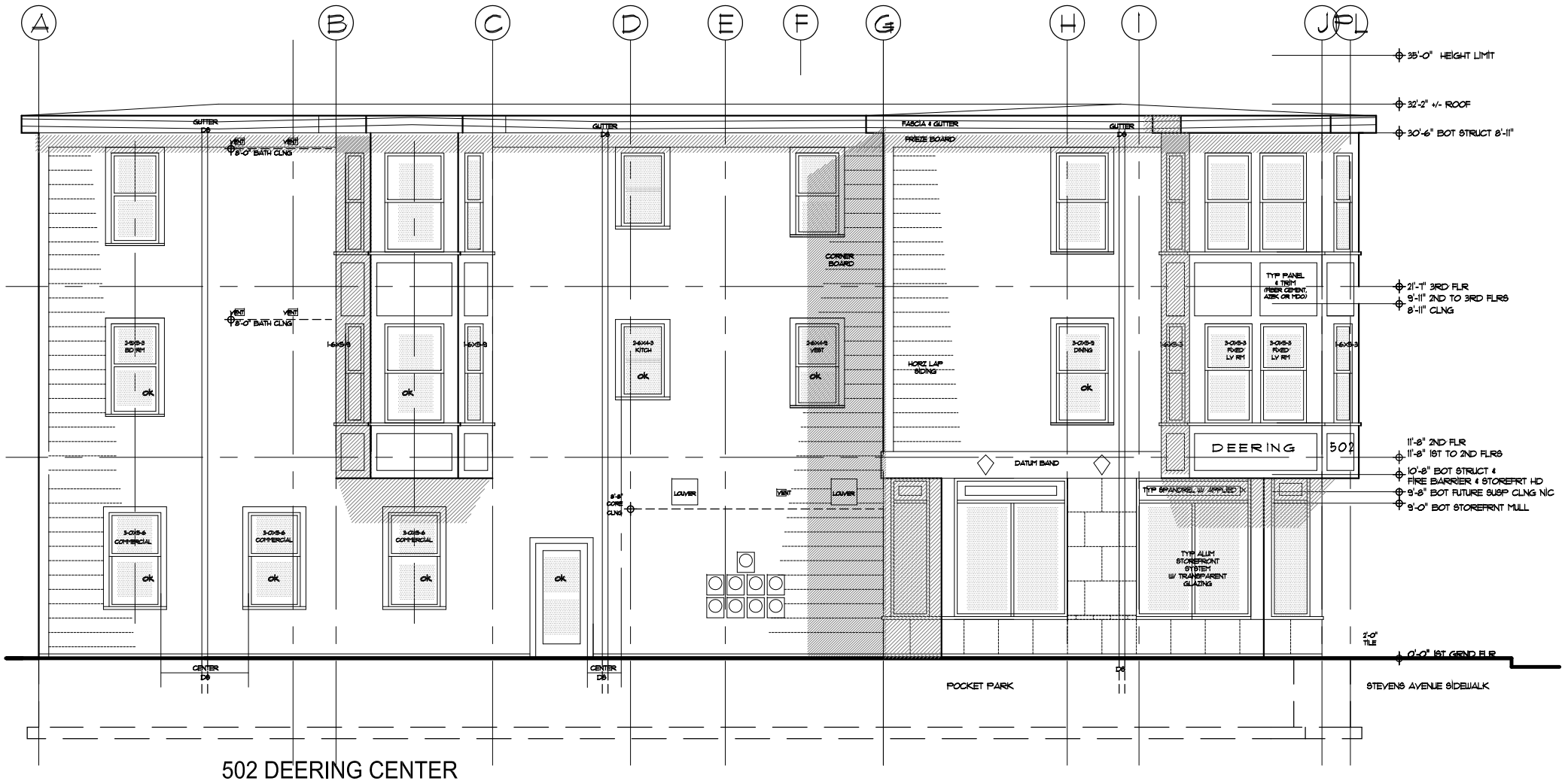
FRONT ELEVATION

FRONTING STEVENS AVE

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.2

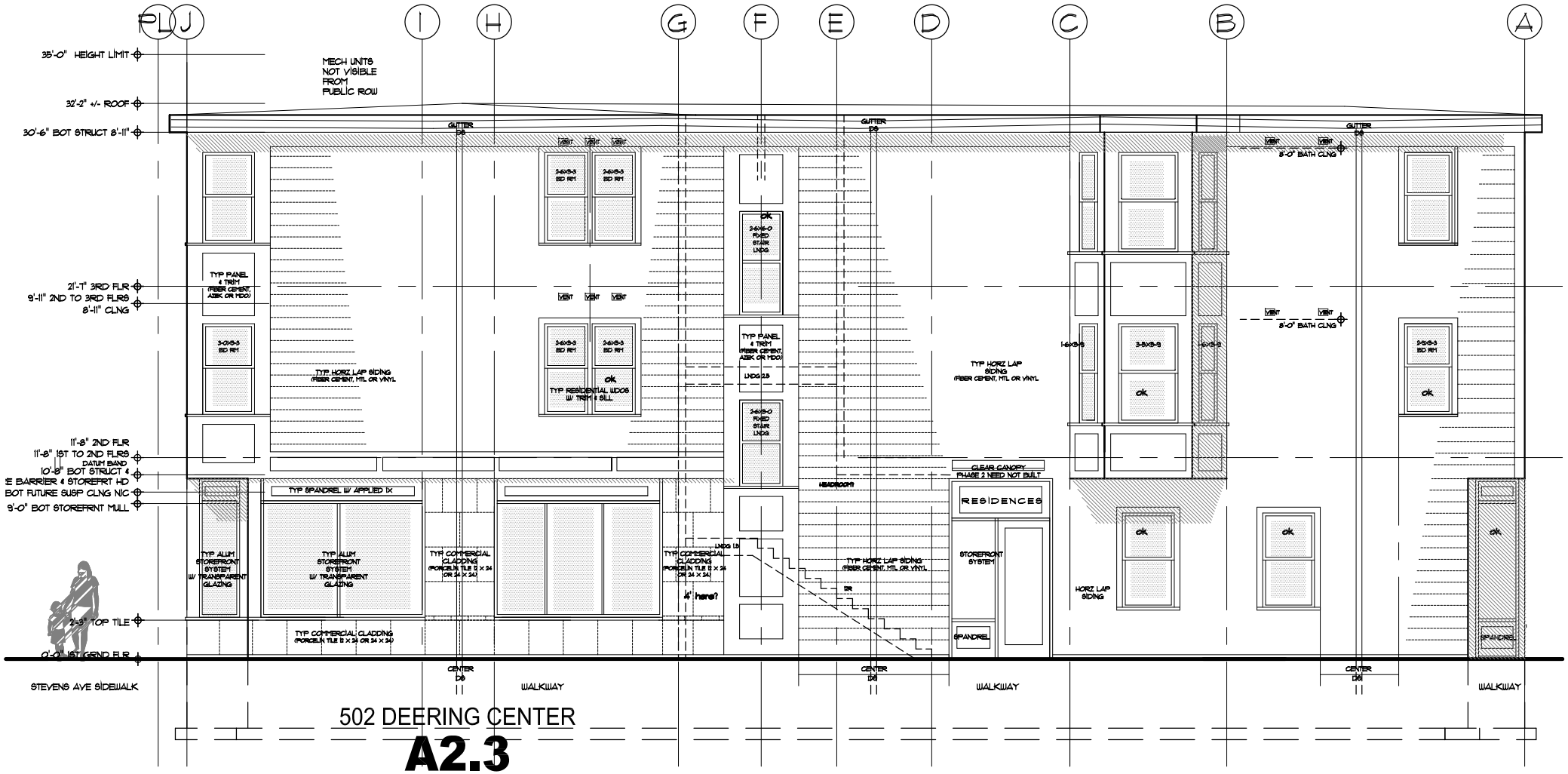
SIDE (SOUTH) ELEVATION

FRONTING POCKET PARK

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.3

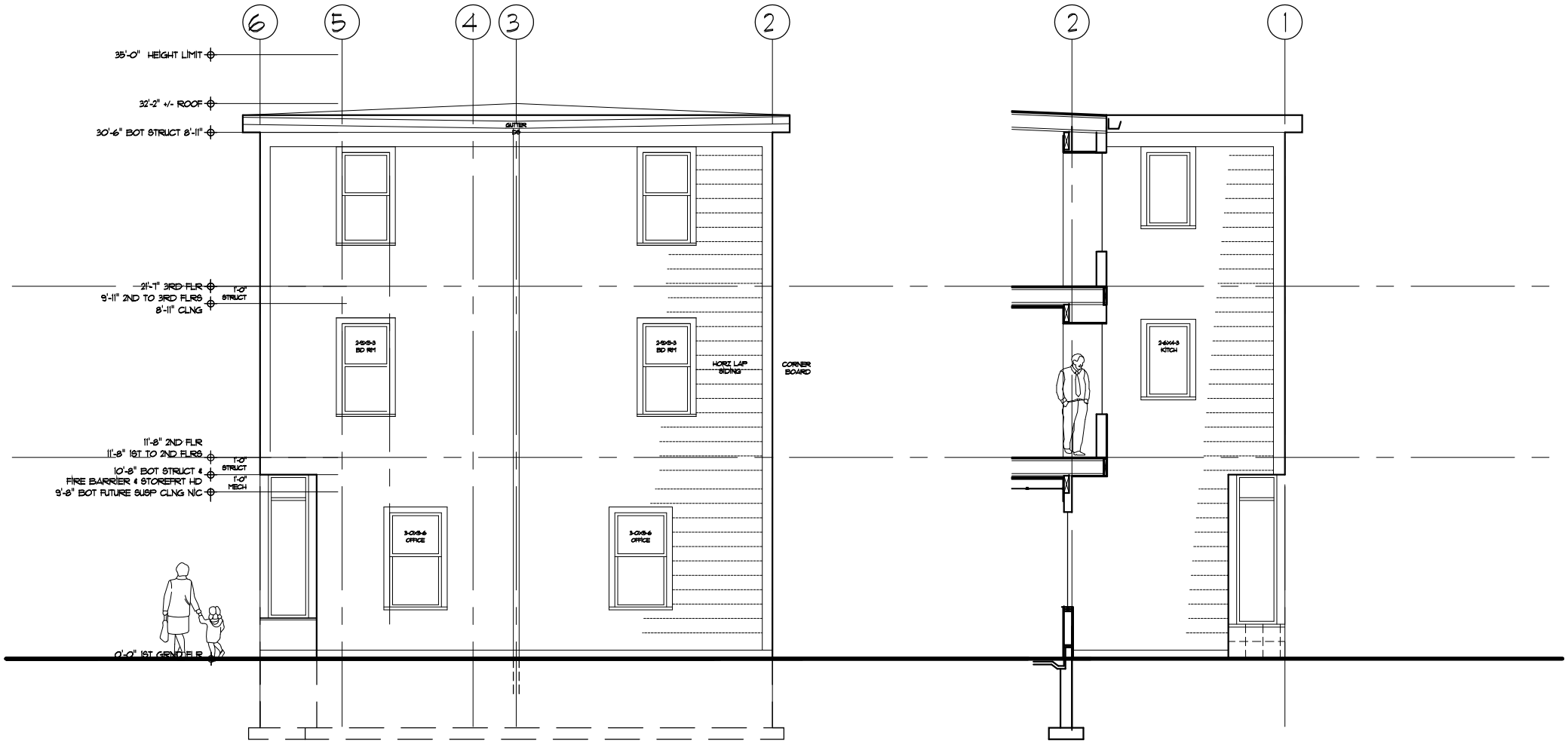
SIDE (NORTH) ELEVATION

FRONTING WALKWAY & SHARED DRIVEWAY

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.4

REAR (WEST) ELEVATION

FRONTING PARKING AREA

For DD Progress. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'

502 DEERING CENTER

A2.4

PARTIAL REAR (WEST) ELEVATION @ GRID G & SECTION BETWEEN GRIDS B&C

For PB Approval, No Scale, 3/14/17

Lachman Architects & Planners

WAIVERS & CONDITIONS OF APPROVAL:

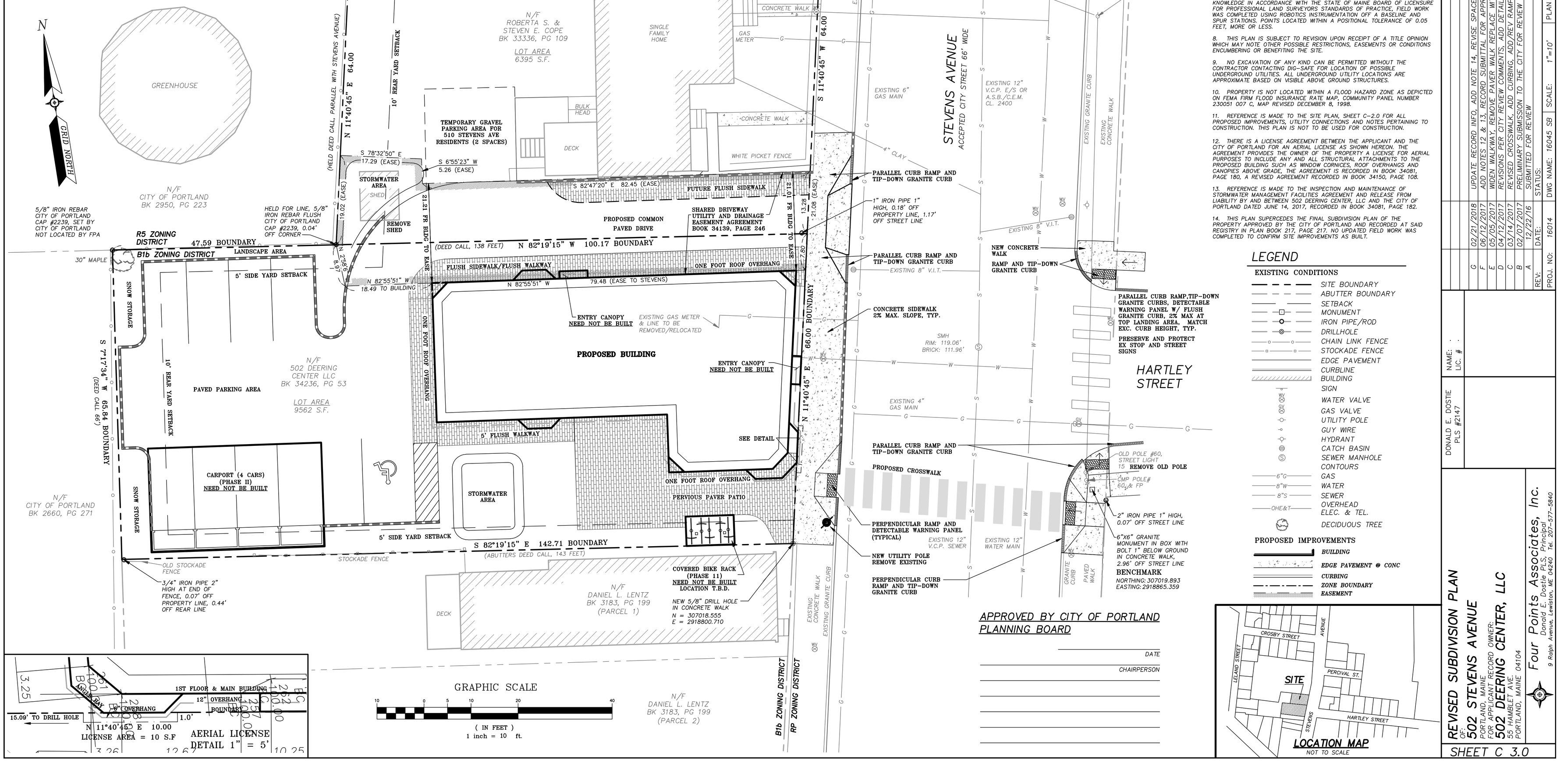
REFERENCE IS MADE TO APPROVAL LETTER DATED APRIL 3, 2017 FROM THE CITY OF PORTLAND, MAINE PLANNING BOARD TO DENIS LACHMAN, APPLICANT AND PAT CAROLL, CAROLL ASSOCIATES.

WAIVERS:

A. THE PLANNING BOARD WAIVES THE TECHNICAL MANUAL STANDARD (SECTION 1.14) TO ALLOW A 21 FOOT WIDE AISLE WITHIN THE PROPOSED SURFACE PARKING LOT.
B. THE PLANNING BOARD WAIVES THE TECHNICAL MANUAL STANDARD (SECTION 1.7.2.3) TO ALLOW AN 18 FOOT WIDE TWO WAY DRIVEWAY.
C. THE PLANNING BOARD WAIVES THE TECHNICAL MANUAL STANDARD (SECTION 5) TO ALLOW A REDUCTION OF THE MINIMUM SEPARATION REQUIREMENT FOR A STORM WATER INFILTRATION SYSTEM.

CONDITIONS OF APPROVAL:

1. THE APPLICANT SHALL PROVIDE A REVISED CONSTRUCTION MANAGEMENT PLAN, INCLUDING THE DETAILS REGARDING SAFE PEDESTRIAN ACCESS ALONG THE WEST SIDE OF STEVENS AVENUE ADJACENT TO THE PROPOSED DEVELOPMENT AS REQUESTED BY THE CITY'S CONSULTING TRAFFIC ENGINEER.
2. THE APPLICANT SHALL PROVIDE EITHER A MONETARY CONTRIBUTION TO THE CITY'S TREE FUND IN AN AMOUNT DETERMINED BY THE CITY ARBORIST OR SHALL BE RESPONSIBLE FOR THE PLANTING OF REQUIRED TREES AT A NEARBY LOCATION IN ORDER TO MEET THE CITY'S STREET TREE STANDARDS.
3. THE APPLICANT SHALL PROVIDE A MAINTENANCE AGREEMENT FOR THE STORM WATER DRAINAGE SYSTEM, WHICH SHALL BE SUBMITTED, SIGNED AND RECORDED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT WITH A COPY TO THE DEPARTMENT OF PUBLIC WORKS.
4. THE SIDEWALK RAMP DESIGN DETAIL AT THE SOUTHEAST CORNER OF HARTLEY STREET SHALL BE REVISED TO BE IN COMPLIANCE WITH CITY STANDARDS (LESS THAN 2% SLOPE). THE REVISED DETAIL SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE PLANNING AUTHORITY.
5. THE APPLICANT SHALL PROVIDE A REVISED STORM WATER PLAN TO ADDRESS THE STORM WATER ENGINEER'S "COMMENT 2" FROM THE REVIEW MEMO DATED MARCH 23, 2017 (ATTACHMENT 3). THIS PLAN SHALL BE REVIEWED AND APPROVED BY THE PLANNING AUTHORITY AND THE DEPARTMENT OF PUBLIC WORKS IN REGARDS TO THEIR WASTE WATER CAPACITY APPLICATION PRIOR TO ISSUANCE OF A BUILDING PERMIT.
6. THE APPLICANT SHALL PROVIDE AN APPROVAL LETTER FROM THE DEPARTMENT OF PUBLIC WORKS IN REGARDS TO THEIR WASTE WATER CAPACITY APPLICATION PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.



SPACE AND BULK: RESIDENTIAL (7 UNITS) + RETAIL (1,500 S.F.)

	B1–b	PROPOSED
MIN. LOT SIZE	NONE	0.22 AC±
MIN. LOT AREA / D.U.	1,000 SF/DU (MULTI–FAMILY)	7 D.U. (1,366 SF/DU)
MIN. STREET FRONTAGE	20 FT.	66 FT.
MIN. LOT WIDTH	NONE	65.84 FT.
MIN. FRONT YARD	NONE	0 FT.
MAX. FRONT YARD	10 FT.	0 FT.
MIN. REAR YARD	10 FT. (PRINCIPAL)	67.8 FT.
	5 FT. (ACCESSORY)	6.59 FT.
MIN. SIDE YARD	5 FT. (PRINCIPAL)	6.31 FT.
	NONE (ACCESSORY)	0.1 FT.
MAX. BLDG HEIGHT	35 FT.	32 FT.
MAX. FLOOR AREA	NON–RESIDENTIAL: 10,000 SF	1,500 SF
	RETAIL: 5,000 SF	1,500 SF
OFF–STREET PARKING	RESIDENTIAL (7 UNITS): 2 PS / D.U.	14 PS
	RETAIL: (1,500 SF): 1 PS / 200 SF >2,000	0 PS
	TOTAL	14 PS REQUIRED
		10 PS PROPOSED ONSITE
		4 PS OFFSITE
MAX. IMPERVIOUS SURFACE	90%	83%±

GENERAL NOTES:

1. RECORD OWNER – 502 DEERING CENTER LLC BY DEED OF DENIS J. LACHMAN & KAREN J. SMITH DATED AUGUST 14, 2017 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 34236, PAGE 53.

APPLICANT – 502 DEERING CENTER, LLC
55 HAMBLET AVENUE
PORTLAND, ME 04103

2. THE PROPERTY IS SHOWN ON THE CITY OF PORTLAND MAINE TAX MAP 18NE, AS BEING LOT 135–E009 AND IS LOCATED IN THE NEIGHBORHOOD BUSINESS ZONE (B1–b).

3. PLAN REFERENCES:

A) STANDARD BOUNDARY SURVEY OF LINCOLN MIDDLE SCHOOL PROPERTY STEVENS AVENUE PORTLAND, MAINE, BY WILLIAM G. SCOTT OF CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, DATED DECEMBER 1993, AND RECORDED IN THE (CCRD) IN PLAN BOOK 937, PAGE 5.

B) PLAN OF HIGH SCHOOL LOT, BOUGHT OF GEO. MEAD STEVENS, DATED SEPTEMBER 3, 1897, AND RECORDED IN THE (CCRD) IN PLAN BOOK 9, PAGE 7. DEED REFERENCE IS BOOK 657, PAGE 17.

C) LELAND ST. AND VICINITY, BY CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, DATED FEBRUARY 15, 1978, AND RECORDED IN THE (CCRD) IN PLAN BOOK 396, PAGE 3.

4. BEARINGS AND COORDINATES ARE BASED ON GRID NORTH NAD 1983 MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE.

5. VERTICAL DATUM IS NGVD 1929 AND WAS DETERMINED BY STATIC OBSERVATION USING A DUAL FREQUENCY GPS UNIT ON TWO CONTROL POINTS. THE DATA WAS PROCESSED BY USING THE OPUS PROGRAM ON THE NGS WEBSITE. SITE BENCHMARK ELEVATION CONFIRMED WITH CITY OF PORTLAND MONUMENT AT INTERSECTION OF HARTLEY STREET & STEVENS AVE.

6. CATCH BASIN & MANHOLE INVERTS PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT AND NEED CONFIRMATION PRIOR TO ANY NEW CONNECTIONS DURING CONSTRUCTION. SEE EXISTING CONDITIONS SURVEY FOR RIM AND INVERT ELEVATIONS.

7. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE, FIELD WORK WAS COMPLETED USING ROBOTICS INSTRUMENTATION OFF A BASELINE AND SPUR STATIONS. POINTS LOCATED WITHIN A POSITIONAL TOLERANCE OF 0.05 FEET, MORE OR LESS.

8. THIS PLAN IS SUBJECT TO REVISION UPON RECEIPT OF A TITLE OPINION WHICH MAY NOTE OTHER POSSIBLE RESTRICTIONS, EASEMENTS OR CONDITIONS ENCUMBERING OR BENEFITING THE SITE.

9. NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG–SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE BASED ON VISIBLE ABOVE GROUND STRUCTURES.

10. PROPERTY IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE AS DEPICTED ON FEMA FIRM FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 230051 007 C, MAP REVISED DECEMBER 8, 1998.

11. REFERENCE IS MADE TO THE SITE PLAN, SHEET C–2.0 FOR ALL PROPOSED IMPROVEMENTS, UTILITY CONNECTIONS AND NOTES PERTAINING TO CONSTRUCTION. THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION.

12. THERE IS A LICENSE AGREEMENT BETWEEN THE APPLICANT AND THE CITY OF PORTLAND FOR AN AERIAL LICENSE AS SHOWN HEREON. THE AGREEMENT PROVIDES THE OWNER OF THE PROPERTY A LICENSE FOR AERIAL PURPOSES TO INCLUDE ANY AND ALL STRUCTURAL ATTACHMENTS TO THE PROPOSED BUILDING SUCH AS WINDOW CORNICES, ROOF OVERHANGS AND CANOPIES ABOVE GRADE. THE AGREEMENT IS RECORDED IN BOOK 34081, PAGE 180, A REVISED AGREEMENT RECORDED IN BOOK 34150, PAGE 108.

13. REFERENCE IS MADE TO THE INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES AGREEMENT AND RELEASE FROM LIABILITY BY AND BETWEEN 502 DEERING CENTER, LLC AND THE CITY OF PORTLAND DATED JUNE 14, 2017, RECORDED IN BOOK 34081, PAGE 182.

14. THIS PLAN SUPERCEDES THE FINAL SUBDIVISION PLAN OF THE PROPERTY APPROVED BY THE CITY OF PORTLAND AND RECORDED AT SAID REGISTRY IN PLAN BOOK 217, PAGE 217. NO UPDATED FIELD WORK WAS COMPLETED TO CONFIRM SITE IMPROVEMENTS AS BUILT.

LEGEND

EXISTING CONDITIONS

- SITE BOUNDARY
- ABUTTER BOUNDARY
- SETBACK
- MONUMENT
- IRON PIPE/ROD
- DRILLHOLE
- CHAIN LINK FENCE
- STOCKADE FENCE
- EDGE PAVEMENT
- CURBLINE
- BUILDING
- SIGN
- WATER VALVE
- GAS VALVE
- UTILITY POLE
- GUY WIRE
- HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- CONTOURS
- 6"G — GAS
- 8"W — WATER
- 8"S — SEWER
- OHE&T — OVERHEAD ELEC. & TEL.
- DECIDUOUS TREE

PROPOSED IMPROVEMENTS

- BUILDING
- EDGE PAVEMENT @ CONC
- CURBING
- ZONE BOUNDARY
- EASEMENT

APPROVED BY CITY OF PORTLAND PLANNING BOARD

_____ DATE

_____ CHAIRPERSON

LOCATION MAP
NOT TO SCALE

STATE OF MAINE
CUMBERLAND COUNTY SS REGISTRY OF DEEDS
RECEIVED _____, 2017
AT ___h _____m AND RECORDED IN
PLAN BOOK _____ PAGE _____
ATTEST _____ REGISTER

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM FOUR POINTS ASSOCIATES, INC. ANY ALTERATIONS AUTHORIZED BY OTHERS SHALL BE AT THEIR SOLE RISK AND WITHOUT LIABILITY TO FOUR POINTS ASSOCIATES, INC.

REV:	DATE:	STATUS:
G	02/21/2018	UPDATE RECORD INFO, ADD NOTE 14, REVISE SPACE & BULK NOTES
F	06/12/2017	ADD NOTES 12 & 13, RECORD SUBMITTAL FOR APPROVAL
E	05/05/2017	WIDEN WALKWAY, REMOVE PAVER WALK REPLACE WITH ASPHALT
D	04/12/2017	REVISIONS PER CITY REVIEW COMMENTS, ADD DETAIL OF OVERHANG
C	03/14/2017	REVISED CROSSWALK, ADD CURBING, ADD/REV RAMPS, ADD 2 UNITS
B	02/07/2017	PRELIMINARY SUBMISSION TO THE CITY FOR REVIEW
A	12/22/16	SUBMITTED FOR REVIEW

PROJ. NO: 16014 | DWG NAME: 16045 SB | SCALE: 1"=10' | PLAN BY: DED & SMM

NAME: . .
LIC. #

DONALD E. DOSTIE
PLS #2147

REVISED SUBDIVISION PLAN
OF
502 STEVENS AVENUE
PORTLAND, MAINE
FOR APPLICANT RECORD OWNER:
502 DEERING CENTER, LLC
55 HAMBLET AVE.
PORTLAND, MAINE 04104

Four Points Associates, Inc.
Surveying & Civil Engineering
9 Ralph Avenue, Lewiston, ME. 04240 Tel. 207-577-5840

SHEET C 3.0